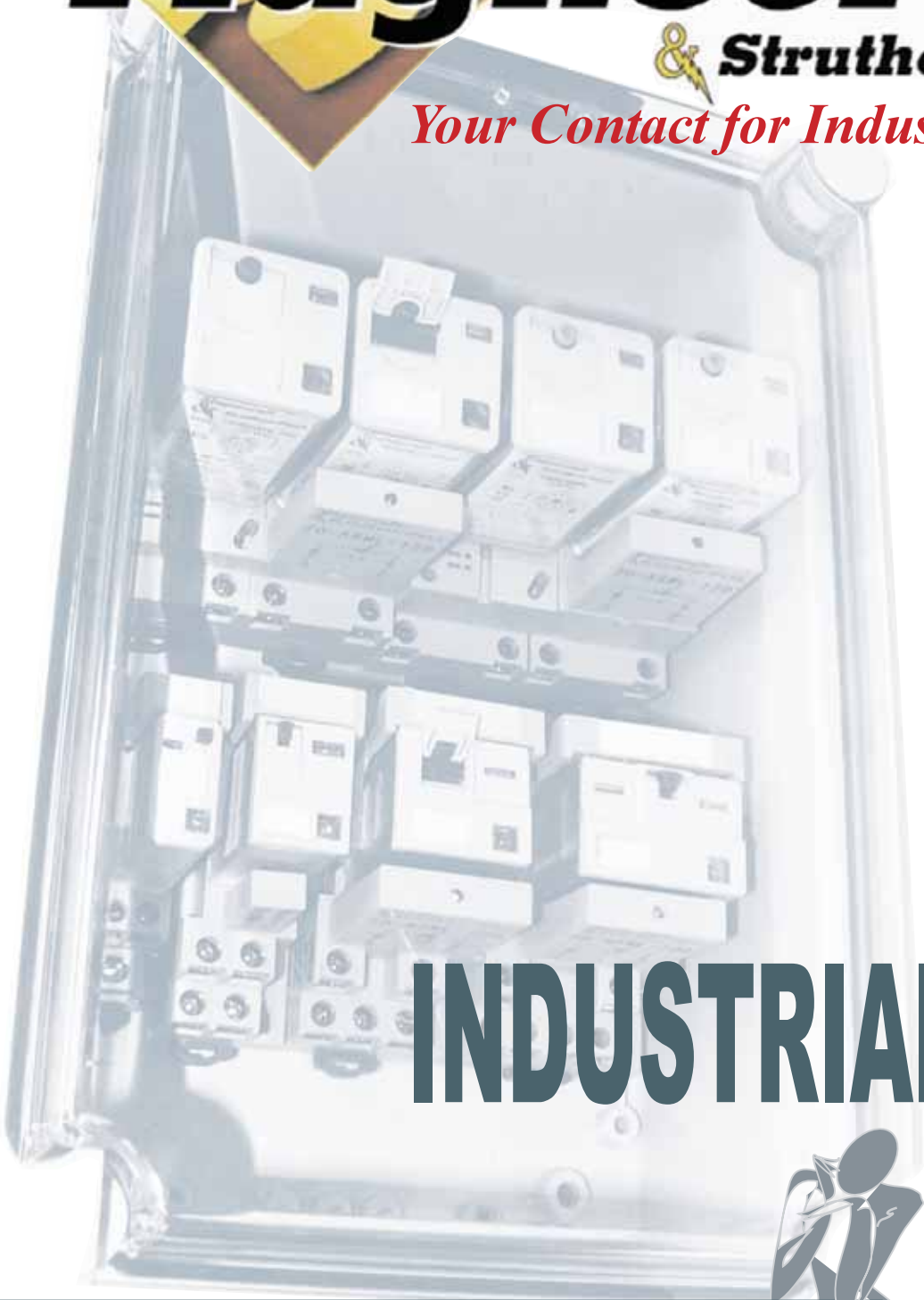
Magnecraft

& Struthers-Dunn

Your Contact for Industrial Relays



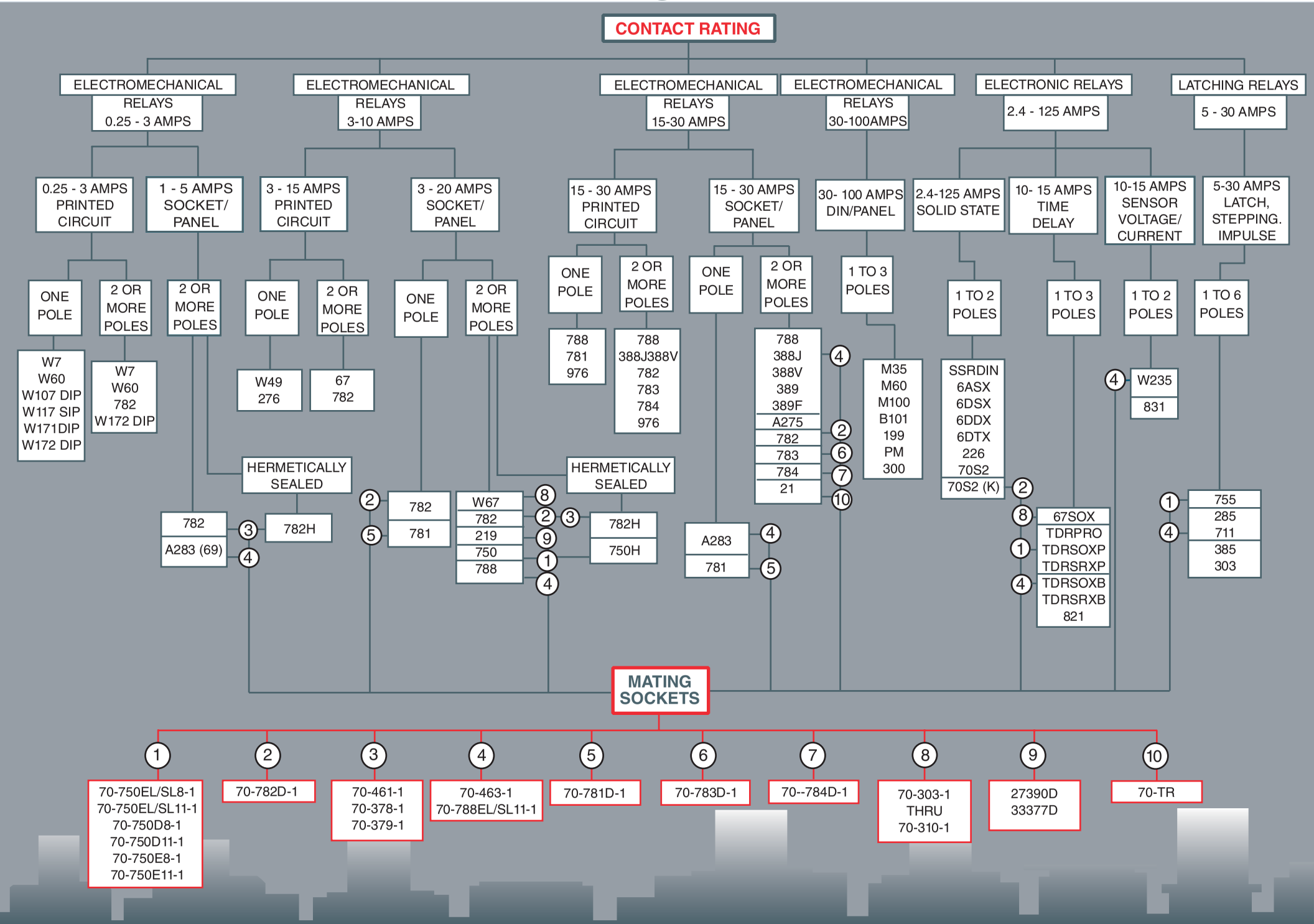
INDUSTRIAL RELAYS

THINK INSIDE THE BOX...

EDITION 104

RELAY DECISION TREE

www.magnecraft.com



ASCENDING PART NUMBERS	DESCRIPTION	SECTION	PAGE LOCATION
SSR 2 DIN-AC	Relay, Solid state, AC input, 280 AC output, SPST-NO, DIN/panel mt. SCR output - 10 - 25 Amps	2	6
SSR 2 DIN-DC	Relay, Solid state, DC input, 280 AC output, SPST-NO, DIN/panel mt. SCR output - 10 - 25 Amps	2	6
SSR 6 DIN-AC	Relay, Solid state, AC input, 660 AC output, SPST-NO, DIN/panel mt. SCR output - 10 - 25 Amps	2	6
SSR 6 DIN-DC	Relay, Solid state, DC input, 660 AC output, SPST-NO, DIN/panel mt. SCR output - 10 - 25 Amps	2	6
W7	Relay, Subminiature, SPDT, DPDT, Printed Circuit, Epoxy sealed - 2 Amps	6	10, 11
W9A	Relay, Miniature high power, SPST-NO, SPDT, flange/Q.C, epoxy sealed 30 Amps	1	40, 41
15-707	Socket Jumper cover 70-750D8-1	7	20
15-708	Socket Jumper cover 70-750D11-1	7	21
16- ( )	Relay hold down clips	7	See Section 7
16-9ADIN-1	DIN adapter - 9A	7	41
16-DCLIP-1	End clip for DIN track	7	39
16-700DIN	DIN track 35 millimeter	7	39
16-711C1	Flange mount adapter for TDR compact	4	10
16-711C4	DIN rail adapter for TDR compact	4	10
16-781C or C1	DIN and flange adapters - 781	1	12
16-782C or C1	DIN and flange adapters - 782	1	12
16-783C or C1	DIN and flange adapters - 783	1	12
16-784C or C1	DIN and flange adapters - 784	1	12
16-788C1	Flange adapter -70-788EL/SL sockets	7	27
W21/136	Relay, DPDT, plug-in, tungsten lamp rated 20 Amps, 30 Amps resistive	1	43
33-796	Coil buss jumpers - 70-750 D8-1 or D11-1	7	20, 21
35D203	Plastic Snap on dust cover - PM	3	8
35D227	Metal enclosure - PM	3	8
33-797	Coil buss jumpers - 70-750, 788EL, SL sockets	7	24, 25, 27
WM35	Relay, Mercury displacement, high inrush, 1 to 3 pole NO, SPST-NC, panel mt. - 35 Amps	3	12 - 14
WML35	Relay, Mercury displacement long life, 1 to 3 pole NO, SPST-NC, panel mt. - 35 Amps	3	13 - 15
W49	Relay, Miniature, SPDT, DPDT, printed circuit, 3, 5, 10 Amps	6	12, 13
50-1289	Metal enclosure - 199/425	3	8
60-884	Flip up terminals ID tag	7	22 - 25, 27
W60	Relay, Miniature, SPDT, DPDT, printed circuit - 2 Amps	6	16, 17
WM60	Relay, Mercury displacement, high inrush, 1 to 3 pole NO, SPST-NC, panel mt. - 60 Amps	3	13 -15
WML60	Relay, Mercury displacement long life, 1 to 3 pole NO, SPST-NC, panel mt. - 60 Amps	3	13 -15
W62ASX	Relay, Solid state, AC input, 280 AC output, SPST-NO, panel mt. SCR output - 10 - 75 Amps	2	7 - 9
W62DSX	Relay, Solid state, DC input, 280 AC output, SPST-NO, panel mt. SCR output - 10 - 75 Amps	2	7 - 9
W62DTX	Relay, Solid state, DC input, 280 AC output, SPST-NO, or NC, panel mt. Triac output -10 - 40 Amps	2	7, 8, 11
W6210DTX-3	Relay, Solid state, DC input, 280 AC output, DPST-NO, panel mt. Triac output - 10 - 40 Amps	2	7, 8, 11
W62DDX	Relay, Solid state, DC input, 200 DC output, SPST-NO, panel mt. Mosfet output - 12 - 40 Amps	2	7, 8, 10
W64ASX	Relay, Solid state, AC input, 480 AC output, SPST-NO, panel mt. SCR output - 10 - 75 Amps	2	7 - 9
W64DSX	Relay, Solid state, DC input, 480 AC output, SPST-NO, panel mt. SCR output - 10 - 75 Amps	2	7 - 9
W64DTX	Relay, Solid state, DC input, 480 AC output, SPST-NO, panel mt. Triac output -10 - 40 Amps	2	7 - 9,11
W66ASX	Relay, Solid state, AC input, 660 AC output, SPST-NO, panel mt. SCR output - 90 - 125 Amps	2	7 - 9
W66DSX	Relay, Solid state, DC input, 660 AC output, SPST-NO, panel mt. SCR output - 90 - 125 Amps	2	7 - 9
W67	Relay, Miniature, DPDT - 6PDT, solder/plug-in, printed circuit - 3, 5 Amps	1	44 - 45
W67CPSOX	Relay, Miniature time delay, screw adjustable, ON delay, DPDT, Solder/Plug-in - 5 Amps	4	17
70-124-1 or -2	Socket 11 pin solder or quick connect/chassis mt. with mounting tabs - A283	7	31
70-169-1	Socket 8 pin octal, low profile, screw/panel mt	7	19
70-170-1	Socket 11 pin octal, low profile, screw/panel mt	7	19
70-178-1 or -2	Socket 11 pin printed circuit, with and without mounting tabs - A283	7	36
70-303-1 to 310-1	Sockets solder terminals/chassis mt. or printed circuit terminals - Class 67 Relays	7	33, 37
70-378-1	Socket 14 pin solder terminals, chassis mt. - 782	7	30
70-379-1	Socket 14 pin printed circuit terminals - 782	7	35
70-401-1	Socket 8 pin solder terminals, chassis mt. - 782	7	30
70-402-1	Socket 8 pin printed circuit terminals - 782	7	35
70-459-1	Socket 8 pin miniature DIN/panel mt., screw terminal - 782	7	13
70-461-1	Socket 14 pin miniature DIN/panel mt., screw terminal - 782	7	12
70-463-1	Socket 11 pin sq. base, DIN/panel mt.. screw terminal	7	26
70-464-1	Socket 8 pin octal, DIN/panel mt., screw terminal	7	17
70-465-1	Socket 11 pin octal, DIN/panel mt., screw terminal	7	18
70-750D8-1	Socket 8 pin octal, logic, DIN/panel mt., finger safe, screw terminal	7	20
70-750D11-1	Socket 11 pin octal, logic, DIN/panel mt., finger safe, screw terminal	7	21
70-750E8-1	Ecnomical 8 pin octal, DIN/panel mt., finger safe, rising elevator box terminals	7	22
70-750E11-1	Ecnomical 11 pin octal, DIN/panel mt., finger safe, rising elevator box terminals	7	23
70-750EL8-1	Logic 8 pin octal, DIN/panel mt., finger safe, rising elevator box terminals	7	24
70-750EL11-1	Logic 11 pin octal, DIN/panel mt., finger safe, rising elevator box terminals	7	25
70-750SL8-1	Logic 8 pin octal, DIN/panel mt., finger safe, screw terminals	7	24
70-750SL11-1	Logic 11 pin octal, DIN/panel mt., finger safe, screw terminals	7	25
70-781D-1	Socket 5 pin slim, DIN/panel mt., screw terminal, finger safe. - 781	7	11
70-781F-1 or T-1	Socket 5 pin solder terminals/chassis mt., or printed circuit terminals - 781	7	29, 34
70-782D-1	Socket 8 pin DIN/ dual panel mt., screw terminal, finger safe. - 782	7	14
70-783D-1	Socket 11 pin DIN/ dual panel mt., screw terminal, finger safe. - 783XCX	7	15

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NUMERICAL PRODUCT INDEX

Magnecraft Struthers-Dunn — Your Contact for Industrial Relays

* Formerly W388, W388B
** Formerly A314

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SECTION 1 continued

Socket Compatible and Flange Mounted Relays: 1 to 30 Amperes

SECTION 2

Solid State Relays (SSR): 2.5 to 125 Amperes

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SECTION 7 continued

Sockets & Accessories: 5 to 16 Amperes

Mature product: Mature product series are no longer described in the body of this edition, as they no longer represent the most effective solution for many new design requirements. However many models within each of these series are currently available, for retrofit applications. Data sheet are still available from the Fax on Demand system. Call 1-800-891-2957 and Document 100 for listings from previous editions.

SECTION 1

SOCKET COMPATIBLE AND FLANGE MOUNTED RELAYS

1 TO 30 AMPERES

781
782
782H
783
784
750
788
283
388J/V
389/389F
300
9A/92
21
67
219
750H

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Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

PRODUCT	781	782XAX
	 MANUFACTURED UNDER ISO 9002 QS 9000	 MANUFACTURED UNDER ISO 9002 QS 9000
L X W X H (INCHES)	1.60 x 0.55 x 1.10	1.54 x 0.83 x 1.10
FEATURES	0.187 QUICK CONNECT/SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS FLAG INDICATOR L.E.D. STATUS LAMP PUSH BUTTON FINGER GRIP COVER I.D. TAG/WRITE LABEL OPTIONAL FLANGE AND DIN ADAPTERS UL LISTED WHEN USED WITH 70-781D-1 SOCKET	0.187 QUICK CONNECT/SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS FLAG INDICATOR L.E.D. STATUS LAMP PUSH BUTTON WITH LOCK DOWN DOOR FINGER GRIP COVER I.D. TAG/WRITE LABEL OPTIONAL FLANGE AND DIN ADAPTERS UL LISTED WHEN USED WITH 70-459-1 OR 70-782D-1 SOCKETS
COIL	**UNITS**	
Standard Voltage AC:	50/60 Hz	6, 12, 24,110 / 120, 220 / 230, 240	6, 12, 24,110 / 120, 220 / 230, 240
DC:		6, 12, 24, 48, 110 /125	6, 12, 24, 48,110 /125
Coil Power AC (60 Hz):	VA	0.9	1.2
Coil Power DC:	W	0.7	0.9
Insulation System Per UL Standard 1446:		Class B (130ºC)	Class B (130ºC)
CONTACTS			
Contact Configuration:		**SPDT**	**SPDT**
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50	50
Contact Rating AC Amperes (AC1):	A	15	20
Contact Rating AC Voltage:	V	277	277
Contact Rating DC Amperes (DC1):	A	15 / 0.5	20 / 0.5
Contact Rating DC Voltage:	V	28 / 220	28 /220
Horse Power (AC):	Hp	1/2 @ 120 V	1/2 @ 120 V
Horse Power (AC):	Hp	1 @ 250 V	1 @ 250 V
TIMING			
Operate Time:	ms	20	25
Release Time:	ms	20	20
DIELECTRIC STRENGTH			
Coil to Contacts:	V rms	2500	2500
Insulation Resistance:	megohms minimum@VDC	100 @ 500	1000 @ 500
TEMPERATURE			
Operating, AC Lower:	ºC	-40	-40
Operating, AC Upper:	ºC	+70	+70
Operating, DC Lower:	ºC	-40	-40
Operating, DC Upper:	ºC	+70	+70
Storage, Lower:	ºC	-40	-40
Storage, Upper:	ºC	+105	+105
LIFE EXPECTANCY			
Electrical @ Rated Load (AC1):	operations	15 A: 100,000, 20 A: 50,000	100,000
Mechanical @ no Load :	operations	10,000,000	10,000,000
MISCELLANEOUS			
Cover Protection Category:	IP	40	40
Weight:	grams	29	36
MATING SOCKETS SEE SECTION 7		70-781D-1, 70-781F-1, 70-781T-1	70-459-1, 70-782D-1, 70-401-1, 70-402-1
AGENCY APPROVALS		c UL us UL Recognized File No. E43641, 40787, CE, UL LISTED, TÜV	c UL us UL Recognized File No. E43641, 40787, CE, UL LISTED, TÜV
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SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

782XBX

MANUFACTURED UNDER ISO 9002 QS 9000

1.54 x 0.83 x 1.10

- 0.187 QUICK CONNECT/SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS
- FLAG INDICATOR
- L.E.D. STATUS LAMP
- PUSH BUTTON WITH LOCK DOWN DOOR
- FINGER GRIP COVER
- I.D. TAG/WRITE LABEL
- OPTIONAL FLANGE AND DIN ADAPTERS
- UL LISTED WHEN USED WITH 70-459-1 OR 70-782D-1 SOCKETS

6, 12, 24, 110 / 120, 220 / 230, 240 6, 12, 24, 48, 110 /125	
1.2 0.9	
Class B (130ºC)	
DPDT	
Silver alloy, gold flashed	
50	
15 / 12 120 / 277	
12 / 0.5 28 /220	
1/2 @ 120 V 1 @ 250 V	
25 20	
2500	
1000 @ 500	
-40 +70	
-40 +70	
-40 +105	
200,000	
10,000,000	
40	
36	

70-459-1, 70-782D-1, 70-401-1, 70-402-1

cULus UL Recognized File No. E43641 | 40787 | CE | LISTED | TÜV

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783XCX

MANUFACTURED UNDER ISO 9002 QS 9000

1.54 x 1.21 x 1.10

- 0.187 QUICK CONNECT/SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS
- FLAG INDICATOR
- L.E.D. STATUS LAMP
- PUSH BUTTON WITH LOCK DOWN DOOR
- FINGER GRIP COVER
- I.D. TAG/WRITE LABEL
- OPTIONAL FLANGE AND DIN ADAPTERS
- UL LISTED WHEN USED WITH 70-783D-1 SOCKET

6, 12, 24,110 / 120, 220 / 230, 240 6, 12, 24, 48, 110 /125	
1.7 1.5	
CLASS B (130ºC)	
3PDT	
Silver alloy, gold flashed	
50	
15 / 12 120 / 277	
15 / 0.5 28 / 220	
1/2 @ 120 V 3/4 @ 250 V	
25 20	
2500	
1000 @ 500	
-40 +70	
-40 +70	
-40 +105	
150,000	
10,000,000	
40	
60	

70-783D-1

cULus UL Recognized File No. E43641 | 40787 | CE | LISTED | TÜV

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784XDX

MANUFACTURED UNDER ISO 9002 QS 9000

1.54 x 1.60 x 1.10

- 0.187 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS
- FLAG INDICATOR
- PUSH BUTTON WITH LOCK DOWN DOOR
- FINGER GRIP COVER
- I.D. TAG/WRITE LABEL
- OPTIONAL FLANGE AND DIN ADAPTERS
- UL LISTED WHEN USED WITH 70-784D-1 SOCKET

6, 12, 24,110 / 120, 220 / 230, 240 6, 12, 24, 48, 110 /125	
2 1.5	
Class B (130ºC)	
4PDT	
Silver alloy, gold flashed	
50	
15 / 12 120 / 277	
15 / 0.5 28 / 220	
1/2 @ 120 V 3/4 @ 250 V	
20 20	
2500	
100 @ 500	
-40 +70	
-40 +70	
-40 +105	
150,000	
10,000,000	
40	
80	

70-784D-1

cULus UL Recognized File No. E43641 | 40787 | CE | LISTED | TÜV

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Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

PRODUCT	782XBX1 & 782XDX1	782XBX2 & 782XDX2
	 MANUFACTURED UNDER ISO 9002 QS 9000	 MANUFACTURED UNDER ISO 9002 QS 9000
L X W X H (INCHES)	1.54 x 0.83 x 1.10	1.54 x 0.83 x 1.10
FEATURES	• 0.100 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • FLAG INDICATOR • L.E.D. STATUS LAMP • PUSH BUTTON • FINGER GRIP COVER • I.D. TAG/WRITE LABEL • OPTIONAL FLANGE AND DIN ADAPTERS AVAILABLE • UL LISTED WHEN USED WITH 70-461-1 SOCKET	• 0.100 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • FLAG INDICATOR • L.E.D. STATUS LAMP • PUSH BUTTON WITH LOCK DOWN DOOR • FINGER GRIP COVER • I.D. TAG/WRITE LABEL • OPTIONAL FLANGE AND DIN ADAPTERS AVAILABLE • UL LISTED WHEN USED WITH 70-461-1 SOCKET
COIL	**UNITS**	
Standard Voltage AC:	50/60 Hz	6, 12, 24, 110 / 120, 220 / 230, 240
DC:		6, 12, 24, 48, 110 /125
Coil Power AC (60 Hz):	VA	1.2
Coil Power DC:	W	0.9
Insulation System Per UL Standard 1446:		Class B (130ºC)
CONTACTS		
Contact Configuration:		**DPDT, 4PDT**
Contact Material:		Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50
Contact Rating AC Amperes (AC1):	A	3
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	3 / 0.25
Contact Rating DC Voltage:	V	28 / 220
Horse Power (AC):	Hp	
Horse Power (AC):	Hp	1/10 @ 240 V
TIMING		
Operate Time:	ms	20
Release Time:	ms	20
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Insulation Resistance:	megohms minimum@VDC	100 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-40
Operating, AC Upper:	ºC	+70
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+70
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	200,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Cover Protection Category:	IP	40
Weight:	grams	36
MATING SOCKETS SEE SECTION 7		70-461-1, 70-378-1, 70-379-1
AGENCY APPROVALS		c US UL Recognized File No. E43641 · SA 40787 · CE · UL LISTED · TÜV
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	782XBX1 & 782XDX1	782XBX2 & 782XDX2
COIL	**UNITS**	
Standard Voltage AC:	50/60 Hz	6, 12, 24, 110 / 120, 220 / 230, 240
DC:		6, 12, 24, 48, 110 /125
Coil Power AC (60 Hz):	VA	1.2
Coil Power DC:	W	0.9
Insulation System Per UL Standard 1446:		Class B (130ºC)
CONTACTS		
Contact Configuration:		**DPDT, 4PDT**
Contact Material:		Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50
Contact Rating AC Amperes (AC1):	A	10 / 8.0
Contact Rating AC Voltage:	V	120 / 277
Contact Rating DC Amperes (DC1):	A	8 / 0.25
Contact Rating DC Voltage:	V	28 / 220
Horse Power (AC):	Hp	1/3 @ 120 V
Horse Power (AC):	Hp	1 @ 277 V
TIMING		
Operate Time:	ms	20
Release Time:	ms	20
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Insulation Resistance:	megohms minimum@VDC	100 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-40
Operating, AC Upper:	ºC	+70
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+70
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	200,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Cover Protection Category:	IP	40
Weight:	grams	36
MATING SOCKETS SEE SECTION 7		70-461-1, 70-378-1, 70-379-1
AGENCY APPROVALS		c US UL Recognized File No. E43641 · SA 40787 · CE · UL LISTED · TÜV
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SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

782XBX3 & 782XDX3

MANUFACTURED UNDER ISO 9002 QS 9000

782H

CERTIFIED CLASS 1 DIVISION 2 FOR HAZARDOUS LOCATIONS

MANUFACTURED UNDER ISO 9001

750

MANUFACTURED UNDER ISO 9002 QS 9000

1.54 x 0.83 x 1.10	1.28 x 0.91 x 1.15	2.280 x 1.37 x 1.39
• 0.100 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • FLAG INDICATOR • L.E.D. STATUS LAMP • PUSH BUTTON WITH LOCK DOWN DOOR • FINGER GRIP COVER • I.D. TAG/WRITE LABEL • OPTIONAL FLANGE AND DIN ADAPTERS AVAILABLE • UL LISTED WHEN USED WITH 70-461-1 SOCKET	• 0.100 SOLDER PLUG-IN TERMINALS • HERMETICALLY SEALED VACUUM BAKED AND DRY NITROGEN FILLED • GRAY LACQUER FINISH OVER STEEL ENCLOSURE • MEETS UL STANDARD FOR CLASS 1 DIVISION 2 HAZARDOUS LOCATIONS • OPTIONAL TOP OR SIDE STUD MOUNT • UL LISTED WHEN USED WITH 70-461-1 SOCKET	• 8 & 11 PIN OCTAL • FLAG INDICATOR • L.E.D. STATUS LAMP • PUSH BUTTON WITH LOCK DOWN DOOR • FINGER GRIP COVER • I. D. TAG/WRITE LABEL • UL LISTED WHEN USED WITH 70-464-1, 70-465-1, 70-750D8-1 OR 70-750D11-1 SOCKETS
6, 12, 24,110 / 120, 220 / 230, 240 6, 12, 24, 48, 110 /125	6,12, 24, 110 /120, 240 6,12, 24, 48, 110 /125	6,12, 24, 110 /120, 220/ 240 6,12, 24, 48, 110 /125
1.2 0.9	1.2 0.9	2.0 - 3.0 1.4
Class B (130ºC)	Class B (130ºC)	Class B (130ºC)
DPDT, 4PDT	**4PDT**	**DPDT, 3PDT**
Silver alloy, gold flashed	See Table	Silver alloy, gold flashed
50	50	50
3 240	1.0 / 3.0 / 5.0 240	16 277
3 / 0.25 28 / 220	1.0 / 3.0 / 5.0 28	16 / 0.5 28 / 220
1/16 @ 120 V		1/3 @ 120 V 1/2 @ 240 V
20 20	13 6	20 20
1500 100 @ 500	1240 1000 @ 500	2500 1000 @ 500
-40 +70 -40 +70 -40 +105	-40 +70 -40 +70 -40 +105	-40 +50 -40 +65 -40 +105
200,000 10,000,000	100,000 10,000,000	100,000 5,000,000
40 36	67 45	40 89
70-461-1, 70-378-1, 70-379-1	**70-461-1, 70-378-1, 70-379-1**	**70-464-1, 70-465-1, 70-750D8-1, 70-750D11-1 70-750EL, 70-750E, 70-750SL**
c US UL Recognized File No. E43641 · 40787 · LISTED · TÜV	c US UL Recognized File No. E209950 · 168986 · LISTED	c US UL Recognized File No. E43641 · 40787 · LISTED · TÜV
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Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

PRODUCT	788	A283
	 MANUFACTURED UNDER ISO 9002 QS 9000	 MANUFACTURED UNDER ISO 9002 QS 9000
L X W X H (INCHES)	2.15 x 1.37 x 1.39	1.90 x 1.53 x 1.40
FEATURES	• SOCKET OR FLANGE MOUNT • FLAG INDICATOR • L.E.D. STATUS LAMP • PUSH BUTTON WITH LOCK DOWN DOOR • FINGER GRIP COVER • I. D. TAG/WRITE LABEL • UL LISTED WHEN USED WITH 70-463-1 SOCKET	• SOCKET OR FLANGE MOUNT • 0.187 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • UL LISTED WHEN USED WITH 70-463-1 SOCKET

	UNITS		
COIL			
Standard Voltage AC:	50/60 Hz	6,12, 24, 110 / 120, 220 / 240	6, 12, 24, 110 / 120, 220 / 240
DC:		6, 12, 24, 48, 110 / 125	6,12, 24, 48, 110 / 125
Coil Power AC (60 Hz):	VA	2.0 - 3.0	2.75
Coil Power DC:	W	1.4	2
Insulation System Per UL Standard 1446:		Class B (130ºC)	Class B (130ºC)
CONTACTS			
Contact Configuration:		**DPDT, 3PDT**	**SPST, DPDT, 3PDT**
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50	50
Contact Rating AC Amperes (AC1):	A	16	15
Contact Rating AC Voltage:	V	277	240
Contact Rating DC Amperes (DC1):	A	16 / 0.5	10
Contact Rating DC Voltage:	V	28 / 220	28
Horse Power (AC):	Hp	1/3 @ 120 V	1/3 @ 120 V
Horse Power (AC):	Hp	1/2 @ 240 V	1/2 @ 240 V
TIMING			
Operate Time:	ms	20	20
Release Time:	ms	20	20
DIELECTRIC STRENGTH			
Coil to Contacts:	V rms	2500	2500
Insulation Resistance:	megohms minimum@VDC	1000 @ 500	100 @ 500
TEMPERATURE			
Operating, AC Lower:	ºC	-40	-30
Operating, AC Upper:	ºC	+50	+60
Operating, DC Lower:	ºC	-40	-30
Operating, DC Upper:	ºC	+65	+50
Storage, Lower:	ºC	-40	-30
Storage, Upper:	ºC	+105	+100
LIFE EXPECTANCY			
Electrical @ Rated Load (AC1):	operations	100,000	100,000
Mechanical @ no Load :	operations	5,000,000	10,000,000
MISCELLANEOUS			
Cover Protection Category:	IP	40	40
Weight:	grams	88	88
MATING SOCKETS SEE SECTION 7		70-463-1, 70-124-1, 70-124-2, 70-178-1, 70-178-2, 70-788EL, 70-788SL	70-463-1, 70-124-1, 70-124-2, 70-178-1, 70-178-2, 70-788EL, 70-788SL
AGENCY APPROVALS		c UL us UL Recognized File No. E43641; 40787; CE; UL LISTED; TÜV	c UL us UL Recognized File No. E13224; 168986; CE; UL LISTED
PAGE NUMBER		PAGE 11, 26, 27	PAGE 28 - 30

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

A283 DC SWITCHING

MANUFACTURED UNDER ISO 9002 QS 9000

388J

MANUFACTURED UNDER ISO 9002 QS 9000

388V

MANUFACTURED UNDER ISO 9002 QS 9000

1.90 x 1.53 x 1.40	1.90 x 1.53 x 1.40	1.90 x 1.53 x 1.40
• SOCKET OR FLANGE MOUNT • 0.187 QUICK CONNECT/ SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • BLOW OUT MAGNET FOR SWITCHING DC VOLTAGES • UL LISTED WHEN USED WITH 70-463-1 SOCKET	• SOCKET MOUNT OR FLANGE MOUNT • ENLARGED 0.240 SILVER ALLOY CONTACTS FOR HIGH CURRENT • 0.187 QUICK CONNECT / SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • FLAG INDICATOR • PUSH BUTTON • UL LISTED WHEN USED WITH 70-463-1 SOCKET	• SOCKET MOUNT OR FLANGE MOUNT • 3mm CONTACT GAP FOR HIGH VOLTAGE SWITCHING • 0.187 QUICK CONNECT / SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • 8mm SPACING • PUSH BUTTON • UL LISTED WHEN USED WITH 70-463-1 SOCKET
6, 12, 24, 110 / 120, 220 / 240 6,12, 24, 48, 110 / 125	6, 12, 24, 110 / 120, 220 / 240 6,12, 24, 48, 110 / 125	6, 12, 24, 110 / 120, 220 / 240 6,12, 24, 48, 110 / 125
2.75 2	2.75 2	2.75 2
Class B (130ºC)	Class B (130ºC)	Class B (130ºC)
SPDT, DPDT	**DPDT, 3PDT**	**DPDT-NO, 3PDT-NO**
Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed
50	50	50
15 240	2POLE: 20 / 3 POLE: 16 300 / 277	15 240
1POLE: 10, 2POLE: 3 150, 150	20 28	15 28
1/3 @ 120 V 1/2 @ 240 V	See Table See Table	1/3 @ 120 V 1/2 @ 240 V
20 20	20 20	20 20
2000 100 @ 500	2000 100 @ 500	4000 100 @ 500
-30 +65	-30 +65	-30 +65
-30 +50	-30 +50	-30 +50
-30 +100	-30 +100	-30 +100
100,000 5,000,000	100,000 5,000,000	100,000 5,000,000
40 88	40 88	40 88
70-463-1, 70-124-1,70-124-2, 70-178-1, 70-178-2 70-788EL, 70-788SL	**70-463-1, 70-124-1, 70-124-2, 70-178-1, 70-178-2 70-788EL, 70-788SL**	**70-463-1, 70-124-1, 70-124-2 , 70-178-1, 70-178-2 70-788EL, 70-788SL**
c UL us UL Recognized File No. E13224	c UL us UL Recognized File No. E43641	c UL us UL Recognized File No. E43641
168986	168986	168986
LISTED	LISTED	LISTED
PAGE 28, 29, 31	PAGE 32, 33	PAGE 32, 34

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

PRODUCT	389	389F	300
			
	MANUFACTURED UNDER ISO 9002 QS 9000	MANUFACTURED UNDER ISO 9002 QS 9000	MANUFACTURED UNDER ISO 9002 QS 9000
L X W X H (INCHES)	1.90 x 1.53 x 1.40	1.90 x 1.53 x 1.40	1.90 x 1.53 x 1.40
FEATURES	• FLANGE MOUNT • 0.250 QUICK CONNECT/ SOLDER TERMINALS • SWITCHING UP TO 30 AMPS • SOCKET MOUNT AVAILABLE	• FLANGE MOUNT • FLAG INDICATOR • PUSH BUTTON • SWITCHING UP TO 30 AMPS • SOCKET MOUNT AVAILABLE	• FLANGE MOUNT • 0.250 QUICK CONNECT SOLDER OR PRINTED CIRCUIT TERMINALS • VARIETY OF MOUNTING OPTIONS AVAILABLE INCLUDING DIN, FLANGE AND STUD • 2 MILLIMETER CONTACT GAP ARC BARRIER BETWEEN POLES • OPTIONAL BLOWOUT MAGNET FOR HIGH VOLTAGE DC SWITCHING
COIL	**UNITS**			
Standard Voltage AC:	50/60 Hz	6, 12, 24, 110 / 120, 220 / 240	6, 12, 24, 110 / 120, 220 / 240	6, 12, 24, 110 / 120, 220 / 240
DC:		6,12, 24, 48, 110 / 125	6,12, 24, 48, 110 / 125	6,12, 24, 48, 110 / 125
Coil Power AC (60 Hz):	VA	3.5	3.5	3.0
Coil Power DC:	W	1.44	1.44	2.0
Insulation System Per UL Standard 1446:		Class B (130ºC)	Class B (130ºC)	Class B (130ºC) or CLass F (155ºC)
CONTACTS				
Contact Configuration:		**DPDT-NO, 3PDT-NO**	**DPDT-NO, 3PDT-NO**	**DPDT**
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50	50	50
Contact Rating AC Amperes (AC1):	A	20, 25, 30	20, 25, 30	30 / 20 / 15
Contact Rating AC Voltage:	V	See Table	See Table	277 / 480 / 600
Contact Rating DC Amperes (DC1):	A	See Table	See Table	30
Contact Rating DC Voltage:	V	See Table	See Table	28
Horse Power (AC):	Hp	See Table	See Table	1 @ 120
Horse Power (AC):	Hp	See Table	See Table	2 @ 208 -600
TIMING				
Operate Time:	ms	20	20	20
Release Time:	ms	20	20	15
DIELECTRIC STRENGTH				
Coil to Contacts:	V rms	1600	1600	4000
Insulation Resistance:	megohms minimum@VDC	1000 @ 500	1000 @ 500	1000 @ 500
TEMPERATURE				
Operating, AC Lower:	ºC	-30	-30	-30
Operating, AC Upper:	ºC	+65	+65	+60
Operating, DC Lower:	ºC	-30	-30	-30
Operating, DC Upper:	ºC	+50	+50	+50
Storage, Lower:	ºC	-30	-30	-30
Storage, Upper:	ºC	+100	+100	+100
LIFE EXPECTANCY				
Electrical @ Rated Load (AC1):	operations	100,000	100,000	100,000
Mechanical @ no Load :	operations	5,000,000	5,000,000	10,000,000
MISCELLANEOUS				
Cover Protection Category:	IP	40	40	40
Weight:	grams	88	88	85
MATING SOCKETS SEE SECTION 7		70-788EL, 70-788SL	70-788EL, 70-788SL	
AGENCY APPROVALS		c UL us UL Recognized File No. E43641 CSA 168986 CE	c UL us UL Recognized File No. E43641 CSA 168986 CE	UL us UL Recognized File No. E13224 CSA 50758
PAGE NUMBER		PAGE 35 - 37	PAGE 35 - 37	PAGE 38, 39

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

	9A	92	21 / 136
		 NEW MANUFACTURED UNDER ISO 9002 QS 9000	 MANUFACTURED UNDER ISO 9001
	1.980 x 1.08 x 1.10	2.70 x 1.36 x 1.495	2.84 x 1.85 x 2.47
	• FLANGE MOUNT • 0.250 SPADE TERMINALS ON CONTACTS AND 0.187 SPADE TERMINALS ON COIL ACCEPT INSULATED QUICK CONNECT CONNECTORS • EPOXY SEALED IMMERSION CLEANABLE	• DIN/ FLANGE MOUNT • 0.250 SPADE TERMINALS ON CONTACTS AND 0.187 SPADE TERMINALS ON COIL ACCEPT INSULATED QUICK CONNECT CONNECTORS • EPOXY SEALED IMMERSION CLEANABLE	• TRAFFIC SIGNAL FLASH TRANSFER • MEETS NEMA STD. TS 2-1992 D. O. T. APPROVED • SWITCHES TUNGSTEN LOADS UP TO 20 AMPS • MIDTEX 136 ALSO AVAILABLE
Coil Voltage	24, 120, 240 5, 12, 24, 48, 110 / 125	24, 120, 240 5, 12, 24, 48, 110 / 125	6, 12, 24, 110 / 120, 220 / 240 6,12, 24, 48, 110 / 125
Coil Power (Watts)	2.8 1	4 1.7	3.0 2.0
Insulation	Class F (155ºC)	Class F (155ºC)	CLASS B (130ºC)
Contact Arrangement	**SPST-NO. & SPDT**	**DPST-NC. & DPDT**	**DPDT**
Contact Material	Silver alloy	Silver alloy	Silver alloy
Contact Rating (Amps)	75 30 240	75 30 277	100 30 240
Motor Rating (HP)	30 28	20 7 28	20 28
Pilot Duty (VA)	1 @ 120 V 2 @ 240 V	1 @ 120 V 2 @ 240 V	1 1/2 @ 120 V 2 @ 240 V
Resistive Rating (Amps)	20 20	20 20	20 20
Operations/Hour	2500 100 @ 500	2500 100 @ 500	1500 1000 @ 500
Ambient Temperature Range	-55 +85	-55 +85	-40 +80
Humidity	-55 +85	-55 +85	Not Applicable Not Applicable
Storage Temperature Range	-55 +105	-55 +105	-40 +105
Mechanical Life (Operations)	100,000 10,000,000	100,000 5,000,000	200,000 5,000,000
Weight (Ounces)	40 33	40 86	40 205
	OPTIONAL DIN ADAPTER 16-9A DIN-1		70-TRF-8-1 70-TRB-8-1
	c UL us UL Recognized File No. E43641	c UL us UL Recognized File No. E43641	c UL us UL Recognized File No. E43641 168986
	PAGE 40, 41	PAGE 40, 42	PAGE 43

SOCKET COMPATIBLE & FLANGE MOUNT RELAYS

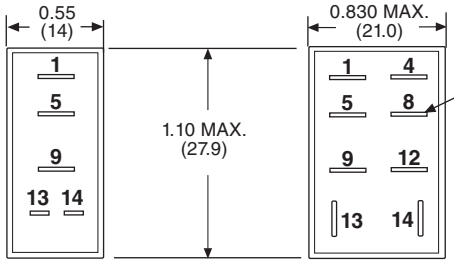
Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	67	219	750H
		 MANUFACTURED UNDER ISO 9002 QS 9000	
L X W X H (INCHES)	1.20 x 0.735 x 0.978 to 1.592	2.59 x1.468 x 2.625 / 3.062	1.281 x 0.910 x 1.156
FEATURES	• 0.100 SOLDER PLUG-IN OR PRINTED CIRCUIT TERMINALS • UP TO 6 POLES SWITCHING PLUG-IN STYLES HAVE 3-48 UNC • GROUND STUDS . OPTIONAL L 3 AMP BIFURCATED CONTACTS FOR LOW LEVEL	• 12 OR 14 PIN WITH LOCKING CLIP • WIDE RANGE OF CONTACT CONFIGURATIONS TO 6PST • WIDE CHOICE OF OPTIONS • OPTIONAL 5 AMP BIFURCATED CONTACTS FOR LOW LEVEL • UL LISTED WHEN USED WITH 27390D OR 33377D SOCKET • NUCLEAR QUALIFIED VERSIONS AVAILABLE	• 8 & 11 PIN OCTAL BASE • HERMETICALLY SEALED DRY NITROGEN FILLED • GRAY LACQUER FINISH OVER STEEL ENCLOSURE • MEETS UL STANDARD FOR CLASS 1 DIVISION 2 HAZARDOUS LOCATIONS • UL LISTED WHEN USED WITH 70-464-1 OR 70-465-1 SOCKETS
COIL	**UNITS**			
Standard Voltage AC:	50/60 Hz	110 /120	6, 12, 24, 110 / 120, 220 / 240	12, 24. 110 / 120
DC:		5, 12, 24, 48, 110 / 125	6, 12, 24, 48, 110 / 125	12, 24, 110 / 125
Coil Power AC (60 Hz):	VA	2.75	1.2	2.0
Coil Power DC:	W	0.45	0.9	1.2
Insulation System Per UL Standard 1446:		Class B (130ºC)	Class B (130ºC)	Class B (130ºC)
CONTACTS				
Contact Configuration:		**DPST to 6PDT**	**to 6PDT**	**DPDT, 3PDT**
Contact Material:		Silver alloy, gold plated	Silver alloy, gold diffused	Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50	75	100
Contact Rating AC Amperes (AC1):	A	5 / 3	10 / 5	2 Pole-12, 3 Pole-10
Contact Rating AC Voltage:	V	120 / 120	120 / 120	120 / 240
Contact Rating DC Amperes (DC1):	A	5/3	10/5	10
Contact Rating DC Voltage:	V	28 / 28	28 / 28	30
Horse Power (AC):	Hp	-	See Table	1/3 @ 120 V
Horse Power (AC):	Hp	-	See Table	1/2 @ 240 V
TIMING				
Operate Time:	ms	25	25	10
Release Time:	ms	20	20	30
DIELECTRIC STRENGTH				
Coil to Contacts:	V rms	1500	1500	1250
Insulation Resistance:	megohms minimum@VDC	1000 @ 500	1000 @ 500	1000 @ 500
TEMPERATURE				
Operating, AC Lower:	ºC	-40	-40	-45
Operating, AC Upper:	ºC	+60	+80	+55
Operating, DC Lower:	ºC	-40	-40	-45
Operating, DC Upper:	ºC	+60	+80	+70
Storage, Lower:	ºC	-40	-40	-45
Storage, Upper:	ºC	+130	+130	+105
LIFE EXPECTANCY				
Electrical @ Rated Load (AC1):	operations	100,000	100,000	100,000
Mechanical @ no Load :	operations	10,000,000	10,000,000	5,000,000
MISCELLANEOUS				
Cover Protection Category:	IP	40	40	67
Weight:	grams	22 to 40	241	130
MATING SOCKETS SEE SECTION 7		70-303-1, 70-305-1, 70-307-1 70-304-1, 70-306-1, 70-308-1	27390D, 33377D	70-464-1, 70-465-1 70-750D8-1, 70-750D11-1
AGENCY APPROVALS		c US UL Recognized File No. E52197	c US UL Recognized File No. E13224 168986 LISTED	c US UL Recognized File No. E43641 LISTED
PAGE NUMBER		PAGE 44, 45	PAGE 46, 47	PAGE 48, 49

HOW TO CHOOSE A PLUG -IN RELAY

Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

SPDT (XAX)

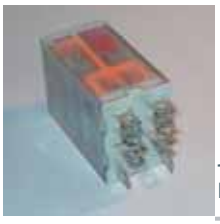


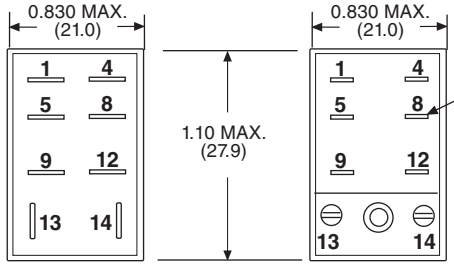
TYPICAL TERMINAL SIZE IN INCHES:
0.187 X 0.020 (LONG)

781
20 AMPS
PAGE 14

782
20 AMPS
PAGE 15

DPDT (XBX)



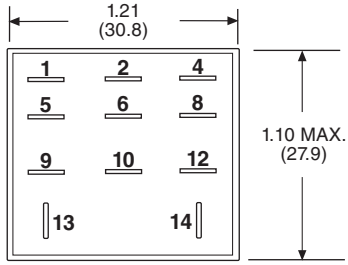


TYPICAL TERMINAL SIZE IN INCHES:
0.110 X 0.020 (SHORT)

782
15 AMPS
PAGE 16

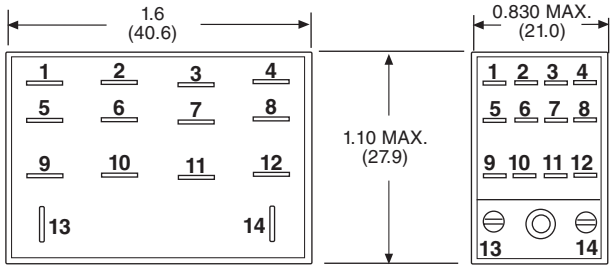
782
UP TO 10 AMPS
PAGE 21

3PDT (XCX)



783
15 AMPS
PAGE 17

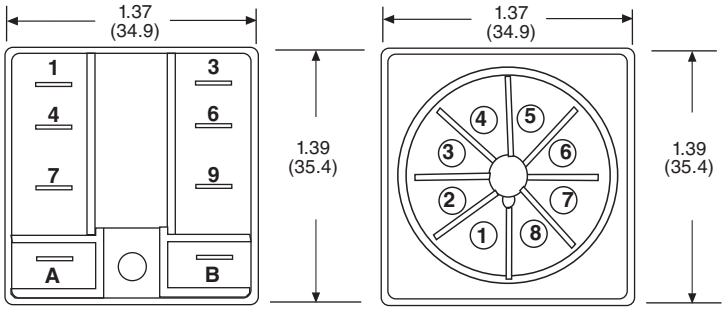
4PDT (XDX)



784
15 AMPS
PAGE 18

782
UP TO 10 AMPS
PAGE 21

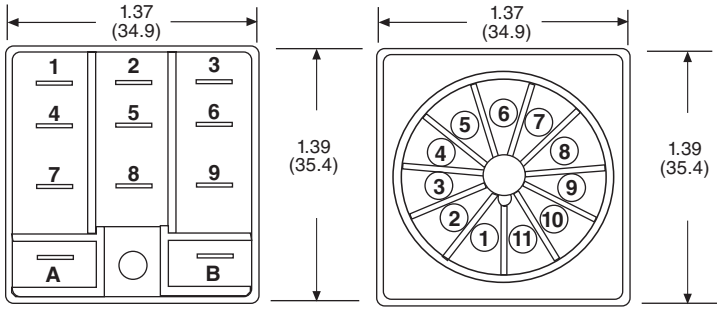
DPDT (XBX)



788
16 AMPS
PAGE 27

750
16 AMPS
PAGE 25

3PDT (XCX)



788
16 AMPS
PAGE 27

750
16 AMPS
PAGE 25

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

700 SERIES "ICE CUBE" POWER RELAYS

c UL us
UL Recognized
File No. E43641

40787

TÜV

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

c UL us
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKETS:
781:**70-781D-1**
782:**70-782D-1**
70-459-1
70-461-1
783:**70-783D-1**
784:**70-784D-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
FLAG INDICATOR:	SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.
BI - POLAR L.E.D. STATUS LAMP:	ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.
COLOR CODED PUSH BUTTON:	IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.
LOCK-DOWN DOOR:	WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.
FINGER - GRIP COVER:	ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.
WHITE PLASTIC I.D. TAG/WRITE LABEL:	USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.
COVER ADAPTERS:	DIN RAIL ADAPTER OR TOP/BOTTOM FLANGE ADAPTER, ALLOWS THE 700 RELAYS TO BE DIRECT MOUNTED TO A DIN RAIL OR PANEL.

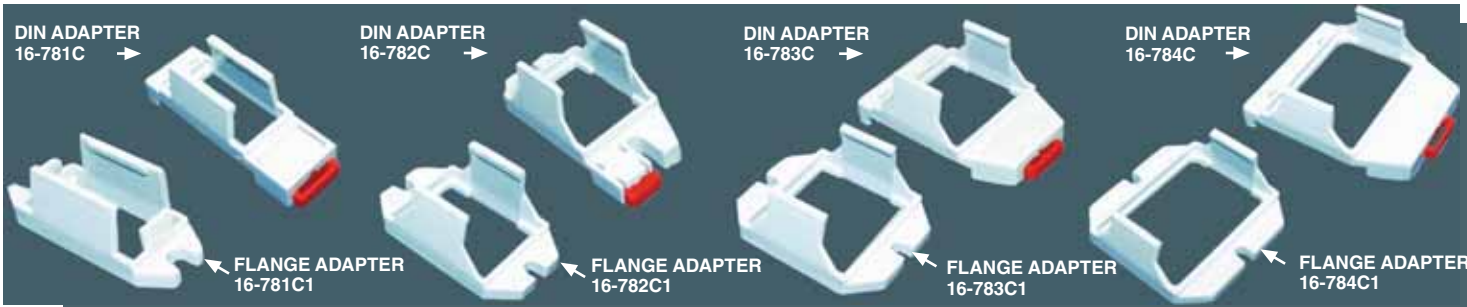
MANUFACTURED UNDER ISO 9002 & QS 9000

781
SPDT
15 AMPS

782
SPDT
20 AMPS
DPDT
15 AMPS

783
3PDT
15 AMPS

784
4PDT
15 AMPS



OPTIONAL ADAPTERS ORDERED SEPARATELY

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

GENERAL SPECIFICATIONS (@ 25°C)

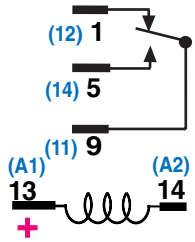
	UNITS	781XAX	782XAX	782XBX	783	784
COIL						
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85	85	85	85	85
Pull-in Voltage DC:≤	% of nominal	80	80	80	80	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10	10	10	10	10
Dropout Voltage DC:≥	% of nominal	10	10	10	10	10
Maximum Voltage:	% of nominal	110	110	110	110	110
Resistance:	% ±	15	15	15	15	15
Coil Power AC (60 Hz):	VA	0.9	1.2	1.2	1.5	1.5
Coil Power DC:	W	0.7	0.9	0.9	1.7	2
Insulation System Per UL Standard 1446:		Class B (130 °C)	Class B (130 °C)	Class B (130 °C)	Class B (130 °C)	Class B (130 °C)
Maximum Coil Dissipation, AC (60 Hz):	VA	2.55	2.55	2.55	3	3
Maximum Coil Dissipation, DC:	W	2.3	2.3	2.3	3.4	2.3
Duty:		Continuous	Continuous	Continuous	Continuous	Continuous
CONTACTS						
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	15	20	15 / 12	15 / 12	15 / 12
Contact Rating AC Voltage:	V	277	277	120 / 277	120 / 277	120 / 277
Contact Rating DC Amperes (DC1):	A	15 / 0.5	20 / 0.5	12 / 0.5	15/ 0.5	15 / 0.5
Contact Rating DC Voltage:	V	28 / 220	28 / 220	28 / 220	28 / 220	28 / 220
General Purpose Rating (75%-80% pf):	A @ V	10 @ 240				
Horse Power (AC):	HP	1/2 @ 120 V	1/2 @ 120 V	1/2 @ 120 V	1/2 @ 120 V	1/2 @ 120 V
Horse Power (AC):	HP	1 @ 250 V	1 @ 250 V	1 @ 250 V	3/4 @ 250 V	3/4 @ 250 V
Pilot Duty (60 Hz):		B300	B300	B300	B300	B300
Utilization Category:	IEC	AC15	AC15	AC15	AC15	AC15
VA Rating Make:	VA	3600	3600	3600	3600	3600
VA Rating Break:	VA	360	360	360	360	360
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W
TIMING						
Operate Time:	ms	20	20	25	25	20
Release Time:	ms	20	20	20	20	20
DIELECTRIC STRENGTH						
Coil to Contacts:	V rms	2500	2500	2500	2500	2500
Across Open Contacts:	V rms	1500	1500	1000	1000	1000
Pole to Pole:	V rms			2500	2500	2500
Insulation Resistance:	megohms minimum @ VDC	100 @ 500	100 @ 500	100 @ 500	100 @ 500	100 @ 500
VIBRATION RESISTANCE						
Functional:	g's	10-55 Hz, 6 g's,1mm double amplitude	10-55 Hz, 6g's 1mm double amplitude	10-55 Hz, 6g's 1mm double amplitude	10-55 Hz, 6g's 1mm double amplitude	10-55 Hz, 6g's1mm double amplitude
SHOCK RESISTANCE						
Functional:	g's	10	10	10	10	10
TEMPERATURE						
Operating, AC Lower:	°C	-40	-40	-40	-40	-40
Operating, AC Upper:	°C	+70	+70	+70	+70	+70
Operating, DC Lower:	°C	-40	-40	-40	-40	-40
Operating, DC Upper:	°C	+70	+70	+70	+70	+70
Storage, Lower:	°C	-40	-40	-40	-40	-40
Storage, Upper:	°C	+105	+105	+105	+105	+105
LIFE EXPECTANCY						
Electrical @ Rated Load (AC1):	operations	15 A: 100,000 20 A: 50,000	100,000	200,000	150,000	150,000
Mechanical @ no Load :	operations	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
MISCELLANEOUS						
Operating Position:		Any	Any	Any	Any	Any
Insulation Material:	94V-0	Molded plastic	Molded plastic	Molded plastic	Molded plastic	Molded plastic
Enclosure Material:	94V-0	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
Cover Protection Category:	IP	40	40	40	40	40
Terminals:	Inch (mm)	0.187, 0.1, 0.08 x 0.020 (4.47, 2.54, 2.03 x 0.508)	0.187, 0.08 x 0.020 (4.47, 2.03 x 0.508)	0.187, 0.08 x 0.020 (4.47, 2.03 x 0.508)	0.187, 0.08 x 0.020 (4.47, 2.03 x 0.508)	0.187, 0.08 x 0.020 (4.47, 2.03 x 0.508)
Weight:	grams	29	36	36	60	80

9/04

781 - 1 POLE "ICE CUBE" POWER RELAY

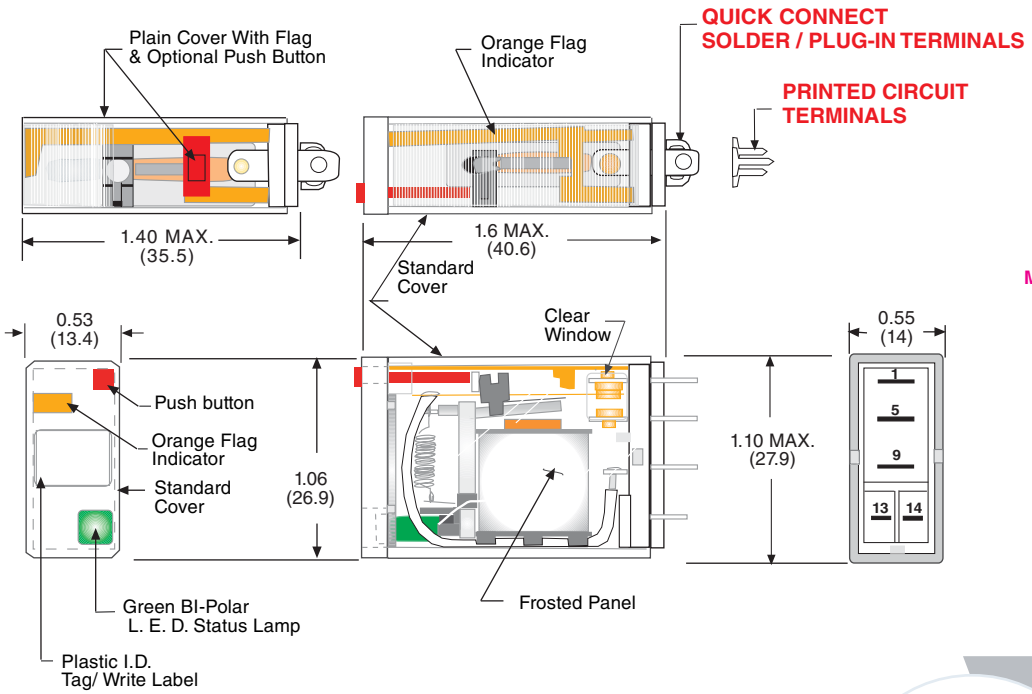
SPDT, 15 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)

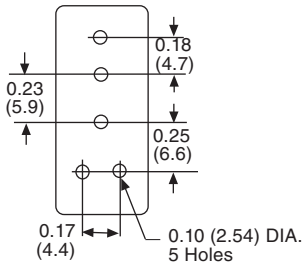


ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



ALSO UL RATED 20 AMPS @ 277/28 DC - 50,000 OPERATIONS

Mating Sockets
70-781D-1: SCREW/DIN,
70-781F-1: SOLDER,
70-781T-1: PRINTED CIRCUIT
See section 7

ORDERING CODE

781 XAX ML -120A

CLASS:

CONTACT CONFIGURATION:
SPDT: **XAX**

OPTIONAL PLAIN COVER:
CODE C

TERMINAL STYLE:
QUICK CONNECT SOLDER / PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

FULL FEATURED VERSION:
PUSH BUTTON : **CODE M**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON : **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY +)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

FULL FEATURED	PLAIN COVER WITH FLAG	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED - SOLDER/PLUG-IN, 15 AMP			
781XAXML-24A	**781XAXC-24A**	24 VAC, 50/60Hz	160 Ω
781XAXML-120A	**781XAXC-120A**	110/120 VAC, 50/60Hz	4,430 Ω
781XAXML-220/230A		220/230 VAC, 50/60HZ	15,720 Ω
781XAXML-240A		240 VAC, 50/60HZ	15,720 Ω
DC OPERATED - SOLDER/PLUG-IN, 15 AMP			
781XAXML-12D		12 VDC	180 Ω
781XAXML-24D	**781XAXC-24D**	24 VDC	750 Ω
781XAXML-110D		110/125 VDC	13,800 Ω
AC OPERATED - PRINTED CIRCUIT, 15 AMP			
781XAXTML-120A		110/120 VAC, 50/60Hz	4,430 Ω
DC OPERATED - PRINTED CIRCUIT, 15 AMP			
781XAXTML-12D		12 VDC	188 Ω
781XAXTML-24D		24 VDC	750 Ω

RETROFITS IDEC RH1B- & RH1V2-. SEE END OF SECTION 1 FOR CROSS REFERENCE CADMIUM-FREE CONTACTS AVAILABLE, CONTACT FACTORY FOR DETAILS

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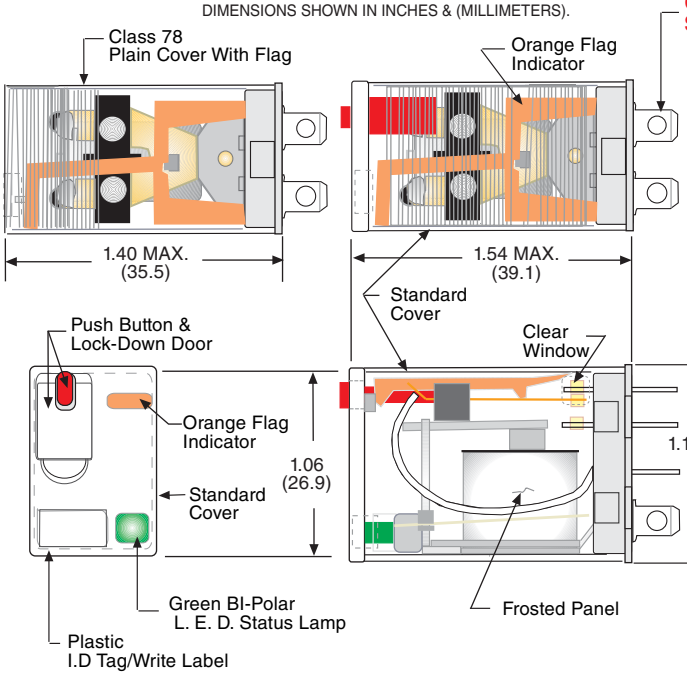
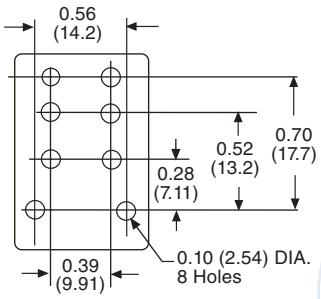
782/78 - 1 POLE "ICE CUBE" POWER RELAY

SPDT, 20 AMPS

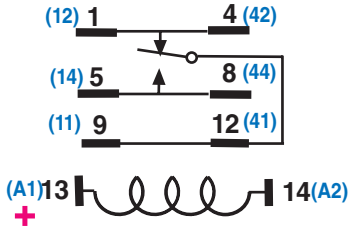
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Sockets
70-782D-1, 70-459-1: SCREW/DIN SOLDER
70-402-1: PRINTED CIRCUIT
70-401-1: SOLDER TERMINAL
See section 7

ORDERING CODE

782	XAX			M4L	-120A

CLASS:

CONTACT CONFIGURATION:
SPDT: **XAX**

OPTIONAL PLAIN COVER:
CODE C

TERMINAL STYLE:
QUICK CONNECTSOLDER/
PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

FULL FEATURED VERSION:
PUSH BUTTON &
LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT
LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT
LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24 ,48, 110 **ADD "D" FOR DC COILS**

STANDARD PART NUMBERS			COIL MEASURED @ 25 °C	
FULL FEATURED	PLAIN COVER WITH FLAG		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
	DUAL MARKED			
	NEW PART NUMBER	SUPERCEDES		
AC OPERATED SOLDER/PLUG -IN, 20 AMP				
782XAXM4L-12A	782XAXC-12A	W78ARCSX-108	12 VAC, 50/60Hz	46 Ω
782XAXM4L-24A	782XAXC-24A	W78ARCSX-109	24 VAC, 50/60Hz	180 Ω
782XAXM4L-120A	782XAXC-120A	W78ARCSX-111	110/120 VAC,50/60Hz	4,430 Ω
782XAXM4L-220/230A	782XAXC-220/230A		220/230VAC,50/60Hz	15,000 Ω
782XAXM4L-240A	782XAXC-240A	W78ARCSX-112	240 VAC, 50/60HZ	15,700 Ω
DC OPERATED SOLDER/PLUG -IN, 20 AMP				
782XAXM4L-12D	782XAXC-12D	W78RCSX-97	12 VDC	160 Ω
782XAXM4L-24D	782XAXC-24D	W78RCSX-98	24 VDC	650 Ω
782XAXM4L-110D	782XAXC-110D	W78RCSX-100	110/125 VDC	13,800 Ω
AC OPERATED SOLDER/PLUG -IN, 20 AMP WITH STATUS LED LAMP				
	782XAXCL-24A	W78ARNCSX-8	24 VAC, 50/60Hz	180 Ω
	782XAXCL-120A	W78ARNCSX-9	110/120 VAC,50/60Hz	4,430 Ω
	782XAXCL-240A	W78ARNCSX-10	240 VAC, 50/60HZ	15,700 Ω
DC OPERATED SOLDER/PLUG -IN, 20 AMP WITH STATUS LED LAMP				
	782XAXCL-24D	W78RNCSX-10	24 VDC	650 Ω
AC OPERATED PRINTED CIRCUIT TERMINALS, 20 AMP				
782XAXTM4L-12A	782XAXCT-12A	W78ARPCX-81	12 VAC, 50/60Hz	46 Ω
782XAXTM4L-24A	782XAXCT-24A	W78ARPCX-82	24 VAC, 50/60Hz	180 Ω
782XAXTM4L-120A	782XAXCT-120A	W78ARPCX-84	110/120 VAC,50/60Hz	4,430 Ω
DC OPERATED PRINTED CIRCUIT TERMINALS, 20 AMP				
782XAXTM4L-12D	782XAXCT-12D	W78RPCX-79	12 VDC	160 Ω
782XAXTM4L-24D	782XAXCT-24D	W78RPCX-83	24 VDC	650 Ω
782XAXTM4L-110D	782XAXCT-110D	W78RPCX-85	110 /125 VDC	13,800 Ω

NOTE: CLASS 782C IS AN ENHANCED VERSION OF THE 78, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.

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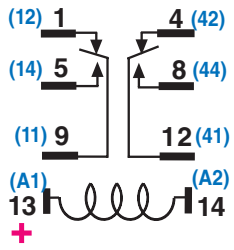
782/78 - 2 POLE "ICE CUBE" POWER RELAYS

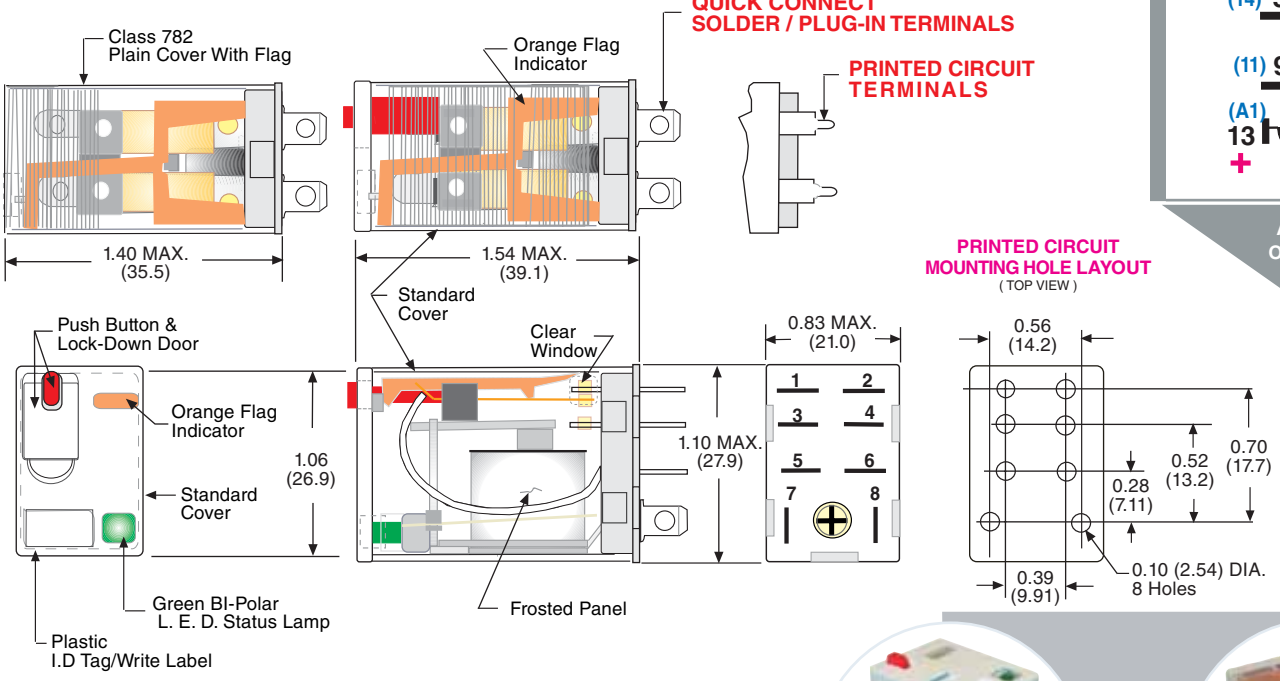
DPDT, 15 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)

ORDERING CODE

782	XBX			M4L	-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX**

OPTIONAL PLAIN COVER:
CODE C

TERMINAL STYLE:
QUICK CONNECTSOLDER/
PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS:
CODE T

FULL FEATURED VERSION:
PUSH BUTTON &
LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT
LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT
LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24 ,48, 110 **ADD "D" FOR DC COILS**

Mating Sockets
70-782D-1, 70-459-1: SCREW/DIN
70-402-1: PRINTED CIRCUIT
70-401-1: SOLDER TERMINAL
See section 7

STANDARD PART NUMBERS			COIL MEASURED @ 25°C	
FULL FEATURED	PLAIN COVER WITH FLAG		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
SOLDER/PLUG -IN, 15 AMP				
	DUAL MARKED			
	NEW PART NUMBER	SUPERCEDES		
	782XBXC-6A	W78ARCSX-7	6 VAC, 50/60Hz	9.6 Ω
782XBXM4L-24A	782XBXC-24A	W78ARCSX-9	24 VAC, 50/60Hz	180 Ω
782XBXM4L-120A	782XBXC-120A	W78ARCSX-11	110/120 VAC, 50/60Hz	4,430 Ω
782XBXM4L-220/230A			220/230 VAC, 50/60Hz	15,000 Ω
782XBXM4L-240A	782XBXC-240A	W78ARCSX-12	240 VAC, 50/60Hz	15,700 Ω
	782XBXC-6D	W78RCSX-6	6 VDC	40 Ω
782XBXM4L-12D	782XBXC-12D	W78RCSX-7	12 VDC	160 Ω
782XBXM4L-24D	782XBXC-24D	W78RCSX-8	24 VDC	650 Ω
	782XBXC-48D	W78RCSX-9	48 VDC	2600 Ω
782XBXM4L-110D	782XBXC-110D	W78RCSX-10	110/125 VDC	11,000 Ω
PRINTED CIRCUIT, 15 AMP				
	782XBXCT-24A	W78ARPCX-3	24 VAC, 50/60Hz	180 Ω
	782XBXCT-120A	W78ARPCX-6	110/120 VAC, 50/60Hz	4,430 Ω
	782XBXCT-6D	W78RPCX-1	6 VDC	40 Ω
	782XBXCT-12D	W78RPCX-2	12 VDC	160 Ω
	782XBXCT-24D	W78RPCX-3	24 VDC	650 Ω

NOTE: CLASS 782C IS AN ENHANCED VERSION OF THE 78, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.

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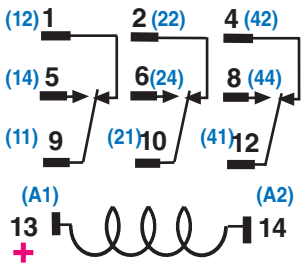
783 - 3 POLE "ICE CUBE" POWER RELAY

Magnecraft Struthers-Dunn

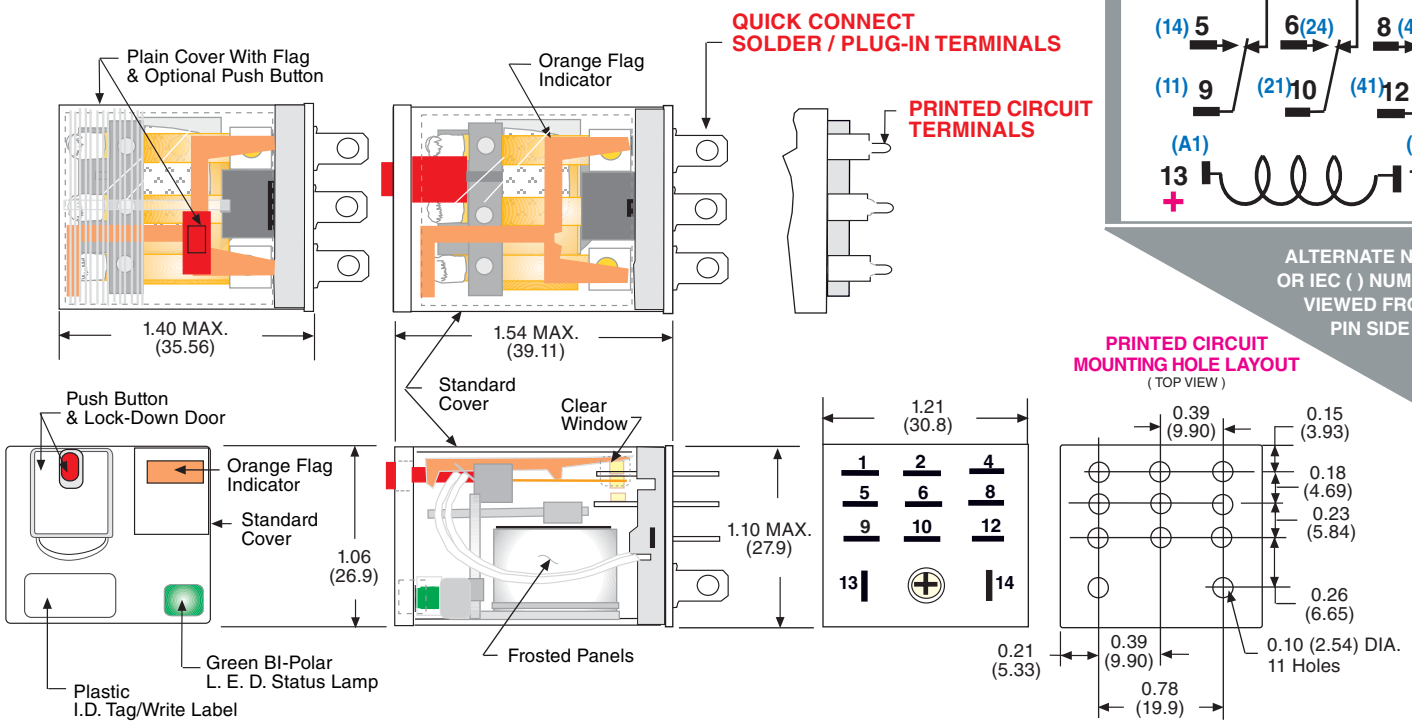
3PDT, 15 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)

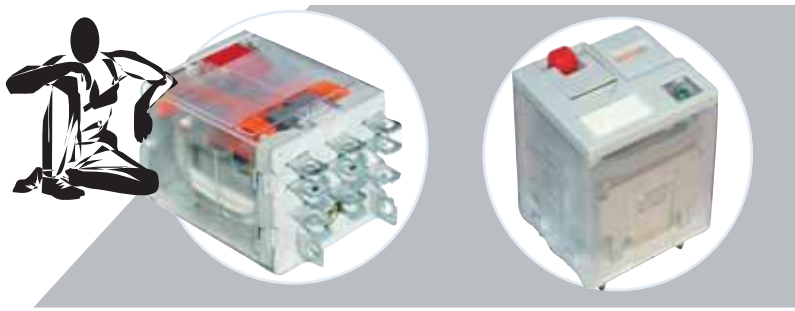


ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



ORDERING CODE

783	XCX			M4L	-120A

CLASS:

CONTACT CONFIGURATION:
3PDT: **XCX**

OPTIONAL PLAIN COVER:
CODE C

TERMINAL STYLE:
QUICK CONNECT SOLDER / PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

Mating Socket
70-783D-1: SCREW/DIN
See section 7

FULL FEATURED	PLAIN COVER WITH FLAG	COIL MEASURED @ 25°C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25°C NOMINAL RESISTANCE (OHMS)
AC OPERATED - SOLDER/PLUG-IN, 15 AMP			
783XCXM4L-24A	783XCXC-24A	24 VAC, 50/60 Hz	103 Ω
783XCXM4L-120A	783XCXC-120A	110/120 VAC, 50/60 Hz	2770 Ω
783XCXM4L-220/230A		220/230 VAC, 50/60 Hz	12,000 Ω
783XCXM4L-240A		240 VAC, 50/60 Hz	12,000 Ω
DC OPERATED - SOLDER/PLUG-IN, 15 AMP			
783XCXM4L-12D		12 VDC	100 Ω
783XCXM4L-24D	783XCXC-24D	24 VDC	400 Ω
783XCXM4L-110D		110/125 VDC	8600 Ω
AC OPERATED - PRINTED CIRCUIT, 15 AMP			
783XCXTM4L-120A		110/120 VAC, 50/60 Hz	2770 Ω
DC OPERATED - PRINTED CIRCUIT, 15 AMP			
783XCXTM4L-12D		12 VDC	100 Ω
783XCXTM4L-24D		24 VDC	400 Ω

RETROFITS IDEC RH3B- & RH3V2-.
SEE END OF SECTION 1 FOR CROSS REFERENCE

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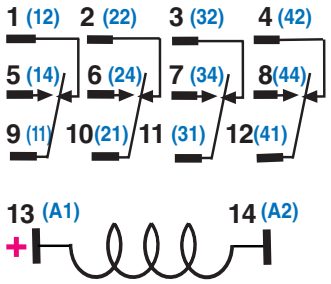
784 - 4 POLE "ICE CUBE" POWER RELAY

Magnecraft Struthers-Dunn

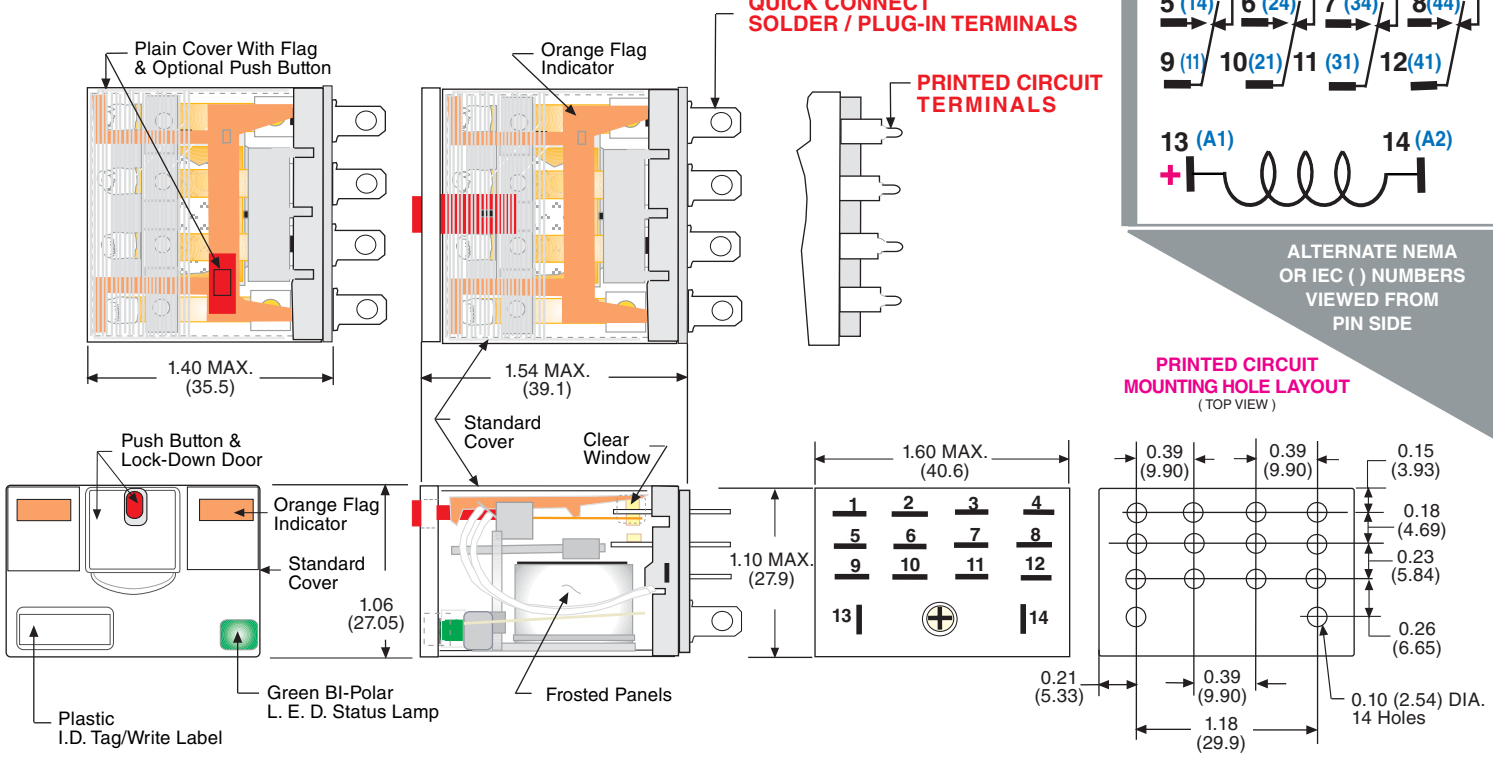
4PDT, 15 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)

ORDERING CODE

784 | XDX | | | M4L | -120A

CLASS:

CONTACT CONFIGURATION:
4PDT: **XDX**

OPTIONAL PLAIN COVER:
CODE C

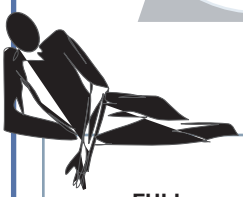
TERMINAL STYLE:
QUICK CONNECT SOLDER / PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**



Mating Socket
70-784D-1: SCREW/DIN
See section 7

FULL FEATURED	PLAIN COVER WITH FLAG	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED - SOLDER/PLUG-IN, 15 AMP			
784XDXM4L-24A	**784XDXC-24A**	24 VAC, 50/60 Hz	84.5 Ω
784XDXM4L-120A	**784XDXC-120A**	110/120 VAC, 50/60 Hz	2220 Ω
784XDXM4L-220/230A		220/230 VAC, 50/60 Hz	9120 Ω
784XDXM4L-240A		240 VAC, 50/60 Hz	9120 Ω
DC OPERATED - SOLDER/PLUG-IN, 15 AMP			
784XDXM4L-12D		12 VDC	96 Ω
784XDXM4L-24D	**784XDXC-24D**	24 VDC	388 Ω
784XDXM4L-110D		110/125 VDC	7340 Ω
AC OPERATED - PRINTED CIRCUIT, 15 AMP			
784XDXTM4L-120A		110/120 VAC, 50/60 Hz	2220 Ω
DC OPERATED - PRINTED CIRCUIT, 15 AMP			
784XDXTM4L-12D		12 VDC	96 Ω
784XDXTM4L-24D		24 VDC	388 Ω

RETROFITS IDEC RH4B- & RH4V2-.
SEE END OF SECTION 1 FOR CROSS REFERENCE

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782 "ICE CUBE" CONTROL RELAYS

FEATURES — BENEFITS

c UL us
UL Recognized
File No. E43641(782)
E209950 (782H)

168986

TÜV

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

c UL us
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKETS:
782: **70-461-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
FLAG INDICATOR:	SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.
BI - POLAR L.E.D. STATUS LAMP:	ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.
COLOR CODED PUSH BUTTON:	IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.
LOCK-DOWN DOOR:	WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.
FINGER - GRIP COVER:	ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.
WHITE PLASTIC I.D. TAG/WRITE LABEL:	USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.
COVER ADAPTERS:	DIN RAIL ADAPTER OR TOP/BOTTOM FLANGE ADAPTER, ALLOWS THE 700 RELAYS TO BE DIRECT MOUNTED TO A DIN RAIL OR PANEL.
VACUUM BAKED & DRY NITROGEN FILLED (782H):	REMOVES CONTAMINANTS AND PROVIDES A CLEAN & DRY ATMOSPHERE FOR CONTACTS.
HERMETICALLY SEALED METAL ENCLOSURE (782H):	IDEAL FOR USE IN HAZARDOUS LOCATIONS. UL CERTIFIED FOR CLASS 1 DIVISION 2 GROUP A, B, C & D HAZARDS. WHEN RELAY IS USED WITH 70-461-1 SOCKET, THE HOLD-DOWN CLIP 16-1328 IS REQUIRED.
PLUG-IN STYLE OR SIDE MOUNTING STUD WITH ANTI- ROTATION TAB:	WHEN USED WITH 70-461-1 SOCKET THE 782H CAN BE DIN RAIL MOUNTED OR PANEL MOUNTED. THE SIDE STUD PROVIDES FOR DIRECT MOUNT & SOLDERED WIRE APPLICATIONS.

MANUFACTURED UNDER ISO 9002 & QS 9000

UL RATINGS FOR 782 HERMETICALLY SEALED

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD	MINIMUM LOAD
4PDT	1 AMP	120/240	50/60 Hz	RESISTIVE	DRY CIRCUIT
	3 AMP	120/240	50/60 Hz	RESISTIVE	100 mA 12 VAC
	5 AMP	120/240	50/60 Hz	RESISTIVE	500 mA 12 VAC
	1 AMP	30	DC	RESISTIVE	50 mA 5 VAC
	3 AMP	30	DC	RESISTIVE	100 mA 12 VDC
	5 AMP	30	DC	RESISTIVE	500 mA 12 VDC

782 "ICE CUBE" CONTROL RELAYS

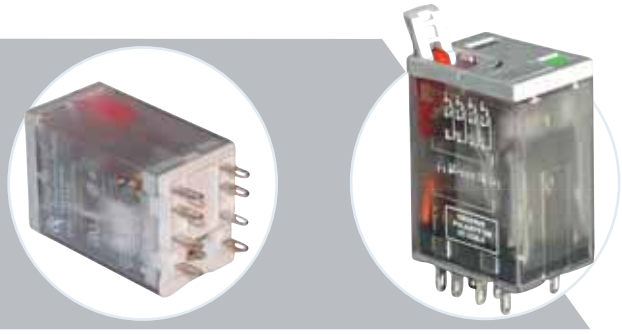
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	782XBX1/782XDX1	782XBX2/782XDX2	782XBX3/782XDX3	782H
COIL					
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85	85	85	85
Pull-in Voltage DC:≤	% of nominal	80	80	80	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10	10	10	10
Dropout Voltage DC:≥	% of nominal	10	10	10	10
Maximum Voltage:	% of nominal	110	110	110	110
Resistance:	% ±	15	15	15	15
Coil Power AC (60 Hz):	VA	1.2	1.2	1.2	1.2
Coil Power DC:	W	0.9	0.9	0.9	0.9
Insulation System Per UL Standard 1446:		Class B (130 ºC)	Class B (130 ºC)	Class B (130ºC)	Class B (130ºC)
Maximum Coil Dissipation, AC (60 Hz):	VA	2.55	2.55	2.55	2.5
Maximum Coil Dissipation, DC:	W	2.3	2.3	2.3	2
Duty:		Continuous	Continuous	Continuous	Continuous
CONTACTS					
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed	Silver,gold plated,silver,gold flashed, silver alloy, gold, flashed, gold,silver,nickel
Contact Rating AC Amperes (AC1):	A	3	10 / 8.0	3	1.0 / 3.0 / 5.0
Contact Rating AC Voltage:	V	120 / 240	110/120 - 220/277	120 /240	120 / 240
Contact Rating DC Amperes (DC1):	A	3 / 0.25	8 / 0.25	3 / 0.25	1.0 / 3.0 / 5.0
Contact Rating DC Voltage:	V	28 / 220	28 / 220	28 / 220	28
Horse Power (AC):	HP	1/10 @ 120 V	1/3 @ 120 V	1/16 @ 120 V	
Horse Power (AC):	HP	1/10 @ 240 V	1 @ 277 V		
Pilot Duty (60 Hz):		B300	B300	B300	
Utilization Category:	IEC	AC15	AC15	AC15	AC15
VA Rating Make:	VA	1800	3600	1800	1800
VA Rating Break:	VA	180	360	180	180
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	50 @ 5 VDC or 0.5 W	50/100 @ 5 VDC or 50 mw / 0.5 W
TIMING					
Operate Time:	ms	20	20	20	13
Release Time:	ms	20	20	20	6
DIELECTRIC STRENGTH					
Coil to Contacts:	V rms	1500	1500	1500	1240
Across Open Contacts:	V rms	1000	1000	1000	500
Pole to Pole:	V rms	1500	1500	1500	1240
Contacts to Frame:	V rms				1240
Insulation Resistance:	megohms minimum @VDC	100 @ 500	100 @ 500	100 @ 500	100 @ 500
VIBRATION RESISTANCE					
Functional:	g's	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude	10-55 Hz, 6 g's,1 mm double amplitude
SHOCK RESISTANCE					
Functional:	g's	10	10	10	10
TEMPERATURE					
Operating, AC Lower:	ºC	-40	-40	-40	-40
Operating, AC Upper:	ºC	+70	+70	+70	+70
Operating, DC Lower:	ºC	-40	-40	-40	-40
Operating, DC Upper:	ºC	+70	+70	+70	+70
Storage, Lower:	ºC	-40	-40	-40	-40
Storage, Upper:	ºC	+105	+105	+105	+105
LIFE EXPECTANCY					
Electrical @ Rated Load (AC1):	operations	200,000	200,000	200,000	100,000
Mechanical @ no Load :	operations	10,000,000	10,000,000	10,000,000	10,000,000
MISCELLANEOUS					
Operating Position:		Any	Any	Any	Any
Insulation Material:	94V-0	Molded plastic	Molded plastic	Molded plastic	Molded plastic
Enclosure Material:	94V-0	Polycarbonate	Polycarbonate	Polycarbonate	Steel
Cover Protection Category:	IP	40	40	40	67
Terminals:	Inch (mm)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508) 0.040 x 0.020 (1.016 x 0.508)	0.10 x 0.020 (2.54 x 0.508)
Weight:	grams	36	36	36	45

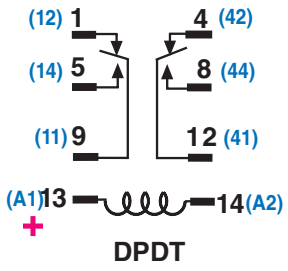
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS

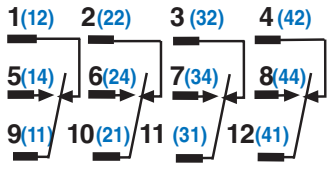
DPDT & 4PDT
1, 3, 5 & 10 AMPS



WIRING DIAGRAM
(VIEWED FROM PIN END)



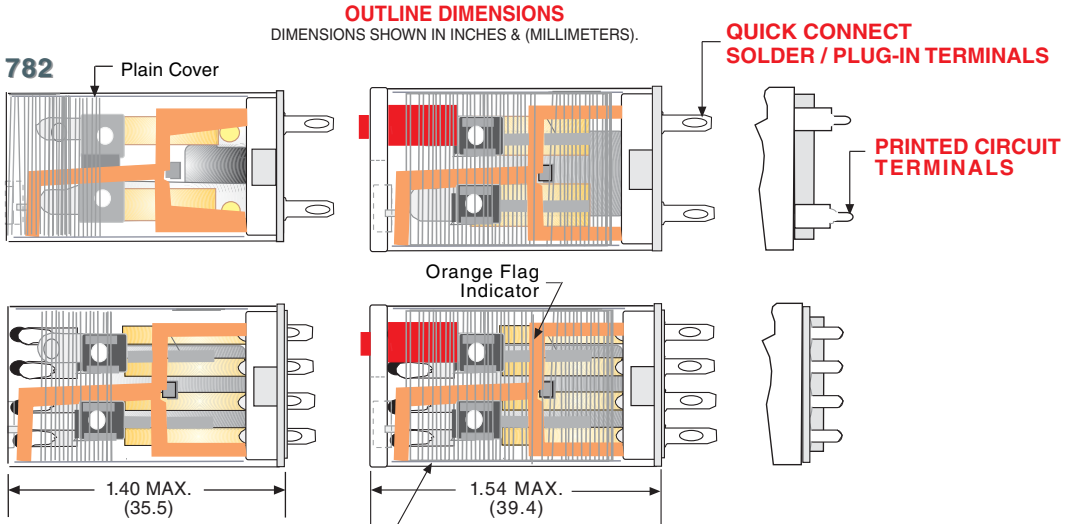
DPDT

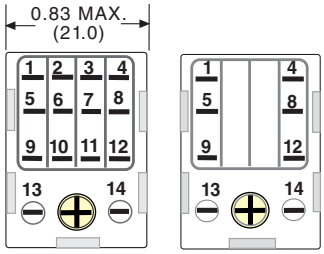


4PDT

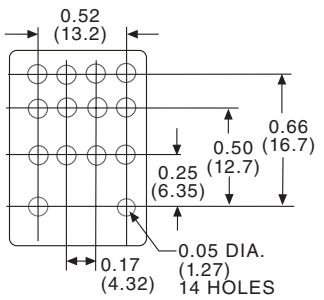
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

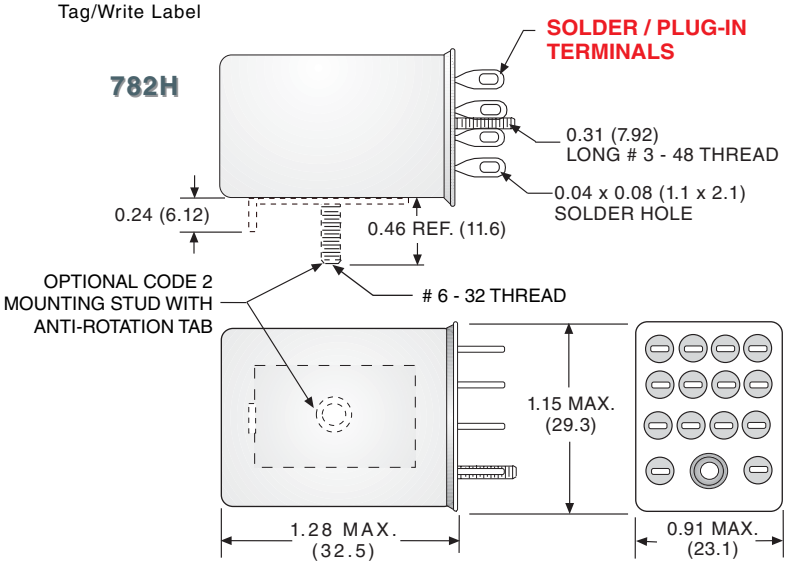
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).





PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)





CERTIFIED CLASS 1 DIVISION 2 FOR HAZARDOUS LOCATIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAYS

DPDT & 4PDT, 1, 3, 5 & 10 AMPS

ORDERING CODE

782	XDX	☐	☐	☐	☐	2	☐	M4L	-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX,** 4PDT: **XDX**

CONTACT RATING (EXCEPT 782H):
3 AMP: **CODE 1**
10 AMP: **CODE 2**
3 AMP BIFURCATED CONTACT: **CODE 3**

HERMETICALLY SEALED (782H):
CODE H

OPTIONAL PLAIN COVER (EXCEPT 782H):
CODE C

TERMINALS STYLE (EXCEPT 782H):
QUICK CONNECT SOLDER/PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

CONTACT RATING (782H ONLY):
1 AMP BIFURCATED CONTACT: **CODE 32**
(SILVER CROSS BAR WITH GOLD OVERLAY)
3 AMP: **CODE 10** (SILVER GOLD FLASHED)
5 AMP: **CODE 21** (SILVER ALLOY)

TERMINALS & MOUNTING STYLE (782H ONLY):
SOLDER/PLUG-IN: **NO CODE**
STUD ON BROAD SIDE: **CODE 2**
STUD ON NARROW SIDE: **CODE 3**
STUD ON TOP SIDE: **CODE 4**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK-DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L** (OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24 ,48, 110 **ADD "D" FOR DC COILS**

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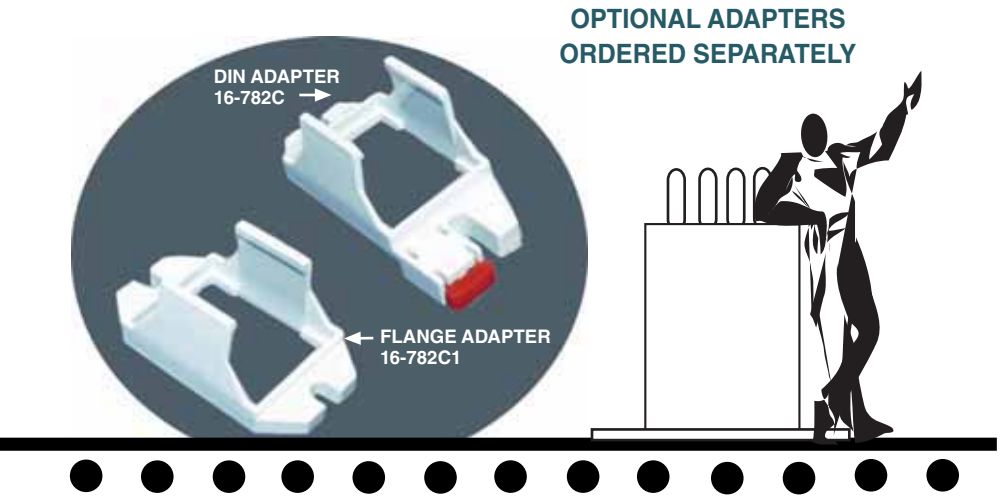
782 - 2 & 4 POLE "ICE CUBE" CONTROL RELAY

DPDT & 4PDT, 1, 3, 5 & 10 AMPS



Mating Sockets
70-461-1, SCREW/DIN
70-378-1: SOLDER
70-379-1: PRINTED CIRCUIT
See section 7

STANDARD PART NUMBERS					COIL MEASURED @ 25 °C	
FULL FEATURED	PLAIN COVER WITH FLAG		HERMETICALLY SEALED	FULL FEATURED	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
4PDT				DPDT		
SOLDER/PLUG -IN, BIFURCATED CONTACTS 3 AMP						
	DUAL MARKED					
	NEW PART NUMBER	SUPERCEDES				
	782XDX3C-12A	W78ATCSX-2			12 VAC, 50/60 Hz	46 Ω
782XDX3M4L-24A	782XDX3C-24A	W78ATCSX-3		782XBX3M4L-24A	24 VAC, 50/60 Hz	180 Ω
782XDX3M4L-120A	782XDX3C-120A	W78ATCSX-5		782XBX3M4L-120A	110/120 VAC, 50/60 Hz	4,430 Ω
782XDX3M4L-220/230A	782XDX3C-220/230A			782XBX3M4L-220/230A	220/230 VAC, 50/60 Hz	15,000 Ω
782XDX3M4L-240A	782XDX3C-240A	W78ATCSX-6		782XBX3M4L-240A	240 VAC, 50/60 Hz	15,700 Ω
	782XDX3C-6D	W78TCSX-1			6 VDC	
782XDX3M4L-12D	782XDX3C-12D	W78TCSX-2		782XBX3M4L-12D	12 VDC	160 Ω
782XDX3M4L-24D	782XDX3C-24D	W78TCSX-3		782XBX3M4L-24D	24 VDC	650 Ω
782XDX3M4L-110D	782XDX3C-110D	W78TCSX-5		782XBX3M4L-110D	110/125 VDC	11,000 Ω
SOLDER/PLUG -IN, CONTACTS 3 AMP						
	782XDX1C-12A	W78ACSX-2			12 VAC, 50/60 Hz	46 Ω
782XDX1M4L-24A	782XDX1C-24A	W78ACSX-3	782XDXH10-24A		24 VAC, 50/60 Hz	180 Ω
782XDX1M4L-120A	782XDX1C-120A	W78ACSX-5	782XDXH10-120A		110/120 VAC, 50/60 Hz	4,430 Ω
782XDX1M4L-220/230A	782XDX1C-220/230A				220/230 VAC, 50/60 Hz	15,000 Ω
782XDX1M4L-240A	782XDX1C-240A	W78ACSX-6			240 VAC, 50/60 Hz	15,700 Ω
	782XDX1C-6D	W78CSX-1			6 VDC	
782XDX1M4L-12D	782XDX1C-12D	W78CSX-2	782XDXH10-12D		12 VDC	160 Ω
782XDX1M4L-24D	782XDX1C-24D	W78CSX-3	782XDXH10-24D		24 VDC	650 Ω
782XDX1M4L-110D	782XDX1C-110D	W78CSX-6	782XDXH10-110D		110/125 VDC	11,000 Ω
SOLDER/PLUG -IN, CONTACTS 10 AMP						
782XDX2M4L-24A	782XDX2C-24A	W78KACSX-15		782XBX2M4L-24A	24 VAC, 50/60 Hz	180 Ω
782XDX2M4L-120A	782XDX2C-120A	W78KACSX-17	782XDXH21-120A	782XBX2M4L-120A	110/120 VAC, 50/60 Hz	4,430 Ω
782XDX2M4L-220/230A	782XDX2C-220/230A			782XBX2M4L-220/230A	220/230 VAC, 50/60 Hz	15,000 Ω
782XDX2M4L-240A	782XDX2C-240A	W78KACSX-18		782XBX2M4L-240A	240 VAC, 50/60 Hz	15,700 Ω
782XDX2M4L-12D	782XDX2C-12D	W78KCSX-12	782XDXH21-12D	782XBX2M4L-12D	12 VDC	160 Ω
782XDX2M4L-24D	782XDX2C-24D	W78KCSX-13	782XDXH21-24D	782XBX2M4L-24D	24 VDC	650 Ω
782XDX2M4L-110D	782XDX2C-110D			782XBX2M4L-110D	110/125 VDC	11,000 Ω
PRINTED CIRCUIT BIFURCATED CONTACTS 3 AMP						
	782XDX3CT-24A	W78APCX-3			24 VAC, 50/60 Hz	180 Ω
	782XDX3CT-120A	W78APCX-5			110/120 VAC, 50/60 Hz	4430 Ω
	782XDX3CT-12D	W78PCX-2			12 VDC	15700 Ω
	782XDX3CT-24D	W78PCX-3			24 VDC	160 Ω
	782XDX3CT-110D	W78PCX-6			110/125 VDC	11,000 Ω

NOTE: CLASS 782C IS AN ENHANCED VERSION OF THE 78, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.

750 OCTAL STYLE POWER RELAY

UL Recognized
File No. E43641

40787

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

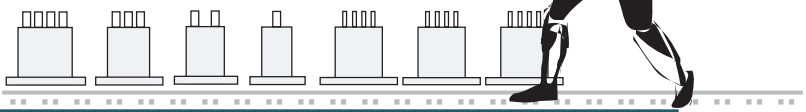
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKETS:
70-464-1, 70-465-1, 70-750D8-1 & 70-750D11-1

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
FLAG INDICATOR:	SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.
BI - POLAR L.E.D. STATUS LAMP:	ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.
COLOR CODED PUSH BUTTON:	IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.
LOCK-DOWN DOOR:	WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.
FINGER - GRIP COVER:	ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.
WHITE PLASTIC I.D. TAG/WRITE LABEL:	USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.

MANUFACTURED UNDER ISO 9002 & QS 9000



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	2.0 - 3.0
Coil Power DC:	W	1.4
Insulation System Per UL Standard 1446:		Class B (130 °C)
Maximum Coil Dissipation, AC (60 Hz):	VA	3.5
Maximum Coil Dissipation, DC:	W	3
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	16
Contact Rating AC Voltage:	V	277
Contact Rating DC Amperes (DC1):	A	16 / 0.5
Contact Rating DC Voltage:	V	28 / 220
General Purpose Rating (75%-80% pf):	A @ V	12 @ 120 / 240
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	HP	1/2 @ 240 V
Pilot Duty (60 Hz):		B300
Utilization Category:	IEC	AC15
VA Rating Make:	VA	3600
VA Rating Break:	VA	360
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	20
Release Time:	ms	20

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	2500
Contacts to Frame:	V rms	2500
Insulation Resistance:	megohms minimum @VDC	100 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10-55 Hz, 6 g's,1mm double amplitude
SHOCK RESISTANCE		
Functional:	g's	10
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+50
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+65
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	89

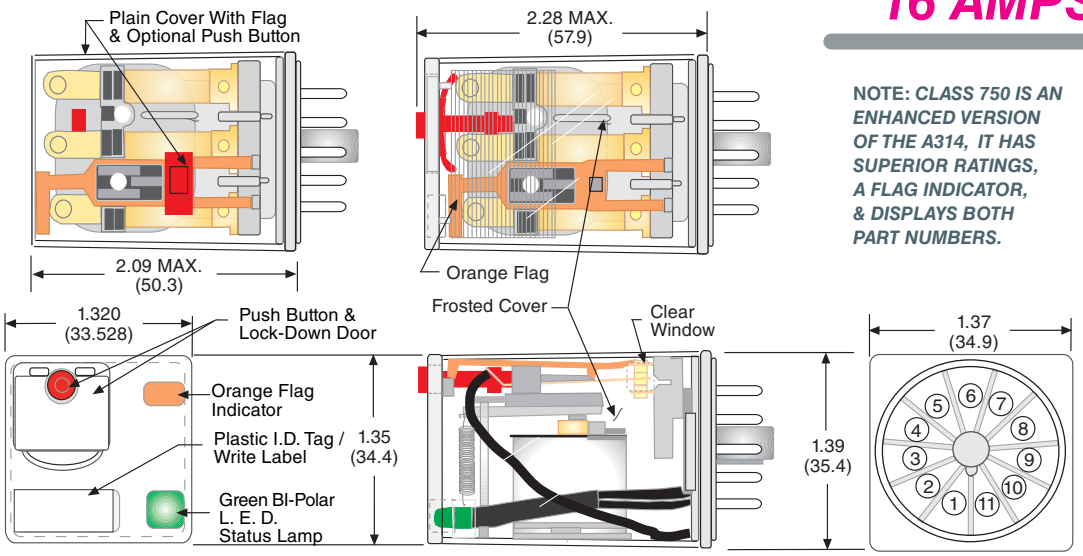
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

750 OCTAL STYLE POWER RELAY

Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

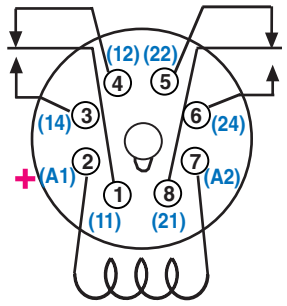


8 PIN OCTAL BASE
NOT SHOWN

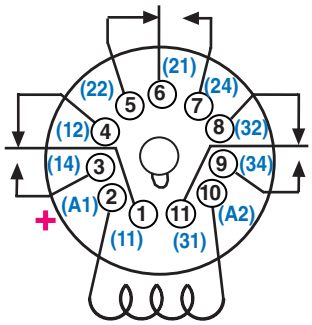
DPDT & 3PDT
16 AMPS

NOTE: *CLASS 750 IS AN ENHANCED VERSION OF THE A314, IT HAS SUPERIOR RATINGS, A FLAG INDICATOR, & DISPLAYS BOTH PART NUMBERS.*

WIRING DIAGRAM
(VIEWED FROM PIN END)



8 PIN



11 PIN

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

ORDERING CODE

750	XBX			M4L	-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX,** 3PDT: **XCX**

OPTIONAL PLAIN COVER:
CODE C

OPTIONS:
MAGNETIC BLOWOUT: **CODE 69**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

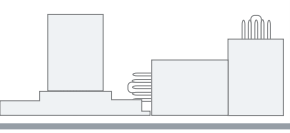
OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M.**
(**CODES 69, L,** OR **M** ALSO AVAILABLE ON CLEAR COVER VERSIONS)

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L** (OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24, 120, 220 / 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

Mating Sockets
70-750D8-1, 70-750D11-1,
70-464-1, 70-465-1, 70-750E8-1,70-750E11-1
70-750EL/SL8-1, 70-750EL/SL11-1: SCREW/DIN
70-169-1, 70-170-1: SCREW/PANEL
See section 7

STANDARD PART NUMBERS				COIL MEASURED @ 25 °C	
FULL FEATURED	PLAIN COVER WITH FLAG		CONTACT CONFIGURATION	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE(OHMS)
	DUAL MARKED				
	NEW PART NUMBER	SUPERCEDES			
AC OPERATED - 8 PIN OCTAL, 16 AMP					
750XBXM4L-24A	**750XBXC-24A**	**A314XBX48P-24A**	DPDT	24 VAC, 50/60Hz	72 Ω
750XBXM4L-120A	**750XBXC-120A**	**A314XBX48P-120A**	DPDT	110/120 VAC, 50/60Hz	1,700 Ω
750XBXM4L-220/240A	**750XBXC-220/240A**	**A314XBX48P-220/240A**	DPDT	220/240 VAC, 50/60Hz	7,200 Ω
DC OPERATED - 8 PIN OCTAL, 16 AMP					
750XBXM4L-12D	**750XBXC-12D**	**A314XBX48P-12D**	DPDT	12 VDC	120 Ω
750XBXM4L-24D	**750XBXC-24D**	**A314XBX48P-24D**	DPDT	24 VDC	470 Ω
750XBXM4L-110D	**750XBXC-110D**	**A314XBX48P-110D**	DPDT	110/125 VDC	10,000 Ω
AC OPERATED - 11 PIN OCTAL, 16 AMP					
750XCXM4L-24A	**750XCXC-24A**	**A314XCX48P-24A**	3PDT	24 VAC, 50/60Hz	72 Ω
750XCXM4L-120A	**750XCXC-120A**	**A314XCX48P-120A**	3PDT	110/120 VAC, 50/60Hz	1,700 Ω
750XCXM4L-220/240A	**750XCXC-220/240A**	**A314XCX48P-220/240A**	3PDT	220/240 VAC, 50/60Hz	7,200 Ω
DC OPERATED - 11 PIN OCTAL, 16 AMP					
750XCXM4L-12D	**750XCXC-12D**	**A314XCX48P-12D**	3PDT	12 VDC	120 Ω
750XCXM4L-24D	**750XCXC-24D**	**A314XCX48P-24D**	3PDT	24 VDC	470 Ω
750XCXM4L-110D	**750XCXC-110D**	**A314XCX48P-110D**	3PDT	110/125 VDC	10,000 Ω



788 PLUG-IN POWER RELAY

UL Recognized
File No. E43641

40787

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

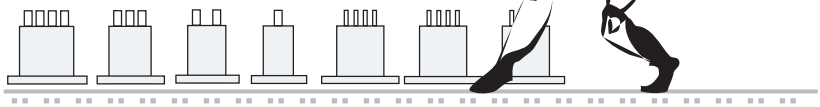
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKET **70-463-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
FLAG INDICATOR:	SHOWS RELAY STATUS IN MANUAL OR POWERED CONDITION.
BI - POLAR L.E.D. STATUS LAMP:	ALLOWS FOR REVERSE POLARITY APPLICATIONS, SHOWS COIL "ON" OR "OFF" STATUS. IDEAL IN LOW LIGHT CONDITIONS.
COLOR CODED PUSH BUTTON:	IDENTIFIES AC COILS WITH RED OR DC COILS WITH BLUE PUSH BUTTONS. ALLOWS FOR MANUAL OPERATION OF RELAY WITHOUT THE NEED FOR COIL POWER. IDEAL FOR FIELD SERVICE PERSONNEL TO TEST CONTROL CIRCUITS.
LOCK-DOWN DOOR:	WHEN ACTIVATED, HOLDS PUSH BUTTON AND CONTACTS IN THE OPERATE POSITION. EXCELLENT FOR ANALYZING CIRCUIT PROBLEMS.
FINGER - GRIP COVER:	ALLOWS OPERATOR TO REMOVE RELAYS FROM SOCKETS MORE EASILY THAN CONVENTIONAL RELAYS.
WHITE PLASTIC I.D. TAG/WRITE LABEL:	USED FOR IDENTIFICATION OF RELAYS IN MULTI-RELAY CIRCUITS.

MANUFACTURED UNDER ISO 9002 & QS 9000



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	2.0 - 3.0
Coil Power DC:	W	1.4
Insulation System Per UL Standard 1446:		Class B (130 °C)
Maximum Coil Dissipation, AC (60 Hz):	VA	3.5
Maximum Coil Dissipation, DC:	W	3
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	16
Contact Rating AC Voltage:	V	277
Contact Rating DC Amperes (DC1):	A	16 / 0.5
Contact Rating DC Voltage:	V	28 / 220
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	HP	1/2 @ 240 V
Pilot Duty (60 Hz):		B300
Utilization Category:	IEC	AC15
VA Rating Make:	VA	3600
VA Rating Break:	VA	360
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	20
Release Time:	ms	20

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	2500
Contacts to Frame:	V rms	
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10-55 Hz, 6 g's,1mm double amplitude
SHOCK RESISTANCE		
Functional:	g's	10
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+50
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+65
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.187, 0.062 x 0.020 (4.74, 1.57 x 0.508)
Weight:	grams	88

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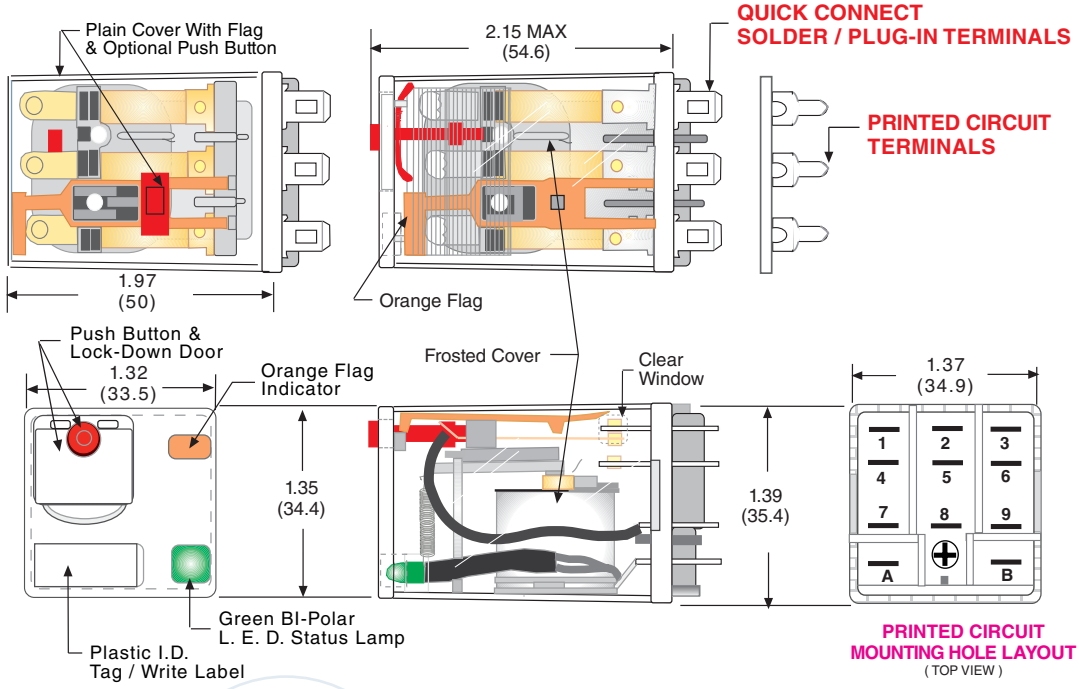
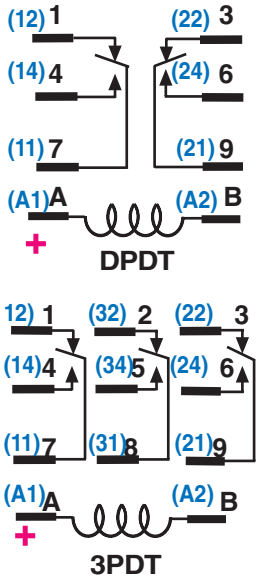
788 PLUG-IN POWER RELAY

DPDT & 3PDT, 16 AMPS

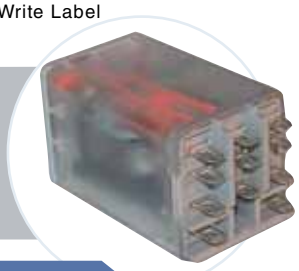
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



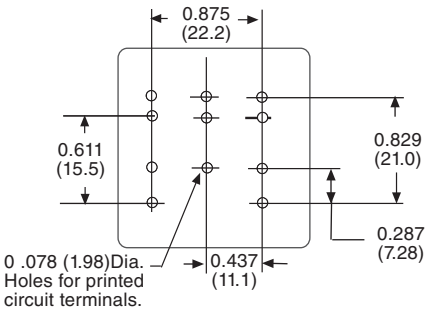
WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



ORDERING CODE

788	XBX			M4L	-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX**, 3PDT: **XCX**

OPTIONAL PLAIN COVER:
CODE C

TERMINAL STYLE:
SOLDER PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

FULL FEATURED VERSION:
PUSH BUTTON & LOCK DOWN DOOR: **CODE M4**
BI - POLAR L.E.D. STATUS LAMP: **CODE L**

OPTIONAL FULL FEATURED DELETION:
PUSH BUTTON WITHOUT LOCK DOWN DOOR: **CODE M**

OPTIONAL PLAIN COVER FEATURES:
PUSH BUTTON WITHOUT LOCK-DOWN DOOR: **CODE M**
POLARIZED L.E.D. STATUS LAMP: **CODE L**
(OBSERVE POLARITY+)

COIL VOLTAGE:
6, 12, 24,120, 220 / 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

Mating Sockets
70-463-1: SCREW/DIN
70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
70-788EL/SL11-1, 70-124-2: QUICK CONNECT
See section 7

FULL FEATURED	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED - SOLDER/PLUG-IN, 16 AMP			
788XBXM4L-24A	DPDT	24 VAC, 50/60Hz	72 Ω
788XBXM4L-120A	DPDT	110/120 VAC, 50/60Hz	1,700 Ω
788XBXM4L-220/240A	DPDT	220/240 VAC, 50/60Hz	7,200 Ω
DC OPERATED - SOLDER/PLUG-IN, 16 AMP			
788XBXM4L-12D	DPDT	12 VDC	120Ω
788XBXM4L-24D	DPDT	24 VDC	470 Ω
788XBXM4L-110D	DPDT	110/125 VDC	10,000 Ω
AC OPERATED - SOLDER/PLUG-IN, 16 AMP			
788XCXM4L-24A	3PDT	24 VAC, 50/60Hz	72 Ω
788XCXM4L-120A	3PDT	110/120 VAC, 50/60Hz	1,700 Ω
788XCXM4L-220/240A	3PDT	220/240 VAC, 50/60Hz	7,200 Ω
DC OPERATED - SOLDER/PLUG-IN, 16 AMP			
788XCXM4L-12D	3PDT	12 VDC	120 Ω
788XCXM4L-24D	3PDT	24 VDC	470 Ω
788XCXM4L-110D	3PDT	110/125 VDC	10,000 Ω

CADMIUM-FREE CONTACTS AVAILABLE, CONTACT FACTORY FOR DETAILS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

A283 PLUG-IN & FLANGE MOUNT RELAYS

UL CONTACT LOAD RATINGS TABLE

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
1 POLE THRU 3 POLES	15 AMP	240 VAC	50/60 Hz	RESISTIVE
	10 AMP	28 VDC	DC	RESISTIVE
	1/3 HP	120 VAC	50/60 Hz	MOTOR
	1/2 HP	240 VAC	50/60 Hz	MOTOR
	3 AMP	600 VAC	50/60 Hz	RESISTIVE

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UL Recognized
File No. E13224

168986

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

c UL us
LISTED 367G
IND. CONT. EQ.
WHEN USED WITH SOCKETS **70-463-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

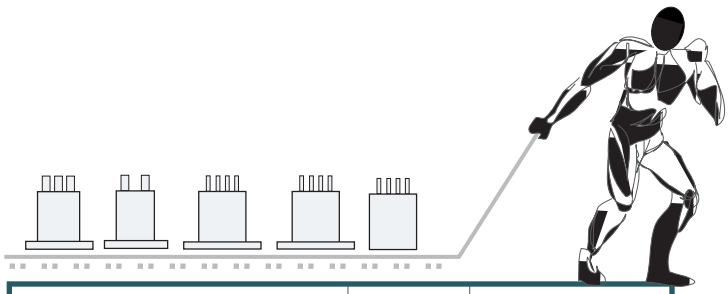
UL CONTACT LOAD RATINGS TABLE FOR DC SWITCHING
(WITH OPTIONAL MAGNETIC BLOWOUT: CODE 69)

MANUFACTURED UNDER ISO 9002 & QS 9000

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	TYPE OF LOAD
DPDT	3 AMP	150 VDC	RESISTIVE
DPST - NO	5 AMP	150 VDC	RESISTIVE
SPST - NO (DM)	10 AMP	150 VDC	RESISTIVE
SPDT (DB and DM)	10 AMP	150 VDC	RESISTIVE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	2.75
Coil Power DC:	W	2
Insulation System Per UL Standard 1446:		Class B (130 ºC)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy gold flashed
Contact Rating AC Amperes (AC1):	A	15
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	10
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	V	1/2 @ 240 V
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2000
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	2000
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500



	UNITS	
TEMPERATURE		
Operating, AC Lower:	ºC	-30
Operating, AC Upper:	ºC	+60
Operating, DC Lower:	ºC	-30
Operating, DC Upper:	ºC	+50
Storage, Lower:	ºC	-30
Storage, Upper:	ºC	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.187, 0.062 x 0.020 (4.74, 1.57 x 0.508)
Weight:	grams	88

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A283 PLUG-IN & FLANGE MOUNT RELAYS

Magnecraft
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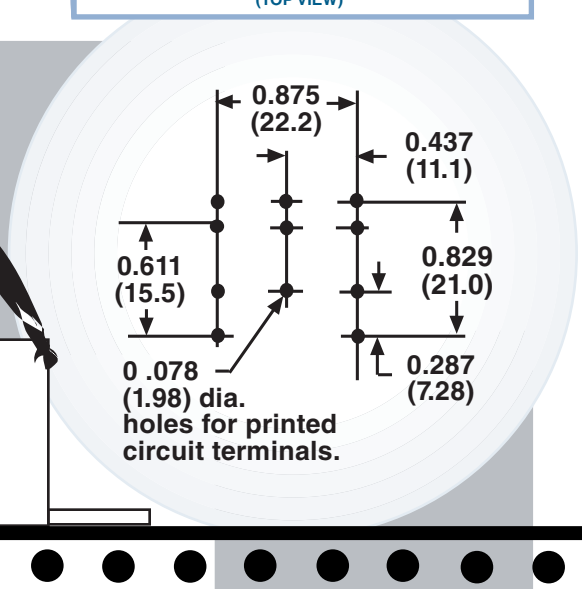
Your Contact for Industrial Relays

PLUG-IN

FLANGE MOUNT

RECOMMENDED PRINTED CIRCUIT LAYOUT
(TOP VIEW)



ORDERING CODE

A283	XCX		C1		M-	240A

CLASS:

CONTACT CONFIGURATION:
SPDT: **XAX**
DPDT: **XBX**
DPST-NO: **BXX**
3PDT: **XCX**
SPST -NO-DM: **HXX**
SPDT -DB and DM: **XHX**

OPTIONAL:
MAGNETIC BLOWOUT**: CODE 69**

CONSTRUCTION STYLE:
* ENCLOSED, PLAIN COVER**: CODE C**
ENCLOSED, FLANGE COVER: **CODE C1**
ENCLOSED TOP FLANGE MOUNT**: CODE C3**
ENCLOSED DIN MOUNT**: CODE C4**

TERMINAL STYLE:
QUICK CONNECT SOLDER TERMINALS**: NO CODE**
PRINTED CIRCUIT TERMINALS**: CODE T**

OPTIONS:
BI - POLAR L.E.D. STATUS LAMP**: CODE L**
PUSH BUTTON**: CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

* Note: Code C recommended to be used with printed circuit terminals or Plug-in applications only.

OPTIONAL PRINTED CIRCUIT TERMINAL

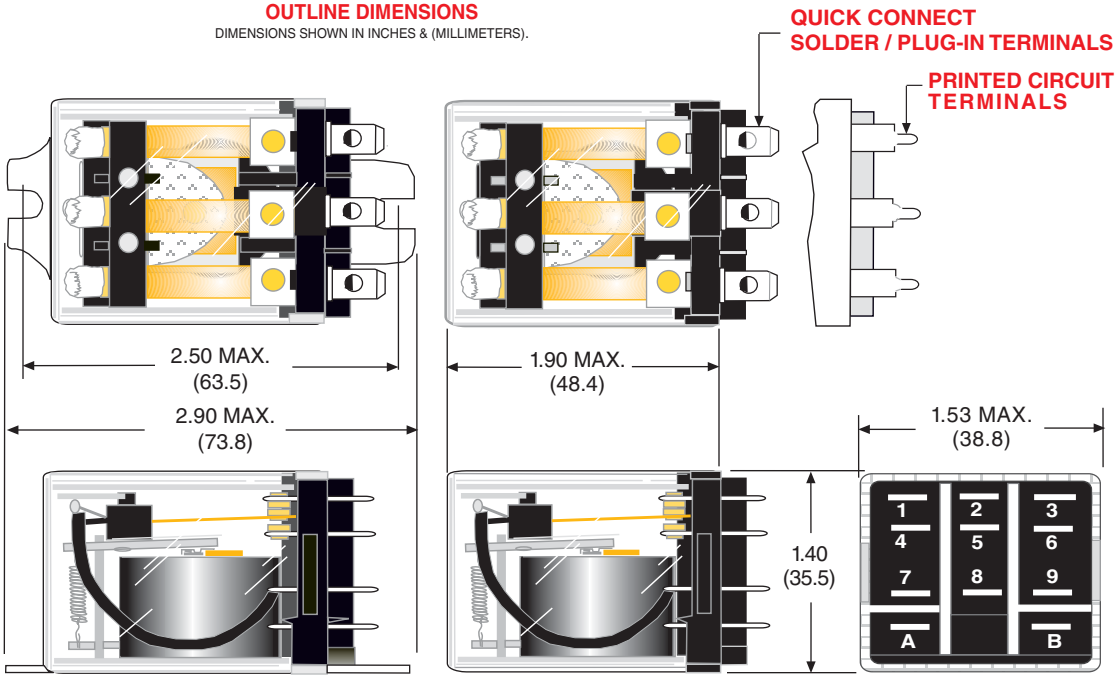
OPTIONAL TOP FLANGE COVER

OPTIONAL DIN COVER

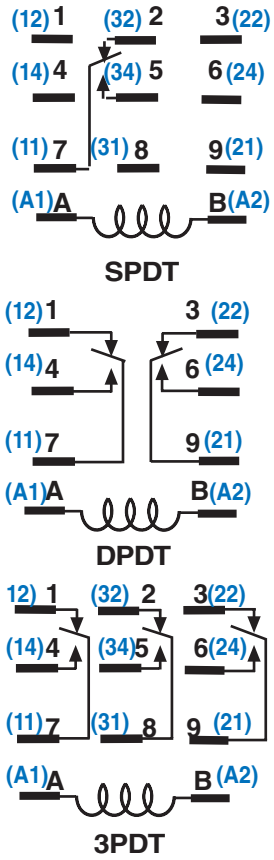
A283 PLUG-IN & FLANGE MOUNT RELAYS

SPDT, DPDT & 3PDT, 15 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

SEE CLASS 788 FOR PART NUMBERS WITH L.E.D. STATUS LAMP AND PUSH BUTTON

Mating Sockets
70-463-1: SCREW/DIN
70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
70-788EL/SL-1, 170-124-2: QUICK CONNECT
See section 7

FLANGE MOUNT

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED, 15 AMP			
A283XAXC1-120A	SPDT	110/120 VAC, 50/60Hz	2250 Ω
A283XAXC1-240A	SPDT	220/240 VAC, 50/60Hz	9100 Ω
A283XBXC1-120A	DPDT	110/120 VAC, 50/60Hz	2250 Ω
A283XBXC1-240A	DPDT	220/240 VAC, 50/60Hz	9100 Ω
A283XCXC1-120A	3PDT	110/120 VAC, 50/60Hz	1700 Ω
A283XCXC1-240A	3PDT	220/240 VAC, 50/60Hz	7200 Ω
DC OPERATED, 15 AMP			
A283XAXC1-12D	SPDT	12 VDC	120 Ω
A283XAXC1-24D	SPDT	24 VDC	472 Ω
A283XBXC1-12D	DPDT	12 VDC	120 Ω
A283XBXC1-24D	DPDT	24 VDC	472 Ω
A283XCXC1-24D	3PDT	24 VDC	472 Ω

RETROFITS POTTER & BRUMFIELD KUP.
SEE END OF SECTION 1 FOR CROSS REFERENCE

PLUG-IN

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED SOLDER/PLUG-IN, 15 AMP			
A283XAXC-120A	SPDT	110/120 VAC, 50/60Hz	2250 Ω
A283XAXC-240A	SPDT	220/240 VAC, 50/60Hz	9100 Ω
A283XBXC-24A	DPDT	24 VAC, 50/60Hz	75 Ω
A283XBXC-120A	DPDT	110/120 VAC, 50/60Hz	2250 Ω
A283XBXC-240A	DPDT	220/240 VAC, 50/60Hz	9100 Ω
A283XCXC-24A	3PDT	24 VAC, 50/60Hz	72 Ω
A283XCXC-120A	3PDT	110/120 VAC, 50/60Hz	1700 Ω
A283XCXC-240A	3PDT	220/240 VAC, 50/60Hz	7200 Ω
DC OPERATED SOLDER/PLUG-IN, 15 AMP			
A283XAXC-12D	SPDT	12 VDC	120 Ω
A283XAXC-24D	SPDT	24 VDC	472 Ω
A283XBXC-12D	DPDT	12 VDC	120 Ω
A283XBXC-24D	DPDT	24 VDC	472 Ω
A283XBXC-110D	DPDT	110/125 VDC	10,000 Ω
A283XCXC-12D	3PDT	12 VDC	120 Ω
A283XCXC-24D	3PDT	24 VDC	472 Ω

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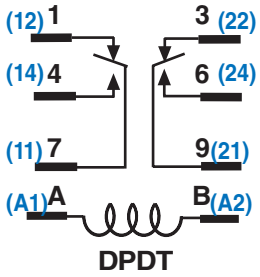
A283 PLUG-IN RELAY FOR DC SWITCHING

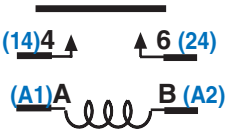
Magnecraft Struthers-Dunn Your Contact for Industrial Relays

DPDT, SPST-NO-DM
3, 5 & 10 AMPS
150 VDC SWITCHING

WIRING DIAGRAM
(VIEWED FROM PIN END)



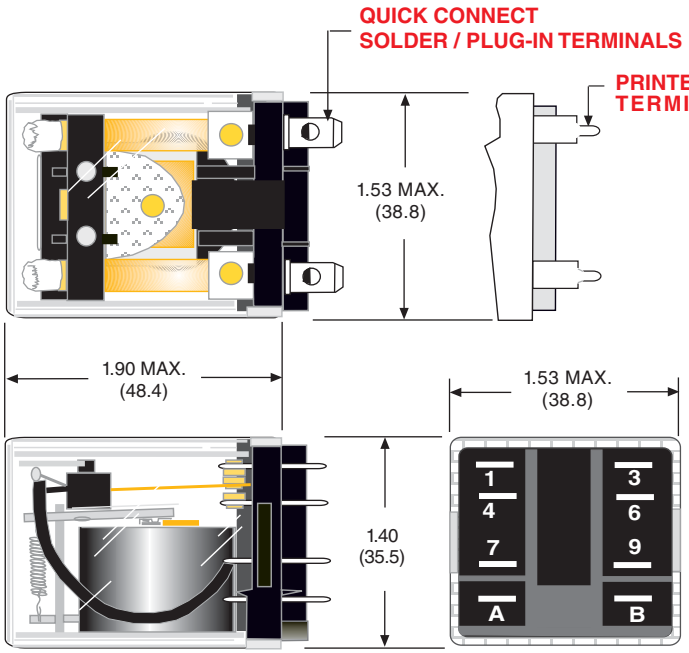
DPDT



SPST-NO-DM

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



BLOWOUT MAGNET
STANDARD FEATURE

Mating Sockets
70-463-1: SCREW/DIN
70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
70-788EL/SL-1, 70-124-2: QUICK CONNECT
See section 7

THE BLOWOUT MAGNET STYLES HAVE THE SAME LOAD SPECIFICATIONS AS THE A283 ENCLOSED PLUG-IN RELAYS, PLUS THE ADDITIONAL DC LOAD RATINGS. SEE A283 GENERAL SPECIFICATIONS.

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED WITH BLOWOUT MAGNET, 3 AMP			
A283XBX69C-120A	DPDT	110/120 VAC, 50/60Hz	2250 Ω
DC OPERATED WITH BLOWOUT MAGNET, 3 AMP			
A283XBX69C-12D	DPDT	12 VDC	120 Ω
A283XBX69C-24D	DPDT	24 VDC	472 Ω
A283XBX69C-110D	DPDT	110/125 VDC	10,000 Ω
AC OPERATED WITH BLOWOUT MAGNET, 10 AMP			
A283HXX69C-120A	SPST-NO (DM)	110/120 VAC, 50/60Hz	2250 Ω
DC OPERATED WITH BLOWOUT MAGNET, 10 AMP			
A283XHX69C-48D	SPDT-NO (DB-DM)	48 VDC	1800 Ω
DC OPERATED WITH BLOWOUT MAGNET, 5 AMP			
A283BXX69C-24D	DPST-NO	24 VDC	472 Ω
A283BXX69C-48D	DPST-NO	48 VDC	1800 Ω
DC OPERATED WITH BLOWOUT MAGNET, 10 AMP			
A283HXX69C-12D	SPST-NO (DM)	12 VDC	120 Ω
A283HXX69C-24D	SPST-NO (DM)	24 VDC	472 Ω
A283HXX69C-48D	SPST-NO (DM)	48 VDC	1800 Ω
A283HXX69C-110D	SPST-NO (DM)	110/125 VDC	10,000 Ω

SEE CLASS 788 FOR PART NUMBERS WITH L.E.D. STATUS LAMP AND PUSH BUTTON

RETROFITS POTTER & BRUMFIELD KUP.
SEE END OF SECTION 1 FOR CROSS REFERENCE

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388J & 388V PLUG-IN & FLANGE MOUNT RELAYS

UL CONTACT LOAD RATINGS TABLE FOR 388J

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
DPDT	20 AMP	300 VAC	50/60 Hz	RESISTIVE
	20 AMP	28 VDC	DC	RESISTIVE
3PDT	16 AMP	277 VAC	50/60 Hz	RESISTIVE
	16 AMP	28 VDC	DC	RESISTIVE
2 & 3 POLES	3/4 HP	120 VAC	50/60 Hz	MOTOR
	1 HP	208 - 600 VAC	50/60 Hz	MOTOR

c UL us
UL Recognized
File No. E43641

168986 for 388J
41729 for 388V

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

MANUFACTURED UNDER ISO 9002 & QS 9000

UL CONTACT LOAD RATINGS TABLE FOR 388V

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
1 POLE THRU 3 POLES	15 AMP	240 VAC	50/60 Hz	RESISTIVE
	15 AMP	28 VDC	DC	RESISTIVE
	1/3 HP	120 VAC	50/60 Hz	MOTOR
	1/2 HP	240 VAC	50/60 Hz	MOTOR

c UL us
LISTED 367G
IND. CONT. EQ.
WHEN USED WITH SOCKETS **70-463-1**

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

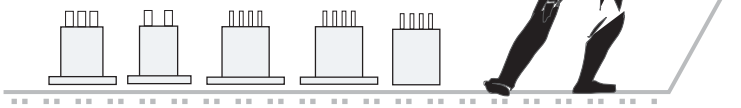
PLUG-IN

FLANGE MOUNT

OPTIONAL DIN MOUNT COVER

BENEFITS OF 3mm CONTACT GAP DESIGN:

1. HIGH DIELECTRIC STRENGTH ACROSS CONTACTS.
2. IMPROVED ARC QUENCHING WHEN BREAKING HIGH CURRENT LOADS.
3. MEETS EUROPEAN SPACING REQUIREMENTS OF 8mm ACROSS SURFACES



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	J: 2.75, V: 4
Coil Power DC:	W	2
Insulation System Per UL Standard 1446:		Class B (130 C)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy gold flashed
Contact Rating AC Amperes (AC1):	A	J: 2 Pole-20, 3 Pole-16 V: 15
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	J: 20, V: 15
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	J: 3/4 @ 120 V V: 1/3 @ 120 V
Horse Power (AC):	HP	J: 1 @ 240 V V: 1/2 @ 240 V
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	J: 2000, V: 4000
Across Open Contacts:	V rms	J: 500, V: 1000
Pole to Pole:	V rms	2000
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @ VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-30
Operating, AC Upper:	°C	+65
Operating, DC Lower:	°C	-30
Operating, DC Upper:	°C	+50
Storage, Lower:	°C	-30
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.187x 0.020 (4.74 x 0.508)
Weight:	grams	88

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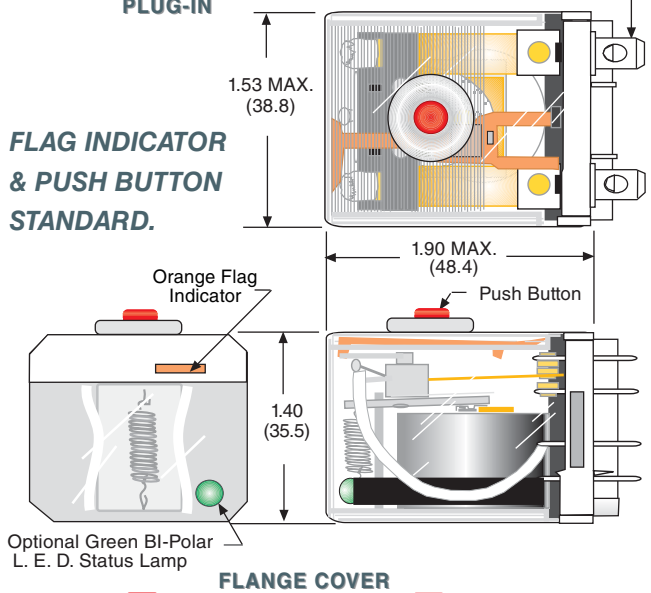
388J HIGH CURRENT PLUG-IN & FLANGE MOUNT RELAYS

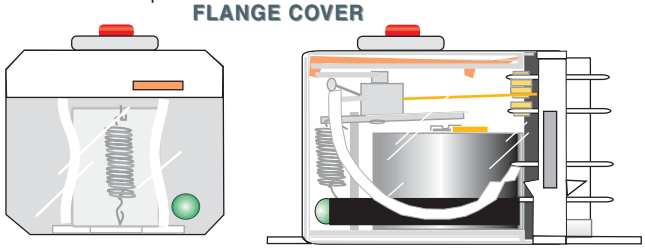
DPDT 20 AMPS & 3PDT 16 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

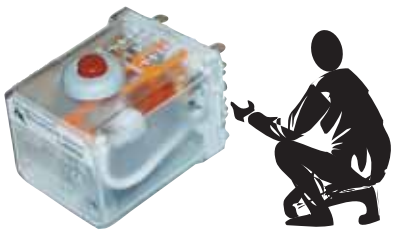
PLUG-IN

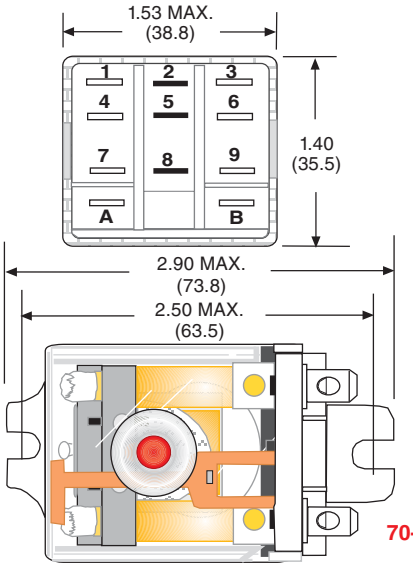


FLANGE COVER

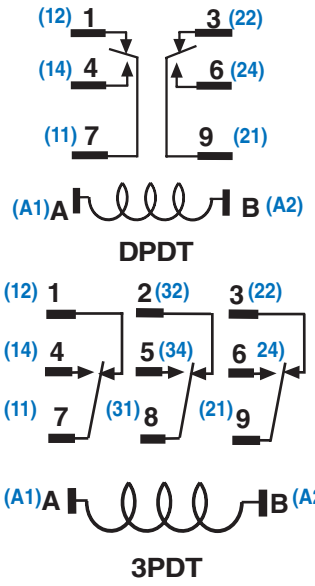


QUICK CONNECT
SOLDER / PLUG-IN TERMINALS





WIRING DIAGRAM
(VIEWED FROM PIN END)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Sockets
70-463-1: SCREW/DIN
70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
70-788EL/SL-1, 70-124-2: QUICK CONNECT
See section 7

ORDERING CODE

388J | XCX | | C1 | | M- | 240A

CLASS:
FLAG INDICATOR
STANDARD FEATURE

CONTACT CONFIGURATION:
DPDT: **XBX**, 3PDT: **XCX**

OPTIONAL:
MAGNETIC BLOWOUT: **CODE 69 (XBX ONLY)**

CONSTRUCTION STYLE:
* ENCLOSED, PLAIN COVER: **CODE C**
ENCLOSED, FLANGE COVER: **CODE C1**
ENCLOSED TOP FLANGE MOUNT: **CODE C3**
ENCLOSED DIN MOUNT: **CODE C4**

TERMINAL STYLE:
QUICK CONNECT SOLDER TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

OPTIONS:
BI - POLAR L.E.D. STATUS LAMP: **CODE L**
PUSH BUTTON: **CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

* Note: Code C recommended to be used with printed circuit terminals or Plug-in applications only.

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 20 AMP			
388JXBXC1M-240A	DPDT	220/240 VAC,50/60Hz	9100 Ω
388JXBXC1M-120A	DPDT	110/120 VAC,50/60Hz	2250 Ω
DC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 20 AMP			
388JXBXC1M-12D	DPDT	12 VDC	120 Ω
388JXBXC1M-24D	DPDT	24 VDC	470 Ω
AC OPERATED PLUG-IN WITH PUSH BUTTON, 20 AMP			
388JXBXCM-240A	DPDT	220/240 VAC,50/60Hz	9100 Ω
388JXBXCM-120A	DPDT	110/120 VAC,50/60Hz	2250 Ω
DC OPERATED PLUG-IN WITH PUSH BUTTON, 20 AMP			
388JXBXCM-12D	DPDT	12 VDC	120 Ω
388JXBXCM-24D	DPDT	24 VDC	470 Ω
AC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 16 AMP			
388JXCXC1M-240A	3PDT	220/240 VAC,50/60Hz	7200 Ω
388JXCXC1M-120A	3PDT	110/120 VAC,50/60Hz	1700 Ω
DC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 16 AMP			
388JXCXC1M-12D	3PDT	12 VDC	120 Ω
388JXCXC1M-24D	3PDT	24 VDC	470 Ω
AC OPERATED PLUG-IN WITH PUSH BUTTON, 16 AMP			
388JXCXCM-240A	3PDT	220/240 VAC,50/60Hz	7200 Ω
388JXCXCM-120A	3PDT	110/120 VAC,50/60Hz	1700 Ω
DC OPERATED PLUG-IN WITH PUSH BUTTON, 16 AMP			
388JXCXCM-12D	3PDT	12 VDC	120 Ω
388JXCXCM-24D	3PDT	24 VDC	470 Ω

RETROFITS SCHRACK RM. SEE END OF SECTION 1 FOR CROSS REFERENCE
CADMIUM-FREE CONTACTS AVAILABLE, CONTACT FACTORY FOR DETAILS

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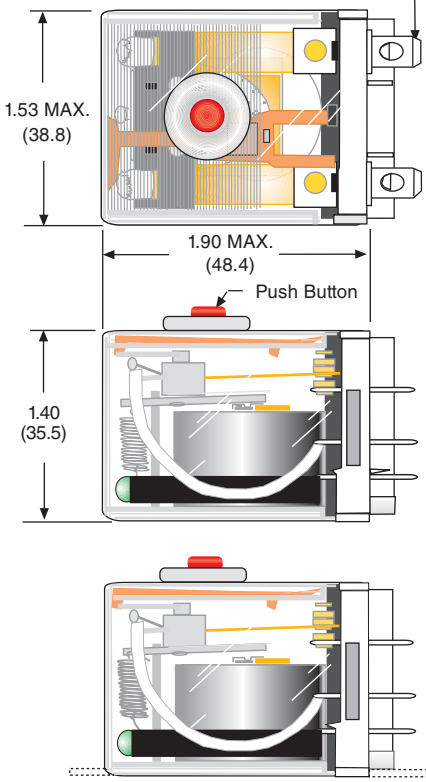
388V HIGH VOLTAGE PLUG-IN & FLANGE MOUNT RELAYS

Magnecraft Struthers-Dunn

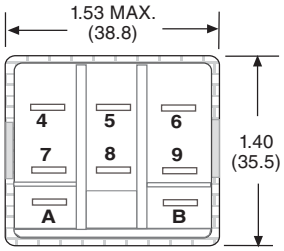
DPST-NO & 3PST-NO 15 AMPS

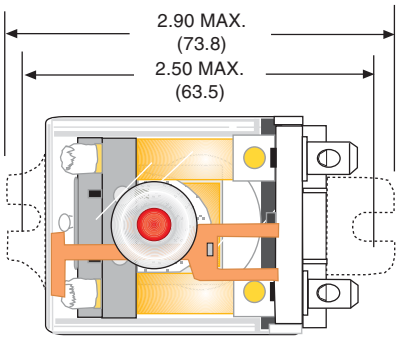
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

PLUG-IN



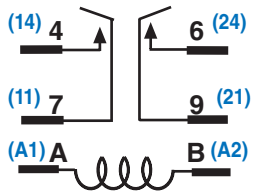
QUICK CONNECT SOLDER / PLUG-IN TERMINALS



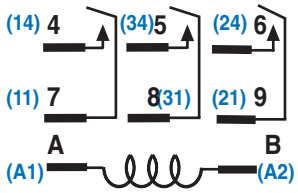


OPTIONAL FLANGE COVER

WIRING DIAGRAM
(VIEWED FROM PIN END)



DPST-NO



3PST-NO

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

3 MILLIMETER CONTACT GAP.
PUSH BUTTON STANDARD.

ORDERING CODE

388V | CXX | ☐ | C1 | ☐ | M- | 240A

CLASS:

CONTACT CONFIGURATION:
DPST-NO: **BXX**
3PST-NO: **CXX**

OPTIONAL:
MAGNETIC BLOWOUT: **CODE 69 (BXX ONLY)**

CONSTRUCTION STYLE:
* ENCLOSED, PLAIN COVER: **CODE C**
ENCLOSED, FLANGE COVER: **CODE C1**
ENCLOSED TOP FLANGE MOUNT: **CODE C3**
ENCLOSED DIN MOUNT: **CODE C4**

TERMINAL STYLE:
QUICK CONNECT SOLDER/PLUG-IN TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

OPTIONS:
BI - POLAR L.E.D. STATUS LAMP: **CODE L**
PUSH BUTTON: **CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 220/240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

* Note: Code C recommended to be used with printed circuit terminals or Plug-in applications only.

Mating Sockets
70-463-1: SCREW/DIN
70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
0-788EL/SL-1, 70-124-2: QUICK CONNECT
See section 7

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED PLUG-IN WITH PUSH BUTTON 3mm GAP, 15 AMP			
388VCXXCM-220/240A	3PST-NO	220/240 VAC,50/60Hz	9100 Ω
388VCXXCM-120A	3PST-NO	110/120 VAC,50/60Hz	1100 Ω
388VCXXCM-24A	3PST-NO	24 VAC,50/60Hz	75 Ω
388VBXXCM-220/240A	DPST-NO	220/240 VAC,50/60Hz	9100 Ω
388VBXXCM-120A	DPST-NO	110/120 VAC,50/60Hz	1100 Ω
388VBXXCM-24A	DPST-NO	24 VAC,50/60 Hz	75 Ω
DC OPERATED PLUG-IN WITH PUSH BUTTON 3mm GAP, 15 AMP			
388VCXXCM-24D	3PST-NO	24 VDC	240 Ω
388VCXXCM-12D	3PST-NO	12 VDC	120 Ω
388VBXXCM-24D	DPST-NO	24 VDC	240 Ω
388VBXXCM-12D	DPST-NO	12 VDC	120 Ω

RETROFITS POTTER & BRUMFIELD KUGP.
SEE END OF SECTION 1 FOR CROSS REFERENCE

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389 & 389F FLANGE MOUNT POWER RELAYS

FEATURES — BENEFITS

FEATURES	BENEFITS
OVERSIZE CURRENT CARRYING PARTS	RUNS COOLER & LONGER
600 VOLT SPACING	HANDLES MOST LOAD VOLTAGES
FULL RANGE OF CONTACT RATINGS	ELIMINATES "GUESS WORK"
BROAD SELECTION OF MOUNTING STYLES & OPTIONS	CAN BE "CUSTOMIZED" FOR UNIQUE SITUATIONS

c UL us
UL Recognized
File No. E43641

CSA
168986

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

MANUFACTURED UNDER ISO 9002 & QS 9000

DIELECTRIC STRENGTH CHART (V rms)

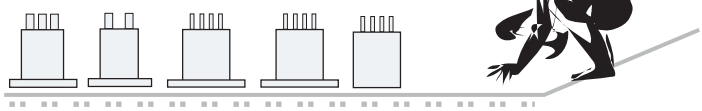
CONTACT CONFIGURATION	ACROSS OPEN CONTACTS	COIL TO CONTACTS	POLE TO POLE
SPST	1000	2200	-
DPDT	1000	2200	2200
3PDT	1000	1600	1600
SPDT (DB and DM)	1500	2200	-

STANDARD SIDE FLANGE COVER

389F WITH PUSH BUTTON AND FLAG

OPTIONAL TOP FLANGE COVER

OPTIONAL DIN COVER



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	3.5
Coil Power DC:	W	1.44
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy gold flashed
Contact Rating AC Amperes (AC1):	A	20, 25, 30
		see load tables
Pilot Duty:		A600, B600
VA Rating Make:	VA	600
VA Rating Break:	VA	60
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1600
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	1600
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500

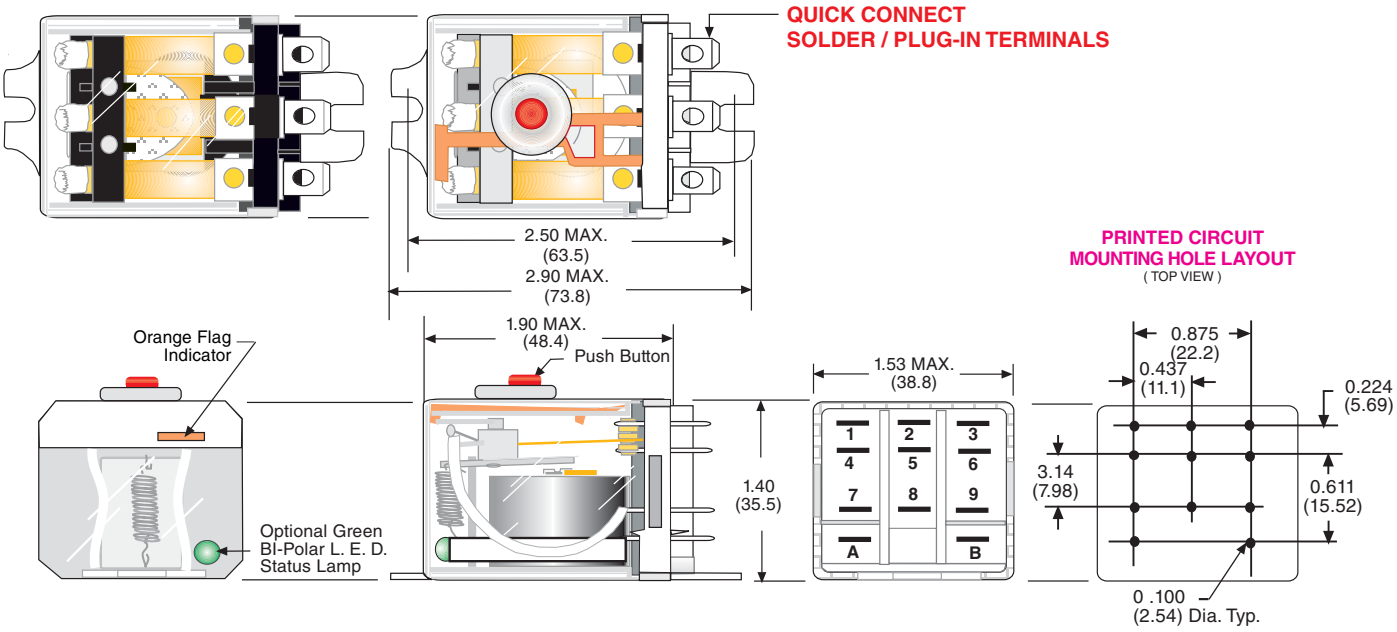
	UNITS	
TEMPERATURE		
Operating, AC Lower:	°C	-30
Operating, AC Upper:	°C	+65
Operating, DC Lower:	°C	-30
Operating, DC Upper:	°C	+50
Storage, Lower:	°C	-30
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.250, 0.09 x 0.032 (6.35, 2.29 x 0.81)
Weight:	grams	88

389 & 389F FLANGE MOUNT POWER RELAYS

20, 25 & 30 AMPS

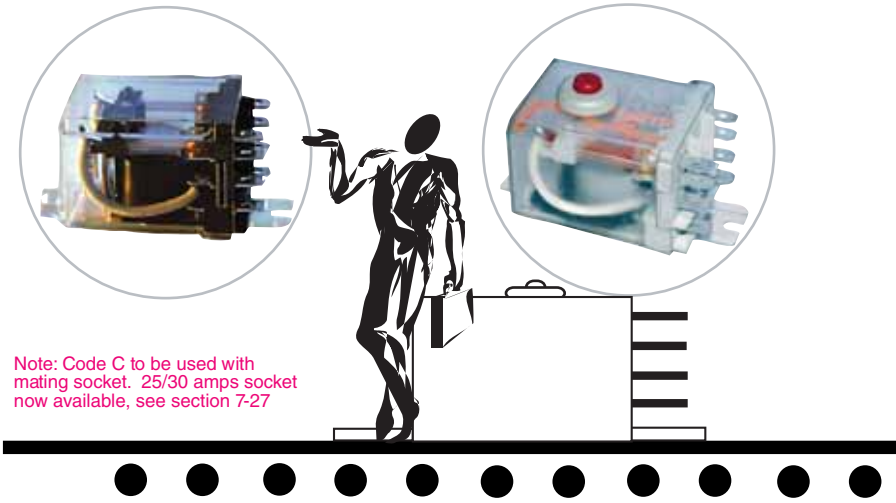
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



CLASS 389 LOAD RATINGS

CONTACT CONFIGURATION	CURRENT ORHORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
SPDT	13A	28	DC	RESISTIVE
	20A	15	DC	RESISTIVE
	25A	300	50/60 Hz	RESISTIVE
	5A	600	50/60 Hz	RESISTIVE
	20A	277	50/60 Hz	BALLAST
	1HP	120	50/60 Hz	MOTOR
	1-1/2HP	208/240	50/60 Hz	MOTOR
	1HP	480/600	50/60 Hz	MOTOR
	660VA	120	50/60 Hz	PILOT DUTY
	960VA	240	50/60 Hz	PILOT DUTY
	B600		50/60Hz	PILOT DUTY
	13A	28	DC	RESISTIVE
	20A	15	DC	RESISTIVE
DPDT	25A	300	50/60 Hz	RESISTIVE
	5A	600	50/60 Hz	RESISTIVE
	20A	277	50/60 Hz	BALLAST
	1HP	120	50/60 Hz	MOTOR
	1-1/2HP	208/240	50/60 Hz	MOTOR
	1HP	480/600	50/60 Hz	MOTOR
	660VA	120	50/60 Hz	PILOT DUTY
	960VA	240	50/60Hz	PILOT DUTY
	B600		50/60Hz	PILOT DUTY
	13A	28	DC	RESISTIVE
	15A	28	DC (NO)	RESISTIVE
	20A	15	DC	RESISTIVE
	20A	150	50/60 Hz	RESISTIVE
3PDT	††15A	250	50/60 Hz	RESISTIVE
	†10A	300	50/60 Hz	RESISTIVE
	20A	150	50/60 Hz	BALLAST
	6-2/3A	277	50/60 Hz	BALLAST
	1/2HP	120	50/60Hz	MOTOR
	1/2HP	208/240	50/60 Hz	MOTOR
	1HP	240	50/60 Hz	MOTOR
	3/4HP	120	50/60Hz	MOTOR
	470VA	120/240	50/60Hz	PILOT DUTY
	B300		50/60Hz	PILOT DUTY



Note: Code C to be used with mating socket. 25/30 amps socket now available, see section 7-27

CLASS 389D LOAD RATINGS

CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
SPST (NO-DM)	30A	28	DC	RESISTIVE
	30A	300	50/60 Hz	RESISTIVE
	10A	600	50/60 Hz	RESISTIVE
	1HP	120	50/60 Hz	MOTOR
	1-1/2HP	200 thru 600	50/60 Hz	MOTOR
	765VA	120	50/60 Hz	PILOT DUTY
	960VA	240,480,600	50/60 Hz	PILOT DUTY
	A600		50/60 Hz	PILOT DUTY
SPDT (DB and DM)	25 A	277	50/60 Hz	BALLAST

†† UL APPLIANCE RATED. ALL OTHER RATINGS NOT SO MARKED ARE INDUSTRIAL RATED

† CSA RATING ONLY, NOT UL

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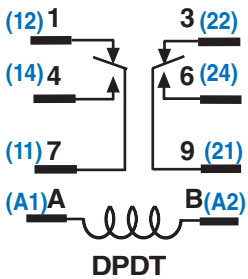
389 & 389F FLANGE MOUNT POWER RELAYS

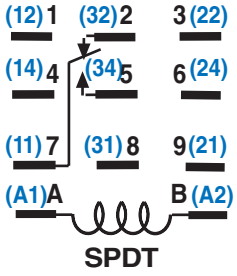
Magnecraft Struthers-Dunn

20, 25 & 30 AMPS

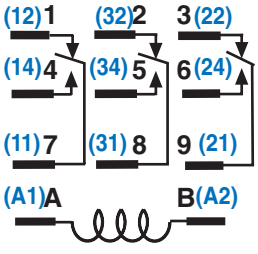
WIRING DIAGRAM
(VIEWED FROM PIN END)



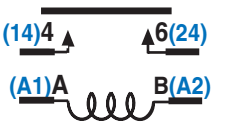
DPDT



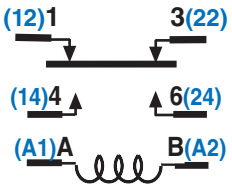
SPDT



3PDT



SPST-NO-DM



SPDT-NC-NO-DB-DM

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

ORDERING CODE

389F	XCX		C1		M	-120A

CLASS:
FLAG INDICATOR
STANDARD FEATURE

CONTACT CONFIGURATION:
DPDT: **XBX**, 3PDT: **XCX**

OPTIONAL:
MAGNETIC BLOWOUT:
CODE 69 (XBX ONLY)

CONSTRUCTION STYLE:
* ENCLOSED, PLAIN COVER: **CODE C**
ENCLOSED, FLANGE COVER: **CODE C1**
ENCLOSED TOP FLANGE MOUNT: **CODE C3**
ENCLOSED DIN MOUNT: **CODE C4**

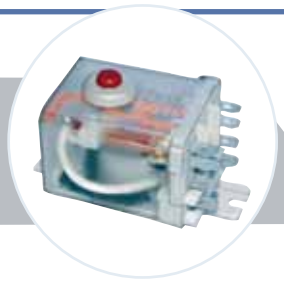
TERMINAL STYLE:
0.250 QUICK CONNECT
SOLDER TERMINALS: **NO CODE**
PRINTED CIRCUIT TERMINALS: **CODE T**

OPTIONS:
BI - POLAR L.E.D. STATUS LAMP: **CODE L**
PUSH BUTTON: **CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

* Note: Code C to be used with mating socket. 25/30 amps socket now available, see section 7-27

389



389F

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 25 AMP			
389FXBXC1M-240A	DPDT	220/240 VAC, 50/60Hz	7200 Ω
389FXBXC1M-120A	DPDT	110/120 VAC,50/60Hz	1700 Ω
AC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 20 AMP			
389FXCXC1M-240A	3PDT	220/240 VAC, 50/60Hz	4600 Ω
389FXCXC1M-120A	3PDT	110/120 VAC, 50/60Hz	1200 Ω
DC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 25 AMP			
389FXBXC1M-12D	DPDT	12 VDC	100 Ω
389FXBXC1M-24D	DPDT	24 VDC	400 Ω
DC OPERATED FLANGE MOUNT WITH PUSH BUTTON, 20 AMP			
389FXCXC1M-12D	3PDT	12 VDC	100 Ω
389FXCXC1M-24D	3PDT	24 VDC	400 Ω

RETROFITS SCHRACK RM.
SEE END OF SECTION 1 FOR CROSS REFERENCE

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED FLANGE MOUNT, 30 AMP			
W389ADCX-4	SPST-NO (DM)	110/120 VAC,50/60Hz	1100 Ω
W389ADCX-5	SPST-NO (DM)	220/240 VAC,50/60Hz	4300 Ω
W389ADZCX-3	SPDT-NO-NC (DB-DM)	24 VAC,50/60Hz	44 Ω
W389ADZCX-4	SPDT-NO-NC (DB-DM)	110/120 VAC,50/60Hz	1100 Ω
DC OPERATED FLANGE MOUNT, 30 AMP			
W389DCX-2	SPST-NO (DM)	12 VDC	100 Ω
W389DCX-3	SPST-NO (DM)	24 VDC	400 Ω
W389DZCX-2	SPST-NO-NC (DB-DM)	12 VDC	100 Ω
W389DZCX-3	SPST-NO-NC (DB-DM)	24VDC	400 Ω
AC OPERATED FLANGE MOUNT, 25 AMP			
W389ACX-4	SPDT	110/120 VAC,50/60Hz	1700 Ω
W389ACX-8	DPDT	24 VAC,50/60Hz	72 Ω
W389ACX-9	DPDT	110/120 VAC,50/60Hz	1700 Ω
W389ACX-10	DPDT	220/240 VAC,50/60Hz	7200 Ω
AC OPERATED FLANGE MOUNT, 20 AMP			
W389ACX-14	3PDT	110/120 VAC,50/60Hz	1200 Ω
W389ACX-15	3PDT	220/240 VAC,50/60Hz	4600 Ω
DC OPERATED FLANGE MOUNT, 25 AMP			
W389CX-2	SPDT	12 VDC	100 Ω
W389CX-3	SPDT	24VDC	400 Ω
W389CX-7	DPDT	12 VDC	100 Ω
W389CX-8	DPDT	24VDC	400 Ω
DC OPERATED FLANGE MOUNT, 20 AMP			
W389CX-12	3PDT	12 VDC	100 Ω
W389CX-13	3PDT	24VDC	400 Ω

RETROFITS POTTER & BRUMFIELD KUMP & KUHP.
SEE END OF SECTION 1 FOR CROSS REFERENCE

300 HIGH CURRENT & HIGH VOLTAGE POWER RELAYS

UL Recognized
File No. E13224

50758

COMPLIES WITH REQUIREMENTS OF

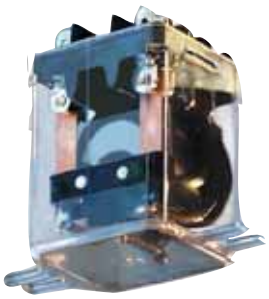
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
2 MILLIMETER CONTACT GAPS AND 8 MILLIMETER CREEPAGE AND CLEARANCE	MEETS INTERNATIONAL REQUIREMENTS.
WIDE SPACING BETWEEN STATIONARY CONTACT TERMINALS	CLEARANCE FOR FULLY BOOTED QUICK CONNECT TERMINALS
ARC BARRIERS BETWEEN CONTACTS	IMPROVED DIELECTRIC STRENGTH BETWEEN CONTACT SETS.
OPTIONAL BLOWOUT MAGNET	HIGH VOLTAGE DC SWITCHING
IMPROVED DIELECTRIC STRENGTH BETWEEN CONTACT	4000 Vrms DIELECTRIC BETWEEN MUTUALLY INSULATED CONDUCTIVE ELEMENTS AND FRAME.
WIDE SELECTION OF MOUNTING OPTIONS	ALLOWS INSTALLATIONS TO BE "CUSTOMIZED"

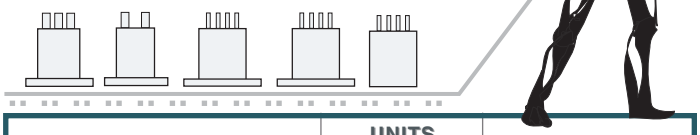
MANUFACTURED UNDER ISO 9002 & QS 9000

STANDARD SIDE FLANGE COVER

OPTIONAL TOP FLANGE MOUNT COVER



OPTIONAL DIN MOUNT COVER



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	3
Coil Power DC:	W	2
Insulation System Per UL Standard 1446:		Class B (130 ºC) or Class F (155 ºC)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy gold flashed
Contact Rating AC Amperes (AC1):	A	30 / 20 / 15
Contact Rating AC Voltage:	V	277 / 600
Contact Rating DC Amperes (DC1):	A	30
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1 @ 120
Horse Power (AC):	HP	2 @ 208 - 600
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	20
Release Time:	ms	15

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	4000
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	1000
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-30
Operating, AC Upper:	ºC	+60
Operating, DC Lower:	ºC	-30
Operating, DC Upper:	ºC	+50
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.250, 0.09 x 0.032 (6.35, 2.29 x 0.81)
Weight:	grams	85

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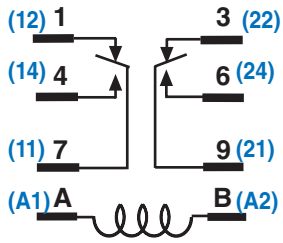
300 HIGH CURRENT & HIGH VOLTAGE POWER RELAY

Magnecraft Struthers-Dunn Your Contact for Industrial Relays

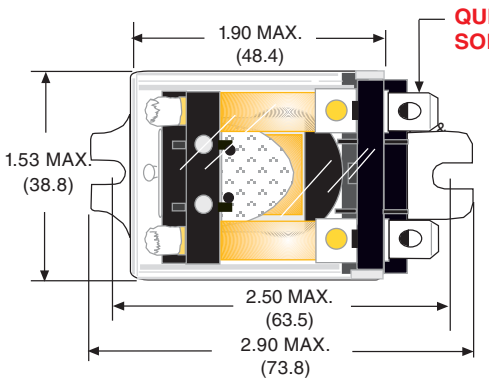
DPDT, UP TO 30 AMPS
UP TO 600 VAC OR 150 VDC

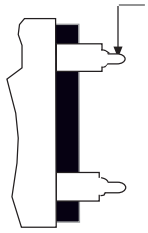
WIRING DIAGRAM
(VIEWED FROM PIN END)



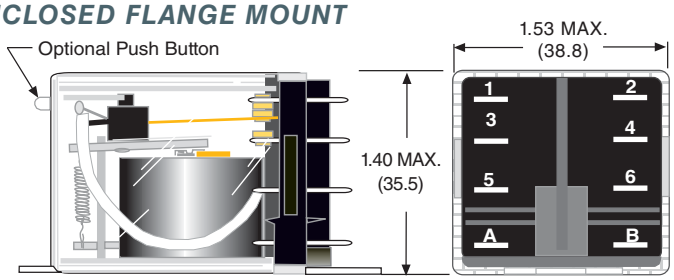
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

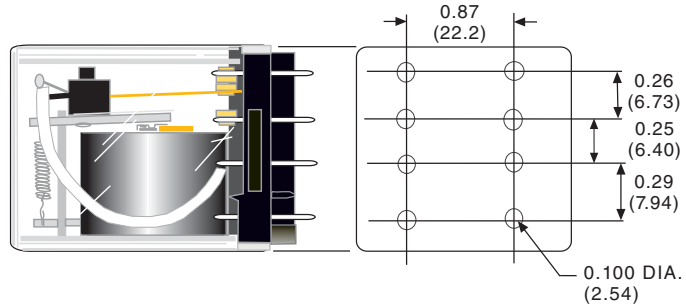




ENCLOSED FLANGE MOUNT



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



ORDERING CODE

F	300	XBX		C1		LM	-24D

TEMPERATURE RATING:
130°C COIL (CLASS B)**: NO CODE**
155°C COIL (CLASS F)**: CODE F**

CLASS:

CONTACT CONFIGURATION:
DPDT**: XBX**
SPDT-DB-DM**: XHX**

OPTIONAL:
MAGNETIC BLOWOUT **:CODE 69**

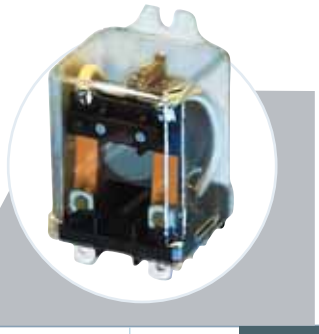
CONSTRUCTION STYLE:
* ENCLOSED, PLAIN COVER**: CODE C**
ENCLOSED, FLANGE COVER: **CODE C1**
ENCLOSED TOP FLANGE MOUNT**: CODE C3**
ENCLOSED DIN MOUNT**: CODE C4**

TERMINAL STYLE:
QUICK CONNECT SOLDER TERMINALS**: NO CODE**
PRINTED CIRCUIT TERMINALS**: CODE T**

OPTIONS:
BI - POLAR L.E.D. STATUS LAMP**: CODE L**
PUSH BUTTON**: CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

* Note: Code C recommended to be used with printed circuit terminals only.



STANDARD PART NUMBERS	CONTACT CONFIGURATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED, 30 AMP			
300XBXC1-240A	DPDT	220/240 VAC, 50/60Hz	5400 Ω
300XBXC1-120A	DPDT	110/120 VAC, 50/60Hz	1270 Ω
300XBXC1-24A	DPDT	24 VAC, 50/60Hz	54 Ω
300XBXC1-12A	DPDT	12 VAC, 50/60Hz	13.5 Ω
DC OPERATED, 30 AMP			
300XBXC1-110D	DPDT	110/125 VDC	6300 Ω
300XBXC1-24D	DPDT	24 VDC	300 Ω
300XBXC1-12D	DPDT	12 VDC	75 Ω
DC OPERATED, 30 AMP WITH MAGNETIC BLOWOUT			
300XBX69C1-110D	DPDT	110/125 VDC	6300 Ω
300XBX69C1-24D	DPDT	24 VDC	300 Ω
300XBX69C1-12D	DPDT	12 VDC	75 Ω

9A & 92 FLANGE MOUNT MINIATURE RELAYS

UL CONTACT LOAD RATINGS TABLE FOR 9A

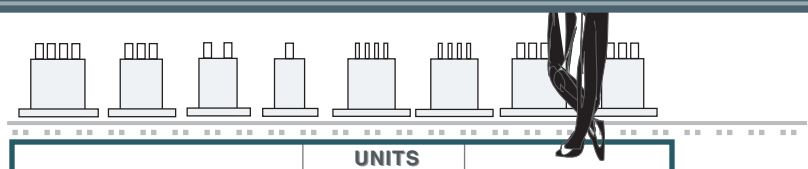
c UL us
UL Recognized
File No. E43641

LOAD	LOAD VOLTAGE	SPST	SPDT	
		N.O. LOAD	N.O.LOAD	N.C. LOAD
GENERAL PURPOSE	240 VAC	30 AMP	20 AMP	10 AMP
RESISTIVE	28 VDC	30 AMP	30 AMP	10 AMP
MOTOR	125 VAC	1 HP	1 HP	1/4 HP
	240 VAC	2 HP	2 HP	1/2 HP
FLA/LRA ‡	120 VAC	22/98 AMP	22/98 AMP	-
	240 VAC	30/80 AMP	30/80 AMP	12/30 AMP
TUNGSTEN	240 VAC	5 AMP	5 AMP	-
BALLAST	277 VAC	10 AMP	10 AMP	3 AMP
PILOT DUTY	240 VAC	470 VA	470 VA	275 VA

‡ FLA = Full load amps, LRA = Locked rotor amps.

UL CONTACT LOAD RATINGS TABLE FOR 92

RATING	LOAD VOLTAGE	DPST-N.O. & DPDT	DPDT
		N.O. LOAD	N.C. LOAD
RESISTIVE LOAD	120/277 VAC	30 AMP	3 A MP
	28 VDC	20 AMP	3 A MP
MOTOR	120 VAC	1 HP	-
	240 VAC	3 HP	-
TUNGSTEN	120 VAC	10 AMP	-
LRA/FLA‡	240 VAC	96/22	-
		110/25.3	-
PILOT DUTY	240 VAC	3 AMP	-



CLASS "F" INSULATION 155 ºC. FLANGE MOUNTED. EPOXY SEALED WITH REMOVABLE TAPE SEAL OVER VENT HOLE (REMOVED AFTER CLEANING)

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	80
Pull-in Voltage DC:≤	% of nominal	75
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	120
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	9A: 2.8, 92: 4
Coil Power DC:	W	9A: 1, 92: 1.7
Insulation System Per UL Standard 1446:		Class F (155 ºC)
Duty:		Continuous
CONTACTS		
Contact Configuration:		9A: SPST-NO & SPDT 92: DPST-NC & DPDT
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):	A	30
Contact Rating AC Voltage:	V	9A: 240, 92: 277
Contact Rating DC Amperes (DC1):	A	9A: 30, 92: 20
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	9A: 1@120, 2@ 240 VAC
Horse Power (AC):	HP	92: 1@120, 3@ 240 VAC
Pilot Duty (60 Hz):	VA	9A: 470, 92: 720
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	20
Release Time:	ms	20

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	9A: Not applicable 92: 2500
Contacts to Frame:	V rms	Not Applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10
SHOCK RESISTANCE		
Functional:	g's	20
TEMPERATURE		
Operating, AC Lower:	ºC	-55
Operating, AC Upper:	ºC	+85
Operating, DC Lower:	ºC	-55
Operating, DC Upper:	ºC	+85
Storage, Lower:	ºC	-55
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	9A: 10,000,000 92: 5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	92: 0.250 x 0.032 (6.35 x 0.81)
Weight:	grams	9A: 33, 92: 86

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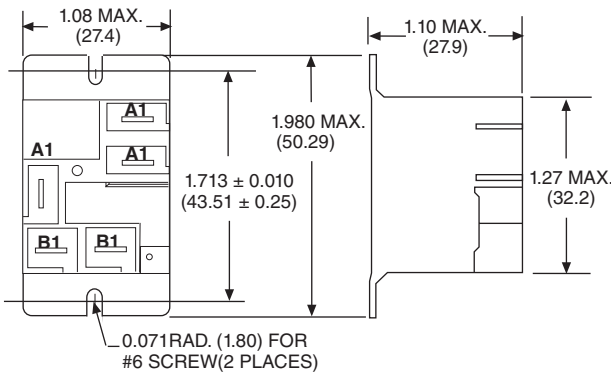
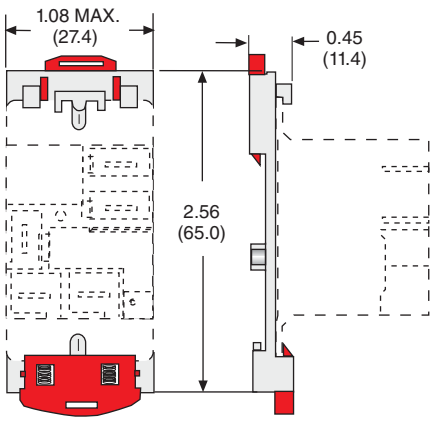
9A FLANGE MOUNT MINIATURE RELAY

SPST-N.O. & SPDT, 30 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



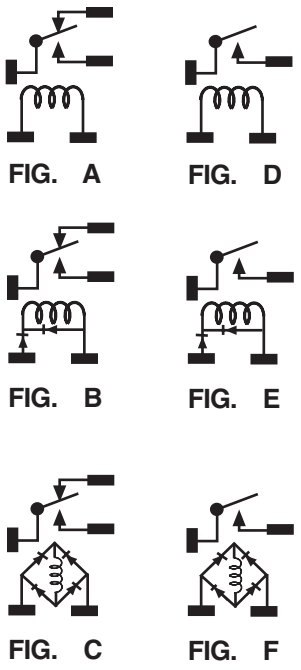
WITH OPTIONAL DIN ADAPTER



A1 = 0.250 X 0.032 (6.35 X 0.81)
Quick Connect Terminal

B1 = 0.187 x 0.020 (4.78 x 0.508)
Quick Connect Terminal

WIRING DIAGRAM
(VIEWED FROM PIN END)



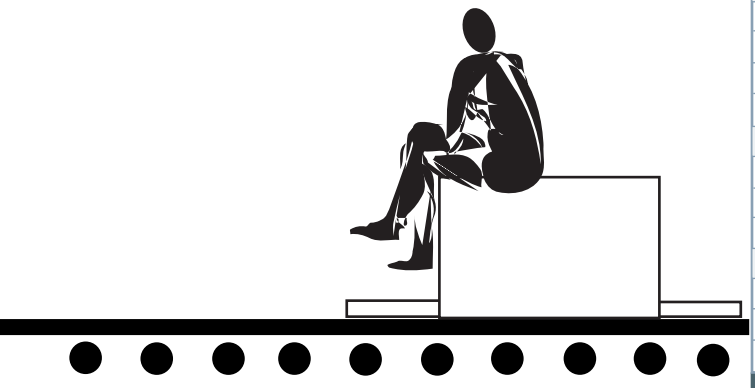
STANDARD
FLANGE COVER

OPTIONAL DIN
ADAPTER
16-9A DIN-1

ORDERED AND SHIPPED
SEPARATELY

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	FIG.	COIL MEASURED @ 25 °C	
			NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
FLANGE MOUNT, 30 AMP				
W9AS1D52-5	SPST-NO	A	5 VDC	25 Ω
W9AS1D52-12	SPST-NO	A	12 VDC	144 Ω
W9AS1D52-24	SPST-NO	A	24 VDC	576 Ω
W9AS1D52-110	SPST-NO	A	110/125 VDC	12100 Ω
FLANGE MOUNT, 20 AMP				
W9AS5D52-5	SPDT	D	5 VDC	25 Ω
W9AS5D52-12	SPDT	D	12 VDC	144 Ω
W9AS5D52-24	SPDT	D	24 VDC	576 Ω
W9AS5D52-110	SPDT	D	110/125 VDC	12100 Ω
FLANGE MOUNT, 30 AMP				
W9AS1A52-24	SPST-NO	F	24 VAC, 50/60 Hz	500 Ω
W9AS1A52-120	SPST-NO	E	120 VAC, 50/60 Hz	3,000 Ω
W9AS1A52-240	SPST-NO	E	240 VAC, 50/60 Hz	12,100 Ω
FLANGE MOUNT, 20 AMP				
W9AS5A52-24	SPDT	C	24 VAC, 50/60 Hz	500 Ω
W9AS5A52-120	SPDT	B	120 VAC, 50/60 Hz	3,000 Ω
W9AS5A52-240	SPDT	B	240 VAC, 50/60 Hz	12,100 Ω

MEETS UL 873 AND UL 508
SPACING - (8MM) THRU AIR,
(9.5 MM) OVER SURFACE



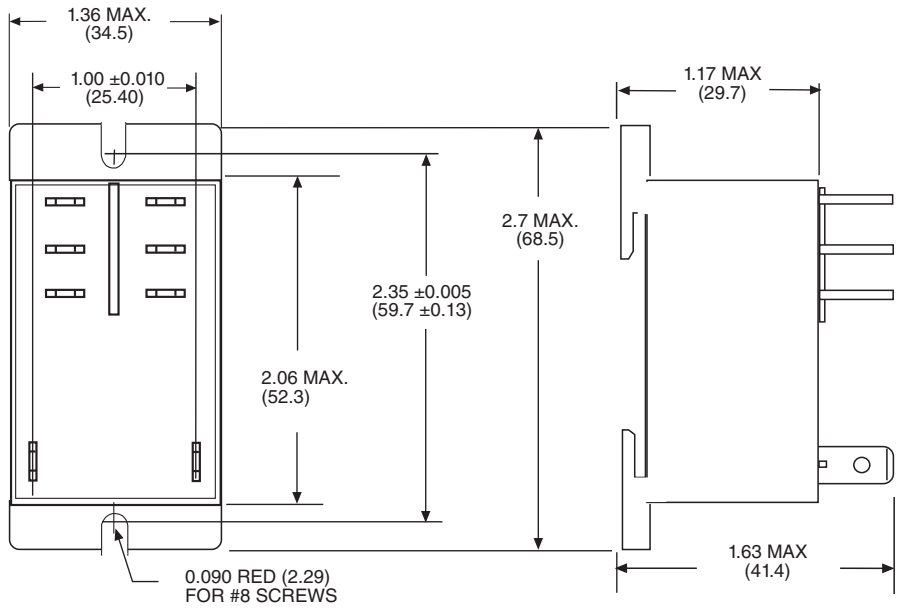
92 FLANGE / DIN MOUNT POWER RELAY

Magnecraft Struthers-Dunn Your Contact for Industrial Relays

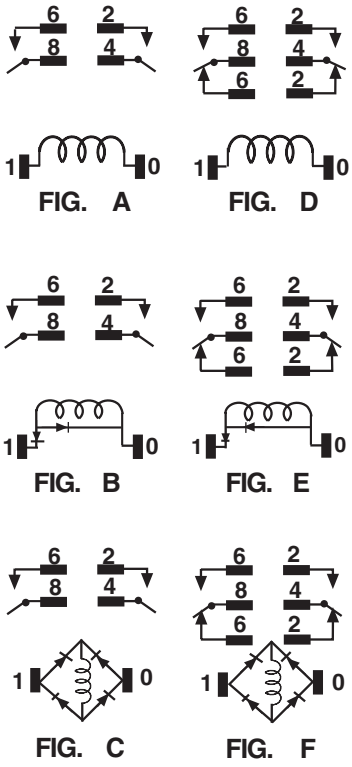
DPST-N.O. & DPDT 30 AMPS

NEW

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



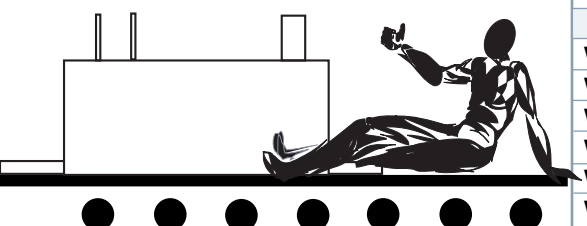
WIRING DIAGRAM
(VIEWED FROM PIN END)



IMPROVED FLANGE COVER WITH DIN

MEETS UL 873, UL 508 AND UL 1950 - (0.125 MM) THRU AIR, (0.25 MM) OVER SURFACE

DIN MOUNT PART NUMBERS	SUPERCEDES PART NUMBERS	FIG.	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED COIL FLANGE MOUNT, 30 AMP					
DUAL MARKED					
W92S7A22D-24	W92S7A22-24	C	DPST-NO	24 VAC, 50/60 Hz	250 Ω
W92S7A22D-120	W92S7A22-120	B	DPST-NO	120 VAC, 50/60 Hz	1,600 Ω
W92S7A22D-240	W92S7A22-240	B	DPST-NO	240 VAC (50/60 Hz)	6,500 Ω
W92S11A22D-24	W92S11A22-24	F	DPDT	24 VAC, 50/60 Hz	250 Ω
W92S11A22D-120	W92S11A22-120	E	DPDT	120 VAC, 50/60 Hz	1,600 Ω
W92S11A22D-240	W92S11A22-240	E	DPDT	240 VAC, 50/60 Hz	6,500 Ω
DC OPERATED COIL FLANGE MOUNT, 30 AMP					
W92S7D22D-12	W92S7D22-12	A	DPST-NO	12 VDC	86 Ω
W92S7D22D-24	W92S7D22-24	A	DPST-NO	24 VDC	350 Ω
W92S7D22D-110	W92S7D22-110	A	DPST-NO	110/125 VDC	7,255 Ω
W92S11D22D-12	W92S11D22-12	D	DPDT	12 VDC	86 Ω
W92S11D22D-24	W92S11D22-24	D	DPDT	24 VDC	350 Ω
W92S11D22D-110	W92S11D22-110	D	DPDT	110/125 VDC	7,255 Ω



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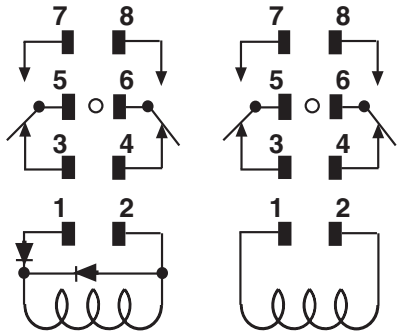
21/136 FLASH TRANSFER POWER RELAY

DPDT, 30 AMPS

UL Recognized
File No. E43641

168986

WIRING DIAGRAM
(VIEWED FROM PIN END)



RECTIFIED COIL

BENEFITS	MAGNECRAFT: W21ACPX-2 (UL RECOGNIZED)	MIDTEX: TYPE 136 (NOT UL RECOGNIZED)
CURRENT RATING:	30 AMPS @ 120 / 240 VAC, 20 AMPS @ 28 VDC	15 AMPS @ 120 VAC, 15 AMPS @ 28 VDC
HORSEPOWER RATING:	1-1/2 HP @ 120 VAC, 2 HP @ 240 VAC	1/4 HP @ 120 VAC, NOT UL RATED
TUNGSTEN LOAD RATING:	2.4 KW @ 120 / 240 VAC	1 KW @ 120 / 240 VAC
ELECTRICAL LIFE @ RATED LOAD:	200,000 OPERATIONS	100,000 OPERATIONS

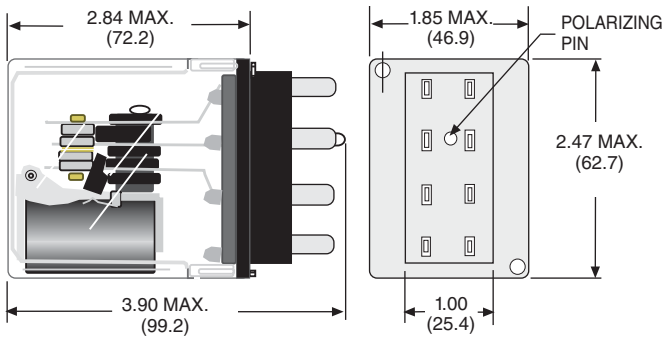
MANUFACTURED UNDER ISO 9001

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	65
Pull-in Voltage DC:≤	% of nominal	Not Applicable
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	Not Applicable
Maximum Voltage:	% of nominal	10
Resistance:	% ±	Not Applicable
Insulation System Per UL Standard 1446:		Class B (130 °C)
CONTACTS		
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):	A	30
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	20
Contact Rating DC Voltage:	V	28
Horse Power (AC):	Hp	1 1/2 @ 120 V
Horse Power (AC):	Hp	2 @ 240 V
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	20
Release Time:	ms	20
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	Not Applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	Not Applicable
Operating, AC Upper:	°C	Not Applicable
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+80
Storage, Lower:	°C	-40
Storage, Upper:	°C	+130
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	200,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.250 x 0.032 (6.35 x 0.81)
Weight:	grams	205

EXCEEDS NEMA STD. TS 2-1992 APPROVED BY D.O.T FOR:
California Minnesota Georgia New York Illinois Texas Oregon Colorado Maryland MissouriNorth Carolina

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Mating Sockets
70-TRF8-1, 70-TRB8-1 : SOLDER
See section 7

STANDARD PART NUMBER	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C: NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C: NOMINAL POWER
AC RECTIFIED - PLUG-IN, 30 AMP			
W21ACPX-2	DPDT	110/120 VAC, 50/60Hz	4.0 VA
136-627200	DPDT	110/120 VAC, 50/60Hz	10 VA

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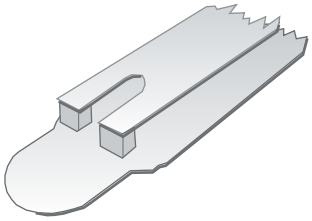
67 MINIATURE ENCLOSED INDUSTRIAL RELAY

UL CONTACT LOAD RATINGS TABLE

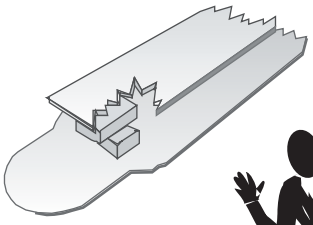
c UL us
UL Recognized
File No. E52197

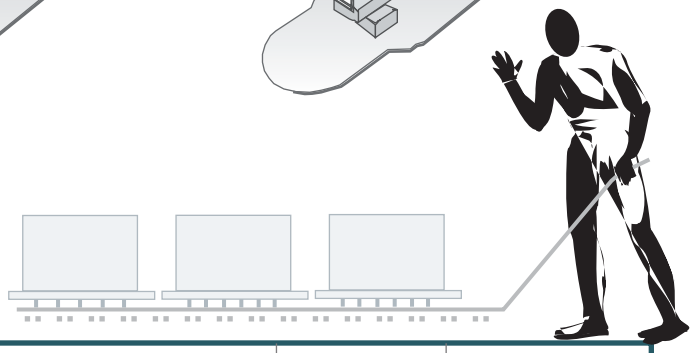
CONTACT CONFIGURATION	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
1 POLE THRU 6 POLES	5 AMP	120 VAC	50/60 Hz	RESISTIVE
	5 AMP	28 VDC	DC	RESISTIVE
	3 AMP	120 VAC	50/60 Hz	RESISTIVE
	3 AMP	28 VDC	DC	RESISTIVE

BIFURCATED CONTACTS
(LOW LEVEL APPLICATIONS)



STANDARD CONTACTS
(5 AMP CROSS BAR)





STANDARD CLASS 67 MINIATURE INDUSTRIAL RELAYS ARE DESIGNED FOR APPLICATIONS REQUIRING DPDT TO 6PDT CONTACTS WHERE SPACE AND WEIGHT ARE OF PRIME IMPORTANCE. SHATTER RESISTANT, SEE-THRU PLASTIC COVERS ARE UTILIZED TO PROTECT AGAINST DUST, TAMPERING AND ELECTRICAL SHOCK. THE 67T MODELS HAVE BIFURCATED CONTACTS AND ARE DESIGNED FOR LOW LEVEL SWITCHING APPLICATIONS.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	80
Pull-in Voltage DC:≤	% of nominal	75
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	120
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	2.75
Coil Power DC:	W	0.45
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):		5/3
Contact Rating AC Voltage:	A	120 / 120
Contact Rating DC Amperes (DC1):	V	5/3
Contact Rating DC Voltage:	A	28 / 28
Minimum Recommended Load:	V	100 @ 5 VDC
	ma	or 0.5 W
TIMING		
Operate Time:	ms	25
Release Time:	ms	20

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	1000
Contacts to Frame:	V rms	1000
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10
SHOCK RESISTANCE		
Functional:	g's	20
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+60
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+60
Storage, Lower:	°C	-40
Storage, Upper:	°C	+130
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	Polycarbonate
Cover Protection Category:	IP	40
Terminals:	Inch (mm)	0.10, 0.04 x 0.01 (2.54, 1.01 x 0.25)
Weight:	grams	22 to 40

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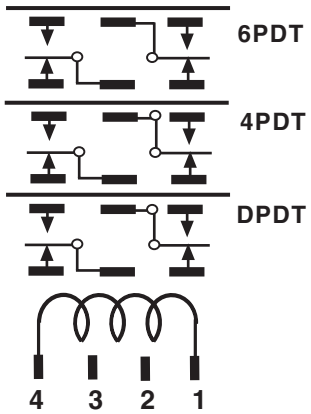
Magnecraft Struthers-Dunn

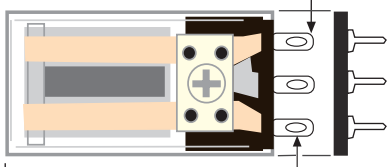
DPDT THRU 6PDT 3 & 5 AMPS

WIRING DIAGRAM

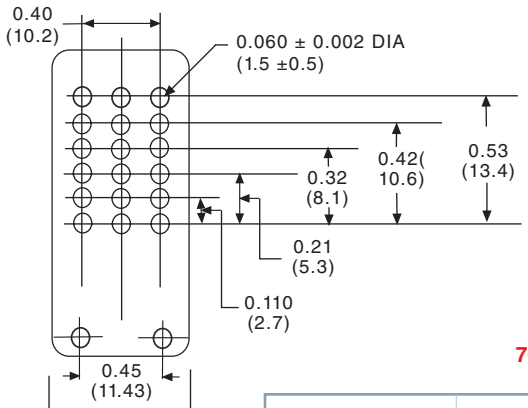


OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

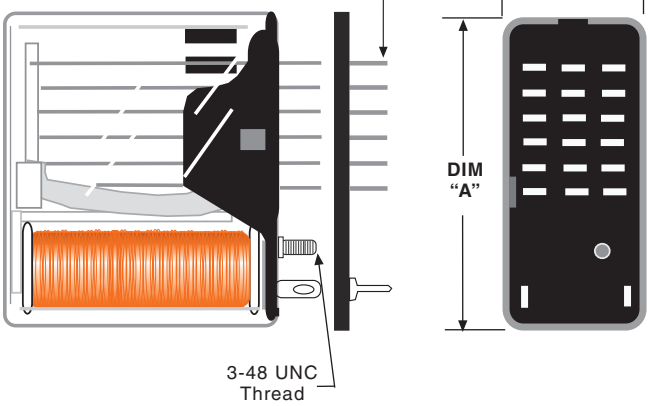
SOLDER / PLUG-IN TERMINALS



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW)



PRINTED CIRCUIT TERMINALS



Mating Sockets
70-303-1, 70-305-1, 70-307-1: SOLDER
70-304-1, 70-306-1, 70-308-1: PRINTED CIRCUIT
See section 7

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
DC OPERATED COIL - SOLDER/PLUG-IN, 5 AMP			
W67RCSX-1	DPDT	5 VDC	52 Ω
W67RCSX-2	DPDT	12 VDC	185 Ω
W67RCSX-3	DPDT	24 VDC	700 Ω
W67RCSX-4	DPDT	48 VDC	2,500 Ω
W67RCSX-5	DPDT	110/125 VDC	15,000 Ω
W67RCSX-6	4PDT	5 VDC	52 Ω
W67RCSX-7	4PDT	12 VDC	185Ω
W67RCSX-8	4PDT	24 VDC	700 Ω
W67RCSX-9	4PDT	48 VDC	2,500Ω
W67RCSX-10	4PDT	110/125 VDC	15,000 Ω
W67RCSX-12	6PDT	12 VDC	90Ω
W67RCSX-13	6PDT	24 VDC	430 Ω
DC OPERATED COIL-BIFURCATED CONTACTS, 3 AMP			
W67TRCSX-2	DPDT	12 VDC	185 Ω
W67TRCSX-3	DPDT	24 VDC	700 Ω
W67TRCSX-7	4PDT	12 VDC	185 Ω
W67TRCSX-8	4PDT	24 VDC	700 Ω
W67TRCSX-12	6PDT	12 VDC	90 Ω
W67TRCSX-13	6PDT	24 VDC	430 Ω
DC OPERATED PRINTED CIRCUIT, 5 AMP			
W67RPCX-2	DPDT	12 VDC	185 Ω
W67RPCX-3	DPDT	24 VDC	700 Ω
W67RPCX-7	4PDT	12 VDC	185 Ω
W67RPCX-8	4PDT	24 VDC	700 Ω
W67RPCX-12	6PDT	12 VDC	90 Ω
W67RPCX-13	6PDT	24 VDC	430 Ω
AC OPERATED COIL - SOLDER/PLUG-IN, 5 AMP			
W67ARCSX-5	DPDT	110/120 VAC, 50/60Hz	9000 Ω
W67ARCSX-10	4PDT	110/120 VAC, 50/60Hz	8000 Ω
W67ARCSX-15	6PDT	110/120 VAC, 50/60Hz	8000 Ω
DC OPERATED COIL ULTRA SENSITIVE -SOLDER/PLUG-IN, 3 AMP			
W67SCSX-1	DPDT	9.4 MADC	1,000 Ω
W67SCSX-2	DPDT	6.4 MADC	2,500 Ω
W67SCSX-3	DPDT	4.5 MADC	5,000 Ω
W67SCSX-6	4PDT	13.7 MADC	1,000 Ω
W67SCSX-7	4PDT	9.1 MADC	2,500 Ω
W67SCSX-8	4PDT	6.5 MADC	5,000 Ω

DIMENSIONS

CONTACT CONFIGU	"A"
6PDT	1.374 (34.9)
4PDT	1.156 (29.4)
DPDT	0.978 (24.8)

RETROFITS POTTER & BRUMFIELD R10.
SEE END OF SECTION 1 FOR CROSS REFERENCE

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219 PLUG-IN RELAY WITH INTEGRAL LOCKING CLIP

UL CONTACT LOAD RATINGS TABLE

CONTACT CONFIGURATION	CURRENT	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
ALL STYLES	10 AMP	120 VAC	50/60 Hz	RESISTIVE
	5 AMP	240 VAC	50/60 Hz	RESISTIVE
	10 AMP	28 VDC	DC	RESISTIVE
	0.5 AMP	125 VDC	DC	RESISTIVE
	3 AMP	120 VAC	50/60 Hz	INDUCTIVE
	1 AMP	240 VAC	50/60 Hz	INDUCTIVE
	3 AMP	28 VDC	DC	INDUCTIVE
	0.1 AMP	125 VDC	DC	INDUCTIVE
SUFFIX "69" WITH BLOWOUT MAGNET FOR DC SWITCHING (NOT UL OR CSA)				
SINGLE MAKE AND DOUBLE MAKE	1.5 AMP	125 VDC	DC	RESISTIVE
	4 AMP	125 VDC	DC	RESISTIVE
	0.5 AMP	250 VDC	DC	RESISTIVE
	1.5 AMP	250 VDC	DC	RESISTIVE
	0.5 AMP	125 VDC	DC	INDUCTIVE
	1.5 AMP	125 VDC	DC	INDUCTIVE
	150 mA	250 VDC	DC	INDUCTIVE
	0.5 AMP	250 VDC	DC	INDUCTIVE

CONTACTS CAN CLOSE ON 30 AMP LOADS AND CARRY 10 AMPS CONTINUOUSLY AT ALL VOLTAGES SHOWN

c US UL Recognized File No. E13224

168986

c UL US LISTED 225G IND. CONT. EQ.

WHEN USED WITH SOCKETS **27390D** OR **33377D**

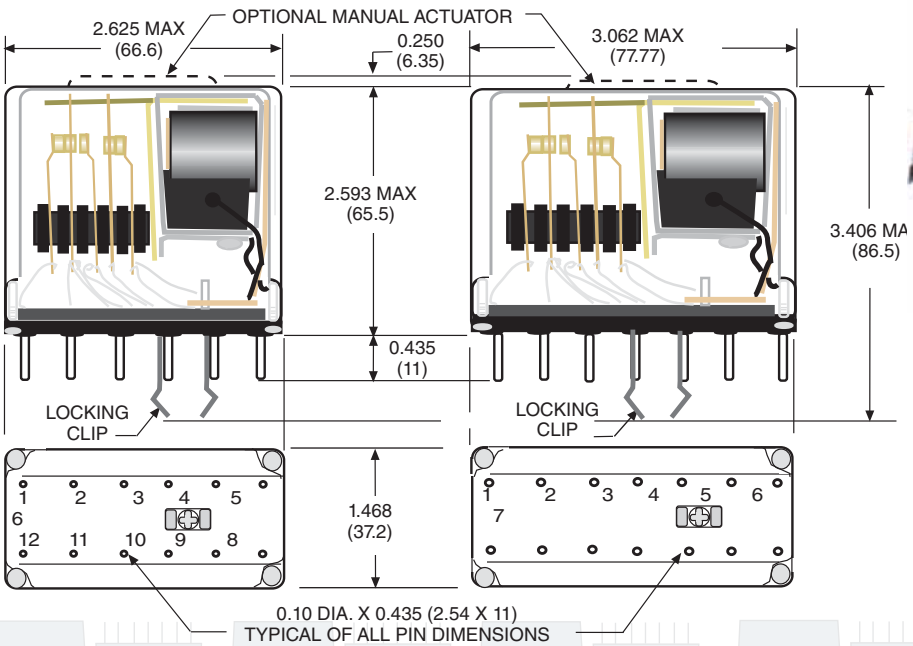
CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

COIL SPECIFICATIONS @ 25ºC

AC RELAYS, 50/60 HZ 5 VA (COIL DATA @ 60HZ)					DC RELAYS, 1.8 WATTS (2.5 W @ 125 VDC)			
Nominal Voltage	Resistance Ohms ±10%	Milliamperes Inrush (Open)	Milliamperes Sealed (Pull-In)	Impedance Ohms	Nominal Voltage	Resistance Ohms ±10%	Milliamperes Cold	Milliamperes Hot
6	1.1	1500	840	7.2	6	15.5	385	304
12	4.2	750	410	27	12	63.5	189	147
24	15.5	375	200	120	24 / 28*	250	96	77
120	540	75	40	2700	32	375	86	62
240	2100	32	17	13,400	115/125*	6200	20	16

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



* 24 VDC & 110 VDC Relays Have Name Plates Stamped 24-28 & 110-125 VDC Respectively. These Relays Operate At 80% Of The Lower Voltages And Operate Within Allowable Temperature Rises At 110% Of Higher Voltages. 250 VDC: Use 125 VDC Relay And Series Resistor (6000 Ω, 5 W) Not Supplied.

THE 219 COIL IS ENCAPSULATED IN THERMO-SET EPOXY FOR PROTECTION. THE BUILT-IN LOCKING CLIP ELIMINATES THE NEED FOR ANY EXTERNAL HOLD-DOWN DEVICE. NUCLEAR QUALIFIED VERSIONS ARE AVAILABLE. PLEASE CONSULT FACTORY.

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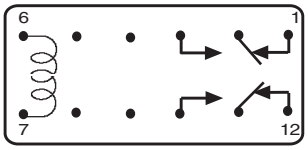
219 PLUG-IN RELAY WITH INTEGRAL LOCKING CLIP

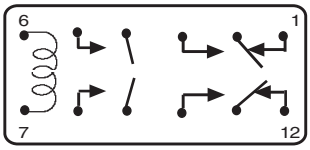
12 & 14 PIN, 10 AMPS

Mating Sockets
27390D, 33377D:
SCREW/PANEL/DIN
See section 7

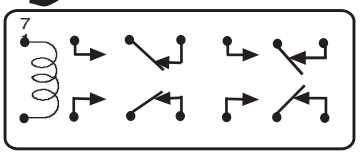
WIRING DIAGRAM
(TOP VIEW)



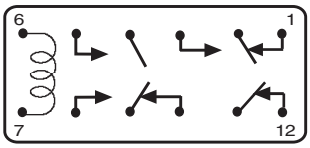
219XBXP
DPDT



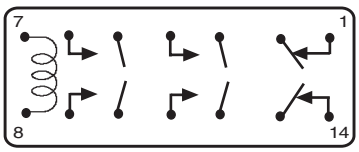
219BBXP
DPDT+2 NO



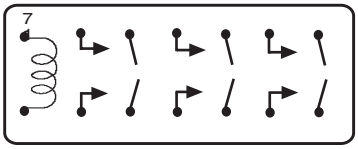
219XDXP
4PDT



219ABAP
DPDT+1NO & 1NC



219DXBP
4P-NO+2P-NC



219FXXP
6P-NO

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Insulation System Per UL Standard 1446:		Class B (130ºC)
Duty:		Continuous
CONTACTS		
Contact Configuration:		to 6PDT
Contact Material:		Silver alloy, gold diffused
Contact Rating AC Amperes (AC1):	A	10/5
Contact Rating AC Voltage:	V	120 / 120
Contact Rating DC Amperes (DC1):	A	10/5
Contact Rating DC Voltage:	V	28 / 28
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	25
Release Time:	ms	20
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	1500
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10
SHOCK RESISTANCE		
Functional:	g's	20
TEMPERATURE		
Operating, AC Lower:	ºC	-40
Operating, AC Upper:	ºC	+80
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+80
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+130
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:	94V-0	polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	241

ORDERING CODE

219	XBX		P	L	-24D

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX**
DPDT +1 POLE: NO & 1 POLE NC: **ABA**
2 POLE: NO & DPDT: **BBX**
4 PDT: **XDX**
6 POLE: NO: **FXX**
4 POLE: NO & 2 POLE: NC: **DXB**

OPTIONAL MAGNETIC BLOWOUT:
CODE 69

OPTIONAL BIFURCATED CONTACTS:
CODE 33

STANDARD FEATURES:
POLYCARBONATE COVER: **CODE P**

OPTIONAL FEATURES:
STATUS LAMP: **CODE L**
MANUAL ACTUATOR: **CODE M**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 /125 **ADD "D" FOR DC COILS**

COIL VOLTAGES & FREQUENCIES MUST BE SPECIFIED.

Make before break and other contact configurations available,

750H OCTAL STYLE HERMETICALLY SEALED RELAY

c UL us
UL Recognized
File No. E43641

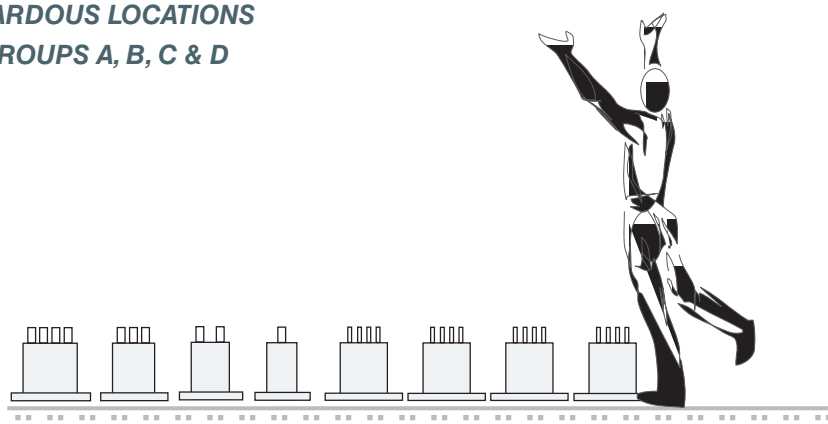
c UL us
LISTED 367G
IND. CONT. EQ.

WHEN USED WITH SOCKETS:
70-464-1, 70-465-1, 70-750D8-1 & 70-750D11-1

CURRENT LIMITED TO RATING OF RELAY OR SOCKET WHICHEVER IS LESS

FEATURES	BENEFITS
VACUUM BAKED & DRY NITROGEN FILLED	REMOVES CONTAMINANTS AND PROVIDES A CLEAN & DRY ATMOSPHERE FOR CONTACTS.
HERMETICALLY SEALED METAL ENCLOSURE	IDEAL FOR USE IN HAZARDOUS LOCATIONS. UL CERTIFIED FOR CLASS 1 DIVISION 2 GROUP A, B, C & D HAZARDS.
PLUG-IN STYLE MOUNTING	WHEN USED WITH 70-464-1, 70-465-1, 70-750D8-1 OR 70-750D11-1 SOCKETS, THE 750H CAN BE DIN RAIL MOUNTED OR PANEL MOUNTED.

CERTIFIED CLASS 1
DIVISION 2 FOR
HAZARDOUS LOCATIONS
UL GROUPS A, B, C & D



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	2.0
Coil Power DC:	W	1.2
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy gold flashed
Contact Rating AC Amperes (AC1):	A	2 Pole-12, 3 Pole-10
Contact Rating AC Voltage:	V	120 / 240
Contact Rating DC Amperes (DC1):	A	10
Contact Rating DC Voltage:	V	30
Horse Power (AC):	HP	1/2 @ 120
Horse Power (AC):	HP	1/3 @ 240
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	15
Release Time:	ms	10

	UNITS	
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1250
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	1250
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-45
Operating, AC Upper:	°C	+55
Operating, DC Lower:	°C	-45
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-45
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:	94V-0	Molded plastic
Enclosure Material:		Steel
Cover Protection Category:	IP	67
Weight:	grams	130

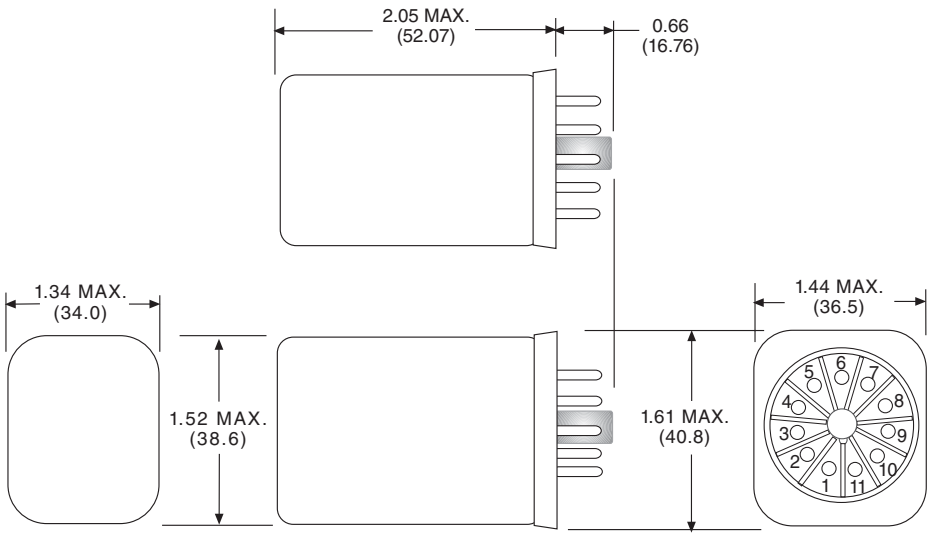
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

750H OCTAL STYLE HERMETICALLY SEALED RELAY

Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

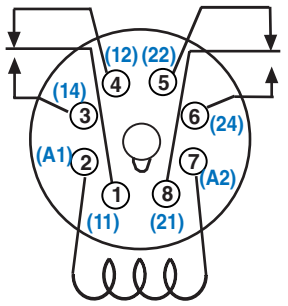
DPDT, 12 AMPS
3PDT, 10 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

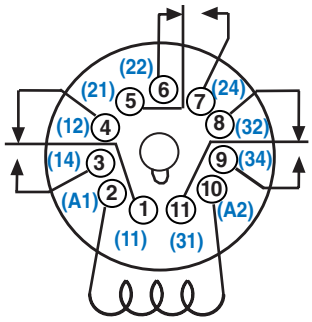


8 PIN OCTAL BASE
NOT SHOWN

WIRING DIAGRAM
(VIEWED FROM PIN END)



8 PIN



11 PIN

ALTERNATE NEMA
OR IEC ( ) NUMBERS
VIEWED FROM
PIN SIDE

Mating Sockets
70-750D8-1, 70-750D11-1,
70-464-1, 70-465-1: SCREW/DIN
70-169-1, 70-170-1: SCREW/PANEL
See Section 7

STANDARD PART NUMBERS		CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C	
NEW PART NUMBER	SUPERCEDES		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED - 8 PIN OCTAL, 12 AMP				
750XBXH-12A		DPDT	12 VAC, 50/60Hz	72 Ω
750XBXH-24A		DPDT	24 VAC, 50/60Hz	1,700 Ω
750XBXH-120A	**W88AHPX-24**	DPDT	110/120 VAC, 50/60Hz	9,100 Ω
DC OPERATED - 8 PIN OCTAL, 12 AMP				
750XBXH-12D	**W88HPX-33**	DPDT	12 VDC	120 Ω
750XBXH-24D	**W88HPX-34**	DPDT	24 VDC	470 Ω
750XBXH-110/125D		DPDT	110/125 VDC	10,000 Ω
AC OPERATED - 11 PIN OCTAL, 10 AMP				
750XCXH-12A		3PDT	12 VAC, 50/60Hz	72 Ω
750XCXH-24A		3PDT	24 VAC, 50/60Hz	1,700 Ω
750XCXH-120A	***W88AHPX-36**	3PDT	110/120 VAC, 50/60Hz	9,100 Ω
DC OPERATED - 11 PIN OCTAL, 10 AMP				
750XCXH-12D		3PDT	12 VDC	120 Ω
750XCXH-24D	***W88HPX-51**	3PDT	24 VDC	470 Ω
750XCXH-110/125D		3PDT	110/125 VDC	10,000 Ω

* *SOCKET CONNECTIONS TO TERMINALS 5 & 6 (21 & 22) MUST BE REVERSED*

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	IDEC	
781XAXM4L-24A	RH1B-L-AC24	
781XAXM4L120A	RH1B-L-AC120	
781XAXM4L-220/230A	RH1B-L-AC240	
781XAXM4L-240A	RH1B-L-AC240	
781XAXM4L-12D	RH1B-L-DC12	
781XAXM4L-24D	RH1B-L-DC24	
781XAXM4L-110D	RH1B-L-DC110	
781XAXTM4L-120A	RH1V2-L-AC120	
781XAXTM4L-12D	RH1V2-L-DC12	
781XAXTM4L-24D	RH1V2-L-DC24	
781XAXC-24A	RH1B-U-AC24	
781XAXC-120A	RH1B-U-AC120	
781XAXC-24D	RH1B-U-DC24	

MAGNECRAFT & STRUTHERS-DUNN	OMRON	RELECO	
782XAXM4L-12A		C7-A10X/AC12	
782XAXM4L-24A		C7-A10X/AC24	
782XAXM4L120A		C7-A10X/AC115	
782XAXM4L-220/230A		C7-A10X/AC230	
782XAXM4L-240A			
782XAXM4L-12D		C7-A10X/DC12	
782XAXM4L-24D		C7-A10X/DC24	
782XAXM4L-110D		C7-A10X/DC110	
782XAXTM4L-12A		C7-A10PX/AC12	
782XAXTM4L-24A		C7-A10PX/AC24	
782XAXTM4L120A		C7-A10PX/AC115	
782XAXTM4L-12D		C7-A10PX/DC12	
782XAXTM4L-24D		C7-A10PX/DC24	
782XAXTM4L-110D		C7-A10PX/DC110	
782XAXC-12A	LY1-AC12		
782XAXC-24A	LY1-AC24		
782XAXC120A	LY1-AC110/120		
782XAXC-220/230A	LY1-AC220/240		
782XAXC-240A	LY1-AC220/240		
782XAXCL-24A	LY1N-AC24		
782XAXCL120A	LY1N-AC110/120		
782XAXCL-240A	LY1N-AC220/240		
782XAXC-12D	LY1-DC12		
782XAXC-24D	LY1-DC24		
782XAXC-110D	LY1-DC110		
782XAXTCL-24D	LY1N-DC24		
782XAXTC-12A	LY1-0-AC12		
782XAXTC-24A	LY1-0-AC24		
782XAXTC-120A	LY1-0-AC110/120		
782XAXTC-12D	LY1-0-DC12		
782XAXTC-24D	LY1-0-DC24		
782XAXTC-110D	LY1-0-DC110		

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	IDEC	RELPOL
782XBXM4L-24A	LY212N-AC24	56.32.8024.20.94	C7-A20X/AC24		RY2-1012-26-5024-WTL
782XBXM4L120A	LY212N-AC120	56.32.8120.20.94	C7-A20X/AC120		RY2-1012-26-5120-WTL
782XBXM4L-220/230A		56.32.8230.20.94	C7-A20X/AC230		RY2-1012-26-5230-WTL
782XBXM4L-240A		56.32.8240.20.94			RY2-1012-26-5240-WTL
782XBXM4L-12D	LY212N-DC12	56.32.9012.20.94	C7-A20X/DC12		RY2-1012-26-1012-WTL
782XBXM4L-24D	LY212N-DC24	56.32.9024.20.94	C7-A20X/DC24		RY2-1012-26-1024-WTL
782XBXM4L-110D		56.32.9110.20.94	C7-A20X/DC110		RY2-1012-26-1110-WTL
782XBXC-6A	LY2-AC06			RH2B-U-AC6	RY2-1006-26-5006
782XBXC-24A	LY2-AC24			RH2B-U-AC24	RY2-1012-26-5024
782XBXC120A	LY2-AC110/120			RH2B-U-AC120	RY2-1012-26-5120
782XBXC220/230A	LY2-AC220/240			RH2B-U-AC240	RY2-1012-26-5230
782XBXC240A	LY2-AC220/240			RH2B-U-AC240	RY2-1012-26-5240
782XBXC-6D	LY2-DC06			RH2B-U-DC6	RY2-1012-26-5006
782XBXC-12D	LY2-DC12			RH2B-U-DC12	RY2-1012-26-1012
782XBXC-24D	LY2-DC24			RH2B-U-DC24	RY2-1012-26-1024
782XBXC48D	LY2-DC48			RH2B-U-DC48	RY2-1012-26-1048
782XBXC-110D	LY2-DC110			RH2B-U-DC110	RY2-1012-26-1110
782XBXTC-24A	LY2-0-AC24		C7-A20X/AC24	RH2V2-AC24	
782XBXTC120A	LY2-0-AC120		C7-A20X/AC115	RH2V2-AC120	
782XBXTC-6D	LY2-0-DC06			RH2V2-DC6	
782XBXTC-12D	LY2-0-DC12		C7-A20X/DC12	RH2V2-DC12	
782XBXTC-24D	LY2-0-DC24		C7-A20X/DC24	RH2V2-DC24	

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	IDEC	
783XCXM4L-24A				RH3B-ULC-AC24	
783XCXM4L-120A				RH3B-ULC-AC120	
783XCXM4L-220/230A					
783XCXM4L-240A				RH3B-ULC-AC240	
783XCXM4L-12D				RH3B-ULC-DC12	
783XCXM4L-24D				RH3B-ULC-DC24	
783XCXM4L-110D				RH3B-ULC-DC110	
783XCXTM4L-120A				RH3V2-ULC-AC120	
783XCXTM4L-12D				RH3V2-ULC-DC12	
783XCXTM4L-24D				RH3V2-ULC-DC24	
783XCXC-24A	LY3-AC24			RH3B-U-AC24	
783XCXC-120A	LY3-AC120			RH3B-U-AC120	
783XCXC-240A	LY3-AC240			RH3B-U-DC24	

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	IDEC	
784XDXM4L-24A	LY412N-AC24	56.34.8024.20.94		RH4B-ULC-AC24	
784XDXM4L-120A	LY412N-AC120	56.34.8120.20.94		RH4B-ULC-AC120	
784XDXM4L-220/230A		56.34.8230.20.94			
784XDXM4L-240A		56.34.8240.20.94		RH4B-ULC-AC240	
784XDXM4L-12D	LY412N-DC12	56.34.9012.20.94		RH4B-ULC-DC12	
784XDXM4L-24D	LY412N-DC24	56.34.9024.20.94		RH4B-ULC-DC24	
784XDXM4L-110D		56.34.9110.20.94		RH4B-ULC-DC110	
784XDXTM4L-120A		56.44.8120.20.94		RH4V2-ULC-AC120	

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CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	IDEC	
784XDXTM4L-12D		56.44.9012.20.94		RH4V2-ULC-DC12	
784XDXTM4L-24D		56.44.9024.20.94		RH4V2-ULC-DC24	
784XDXC-24A	LY4-AC24	56.34.8024.20.94		RH4B-U-AC24	
784XDXC-120A	LY4-AC120	56.34.8120.20.94		RH4B-U-AC120	
784XDXC-24D	LY4-DC24	56.34.8240.20.94		RH4B-U-DC24	

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	TYCO / SCHRACK	RELPOL
782XDX3M4L-24A			C9-T48X/AC24		
782XDX3M4L120A			C9-T48X/AC115		
782XDX3M4L-220/230A			C9-T48X/AC230		
782XDX3M4L-240A					
782XDX3M4L-12D			C9-T48X/DC12		
782XDX3M4L-24D			C9-T48X/DC24		
782XDX3M4L-110D			C9-T48X/DC110		
782XDX1M4L-24A			C9-A48X/AC24		
782XDX1M4L120A			C9-A48X/AC115		
782XDX1M4L-220/230A			C9-A48X/AC230		
782XDX1M4L-240A					
782XDX1M4L-12D			C9-A48X/DC12		
782XDX1M4L-24D			C9-A48X/DC24		
782XDX1M4L-110D			C9-A48X/DC110		
782XDX2M4L-24A		55.34.8024.20.94	C9-T48X/AC24	PT570524	R4-2014-23-5024-WTL
782XDX2M4L120A		55.34.8120.20.94	C9-T48X/AC115	PT570615	R4-2014-23-5012-WTL
782XDX2M4L-220/230A		55.34.8230.20.94	C9-T48X/AC230	PT570730	R4-2014-23-5030-WTL
782XDX2M4L-240A		55.34.8240.20.94		PT570730	R4-2014-23-5040-WTL
782XDX2M4L-12D		55.34.9012.20.94	C9-T48X/DC12	PT570012	R4-2014-23-1012-WTL
782XDX2M4L-24D		55.34.9024.20.94	C9-T48X/DC24	PT570024	R4-2014-23-1024-WTL
782XDX2M4L-110D		55.34.9110.20.94	C9-T48X/DC110	PT570110	R4-2014-23-1110-WTL
782XDX3C-12A	MY4Z-AC-12				
782XDX3C-24	MY4Z-AC-24				
782XDX3C-120A	MY4Z-AC-120				
782XDX3C-220/230A	MY4Z-AC-220/230				
782XDX3C-240A	MY4Z-AC-240				
782XDX3C-6D	MY4Z-DC-6				
782XDX3C-12D	MY4Z-DC-12				
782XDX3C-24D	MY4Z-DC-24				
782XDX3C-110D	MY4Z-DC-110				
782XDX1C-12A	MY4-AC-12				
782XDX1C-24	MY4-AC-24				
782XDX1C-120A	MY4-AC-120				
782XDX1C-220/230A	MY4-AC-220/230				
782XDX1C-240A	MY4-AC-240				
782XDX1C-6D	MY4-DC-6				
782XDX1C-12D	MY4-DC-12				
782XDX1C-24D	MY4-DC-24				
782XDX1C-110D	MY4-DC-110				
782XDX2C-12A	MY4-AC-12				R4-2014-23-5012
782XDX2C-120A	MY4-AC-120				R4-2014-23-5120

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MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	TYCO / SCHRACK	RELPOL	ALLEN-BRADLEY
782XDX2C-220/230A	MY4-AC220/240				R4-2014-23-5012	
782XDX2C-240A	MY4-AC240				R4-2014-23-5120	
782XDX2C-12D	MY4-DC12				R4-2014-23-5230	
782XDX2C-24D	MY4-DC24				R4-2014-23-5240	
782XDX2C-110D	MY4-DC110				R4-2014-23-1012	
782XDXT1C-24A	MY4-02-AC24				R4-2014-23-1024	
782XDXT1C-120A	MY4-02-AC120				R4-2014-23-1110	
782XDXT1C-12D	MY4-02-DC12					
782XDXT1C-24D	MY4-02-DC24					
782XDXT1C-110D	MY4-02-DC110					
782XBX3M4L-24A			C9-T28X/AC24			
782XBX3M4L-120A			C9-T28X/AC115			
782XBX3M4L-220/230A			C9-T28X/AC230			
782XBX3M4L-240A						
782XBX3M4L-12D			C9-T28X/DC12			
782XBX3M4L-24D			C9-T28X/DC24			
782XBX3M4L-110D			C9-T28X/DC110			
782XBX2M4L-24A		55.32.8024.20.94	C9-A20X/AC24	PT270524	R2-2012-23-5024-WTL	700-HC24A24-1-4
782XBX2M4L-120A		55.32.8120.20.94	C9-A20X/AC115	PT270615	R2-2012-23-5120-WTL	700-HC24A1-1-4
782XBX2M4L-220/230A		55.32.8230.20.94	C9-A20X/AC230	PT270730	R2-2012-23-5230-WTL	700-HC24A2-1-4
782XBX2M4L-240A		55.32.8240.20.94		PT270730	R2-2014-23-5240-WTL	700-HC24A2-1-4
782XBX2M4L-12D		55.32.9012.20.94	C9-A20X/DC12	PT270012	R2-2012-23-1012-WTL	700-HC24Z12-1-4
782XBX2M4L-24D		55.32.9024.20.94	C9-A20X/DC24	PT270024	R2-2012-23-1024-WTL	700-HC24Z24-1-4
782XBX2M4L-110D		55.32.9110.20.94	C9-A20X/DC110	PT270110	R2-2012-23-1110-WTL	700-HC24Z1-1-4

MAGNECRAFT & STRUTHERS-DUNN	TYCO / SCHRACK HERMECLCALLY SEALED
782XDXH10-24A	KHS17A11-24
782XDXH10-120A	KHS17A11-120
782XDXH10-12D	KHS17D11-12
782XDXH10-24D	KHS17D11-24
782XDXH10-110D	KHS17D11-110
782XDXH21-120A	KHS17A12-120
782XDXH21-12D	KHS17D12-12
782XDXH21-24A	KHS17A12-24

MAGNECRAFT & STRUTHERS-DUNN	OMRON	FINDER	RELECO	TYCO / P & B / SCHRACK	RELPOL	ALLEN-BRADLEY
750XBXM4L-24A	MK2PN-S-AC24	60.12.8024.20.70	C2-A20X/AC24	KRPA-11ANFP-24 or MT228024	R15-2012-23-5024-WTL	700-HA32A24-1-4
750XBXM4L-120A	MK2PN-S-AC120	60.12.8120.20.70	C2-A20X/AC120	KRPA-11ANFP-120 or MT228115	R15-2012-23-5210-WTL	700-HA32AA1-1-4
750XBXM4L-220/240A	MK2PN-S-AC240	60.12.8204.20.70	C2-A20X/AC240	KRPA-11ANFP-240 or MT228240	R15-2012-23-5230-WTL	700-HA32A2-1-4
750XBXM4L-12D	MK2PN-S-DC12	60.12.9012.20.70	C2-A20X/DC12	KRPA-11DNFP-12 or MT223012	R15-2012-23-1012-WTL	700-HA32Z12-1-4
750XBXM4L-24D	MK2PN-S-DC24	60.12.9024.20.70	C2-A20X/DC24	KRPA-11DNFP-24 or MT223024	R15-2012-23-1024-WTL	700-HA32Z24-1-4
750XBXM4L-110D	MK2PN-S-DC110	60.12.9110.20.70	C2-A20X/DC110	KRPA-11DNFP-24 or MT223110	R15-2012-23-1110-WTL	700-HA32Z1-1-4
750XCXM4L-24A	MK3PN-S-AC24	60.13.8024.20.70	C3-A30X/AC24	KRPA-14DNFP-24 or MT328024	R15-2012-23-5024-WTL	700-HA33A24-1-4
750XCXM4L-120A	MK3PN-S-AC120	60.13.8120.20.70	C3-A30X/AC120	KRPA-14ANFP-120 or MT322115	R15-2012-23-5210-WTL	700-HA33AA1-1-4
750XCXM4L-220/240A	MK3PN-S-AC240	60.13.8204.20.70	C3-A30X/AC240	KRPA-14ANFP-240 or MT328240	R15-2012-23-5230-WTL	700-HA33A2-1-4
750XCXM4L-12D	MK3PN-S-DC12	60.13.9012.20.70	C3-A30X/DC12	KRPA-14DNFP-12 or MT323012	R15-2012-23-1012-WTL	700-HA33Z12-1-4
750XCXM4L-24D	MK3PN-S-DC24	60.13.9024.20.70	C3-A30X/DC24	KRPA-14DNFP-24 or MT323024	R15-2012-23-1024-WTL	700-HA32Z24-1-4
750XCXM4L-110D	MK3PN-S-DC110	60.13.9110.20.70	C3-A30X/DC110	KRPA-14DNFP-24 or MT323110	R15-2012-23-1110-WTL	

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CROSS REFERENCE GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

MAGNECRAFT & STRUTHERS-DUNN	OMRON	TYCO / P & B / SCHRACK	IDEC
750XBXC-24A	MK2P-S-AC24	KRPA-11AG-24	RH2P-U-AC24
750XBXC-120A	MK2P-S-AC120	KRPA-11AG-120	RH2P-U-AC120
750XBXC-220/240A	MK2P-S-AC240	KRPA-11AG-240	
750XBXC-12D	MK2P-S-DC12	KRPA-11DG-12	RH2P-U-DC12
750XBXC-24D	MK2P-S-DC24	KRPA-11DG-24	RH2P-U-DC24
750XBXC-110D	MK2P-S-DC110	KRPA-11DG-110	RH2P-U-DC110
750XCXC-24A	MK3P5-S-AC24	KRPA-14AG-24	RH3P-U-AC24
750XCXC-120A	MK3P5-S-AC120	KRPA-14AG-120	RH3P-U-AC120
750XCXC-220/240A	MK3P5-S-AC240	KRPA-14AG-240	RH3P-U-AC240
750XCXC-12D	MK3P5-S-DC12	KRPA-14DG-12	RH3P-U-DC12
750XCXC-24D	MK3P5-S-DC24	KRPA-14DG-24	RH3P-U-DC24
750XCXC-110D	MK3P5-S-DC110	KRPA-14DG-110	RH3P-U-DC110

MAGNECRAFT & STRUTHERS-DUNN	FINDER	RELECO	TYCO / P & B / SCHRACK	IDEC	RELPOL	ALLEN-BRADLEY
788XBXM4L-24A	62.32.8024.00.70	C5-A20X/AC24		RR2BA-U-AC24		700-HB32A24-1-4
788XBXM4L-120A	62.32.8120.00.70	C5-A20X/AC120		RR2BA-U-AC120		700-HB32AA1-1-4
788XBXM4L-220/240A	62.32.8204.00.70	C5-A20X/AC240		RR2BA-U-AC240		700-HB32A2-1-4
788XBXM4L-12D	62.32.9012.00.70	C5-A20X/DC12		RR2BA-U-DC12		700-HB32Z12-1-4
788XBXM4L-24D	62.32.9024.00.70	C5-A20X/DC24		RR2BA-U-DC24		700-HB32Z24-1-4
788XBXM4L-110D	62.32.9110.00.70	C5-A20X/DC110		RR2BA-U-DC110		700-HB32Z1-1-4
788XCXM4L-24A	62.33.8024.00.70	C5-A30X/AC24		RR3BA-U-AC24		700-HB33A24-1-4
788XCXM4L-120A	62.33.8120.00.70	C5-A30X/AC120		RR3BA-U-AC120		700-HB33AA1-1-4
788XCXM4L-220/240A	62.33.8204.00.70	C5-A30X/AC240		RR3BA-U-AC240		700-HB33A2-1-4
788XCXM4L-12D	62.33.9012.00.70	C5-A30X/DC12		RR3BA-U-DC12		700-HB33Z12-1-4
788XCXM4L-24D	62.33.9024.00.70	C5-A30X/DC24		RR3BA-U-DC24		700-HB32Z24-1-4
788XCXM4L-110D	62.33.9110.00.70	C5-A30X/DC110		RR3BA-U-DC110		
788XBXC-24A			KUP-11A45 (or F) -24 or RM202524		RUC-1012-26-5024	
788XBXC-120A			KUP-11A45- (or F) 120 or RM202615		RUC-1012-26-5210	
788XBXC-220/240A			KUP-11A45- (or F) 240 or RM202730		RUC-2012-26-5230	
788XBXC-12D			KUP-11D45- (or F) 12 or RM202012		RUC2012-26-1012	
788XBXC-24D			KUP-11D45- (or F) 24 or RM202024		RUC-2012-26-1024	
788XBXC-110D			KUP-11D45- (or F) 110 or RM202110		RUC-2012-26-1110	
788XCXC-24A			KUP-14A45- (or F) 24 or RM302524		RUC-2013-26-5024	
788XCXC-120A			KUP-14A45- (or F) 120 or RM302615		RUC-013-26-5210	
788XCXC-220/240A			KUP-14A45- (or F) 240 or RM302730		RUC-2013-26-5230	
788XCX-12D			KUP-14D45- (or F) 12 or RM302012		RUC-2013-26-1012	
788XCX-24D			KUP-14D45- (or F) 24 or RM302024		RUC-2013-26-1024	
788XCXC-110D			KUP-14D45- (or F) 110 or RM302110		RUC-2013-23-1110	

MAGNECRAFT & STRUTHERS-DUNN	OMRON	TYCO / P & B / SCHRACK	IDEC	DELTROL
A283XAXC-24A	MJN1C-AC24	KUP5A15 (or F) - 24	RR1BA-U-AC24V	20306-82
A283XAXC-120A	MJN1C-AC120	KUP5A15 (or F) - 120	RR1BA-U-AC120V	20306-84
A283XAXC-240A	MJN1C-AC240	KUP5A15 (or F) - 240	RR1BA-U-AC240V	20306-85
A283XBXC-24A	MJN2C-AC24	KUP11A15 (or F) - 24	RR2BA-U-AC24V	20307-82
A283XBXC-120A	MJN2C-AC120	KUP11A15 (or F) - 120	RR2BA-U-AC120V	20307-84
A283XBXC-240A	MJN2C-AC240	KUP11A15 (or F) - 240	RR2BA-U-AC240V	20307-85
A283XCXC-24A	MJN3C-AC24	KUP14A15 (or F) - 24	RR3B-U-AC24V	20308-82
A283XCXC-120A	MJN3C-AC120	KUP14A15 (or F) - 120	RR3B-U-AC120V	20308-84

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MAGNECRAFT & STRUTHERS-DUNN	OMRON	TYCO / POTTER & BRUMFIELD	IDEC	DELTROL
A283XCXC-240A	MJN3C-AC240	KUP14A15 (or F) - 240	RR3B-U-AC240V	20308-85
A283XAXC-12D	MJN1C-DC12	KUP5D15 (or F) - 12	RR1BA-U-DC12V	20309-81
A283XAXC-24D	MJN1C-DC24	KUP5D15 (or F) - 24	RR1BA-U-DC24V	20309-82
A283XBXC-12D	MJN2C-DC12	KUP11D15 (or F) - 12	RR2BA-U-DC12V	20310-81
A283XBXC-24D	MJN2C-DC24	KUP11D15 (or F) - 24	RR2BA-U-DC24V	20310-82
A283XBXC-110D	MJN2C-DC110	KUP11D15 (or F) - 110	RR2B-U-DC110V	20310-84
A283XCXC-12D	MJN3C-DC12	KUP14D15 (or F) - 12	RR3B-U-DC12V	20311-81
A283XCXC-24D	MJN3C-DC24	KUP14D15 (or F) - 24	RR3B-U-DC24V	20311-82
A283XAXC1-120A	MJN1CF-AC120	KUP5A55 (or F) - 120	RR1BA-US-AC120V	20545-84
A283XAXC1-240A	MJN1CF-AC240	KUP5A55 (or F) - 240	RR1BA-US-AC240V	20545-85
A283XBXC1-120A	MJN2CF-AC120	KUP11A55 (or F) - 120	RR2BA-US-AC120V	20546-84
A283XBXC1-240A	MJN2CF-AC240	KUP11A55 (or F) - 240	RR2BA-US-AC240V	20546-85
A283XCXC1-120A	MJN3CF-AC120	KUP14A55 (or F) - 120	RR3B-US-AC120V	20547-84
A283XCXC1-240A	MJN3CF-AC240	KUP14A55 (or F) - 240	RR1BA-US-DC240V	20547-85
A283XAXC1-12D	MJN1CF-DC12	KUP5D55 (or F) - 12	RR1BA-US-DC12V	20551-81
A283XAXC1-24D	MJN1CF-DC24	KUP11D55 (or F) - 24	RR2BA-US-DC24V	20551-82
A283XBXC1-12D	MJN2CF-DC12	KUP11D55 (or F) - 12	RR2BA-US-DC12V	20552-81
A283XBXC1-24D	MJN2CF-DC24	KUP11D55 (or F) - 24	RR2B-US-DC24V	20552-82
A283XCXC1-24D	MJN3CF-DC24	KUP14D55 (or F) - 24	RR3B-US-DC24V	20553-82
A283XBX69C-120A		KUEP-11A15-120		
A283XBX69C-12D		KUEP-11D15-12		
A283XBX69C-24D		KUEP-11D15-24		
A283BXX69C-24D		KUEP-7D15-24		
A283BXX69C-48D		KUEP-7D15-48		
A283XBX69C-110D		KUEP-11D15-110		
A283HXX69C-120A		KUEP-3A15-120		
A283HXX69C-12D		KUEP-3D15-12		
A283HXX69C-24D		KUEP-3D15-24		
A283HXX69C-48D		KUEP-3D15-48		
A283HXX69C-110D		KUEP-3D15-110		

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD	TYCO / SCHRACK	FINDER
388JXCXC1M-240A	KUMP-14A68-240	RM333740	
388JXCXC1M-120A	KUMP-14A68-120	RM333615	
388JXCXC1M-12D	KUMP-14D68-12	RM333012	
388JXCXC1M-24D	KUMP-14D68-24	RM333024	
388JXCXCM-240A	KUMP-14A28-240	RM332740	6233 8240 0040
388JXCXCM-120A	KUMP-14A28-120	RM332615	6233 8120 0040
388JXCXCM-12D	KUMP-14D28-12	RM332012	6233 9012 0040
388JXCXCM-24D	KUMP-14D28-24	RM332024	6233 9024 0040
388JXBXC1M-240A	KUMP-11A68-240	RM233740	
388JXBXC1M-120A	KUMP-11A68-120	RM233615	
388JXBXC1M-12D	KUMP-11D68-12	RM233012	
388JXBXC1M-24D	KUMP-11D68-24	RM233024	
388JXBXCM-240A	KUMP-11A28-240	RM232740	6232 8240 0040
388JXBXCM-120A	KUMP-11A28-120	RM232615	6232 8120 0040
388JXBXCM-12D	KUMP-11D28-12	RM232012	6232 9012 0040
388JXBXCM-24D	KUMP-11D28-24	RM232024	6232 9024 0040

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CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD	TYCO / SCHRACK	FINDER
388VCXXCM-220/240A	KUGP-12A15-240	RM632740	62.33 8240.0310
388VCXXCM-120A	KUGP-12A15-120	RM632615	62.33 8120.0310
388VCXXCM-24A	KUGP-12A15-24	RM632524	62.32 8024.0310
388VBXXCM-220/240A	KUGP-7A15-240	RM532740	62.22 8240.0310
388VBXXCM-120A	KUGP-7A15-120	RM532615	62.23 8120.0310
388VBXXCM-24A	KUGP-7A15-24	RM532524	62.23 8024.0310
388VCXXCM-24D	KUGP-12D15-24	RM632024	62.32 9024.0310
388VCXXCM-12D	KUGP-12D15-12	RM632012	62.32 9012.0310
388VBXXCM-24D	KUGP-7D15-24	RM532024	62.32 9024.0310
388VBXXCM-12D	KUGP-7D15-12	RM532012	62.33 9012.0310
MAGNECRAFT & STRUTHERS-DUNN		**TYCO / SCHRACK**	**FINDER**
389FXCXC1M-240A		RM735740	6283 8240 0040
389FXCXC1M-120A		RM735615	6283 8120 0040
389FXBXC1M-240A		RM835740	6282 8240 0040
389FXBXC1M-120A		RM83561	6282 8240 0040
389FXCXC1M-12D		RM735024	6283 9024 0040
389FXCXC1M-24D		RM735012	6283 9012 0040
389FXBXC1M-12D		RM835024	6282 9024 0040
389FXBXC1M-24D		RM835012	6282 9012 0040
MAGNECRAFT & STRUTHERS-DUNN	**TYCO / POTTER & BRUMFIELD**	**TYCO / SCHRACK**	**DELTROL**
W389ADCX-4	KUMP-3A5G-120	RMD 05 615	0840-84
W389ADCX-5	KUMP-3A5G-240	RMD 05 740	20840-85
W389ADZCX-3	KUMP-6A5G-24	RMC 05 524	
W389ADZCX-4	KUMP-6A5G-120	RMC 05 615	
W389DCX-2	KUMP-3D5G-12	RMD 05 012	20848-81
W389DCX-3	KUMP-3D5G-24	RMD 05 024	20848-82
W389DZCX-2	KUMP-6D5G-12	RMC 05 012	
W389DZCX-3	KUMP-6D5G-24	RMC 05 024	
W389ACX-4	KUHP-5A51-120		
W389ACX-8	KUHP11A51-24		
W389ACX-9	KUHP11A51-120		
W389ACX-10	KUHP11A51-240		
W389ACX-14	-		
W389ACX-15	-		
W389CX-2	KUHP5D51-12		
W389CX-3	KUHP5D51-24		
W389CX-7			
W389CX-8			
W389CX-12			
W389CX-13			
MAGNECRAFT & STRUTHERS-DUNN	**DELTROL**		
300XBXC1-240A	20844-85		
300XBXC1-120A	20844-84		
300XBXC1-24A	20844-82		
300XBXC1-12A	20844-81		

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MAGNECRAFT & STRUTHERS-DUNN	DELTROL
300XBXC1-110D	20852-84
300XBXC1-24D	20852-82
300XBXC1-12D	20852-81

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD	AMERICAN ZETTLER
W9AS1D52-5	T9AS1D52-5	AZ2280-1A-5DEF
W9AS1D52-12	T9AS1D52-12	AZ2280-1A-12DEF
W9AS1D52-24	T9AS1D52-24	AZ2280-1A-24DEF
W9AS1D52-48	T9AS1D52-48	AZ2280-1A-48DEF
W9AS1D52-110	T9AS1D52-110	AZ2280-1A-110DEF
W9AS5D52-5	T9AS5D52-5	AZ2280-1C-5DEF
W9AS5D52-12	T9AS5D52-12	AZ2280-1C-12DEF
W9AS5D52-24	T9AS5D52-24	AZ2280-1C-24DEF
W9AS5D52-48	T9AS5D52-48	AZ2280-1C-48DEF
W9AS5D52-110	T9AS5D52-110	AZ2280-1C-110DEF
W9AS1A52-24		AZ2280-1A-24AEF
W9AS1A52-120		AZ2280-1A-120AEF
W9AS1A52-240		AZ2280-1A-240AEF
W9AS5A52-24		AZ2280-1C-24AEF
W9AS5A52-120		AZ2280-1C-120AEF
W9AS5A52-240		AZ2280-1C-240AEF

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD	AMERICAN ZETTLER	OMRON	AROMAT
W92S7D22-12	T92P7D22-12	AZ2800-2A-12D	G7L-2A-TUB-CB-DC12	HE2aN-Q-DC12V
W92S7D22-24	T92P7D22-24	AZ2800-2A-24D	G7L-2A-TUB-CB-DC24	HE2aN-Q-DC24V
W92S7D22-110	T92P7D22-110	AZ2800-2A-110D	G7L-2A-TUB-CB-DC110	HE2aN-Q-DC110V
W92S11D22-12	T92P11D22-12	AZ2800-2C-12D		
W92S11D22-24	T92P11D22-24	AZ2800-2C-24D		
W92S11D22-110	T92P11D22-110	AZ2800-2C-110D		
W92S7A22-24	T92P7A22-24	AZ2800-2A-24AE	G7L-2A-TUB-CB-AC24	HE2aN-Q-AC24V
W92S7A22-120	T92P7A22-120	AZ2800-2A-120AE	G7L-2A-TUB-CB-AC120	HE2aN-Q-AC120V
W92S7A22-240	T92P7A22-240	AZ2800-2A-240AE	G7L-2A-TUB-CB-AC240	HE2aN-Q-AC240V
W92S11A22-24	T92P11A22-24	AZ2800-2C-24AE		
W92S11A22-120	T92P11A22-120	AZ2800-2C-120AE		
W92S11A22-240	T92P11A22-240	AZ2800-2C-240AE		

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD
W67RCSX-1	R10E1(X or Y)2-V28
W67RCSX-2	R10E1(X or Y)2-V185
W67RCSX-3	R10E1(X or Y)2-V700
W67RCSX-4	R10E1(X or Y)2-V2.5K
W67RCSX-5	R10E1(X or Y2-V15.0K
W67RCSX-6	R10E1(X or Y)4-V28
W67RCSX-7	R10E1(X or Y)4-V185
W67RCSX-8	R10E1(X or Y)4-V700
W67RCSX-9	R10E1(X or Y)4-V2.5K
W67RCSX-10	R10E1(X or Y)4-V15.0K

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CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD
W67RCSX-12	R10E1(X or Y)6-V90
W67RCSX-13	R10E1(X or Y)6-V430
W67TRCSX-2	R10E1(P or Z)2-V185
W67TRCSX-3	R10E1(P or Z)2-V700
W67TRCSX-7	R10E1(P or Z)4-V185
W67TRCSX-8	R10E1(P or Z)4-V700
W67TRCSX-12	R10E1(P or Z)6-V90
W67TRCSX-13	R10E1(P or Z)6-V430
W67RPCX-2	R10E2(X or Y)2-V185
W67RPCX-3	R10E2(X or Y)2-V700
W67RPCX-7	R10E2(X or Y)4-V185
W67RPCX-8	R10E2(X or Y)4-V700
W67RPCX-12	R10E2(X or Y)6-V90
W67RPCX-13	R10E2(X or Y)6-V430
W67ARCSX-5	R10E1(X or Y)2-120V
W67ARCSX-10	R10E1(X or Y)4-120V
W67ARCSX-15	R10E1(X or Y)6-120V
W67SCSX-1	R10SE1(X or Y)2-J1.0K
W67SCSX-2	R10SE1(X or Y)2-J2.5K
W67SCSX-3	R10SE1(X or Y)2-J5.0K
W67SCSX-6	R10SE1(X or Y)4-J1.0K
W67SCSX-7	R10SE1(X or Y)4-J2.5K
W67SCSX-8	R10SE1(X or Y)4-J5.0K

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD
750XBXH-12A	KR11AGE (or GF) 12
750XBXH-24A	KR11AGE (or GF) 24
750XBXH-120A	KR11AGE (or GF) 120
750XBXH-12D	KR11DGE (or GF) 12
750XBXH-24D	KR11DGE (or GF) 24
750XBXH-110D	KR11DGE (or GF) 110
750XCXH-12A	KR14AGE (or GF) 12
750XCXH-24A	KR14AGE (or GF) 24
750XCXH-120A	KR14AGE (or GF) 120
750XCXH-12D	KR14DGE (or GF) 12
750XCXH-24D	KR14DGE (or GF) 24
750XCXH-110D	KR14DGE (or GF) 110

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD
W21ACPX-2	136-62T3A1

U. S. A.

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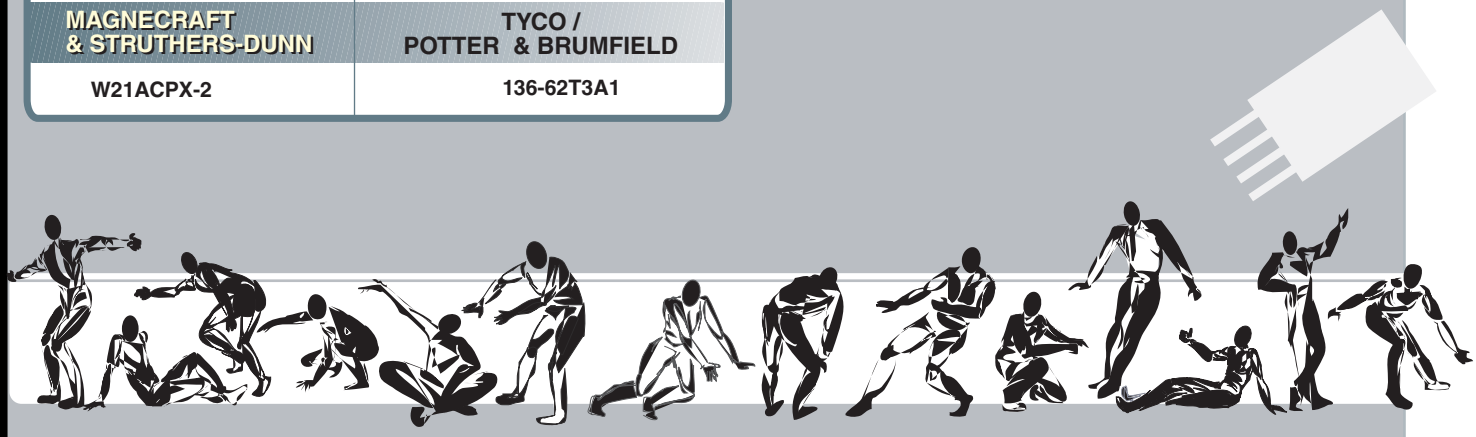

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SECTION 2

SOLID STATE RELAYS (SSR)

2.5 TO 125 AMPERES

SSR:

DIN

6ASX

6DSX

6DDX

6DTX

70S2:

"V"

"N"&"S"

"F"&"M"

"H"&"L"

"K"

226

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

SOLID STATE RELAYS

PRODUCT	SSRDIN	6 (ASX)/(DSX)	6 (DDX)	6 (DTX)
	L.E.D. STATUS LAMP	L.E.D. STATUS LAMP	L.E.D. STATUS LAMP	L.E.D. STATUS LAMP
				
	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002
L X W X H (INCHES)	4.015 x 1.180 x 4.527	2.25 x 1.75 x 0.78	2.25 x 1.75 x 0.78	2.25 x 1.75 x 0.78
FEATURES	• AC & DC INPUT • AC OUTPUT • 10 OR 25 AMP LOADS • PHOTO ISOLATED, ZERO VOLTAGE SWITCHING • 4000V rms ISOLATION INPUT TO OUTPUT • INTERNAL RC (SNUBBER) NETWORK • RFI SUPPRESSION • INTEGRAL SAFETY COVER, AND HEAT SINK • DIN RAIL MOUNTING	• AC INPUT • AC OUTPUT • UP TO 125 AMP LOADS • PHOTO ISOLATED, ZERO VOLTAGE SWITCHING OR RANDOM TURN ON • 4000V rms ISOLATION INPUT TO OUTPUT • INTERNAL RC (SNUBBER) NETWORK • RFI SUPPRESSION • SAFETY COVER STANDARD	• DC INPUT • DC OUTPUT • UP TO 40 AMP LOADS • RFI SUPPRESSION • SAFETY COVER STANDARD • L.E.D. STATUS LAMP	• DC INPUT • AC OUTPUT • UP TO 125 AMP LOADS • PHOTO ISOLATED, ZERO VOLTAGE SWITCHING • 4000V rms ISOLATION INPUT TO OUTPUT • INTERNAL RC (SNUBBER) NETWORK • SAFETY COVER STANDARD
INPUT	**UNITS**			
Input Voltage Range:	VAC 50/60 Hz VDC	90 to 280 3 to 32	90 to 280 (ASX) 3 to 32 (DSX)	3 to 32 3.5 to 32
Input Current:	mA	10 to 20	10 to 20	10 to 20	2 to 20
Must Release Voltage:	VAC VDC	10	10	1	1
OUTPUT					
Switching Configuration:		**SPST-NO,NC**	**SPST-NO, NC**	**SPST-NO**	**SPST-NO, NC, DPST-NO**
Switching Device:		SCR (2)	SCR (2)	MOSFET	TRIAC
Switching Type:		Zero cross or random turn on	Zero cross or random turn on	DC switch	Zero cross or random turn on
Load Voltage Range.:	VAC 50/60 Hz VDC	40 to 280, 48 to 660	40 to 280, 40 to 480, 40 to 660	3 to 200	24 to 280, 40 to 480
Rated Load Current Max.:	Amp	10 & 25 Arms	10 , 25, 40, 50, 75, 90, 125 Arms	10 , 25, 40 ADC	10 , 25, 40 Arms
Operate Time Max.:	ms	8.3	8.3	0.6	8.3
Release Time Max.:	ms	8.3	8.3	2.6	8.3
MISCELLANEOUS					
Dielectric Strength	Vrms	4000 I/O, 2500 to base	4000	2500	2500, 4000
Insulation Resistance:	megohms minimum@VDC	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC
Operating, Lower:	°C	-30	-40	-40	-40
Operating, Upper:	°C	+80	+80	+80	+80
Storage, Lower:	°C	-40	-40	-40	-40
Storage, Upper:	°C	+100	+100	+100	+100
Safety Cover:		Integral	Yes	Yes	Yes
Cover Protection Category:	IP	20			
Weight:	grams	340	100, 135, 200	100, 135	100
AGENCY APPROVALS		c UL us CE SP UL Recognized File No. E52197	c UL us CE UL Recognized File No. E52197	c UL us CE UL Recognized File No. E52197	c UL us CE UL Recognized File No. E52197 CE APPROVED ON SELECT MODELS
PAGE NUMBER		PAGE 6, 7	PAGE 8 - 10	PAGE 8, 9, 11	PAGE 8, 9, 12

	70S2 "V" STYLE	70S2 "N" & "S" STYLES	70S2 "F" & "M" STYLES	70S2 "H" & "L" STYLES	70S2 "K" STYLE	226
						
	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002	MANUFACTURED UNDER ISO 9002
	1.70 x 0.400 x 1.00	2.20 x 1.00 x 0.864	2.20 x 1.00 x 0.85	1.20 x 1.00 x 0.520	1.20 x 1.00 x 0.830	1.50 X 0.670 X 0.600
	• DC INPUT • AC OR DC OUTPUT • 3 AMP LOADS • OPTICALLY ISOLATED • SINGLE IN-LINE PACKAGE	• DC INPUT • AC OR DC OUTPUT • UP TO 25 AMP LOADS • OPTICALLY ISOLATED • COMPACT SIZE	• DC INPUT • AC OR DC OUTPUT • UP TO 10 AMP LOADS • OPTICALLY I SOLATED • PRINTED CIRCUIT BOARD OR PANEL MOUNT	• DC INPUT • AC OUTPUT • UP TO 6 AMP LOADS • OPTICALLY ISOLATED • PRINTED CIRCUIT BOARD OR PANEL MOUNT	• DC INPUT • AC OR DC OUTPUT • UP TO 4 AMP LOADS • OPTICALLY ISOLATED • SOCKET MOUNT	• DC INPUT • AC OUTPUT • UP TO 6 AMP LOADS • OPTICALLY ISOLATED • QUICK CONNECT TERMINAL OR PANEL MOUNT
	FORMERLY GRAYHILL	**FORMERLY GRAYHILL**	**FORMERLY GRAYHILL**	**FORMERLY GRAYHILL**	**FORMERLY GRAYHILL**	**FORMERLY GRAYHILL**
	3 to 32, 6 to 32, 3 to 15, 9 to 30	2 to 140, 24 to 280 3 to 60	2 to 140, 24 to 280 3 to 60	24 to 140, 24 to 280 3 to 60	3 to 50,24 to 140,24 to 280 3 to 60	24 to 140, 24 to 280
	1 to19,1 to 6, 5 to 40,5 to 17	7 to 16, 6 to 10, 5 to 40	7 to 16, 6 to 10, 5 to 40	1 to 17, 1 to 6	1 to17, 1 to 6, 5 to 40	10
	1	1	1	1	1	1
	SPST-NO	**SPST-NO**	**SPST-NO**	**SPST-NO**	**SPST-NO**	**SPST-NO**
	MOSFET, TRIAC	MOSFET, TRIAC	MOSFET, TRIAC	TRIAC	MOSFET, TRIAC	TRIAC
	DC switch	DC switch, Zero cross	DC switch, Zero cross	Zero cross	DC switch, Zero cross	Random turn on
	8 to 50, 24 to 140, 24 to 280	24 to 280, 40 to 480 3 to 60	24 to 280, 40 to 480 3 to 60	24 to 280, 40 to 480	24 to 280, 40 to 480 30 to 60	24 to 280, 40 to 480
	3 Arms or ADC	6, 12 , 25 Arms, 5 ADC	6, 12 , 25 Arms, 5 ADC	2, 5, 6 Arms	4 Arms, 3 ADC	2, 5, 6 Arms
	8.3, 0.075 8.3, 0.5	8.3, 0.075 8.3, 0.5	8.3, 0.075 8.3, 0.5	8.3 8.3	8.3 8.3	8.3 8.3
	2500	2500	2500	2500	2500	2500
	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC	100 @ 500 VDC
	-40 +100	-40 +100	-40 +100	-40 +100	-40 +100	-40 +100
	-40 +125	-40 +125	-40 +125	-40 +125	-40 +125	-40 +125
	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	25	25	25	25	35	35
	c UL us UL Recognized File No. E52197 168986 TÜV	c UL us UL Recognized File No. E52197 168986	c UL us UL Recognized File No. E52197 168986	c UL us UL Recognized File No. E52197 168986	c UL us UL Recognized File No. E52197 168986	c UL us UL Recognized File No. E52197
	PAGE 13, 14	PAGE 13, 15	PAGE 13, 16	PAGE 13, 17	PAGE 13, 18	PAGE 19

CONSULT FACTORY FOR OTHER CONFIGURATIONS

APPLICATION DATA

INTRODUCTION:

SOLID STATE RELAY (SSR) is a relay with isolated input and output, whose functions are achieved by means of electronic components without the use of moving parts as found in electromechanical relays.

PRINCIPLE OF OPERATION:

Solid State Relays are similar to electromechanical relays, in that both use a control circuit and a separate circuit for switching the load. When voltage is applied to the input of the SSR, the relay is energized by a light emitting diode. The light from the diode is beamed into a light sensitive semiconductor which, in the case of zero voltage crossover relays, conditions the control circuit to turn on the output solid state switch at the next zero voltage crossover. In the case of nonzero voltage crossover relays, the output solid state switch is turned on at the precise voltage occurring at the time. Removal of the input power disables the control circuit and the solid state switch is turned off when the load current passes through the zero point of its cycle.

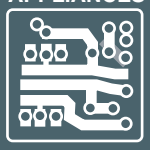
APPLICATIONS:

Solid State Relays are specially suitable in many applications. Listed below are some typical applications.

INDUSTRIAL AUTOMATION

ALARM SYSTEMS

ELECTRONIC APPLIANCES



INDUSTRIAL APPLIANCES

MEDICAL EQUIPMENT

PACKING MACHINES

TOOLING MACHINGS

APPLICATION AND SELECTION CRITERIA FOR SOLID STATE RELAYS:

The Chart below indicates the areas in which SSR's (Solid State Relays) or EMR's (Electromechanical Relays) have better capabilities. (X) Indicates the Better choice.

	SSR	EMR
Long life	X	
Temperature cycling		X
Shock and vibration resistant	X	
Immunity to false operation due to transients		X
Generation of RFI, EMI	X	
Multipole		X
Multithrow (SPDT)		X
Size (includes Heat Sink) for equivalent load handling		X
Contact bounce	X	
Arcless switching	X	
Acoustic noise	X	
Zero voltage switching	X	
Ease of diagnosing malfunction		X
IC compatibility	X	
Immunity to humidity, salt spray & dirt	X	

LOAD CONSIDERATIONS

A major portion of application problems with SSR's result from operating conditions which specific loads impose upon an SSR. The following types of loads point out the potential problems that can occur with SSR's.

DC LOADS: All loads should be considered inductive and a diode should be placed across the load to absorb any inductive surge on turnoff.

RESISTIVE LOADS: Loads of constant value resistance are probably the simplest application of SSR's. Proper attention to the steady state current ratings and applied blocking voltage specifications normally will result in trouble-free operation.

LAMP LOADS: Incandescent lamp loads, though basically resistive, present some special problems. Because the resistance of a cold tungsten filament is about five to ten percent of the heated value, a large inrush current can occur. The period of the inrush current can range from one half cycle to several cycles, depending on the thermal time constant of the filament. It is essential to verify that this inrush current is within the surge specifications of the SSR. Also check that the lamp rating of the SSR is not exceeded. This is a UL rating based on the inrush of a typical lamp. Because of the unusually low filament resistance at the time of turn-on, a zero voltage turn-on characteristic is particularly desirable with tungsten lamps. It has been demonstrated that a zero voltage turn-on can extend the life of tungsten lamps by limiting inrush current.

APPLICATION DATA

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

CAPACITIVE LOADS: Caution must be used with low impedance capacitive loads to verify that the di/dt capabilities are not exceeded. The di/dt of a discharged capacitive load without external limiting impedance can approach infinity. Zero voltage turn-on is a particularly valuable means of limiting di/dt with capacitive loads.

MOTORS: Motors frequently have severe inrush currents during starting and can impose unusual voltages during turnoff. The inrush currents connected to mechanical loads having high starting torque or inertia should be carefully determined to verify that they are within the surge capabilities of the SSR. A current shunt and oscilloscope should be used to examine the duration of the inrush current. Motor starting may frequently reoccur at short intervals and the affect of repetitive inrush currents on the thermal operating point of an SSR must be considered. Check the motor operating current and locked rotor current versus the SSR motor rating. The possibility of abnormally stalled rotor conditions which draw much higher than normal currents should be considered. An extended stalled rotor condition may require an oversized SSR or fuse protection. The generated EMF of certain motors can require an SSR to have a blocking voltage greater than might be expected from steady state line voltage. The voltage applied to an SSR by a motor circuit during turnoff should be examined with an oscilloscope to verify hat the applied voltages are safely below the specified SSR blocking voltages. Otherwise lock-on or erratic turnoff of the motor may occur. Some motor circuits may require higher than normal blocking voltage, transient limiting devices, or other techniques to control the voltage which must be blocked by an SSR during deceleration or direction reversal.

TRANSFORMERS:

In controlling transformers, the characteristics of the secondary load should be considered because it reflects the effective load on the SSR. Voltage transients from secondary load circuits, similarly, are frequently transformed and can be imposed on the SSR. Transformers present a special problem in that, depending on the state of the transformer flux at the time of turnoff, the transformer may saturate during the first half-cycle of subsequent applied voltage. This saturation can impose a very large current (Commonly ten to one hundred times rated primary current) on the SSR and exceed its half-cycle surge rating.

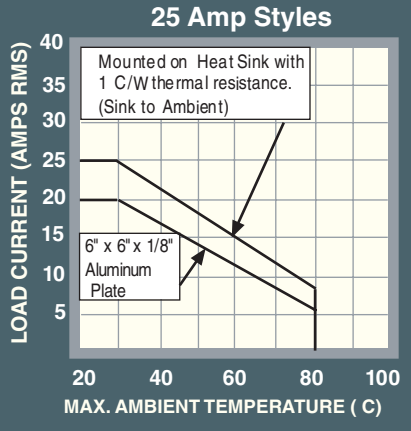
SSR's having random turn-on may have a better chance of survival than a zero voltage turn-on device for they commonly require the transformer to support only a portion of the first half-cycle of the voltage. On the other hand, a random turn-on device will frequently close at the essentially zero voltage point (start of the half-cycle) and then the SSR must sustain the worst-case saturation current. A zero voltage turn-on device has the advantage that it turns on in a known, predictable mode and will normally immediately demonstrate (dependent on turnoff flux polarity) the worst-case condition. The use of an oscilloscope is recommended to verify that the half-cycle surge capability of the SSR is not exceeded. The severity of the transformer saturation problem varies greatly, dependent on the magnetic material of the transformer, saturated primary impedance, line impedance, etc.

A safe rule of thumb in applying an SSR to a transformer primary is to select an SSR having a half-cycle current surge rating (RMS) greater than the maximum applied line voltage (RMS) divided by the transformer primary resistance. The primary resistance is usually easily measured and can be relied on as a minimum impedance limiting the first half-cycle of inrush current. The presence of some residual flux plus the saturated reactance of the primary will then further limit, in the worst case, the half-cycle surge safely within the surge rating of the SSR.

SELECTING THE PROPER SSR

NOMINAL LOAD CURRENT: Initially select a relay whose current rating exceeds the normal load current. Using the load current vs, temperature charts for that relay, check the actual current capacity at the ambient temperature to which the relay will be subjected.

As an example, the chart shows that a 25 ampere relay provided with a suitable heat sink can safely carry a maximum of 22 amperes continuously at 40 C ambient. Since heat degrades the components ability to carry current, every effort should be made to keep the operating temperature of the SSR as low as possible.



SSR - DIN SOLID STATE DIN MOUNT RELAY

SPST-N.O., 10 & 25 AMPS

UL Recognized
File No. E52197

COMPLIES WITH REQUIREMENTS OF

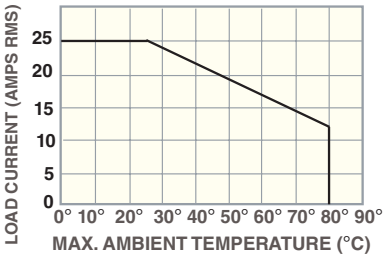
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
INTEGRAL HEATSINK	FACTORY TESTED THERMAL MANAGEMENT
DIN CLIP	MOUNT DIRECTLY ON DIN RAIL OR PANEL
SOLID STATE CIRCUITRY	NO MOVING PARTS
OPTICALLY COUPLED CIRCUIT	ISOLATE INPUT FROM OUTPUT
INTERNAL SNUBBER	PROTECTS FROM TRANSIENTS

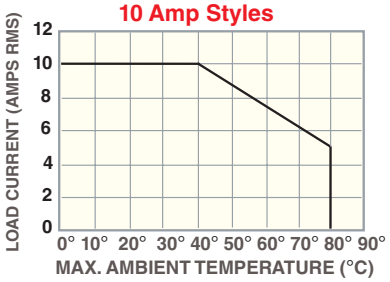
MANUFACTURED UNDER ISO 9002

THERMAL DERATING CURVE & LOAD CHARACTERISTICS

25 Amp Styles



10 Amp Styles



RANDOM TURN-ON AND NORMALLY CLOSED VERSIONS AVAILABLE

AC & DC CONTROLLED INPUT. INTEGRAL HEATSINK. OPTICALLY COUPLED FOR 4000 VAC ISOLATION BETWEEN INPUT AND OUTPUT AND RFI SUPPRESSION. 30 MILLIMETERS WIDE PANEL/DIN MOUNTABLE(35 mm RAIL) FINGER SAFE COVER L. E. D. STATUS LAMP LIFETIME WARRANTY

ORDERING CODE

SSR | 2 | 10 | DIN-DC

CLASS:

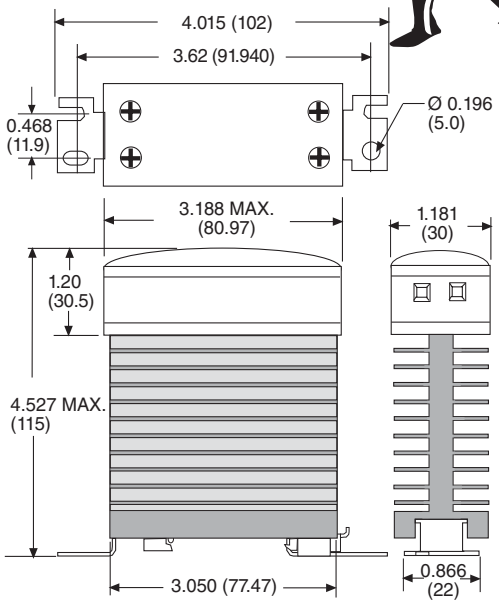
LOAD VOLTAGE RANGE:
24 - 280 VAC: **CODE 2**
48 - 660 VAC: **CODE 6**

RATED LOAD CURRENT:
10 AMPS, 25 AMPS

CONTROL VOLTAGE :
3 - 32 VDC = DIN-DC; 90 - 280 VAC = DIN - AC

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



GENERAL SPECIFICATIONS (@ 25°C)

INPUT CHARACTERISTICS

Control Voltage Range:	DIN-AC: 90-280 VAC (50/60 Hz) / DIN-DC: 3 - 32 VDC
Typical Input Current:	AC: 12 mA; DC: 16 mA
Must Release Voltage:	10 VAC / 1 VDC
Reverse Polarity Protection:	DC: Yes
Power Indicator:	Red L. E. D. Status lamp

OUTPUT CHARACTERISTICS

Style: SSR:	210DIN-AC	225DIN-AC	610DIN-AC	625DIN-AC	210DIN-DC	225DIN-DC	610DIN-DC	625DIN-DC
Load Voltage Range (50/60 Hz):	40-280 VAC	40-280 VAC	48-660 VAC	48-660 VAC	40-280 VAC	40-280 VAC	48-660 VAC	48-660 VAC
Rated Load Current:	10 Amp	25 Amp	10 Amp	25 Amp	10 Amp	25 Amp	10 Amp	25 Amp
Maximum Off State Voltage dv/dt:	200 uS	500 uS	200 uS	700 uS	200 uS	500 uS	200 uS	700 uS
Minimum Load Current:	50 mA	120 mA	80 mA	250 mA	50 mA	120 mA	80 mA	250 mA
Non-Repetitive Surge Current (1 Cycle):	83 A	800 A	83 A	1000 A	83 A	800 A	83 A	1000 A
Maximum Off State Leakage Current (Rms):	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA
Typical On-State Voltage Drop (Rms):	1.25 VAC	1.35 VAC	1.25 VAC	1.35VAC	1.25 VAC	1.25 VAC	1.25 VAC	1.35 VAC
Maximum I^2T For Fusing (A^2Sec):	83	3700	83	1700	83	3700	83	1700

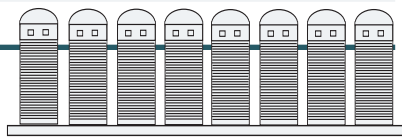
Maximum Turn - On Time:	8.3 mS
Maximum Turn - Off Time:	8.3 mS

MISCELLANEOUS CHARACTERISTICS

Dielectric Strength (Input/Output/Base):	4000 V rms
Insulation Resistance:	100 megohms minimum @ 500 VDC
Operating Temperature Range:	-30ºC to +80ºC
Storage Temperature Range:	-40ºC to +100ºC
Weight:	340 grams approx.

RECOMMENDED SPACING BETWEEN MULTIPLE SSR's: 0.75 INCH

STANDARD PART NUMBERS	RATED LOAD CURRENT
SSR210DIN-AC	10 AMPS
SSR225DIN-AC	25 AMPS
SSR610DIN-AC	10 AMPS
SSR625DIN-AC	25 AMPS
SSR210DIN-DC	10 AMPS
SSR225DIN-DC	25 AMPS
SSR610DIN-DC	10 AMPS
SSR625DIN-DC	25 AMPS



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6 SERIES SOLID STATE RELAYS

FEATURES	BENEFITS
SOLID STATE CIRCUITRY	NO MOVING PARTS
OPTICALLY COUPLED CIRCUIT	ISOLATE INPUT FROM OUTPUT
INTERNAL SNUBBER	PROTECTS RELAY FROM TRANSIENTS
RED L. E. D. STATUS LAMP	VERIFY PRESENCE OF INPUT VOLTAGE
CLEAR PLASTIC COVER	PROTECTION FROM ACCIDENTAL CONTACT

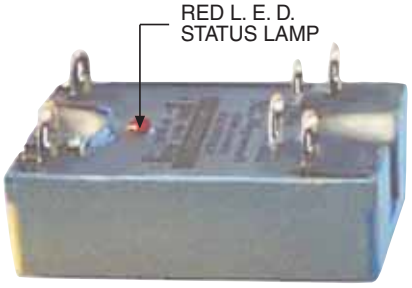
c UL us
UL Recognized
File No. E52197

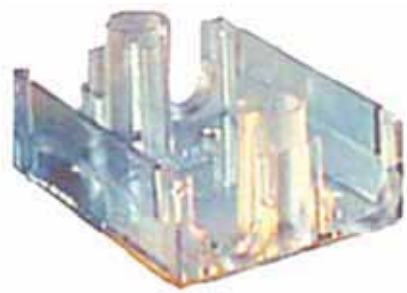
CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

MANUFACTURED UNDER ISO 9002

ALL CURRENT RATINGS ON THE FOLLOWING PAGES ARE BASED ON USE OF A SUITABLE THERMALLY CONDUCTIVE COMPOUND (E.G. SILICONE GREASE BETWEEN THE SSR MOUNTING BASE AND THE MOUNTING SURFACE OF A SUITABLE HEAT SINK).





SAFETY COVER STANDARD ON ALL MODELS EXCEPT DUAL OUTPUT

FAMILY	INPUT-CONTROL	OUTPUT-LOAD	CONTROL-METHOD
ASX	AC	AC	SCRs
DSX	DC	AC	SCRs
DTX	DC	AC	TRIAC
DDX	DC	DC	MOSFET

INPUT & OUTPUT SCREW SIZE

UP TO 40 AMP	
INPUT	OUTPUT
M 3.5	M 4
ABOVE 40 AMP	
M 3.5	M 6

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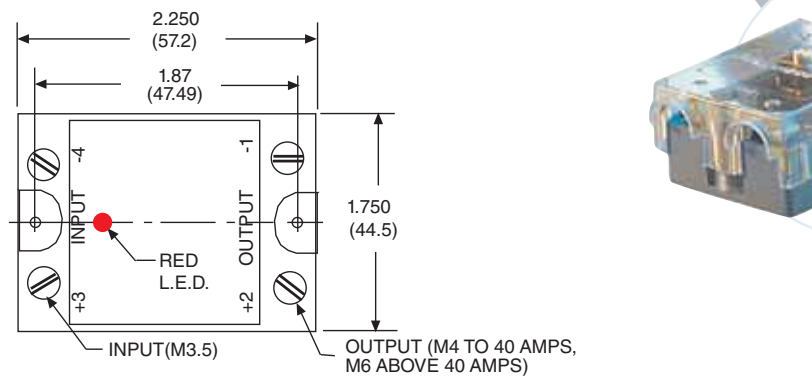
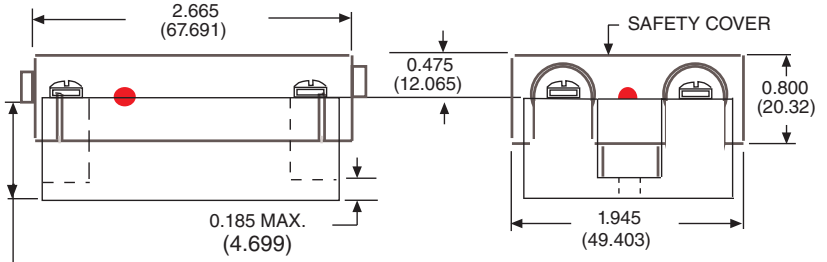
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



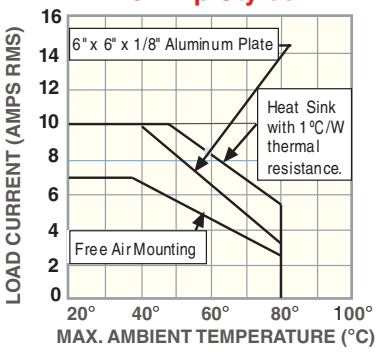


0.996 Max. (25.3) for 40 Amp DDX Models & for 75 to 125 Amps DSX & ASX Models.

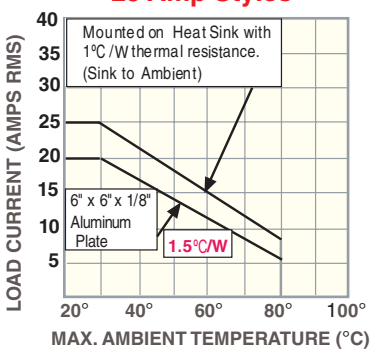
0.800 Max (20.32) for Models ASX, DSX & DTX Models up to 50 Amp & DDX 12 Amp Models.

THERMAL DERATING CURVE & LOAD CHARACTERISTICS

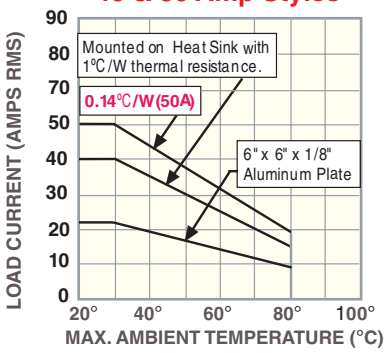
10 Amp Styles



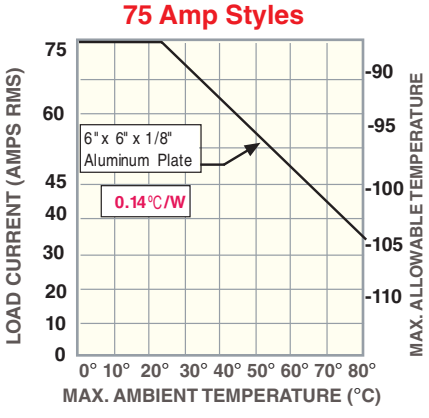
25 Amp Styles



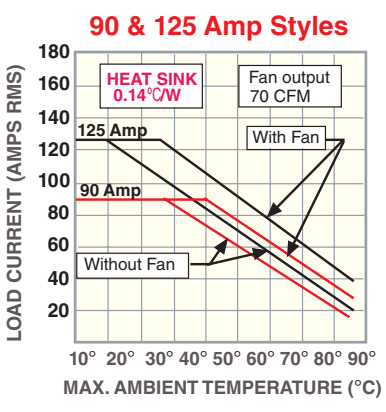
40 & 50 Amp Styles



75 Amp Styles



90 & 125 Amp Styles



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CE

ASX - AC/AC, DSX - DC/AC SPST, 10 TO 125 AMPS

GENERAL SPECIFICATIONS (@ 25°C)

INPUT CHARACTERISTICS

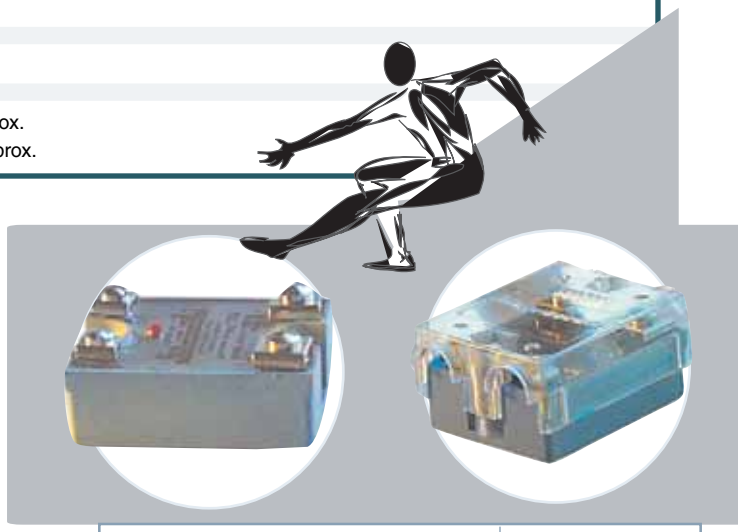
Style:	ASX	DSX
Control Voltage Range:	90 - 280 VAC (50/60 Hz)	3 - 32 VDC
Typical Input Current:	20 mA @ 240 VAC	16 mA @ 30 VDC
Must Release Voltage:	10 VAC	1 VDC
Maximum. Reverse Control Voltage:	N / A	YES

OUTPUT CHARACTERISTICS

Style:	W62					W64					W66	
Load Voltage Range (50/60 Hz):	40 - 280 VAC					48 - 480 VAC					48 - 660 VAC	
Rated Load Current:	10 Amp	25 Amp	40 Amp	50 Amp	75 Amp	10 Amp	25 Amp	40 Amp	50 Amp	75 Amp	90 Amp	125 Amp
Maximum Off-State Voltage dv/dt:	200 uS	500 uS	500 uS	500 uS	500 uS	200 uS	300 uS	500 uS	500 uS	500 uS	1000 uS	1000 uS
Minimum Load Current:	50 mA	120 mA	250 mA	250 mA	250 mA	50 mA	250 mA	250 mA	250 mA	250 mA	500 mA	500 mA
Non-Repetitive Surge Current (1 Cycle):	83 A	250 A	625 A	520 A	1150 A	83 A	250 A	625 A	520 A	1150 A	1350 A	1800 A
Maximum off State Leakage Current (Rms):	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA	5 mA	5 mA
Typical On-State Voltage Drop (Rms):	1.6 VAC	1.6 VAC	1.6 VAC	1.8 VAC	1.8 VAC	1.6 VAC	1.6 VAC	1.6 VAC	1.8VAC	1.8 VAC	1.8 VAC	1.8 VAC
Maximum I^2T for Fusing (A^2 Sec):	83	250	625	1250	5000	72	312	1250	1035	2600	3500	5800
Suggested Heatsink °C/W:	3.2	0.5	0.2	0.014	0.14	3.2	0.5	0.2	0.14	0.14	0.14+fan	0.14+fan
Maximum Turn - On Time:	8.3 mS											
Maximum Turn - Off Time:	8.3 mS											

MISCELLANEOUS CHARACTERISTICS

Dielectric Strength (Input/Output/Base):	4000 V rms
Insulation Resistance:	100 megohms minimum @ 500 VDC
Operating Temperature Range:	-40 °C to +80 °C
Storage Temperature Range:	-40 °C to +100 °C
Weight:	10 amps to 50 amps: 100 grams approx. 75 amps to 125 amps: 250 grams approx.



ORDERING CODE

6	2	10	ASX-	1

CLASS:

LOAD VOLTAGE RANGE:
40 - 280 VAC: CODE 2
48 - 480 VAC: CODE 4
48 - 600 VAC: CODE 6

RATED LOAD CURRENT:
10 AMPS, 25 AMPS, 40 AMPS, 50 AMPS, 75 AMPS, 90 AMPS, 125 AMPS

INPUT/OUTPUT STYLE:
ASX: AC- INPUT / AC OUTPUT
DSX: DC- INPUT / AC OUTPUT

OPTIONS:
-1 = ZERO CROSS, NORMALLY OPEN
-2 = RANDOM TURN ON, NORMALLY OPEN
-4 = RANDOM TURN ON, NORMALLY CLOSED

STANDARD PART NUMBERS		RATED LOAD CURRENT
ASX	DSX	
W6210ASX-1	W6210DSX-1	10 AMPS
W6225ASX-1	W6225DSX-1	25 AMPS
W6240ASX-1	W6240DSX-1	40 AMPS
W6250ASX-1	W6250DSX-1	50 AMPS
W6275ASX-1	W6275DSX-1	75 AMPS
W6410ASX-1	W6410DSX-1	10 AMPS
W6425ASX-1	W6425DSX-1	25 AMPS
W6440ASX-1	W6440DSX-1	40 AMPS
W6450ASX-1	W6450DSX-1	50 AMPS
W6475ASX-1	W6475DSX-1	75 AMPS
W6690ASX-1	W6690DSX-1	90 AMPS
W66125ASX-1	W66125DSX-1	125 AMPS

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Magnecraft Struthers-Dunn Your Contact for Industrial Relays

DDX - DC/DC, SPST, 12 TO 40 AMPS

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File No. E52197

CE

GENERAL SPECIFICATIONS (@ 25°C)

INPUT CHARACTERISTICS	DDX
Style:	3.5 - 32 VDC
Control Voltage Range:	16 mA @ 30 VDC
Typical Input Current:	1 VDC
Must Release Voltage:	NO
Maximum. Reverse Control Voltage:	

OUTPUT CHARACTERISTICS			
Style:	W62		
Load Voltage Range:	3 - 200 VDC		
Rated Load Current:	12 Amp	25 Amp	40 Amp
Minimum Load Current:	20 mA	20 mA	20 mA
Non-Repetitive Surge Current (1 Second):	27 A	50 A	90 A
Maximum Off State Leakage Current (Rms):	8 mA	8 mA	8 mA
Typical On-State Voltage Drop (Rms):	1.6 VAC	1.6 VAC	1.6 VAC
Suggested Heatsink °C/W:	1.0	0.5	0.14
Maximum Turn - On Time:	600 uS		
Maximum Turn - Off Time:	2.6 mS		

MISCELLANEOUS CHARACTERISTICS	
Dielectric Strength (Input/Output/Base):	2500 V rms
Insulation Resistance:	100 megohms minimum @ 500 VDC
Operating Temperature Range:	-40 °C to +80 °C
Storage Temperature Range:	-40 °C to +100 °C
Weight:	100 grams approx.

ORDERING CODE

6	2	10	DDX-

CLASS:

LOAD VOLTAGE RANGE:
3 - 200 VDC: **CODE 2**

RATED LOAD CURRENT:
10 AMPS, 25 AMPS, 40 AMPS

OPTIONS:
-1 = RANDOM TURN ON, NORMALLY OPEN

STANDARD PART NUMBERS	RATED LOAD CURRENT
W6212DDX-1	12 AMPS
W6225DDX-1	25 AMPS
W6240DDX-1	40 AMPS

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File No. E52197

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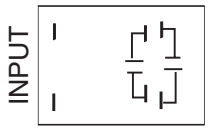
DTX - DC/AC
SPST & DPST, 10 TO 40 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



DTX - 3

GENERAL SPECIFICATIONS (@ 25°C)

INPUT CHARACTERISTICS

Style:	DTX
Control Voltage Range:	3 - 32 VDC
Typical Input Current:	2 mA (62 series), 16 mA (64 series)
Must Release Voltage:	1 VDC
Maximum. Reverse Control Voltage:	YES

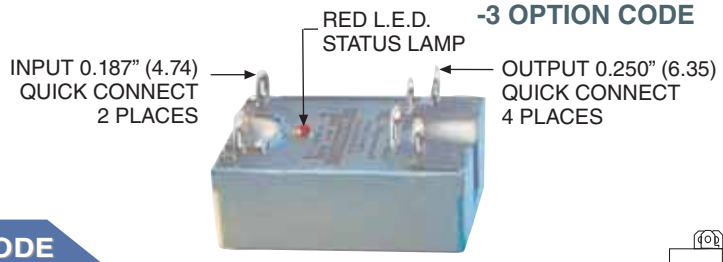
OUTPUT CHARACTERISTICS

Style:	W62			W64		
Load Voltage Range (50/60 Hz):	24 - 280 VAC			48 - 480 VAC		
Rated Load Current:	10 Amp	25 Amp	40 Amp	10 Amp	25 Amp	40 Amp
Maximum Off-State Voltage dv/dt:	250 uS	250 uS	250 uS	200 uS	250 uS	250 uS
Minimum Load Current:	50 mA	120 mA	50 mA	50 mA	20 mA	250 mA
Non -Repetitive Surge Current (1 Cycle):	100 A	250 A	250 A	100 A	250 A	250 A
Maximum Off State Leakage current (Rms):	10 mA	10 mA	10 mA	10 mA	10 mA	10 mA
Typical On-State Voltage Drop (Rms):	1.6 VAC	1.6 VAC	1.6 VAC	1.6 VAC	1.6 VAC	1.6 VAC
Maximum I^2T for Fusing (A^2 Sec):	52	300	438	35	200	250
Suggested Heatsink °C/W:	3.2	0.5	1.4	3.2	0.5	0.2

Maximum Turn - On Time:	8.3 mS
Maximum Turn - Off Time:	8.3 mS

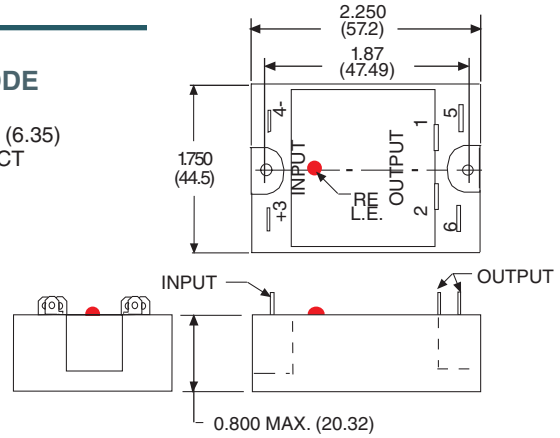
MISCELLANEOUS CHARACTERISTICS

Dielectric Strength (Input/Output/Base):	4000 V rms
Insulation Resistance:	100 megohms minimum @ 500 VDC
Operating Temperature Range:	-40 °C to +80 °C
Storage Temperature Range:	-40 °C to +100 °C
Weight:	100 grams approx.



-3 OPTION CODE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



ORDERING CODE

6	2	10	DTX-	1

CLASS:

LOAD VOLTAGE RANGE:
24 - 280 VAC: **CODE 2**
48 - 480 VAC: **CODE 4**

RATED LOAD CURRENT:
10 AMPS, 25 AMPS, 40 AMPS,

INPUT/OUTPUT STYLE:
DTX: DC - INPUT / AC OUTPUT

OPTIONS:
-1 = ZERO CROSS, NORMALLY OPEN
-2 = RANDOM TURN ON, NORMALLY OPEN
-3 = DOUBLE POLE, RANDOM TURN ON, NORMALLY OPEN
-4 = RANDOM TURN ON, NORMALLY CLOSED

STANDARD PART NUMBERS	RATED LOAD CURRENT
*W6210DTX-1	10 AMPS
*W6225DTX-1	25 AMPS
*W6240DTX-1	40 AMPS
*W6410DTX-1	10 AMPS
*W6425DTX-1	25 AMPS
*W6440DTX-1	40 AMPS
W6210DTX-3	10 AMPS
W6210DTX-4	10 AMPS
*W6225DTX-4	25 AMPS
W6240DTX-4	40 AMPS

*CE Approved

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70S2 SERIES SOLID STATE RELAYS

SPST-N.O., 2.5 TO 25 AMPS

c UL us
UL Recognized
File No. E52197

168986

FEATURES	BENEFITS
SMALL PACKAGES	IDEAL FOR TIGHT DESIGNS
EIGHT DIFFERENT PACKAGES	WIDE CHOICE OF DESIGN OPTIONS
OPTICALLY ISOLATED.	INPUT ISOLATED FROM OUTPUT
ZERO CROSS SWITCHING	REDUCED CURRENT SURGES FOR MOST LOADS
INTERNAL SNUBBER	EXCELLENT TRANSIENT PROTECTION

MANUFACTURED UNDER ISO 9002

DC INPUT-AC OUTPUT

MAX. LOAD CURRENT	CONTROL VOLTAGE RANGE	NOMINAL LOAD VOLTAGE	DESCRIPTION AND FEATURES	STYLE
2.5 A	3-30 or 6-30 VDC	24, 120 or 240 VAC	MINIATURE PRINTED CIRCUIT MOUNT RELAY, ONLY 0.500" HIGH	H
3 A	3-32 or 6-32 VDC	24, 120 or 240 VAC	SINGLE IN - LINE PACKAGE, USES ONLY 0.680 SQ. INCHES BOARD AREA	V
4 A	3-30 or 6-30 VDC	24, 120 or 240 VAC	COMPACT RELAY, PRINTED CIRCUIT MOUNT	F
6 A	3-30 or 6-30 VDC	120 or 240 VAC	LOW PROFILE RELAY, PANEL OR PRINTED CIRCUIT MOUNT	L
6 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, PANEL OR PRINTED CIRCUIT MOUNT	M
6 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, QUICK CONNECT TERMINALS	N
6 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, SCREW TERMINALS	S
10 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, PANEL OR PRINTED CIRCUIT MOUNT 10 AMP	M
12 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, QUICK CONNECT TERMINALS	N
12 A	3-30 or 6-30 VDC	120 or 240 VAC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, SCREW TERMINALS	S
25 A	3-30 VDC	120 or 240 VAC	HIGH OUTPUT VERSION OF ABOVE STYLE "S"	S

DC INPUT-DC OUTPUT

MAX. LOAD CURRENT	CONTROL VOLTAGE RANGE	NOMINAL LOAD VOLTAGE	DESCRIPTION AND FEATURES	STYLE
3 A	3-15 or 9-30 VDC	3 to 60 VDC	SINGLE IN - LINE PACKAGE, USES ONLY 0.680 SQ . INCHES BOARD SPACE	V
3 A	3-15 or 9-30 VDC	3 to 60 VDC	COMPACT RELAY, PRINTED CIRCUIT. MOUNT	F
5 A	3-15 VDC	3 to 60 VDC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, QUICK CONNECT TERMINALS	N
5 A	3-15 VDC	3 to 60 VDC	COMPACT RELAY, MEETS FIT/FUNCTION REPLACEMENTS FOR LARGER CLASS 6 STYLE RELAYS, SCREW TERMINALS	S

FORMERLY GRAYHILL

ORDERING CODE

70S2- 04- D- 03 - V

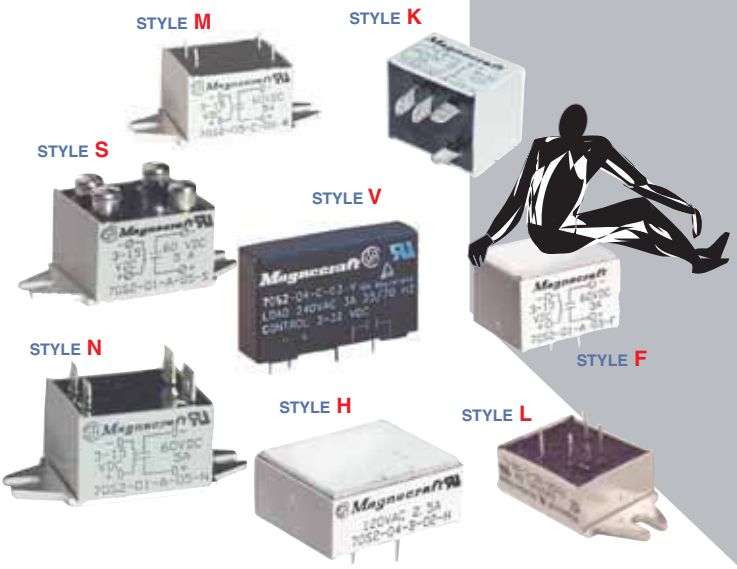
CLASS:

CONTROL VOLTAGE:
01 = 3 - 15 VDC, DC/DC RELAYS
02 = 9 - 30 VDC, DC/DC RELAYS
03 = 3 - 30 VDC, 25 A S PACK
04 = 3 - 30 VDC (OR 32 VDC), DC/AC RELAYS
05 = 6 - 30 VDC (OR 32 VDC), DC/AC RELAYS

LOAD VOLTAGE RANGE:
A = 3-60 VDC B = 120 VAC
C = 240 VAC D = 24 VAC

MAX CURRENT RATING
02 = 2.5 A 04 = 4 A 06 = 6 A 12 = 12 A
03 = 3 A 05 = 5 A 10 = 10A 25 = 25 A

PACKAGE STYLE
F, H, L, M, N, S OR V.



LIFETIME WARRANTY.

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70S2 SERIES SOLID STATE "V" STYLE RELAY

DC/AC, SPST-N.O., 3 AMPS

GENERAL SPECIFICATIONS (@ 25°C)

c UL us
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File No. E52197

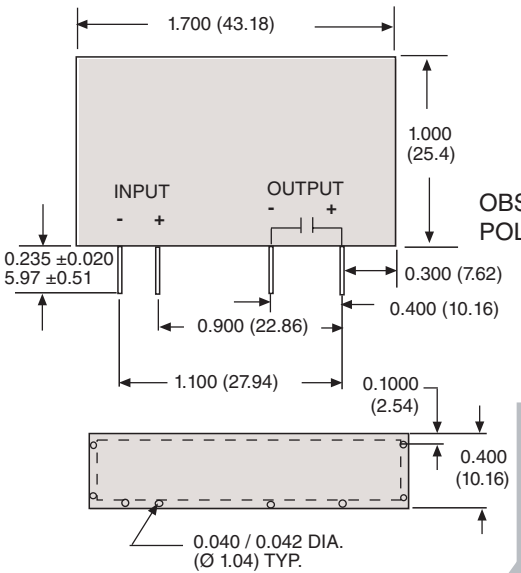
168986

TÜV

INPUT CHARACTERISTICS								
Style:	70S2-04-D	70S2-05-D	70S2-04-B	70S2-05-B	70S2-04-C	70S2-05-C	70S2-01-A	70S2-02-A
Control Voltage Range:	3 - 32 VDC	6 - 32 VDC	3 - 32 VDC	6 - 32 VDC	3 - 32 VDC	6 - 32 VDC	3 - 15 VDC	9 - 30 VDC
Typical Input Current:	1.0 -19 mA	1.0 -6.0 mA	1.0 -19 mA	1.0 -6.0 mA	1.0 -19 mA	1.0 -6.0 mA	5 -40mA	5 -17 mA
Must Release Voltage:	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC
Max. Reverse Control Voltage:	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC
OUTPUT CHARACTERISTICS								
Load Voltage Range:	8 - 50 VAC	8 - 50 VAC	24 - 140 VAC	24 - 140 VAC	24 - 280VAC	24 - 280 VAC	3 - 60 VDC	3 - 60 VDC
Rated Load Current :	3 Amps	3 Amps	3 Amps	3 Amps	3 Amps	3 Amps	3 Amps	3 Amps
Maximum off-State Voltage dv/dt:	300 V/u Sec Typ						-	-
Minimum Load Current:	75 mA	75 mA	75 mA	75 mA	75 mA	75 mA	100 mA	100 mA
Non-Repetitive Surge Current (1 Cycle):	60 Amps Peak @ 25 C						5 Amps/1 Sec.	
Maximum Off State Leakage Current (Rms):	3 mA	3 mA	6 mA	6 mA	6 mA	6 mA	10 uA	10 uA
Typical On-State Voltage Drop(Rms):	1.6	1.6	1.6	1.6	1.6	1.6	1.2 VDC	1.2 VDC
Minimum Peak Blocking Voltage:	200 V	200 V	400 V	400 V	600 V	600 V	105 VDC	105 VDC
Operating Frequency Range:	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	DC	DC
Maximum Turn - On Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	75 mS	75 mS
Maximum Turn - Off Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	500 mS	500 mS
MISCELLANEOUS CHARACTERISTICS								
Dielectric Strength (Input/Output):	3750 V rms.	3750 V rms.	3750 V rms.	3750 V rms.	3750 V rms.	3750 V rms.	3750 V rms.	3750 V rms.
Insulation Resistance:	100 megohms minimum @ 500 VDC							
Operating Temperature Range:	-40°C to +100°C							
Storage Temperature Range:	-40°C to +125°C							
Weight:	25 grams approx.							

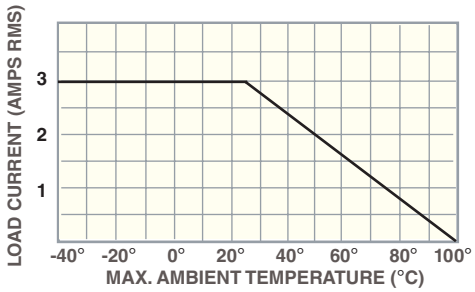
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



STYLE V

Figure 1: Maximum Continuous Current **vs.** Ambient Temperature



STANDARD PART NUMBERS	LOAD VOLTAGE RANGE	RATED LOAD CURRENT
*70S2-04-D-03-V	8 - 50 VAC	3 AMPS
*70S2-05-D-03-V	8 - 50 VAC	3 AMPS
*70S2-04-B-03-V	24 -140 VAC	3 AMPS
*70S2-05-B-03-V	24 - 140 VAC	3 AMPS
*70S2-04-C-03-V	24 - 280 VAC	3 AMPS
*70S2-05-C-03-V	24 - 280 VAC	3 AMPS
70S2-01-A-03-V	3 - 60 VDC	3 AMPS
70S2-02-A-03-V	3 - 60 VDC	3 AMPS

* TUV

CONSULT FACTORY FOR OTHER CONFIGURATIONS.

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70S2 SERIES SOLID STATE "N" & "S" STYLE RELAYS

DC/AC, SPST-N.O. 5, 6, 12 & 25 AMPS

GENERAL SPECIFICATIONS (@ 25°C)

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File No. E52197

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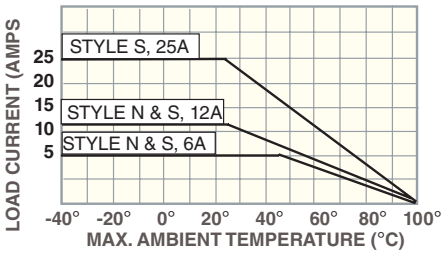
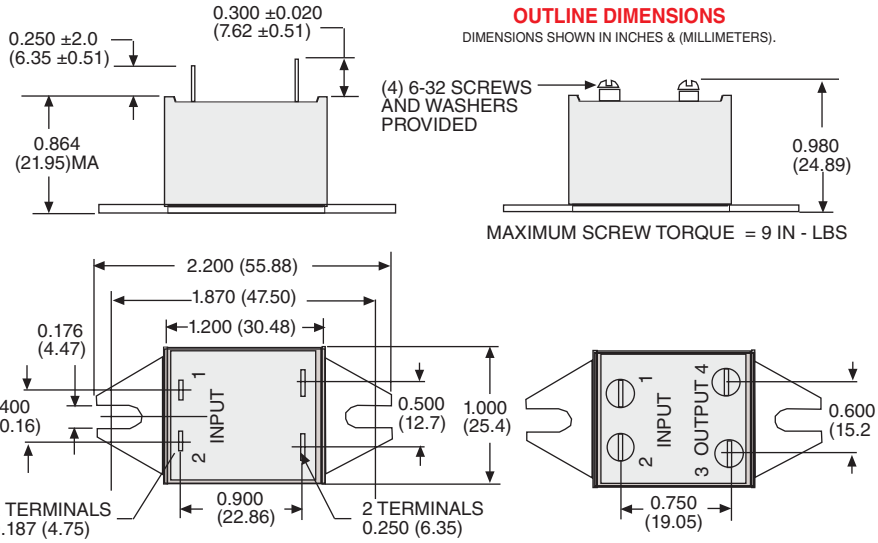
	70S2-04-B	70S2-05-B	70S2-04-C	70S2-05-C	70S2-03-B	70S2-03-C	70S2-01-A	70S2-02-A
INPUT CHARACTERISTICS								
Style:								
Control Voltage Range:	3 - 30 VDC	6 - 30 VDC	3 - 30 VDC	6 - 30 VDC	3 - 30 VDC	3 - 30 VDC	3 - 15 VDC	9 - 30 VDC
Typical Input Current:	7.0 -16 mA	6.0 -10 mA	7.0 -16 mA	6.0 -10 mA	7.0 -16 mA	7.0 -16 mA	5 -40 mA	5 -17 mA
Must Release Voltage:	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC
Maximum. Reverse Control Voltage:	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC
OUTPUT CHARACTERISTICS								
Load Voltage Range:	24 - 140 VAC	24 - 140 VAC	24 - 280 VAC	24 - 280 VAC	24 - 140 VAC	24 - 280 VAC	3 - 60 VDC	3 - 60 VDC
Rated Load Current :	6 Amp | 12 Amp	6 Amp | 12 Amp	6 Amp | 12 Amp	6 Amp | 12 Amp	25 Amps	25 Amps	5 Amps	5 Amps
Maximum off-State Voltage dv/dt:	300 V/u Sec Typ						-	-
Minimum Load Current:	75 mA | 100 mA	75 mA | 100 mA	75 mA | 100 mA	75 mA | 100 mA	100 mA	100 mA	100 mA	100 mA
Non-Repetitive Surge Current (1 Cycle):	60 Amp | 150 Amp	60 Amp | 150 Amp	60 Amp | 150 Amp	60 Amp | 150 Amp	300 Amps	300 Amps	7 Amps/sec 10	7 Amps/sec
Maximum Off State Leakage Current (Rms):	6 mA	6 mA	6 mA	6 mA	6 mA	6 mA	uA	10 uA
Typical On-State Voltage Drop(Rms):	1.6 V	1.6 V	1.6 V	1.6 V	1.7 V	1.7 V	1.85 VDC	1.85 VDC
Minimum Peak Blocking Voltage:	400 V	400 V	600 V	600 V	400 V	600 V	105 VDC	105 VDC
Operating Frequency Range:	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	DC	DC
Maximum Turn - On Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	75 mS	75 mS
Maximum Turn - Off Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	750 mS	750 mS
MISCELLANEOUS CHARACTERISTICS								
Dielectric Strength (Input/Output/Base):	3000 V rms.	3000 V rms.	3000 V rms.	3000 V rms.	3000 V rms.	3000 V rms.	2500 V rms.	2500 V rms.
Insulation Resistance:	100 megohms minimum @ 500 VDC							
Operating Temperature Range:	-40°C to +100°C							
Storage Temperature Range:	-40°C to +125°C							
Weight:	47 grams approx.							

Figure 1: Maximum Continuous Current **vs.** Ambient Temperature



OUTLINE DIMENSIONS

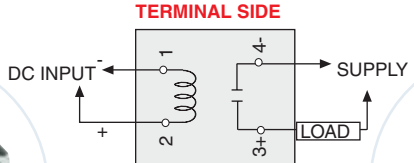
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



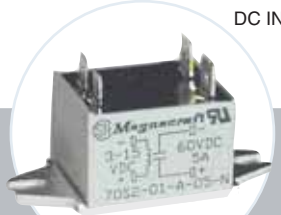
STANDARD PART NUMBERS	LOAD VOLTAGE RANGE	RATED LOAD CURRENT
70S2-04-B-06-N	24 - 140 VAC	6 AMPS
70S2-05-B-06-N	24 - 140 VAC	6 AMPS
70S2-04-B-12-N	24 - 140 VAC	12 AMPS
70S2-05-B-12-N	24 - 140 VAC	12 AMPS
70S2-04-C-06-N	24 - 280 VAC	6 AMPS
70S2-05-C-06-N	24 - 280 VAC	6 AMPS
70S2-04-C-12-N	24 - 280 VAC	12 AMPS
70S2-05-C-12-N	24 - 280 VAC	12 AMPS
70S2-04-B-06-S	24 - 140 VAC	6 AMPS
70S2-05-B-06-S	24 - 140 VAC	6 AMPS
70S2-04-B-12-S	24 - 140 VAC	12 AMPS
70S2-05-B-12-S	24 - 140 VAC	12 AMPS
70S2-03-B-25-S	24 - 140 VAC	25 AMPS
70S2-04-C-06-S	24 - 280 VAC	6 AMPS
70S2-05-C-06-S	24 - 280 VAC	6 AMPS
70S2-04-C-12-S	24 - 280 VAC	12 AMPS
70S2-05-C-12-S	24 - 280 VAC	12 AMPS
70S2-03-C-25-S	24 - 280 VAC	25 AMPS
70S2-01-A-05-N	3 - 60 VDC	5 AMPS
70S2-01-A-05-S	3 - 60 VDC	5 AMPS
70S2-02-A-05-S	3 - 60 VDC	5 AMPS

CONSULT FACTORY FOR OTHER CONFIGURATIONS.
S & N STYLE ARE NOT INTENDED FOR PC BOARD MOUNTING CONSULT FACTORY

TERMINAL SIDE



OBSERVE POLARITY
ON DC CONNECTIONS



STYLE N

STYLE S

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70S2 SERIES SOLID STATE "F" & "M" STYLE RELAYS

DC/AC, SPST-N.O. 3, 4, 6 & 10 AMPS

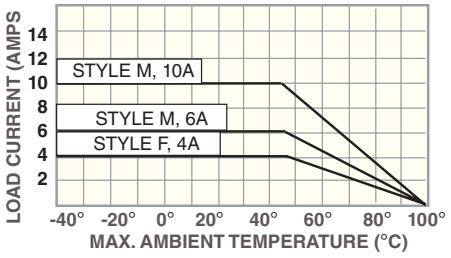
UL Recognized
File No. E52197

168986

GENERAL SPECIFICATIONS (@ 25°C)

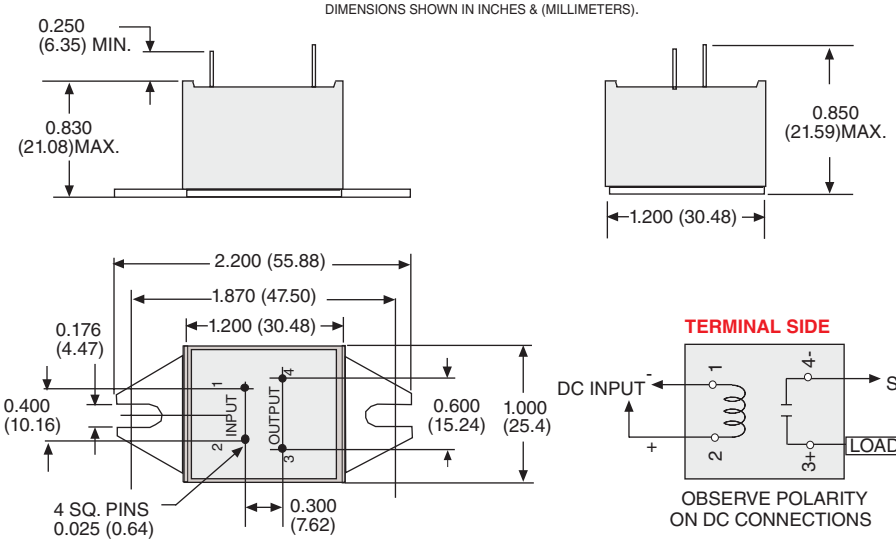
	70S2-04-B	70S2-05-B	70S2-04-C	70S2-05-C	70S2-01-A	70S2-02-A
INPUT CHARACTERISTICS						
Style:						
Control Voltage Range:	3 - 30 VDC	6 - 30 VDC	3 - 30 VDC	6 - 30 VDC	3 - 15 VDC	9 - 30 VDC
Typical Input Current:	7.0 -16 mA	6.0 -10 mA	7.0 -16 mA	6.0 -10 mA	5 - 40 mA	5 -17 mA
Must Release Voltage:	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC
Maximum Reverse Control Voltage:	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC
OUTPUT CHARACTERISTICS						
Load Voltage Range:	24 - 140 VAC	24 - 140 VAC	24 - 280 VAC	24 - 280 VAC	3 - 60 VDC	3 - 60 VDC
Rated Load Current :	4 & 6 Amp | 10 Amp	4 & 6 Amp | 10 Amp	4 & 6 Amp | 10 Amp	4 & 6 Amp | 10 Amp	3 Amps	3 Amps
Maximum off-State Voltage dv/dt:	300 V/u Sec Typ				-	-
Minimum Load Current:	75 mA | 100 mA	75 mA | 100 mA	75 mA | 100 mA	75 mA | 100 mA	100 mA	100 mA
Non-Repetitive Surge Current (1 Cycle):	60 Amp | 110 Amp	60 Amp | 110 Amp	60 Amp | 110 Amp	60 Amp | 110 Amp	-	-
Maximum Off State Leakage Current (Rms):	6 mA	6 mA	6 mA	6 mA	10 uA	10 uA
Typical On-State Voltage Drop(Rms):	1.6	1.6	1.6	1.6	1.2 VDC	1.2 VDC
Minimum Peak Blocking Voltage:	400 V	400 V	600 V	600 V	105 VDC	105 VDC
Operating Frequency Range:	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	DC	DC
Maximum Turn - On Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	75 uS	75 uS
Maximum Turn - Off Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	500 uS	500 uS
MISCELLANEOUS CHARACTERISTICS						
Dielectric Strength (Input/Output/Base):	3000 V rms.	3000 V rms.	3000 V rms.	3000 V rms.	2500 V rms.	2500 V rms
Insulation Resistance:	100 megohms minimum @ 500 VDC					
Operating Temperature Range:	-40°C to +100°C					
Storage Temperature Range:	-40°C to +125°C					
Weight:	35 grams approx.					

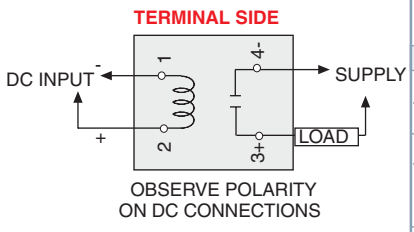
Figure 1: Maximum Continuous Current **vs.** Ambient Temperature



OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).





STANDARD PART NUMBERS	LOAD VOLTAGE RANGE	RATED LOAD CURRENT
70S2-04-B-04-F	24 - 140 VAC	4 AMPS
70S2-05-B-04-F	24 - 140 VAC	4 AMPS
70S2-04-C-04-F	24 - 280 VAC	4 AMPS
70S2-05-C-04-F	24 - 280 VAC	4 AMPS
70S2-04-B-06-M	24 - 140 VAC	6 AMPS
70S2-05-B-06-M	24 - 140 VAC	6 AMPS
70S2-04-B-10-M	24 - 140 VAC	10 AMPS
70S2-05-B-10-M	24 - 140 VAC	10 AMPS
70S2-04-C-06-M	24 - 280 VAC	6 AMPS
70S2-05-C-06-M	24 - 280 VAC	6 AMPS
70S2-04-C-10-M	24 - 280 VAC	10 AMPS
70S2-05-C-10-M	24 - 280 VAC	10 AMPS
70S2-01-A-03-F	3 - 60 VDC	3 AMPS
70S2-02-A-03-F	3 - 60 VDC	3 AMPS

CONSULT FACTORY FOR OTHER CONFIGURATIONS.

STYLE F

STYLE M

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70S2 SERIES SOLID STATE "H" & "L" STYLE RELAYS

DC/AC, SPST-N.O. 2.5 & 6 AMPS

UL Recognized
File No. E52197

168986

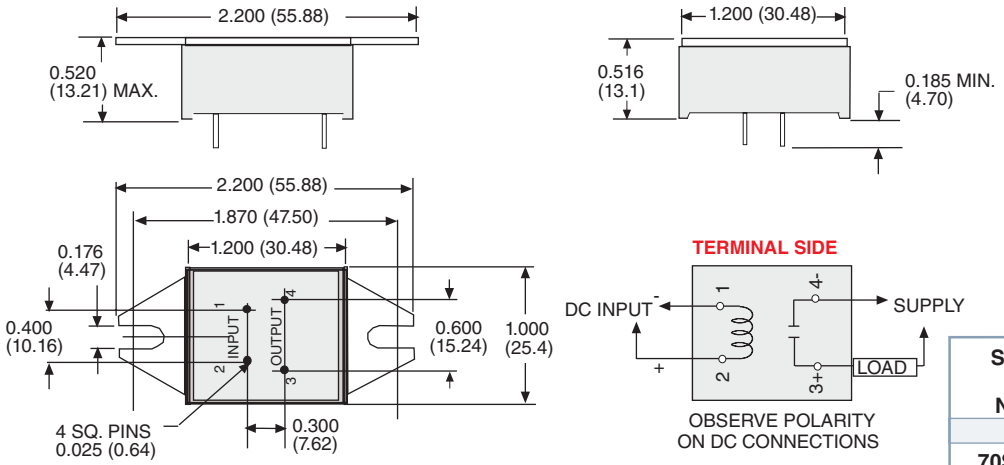
GENERAL SPECIFICATIONS (@ 25°C)

	70S2-04-D	70S2-05-D	70S2-04-B	70S2-05-B	70S2-04-C	70S2-05-C
INPUT CHARACTERISTICS						
Style:						
Control Voltage Range:	3 - 30 VDC	6 - 30 VDC	3 - 30 VDC	6 - 30 VDC	3 - 30 VDC	6 - 30 VDC
Typical Input Current:	1.0 -17 mA	1.0 - 6.0 mA	1.0 -17 mA	1.0 - 6.0 mA	1.0 -17 mA	1.0 - 6.0 mA
Must Release Voltage:	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC
Maximum Reverse Control Voltage:	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC	3 VDC
OUTPUT CHARACTERISTICS						
Load Voltage Range:	8 - 50 VAC	8 - 50 VAC	24 - 140 VAC	24 - 140 VAC	24 - 280 VAC	24 - 280 VAC
Rated Load Current :	2.5 Amps	2.5 Amps	2.5 & 6 Amp	2.5 & 6 Amp	2.5 & 6 Amp	2.5 & 6 Amp
Maximum off-State Voltage dv/dt:	300 V/u Sec Typ					
Minimum Load Current:	75 mA	75 mA	75 mA	75 mA	75 mA	75 mA
Non-Repetitive Surge Current (1 Cycle):	60 Amp	60 Amp	60 Amp	60 Amp	60 Amp	60 Amp
Maximum Off State Leakage Current (Rms):	3 mA	3 mA	6 mA	6 mA	6 mA	6 mA
Typical On-State Voltage Drop(Rms):	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V
Minimum Peak Blocking Voltage:	200 V	200 V	400 V	400 V	600 V	400 V
Operating Frequency Range:	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz
Maximum Turn - On Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS
Maximum Turn - Off Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS

MISCELLANEOUS CHARACTERISTICS	
Dielectric Strength (Input/Output/Base):	2500 V rms.
Insulation Resistance:	-40°C to +100°C
Operating Temperature Range:	-40°C to +125°C
Storage Temperature Range:	100 megohms minimum @ 500 VDC
Weight:	22 g Style **H,** 25 g Style **L** approx.

OUTLINE DIMENSIONS

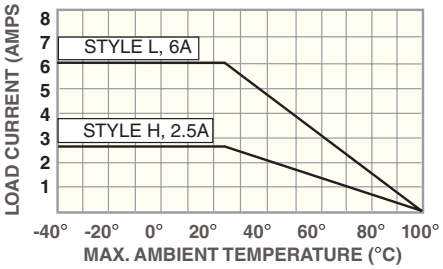
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



TERMINAL SIDE

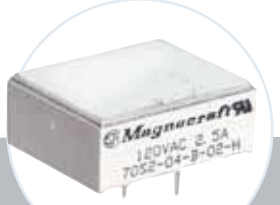
OBSERVE POLARITY
ON DC CONNECTIONS

Figure 1: Maximum Continuous Current **vs.** Ambient Temperature



STANDARD PART NUMBERS	LOAD VOLTAGE RANGE	RATED LOAD CURRENT
70S2-04-D-02-H	8 - 50 VAC	2.5 AMPS
70S2-05-D-02-H	8 - 50 VAC	2.5 AMPS
70S2-04-B-02-H	24 -140 VAC	2.5 AMPS
70S2-05-B-02-H	24 -140 VAC	2.5 AMPS
70S2-04-C-02-H	24 - 280 VAC	2.5 AMPS
70S2-05-C-02-H	24 - 280 VAC	2.5 AMPS
70S2-04-B-06-L	24 - 140 VAC	6 AMPS
70S2-05-B-06-L	24 - 140 VAC	6 AMPS
70S2-04-C-06-L	24 - 280 VAC	6 AMPS
70S2-05-C-06-L	24 - 280 VAC	6 AMPS

CONSULT FACTORY FOR OTHER CONFIGURATIONS.



STYLE H

STYLE L

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

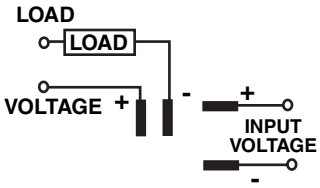
70S2 SERIES SOLID STATE "K" STYLE RELAY

DC/AC, SPST-N.O., 4 AMPS

c UL us
UL Recognized
File No. E52197

168986

WIRING DIAGRAM
(VIEWED FROM PIN END)



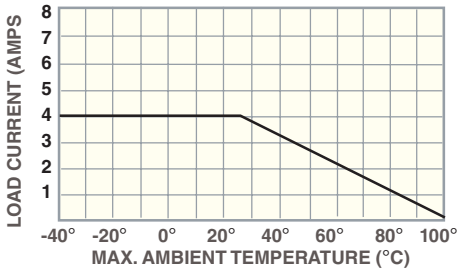
OBSERVE POLARITY

GENERAL SPECIFICATIONS (@ 25°C)

INPUT CHARACTERISTICS								
Style:	70S2-04-B	70S2-04-C	70S2-04-D	70S2-04-B	70S2-05-C	70S2-05-D	70S2-01-A	70S2-02-A
Control Voltage Range:	3 - 30 VDC	3 - 30 VDC	3 - 30 VDC	6 - 30 VDC	6 - 30 VDC	6 - 30 VDC	3 - 15 VDC	9 - 30 VDC
Typical Input Current:	1.0 -17 mA	1.0 - 6.0 mA	1.0 -17 mA	1.0 -6.0 mA	1.0 -17 mA	1.0 - 6.0 mA	5 - 40 mA	5 - 17 mA
Must Release Voltage:	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	1.0 VDC	2 VDC
Max. Reverse Control Voltage:	5 VDC	5 VDC	5 VDC	5 VDC	5 VDC	5 VDC	5 VDC	5 VDC
OUTPUT CHARACTERISTICS								
Load Voltage Range:	24 -140 VAC	24-280 VAC	8 - 50 VAC	24 -140 VAC	24 - 280 VAC	8 - 50 VAC	3 - 60 VDC	3 - 60 VDC
Rated Load Current :	4 Amp	4 Amp	4 Amp	4 Amp	4 Amp	4 Amp	3 Amp	3 Amp
Maximum off-State Voltage dv/dt:	300 V/u Sec							
Minimum Load Current:	75 mA	75 mA	75 mA	75 mA	75 mA	75 mA	100 mA	100 mA
Non-Repetitive Surge Current (1 Cycle):	60 Amp	60 Amp	60 Amp	60 Amp	60 Amp	60 Amp	7 Amp-1sec	7 Amp-1sec
Maximum Off State Leakage Current (Rms):	6 mA	6 mA	3 mA	6 mA	6 mA	6 mA	10 uA	10 uA
Typical On-State Voltage Drop (Rms):	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V	1.6 V	1.2 V	1.2 V
Minimum Peak Blocking Voltage:	400 V	600 V	200 V	400 V	600 V	200 V	105 V	105 V
Operating Frequency Range:	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	25 to 70 Hz	DC	DC
Maximum Turn - On Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	75 uS	75 uS
Maximum Turn - Off Time:	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	8.3 mS	500 uS	500 uS

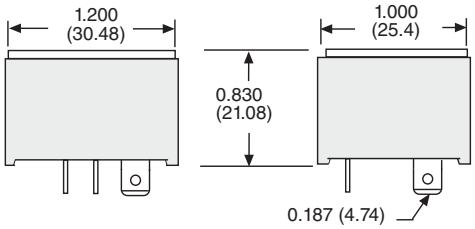
MISCELLANEOUS CHARACTERISTICS	
Dielectric Strength (Input/Output/Base):	3000 V rms. Min.
Insulation Resistance:	100 megohms minimum @ 500 VDC
Operating Temperature Range:	-40°C to +100°C
Storage Temperature Range:	-40°C to +125°C
Weight:	40 grams approx.

Figure 1: Maximum Continuous Current **vs.** Ambient Temperature

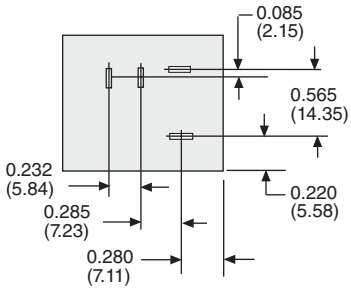


OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



TERMINAL BOTTOM VIEW



Mating Sockets
70-459-1: SCREW/DIN
See Section 7

STANDARD PART NUMBERS	LOAD VOLTAGE RANGE	RATED LOAD CURRENT
70S2-04-B-04-K	24 - 140 VAC	4 AMPS
70S2-04-C-04-K	24 - 280 VAC	4 AMPS
70S2-04-D-04-K	8 - 50 VAC	4 AMPS
70S2-05-B-04-K	24 - 140 VAC	4 AMPS
70S2-05-C-04-K	24 - 280 VAC	4 AMPS
70S2-05-D-04-K	8 - 50 VAC	4 AMPS
70S2-01-A-03-K	3 - 60 VDC	3 AMPS
70S2-02-A-03-K	3 - 60 VDC	3 AMPS

CONSULT FACTORY FOR OTHER CONFIGURATIONS.

STYLE K

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

226 SERIES MINIATURE SOLID STATE RELAY

DC/AC, SPST-N.O., 7 AMPS

c UL us
UL Recognized
File No. E52197

FEATURES

- OPTICALLY ISOLATED.
- PANEL MOUNT.
- SWITCHES UP TO 7 AMP LOADS.
- RANDOM VOLTAGE TURN ON.
- PRINTED CIRCUIT OR PUSH - ON TERMINAL PIN VERSIONS.
- LIFETIME WARRANTY.

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

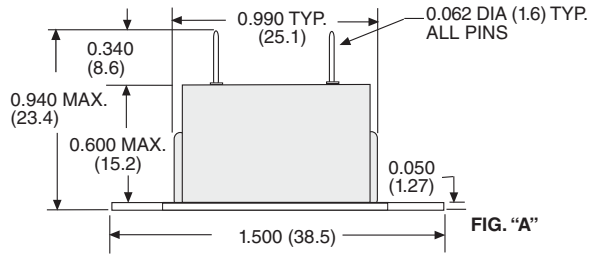


FIG. "A"

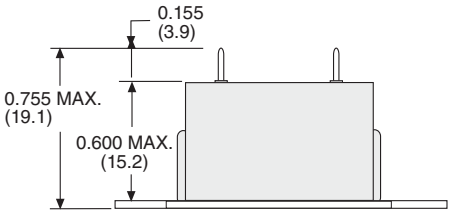
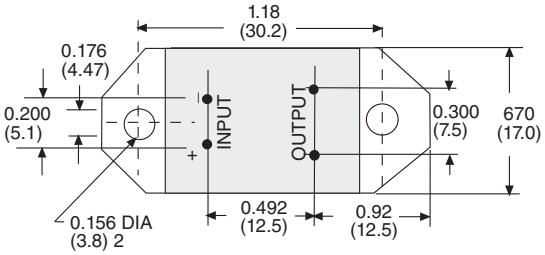
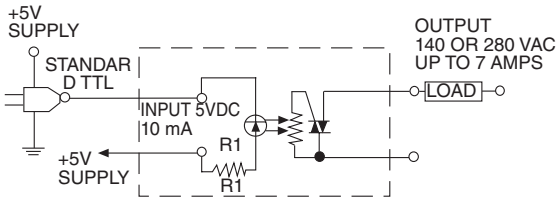


FIG. "B"



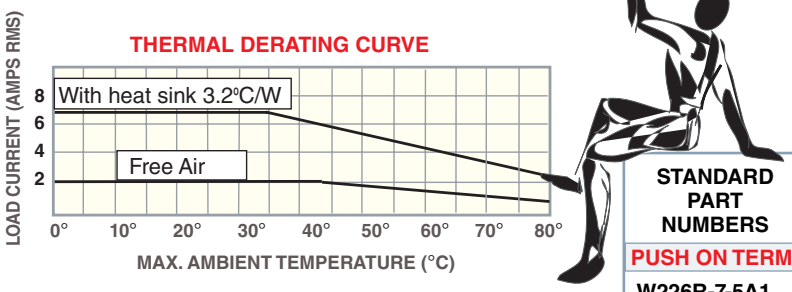


PIN SIDE VIEW

GENERAL SPECIFICATIONS (@ 25°C)

	W226RE-7-	W226RE-8-
INPUT CHARACTERISTICS		
Style:		
Control Voltage Range:	5 VDC OR 12 VDC	5 VDC OR 12 VDC
Typical Input Current:	10 mA	10 mA
OUTPUT CHARACTERISTICS		
Load Voltage Range (50/60 Hz):	140 VAC	280 VAC
Rated Load Current :	7 amps	7 amps
Minimum Load Current:	50 mA	50 mA
Non-Repetitive Surge Current (1 Cycle):	100 Amps	100 Amps
Maximum Off State Leakage Current (Rms):	0.1 mA	0.1 mA
Typical On-State Voltage Drop(Rms):	1.8 V	3.6 V
Minimum Peak Blocking Voltage:	260 V	380 V
Maximum Turn - On Time:	10 mS	
Maximum Turn - Off Time:	60 mS	
MISCELLANEOUS CHARACTERISTICS		
Dielectric Strength (Input/Output/Base):	2500 V rms.	
Insulation Resistance:	100 megohms minimum @ 500 VDC	
Operating Temperature Range:	-30°C to +80°C	
Storage Temperature Range:	-40°C to +100°C	
Weight:	13 grams approx.	

THERMAL DERATING CURVE



PUSH-ON TERMINAL RECEPTACLES

	MOLEX	WINCHESTER
18-22 AWG	02-06-1103	156-10185
24-30 AWG	02-06-1132	156-10245

STANDARD PART NUMBERS	FIGURE	DC CONTROLLED INPUT	MAX. PULL - IN	MIN. DROP-OUT	MAX. OUTPUT CURRENT
PUSH ON TERMINALS, 7 AMP					
W226R-7-5A1	A	5 VDC	4.3 VDC	1.4 VDC	7 AMPS
W226R-7-12A1	A	12 VDC	10.3 VDC	2.5 VDC	7 AMPS
W226R-8-5A1	A	5 VDC	4.3 VDC	1.4 VDC	7 AMPS
W226R-8-12A1	A	12 VDC	10.3 VDC	2.5 VDC	7 AMPS
PRINTED CIRCUIT TERMINALS, 7 AMP					
W226RE-7-5A1	B	5 VDC	4.3 VDC	1.4 VDC	7 AMPS
W226RE-7-12A1	B	12 VDC	10.3 VDC	2.5 VDC	7 AMPS
W226RE-8-5A1	B	5 VDC	4.3 VDC	1.4 VDC	7 AMPS
W226RE-8-12A1	B	12 VDC	10.3 VDC	2.5 VDC	7 AMPS

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MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	IDEC	CRYDOM	CROUZET/ GORDOS	OMRON	CONTINENTAL	OTHERS
W6210ASX-1	-	RSSAN-10A	A2410	84134001	G3NA-210B	S505-0SJ610-009	240A10 (OPTO 22)
W6225ASX-1	SSR240A25	RSSAN-25A	A2425	84134011	G3NA-225B	S505-0SJ625-009	240A25 (OPTO 22)
W6240ASX-1	-	RSSAN-40A	A2440	-	G3NA-240B	S505-0SJ640-009	
W6250ASX-1	SSR240A50	RSSAN-50A	A2450	84134021	-		240A45 (OPTO 22) RA2450HA06 (GAVAZZI)
W6275ASX-1	-	RSSAN-75A	A2475	84134031	-	S505-0SJ675-009	
W6410ASX-1	-		-	-	G3NA-410B	S505-0SJ610-009	
W6425ASX-1	SSR480A25		HA4825	-	G3NA-425B	S505-0SJ625-009	
W6440ASX-1	-		-	-	G3NA-440B	S505-0SJ640-009	
W6450ASX-1	SSR480A50	RSSAN-50A	HA4850	-	-		
W6475ASX-1	-	RSSAN-75A	HA4875	-	-	S505-0SJ675-009	
W6690ASX-1	-	RSSAN-90A	A2490/HA4890	-	-		
W66125ASX-1	SSR480A125	-	A24125/HA48125	84134181	-		
W6210DSX-1	-	RSSDN-10A	D2410	84134000	G3NA-210B	S505-0SJ610-000	240D10 (OPTO 22) AQP10A2-Z4/30VDC (AROMAT)
W6225DSX-1	SSR240D25	RSSDN-25A	D2425	84134010	G3NA-225B	S505-0SJ625-000	240D25 (OPTO 22) AQP20A2-Z4/30VDC (AROMAT)
W6240DSX-1	-	-	-	-	G3NA-240B	S505-0SJ640-000	AQP40A2-Z4/30VDC (AROMAT)
W6250DSX-1	SSR240D50	RSSDN-50A	D2450	84134020	-		240D45 (OPTO 22)
W6275DSX-1	-	RSSDN-75A	D2475	84134030	-	S505-0SJ675-000	
W6410DSX-1	-	RSSDN-10A	-	-	G3NA-410B	S505-0SJ425-000	480D10-12 (OPTO 22)
W6425DSX-1	SSR480D25	RSSDN-25A	HD4825	-	G3NA-425B	S505-0SJ625-000	380D25/480D25-12 (OPTO 22)
W6440DSX-1	-		-	-	G3NA-440B	S505-0SJ640-000	
W6450DSX-1	SSR480D50	RSSDN-50A	HD4850	-	-		380D45/480D45-12 (OPTO 22)
W6475DSX-1	-	RSSDN-75A	HD4875	-	-	S505-0SJ675-000	
W6690DSX-1	-	RSSDN-90A	D2490/HD4890	-	-		
W66125DSX-1	SSR480D125	-	D24125/HD48125	84134080	-		
W6210DTX-1	SSRT240D10		CTD2410	84134900		S5DA-330-10-000	
W6225DTX-1	SSRT240D25		CTD2425	84134910		S5DA-330-25-000	
W6212DDX-1			D1D12/D2D12		G3NA-D210B	RSDC-DC-112-000	
W6225DDX-1			D1D20		-	RSDC-DC-120-000	
W6240DDX-1			D1D40		-	RSDC-DC-140-000	

MAGNECRAFT & STRUTHERS-DUNN	CRYDOM	CROUZET/ GORDOS	CONTINENTAL	CARLO GAVAZZI
SSR210DIN-AC	CKRA2410	84130150 / 84130100		RN1A23A10U
SSR225DIN-AC	CKRA2420	84130152 / 84130102		RN1A23A20U
SSR610DIN-AC	CKRA4810			RN1A60A10U
SSR625DIN-AC	CKRA4820	84130158 / 84130118	RSAA-660-25-1D0	RN1A60A20U
SSR210DIN-DC	CKRD2410	84130101		RN1A23D10U
SSR225DIN-DC	HPF2420 / CKRD2430	84130103		RN1A23D20U
SSR610DIN-DC	CKRD4810			RN1A60D10U
SSR625DIN-DC	HPF480D20 / CKRD4830 / HPF480D30	84130116	RSDA-660-25-1D0	RN1A60D20U

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 2

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	CRYDOM	CROUZET/ GORDOS	CONTINENTAL	OPTO 22
70S2-01-A-03-V			ODC-05/ODC-15	DC60MP
70S2-02-A-03-V			ODC-24	
70S2-04-B-03-V	MP120D3	MOAC5L/MOAC24L/MOACU	OAC-05/OAC-15/OAC-24	MP120D2/MP120D4
70S2-04-C-03-V	MP240D3	GA8-6B02/GA8-6D05	RP03-24/280-04A/OAC-05A/ OAC-15A/OAC-24A	MP240D2/MP120D4
70S2-04-C-12-N	EZ240D12			Z240D10
70S2-05-C-12-N	EZE240D12			
70S2-01-A-05-S	DC60S5/DC60S7			DC60S3/DC60S5
70S2-02-A-05-S	DC60S5/DC60S7			
70S2-03-B-25-S	D1225			
70S2-04-B-06-S				120D3
70S2-04-B-12-S	D1210			120D10
70S2-04-C-06-S	NTD2405			240D3
70S2-04-C-12-S	D2410/NTD2410		S505-OSJ610-000	240D10
70S2-03-C-25-S	D2425/NTD2425		S505-0SJ625-000	120D25/240D25

U. S. A.

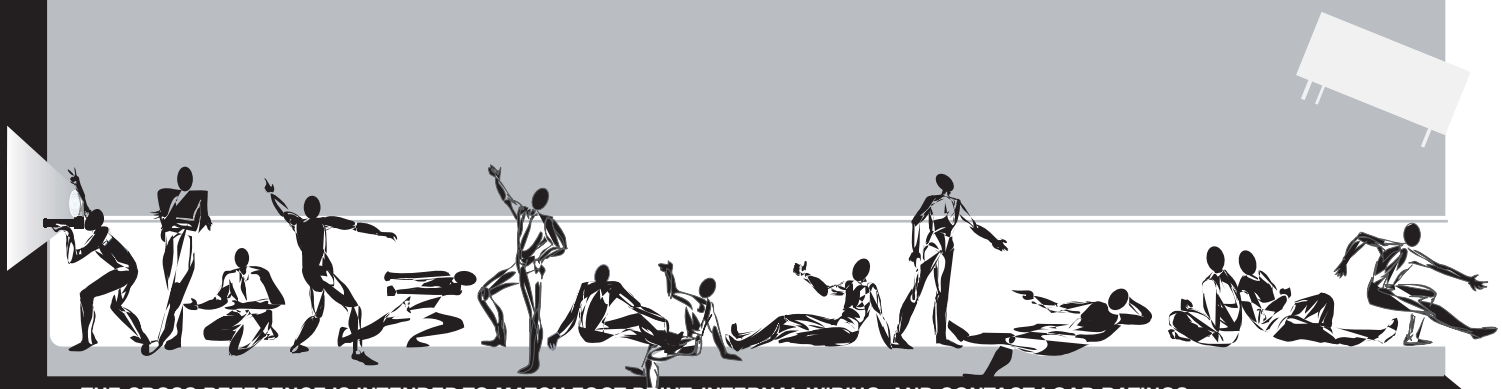
MAGNECRAFT & STRUTHERS-DUNN
700 ORANGE STREET
DARLINGTON, SC. 29532-3739
TEL.: (843) 393-5421 FAX: (843) 393-4123
WEBSITE: www.magnecraft.com
EMAIL: info@magnecraft.com

EUROPE

MAGNECRAFT & STRUTHERS-DUNN
OFFICE MUNICH
FORSTENRIEDER ALLEE 227
D 81476 MUNCHEN/GERMANY
TEL.: 4989 75080310 FAX: 4989 7559344
EMAIL: renatesteinback@magnecraft.de

FOR SOLID STATE RELAYS APPLICATION ENGINEERING ASSISTANCE

Scott Heilman, PRODUCT MANAGER
FAX: (843) 395-8530
EMAIL: sheilman@magnecraft.com



THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 3

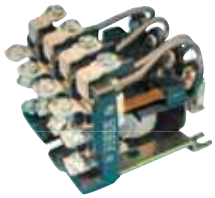
POWER RELAYS AND CONTACTORS

15 TO 300 AMPERES

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

POWER RELAYS & CONTACTORS

Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	199	PM	A275
	 MANUFACTURED UNDER ISO 9002 QS 9000		
L X W X H (INCHES)	2.43-3.12 x 2.50 x 2.53	2.72 x 2.66 x 3.40	3.62 x 2.985 x 2.75
FEATURES	• PANEL MOUNT, OPEN STYLE RELAY • MULTI-CONTACT CONFIGURATIONS WITH RATINGS UP TO 50 AMPS • OPTIONAL MAGNETIC BLOWOUT FOR DC SWITCHING • OPTIONAL AUXILIARY SWITCHES AVAILABLE	• PANEL MOUNT, OPEN STYLE RELAY • 4-POLE, DOUBLE-THROW, UP TO 35 AMPS RATING • OPTIONAL PLASTIC DUST COVER OR METAL ENCLOSURE	• 2 COIL, COMPACT MOTOR REVERSING CONTACTOR • 3 -POLE OPERATION, UP TO 3 HP RATING • MECHANICAL INTERLOCK • OPTIONAL AUXILIARY SWITCHES AVAILABLE • DIN MOUNT ADAPTER AVAILABLE
COIL @ 25°C	**UNITS**			
Standard Coil Voltage				
AC:	50/60 Hz	24, 120, 240	6 to 240	24, 120
DC:		12, 24, 110	6 to 125	24
Coil Power AC (60 Hz):	VA	10	14	14
Coil Power DC:	W	2	4.4	4.6
Insulation System Per UL Standard 1446:		Class B (130 °C)	Class B (130 °C)	Class B (130 °C)
CONTACTS				
Contact Configuration:		**VARIOUS**	**4PDT**	**DUAL 3PST-NO-DM**
Contact Material:		Silver alloy, gold flashed	Silver alloy	Silver alloy, gold flashed
Contact Resistance (Initial):	m ohms	50	50	50
Contact Rating AC Amperes(AC1):	A	See General specifications sheet	35	15 / 10 /5
Contact Rating AC Voltage:	V	See General specifications sheet	277	120 / 240 / 600
Contact Rating DC Amperes(DC1):	A	See General specifications sheet	20	15 / 5
Contact Rating DC Voltage:	V	See General specifications sheet	28	30 / 125
TIMING				
Operate Time:	ms	40	40	50
Release Time:	ms	30	30	30
DIELECTRIC STRENGTH @ 25°C				
Coil to Contacts:	V rms	2200	2000	2500
Insulation Resistance:	megohms minimum @ VDC	1000 @ 500	1000 @ 500	1000 @ 500
TEMPERATURE				
Operating, AC Lower:	°C	-40	-40	-40
Operating, AC Upper:	°C	+50	+45	+50
Operating, DC Lower:	°C	-40	-40	-40
Operating, DC Upper:	°C	+60	+55	+70
Storage, Lower:	°C	-55	-55	-55
Storage, Upper:	°C	+100	+100	+100
LIFE EXPECTANCY				
Electrical @ Rated Load (AC1):	operations	100,000	100,000	100,000
Mechanical @ no Load:	operations	1,000,000	10,000,000	2,000,000
MISCELLANEOUS				
Weight:	grams	227 to 312	397	455
AGENCY APPROVALS		c UL us UL Recognized File No. E43641; CSA; UL LISTED 367G UL Listed File No. E43641; CE	c UL us UL Recognized File No. E43641; CSA; UL LISTED 367G UL Listed File No. E43641	c UL us UL Recognized File No. E43641; CSA
PAGE NUMBER		PAGE 4, 5, 6, 8	PAGE 7, 8	PAGE 9, 10

MDR

SEE PAGE 13

- HERMETICALLY SEALED MERCURY DISPLACEMENT CONTACTOR
- RATINGS UP TO 100 AMPS
- CONSISTENT CONTACT RESISTANCE, QUIET OPERATION
- DIN MOUNT ADAPTER AVAILABLE
- FREE TUBE RECYCLE PROGRAM (CONTACT FACTORY FOR DETAILS)

120, 240 24	
7 to 26.4 3.1 to 9.1	
Class B (130 ºC)	
VARIOUS	
Mercury	
2	
See General specifications sheet See General specifications sheet	
See General specifications sheet See General specifications sheet	
50 80 to 100	
2650 1000 @ 500	
-40 +60 -40 +60 -55 +100	
100,000 5,000,000	
370 to 1078	

CSA UL LISTED 367G
UL Listed
File No. E52197

PAGE 11 - 14

B101

2.84 x 2.80 x 2.90

- HEAVY DUTY DC SOLENOID OPERATED CONTACTOR
- SINGLE-POLE NO OR NC, 100 AMPS RATING
- OPTIONAL SILVER TIN-OXIDE CONTACTS AVAILABLE
- COMBINATION PANEL AND DIN MOUNT

Not Applicable 12, 24, 48	
Not Applicable 10	
Class B (130 ºC)	
SPST-NO-DM, SPST-NC-DB	
Silver alloy	
50	
100 240	
100 28	
60 30	
1500 1000 @ 500	
Not Applicable Not Applicable -40 +65 -55 +100	
100,000 5,000,000	
370	

CSA UL LISTED 367G
UL Listed
File No. E52197

PAGE 15, 16

199 OPEN STYLE POWER RELAYS

Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

c UL us
UL Recognized
File No. E43641

c UL us
LISTED 367G
IND. CONT. EQ.

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES

- 40 AMP POWER RELAY
- RATINGS TO 50 AMPS WITH WIRE PRESSURE CONNECTOR
- METAL ENCLOSURE AVAILABLE
- OPTIONAL 10 AMP SPDT AUXILIARY SWITCH

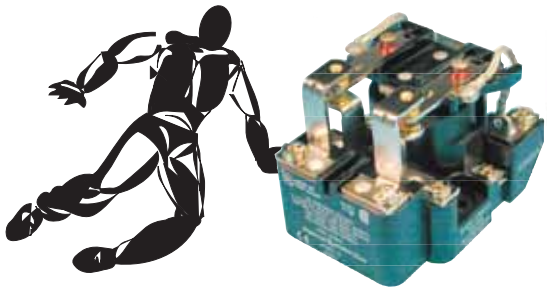
MANUFACTURED UNDER ISO 9002 & QS 9000

CONTACT LOAD RATINGS TABLE

	SINGLE MAKE/BREAK CONTACTS	DOUBLE MAKE/BREAK CONTACTS
UP TO 300 VAC 50/60HZ	40 A, RESISTIVE (AC1)	40 A, RESISTIVE (AC1)
480 VAC 50/60HZ	5 A, RESISTIVE (AC1)	12 A, RESISTIVE (AC1)
600 VAC 50/60HZ	5 A, RESISTIVE (AC1)	10 A, RESISTIVE (AC1)
28 VDC	40 A, RESISTIVE (DC1)	40 A, RESISTIVE (DC1)
MOTOR LOAD, 120 - 600 VAC 50/60HZ	1 1/2 HP	2 HP
TUNGSTEN, 120 VAC 50/60HZ	15 A	15 A
120 - 600 VAC 50/60HZ	960 VA	1152 VA
NEMA PILOT DUTY 50/60HZ	A 600	A 600
SHORT CIRCUIT	5000 A	5000 A
DOUBLE- POLE WITH BOTH SIDES SWITHCHING THE LOAD		
200 - 600 VAC 50/60HZ	2 HP	
200 - 600 VAC 50/60HZ	1152 VA	
ADDITIONAL DC RATING WITH MAGNETIC BLOWOUT		
110 VDC	10 A	20 A
144 VDC		15 A
220 VDC	4 A	8 A
325 VDC	2 A	4 A
500 VDC		2 A
AUXILIARY SWITCH		
UP TO 240 VAC 50/60HZ	10 A (AC1)	10 A (AC1)
MOTOR LOAD, 120- 240 VAC 50/60HZ	1/4 HP	1/4 HP
PILOT DUTY, 120- 240 VAC 50/60HZ	278 VA	278 VA
125 VDC	0.4 A (DC1)	0.4 A (DC1)
250 VDC	0.2 A (DC1)	0.2 A (DC1)
TUNGSTEN, 120 VAC 50/60 HZ	3 A	3 A
WITH WIRE PRESSURE CONNECTORS		
UP TO 300 VAC 50/60 HZ		50 A, RESISTIVE (AC1)
28 VDC		50 A, RESISTIVE (DC1)

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	10
Coil Power DC:	W	2
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Material:		Silver alloy, gold flashed
Minimum Recommended Load:	amps	1 @ 5 VDC or 5 W
TIMING		
Operate Time @ Nominal voltage:	ms	40
Release Time @ Nominal voltage:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2200
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	Not Applicable
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+50
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+60
Storage, Lower:	°C	-55
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	1,000,000
MISCELLANEOUS		
Operating Position:		Any
Coil Terminals:		#6-32 combination head screws
Contact Terminals:		#8-32 combination head screws
Weight:	grams	227 to 312



Magnecraft Struthers-Dunn Your Contact for Industrial Relays

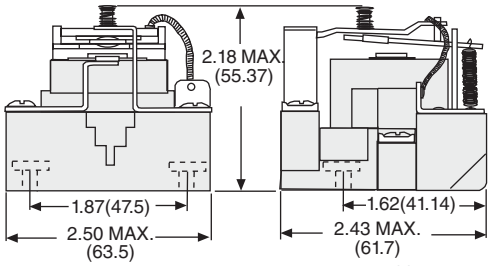
UP TO 50 AMPS

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

199 SPDT

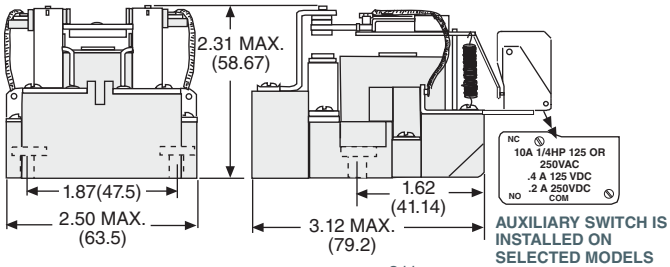
40 AMP, 1-1/2 Hp



227 grams

199 DPDT

40 AMP, 1-1/2 Hp PER POLE
2 Hp -2 POLE SWITCHING

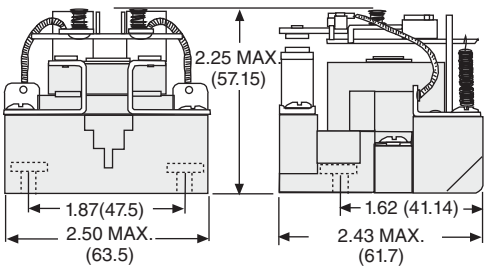


AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS

311 grams

199 DPST-NO

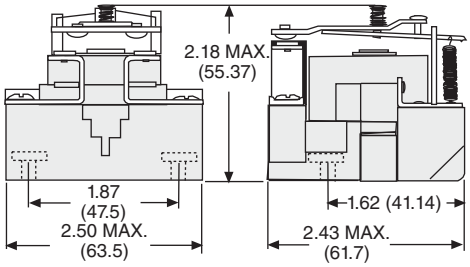
40 AMP, 1-1/2 Hp PER POLE
2 Hp - 2 POLE SWITCHING



255 grams

199 SPST-NO-DM

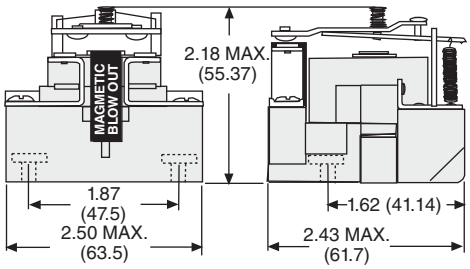
40 AMP, 2 Hp



227 grams

199DB SPST-NO-DM

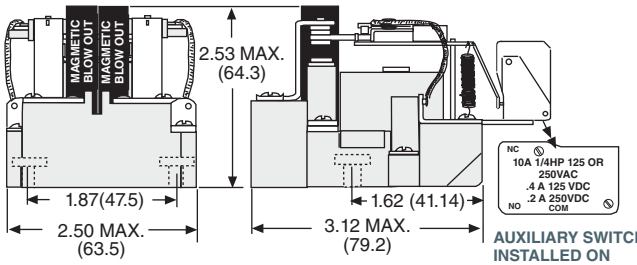
WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING 20 AMP, 110 VDC



228 grams

199B DPDT

WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING 10 AMP, 110 VDC PER POLE

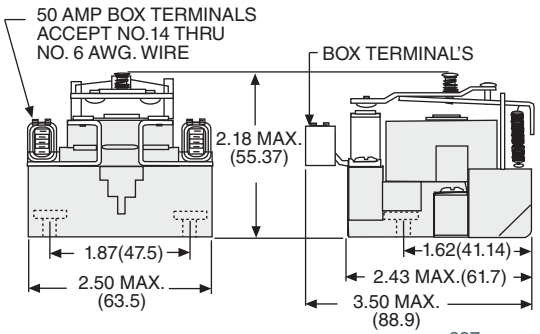


AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS

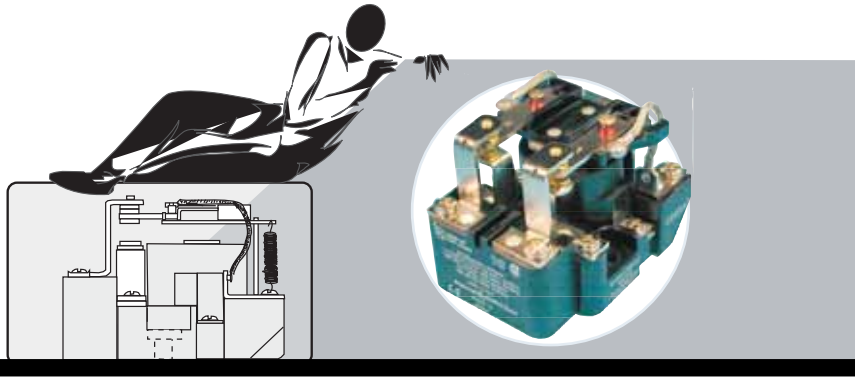
312 grams

199DE SPST-NO-DM

WITH BOX TERMINALS.
50 AMP, 2 Hp



227 grams



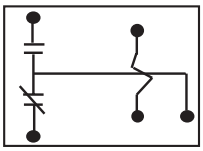
199 OPEN STYLE POWER RELAYS

Magnecraft Struthers-Dunn Your Contact for Industrial Relays

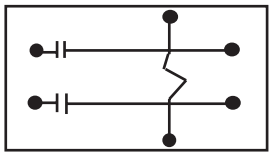
UP TO 50 AMPS

WIRING DIAGRAM
(VIEWED FROM TOP)

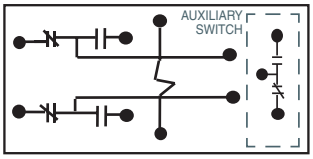
199 SPDT
40 AMP, 1-1/2 Hp

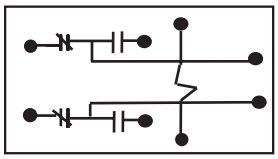


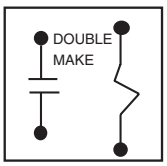
199 DPST-NO
40 AMP, 1-1/2 Hp PER POLE
2 Hp - 2 POLE SWITCHING



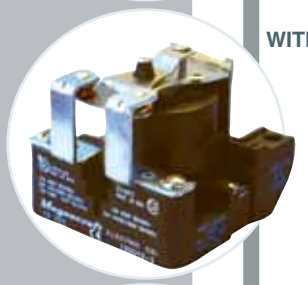
199 DPDT
40 AMP, 1-1/2 Hp PER POLE, 2 Hp-2 POLE SWITCHING

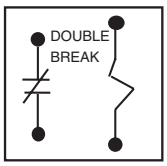




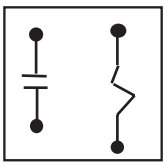


199DB SPST-NO-DM
WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING 20 AMP, 110 VDC

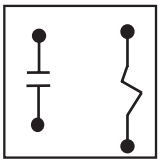




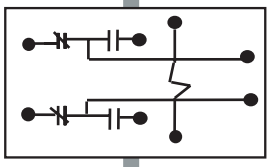
199 SPST-NC-DB
40 AMP, 2 Hp

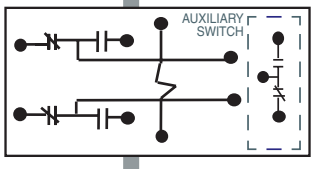


199 SPST-NO-DM
40 AMP, 2 Hp



199DE SPST-NO-DM
WITH BOX TERMINALS.
50 AMP, 2 Hp





199B DPDT
WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING

* REFERENCE DOUBLE MAKE/ BREAK CONTACT RATINGS

STANDARD PART NUMBERS	CONTACT CONFIGURATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED			
W199AX-4	SPDT	120 VAC 50/60 Hz	290 Ω
W199AX-13	DPDT	24 VAC 50/60 Hz	12 Ω
W199AX-14	DPDT	120 VAC 50/60 Hz	290 Ω
W199AX-15	DPDT	240 VAC 50/60 Hz	1200 Ω
W199AX-8	DPST-NO	24 VAC 50/60 Hz	12 Ω
W199AX-9	DPST-NO	120 VAC 50/60 Hz	290 Ω
W199AX-10	DPST-NO	240 VAC 50/60 Hz	1200 Ω
W199ADX-4	*SPST-NO-DM	120 VAC 50/60 Hz	290 Ω
W199ADX-5	*SPST-NO-DM	240 VAC 50/60 Hz	1200 Ω
W199ADBX-4	*SPST-NO-DM (magnetic blowout)	120 VAC 50/60 Hz	290 Ω
W199ABX-14	DPDT (magnetic blowout)	120 VAC 50/60 Hz	290 Ω
AC OPERATED WITH SPDT AUXILIARY			
W199ABMX-7	DPDT (magnetic blowout)	120 VAC 50/60 Hz	290 Ω
W199AMX-64	DPDT	120 VAC 50/60 Hz	290 Ω
AC OPERATED WITH BOX TERMINALS			
W199ADEX-4	*SPST-NO-DM	120 VAC 50/60 Hz	290 Ω
DC OPERATED			
W199X-2	SPDT	12 VDC	70 Ω
W199X-3	SPDT	24 VDC	290 Ω
W199X-11	DPDT	6 VDC	18 Ω
W199X-12	DPDT	12 VDC	70 Ω
W199X-13	DPDT	24 VDC	290 Ω
W199X-14	DPDT	110 VDC	6000 Ω
W199X-7	DPST-NO	12 VDC	70 Ω
W199X-8	DPST-NO	24 VDC	290 Ω
W199DYX-2	*SPST-NC-DB	12 VDC	70 Ω
W199DX-2	*SPST-NO-DM	12 VDC	70 Ω
W199DX-3	*SPST-NO-DM	24 VDC	290 Ω
W199DBX-3	*SPST-NO-DM (magnetic blowout)	24 VDC	290 Ω
W199DBX-6	*SPST-NO-DM (magnetic blowout)	48 VDC	1200 Ω
W199BX-13	DPDT(magnetic blowout)	24 VDC	290 Ω
W199BX-14	DPDT(magnetic blowout)	110 VDC	6000 Ω
DC OPERATED WITH SPDT AUXILIARY			
W199BMX-13	DPDT(magnetic blowout)	24 VDC	290 Ω
W199MX-51	DPDT	24 VDC	290 Ω
DC OPERATED WITH BOX TERMINALS			
W199DEX-3	*SPST-NO-DM	24 VDC	290 Ω

OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR DETAILS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

PM OPEN STYLE POWER RELAYS

UP TO 35 AMPS AC, UP TO 20 AMPS DC

c UL us
UL Recognized
File No. E43641

c UL us
LISTED 367G
IND. CONT. EQ.

FEATURES

- 4PDT POWER RELAY
- RATINGS TO 35 AMPS
- 8-32 SCREW OR 0.250 QC TERMINATIONS
- PLASTIC AND METAL COVERS AVAILABLE

OPTIONAL QUICK CONNECT TERMINAL

OPTIONAL PLASTIC DUST COVER

CONTACT LOAD RATINGS TABLE

UP TO 277 VAC 50/60 Hz	35 A, RESISTIVE (AC1)
28 VDC	20 A, RESISTIVE (DC1)
MOTOR LOAD, 240 VAC 50/60 Hz	1 1/2 HP
MOTOR LOAD, 480 VAC 50/60 Hz	2 HP
TUNGSTEN, 240 VAC 50/60 Hz	10 A

COIL CHARACTERISTICS @ 25 °C

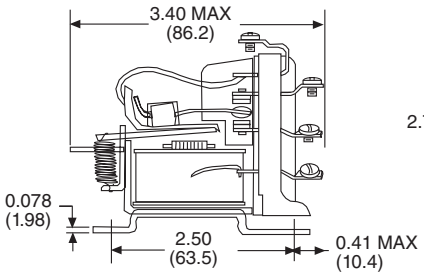
DC COILS		AC COILS	
NOMAINAL INPUT VOLTAGE	DC RESISTANCE IN OHMS ±10%	NOMAINAL INPUT VOLTAGE	DC RESISTANCE IN OHMS ±10%
6	8.2		
12	33	12 VAC 50/60 Hz	1.4
24	132	24 VAC 50/60 Hz	5.0
48	526	120 VAC 50/60 Hz	120
110	2760	240 VAC 50/60 Hz	587
125	3570		

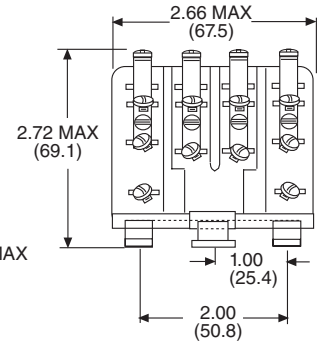
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	14
Coil Power DC:	W	4.4
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Material:		Silver alloy
Minimum Recommended Load:	amps	1 @ 5 VDC or 5 W
TIMING		
Operate Time @ Nominal voltage:	ms	40
Release Time @ Nominal voltage:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2000
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	2000
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+50
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+55
Storage, Lower:	°C	-55
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Terminals PM::		#8-32 combination head screws
Terminals PMT:		0.250 quick connect terminals
Weight:	grams	397

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).





ORDERING CODE

PM [ ] -17 A Y -120

CLASS:

TYPE:
LEAVE BLANK = OPEN RELAY WITH SCREW TERMINAL
T = OPEN RELAY WITH 0.250" (6.35 mm) QUICK CONNECT TERMINALS.
C = PLASTIC DUST COVER

CONTACT ARRANGEMENT:
17 = 4 FORM C (4PDT)

COIL INPUT:
A = AC, D = DC

CONTACT MATERIAL:
Y = SILVER ALLOY

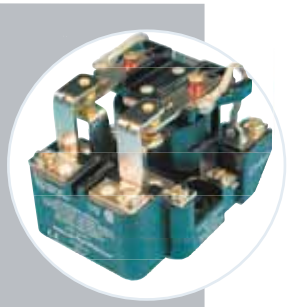
COIL VOLTAGE:
UP TO 240 **ADD "A" FOR AC COILS**
UP TO 125 **ADD "D" FOR DC COILS**

9/04

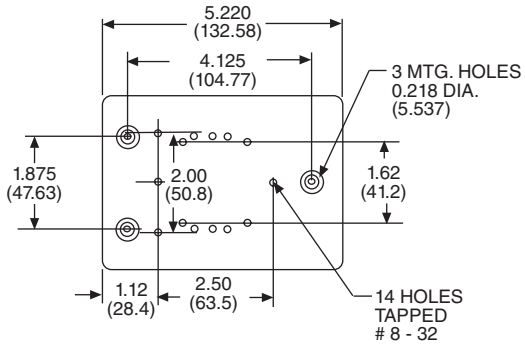
Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

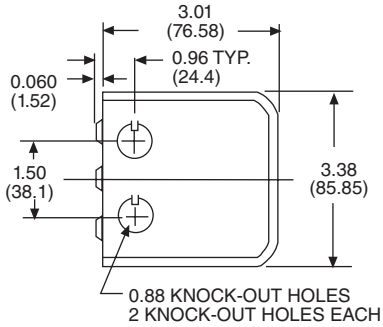
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

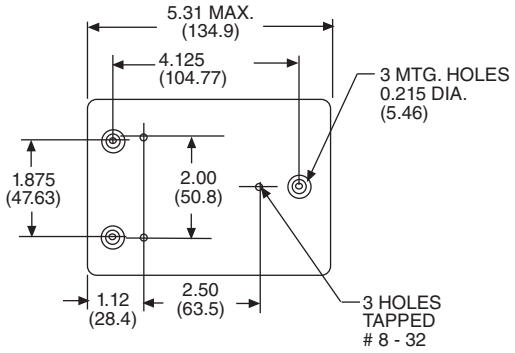


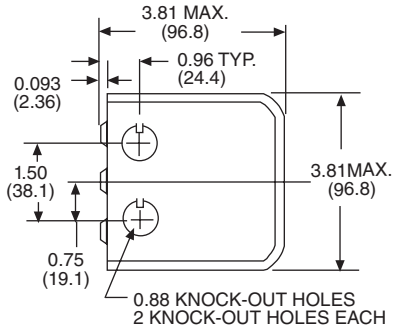
199



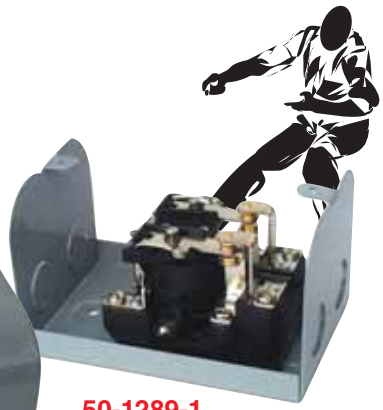


PM





35D203
MAY BE ORDERED AND SHIPPED SEPARATELY



50-1289-1
MAY BE ORDERED AND SHIPPED SEPARATELY

35D227
MAY BE ORDERED AND SHIPPED SEPARATELY

COVER & RELAY MOUNTING SCREWS INCLUDED

STANDARD PART NUMBERS	DESCRIPTION
199 METAL ENCLOSURE	
50-1289-1	UNIVERSAL MOUNT METAL ENCLOSURE
PM ENCLOSURE	
35D203	PLASTIC SNAP-ON DUST COVER
35D227	METAL ENCLOSURE

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

A275 MOTOR REVERSING CONTACTOR

FEATURES

- MECHANICALLY INTERLOCKED
- UP TO 3 POLE SWITCHING
- INDEPENDENT FORWARD / REVERSE COILS
- 5 AMP AUXILIARY SWITCH AVAILABLE

c UL us
UL Recognized
File No. E13224

CONTACT LOAD RATINGS TABLE

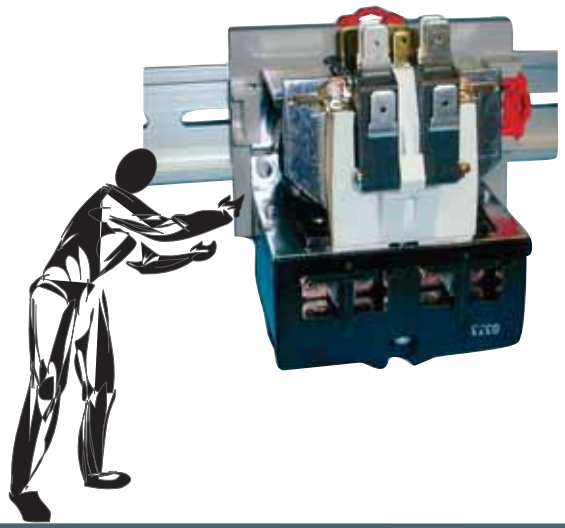
LOAD VOLTAGE	PHASE	MOTOR LOAD	RESISTIVE LOAD
120 VAC	1-2-3	1 HP	15 AMPS (AC1)
240 VAC	1	1.5 HP	10 AMPS (AC1)
240 VAC	2-3	3 HP	10 AMPS (AC1)
480/600 VAC	2-3	3 HP	5 AMPS (AC1)
30 VDC	-	-	15 AMPS (DC1)
125 VDC	-	-	5 AMPS (DC1)

NOTE: AC CONTACTS RATED WITH ALL CONTACTS IN USE, NOT RATED PER POLE.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	10
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	14
Coil Power DC:	W	4.6
Insulation System Per UL Standard 1446:		Class B (130 °C)
Duty:		Continuous
CONTACTS		
Material:		Silver alloy, gold flashed
Minimum Recommended Load:	amps	1 @ 5 VDC or 5 W
TIMING		
Operate Time @ Nominal voltage:	ms	50
Release Time @ Nominal voltage:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	2500
Insulation Resistance:	megohms minimum @ VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+50
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-55
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	2,000,000
MISCELLANEOUS		
Operating Position:		Any
Coil Terminals:		0.25 Inch quick connect, male
Contact Terminals:		0.25 Inch quick connect, male
Weight:		455

THE SERIES A275 IS A COMPACT, 2-COIL, MECHANICALLY INTERLOCKED MOTOR REVERSING CONTACTOR. APPLICATIONS INCLUDE: INDUSTRIAL DOOR OPERATORS, ELECTRIC HOISTS AND ELECTRONIC WHEEL BALANCING. THE A275 HAS 1/4" QUICK CONNECT TERMINALS ON THE COILS, CONTACTS AND AUXILIARY SWITCHES. THE MECHANICAL INTERLOCK WILL NOT JAM, EVEN IF BOTH COILS ARE SIMULTANEOUSLY ENERGIZED.



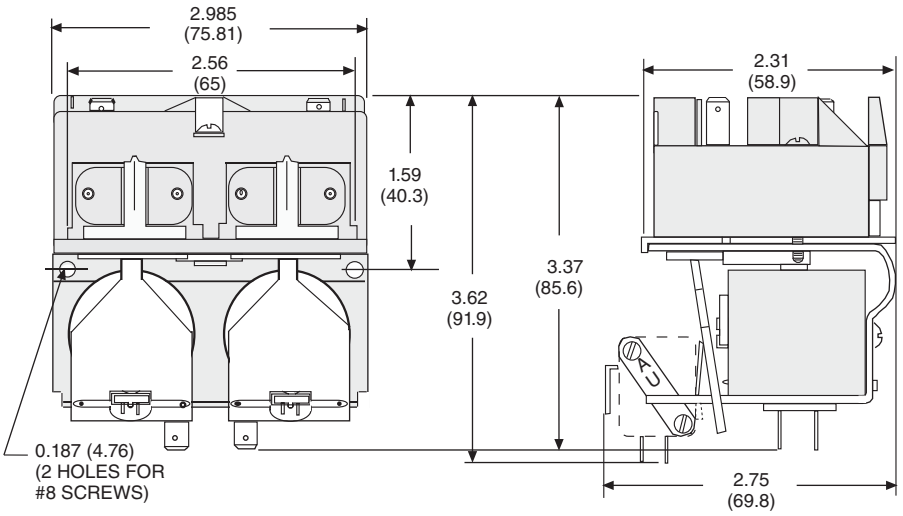
PHONE: (843) 393-5778 FAX: (843) 393-4123
EMAIL: info@magnecraft.com

A275 MOTOR REVERSING CONTACTOR

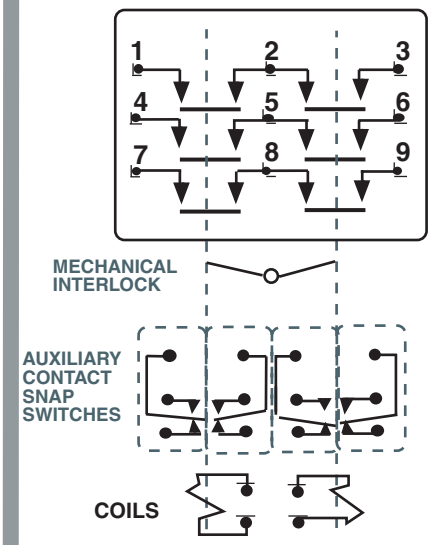
UP TO 3 HP, 15 AMPS

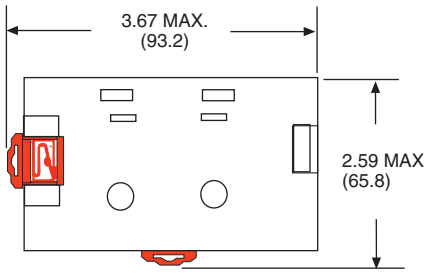
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



WIRING DIAGRAM





OPTIONAL DIN ADAPTER 16-275DIN-1

ORDERED AND SHIPPED SEPARATELY

ORDERING CODE

A275 **KXX** **90** **-24A**

CLASS:
3 POLE CONTACTOR

CONTACT ARRANGEMENTS:
KXX (3PDM-NO., PER COIL)

OPTIONS:
LEAVE BLANK - STANDARD CONTACTOR
2 AUX. CONTACTS, EACH SPDT
(1 PER COIL) 0.250 QUICK CONNECT
TERMINALS - **CODE 90**
4 AUX. CONTACTS, EACH SPDT
(2 PER COIL) 0.250 QUICK CCONNECT
TERMINALS - **CODE 91**
RECTIFIED COIL - **CODE V2**

COIL VOLTAGE:
24 & 120 **ADD "A" FOR AC COILS**
24 **ADD "D" FOR DC COILS**

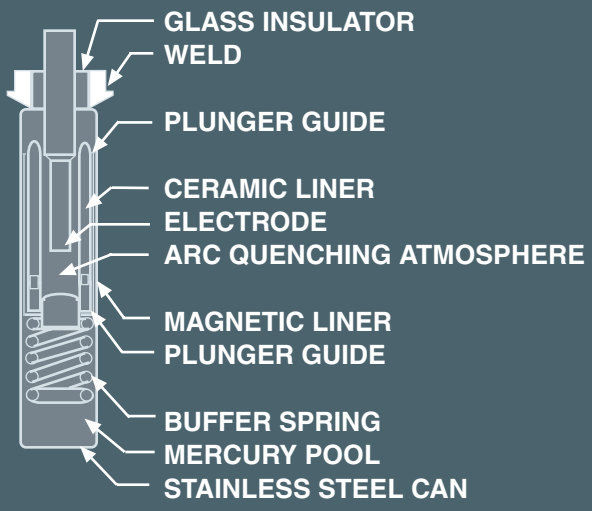
STANDARD PART NUMBERS	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
A275KXX-24A	24 / 24 VAC 50/60 Hz	4.8 Ω
A275KXX-120A	120 / 120 VAC 50/60 Hz	125 Ω
A275KXX90-24A	24 / 24 VAC 50/60 Hz	4.8 Ω
A275KXX90-120A	120 / 120 VAC 50/60 Hz	125 Ω
A275KXX91-24A	24 / 24 VAC 50/60 Hz	4.8 Ω
A275KXX91-120A	120 / 120 VAC 50/60 Hz	125 Ω
DC OPERATED		
A275KXX-24D	24 / 24 VDC	125 Ω
A275KXX90-24D	24 / 24 VDC	125 Ω
A275KXX91-24D	24 / 24 VDC	125 Ω

OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR DETAILS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

APPLICATION DATA

MERCURY DISPLACEMENT TUBE



PRINCIPLE OF OPERATION

The sectional view shows our normally open style Mercury Displacement tube with the plunger assembly floating on the mercury pool.

When the coil power is off, the mercury level is below the electrode tip. No electrical path exists between the electrode and mercury pool.

When coil power is applied, the plunger is drawn down into the mercury by the pull of the magnetic field. This action raises the mercury level, so it covers the end of the electrode closing the circuit.

When coil power is turned off, the buoyant force of the mercury causes the plunger assemble to rise, dropping the mercury level, and breaking the circuit.

APPLICATION DATA

Mercury Displacement relays are ideal for adverse environments-

....Where high inrushes are encountered

....Where hermetically sealed contact operation is required because of corrosive, dirty, or moist ambient conditions.

....Where use does not permit contact maintenance.

....Where reduced noise levels are required.

....Where minimum weight and size are desired.

DESIGN FEATURES

Mercury Displacement Relays provide a perpetually self-renewing contact to assure maximum contact life and minimum contact resistance. Conventional contactors are destroyed by pitting and welding under high load conditions. MDR's have a single moving part that floats free on a pool of mercury. There are no hinges, pivots, pins or mechanical linkage to wear out or break. The result is a life expectancy which exceeds other types of contactors handling the same loads and duty cycle.

Liquid Mercury Contact - provides a new contact surface with every actuation. Mercury is self-renewing and does not pit, weld, disintegrate or oxidize.

Hermetic sealing - provides internal and external protection from arcing.

Inert Gas atmosphere - contactor tube is evacuated, then pressurized with a combination of gases which extinguish arcing and contribute to long life. The pressurized gases provide for a high dielectric withstanding voltage between contact surfaces.

Low Contact Resistance - Large electrode and mercury volume creates low contact resistance and provides high inrush current capability.

Quiet Operation - Audible noise normally associated with conventional contactors is eliminated with mercury displacement tubes and the buffer spring assembly.

APPLICATION OF "M" SERIES VS "ML" SERIES

The series "ML" is physically the same as the "M" series except for the type of gases used in the contactor tubes. The "ML" series was developed for use with resistive and tungsten loads on AC power ONLY. The "ML" series will give much greater life than the "M" series for these types of loads and is intended for high activation use, such as molding machines or ovens. The "ML" series, however is not intended for use with motor loads on AC power, or for resistive, tungsten, or motor loads on DC power. The "M" series, which is our universal series is rated to be used on all types of loads resistive, tungsten, and motor for both AC and DC power.

RECOMMENDED FUSE PROTECTION

MDR's are capable of accepting high inrush currents however, short circuit currents can damage the contactor. Fast acting fuses should be used in-line with the contactor load to protect against short circuit fault current. UL class J and class RK-1 fuses are recommended.

MDR MERCURY DISPLACEMENT RELAYS

LISTED 367G
File E52197

FEATURES

- SILENT OPERATION
- HIGH DC VOLTAGE RATINGS
- OPTIONAL DIN MOUNT ADAPTERS
- STABLE CONTACT RESISTANCE

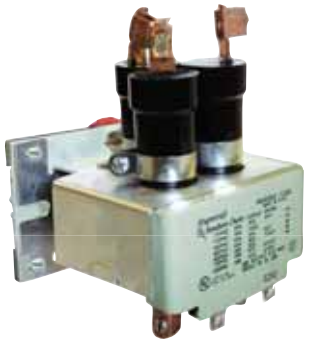
CONTACT LOAD RATINGS TABLE

	VOLTAGE	RESISTIVE AMPS (AC1) (DC1)	TUNGSTEN AMPS NO	TUNGSTEN AMPS NC	HP 1Ø	HP 3Ø	MOTOR AMPS 1Ø	MOTOR AMPS 3Ø
M35	120 VAC	35*	35*	35*	3*	5*	34	30
	240 VAC	35*	17	17	5*	7.5*	28	19
	480 VAC	35*	9	9	5*	10*	14	14
	600 VAC	35*	7	7	5*	10*	11.2	11
	24 VDC	35*	35*	35*	1/2		27	
	48 VDC	35*	35*	35*	1/2		13.5	
	125 VDC	16*	16*	16*	1/2		5.2	
	250 VDC	12*	12*	12*	1/2		2.6	
ML35	120 VAC	35*	35*	35*				
	240 VAC	35*	17	17				
	480 VAC	35*	9	9				
	600 VAC	35*	7	7				
M60	120 VAC	60*	60*	45*	3*	5*	34	30
	240 VAC	60*	30	22.5	5*	10*	28	28
	480 VAC	60*	15	11.2	7.5*	15*	21	21
	600 VAC	50	12	9	7.5*	15*	16	17
	24 VDC	60*	50*	50*	3/4		39	
	48 VDC	60*	50*	50*	3/4		19.5	
	125 VDC	40*	40*	40*	3/4		7.4	
	250 VDC	20*	20*	20*	3/4		3.7	
ML60	120 VAC	60*	60*	45*				
	240 VAC	60*	30	22.5				
	480 VAC	60*	15	11.2				
	600 VAC	50	12	9				
M100	120 VAC	100*	100*					
	240 VAC	100*	60*					
	480 VAC	100*	30*					
	600 VAC	80	24					
	24 VDC	100*	100*					
	48 VDC	100*	100*					
	125 VDC	80*	80*					
	250 VDC	40*	40*					

*** UL and CSA Listed**

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	80
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	78
Dropout Voltage DC:≥	% of nominal	65
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	7 to 26.4
Coil Power DC:	W	3.1 to 9.1
Insulation System Per UL Standard 1446:		Class B (130 ºC)
Duty:		Continuous
CONTACTS		
Material:		Mercury
Minimum Recommended Load:	amps	1 @ 5 VDC or 5 W
TIMING		
Operate Time @ Nominal voltage:	ms	50
Release Time @ Nominal voltage:	ms	80 to 100
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2650
Across Open Contacts:	V rms	2650
Pole to Pole:	V rms	2650
Contacts to Frame:	V rms	2650
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-40
Operating, AC Upper:	ºC	+60
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+60
Storage, Lower:	ºC	-55
Storage, Upper:	ºC	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Vertical ±10%
Load Terminals:		M35: AWG 6-14 wire pressure connectors M60: AWG 2-12 wire pressure connectors M100: AWG 1-8 wire pressure connectors
Coil Terminals:		#6-32 pan head screws
Weight:	grams	370 to 1078



HERMETICALLY SEALED STAINLESS STEEL TUBES

Every contactor tube is hermetically sealed for maximum life. The MDR provides protection to the user from arcing and other hazards of switching heavy loads with exposed contacts.

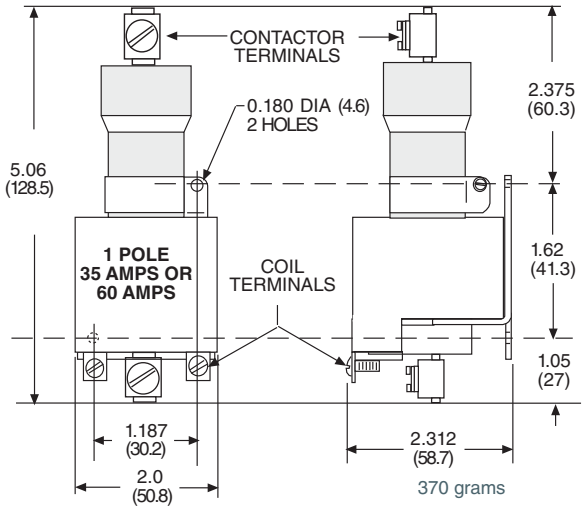
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

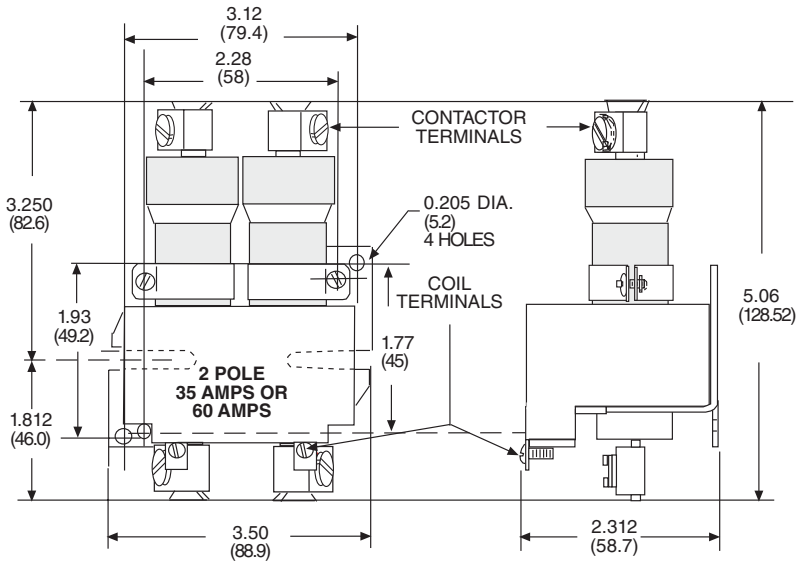
1, 2 & 3 POLES 35, 60 AMPS
1 POLE 100 AMPS

OUTLINE DIMENSIONS

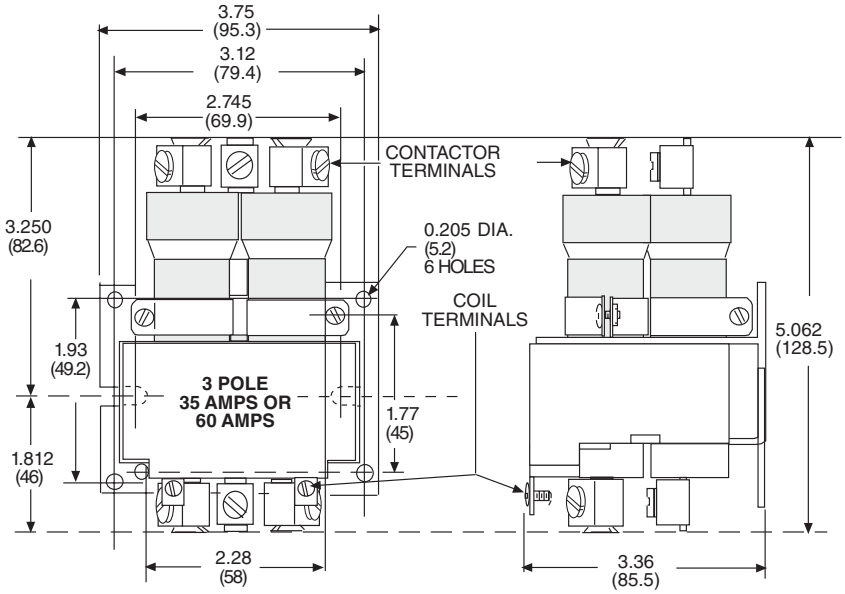
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



370 grams

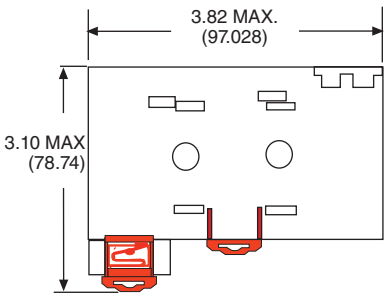


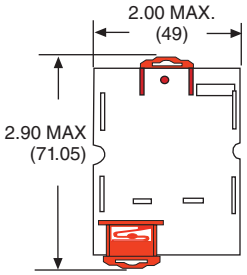
738 grams

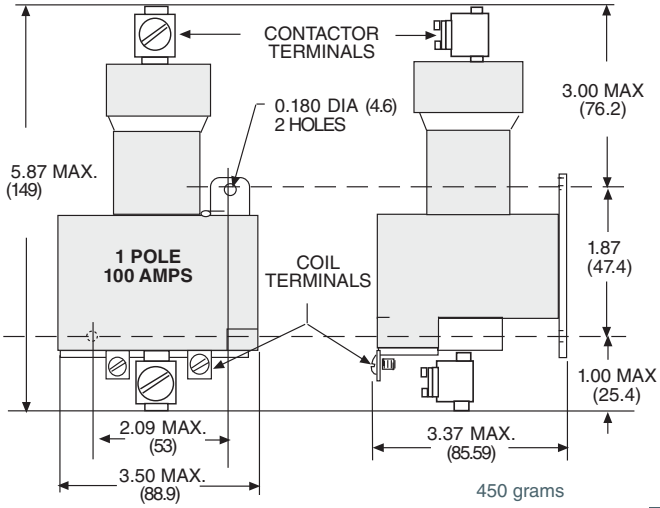


1078 grams

NOTE:
THE OUTLINES FOR THE N.C. VERSIONS ARE NOT SHOWN. THE TUBE IS POSITIONED APPROXIMATELY 0.43 INCHES (11mm) LOWER IN THE COIL. THE OVERALL HEIGHT IS THE SAME AS THE N.O. VERSION.







450 grams

OPTIONAL 2 OR 3 POLE DIN ADAPTER 16-MDRDIN-2 / 3

OPTIONAL 1 POLE DIN ADAPTER 16-MDRDIN-1

ORDERED AND SHIPPED SEPARATELY

LOAD TERMINALS AWG #1 THRU #8 WIRE

MDR MERCURY DISPLACEMENT RELAYS

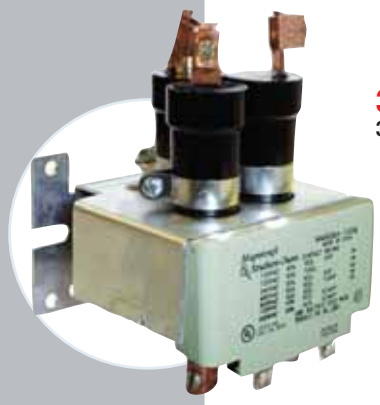
Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

CLASS WM35, WM60 & WM100 SWITCH RESISTIVE, TUNGSTEN, AND MOTOR LOADS. HIGH INRUSH CAPACITY. RECOMMENDED FOR DC LOADS. CLASS WML35 & WML60 RECOMMENDED FOR LONGER LIFE WHEN SWITCHING AC RESISTIVE AND TUNGSTEN LOADS.

1, 2 & 3 POLES
35, 60 AMPS
1 POLE 100 AMPS

1 POLE
35 OR 60 AMPS

2 POLES
35 OR 60 AMPS



3 POLES
35 OR 60 AMPS

1 POLE
100 AMPS

STANDARD PART NUMBERS	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
1 POLE NORMALLY OPEN, 35 AMP		
WM35A-120A	120 VAC 50/60Hz	700 Ω
WM35A-240A	220/240 VAC 50/60Hz	2,800 Ω
WM35A-24D	24 VDC	186 Ω
2 POLE NORMALLY OPEN, 35 AMP		
WM35AA-120A	120 VAC 50/60Hz	218 Ω
WM35AA-240A	220/240 VAC 50/60Hz	1,200 Ω
WM35AA-24D	24 VDC	98 Ω
3 POLE NORMALLY OPEN, 35 AMP		
WM35AAA-120A	120 VAC 50/60Hz	111 Ω
WM35AAA-240A	220/240 VAC 50/60Hz	430 Ω
WM35AAA-24D	24 VDC	63 Ω
1 POLE NORMALLY CLOSED, 35 AMP		
WM35B-120A	120 VAC 50/60Hz	460 Ω
ML SERIES 1 POLE NORMALLY OPEN, 35 AMP		
WML35A-120A	120 VAC 50/60Hz	700 Ω
WML35A-240A	220/240 VAC 50/60Hz	2,800 Ω
ML SERIES 2 POLE NORMALLY OPEN, 35 AMP		
WML35AA-120A	120 VAC 50/60Hz	218 Ω
WML35AA-240A	220/240 VAC 50/60Hz	1,200 Ω
ML SERIES 3 POLE NORMALLY OPEN, 35 AMP		
WML35AAA-120A	120 VAC 50/60Hz	111 Ω
WML35AAA-240A	220/240 VAC 50/60Hz	430 Ω
1 POLE NORMALLY OPEN, 60 AMP		
WM60A-120A	120 VAC 50/60Hz	700 Ω
WM60A-240A	220/240 VAC 50/60Hz	2,800 Ω
WM60A-24D	24 VDC	186 Ω
2 POLE NORMALLY OPEN, 60 AMP		
WM60AA-120A	120 VAC 50/60Hz	218 Ω
WM60AA-240A	220/240 VAC 50/60Hz	1,200 Ω
WM60AA-24D	24 VDC	98 Ω
3 POLE NORMALLY OPEN, 60 AMP		
WM60AAA-120A	120 VAC 50/60Hz	111 Ω
WM60AAA-240A	220/240 VAC 50/60Hz	430 Ω
WM60AAA-24D	24 VDC	63 Ω
1 POLE NORMALLY CLOSED, 60 AMP		
WM60B-120A	120 VAC 50/60Hz	460 Ω
ML SERIES 1 POLE NORMALLY OPEN, 60 AMP		
WML60A-120A	120 VAC 50/60Hz	700 Ω
WML60A-240A	220/240 VAC 50/60Hz	2,800 Ω
ML SERIES 2 POLE NORMALLY OPEN, 60 AMP		
WML60AA-120A	120 VAC 50/60Hz	218 Ω
WML60AA-240A	220/240 VAC 50/60Hz	1,200 Ω
ML SERIES 3 POLE NORMALLY OPEN, 60 AMP		
WML60AAA-120A	120 VAC 50/60Hz	111 Ω
WML60AAA-240A	220/240 VAC 50/60Hz	430 Ω
1 POLE NORMALLY OPEN, 100 AMP		
WM100A-120A	120 VAC 50/60Hz	73.5 Ω
WM100A-240A	220/240 VAC 50/60Hz	300 Ω
WM100A-24D	24 VDC	53 Ω

OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR DETAILS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

B101 100 AMP CONTACTOR

FEATURES

- FITS STANDARD 35 mm DIN RAIL
- 100 AMP SWITCHING CAPABILITY
- DUST COVERED CONTACTS
- SINGLE POLE SWITCHING

LISTED 367G
IND. CONT. EQ.

CONTACT LOAD RATINGS TABLE

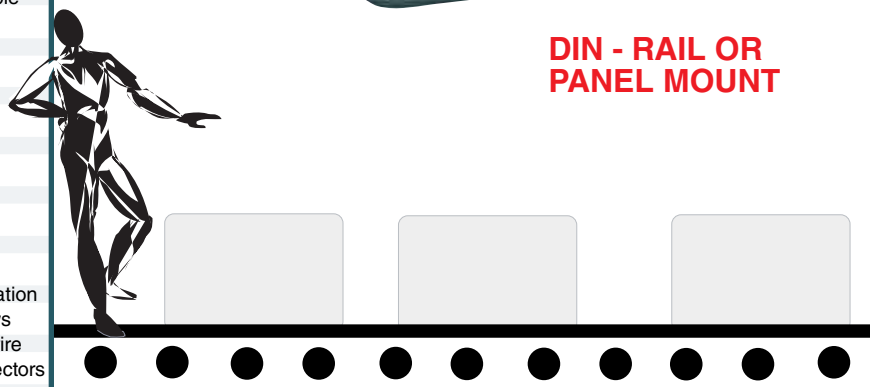
UP TO 240 VAC 50/60 Hz	100 A, RESISTIVE (AC1)
28 VDC	100 A, RESISTIVE (DC1)

THE CLASS B101 IS A DC SOLENOID-ACTUATED, HEAVY DUTY CONTACTOR. EACH CONTACTOR HAS A SINGLE POLE, DOUBLE-MAKE OR DOUBLE-BREAK CONTACT. COMBINATION DIN-RAIL/PANEL MOUNTING IS STANDARD. CONTACTS ARE ENCLOSED IN A MOLDED PLASTIC COVER. THE POWERFUL MAGNETIC STRUCTURE CREATES A HIGH CONTACT PRESSURE WHICH RESULTS IN VERY RELIABLE, LOW RESISTANCE CONTACTS. THE B101 IS SUITABLE FOR POWER APPLICATIONS IN TELECOMMUNICATIONS, ELEVATOR AND RAIL MASS TRANSIT, AS WELL AS OTHER INDUSTRIES.

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not Applicable
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not Applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	Not Applicable
Coil Power DC:	W	10
Insulation System Per UL Standard 1446:		Class B (130 ºC)
Duty:		Continuous
CONTACTS		
Material:		Silver alloy
Minimum Recommended Load:	amps	1 @ 5 VDC or 5 W
TIMING		
Operate Time @ Nominal voltage:	ms	60
Release Time @ Nominal voltage:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	Not Applicable
Contacts to Frame:	V rms	1500
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	Not Applicable
Operating, AC Upper:	ºC	Not Applicable
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+60
Storage, Lower:	ºC	-55
Storage, Upper:	ºC	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Coil Terminals:		#6-32 combination head screws
Contact Terminals:		AWG 2-12 wire pressure connectors
Weight:	grams	370

DIN - RAIL OR PANEL MOUNT

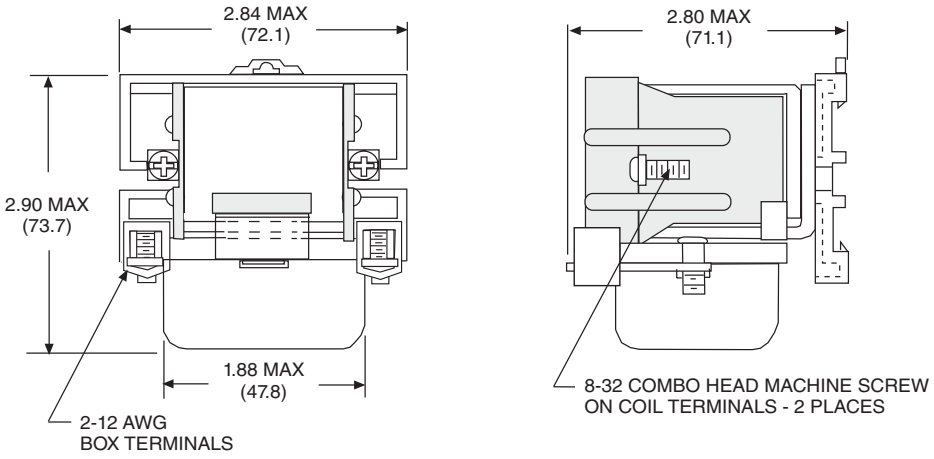


PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

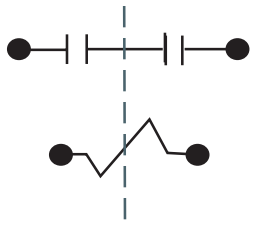
B101 100 AMP CONTACTOR

SPST-N.O.-D.M. OR SPST-N.C.-D.B., 100 AMPS

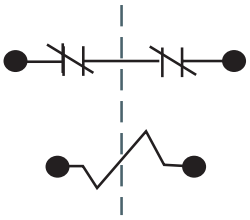
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



WIRING DIAGRAM



HXX
SPST N.O.-D.M.



XXH
SPST N.C.-D.B.

FITS STANDARD
35 MILLIMETER DIN RAIL

ORDERING CODE

B101 **HXX** **-24D**

CLASS:
100 AMP, 1 POLE

CONTACT ARRANGEMENTS:
HXX 1 POLE N.O.-D.M.
XXH 1 POLE N.C.-D.B.

COIL VOLTAGE:
12, 24 & 48 **ADD "D" FOR DC COILS**

OPTIONS (CONSULT FACTORY)
AC COIL INPUT VOLTAGES
NON STANDARD DC COIL VOLTAGES
CADMIUM FREE CONTACTS
0.250 QUICK CONNECT COIL TERMINALS

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C	
		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
B101HXX-12D	SPST -NO	12 VDC	16.5 Ω
B101HXX-24D	SPST -NO	24 VDC	58.2 Ω
B101HXX-48D	SPST -NO	48 VDC	235 Ω
B101XXH-12D	SPST -NC	12 VDC	16.5 Ω
B101XXH-24D	SPST -NC	24 VDC	58.2 Ω
B101XXH-48D	SPST -NC	48 VDC	235 Ω

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

MAGNECRAFT	STRUTHERS-DUNN	POTTER & BRUMFIELD	OMRON	DELTROL	TYCO
W199AX-4	A425XAX-120A	PRD5AG0-120 / PRD5AY0-120	MGN1C-AC120	20239-83	9-1393127-9 / 1393128-5
W199X-2	A425XAX-12D	PRD5DG0-12 / PRD5DY0-12	MGN1C-DC12	20243-81	1-1393128-2/ 1- 1393128-6
W199X-3	A425XAX-24D	PRD5DG0-24 / PRD5DY0-24	MGN1C-DC24	20243-82	1-1393128-3 / 1-1393128-7
W199AX-13	A425XBX-24A	PRD11AG0-24 / PRD11AY0-24	MGN2C-AC24	20241-82	1-1393127-1 / 2-1393127-9
W199AX-14	A425XBX-120A	PRD11AG0-120 / PRD11AY0-120	MGN2C-AC120	20241-83	1-1393127-9 / 2-1393127-6
W199AX-15	A425XBX-240A	PRD11AG0-240 / PRD11AY0-240	MGN2C-AC240	20241-84	1-1393127-2 / 3-1393127-0
W199AMX-64	A425XBX90-120A	PRDA11AGA-120 / PRDA11AYA-120		20246-83	
W199X-11	A425XBX-6D	PRD11DG0-6 / PRD11DY0-6	MGN2C-DC6		
W199X-12	A425XBX-12D	PRD11DG0-12 / PRD11DY0-12	MGN2C-DC12	20245-81	3-1393127-5 / 6-1393127-1
W199X-13	A425XBX-24D	PRD11DG0-24 / PRD11DY0-24	MGN2C-DC24	20245-82	3-1393127-8 / 6-1393127-2
W199X-14	A425XBX-110D	PRD11DG0-110 / PRD11DY0-110	MGN2C-DC110	20245-84	3-1393127-4 / 6-1393127-0
W199MX-51	A425XBX90-24D	PRDA11DGA-24 / PRDA11DYA-24		20247-82	
W199AX-8	A425BXX-24A	PRD7AG0-24 / PRD7AY0-24	MGN2A-AC24	20240-82	9-1393129-6 / 1393130-9
W199AX-9	A425BXX-120A	PRD7AG0-120 / PRD7AY0-120	MGN2A-AC120	20240-83	9-1393129-5 / 1393130-7
W199AX-10	A425BXX-240A	PRD7AG0-240 / PRD7AY0-240	MGN2A-AC240	20240-84	9-1393129-7/ 1-1393130-0
W199AMX-34		PRDA7AGA-120 / PRDA7AYA-120		20248-83	
W199X-7	A425BXX-12D	PRD7DG0-12 / PRD7DY0-12	MGN2A-DC12	20244-81	1-1393130-5 / 2-1393130-8
W199X-8	A425BXX-24D	PRD7DG0-24 / PRD7DY0-24	MGN2A-DC24	20244-82	1-1393130-6 / 2-1393130-9
W199MX-27		PRDA7DGA-24 / PRDA7DYA-24		20249-82	
W199ADX-4	A425HXX-120A	PRD3AG0-120 / PRD3AY0-120	MGN1X-AC120	20238-83	6-1393127-9 / 7-1393127-9
W199ADX-5	A425HXX-240A	PRD3AG0-240 / PRD3AY0-240	MGN1X-AC240	20238-84	7-1393127-1 / 8-1393127-1
W199DYX-2	A425XXH-12D	PRD4DG0-12 / PRD4DY0-12		20336-81	
W199DX-2	A425HXX-12D	PRD3DG0-12 / PRD3DY0-12	MGN1X-DC12	20242-81	8-1393127-3 / 9-1393127-5
W199DX-3	A425HXX-24D	PRD3DG0-24 / PRD3DY0-24	MGN1X-DC24	20242-82	8-1393127-4 / 9-1393127-6
W199ADBX-4	A425HXX69-120A	PRD3AJ0-120 / PRD3AH0-120			7-1393127-4 / 7-1393127-3
W199DBX-3	A425HXX69-24D	PRD3DJ0-24 / PRD3DH0-24			
W199DBX-6	A425HXX69-48D	PRD3DJ0-48 / PRD3DH0-48			
W199ABX-14	A425XBX69-120A	PRD11AJ0-120 / PRD11AH0-120	MGN2CM-AC120	20919-83	2-1393127-0 / 1-1393127-6
W199ABMX-7	A425XBX6990-120A	PRDA11AJA-120 / PRDA11AHA-120			
W199BX-13	A425XBX69-24D	PRD11DJ0-24 / PRD11DH0-24			
W199BX-14	A425XBX69-110D	PRD11DJ0-110 / PRD11DH0-110	MGN2CM-DC110	20918-84	4-1393127-6
W199BMX-13	A425XBX6990-24D	PRDA11DJA-24 / PRD11DHA-24			
W199ADEX-4		PRD3AP4-120			7-1393127-6
W199DEX-3		PRD3DP4-24			9-1393127-1
50-1289-1		35D013			5-1393158-2

MAGNECRAFT & STRUTHERS-DUNN	TYCO
PM-17AY-12	4-1393126-4
PM-17AY-24	4-1393126-7
PM-17AY-120	4-1393126-5
PM-17AY-240	4-1393126-8
PM-17DY-6	5-1393126-5
PM-17DY-12	5-1393126-0
PM-17DY-24	5-1393126-2
PM-17DY-48	5-1393126-4
PM-17DY-110	4-1393126-9
PM-17DY-125	5-1393126-1

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	DURAKOOL	MDI
WM35A-120A	BFL-7032	60NO-24D
WM35A-240A	BFL-7034	260NO-120A
WM35A-24D	BFL-7048	260NO-240A
WM35AA-120A	BFL2-7027	260NO-24D
WM35AA-240A	BFL2-7029	360NO-120A
WM35AA-24D	BFL2-7032	360NO-240A
WM35AAA-120A	BFL3-7024	360NO-24D
WM35AAA-240A	BFL3-7026	100NO-120A
WM35AAA-24D	BFL3-7038	100NO-220A
WM35B-120A		100NO-24D
WM60A-120A	BFC-717	35NO-120A
WM60A-240A	BFC-719	35NO-220A
WM60A-24D	BFC-722	35NO-24D
WM60AA-120A	BFC2-727	235NO-120A
WM60AA-240A	BFC2-729	235NO-240A
WM60AA-24D	BFC2-733	235NO-24D
WM60AAA-120A	BFC3-708	335NO-120A
WM60AAA-240A	BFC3-710	335NO-240A
WM60AAA-24D	BFC3-721	335NO-24D
WM100A-120A	CFC-718	35NC-120A
WM100A-240A	CFC-720	60NO-120A
WM100A-24D	CFC-723	60NO-220A

U. S. A.

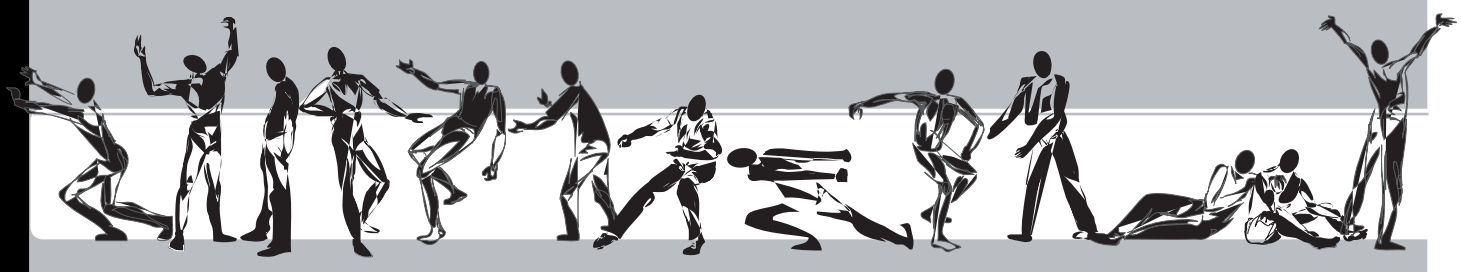
MAGNECRAFT & STRUTHERS-DUNN
700 ORANGE STREET
DARLINGTON, SC. 29532-3739
TEL.: (843) 393-5421 FAX: (843) 393-4123
WEBSITE: www.magnecraft.com
EMAIL: info@magnecraft.com

EUROPE

MAGNECRAFT & STRUTHERS-DUNN
OFFICE MUNICH
FORSTENRIEDER ALLEE 227
D 81476 MUNCHEN/GERMANY
TEL.: 4989 75080310 FAX: 4989 7559344
EMAIL: renatesteinback@magnecraft.de

FOR POWER RELAYS APPLICATION ENGINEERING ASSISTANCE

Richard Harden, PRODUCT MANAGER
FAX: (847) 441-2522
EMAIL: rharden@magnecraft.com



THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 4

TIME DELAY RELAYS

5 TO 15 AMPERES

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

TIME DELAY RELAYS

PRODUCT	821	TDRPRO	TDRSOX / TDRSRX
			
	MANUFACTURED UNDER ISO 9002		MANUFACTURED UNDER ISO 9002 QS 9000
L X W X H (INCHES)	**3.54 x 0.692 x 2.56**	**1.87 x 1.87 x 2.86**	**2.63 x 1.40 x 1.73**
FEATURES	• UNIVERSAL INPUT • 10 TIMING FUNCTIONS • WIDE TIME RANGE • DIN MODULE	• 5 FUNCTIONS • UNIVERSAL INPUT • WIDE TIME RANGE • THUMB WHEEL ADJUSTMENT	• WIDE TIME RANGE • DUAL FUNCTIONS • AC OR DC DUAL VOLTAGE • FITS ALL STANDARD SOCKETS
TIMING	**UNITS**			
Functions Available:		10 (see product pages)	3 or 5(see product pages)	2-On delay/interval or Off delay/ Retriggerable One Shot
Time Scales:		10	7	8
Time Range:		0.1 second to 10 days	0.1 second to 9990 hours	0.1 second to 10 hours
INPUT				
Standard Voltages:	VAC 50/60Hz VDC	12 to 240 12 to 240	24 to 240 12 to 240	12,24,120, 240 12 to 120
Power Consumption:		3 VA / 1.7 W	2.5 VA / 2. W	5 VA / 2.5 W
Reverse Polarity Protection:		Yes	Non-polarity sensitive	Non-polarity sensitive
OUTPUT				
Contact Configuration:		**SPDT**	**SPDT, DPDT**	**DPDT**
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	15 amps resistive @ 240	12 amps resistive@240	12 amps resistive@240
Contact Rating DC Amperes (DC1):	VDC	15 amps resistive @ 24	12 amps resistive @ 30	12 amps resistive @ 30
Contact Material:		Silver-Nickel 90/10	Silver alloy	Silver alloy
DIELECTRIC STRENGTH				
Across Open Contacts:	Vrms	1,000	1,000	1,000
Input to Contacts:	Vrms	2,500	2,500	2,500
Pole to Pole:		Not applicable	2,000	2,000
TEMPERATURE				
Operating, Lower:	°C	-20	-20	-20
Operating, Upper:	°C	+55	+55	+55
Storage, Lower:	°C	-30	-20	-20
Storage, Upper:	°C	+70	+85	+85
LIFE EXPECTANCY				
Electrical Full Load	operations	70,000	100,000	100,000
Mechanical @ no Load :	operations	10.000.000	10.000.000	10.000.000
MISCELLANEOUS				
Cover Protection Category:	IP	40	40	40
Weight:	grams	96	122	90
MATING SOCKETS SEE SECTION 7		-	70-464-1, 70-465-1 750D8-1, 750D11-1	70-463-1, 70-464-1, 70-465-1 750D8-1, 750D11-1
AGENCY APPROVALS		c UL us LISTED File No.E234203 CE	c UL us UL Recognized File No. E43641	c UL us UL Recognized File No. E43641
PAGE NUMBER		PAGE 6, 7	PAGE 8, 9	PAGE 10, 11

TIME DELAY RELAYS

	211	222	388 KNOB ADJUSTMENT
	 MANUFACTURED UNDER ISO 9002 QS 9000		
	1.75 x 2.37 x 3.5	1.75 x 2.37 x 3.5	1.53 x 1.40 x 3.52
	• INDUSTRY STANDARD PACKAGE • SINGLE FUNCTION • HYBRID TECHNOLOGY • UL LISTED	• INDUSTRY STANDARD PACKAGE • SINGLE FUNCTION • TWO KNOBS • HYBRID TECHNOLOGY	• INDUSTRY STANDARD PACKAGE • SINGLE FUNCTION • KNOB ADJUSTMENT • ELECTROMECHANICAL OUTPUT
	On delay, off delay, interval or one shot	Repeat cycle	On delay, off delay
	1 0.1 second to 120 minutes	1 0.1 seconds to 30 minutes	1 0.1 seconds to 180 minutes
	See P/N chart	120	120 24
	2.5 VA / 2 W	2.5 VA / 2 W	2.5 VA / 2 W
	Yes	Yes	Yes
	DPDT	**DPDT**	**DPDT**
	10 amps resistive@ 240 10 amps resistive @ 30	10 amps resistive @ 240 10 amps resistive @ 30	12 amps resistive @ 240 12 amps resistive @ 28
	Silver alloy	Silver alloy	Silver alloy
	1,000 2,500 2,000	1,000 2,500 2,000	1,000 2,000 2,000
	-20 +55 -40 +85	-20 +55 -40 +85	-20 +55 -40 +85
	100,000 10.000.000	100,000 10.000.000	100,000 5.000.000
	40 115	40 130	40 96
	70-464-1, 70-465-1 750D8-1, 750D11-1	70-464-1, 750D8-1	70-463-1
	c UL us UL Recognized File No. E43641 CE CSA UL LISTED	c UL us UL Recognized File No. E43641 CE CSA	c UL us UL Recognized File No. E43641 CE CSA
	PAGE 12	PAGE 13	PAGE 4

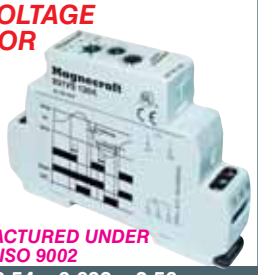
CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

TIME DELAY RELAYS

PRODUCT		388 EXTERNAL ADJUSTMENT 	388 TRUE OFF DELAY 	67 
L X W X H (INCHES)		1.40 x 1.53 x 1.90	1.53 x 1.40 x 3.52	1.37 x 0.734 x 1.18
FEATURES		• INDUSTRY STANDARD PACKAGE • SINGLE FUNCTION • EXTERNAL ADJUSTMENT • ELECTROMECHANICAL OUTPUT **NEW REMOTE ADJUST TDRSOXB ALSO AVAILABLE**	• TRUE OFF • ELECTRONIC TIMING • KNOB ADJUSTMENT • ELECTROMECHANICAL OUTPUT	• COMPACT • RECESSED POTENTIOMER
TIMING	**UNITS**			
Functions Available:		On delay, off delay	True off delay	On delay
Time Scales:		1	1	1
Time Range:		0.1 to 120 Seconds	0.1 to 60 Seconds	0.1 to 30 Seconds
INPUT				
Standard Voltages:	VAC 50/60Hz	120	120	
	VDC	24	24	12, 24
Power Consumption:		2.5 VA / 2 W	1.5 VA / 1 W	1.1 W
Reverse Polarity Protection:		Yes	Yes	Yes
OUTPUT				
Contact Configuration:		**DPDT**	**DPDT**	**DPDT**
Contact Rating AC Amperes (AC1):	VAC 50/60Hz VDC	12 amps resistive @ 240	12 amps resistive @ 240	5 amps resistive @ 120
Contact Rating DC Amperes (DC1):		12 amps resistive @ 28	12 amps resistive @ 28	5 amps resistive @ 28
Contact Material:		Silver alloy	Silver alloy	Silver alloy
DIELECTRIC STRENGTH				
Across Open Contacts:	Vrms	1,000	1,000	500
Input to Contacts:	Vrms	2,000	2,000	1,500
Pole to Pole:		2,000	2,000	1.500
TEMPERATURE				
Operating, Lower:	°C	-20	-20	-20
Operating, Upper:	°C	+55	+55	+55
Storage, Lower:	°C	-40	-40	-40
Storage, Upper:	°C	+85	+85	+85
LIFE EXPECTANCY				
Electrical Full Load	operations	100,000	100,000	50,000
Mechanical @ no Load :	operations	5.000.000	5.000.000	5.000.000
MISCELLANEOUS				
Cover Protection Category:	IP	40	40	40
Weight:	grams	85	96	35
MATING SOCKETS SEE SECTION 7		70-463-1	70-463-1	70-307-1, 70-308-1
AGENCY APPROVALS		c UL us, CSA, CE UL Recognized File No. E52197	c UL us, CSA, CE UL Recognized File No. E43641	c UL us, CSA UL Recognized File No. E43641
PAGE NUMBER		PAGE 15	PAGE 16	PAGE 17

TIME DELAY RELAYS

246 & 247	831 VOLTAGE SENSOR	236 VOLTAGE SENSOR	235 CURRENT SENSOR
	 MANUFACTURED UNDER ISO 9002	 MANUFACTURED UNDER ISO 9002 QS 9000	
2.62 x 1.46 x 4.06	3.54 x 0.692 x 2.56	SEE PAGE 26	1.53 x 1.40 x 3.52
• INDUSTRIAL • VERSATILE DESIGN • BLOWOUT MAGNET AVAILABLE • LONG OPTION LIST	• INDEPENDENT UPPER AND LOWER LIMITS • TIME DELAY • TWO LEDs • DIN MODULE	• INDEPENDENT PICK UP AND DROP OUT ADJUSTMENT • ELECTROMECHANICAL OUTPUT • SOCKET COMPATIBLE	• WIDE SENSE RANGE • SOCKET COMPATIBLE • KNOB ADJUSTMENT
On delay or off delay	Voltage sensor	Voltage sensor	Current sensor
1 0.1 to 300 seconds	1 0.1 to 10 seconds	1 Optional on PX	1
See ordering code	Normal sense Voltage 120	24, 120, 240, 480 24	120
5 VA / 2.5 W	1.2 VA	3.5 VA / W	2 VA
Yes	Yes	Yes	Yes
DPDT, 3PDT 4PDT AND OTHERS	**SPDT**	**PX=DPDT, CX=SPDT**	**SPDT**
10 amps resistive @ 120	15 amps resistive @ 240	DPDT=10 amps @ 240 SPDT=13 amps @ 240	10 amps @ 120
10 amps resistive @ 28	15 amps resistive @ 24	DPDT=10 amps @ 28 SPDT=13 amps @ 28	6 amps @ 28
Silver alloy	Silver-Nickel 90/10	Silver Alloy	Silver Alloy
1,500	1,000	1,000	500
1,500	2,500	2,500	2,500
1,500	Not applicable	2500	Not applicable
-20 AC:+45, DC: +70	-20 +55	-20 +55	-20 +55
-20 +85	-30 +70	-30 +85	-40 +85
100,000	70,000	100,000	200,000
10.000.000	10.000.000	DPDT= 10.000.000, SPDT= 5.000.000	5.000.000
40	40	40	40
227	60	DPDT: 156, SPDT: 125	113
27390D, 33377D	-	70-463-1, 70-464-1	70-463-1
c UL us UL Recognized File No. E13224 UL LISTED CSA 246 SERIES	c UL us LISTED File No. E234203 CE	c UL us UL Recognized File No. E62636 CSA	UL Recognized File No. E62636 CSA
PAGE 18, 19	PAGE 20	PAGE 21	PAGE 22

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

821 TIME DELAY RELAY

Magnecraft — Strathers-Dunn — Your Contact for Industrial Relays

c UL us

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE

* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

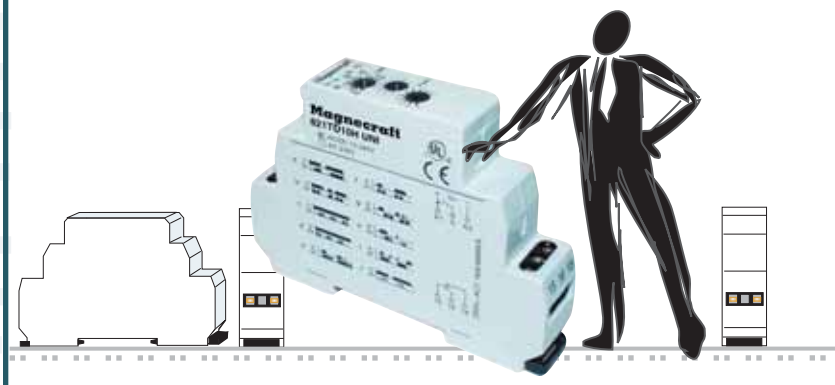
MANUFACTURED UNDER ISO 9002

FEATURES	BENEFITS
UNIVERSAL VOLTAGE SUPPLY	ACCEPTS 12 TO 240 VAC / VDC
10 TIMING FUNCTIONS	IDEAL FOR MOST APPLICATIONS
WIDE TIME RANGE	0.1 SECOND TO 10 DAYS
TWO STATUS LEDS	INDICATES STATUS AT A GLANCE
DIN MODULE	CLIP DIRECTLY TO 35 mm DIN RAIL

TYPE 821 IS A DIN RAIL MOUNTED PRODUCT OFFERING MULTIPLE TIMING FUNCTIONS, MULTIPLE TIME SCALES AND A UNIVERSAL VOLTAGE INPUT IN ONE PACKAGE.

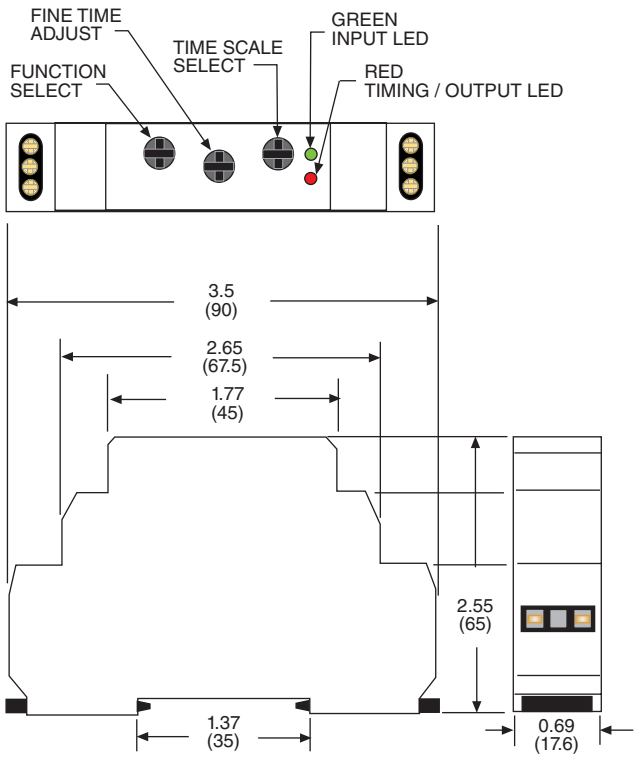
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		10 (see product pages)
Time Scales:		10
Time Range:		0.1 second to 10 hours
Timing Adjustment:		Potentiometer
Timing Deviation (mechanical setting):	%	+5
Timing Repeatability (Constant voltage and temperature):	%	0.2
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC /DC	12 to 240
Input Voltage Tolerance:	of nominal	-15%, +10%,
Power Consumption:	maximum	3 VA / 1.7 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		Green LED
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	15 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	15 amps resistive @ 24
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver-Nickel 90/10
Output Indication:		Red: LED: Blinks = timing On = energized
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:		Not applicable
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+70
LIFE EXPECTANCY		
Electrical Full Load	operations	70,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Maximum Wire Size		2.5 mm (UL-14 gauge)
Cover Protection Category:	IP	40
Pollution Degree:		2
Terminals:		Captive screws
Weight:	grams	96



OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



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821 TIME DELAY RELAY

SPDT, 15 AMPS

TIMING SCALES

TEN DIFFERNT TIME SCALES FROM 0.1 SECOND TO 10 DAYS AND ALWAYS ON OR ALWAYS OFF

SECONDS	MINUTES	HOURS	DAYS	OTHER
0.1 TO 1	0.1 TO 1	0.1 TO 1	0.1 TO 1	ALWAYS ON
1 TO 10	1 TO 10	1 TO 10	1 TO 10	ALWAYS OFF

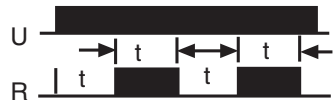
TIMING DIAGRAMS

U = INPUT VOLTAGE, R = RELAY OUTPUT, S = CONTROL SWITCH

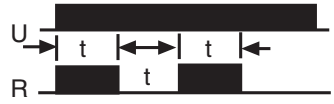
A) On delay - Power on

B) Interval - Power on

C) Repeat / Off first - Power on



D) Repeat / On first - Power on

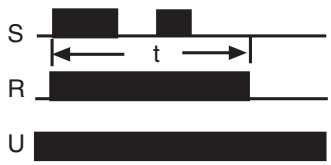


E) Pulse Generator - Power on

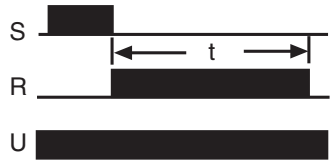
0.5 S PULSE

F) Off delay - S break

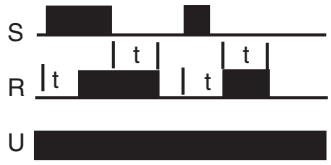
G) Interval - S make



H) Interval - S break

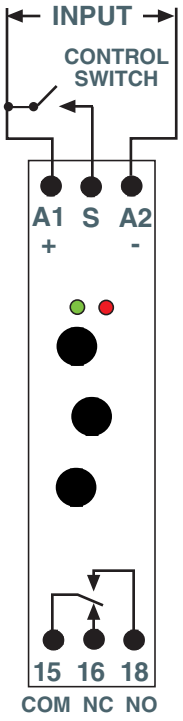


I) On & Off delay - S make / break



J) Memory Latch - S make

WIRING DIAGRAM



- CONTROL SWITCH IGNORED FUNCTIONS "A" TO "E"
- CONTROL SWITCH REQUIRED FUNCTIONS "F" TO "J"

STANDARD PART NUMBER
821TD10H - UNI

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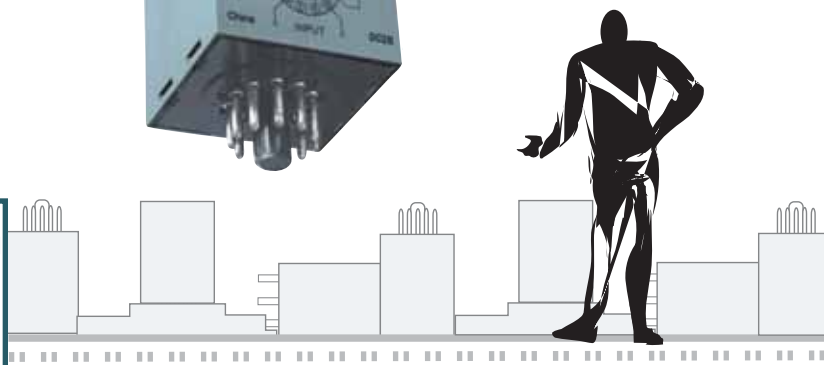
TDRPRO-5000 PROGRAMMABLE TIME DELAY RELAY

c UL us
UL Recognized
File No. E43641

FEATURES	BENEFITS
5 TIMING FUNCTIONS, TIMING RANGES FROM 0.1 SECONDS TO 9,990 HOURS, UNIVERSAL VOLTAGE INPUT AND 12 AMP OUTPUT FOR HIGHER POWER APPLICATIONS	FIVE FUNCTIONS - ONE PACKAGE
UNIVERSAL POWER SUPPLY ALLOWS FOR INPUT VOLTAGES FROM 24 TO 240 VDC OR VAC 50/60HZ.	ONE PART FOR MOST VOLTAGES
CLASS "F" INSULATION SYSTEM	12 AMPS CONTACT RATING
THUMB WHEEL ADJUSTMENTS FOR FUNCTION AND TIMING	POSITIVE POSITION THUMB WHEEL ADJUSTMENT
RED L.E.D. LAMP INDICATOR	STATUS L.E.D.
0.1 % ACCURACY USING A CRYSTAL CLOCK	ACCURATE TIME, ALL THE TIME
MOUNTING CLIP ALLOWS FOR VARIED PANEL THICKNESSES,	PANEL CLIP INCLUDED



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		2-On delay/interval or off delay/ retriggerable one shot
Time Scales:		7
Time Range:		0.1 second to 9990 hours
Timing Adjustment:		Thumbwheels
Timing Deviation (mechanical setting):	%	None
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC/DC	24 to 240
Input Voltage Tolerance:	of nominal	-15% , +15%,
Power Consumption:	maximum	2.5 VA / 2. W
Transient Protection:		Yes
Reverse Polarity Protection:		Non-polarity sensitive
Input Indication:		See output indication
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive@ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 30
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500 mW
Contact Material:		Silver alloy
Output Indication:		Red LED: blinks = timing On = energized

	UNITS	
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,000
Input to Contacts:	Vrms	2,500
Pole to Pole:	Vrms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		TDRPRO-5000= 11pin octal TDRPRO-5001, 5002= 8 pin octal
Weight:	grams	122

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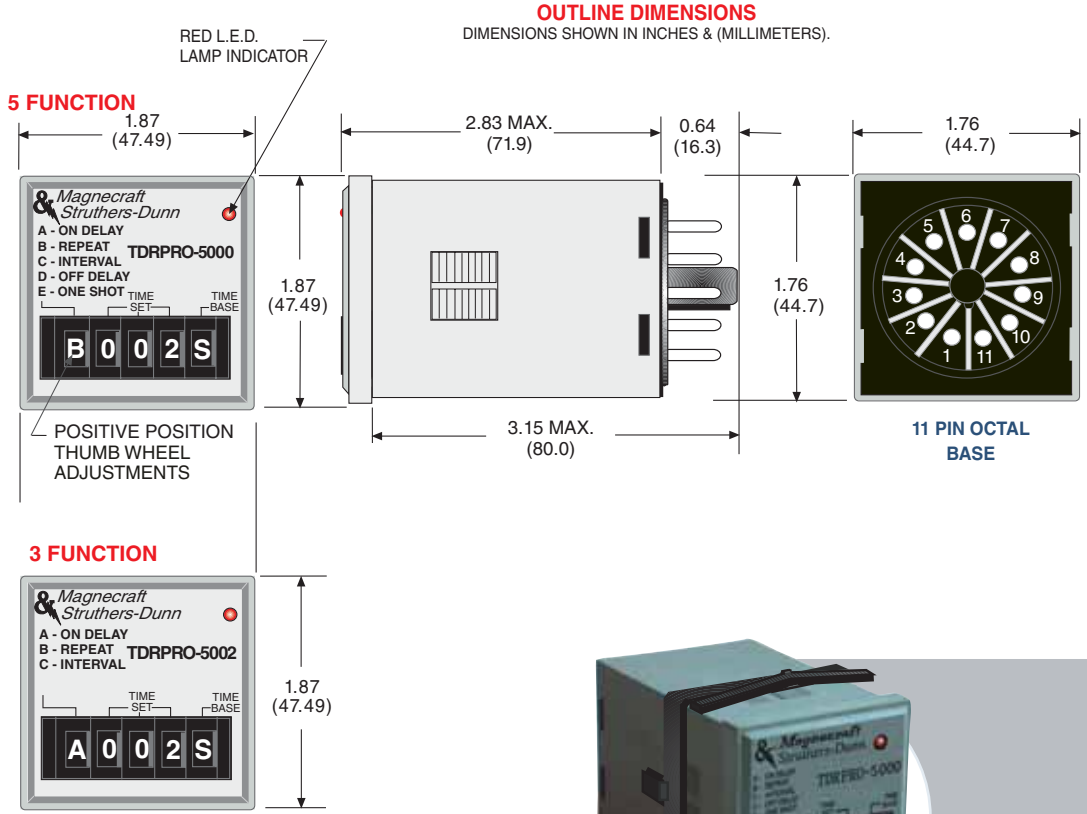
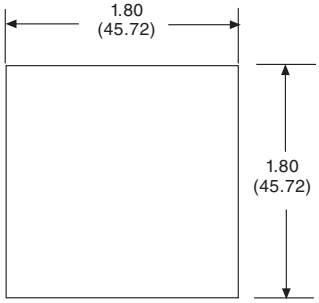
TDRPRO-5000 PROGRAMMABLE TIME DELAY RELAY

SPDT & DPDT, 12 AMPS

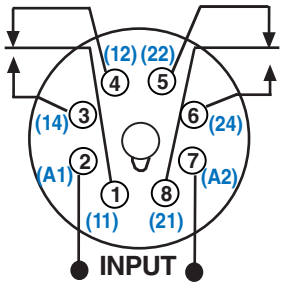
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PANEL CUTOUT
FOR PANEL MOUNTING

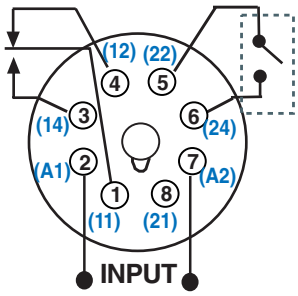


WIRING DIAGRAM
(VIEWED FROM PIN END)



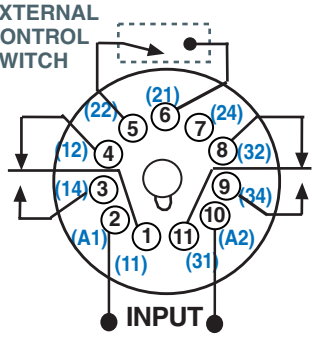
TDRPRO-5002

EXTERNAL CONTROL SWITCH



TDRPRO-5001

EXTERNAL CONTROL SWITCH



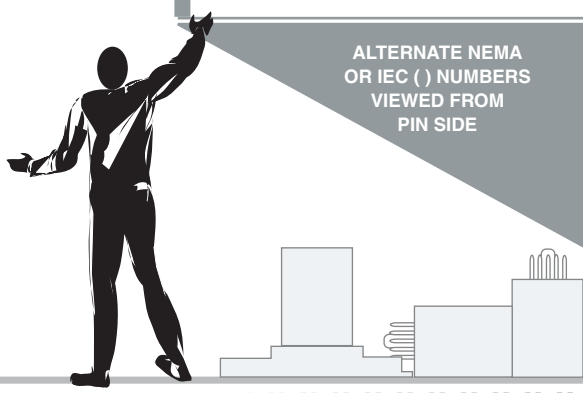
TDRPRO-5000

EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	TIMING RANGE	MATING SOCKETS *See section 7*
5 FUNCTION - 11 PIN, 12 AMP			
TDRPRO-5000	DPDT	0.1 SECOND TO 9,990 HOURS	70-465-1 70-750D11-1
5 FUNCTION - 8 PIN, 12 AMP			
TDRPRO-5001	SPDT	0.1 SECOND TO 9,990 HOURS	70-464-1 70-750D8-1
3 FUNCTION - 8 PIN, 12 AMP			
TDRPRO-5002	DPDT	0.1 SECOND TO 9,990 HOURS	70-464-1 70-750D8-1

COMPARE TO: IDEC RTE SERIES, OMRON H3 SERIES & P & B CN SERIES

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE



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TDR SERIES COMPACT TIME DELAY RELAYS

FEATURES	BENEFITS
WIDE TIME RANGE:	0.1 SECONDS TO 10 HOUR, 8 SCALES, FINE ADJUSTMENT WITH KNOB
AC / DC:	NO NEED TO SPECIFY AC OR DC (AC ONLY FOR 240)
ALL POPULAR VOLTAGES AVAILABLE:	12, 24, 120, 240
DUAL FUNCTION:	ON DELAY / INTERVAL OFF DELAY / RETRIGGERABLE ONE SHOT
INDICATOR LED'S:	GREEN SHOWS POWER ON RED SHOWS OUTPUT RELAY ENERGIZED
ELECTROMECHANICAL OUTPUT:	UP TO 12 AMPS PER POLE, DPDT
COMPACT SIZE:	36mm WIDE TO OPTIMIZE DIN RAIL SPACE
FITS INDUSTRY SOCKETS:	8 PIN OCTAL, 11 PIN OCTAL OR BLADES
ACCEPTS FLANGE ADAPTORS:	PANEL MOUNT OR DIN MOUNT WITH TERMINALS EXPOSED
REMOVABLE KNOB:	PREVENT TAMPERING, REMOVE KNOB TO EXPOSE RECESSED SCREWDRIVER SLOT

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UL Recognized
File No. E43641

MANUFACTURED UNDER ISO 9002 & QS 9000

TDRSRXB
TDRSOXB

BLADES → (QUICK CONNECT)

TDRSRXP
TDRSOXP

PINS → (OCTAL BASE)

TOP OR SIDE MOUNT BRACKET ADAPTERS

ORDERED AND SHIPPED SEPARATELY

DIN ADAPTER 16-711C4

FLANGE ADAPTER 16-711C1

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		2-On delay/interval or Off delay/ Retriggerable One Shot
Time Scales:		8
Time Range:		0.1 second to 10 hours
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	±10
Timing Repeatability (Constant voltage and temperature):	%	1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC/VDC	12, 24,120, 240 (240 AC only)
Input Voltage Tolerance:	of nominal	-20% , +10%,
Power Consumption:	maximum	5 VA / 2.5 W
Transient Protection:		Yes
Reverse Polarity Protection:		Non-polarity sensitive
Input Indication:		Green LED
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive@ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 30
Minimum Load:	mW	500 mW
Contact Material:		Silver alloy
Output Indication:		Red LED

	UNITS	
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,000
Input to Contacts:	Vrms	2,500
Pole to Pole:	Vrms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		XB: = 0.187 x 0.020" quick connect OXP=8 pin octal, RXP=11 pin octal
Weight:	grams	90

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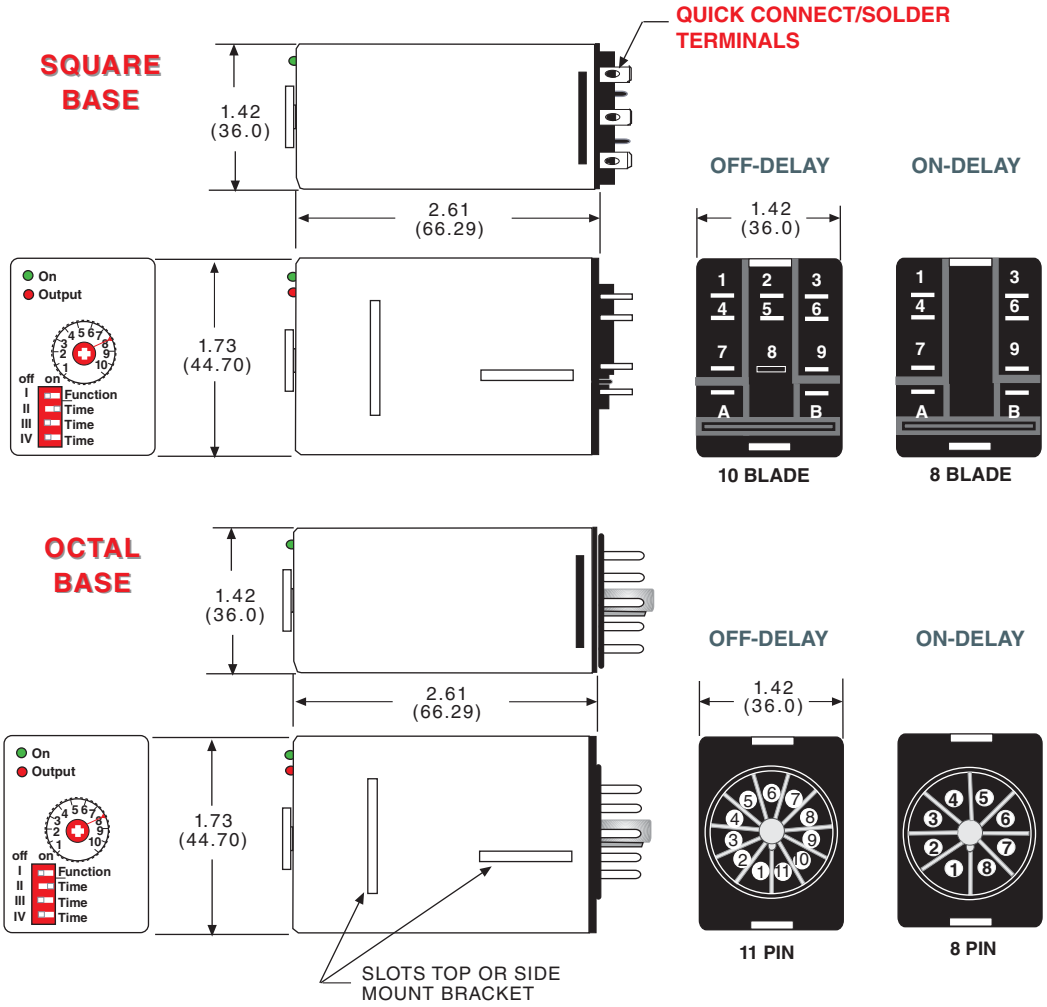
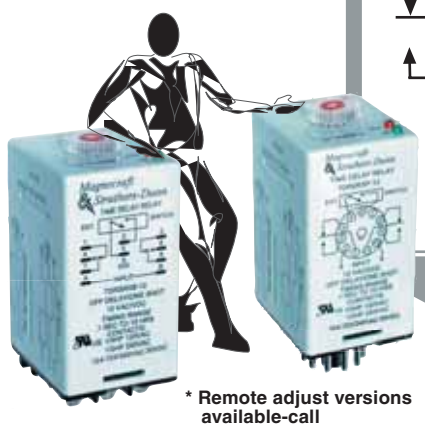
TDR SERIES COMPACT TIME DELAY RELAYS

DPDT, 12 AMPS

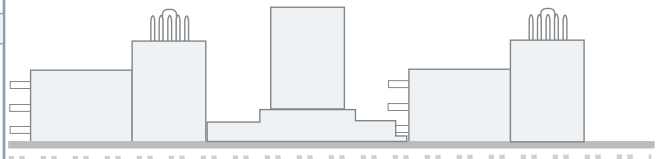


STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	NOMINAL INPUT VOLTAGE	MATING SOCKETS *See section 7*
8 PIN OCTAL BASE - ON DELAY / INTERVAL , 12 AMP			
TDRSOXP-12	DPDT	12 VAC/VDC	70-464-1 70-750D8-1
TDRSOXP-24		24 VAC/VDC	
TDRSOXP-120		120 VAC/VDC	
TDRSOXP-240		240 VAC	
11 PIN OCTAL BASE - OFF DELAY /RETRIGGERABLE ONE SHOT, 12 AMP			
TDRSRXP-12	DPDT	12 VAC/VDC	70-465-1 70-750D11-1
TDRSRXP-24		24 VAC/VDC	
TDRSRXP-120		120 VAC/VDC	
TDRSRXP-240		240 VAC	
8 BLADE SQUARE BASE - ON DELAY / INTERVAL, 12 AMP			
*TDRSOXB-12	DPDT	12 VAC/VDC	70-463-1
*TDRSOXB-24		24 VAC/VDC	
*TDRSOXB-120		120 VAC/VDC	
TDRSOXB-240		240 VAC	
10 BLADE SQUARE BASE - OFF DELAY / RETRIGGERABLE ONE SHOT, 12 AMP			
TDRSRXB-12	DPDT	12 VAC/VDC	70-463-1
TDRSRXB-24		24 VAC/VDC	
TDRSRXB-120		120 VAC/VDC	
TDRSRXB-240		240 VAC	

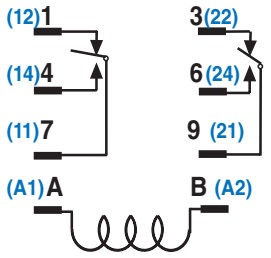
COMPARE TO: IDEC RTE SERIES, OMRON H3 SERIES & P & B CN SERIES



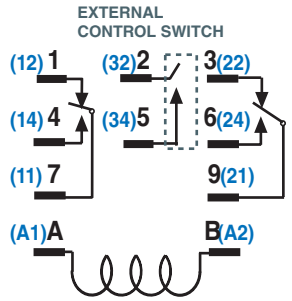
* Remote adjust versions available-call



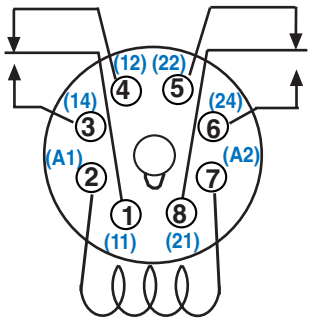
WIRING DIAGRAM
(VIEWED FROM PIN END)



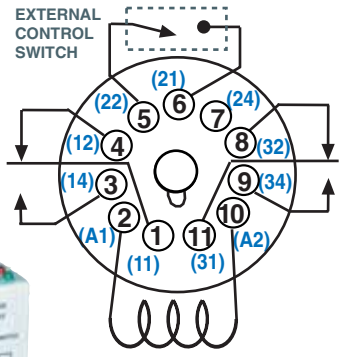
INPUT ON DELAY



INPUT OFF DELAY



INPUT ON DELAY



INPUT OFF DELAY

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

211 OCTAL 8 & 11 PIN TIME DELAY RELAY

DPDT, 10 AMPS

UL Recognized
File No. E43641

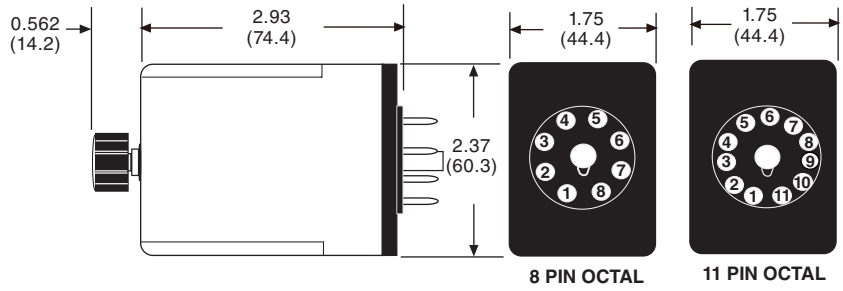
LISTED 367G
IND. CONT. EQ.
WHEN USED WITH SOCKETS:
70-464-1(8 PIN)
70-465-1(11 PIN)

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

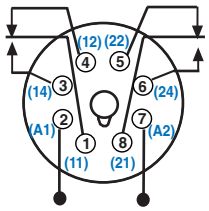
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



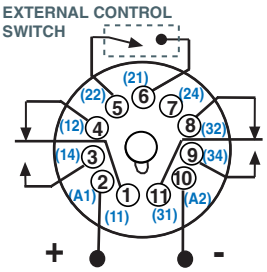
WIRING DIAGRAM

(VIEWED FROM PIN END)



INPUT ON DELAY

EXTERNAL CONTROL SWITCH



INPUT OFF DELAY

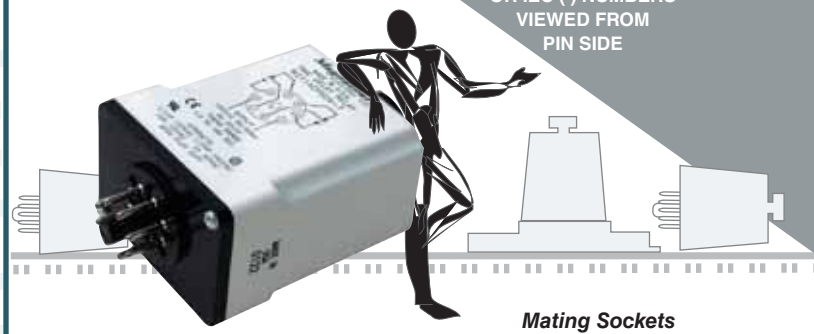
EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR .

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay, off delay, interval or one shot
Time Scales:		1
Time Range:		0.1 second to 120 minutes
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:		See P/N chart
Input Voltage Tolerance:	VAC 50/60 Hz VDC	85% to 110%, 80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps resistive@ 240
Contact Rating DC Amperes (DC1):	VDC	10 amps resistive @ 30
Contact Rating Horsepower:	HP @ VAC	1/3 @120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		SOX = 8 pin octal SRX = 11 pin octal
Weight:	grams	115

THE CLASS 211 TIME DELAY RELAY MAKES USE OF HYBRID CIRCUITRY, COMBINING INTEGRATED CIRCUITS FOR A MULTITUDE OF TIMING FUNCTIONS, AND THE RELIABILITY OF RELAY TECHNOLOGY.

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE



Mating Sockets
70-464-1, 70-750D8-1: SOX, 70-465-1, , 70-750D11-1: SRX
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 10 AMP		
211ACPSOX-3	24 VAC	1 TO 180 SECONDS
W211ACPSOX-5	120 VAC	0.1 TO 10 SECONDS
W211ACPSOX-7	120 VAC	1.0 TO 180 SECONDS
W211ACPSOX-8	120 VAC	2.0 TO 300 SECONDS
W211ACPSOX-60	120 VAC	1.0 TO 15 MINUTES
W211ACPSOX-61	120 VAC	2.0 TO 30 MINUTES
W211ACPSOX-62	120 VAC	4.0 TO 60 MINUTES
W211CPSOX-1	24 VDC	0.1 TO 10 SECONDS
W211CPSOX-3	24 VDC	1.0 TO 180 SECONDS
OFF DELAY, 10 AMP		
W211ACPSRX-5	120 VAC	0.1 TO 10 SECONDS
W211ACPSRX-7	120 VAC	1.0 TO 180 SECONDS
W211ACPSRX-8	120 VAC	2.0 TO 300 SECONDS
W211ACPSRX-60	120 VAC	1.0 TO 15 MINUTES
W211CPSRX-1	24 VDC	0.1 TO 10 SECONDS
W211CPSRX-3	24 VDC	1.0 TO 180 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

222 - 8 PIN REPEAT CYCLE TIME DELAY RELAY

DPDT, 10 AMPS

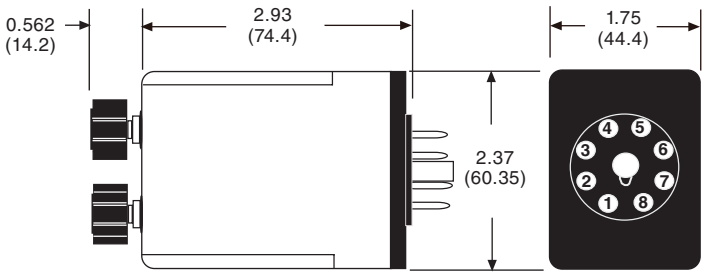
UL Recognized
File No. E43641

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

OUTLINE DIMENSIONS

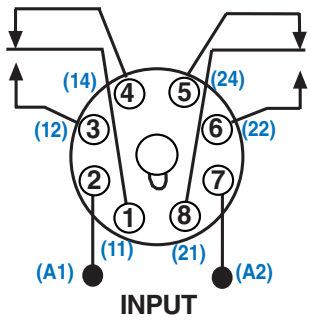
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



8 PIN OCTAL

WIRING DIAGRAM

(VIEWED FROM PIN END)

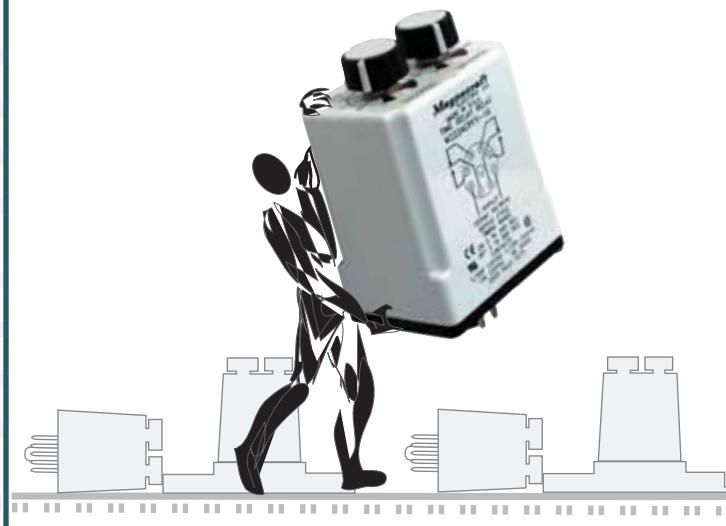


ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		Repeat cycle
Time Scales:		1
Time Range:		0.1 seconds to 30 minutes
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS maximum	50
INPUT		
Standard Voltage:	AC 50/60 Hz	120
Input Voltage Tolerance:	of nominal	AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	10 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		8 pin octal
Weight:	grams	130

INDEPENDENT TIME SETTINGS FOR BOTH "ON" AND "OFF" TIMING RANGES



Mating Sockets
70-464-1, 70-750D8-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
REPEAT CYCLE, 10 AMP		
W222ACPFX-11	120 VAC	0.1 TO 10 SECONDS
W222ACPFX-16	120 VAC	3 TO 300 SECONDS
W222ACPFX-27	120 VAC	2 TO 30 MINUTES

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

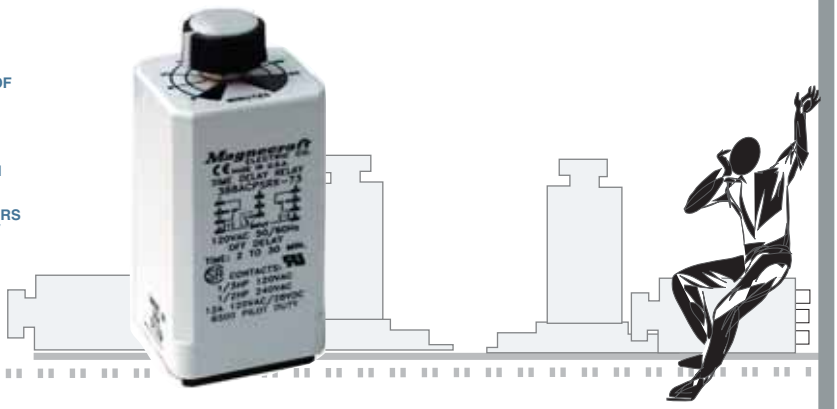
388 SQUARE BASE TIME DELAY RELAY

DPDT, 12 AMPS

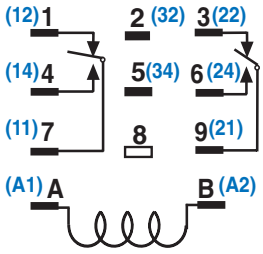
UL Recognized
File No. E43641

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

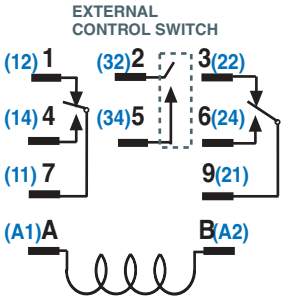


WIRING DIAGRAM
(VIEWED FROM PIN END)



INPUT ON DELAY

EXTERNAL CONTROL SWITCH



INPUT OFF DELAY

EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

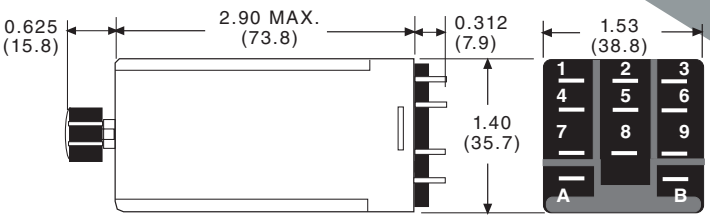
GENERAL SPECIFICATIONS (@ 25°C)

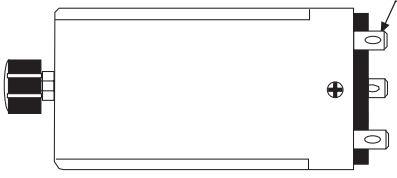
	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 180 Seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60Hz	AC: 120, DC:24
Input Voltage Tolerance:	of nominal	AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020" quick connect
Weight:	grams	96

KNOB ADJUSTABLE TIME "ON" OR "OFF" DELAY FUNCTIONS.

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).





Mating Socket
70-463-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 12 AMP		
W388ACPSOX-42	120 VAC	0.1 TO 10 SECONDS
W388ACPSOX-44	120 VAC	1.0 TO 180 SECONDS
OFF DELAY, 12 AMP		
W388CPSRX-2	24 VDC	0.1 TO 10 SECONDS
W388CPSRX-4	24 VDC	1.0 TO 180 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

388 SQUARE BASE TIME DELAY RELAYS

DPDT, 12 AMPS

UL Recognized
File No. E52197

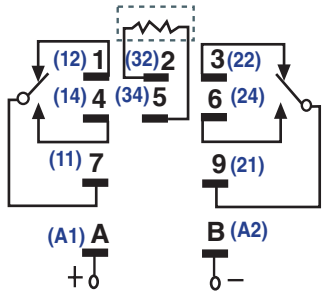
NEW

COMPLIES WITH REQUIREMENTS OF

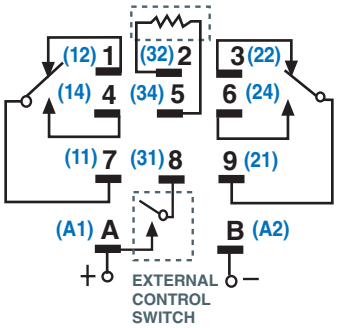
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

PLUG-IN TIMER HAS SAME CASE DIMENSIONS AS FLANGE MOUNT EXCEPT - NO FLANGE AND SOCKET MOUNTABLE.

WIRING DIAGRAM
(VIEWED FROM PIN END)



INPUT ON DELAY



INPUT OFF DELAY

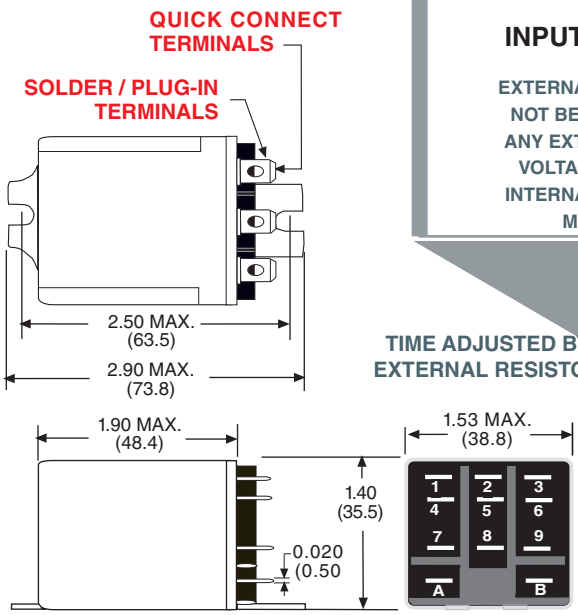
EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 120 Seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60 Hz	120
	VDC	24
Input Voltage Tolerance:	of nominal	AC:85% to 110%,
	of nominal	DC:80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive@28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	ºC	-20
Operating, Upper:	ºC	+55
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020" quick connect
Weight:	grams	85

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Mating Socket
70-463-1: EXCEPT NO SOCKET FOR FLANGE MOUNT
See section 7

STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE	TIMING RANGE	EXTERNAL RESISTOR
ON DELAY PLUG-IN STYLE, 12 AMP			
W388ACPSOX-1	120 VAC	0.1 TO 10 SECONDS	20,000 Ω PER SECOND
W388ACPSOX-2	120 VAC	1.0 TO 120 SECONDS	
W388CPSOX-1	24 VDC	0.1 TO 10 SECONDS	16,000 Ω PER SECOND
W388CPSOX-2	24 VDC	1.0 TO 120 SECONDS	
ON DELAY SURFACE MOUNT FLANGE STYLE, 12 AMP			
W388ACQSOX-1	120 VAC	0.1 TO 10 SECONDS	20,000 Ω PER SECOND
W388ACQSOX-2	120 VAC	1.0 TO 120 SECONDS	
W388CQSOX-2	24 VDC	1.0 TO 120 SECONDS	
OFF DELAY PLUG-IN STYLE , 12 AMP			
W388CPSRX-22	24 VDC	1.0 TO 120 SECONDS	16,000 Ω PER SECOND

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

388 TRUE OFF TIME DELAY RELAY

DPDT, 12 AMPS

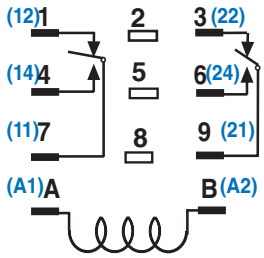
UL Recognized
File No. E43641

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

THE CLASS 388 TRUE OFF DELAY RELAY PULLS IN WHEN POWER IS APPLIED TO THE INPUT. TIMING STARTS WHEN POWER IS REMOVED FROM THE INPUT, AND AT THE END OF THE PRESET TIMING PERIOD THE RELAY WILL DROPOUT.

WIRING DIAGRAM
(VIEWED FROM PIN END)



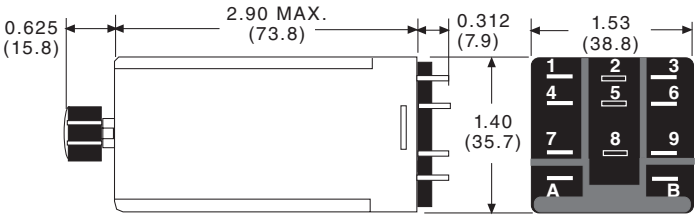
INPUT OFF DELAY

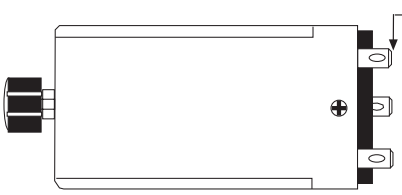
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

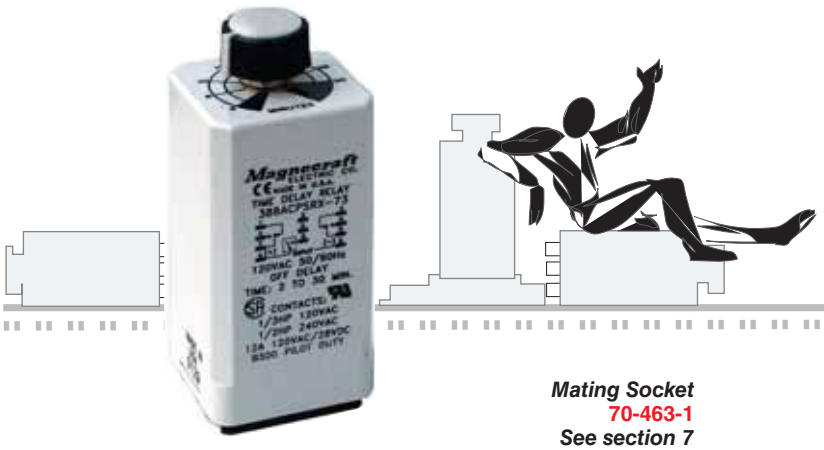
	UNITS	
TIMING		
Functions Available:		True off delay
Time Scales:		1
Time Range:		0.1 to 60 seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60 Hz VDC	120 24
Input Voltage Tolerance:	of nominal	AC:85% to 110%, DC:80% to 110%
Power Consumption:	maximum	1.5 VA / 1 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020" quick connect
Weight:	grams	96

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).





QUICK CONNECT TERMINALS



Mating Socket
70-463-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
AC OPERATED, 12 AMP		
W388ACPSRX-29	120 VAC	0.6 TO 60 SECONDS
W388ACPSRX-30	120 VAC	0.1 TO 10 SECONDS
DC OPERATED, 12 AMP		
W388CPSRX-35	24 VDC	0.1 TO 10 SECONDS
W388CPSRX-36	24 VDC	0.6 TO 60 SECONDS

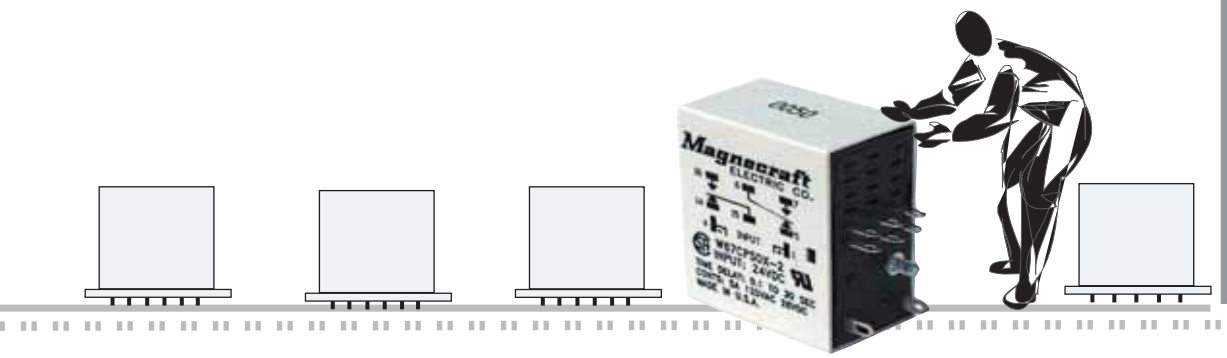
CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

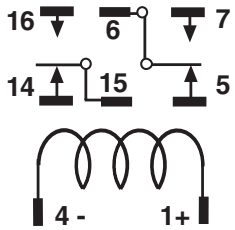
67 MINIATURE TIME DELAY RELAY

DPDT, 5 AMPS

UL Recognized
File No. E43641



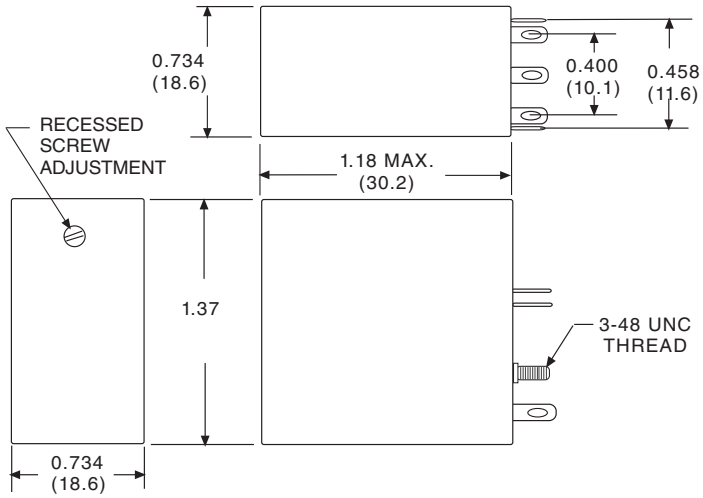
WIRING DIAGRAM
(VIEWED FROM PIN END)



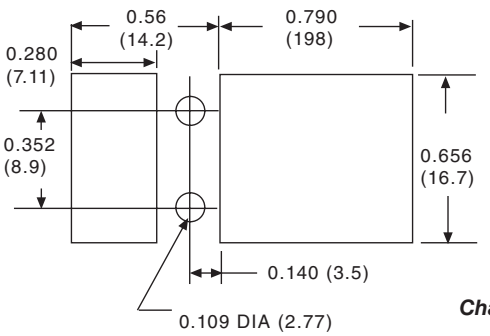
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay
Time Scales:		1
Time Range:		0.1 to 30 Seconds
Timing Adjustment:		Recessed potentiometer
Timing Deviation (mechanical setting):	%	No scale printed on part
Timing Repeatability		
(Constant voltage and temperature):	%	2
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	Not applicable
INPUT		
Standard Voltage:	VAC 50/60Hz	12, 24
Input Voltage Tolerance:	of nominal	DC: 80% to 110%
Power Consumption:	maximum	1.1 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	5 amps resistive @ 120
Contact Rating DC Amperes (DC1):	VDC	5 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @120, 1/2 @ 240
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	500
Input to Contacts:	V rms	1,500
Pole to Pole:	V rms	1.500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	50,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.100 x 0.020" tabs
Weight:	grams	35

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



CHASSIS CUTOUT
FOR PANEL MOUNTING



Chassis Mount:
70-307-1
PCB:
70-308-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 5 AMP		
W67CPSOX-1	12 VDC	0.1 TO 30 SECONDS
W67CPSOX-2	24 VDC	0.1 TO 30 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

246 & 247 INDUSTRIAL DELAY TIMER RELAYS

UL CONTACT LOAD RATINGS TABLE

c UL us
UL Recognized
File No. E13224

Class 246 CSA Certified

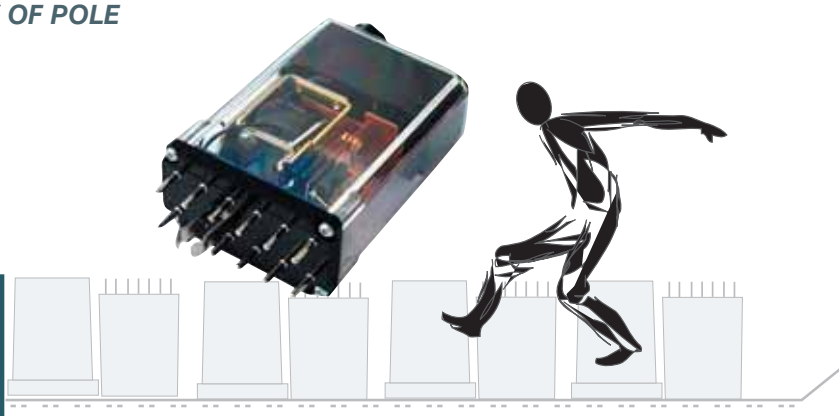
c UL us
LISTED
367G

WHEN USED WITH SOCKET **27390D** or **33377D**

POLES	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
ALL STYLES	10 AMP	120 VAC	50/60 Hz	RESISTIVE
	5 AMP	240 VAC	50/60 Hz	RESISTIVE
	10 AMP	28 VDC	DC	RESISTIVE
	0.5 AMP	125 VDC	DC	RESISTIVE
	3 AMP	120 VAC	50/60 Hz	INDUCTIVE
	1 AMP	240 VAC	50/60 Hz	INDUCTIVE
	3 AMP	28 VDC	DC	INDUCTIVE
	0.1 AMP	125 VDC	DC	INDUCTIVE
SUFFIX "69" WITH BLOWOUT MAGNET FOR DC SWITCHING (NOT UL OR CSA)				
SPST-NO	1.5 AMP	125 VDC	DC	RESISTIVE
SPST-NO-DM	4 AMP	125 VDC	DC	RESISTIVE
SPST-NO	0.5 AMP	250 VDC	DC	RESISTIVE
SPST-NO-DM	1.5 AMP	250 VDC	DC	RESISTIVE
SPST-NO	0.5 AMP	125 VDC	DC	INDUCTIVE
SPST-NO-DM	1.5 AMP	125 VDC	DC	INDUCTIVE
SPST-NO	150 mA	250 VDC	DC	INDUCTIVE
SPST-NO-DM	0.5 AMP	250 VDC	DC	INDUCTIVE

CONTACTS CAN SWITCH 30 AMP LOADS AND CARRY 10 AMPS CONTINUOUSLY AT VOLTAGES SHOWN IN UL CONTACT LOAD RATINGS TABLE.

THE CLASS 246 & 247 ARE AVAILABLE WITH A VARIETY OF POLE AND CONTACT CONFIGURATIONS.
A LARGE CHOICE OF OPTIONS IS AVAILABLE.



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 300 seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	No scale printed on part
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC 50/60 Hz	See ordering code
Input Voltage Tolerance:	of nominal	AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum	5 VA / 2.5 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		Optional
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps resistive @ 120
Contact Rating DC Amperes (DC1):	VDC	10 amps resistive @ 28
Minimum Load:	mW	500 mW
Contact Material:		Silver alloy
Output Indication:		No

	UNITS	
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,500
Input to Contacts:	Vrms	1,500
Pole to Pole:	V rms	1,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	AC: +45, DC: +70
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		12 or 14 pin rectangular
Weight:	grams	227

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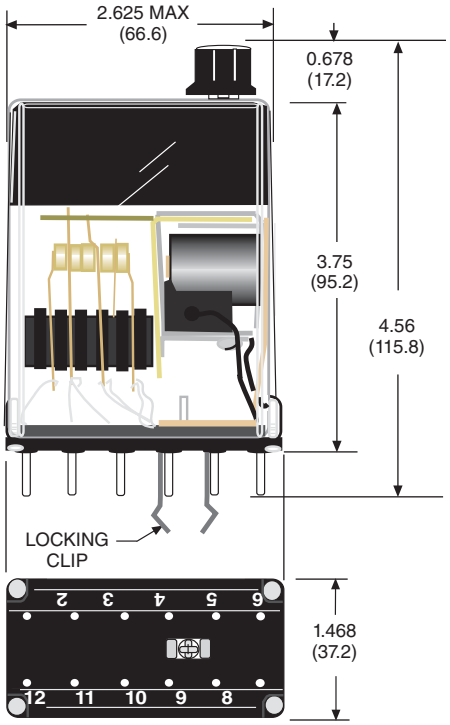
246 & 247 INDUSTRIAL DELAY TIMER RELAYS

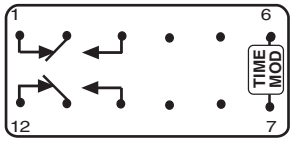
DPDT & 4PDT
10 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

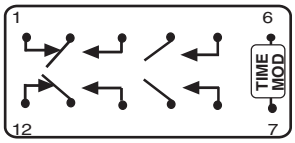


THE AGASTAT ALTERNATIVE

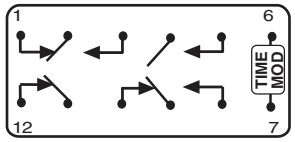
WIRING DIAGRAM



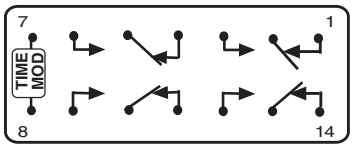
246XBXP



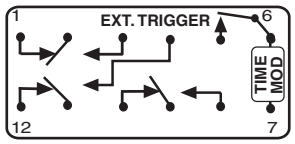
246BBXP



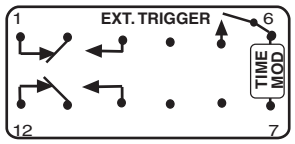
246ABAP



246 XDXP



247XCXP



247XBXP

ORDERING CODE

247	XBX	P	L	-010	-120A

CLASS:
246: ON DELAY, 247: OFF DELAY,

CONTACT ARRANGEMENTS:
XBX: (2 FORM "C"), **XCX:** (3 FORM "C")
ABA: (1 FORM A & 2 FORM C & 1 FORM B).
BBX: (2 FORM A & 2 FORM C) 246 ONLY.
XDX: (4 FORM C) 246 ONLY.

STANDARD FEATURES:
PLUG-IN WITH POLYCARBONATE COVER**: CODE P**

OPTIONS:
INDICATOR LAMP**: CODE L**
MANUAL ACTUATOR**: CODE M**
BIFURCATED CONTACTS (5 AMPS MAX)**: CODE 33**
PERMANENT MAGNET, BLOWOUT**: CODE 69**
ADJUSTMENT KNOB)**: NO CODE**
REMOTE ADJ. (EXT POT REQUIRED) **: CODE R**
LOCKING SHAFT POT**: CODE 8**
INSTANTANEOUS CONTACTS**: CALL**

TIMING RANGES:
0.1 - 1.0 SEC**: CODE 001,** 0.2 - 2.0 SEC**: CODE 002,** 1.0 - 10 SEC**: CODE 010**
3.0 - 30 SEC**: CODE 030,** 6.0 - 60 SEC**: CODE 060,** 18 - 180 SEC**: CODE 180**
30 - 300 SEC**: CODE 300,** OVER 300 SEC**: CALL,** FIXED**: CODE F (EX. 3F)**

OPERATING VOLTAGE:
24, 48, 120, 240 **ADD "A" FOR AC COILS**
12, 24, 48, 110-125, 250 **ADD "D" FOR DC COILS**

CROSS REFERENCE AVAILABLE
CONSULT FACTORY

Mating Sockets:
12 Pin: 27390
14 Pin: 33377
Add "D" suffix (27390D, 33377D)
for DIN mount socket
See section 7

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

831 VOLTAGE SENSING RELAY

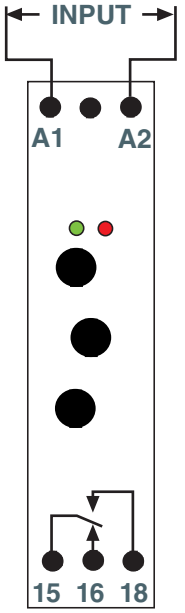
SPDT, 15 AMPS

COMPLIES WITH REQUIREMENTS OF
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

MANUFACTURED UNDER ISO 9002

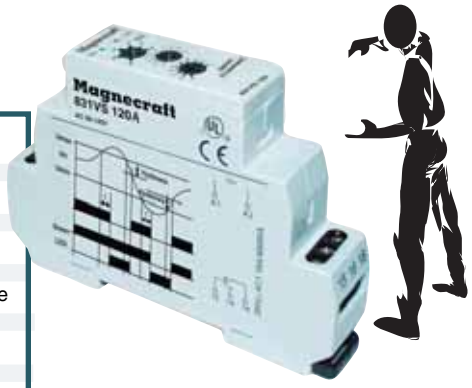
FEATURES	BENEFITS
INDEPENDENT UPPER AND LOWER LIMITS	SENSE OVER VOLTAGE, UNDER VOLTAGE OR BOTH
TIME DELAY	AVOID NUISANCE TRIPPING
TWO STATUS LEDS	INDICATES STATUS AT A GLANCE
DIN MODULE	CLIP DIRECTLY TO 35 mm DIN RAIL

WIRING DIAGRAM

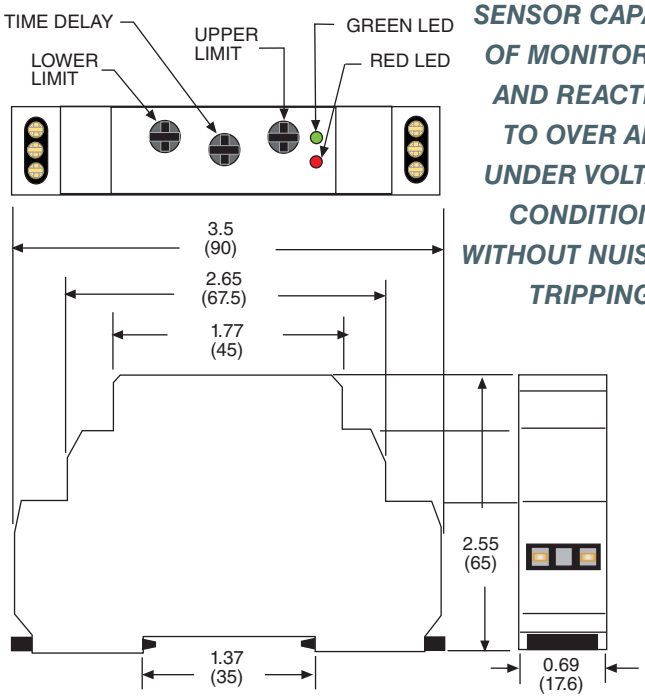


GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
INPUT/SENSING		
Standard Voltage Nominal:	VAC 50/60 Hz	120
Input Voltage Absolute Maximum:	VAC 50/60 Hz	200
Upper Input Voltage Range:	VAC 50/60 Hz	80 to 150
Lower Input Voltage Range:	%	30 to 99 of upper limit voltage
Power Consumption:	maximum	1.2 VA
Transient Protection:		Yes
Reverse Polarity Protection:		Not Applicable
Operate Time:	mS maximum	25
Release Time:	mS maximum	20
Input Indication:		Green LED
TIMING		
Time Scales:		1
Time Range:		0 to 10 second
Setting Adjustment:		Recessed potentiometer
Timing Deviation (mechanical setting):	%	5
Timing Repeatability (Constant voltage and temperature):	%	<1
Reset Time:	mS maximum	150
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	15 amps resistive @120,240
Contact Rating DC Amperes (DC1):	VDC	15 amps resistive @ 24
Contact Rating Pilot Duty:	mW	500
Contact Material:		Silver-Nickel 90/10
Output Indication:		Red: LED: Blinks = timing On = energized
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:		Not applicable
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+70
LIFE EXPECTANCY		
Electrical Full Load	operations	70,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Maximum Wire Size		2.5 mm (UL-14 gauge)
Cover Protection Category:	IP	40
Pollution Degree:		2
Terminals:	Inch	Captive screws
Weight:	grams	60

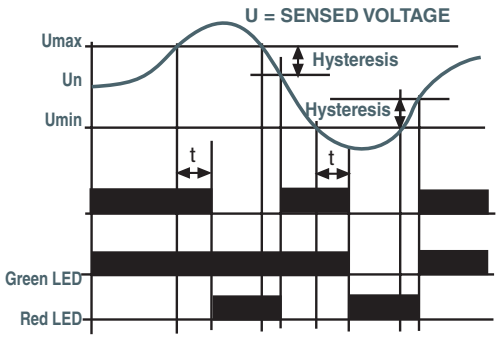


OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



TYPE 831 IS A SINGLE PHASE AC VOLTAGE SENSOR CAPABLE OF MONITORING AND REACTING TO OVER AND UNDER VOLTAGE CONDITIONS WITHOUT NUISANCE TRIPPING

STANDARD PART NUMBER
831VS-120A



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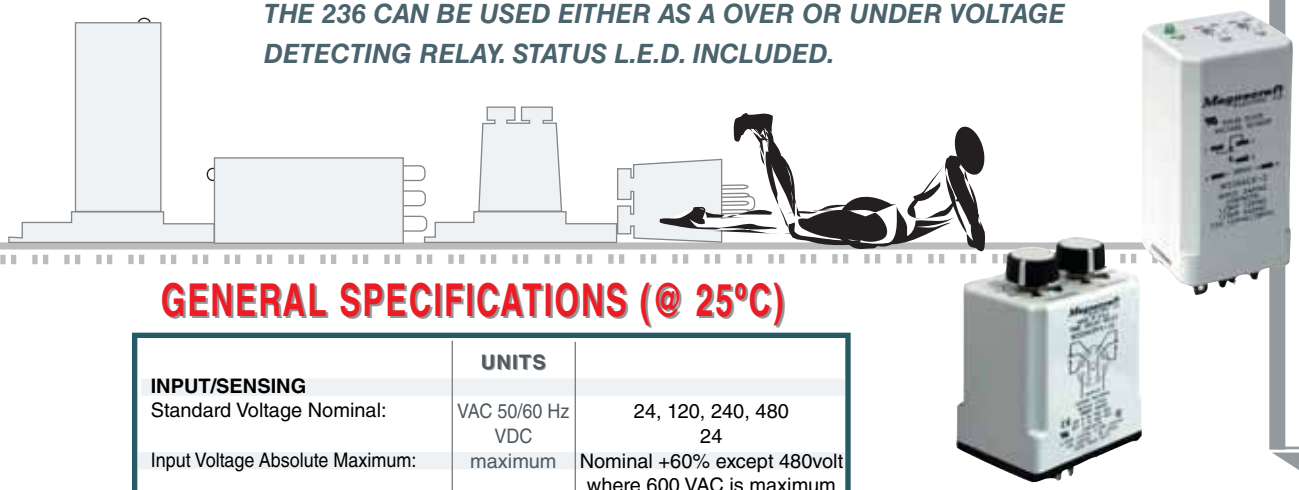
236 VOLTAGE SENSING RELAYS

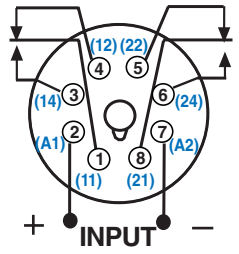
SPDT, 13 AMPS & DPDT, 10 AMPS

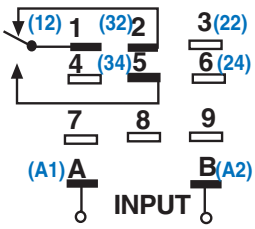
UL Recognized
File No. E62636

CLASS 236 VOLTAGE SENSING RELAYS COMBINE A SOLID STATE SENSOR WITH A SPDT, 13 AMP OR DPDT 10 AMP RELAY. PULL-IN & DROPOUT VOLTAGES ARE INDEPENDENTLY ADJUSTABLE. THE 236 CAN BE USED EITHER AS A OVER OR UNDER VOLTAGE DETECTING RELAY. STATUS L.E.D. INCLUDED.



WIRING DIAGRAM
(VIEWED FROM PIN END)





SQUARE BASE
CONTINUOUS VOLTAGE MUST BE SUPPLIED TO INPUT.

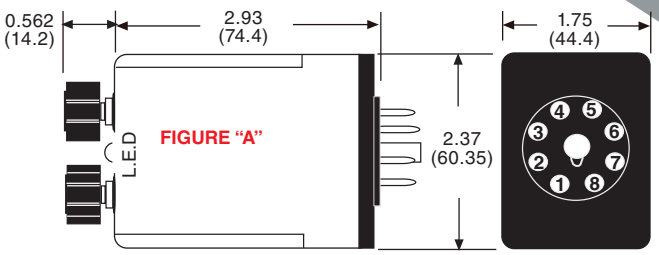
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

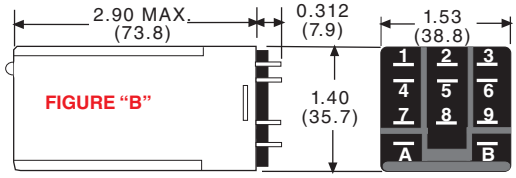
GENERAL SPECIFICATIONS (@ 25°C)

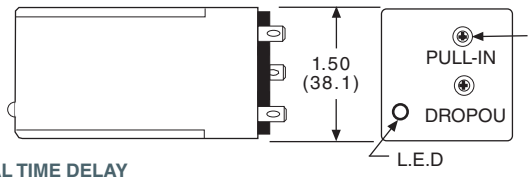
	UNITS	
INPUT/SENSING		
Standard Voltage Nominal:	VAC 50/60 Hz VDC	24, 120, 240, 480 24
Input Voltage Absolute Maximum:	maximum	Nominal +60% except 480volt where 600 VAC is maximum
Upper Input Voltage Range:	nominal	75 to 115%
Lower Input Voltage Range:		75 to 95% of set pickup
Power Consumption:	maximum	3.5 VA / W
Transient Protection:		Yes
Reverse Polarity Protection:	DC	Yes
Operate Time:	mS maximum	25
Release Time:		20
Input Indication:		Green LED
TIMING		
Time Scales:		Optional on PX
Setting Adjustment:		PX= KNOB, CX=Recessed potentiometer
Reset Time:	mS maximum	150
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	DPDT=10 amps @ 240 SPDT=13 amps @ 240
Contact Rating DC Amperes (DC1):		DPDT=10 amps @ 28 SPDT=13 amps @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver Alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:	V rms	2,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	DPDT= 10.000.000 SPDT= 5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	PX= 8 pin octal CX= 0.187 x 0.020 quick connect
Weight:	grams	DPDT: 156, SPDT: 125

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).







OPTIONAL TIME DELAY AVAILABLE IN OCTAL PIN VERSION

Mating Sockets
70-464-1, 70-750D8-1: ACPX/CPX 70-463-1: ACX
See section 7

STANDARD PART NUMBERS	FIG.	NOMINAL INPUT VOLTAGE	VOLTAGE PULL-IN RANGE	VOLTAGE DROP-OUT RANGE
W236ACPX-1	A	120 VAC	92 TO 140 VAC	75% TO 95% OF PICKUP VOLTAGE SETTING
W236ACPX-4	A	24 VAC	20 TO 30 VAC	
W236CPX-1	A	24 VDC	20 TO 30 VDC	
W236ACX-1	B	120 VAC	90 TO 138 VAC	
W236ACX-2	B	208 / 220 / 240 VAC	180 TO 276 VAC	
W236ACX-4	B	480 VAC	360 TO 552 VAC	

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

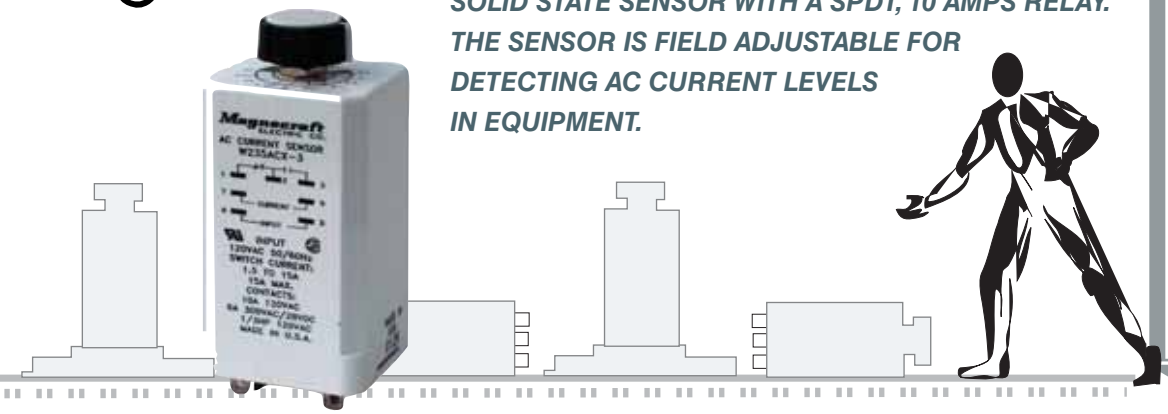
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

235 CURRENT SENSING RELAY

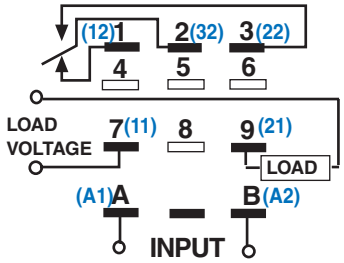
SPDT, 1.5 TO 15 AMPS

c UL us
UL Recognized
File No. E62636

CLASS 235 CURRENT SENSING RELAY COMBINES A SOLID STATE SENSOR WITH A SPDT, 10 AMPS RELAY. THE SENSOR IS FIELD ADJUSTABLE FOR DETECTING AC CURRENT LEVELS IN EQUIPMENT.



WIRING DIAGRAM
(VIEWED FROM PIN END)



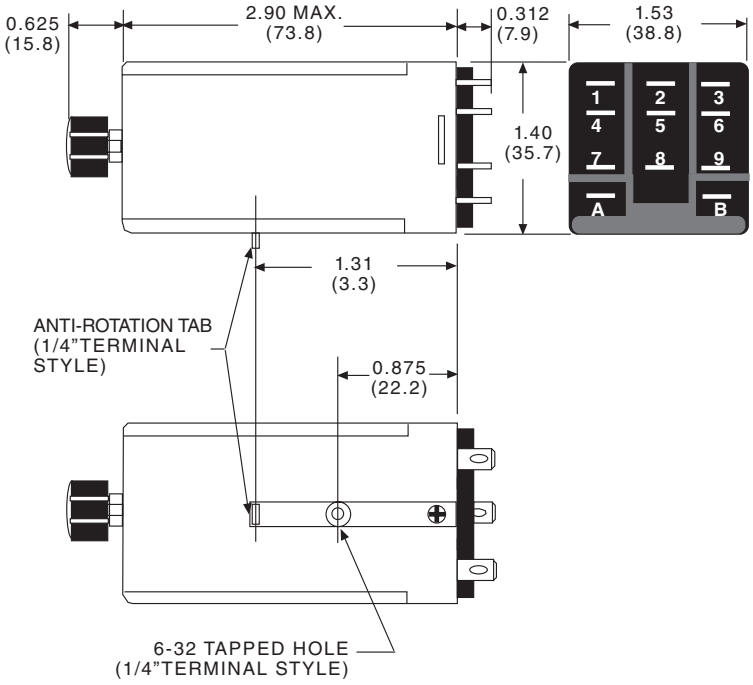
CONTINUOUS VOLTAGE MUST BE SUPPLIED TO INPUT.

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
SENSING		
Current Sense Range:	A	1.5 to 15
Setting Adjustment:		KNOB
Repeatability (constant voltage temperature):	%	2
Reset Time:	mS maximum	150
INPUT		
Standard Voltage:	VAC 50/60Hz	120
Input Voltage Tolerance AC:	of nominal	-85% to +110%
Power Consumption:	maximum	2 VA
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:	DC	No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps @ 120
Contact Rating DC Amperes (DC1):	VDC	6 amps @ 28
Minimum Load:	mW	500
Contact Material:		Silver Alloy
Output Indication:		No
TIMING		
Operate Time:	mS maximum	25
Release Time:	mS maximum	20
Input Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	500
Coil to Contacts (supply to Contacts):	V rms	2,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	200,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020 quick connect
Weight:	grams	113

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Mating Socket
70-463-1: ACX-3
See section 7
ACX-2 : no socket available

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	CURRENT RANGE	TERMINAL SIZE
W235ACX-2	120 VAC	1.5 TO 15 AMPS	0.250"
W235ACX-3	120 VAC	1.5 TO 15 AMPS	0.187"

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	SQUARE D	OMRON	A / B	NCC	IDEC
TDRPRO-5000	CNM5, CNS-35-96, CNS-35-76	9050JCK70V14	H3CA-A			
TDRPRO-5001			H3CA-8H			
TDRPRO-5002	CN1, CNS-35-92, CNS-35-72		H3CA-8			
TDRSOXP-24				700HRM12TU24		RTE-P1AD24
TDRSOXP-120				700HRM12TA17		RTE-P1AF20
TDRSOXP-240				700HRM12TA17		RTE-P1AF20
TDRSRXP-12					T2K-xxxxx-466	RTE-P2D12
TDRSRXP-24					T2K-xxxxx-467/462	RTE-P2AD24
TDRSRXP-120					T2K-xxxxx-461	RTE-P1AF20
TDRSOXB-12						RTE-B1D12
TDRSOXB-24						RTE-B1AD24
TDRSOXB-120						RTE-B1AF20
TDRSRXB-12						RTE-B2D12
TDRSRXB-24						RTE-B2AD24
TDRSRXB-120						RTE-B2AF20

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	SQUARE D	CUTLER HAMMER	A / B	SIEMENS	OTHER
W211ACPSOX-18	CDB-38-70001					
W211ACPSOX-5	CDB-38-70003 CGB-38 70010S CHB-38-70001 CKB-38-70010 CB-1003B-70	9050JCK11V20	MTON1P120A	700HT12AA1	OND-0110-120A	SST12AAA (AGASTAT) 5YZ86 (GRAINGER) 7268K23 (McMASTER CAR) TIK-00010-461 (NCC)
W211ACPSOX-7	CKB-38-70180 CHB-38-70003 CB-1005B-70 CDB-38-70005	9050JCK15V20	MTON2P120A	700HT12BA1	OND-1180-120A	5X829 (GRAINGER) 7268K26 (McMASTER CAR)
W211ACPSOX-8	CGB-38-70005M			700HT12CA1		R28-11A10-120M(NET) 5X830 (GRAINGER) 7268K51 (McMASTER CAR)
W211ACPSOX-60	CGB-38-70010M	9050JCK16V20				6X601 (GRAINGER)
W211ACPSOX-61		9050JCK17V20				7268K53 (McMASTER CAR)
W211ACPSOX-62	CGB-38-70050M	9050JCK18V20				7268K54 (McMASTER CAR)
W211ACPSOX-63	CB-1007B70	9050JCK19V20				
W211CPSOX-1	CHD-38-30001 CB-1028D-30 CDD-38-30003			700HT12AZ24	OND-0110-24D	
W211ACPSRX-5	CHB-38-70011 CDB-38-70014 CB-1021B-78	9050JCK21V20	MTOF1P120A	700HT22AA1	OFD-0110-120A	SST22AAA (AGASTAT) 7268K43 (McMASTER CAR)
W211ACPSRX-7	CHB-38-70013	9050JCK25V20	MTOF2P120A	700HT22BA1	OFD-1180-120A	7268K46 (McMASTER CAR) 6X154 (GRAINGER) T3K-00010-461 (NCC)
W211CPSRX-1	CHD-38-30011			700HT22AZ24		7268K32 (McMASTER CAR)
W211CPSRX-3	CHD-38-30013			700HT22BZ24		
	CDD-38-30008					

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	A / B	SQUARE D	SIEMENS	OTHER
211ACPSOX-3		700HT12BA24	9050JCK15V14	OND-0110-24A	
W211CPSOX-3	CDD-38-30005	700HT12BZ24			7268K35 (McMASTER CAR)
	CHD-38-30003				
	CB-38-70014				
211ACPSRX-8					SS51622-12 (MACROMATIC)
211ACPSRX-60			9050JCK26V20		T3K-00010-461 (NCC)

MAGNECRAFT & STRUTHERS-DUNN	SQUARE D	A / B	McMASTER CAR	GRAINGER
W222ACPFX-16			7630K17	
W222ACPFX-27	9050JCK57V20	700HV32DA1		
W222ACPFX-11	9050JCK51V20	700HV32AA1	7630K12	1A366
222CPFX-11		700HV32AZ24		

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	A / B	MIDTEX	CUTLER HAMMER
W388ACPSOX-1	CLF-41-70010			
W388ACPSOX-2			614-12T400	
W388CPSOX-1	CLH-41-70010			
W388CPSOX-2			614-12C400	
W388CPSRX-22	CUA-42-70010		612-12C400	
W388ACPSOX-42	CUA-51-70010	700HS12AA1	612-43T100	
W388ACPSOX-44		700HS12BA1	614-43T400	
W388CPSRX-2		700HS22AZ24	612-43C100	MTON1B120A
W388CPSRX-4		700HS22BZ24	612-43C400	MTON2B120A
W388CPSRX-35			612-43T400	MTON2B120A
W388ACQSOX-1	CLF-42-70010			

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD
W67CPSOX-1	R123012X2E1
W67CPSOX-2	R123024X2E1

MAGNECRAFT & STRUTHERS-DUNN	GRAINGER
W236CPX-1	5Z564
W236ACPX-1	5Z562

FOR TIME DELAY RELAYS APPLICATION ENGINEERING ASSISTANCE

Scott Heilman, PRODUCT MANAGER
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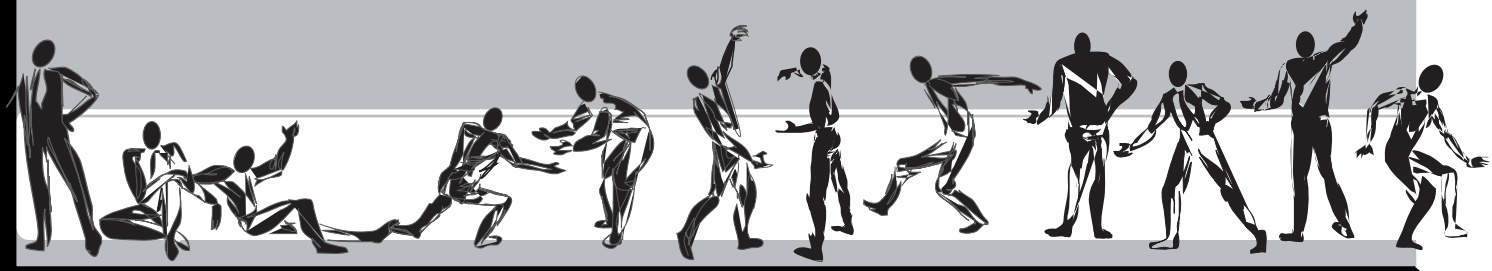
OFFICE MUNICH
FORSTENRIEDER ALLEE 227
D 81476 MUNCHEN/GERMANY
TEL.: 4989 75080310 FAX: 4989 7559344
EMAIL: renatesteinback@magnecraft.de

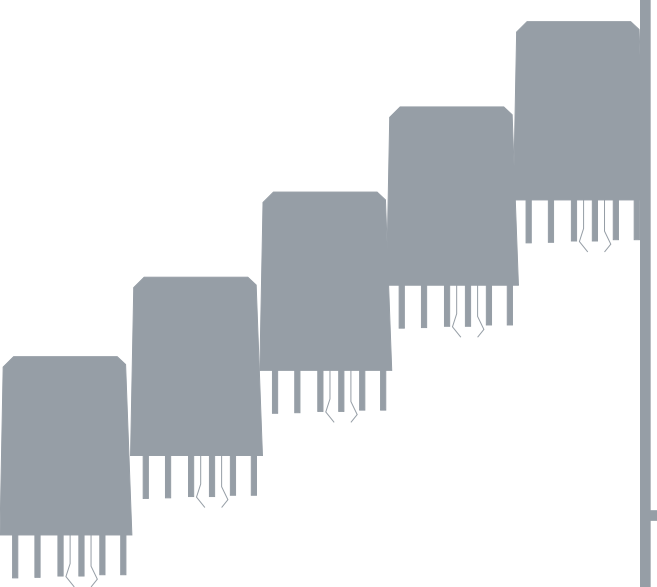


THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 5

LATCHING, SEQUENCE AND STEPPER RELAYS

5 TO 30 AMPERES



711

755/250ML

285/388ML

303

B255

385

311

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MAGNETIC LATCHING RELAYS

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT		711	755 / 250ML	285 / 388ML
				
L X W X H (INCHES)		2.90 x 1.54 x 1.40	2.89 x 1.37 x 1.94	1.90 x 1.53 x 1.40
FEATURES		• IMPULSE SEQUENCING RELAY • 3 - WAY TERMINALS, SOLDER, PLUG-IN, OR 0.187 QUICK CONNECT, • HOLDS LAST SET POSITION WITH NO POWER REQUIRED	• PERMANENT MAGNETIC LATCHING RELAY • 11 PIN OCTAL SOCKET • DUAL COIL LATCHING • SELF-MAINTAINING SET AND RESET COILS MAINTAINS LAST POSITION WITHOUT POWER • AC OR DC COILS OPTIONAL BLOWOUT MAGNET • OPTIONAL SILVER TIN OXIDE CONTACTS	• PERMANENT MAGNETIC LATCHING RELAY • 3-WAY TERMINALS, SOLDER, PLUG-IN OR 0.187 QUICK CONNECT DUAL COIL LATCHING • SELF-MAINTAINING SET AND RESET COILS • MAINTAINS LAST POSITION WITHOUT POWER AC OR DC COILS • OPTIONAL SILVER TIN OXIDE CONTACTS
COIL	**UNITS**			
Standard Voltage AC:	50/60 Hz	12, 24, 110 / 120	12, 24, 110 / 120, 240	12, 24, 110 / 120, 220 / 240
DC:		12 , 24, 48, 110 / 125	6, 12 , 24, 48, 110 / 125	12, 24
Coil Power AC (60 Hz):	VA	1.8	2.0	2.1
Coil Power DC:	W	1.8	1.64	1.9
Insulation System Per UL Standard 1446:		Class B (130ºC)	Class B (130ºC)	Class B (130ºC)
CONTACTS				
Contact Configuration:		**DPDT**	**DPDT**	**PDT SPDT-DM-DB**
Contact Material:		Silver alloy, gold flashed	Silver alloy, gold flashed	Silver alloy, gold flashed
Contact Resistance (Initial):	m Ohms	50	50	50
Contact Rating AC Amperes (AC1):	A	12	16	10
Contact Rating AC Voltage:	V	240	240	240
Contact Rating DC Amperes (DC1):	A	12	16	10
Contact Rating DC Voltage:	V	28	28	28
Horse Power (AC):	Hp	1/3 @120	1/3 @ 120 V	1/3 @ 120 V
Horse Power (AC):	Hp	1/2 @ 240	1/2 @ 240 V	1/2 @ 240 V
TIMING				
Operate Time:	ms	35	30	30
Release Time:	ms	35	30	30
DIELECTRIC STRENGTH				
Coil to Contacts:	V rms	1500	2500	2500
Insulation Resistance:	megohms minimum@VDC	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W
TEMPERATURE				
Operating, AC Lower:	ºC	- 40	-30	-40
Operating, AC Upper:	ºC	+70	+70	+70
Operating, DC Lower:	ºC	- 40	-30	-40
Operating, DC Upper:	ºC	+70	+75	+75
Storage, Lower:	ºC	- 45	-30	-45
Storage, Upper:	ºC	+105	+105	+105
LIFE EXPECTANCY				
Electrical @ Rated Load (AC1):	operations	100,000	100,000	100,000
Mechanical @ no Load :	operations	10,000,000	10,000,000	10,000,000
MISCELLANEOUS				
Cover Protection Category:	IP	40	40	40
Weight:	grams	110	170	87
MATING SOCKETS SEE SECTION 7		70-463-1	70-750D8-1, 70-750D11-1,70-464-1, 70-465-1, 70-169-1, 70-170-1,	70-463-1, 70-124-1, 70-124-2, 70-178-1, 70-178-2,
AGENCY APPROVALS		c UL us PENDING	c UL us UL Recognized File No. E43641	c UL us UL Recognized File No. E43641
PAGE NUMBER		PAGE 5	PAGE 6, 7	PAGE 8, 9

MECHANICAL LATCHING RELAYS

	303	B255	385	311
				
	2.90 x 1.53 x 1.40	2.63 x 1.47 x 4.56	3.04 x 1.67 x 2.392	2.65 x 1.47 x 4.56
	• PERMANENT MAGNETIC LATCHING RELAY • 0.25 TERMINALS, SOLDER, OR QUICK CONNECT OPTIONAL OPTIONAL CLASS F INSULATION • DUAL COIL LATCHING • SELF-MAINTAINING SET AND RESET COILS MAINTAINS LAST POSITION WITHOUT POWER • AC OR DC COILS OPTIONAL BLOWOUT MAGNET • OPTIONAL STUD, FLANGE OR DIN MOUNT	• 2 COIL MECHANICAL LATCHING RELAY • SINGLE LEVEL SOCKET WIRING • CONTINUOUS DUTY COILS BOTH COILS MAY BE ENERGIZED AT SAME TIME • OPTIONAL BLOWOUT MAGNET • OPTIONAL BIFURCATED CONTACT • UP TO 4PST OR 3PDT	• 2 COIL MECHANICAL LATCHING RELAY • 3 POLES PER COIL • AC & DC COILS • 0.187 QUICK CONNECT OR SOLDER • DIN OR PANEL MOUNT BOTH COIL MAY BE ENERGIZED AT THE SAME TIME • UP TO 6PDT 3 POLES PER COIL	• SEQUENCE (STEPPING) RELAY • SINGLE COIL CONTINUOUS DUTY • CONTACT TRANSFER MINERALIZING OR • INDUSTRIAL PLUG-IN CONSTRUCTION
	110 / 120 12, 24	6, 12, 24, 110 / 120, 220 / 240 6, 12 , 24, 48, 110 / 125	6, 12, 24, 110 / 120, 220 / 240 6, 12 , 24, 48, 110 / 125	6, 12, 24, 110 / 120, 220 / 240 6, 12 , 24, 48, 110 / 125
	2.1 1.9	5.0 2.0	2.0 2.6	5.0 2.0
	Class B (130ºC), Class F (155ºC)	Class B (130ºC)	Class B (130ºC), Class F (155ºC)	Class B (130ºC)
	DPDT	**UP TO 4PST OR 3PDT**	**DPDT, 4PDT & 6PDT**	**DPDT**
	Silver alloy, gold flashed	Silver alloy, gold flashed	SIlver alloy, gold flashed	Silver alloy,
	50	50	50	50
	30 277	10 120	15/3 277/ 600	5 120
	30 28	10 24	10 28	5 30
	1/3 @ 120 V 1/2 @ 208 V to 600 V	None None	1/3 @120 1/2 @ 208 to 600	None None
	30 30	25 20	25 25	35 35
	4000	1500	2000	1500
	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W	100 @ 5 VDC or 0.5 W
	-40 +60	-10 +60	-40 +70	-10 +60
	-40 +65	-10 +60	-40 +70	-10 +60
	-40 +105	-40 +105	-40 +105	-40 +105
	100,000	100,000	100,000	100,000
	10,000,000	10,000,000	10,000,000	10,000,000
	40	50	40	50
	170	215	85	190
	-	278390D	-	278390D
	c UL us UL Recognized File No. E13224	c UL us UL Recognized File No. E13224	c UL us PENDING	c UL us UL Recognized File No. E7104
	PAGE 10, 11	PAGE 12, 13	PAGE 14, 15	PAGE 16, 17

LATCHING, SEQUENCE, STEPPER AND IMPULSE RELAYS

APPLICATION DATA

Latching relays are often confused with sequence, or stepper, and impulse relays. These are in fact three distinctly different types of devices, although in many cases one might be used to mimic the function of another.

LATCHING RELAYS

Latching relays require one pulse of coil power to move their contacts in one direction, and another, separate one to move them back. Repeated pulses from the same input have no effect. Latching relays are useful in applications where power must be conserved since they require none to maintain their last position, or where it is desirable to have a relay that stays where it was during an interruption of power. They are most often divided into two sub- categories, magnetic latch and mechanical latch.

Magnetic latch relays employ either a permanent or "remanent" magnet to hold their last set Position. The permanent magnet type has the advantage, in that it will not lose its memory no matter how long it is left in one position, while the remanent type if left latched will eventually lose its magnetic charge and drop out. It will also operate backwards if the reset side is subjected to excessive voltage, while the permanent magnet types will tolerate extreme overvoltage to either input without malfunction or damage. The rest of this discussion will address only permanent magnet types.

Permanent magnet latch relays can have either single or dual coils. They will operate in one direction when power is applied with one polarity, and will reset when polarity is reversed on the single coil types, or when properly polarized voltage is applied to the reset coil of a dual version. Most dual coil types can also be used as single coil versions if necessary or desirable. Nearly all AC controlled magnetic latch relays have single coils that employ steering diodes to differentiate between operate and reset commands.

Mechanical latching relays use a catch device to hold their contacts in their last set Position until commanded to change state, usually by means of energizing a second coil. These types are often constructed in such a manner that when the operate coil is energized the contacts will go to the operated position regardless of whether the reset coil is energized or not. They will stay in that position only if the reset coil is not energized when power is removed from the operate side. This " operate coil dominant" operation can be especially useful in certain applications where it is desirable to have the relay function as a non-latching type unless an event has occurred, at which time the reset coil is de-energized. Packaging machinery that places several units into a single container would be a good example.

SEQUENCE RELAYS

Sequence or stepper relays change the state of their contacts upon successive pulses of power to a single coil. Most employ some form of ratchet and cam assembly that requires several pulses to make one revolution of the cams. Many, but not all, have their cams arranged so that each contact transfers with each pulse. That is, if a contact is open it will close, if closed it will open. By utilizing two sets of double-throw contacts, these devices can perform a number of useful functions. They are most commonly used to equalize wear on two devices that are used to perform a single function. As each command for a device to operate is received, the one that did not operate last is energized. One of the most common uses of this function is sewage lift stations where two pumps sit side by side with only one operating at a time in normal service.

Sequence relays can also be used to perform other repetitive functions by altering the arrangement or number of lobes on their cams. For example, a sequence could be set up controlling two loads with successive pulses where one would come on, then the other, then both , then both would go off. Literally any such sequence is possible that has a number of steps that will divide evenly into the number of pulses required to rotate the cam one full turn.

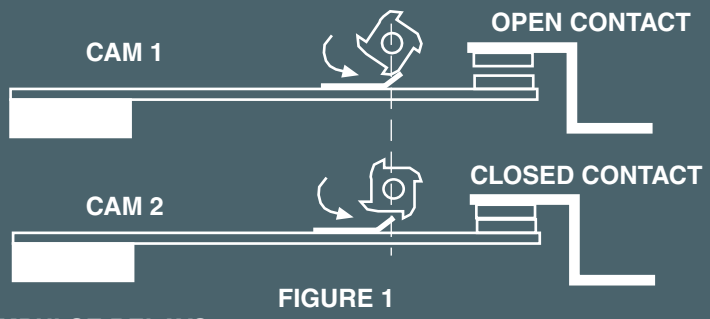


FIGURE 1

IMPULSE RELAYS

Impulse relays are a form of sequence relay that will only perform the first function described earlier, each contact transfers on each pulse. In many cases the terms sequence and impulse can be used interchangeably, but not all.

Many impulse relays are made up of a magnetic latch relay and a solid state steering circuit that, upon application of power, determines which position the relay is in and energizes the opposite coil. The contacts transfer and hold that position when power is removed. When reenergized the contacts transfer again and hold that position, and so on.

Impulse relays can be used as wear equalizers. They are also well suited for applications such as turning a single device on or off from one or more locations with a single momentary switch or push button at each station. For example, a conveyor could be started and/or stopped from multiple locations by means of a single button at each position.

711 IMPULSE SEQUENCING RELAY

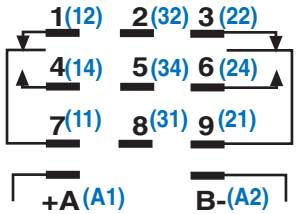
DPDT, 12 AMPS

UL Recognized
File No. E13224

FEATURES — BENEFITS

FEATURES	BENEFITS
ELECTRONIC STEERING CIRCUIT	TOGGLES LOADS ON/OFF (LOAD SHARING)
PERMANENT MAGNETIC LATCH	HOLDS LAST POSITION INDEFINITELY
INDUSTRY STANDARD BLADE BASE	DIRECTLY REPLACES OTHER MANUFACTURES
LED INDICATORS	VISUALLY INDICATES STEERING DIRECTION

WIRING DIAGRAM
(VIEWED FROM PIN END)



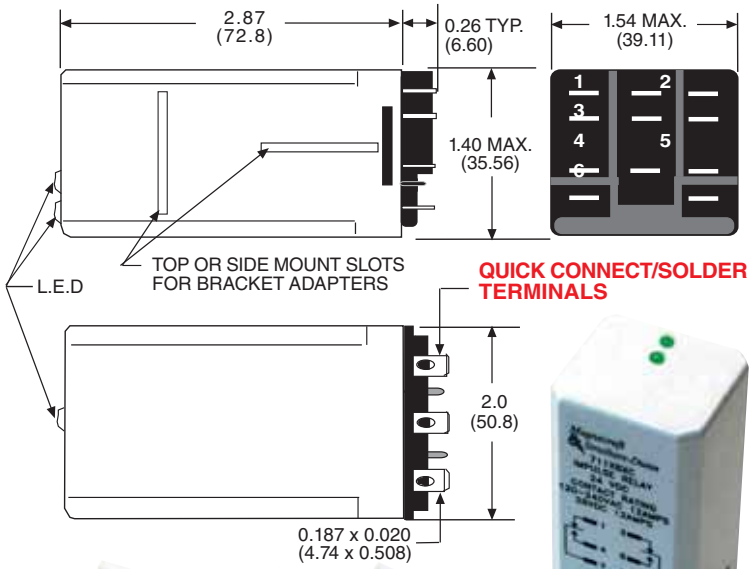
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

TYPE 711 IS AN ALTERNATING RELAY USED FOR LOAD SHARING OR TOGGLING ON / OFF OF ONE LOAD. EACH MOMENTARY PULSE, OR RE - APPLICATION OF INPUT VOLTAGE TOGGLES RELAY CONTACT. ONCE TRANSFERRED RELAY POSITION IS MAINTAINED INDEFINITELY BY INTERNAL MAGNETS.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	85
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	1.8
Coil Power DC:	W	1.8
Insulation System Per UL Standard 1446:		Class B (130°C)
Duty:		Intermittent
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	12
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	12
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @ 120
Horse Power (AC):	HP	1/2 @ 240
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	35
Release Time:	ms	35
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	1500
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-45
Operating, AC Upper:	°C	+70
Operating, DC Lower:	°C	-45
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-45
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	110

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



DIN ADAPTER
16-711C4

FLANGE ADAPTER
16-711C1

TOP OR SIDE MOUNT BRACKET ADAPTERS

ORDERED AND SHIPPED SEPARATELY

Mating Socket
70-463-1
See section 7

STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE
AC OPERATED, 12 AMP	
711XBXCL-24A	24 VAC
711XBXCL-120A	120 VAC
DC OPERATED, 12 AMP	
711XBXCL-12D	12 VDC
711XBXCL-24D	24 VDC
711XBXCL-110D	110 VDC

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

755/250ML OCTAL BASE MAGNETIC LATCHING RELAY

c UL us
UL Recognized
File No. E43641

FEATURES	BENEFITS
11 PIN OCTAL BASE:	EASILY INSTALLED IN EXISTING OR READILY AVAILABLE SOCKETS
16 AMP CONTACT RATING:	ACCOMMODATES MOST CONTROL CIRCUIT LOADS
PERMANENT MAGNET LATCHING MECHANISM:	STAYS IN LAST SET POSITION INDEFINITELY WITH NO EXTERNAL POWER REQUIRED

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	500
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	2
Coil Power DC:	W	1.64
Insulation System Per UL Standard 1446:		Class B (130°C)
Duty:		Single coil Continuous Dual coil intermittent
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	16
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	16
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	HP	1/2 @ 240 V
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	30
Release Time:	ms	30
DIELECTRIC STRENGTH	V rms	2500
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	2500
Pole to Pole:	V rms	Not applicable
Contacts to Frame:	megohms	1000 @ 500
Insulation Resistance:	minimum @VDC	
TEMPERATURE		
Operating, AC Lower:	°C	-30
Operating, AC Upper:	°C	+70
Operating, DC Lower:	°C	-30
Operating, DC Upper:	°C	+75
Storage, Lower:	°C	-30
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	170

MAGNETIC LATCHING RELAY WITH 11 PIN OCTAL BASE. OPERATES BY PULSED INPUT. PERMANENT MAGNET MAINTAINS LAST POSITION.

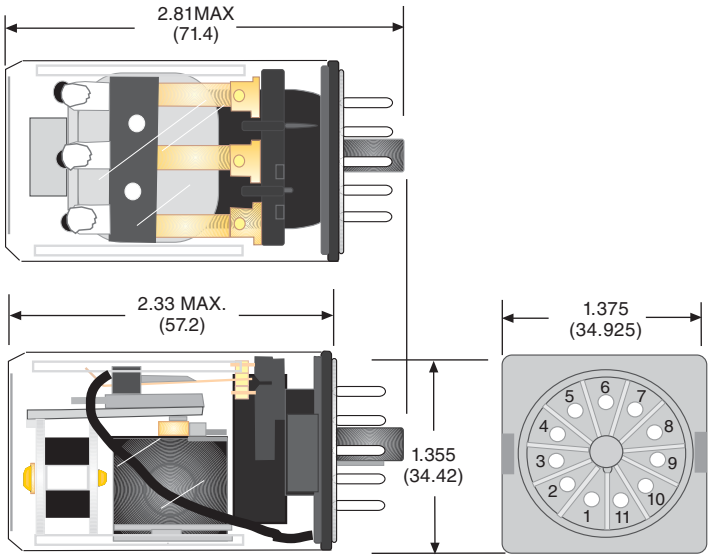
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

755/250ML OCTAL BASE MAGNETIC LATCHING RELAY

DPDT, 16 AMPS

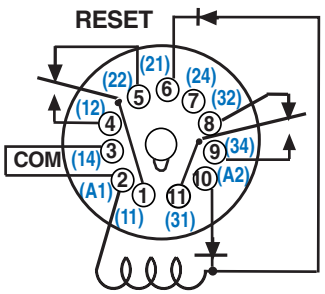
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

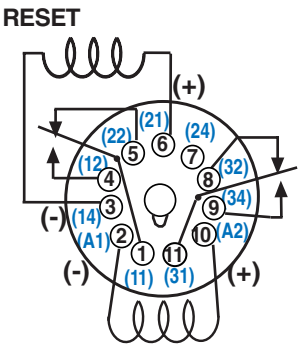


8 PIN OCTAL BASE
NOT SHOWN

WIRING DIAGRAM
(VIEWED FROM PIN END)



AC OPERATE



DC OPERATE

ALTERNATE NEMA
OR IEC ( ) NUMBERS
VIEWED FROM
PIN SIDE

ORDERING CODE

755	XBX		C		-120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX**

OPTIONS:
MAGNETIC BLOWOUT: **CODE 69**
SILVER TIN CONTACTS: **CODE 36**

PLAIN COVER:
CODE C

DUAL COIL:
CODE D (DC ONLY)

SINGLE COIL:
NO CODE

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

Mating Sockets
70-750D8-1, 70-750D11-1,
70-464-1, 70-465-1: SCREW/DIN
70-169-1, 70-170-1: SCREW/PANEL
See section 7

STANDARD PART NUMBERS		COIL MEASURED @ 25 °C		
NEW PART NUMBER	SUPERCEDES	NOMINAL INPUT VOLTAGE	OPERATE VOLTAGE MIN.	NOMINAL RESISTANCE (OHMS)
AC OPERATED SINGLE COIL, 16 AMP				
755XBXC-24A	W250AML2CPX-8	24 VAC	19.2 VAC	740 Ω
755XBXC-120A	W250AML2CPX-9	120 VAC	96 VAC	10,000 Ω
755XBXC-240A	W250AML2CPX-10	240 VAC	192 VAC	36,00 Ω
DC OPERATED DUAL COIL, 16 AMP				
755XBXCD-12D	W250ML2CPX-6	12 VDC	8.4 VDC	88/88 Ω
755XBXCD-24D	W250ML2CPX-7	24 VDC	16.7 VDC	350/350 Ω
755XBXCD-110D	W250ML2CPX-8	110 VDC	77 VDC	9000/9000 Ω

RETROFITS IDEC RR2KP-U, SEE END OF SECTION 5 FOR CROSS REFERENCE

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

285/388ML SQUARE BASE MAGNETIC LATCHING RELAY

UL Recognized
File No. E43641

Recognized Component mark for Canada and the United States.

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
11 PIN BLADE TERMINAL SQUARE BASE:	ACCEPTS STANDARD 0.187" QUICK CONNECT TERMINALS AS WELL AS EXISTING READILY AVAILABLE SOCKETS
CONSERVATIVE 10 AMP CONTACT RATING:	WILL TOLERATE SIGNIFICANT ACCIDENTAL OVERLOADS WITHOUT PREMATURE FAILURE
3 AMP 600 VAC CONTACT RATING:	ACCOMMODATES NEARLY ALL CONTROL CIRCUIT VOLTAGES

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	500
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	2.1
Coil Power DC:	W	1.9
Insulation System Per UL Standard 1446:		Class B (130°C)
Duty:		Single coil Continuous Dual coil intermittent
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	10
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	10
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	HP	1/2 @ 240 V
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	30
Release Time:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	2500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+70
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+75
Storage, Lower:	°C	-45
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	87

MAGNETIC LATCHING RELAY WITH SQUARE BASE. OPERATES BY PULSED INPUT. PERMANENT MAGNET MAINTAINS LAST POSITION.

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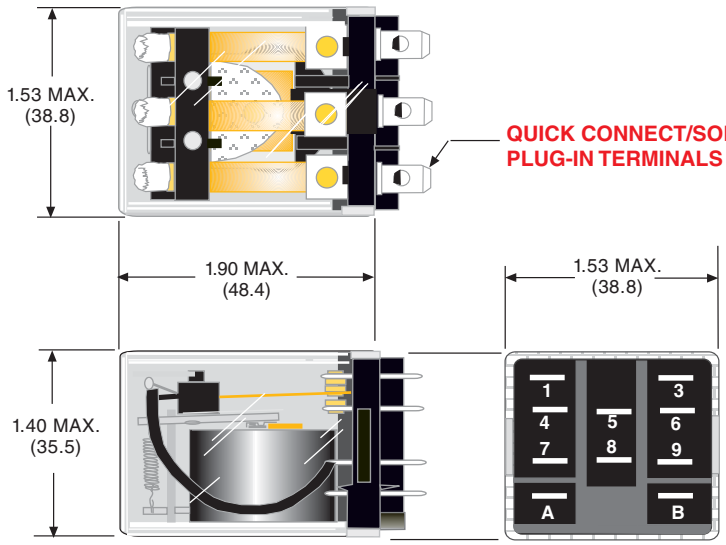
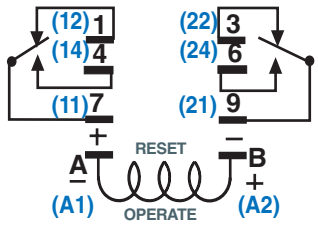
285/388ML SQUARE BASE MAGNETIC LATCHING RELAY

DPDT, 10 AMPS

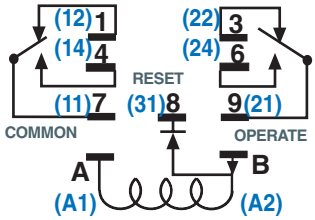
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



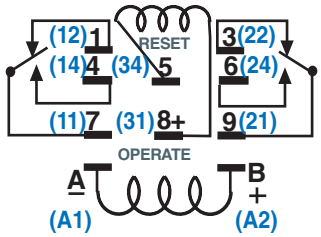
WIRING DIAGRAM
(VIEWED FROM PIN END)



SINGLE COIL (DC)

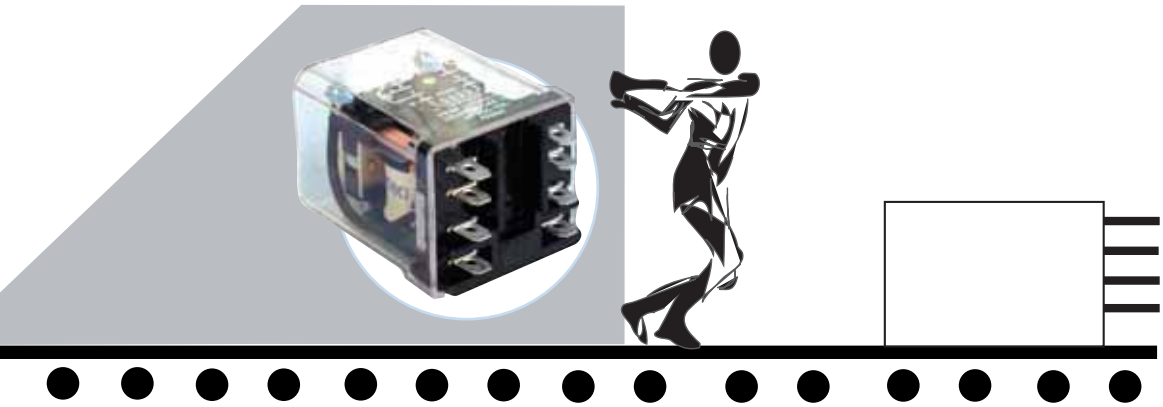


SINGLE COIL (AC)



DUAL COIL (DC)

ALTERNATE NEMA
OR IEC ( ) NUMBERS
VIEWED FROM
PIN SIDE



Mating Sockets
70-463-1: SCREW/DIN, 70-124-1: SOLDER
70-178-1, 70-178-2: PRINTED CIRCUIT
70-124-2: QUICK CONNECT
See section 7

ORDERING CODE

285 XBX C -120A

CLASS:

CONTACT CONFIGURATION:
DPDT: **XBX**

PLAIN COVER:
CODE C

COIL VOLTAGE:
6, 12, 24, 120, 220/230, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110 **ADD "D" FOR DC COILS**

STANDARD PART NUMBERS	EQUIVALENT PART NUMBERS	COIL MEASURED @ 25 °C	
		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED, SINGLE COIL, 10 AMP			
285XBXC-120A	W388AMLCPX-9	120 VAC	10,000 Ω
DC OPERATED, SINGLE COIL, 10 AMP			
285XBXC-12D	W388MLCPX-6	12 VDC	120 Ω
285XBXC-24D	W388MLCPX-7	24 VDC	470 Ω
DC OPERATED, DUAL COIL, 10 AMP			
285XBXCD-12D	W388ML2CPX-6	12 VDC	88/88 Ω
285XBXCD-24D	W388ML2CPX-7	24 VDC	350/350 Ω

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303 SQUARE BASE POWER MAGNETIC LATCHING RELAYS

UL Recognized
File No. E13224

FEATURES	BENEFITS
0.250" QUICK CONNECT/ SOLDER TERMINALS:	SIMPLE INSTALLATION, WILL ACCEPT FULLY INSULATED (BOOTED) TERMINALS
2 MM CONTACT GAPS:	MEETS NEARLY ALL INTERNATIONAL REQUIREMENTS FOR SPACING
COMPACT DESIGN:	HANDLES "CONTACTOR LOADS" IN A CONTROL RELAY PACKAGE.
WIDE SELECTION OF COVER STYLES AND OPTIONS:	CAN BE "CUSTOMIZED" AS NEEDED WITHOUT EXCESSIVE COST OR MINIMUMS

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	500
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	2
Coil Power DC:	W	1.64
Insulation System Per UL Standard 1446:		Class B (130°C) Class F (155°C)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	30
Contact Rating AC Voltage:	V	277
Contact Rating DC Amperes (DC1):	A	30
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @ 120 V
Horse Power (AC):	HP	1/2 @ 208 V to 600 V
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	30
Release Time:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	4000
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	2200
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+60
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+65
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	170

MAGNETIC LATCHING RELAY WITH SQUARE BASE. OPERATES BY PULSED INPUT AND MAINTAINS LAST POSITION.

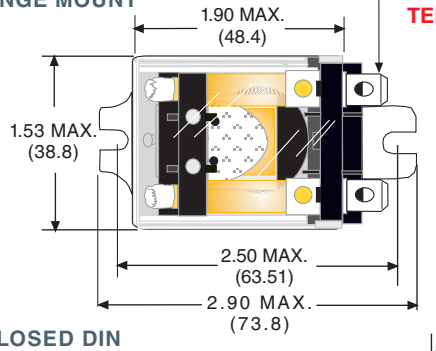
THE CLASS 303 RELAY HAS BEEN DESIGNED FOR INSTALLATION OF FULLY INSULATED 0.250" QUICK CONNECT TERMINALS. CONTACT GAPS ARE 2 MILLIMETERS WIDE TO MEET MOST STANDARDS FOR CREEPAGE AND CLEARANCE. THE OPTIONAL MAGNETIC BLOWOUT ALLOWS FOR HIGH VOLTAGE DC SWITCHING APPLICATIONS. ITS LATCH MECHANISM KEEPS IT IN ITS LAST SET POSITION UNTIL COMMANDED TO CHANGE BY MEANS OF A SEPARATE SIGNAL.

303 SQUARE BASE POWER MAGNETIC LATCHING RELAYS

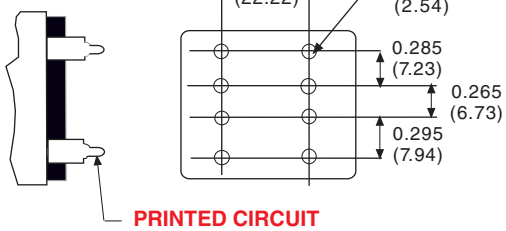
DPDT, 30 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

ENCLOSED FLANGE MOUNT

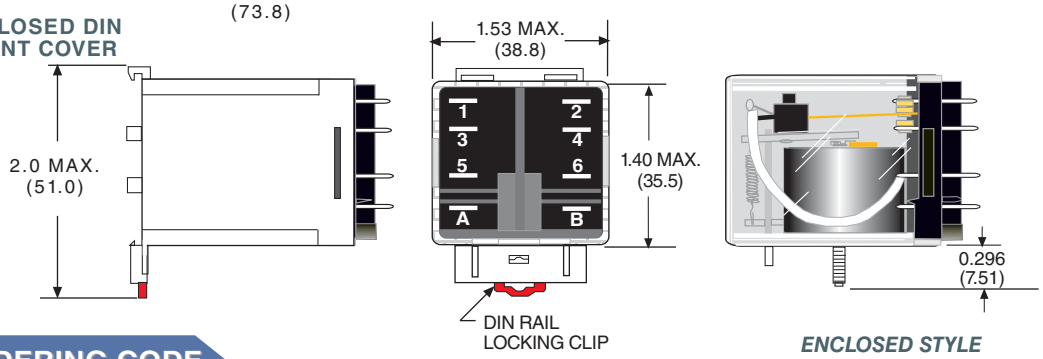


QUICK CONNECT/SOLDER TERMINALS



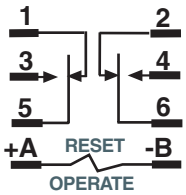
PRINTED CIRCUIT TERMINALS

ENCLOSED DIN MOUNT COVER

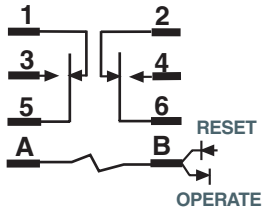


ENCLOSED STYLE CHOICE OF 6 -32 STUD OR TAPPED CORE WITH ANTI ROTATION TAB.

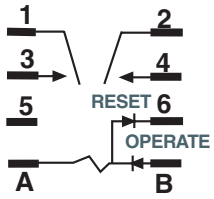
WIRING DIAGRAM
(VIEWED FROM PIN END)



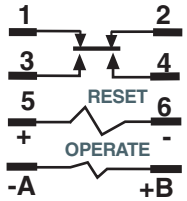
XBX DPDT (SINGLE COIL)



XBX DPDT (AC SINGLE COIL)



BXX DPST - N.O. (AC SINGLE COIL)



XHX SPDT - N.C. - N.O. (DB - DM), (DUAL COIL)

ORDERING CODE

F	303	XBX	C1		L	-240A

COILS:
130ºC: **NO CODE**, 155ºC: **CODE F**

CLASS:
303 - 30 AMPS RATING WITH 0.25 QUICK CONNECT/SOLDER TERMINALS

CONTACT ARRANGEMENTS:
XBX: DPDT, BXX: DPST-N.O.
XHX: SPDT - DM -DB, XXB: DPST-N.C.

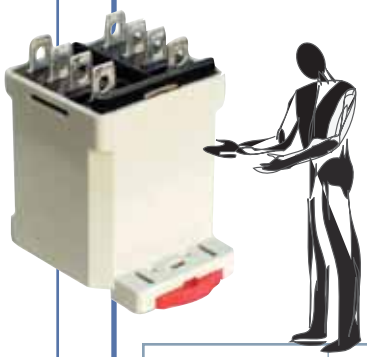
CONSTRUCTION STYLE:
*ENCLOSED, PLAIN COVER: **CODE C**
ENCLOSED, SIDE FLANGE MOUNT: **CODE C1**
ENCLOSED, 6-32 TAPPED CORE & ANTI-ROTATION TAB: **CODE CS2**
ENCLOSED, 6-32 STUD & ANTI-ROTATION TAB: **CODE CS2**
ENCLOSED, TOP FLANGE MOUNT: **CODE C3**
ENCLOSED, DIN MOUNT: **CODE C4**

TERMINALS STYLE:
SOLDER/QUICK CONNECT TERMINALS: **NO CODE**
*PRINTED CIRCUITS TERMINALS: **CODE T**

OPTIONS:
L.E.D. STATUS LAMP: **CODE L** (NOT AVAILABLE **W/CODE 4**)
MAGNET BLOWOUT: **CODE 69**
DUAL COIL: **CODE D

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110-125 **ADD "D" FOR DC COILS**

* Note: Code "C" Recommended To Be Used With Printed Circuit Terminals
** Note: Dual Coil Not Available On Xbx Contact Arrangement



STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 ºC NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 ºC NOMINAL RESISTANCE (OHMS)
AC OPERATED, SINGLE COIL, 30 AMP			
303BXXC3-120A	DPST-N.O	120 VAC	6300 Ω
303XBXC1-120A	DPDT	120 VAC	6300 Ω
DC OPERATED, SINGLE COIL, 30 AMP			
303XBXC1-24D	DPDT	24 VDC	300 Ω
303XBXC4-24D	DPDT	24 VDC	300 Ω
303XBX69C-24D	DPDT	24 VDC	300 Ω
DC OPERATED, DUAL COIL, 30 AMP			
303XHXC1D-12D	SPDT-N.C.-N.O. (DB-DM)	12 VDC	70/70 Ω

RETROFITS POTTER & BRUMFIELD KUB
SEE END OF SECTION 5 FOR CROSS REFERENCE

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B255 INDUSTRIAL PLUG - IN LATCHING RELAY

UL Recognized
File No. E13224

UL Listed industrial control equipment 225G when used with 27390D socket

FEATURES — BENEFITS

FEATURES	BENEFITS
INDUSTRIAL PLUG-IN CONSTRUCTION	ULTIMATE RUGGEDNESS & RELIABILITY.
2 COILS WITH OPERATE COIL DOMINANT	VERSATILE OPERATION
MULTIPLE CONTACT ARRANGEMENTS AND AVAILABLE OPTIONS	CAN BE PURCHASED EXACTLY AS NEEDED
GOLD DIFFUSED CONTACTS STANDARD	WILL NOT TARNISH, LOW CONTACT RESISTANCE FOR THE LIFE OF THE RELAY

GENERAL SPECIFICATIONS (@ 25ºC)

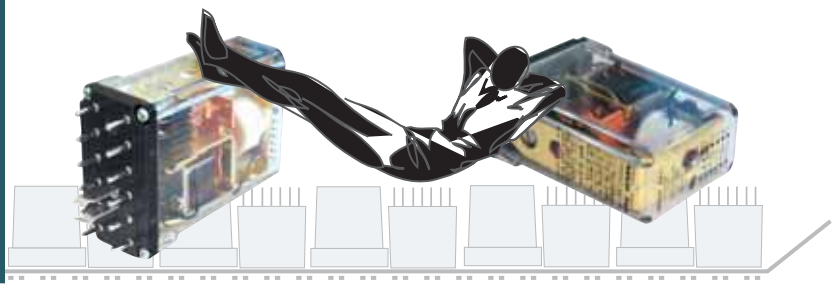
	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	5
Coil Power DC:	W	2
Insulation System		
Per UL Standard 1446:		Class B (130ºC)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	10
Contact Rating AC Voltage:	V	120
Contact Rating DC Amperes (DC1):	A	10
Contact Rating DC Voltage:	V	24
Horse Power (AC):	HP	None
Horse Power (AC):	HP	None
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	25
Release Time:	ms	20
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	1500
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-10
Operating, AC Upper:	ºC	+60
Operating, DC Lower:	ºC	-10
Operating, DC Upper:	ºC	+60
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	50
Weight:	grams	215

UL CONTACT LOAD RATINGS TABLE

VOLTS	MAKE	CARRY	BREAK	
			RESISTIVE	INDUCTIVE
24 VDC	30 A	10 A	10 A	10 A
120 VAC	30 A	10 A	10 A	3 A
240 VAC	30 A	10 A	5 A	1 A
28 VDC	30 A	10 A	10 A	3 A
125 VDC	30 A	10 A	0.5 A	0.1 A
**FOR VERSIONS WITH SUFFIX "69" PERMANENT MAGNET BLOWOUTS				
125 VDC SM*	30 A	10 A	1.5 A	0.5 A
125 VDC DM	30 A	10 A	4 A	1.5 A
250 VDC SM	30 A	10 A	0.5 A	150 A
250 VDC DM	30 A	10 A	1.5 A	0.5 A
**FOR VERSIONS WITH SUFFIX "33" BIFURCATED CONTACTS				
120 VAC	1.5 A	5 A	5 A	2 A
240 VAC	7.5 A	2.5 A	2.5 A	1 A

** RELAYS WITH CODE 69 FEATURE (CHECK WITH FACTORY FOR UL & CSA LISTING)
* SM = SINGLE MAKE DM = DOUBLE MAKE

THE CLASS B255 IS A TWO COIL LATCHING VERSION OF THE GENERAL PURPOSE TYPE 219 RELAY. WHEN THE OPERATE COIL IS MOMENTARILY ENERGIZED, THE RELAY MECHANICALLY LATCHES IN THE ENERGIZED POSITION AND REMAINS IN THE ENERGIZED POSITION WITH THE POWER REMOVED FROM THE COIL. THE SECOND COIL WHEN MOMENTARILY ENERGIZED, PROVIDES ELECTRICAL RESET OF THE CONTACTS. ALL CONTACTS OPERATE FROM A COMMON ARMATURE TO PREVENT CONTACT OVERLAPPING. COILS ARE RATED FOR CONTINUOUS DUTY. NUCLEAR QUALIFIED VERSIONS ARE AVAILABLE. CONTACT THE FACTORY FOR DETAILS.



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B255 INDUSTRIAL PLUG - IN LATCHING RELAY

UP TO 3PDT, 10 AMPS

COIL SPECIFICATIONS @ 25°C — AC COIL DATA (50/60 Hz)

NOMINAL VOLTAGE	RESET COIL (3 VA)		OPERATE COIL (5 VA)	
	RESISTANCE OHMS ±10%	COIL CURRENT (mA)	RESISTANCE OHMS ±10%	COIL CURRENT (mA)
6	3.0	840	1.10	800
12	14.5	256	4.20	410
24	52.0	150	15.5	200
120	1450	26.5	540	45.0
240	5000	4.8	1815	13.2

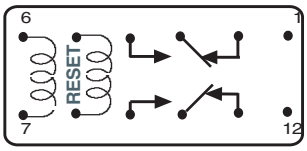
Current inrush on all AC coils is less than twice the listed milliamperes ratings as shown in the AC coil data table. Currents shown in table measured at 60 Hz.

COIL SPECIFICATIONS @ 25°C — DC COIL DATA

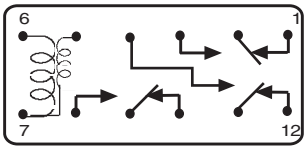
NOMINAL VOLTAGE	RESET COIL (1.4 W)		OPERATE COIL (1.8 W)	
	RESISTANCE OHMS ±10%	COIL CURRENT (mA)	RESISTANCE OHMS ±10%	COIL CURRENT (mA)
6	21.0	286	15.5	385
12	85.0	141	63.5	189
24	300	80	250	96.0
115/125	8000	14.4	6200	20.0

DC relays, 1.8 Watts (2.5 W @ 125VDC)

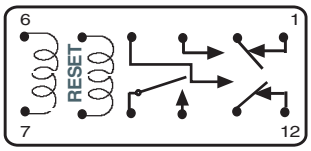
WIRING DIAGRAM (VIEWED FROM PIN END)



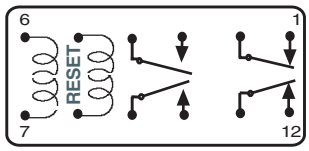
B255XBXP (DPDT)



B255XCXP (3PDT)



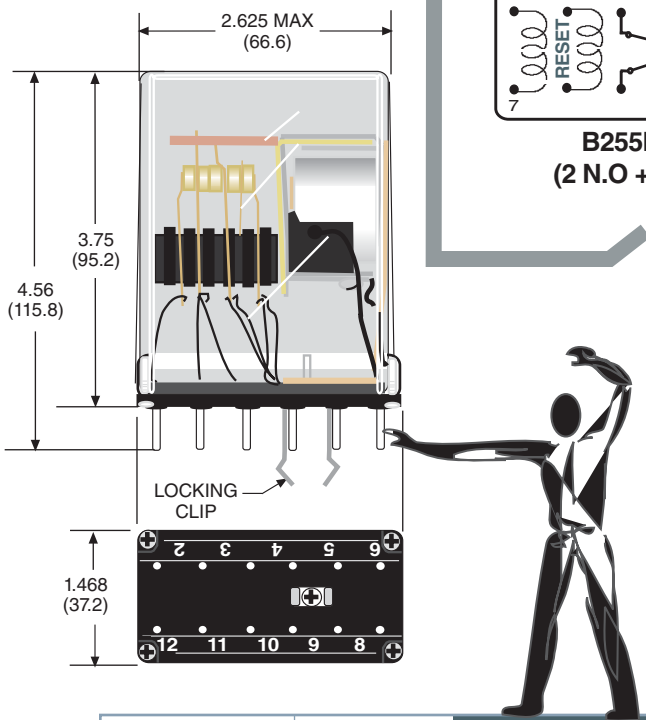
B255ABXP (DPDT + 1 N. O.)



B255BXBP (2 N.O + 2 N. C.)

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Mating Socket
27390D
See section 7

ORDERING CODE

B255 | XCX | P | LM | -120A

CLASS:
B255 2 COIL LATCH PLUG-IN

CONTACT ARRANGEMENTS:
XBX: DPDT
XCX: 3PDT
ABX: SPST-NO & 2 FORM C
BXB: DPST-NO & 2 FORM B

STANDARD FEATURES:
POLYCARBONATE COVER: **CODE "P"**

OPTIONAL FEATURES:
INDICATOR LAMP ACROSS BOTH COILS: **CODE "L"**
MANUAL ACTUATOR: **CODE "M"**
LIGHT & ACTUATOR: **CODE "LM"**
PERM. MAGNET BLOWOUT: **CODE "69"**
BIFURCATED CONTACTS: **CODE "33"**
DC COIL SUPPRESSION: **CODE "V"**
AC COIL SUPPRESSION: **CODE "V1"**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 115-125 **ADD "D" FOR DC COILS**

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED, 10 AMP			
B255BXBP-120A	2 N.O. +2 N.C.	120 VAC	540/1450 Ω
B255XBXP-120A	DPDT	120 VAC	540/1450 Ω
B255XCXP-120A	3PDT	120 VAC	540/1450 Ω
DC OPERATED, DUAL COIL, 10 AMP			
B255BXBP-24D	DPDT	24 VDC	250/300 Ω

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385 DIN / PANEL MOUNTABLE LATCHING RELAY

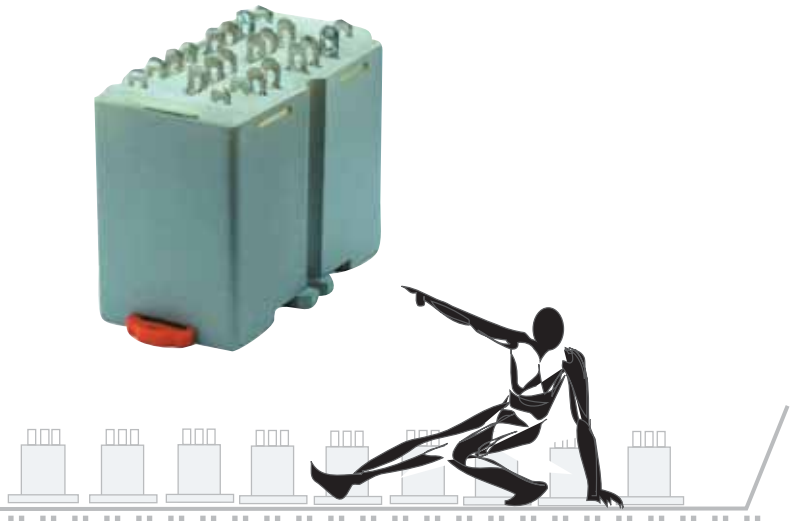
c UL us
PENDING

FEATURES	BENEFITS
UP TO 6PDT 15 AMP CONTACT:	MAXIMUM FLEXIBILITY OF USES EASILY HANDLES MODERATELY HEAVY LOADS
3 AMP 600 VAC RATING:	SUITABLE FOR NEARLY ALL CONTROL VOLTAGES
DIN RAIL/PANEL MOUNTABLE:	RAPID INSTALLATION -CAN REPLACE EXISTING OPEN TYPES SUCH AS POTTER & BRUMFIELD KUB WITHOUT PANEL MODIFICATION
RECTIFIED COILS ON AC TYPES:	RUNS COOLER & QUIETER, USES LESS ENERGY.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	2
Coil Power DC:	W	2.6
Insulation System Per UL Standard 1446:		Class B (130°C), F(155°C)
Duty:		Intermittent
CONTACTS		
Contact Material:		Silver alloy, gold flashed
Contact Rating AC Amperes (AC1):	A	15 / 3
Contact Rating AC Voltage:	V	277/ 600
Contact Rating DC Amperes (DC1):	A	10
Contact Rating DC Voltage:	V	28
Horse Power (AC):	HP	1/3 @120
Horse Power (AC):	HP	1/2 @ 208 to 600
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	25
Release Time:	ms	25
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2000
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	°C	-40
Operating, AC Upper:	°C	+70
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	40
Weight:	grams	85

THE CLASS 385 RELAY IS A MECHANICALLY LATCHED, ELECTRICALLY RESET RELAY, IT CAN BE FURNISHED WITH TWO, FOUR OR SIX SETS OF DOUBLE THROW CONTACTS, AND ALL POPULAR COIL VOLTAGES. AC COIL TYPES INCORPORATE BUILT IN RECTIFIERS FOR MAXIMUM COIL EFFICIENCY AND MINIMAL HEATING FOR CONTINUOUS DUTY CAPABILITY. ALL TERMINALS ARE STANDARD 0.187 INCH QUICK CONNECT AND ARE ALSO PIERCED FOR DIRECT SOLDER CONNECTION IF DESIRED. THE MOLDED PLASTIC DUST COVER SNAPS ONTO A STANDARD DIN RAIL, AS WELL AS INCORPORATING MOUNTING SLOTS THAT EXACTLY MATCH POTTER & BRUMFIELD'S KUB. UNLIKE MOST MECHANICAL LATCH RELAYS, THE 385 DOES NOT HAVE A DOMINANT COIL. IF BOTH COILS ARE ENERGIZED AT THE SAME TIME, ALL OF THE NORMALLY OPEN CONTACTS CLOSE, AND ALL NORMALLY CLOSED CONTACTS OPEN. WHICH EVER COIL IS DE-ENERGIZED FIRST, RELEASES AND LOCKS THE OTHER SIDE IN ITS ENERGIZED POSITION.



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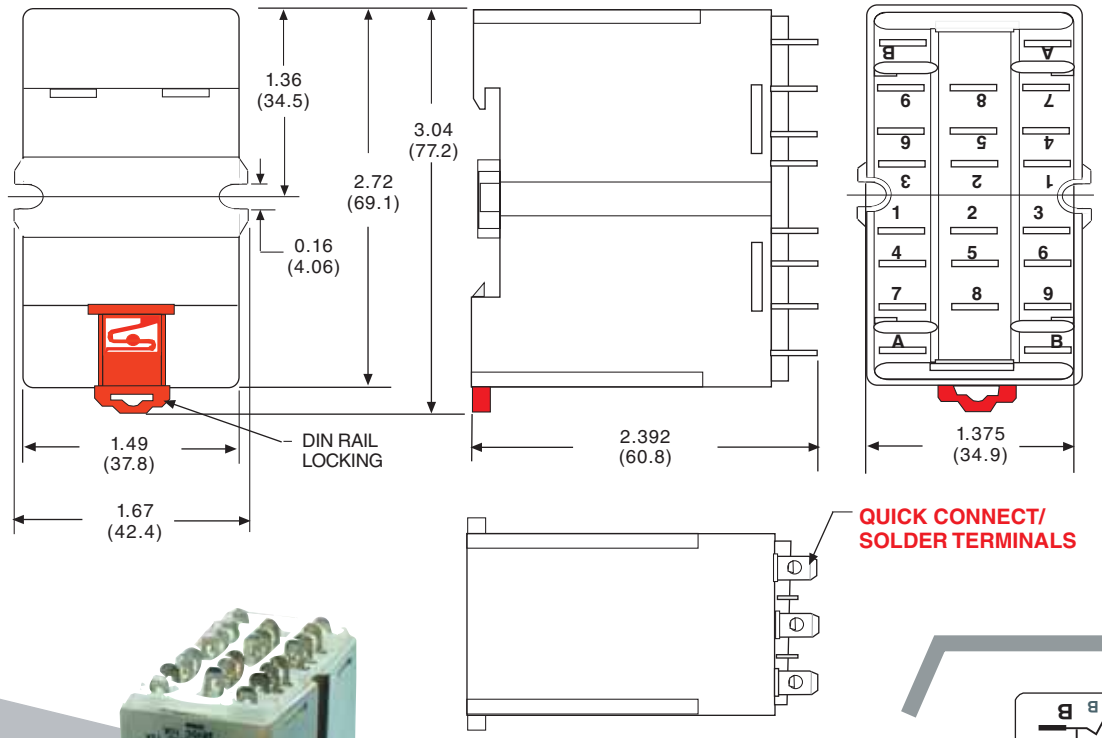
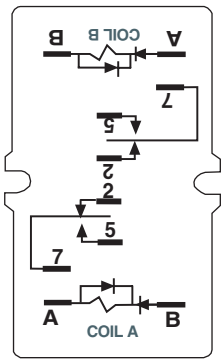
385 DIN / PANEL MOUNTABLE LATCHING RELAY

DPDT, 4PDT & 6PDT 15 AMPS

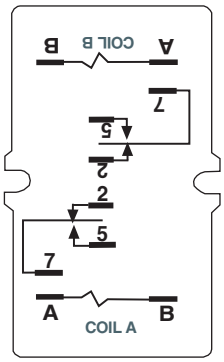
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



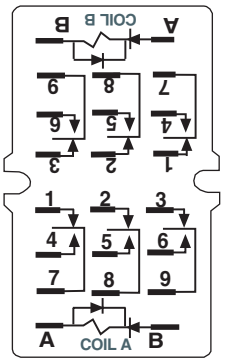
WIRING DIAGRAM
(VIEWED FROM PIN END)



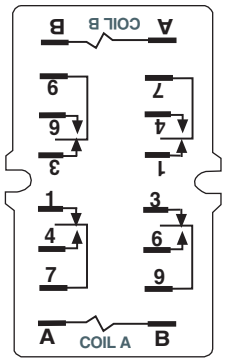
385XBX DPDT
(AC COIL)



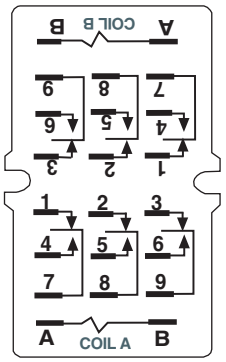
385XBX DPDT
(DC COIL)



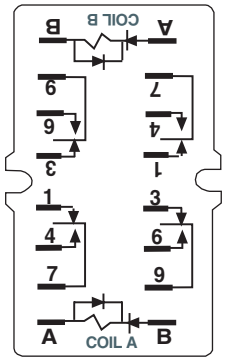
XFX 6PDT
(AC COIL)



XDX 4PDT
(DC COIL)



XFX 6PDT
(DC COIL)



XDX 4PDT
(AC COIL)

ORDERING CODE

F	385	XBX	-240A

COILS:
130ºC: **NO CODE**,
155ºC: **CODE F**

CLASS:
385 - 15 AMPS RATING WITH 0.187" QUICK CONNECT/ SOLDER TERMINALS

CONTACT ARRANGEMENTS:
XBX: DPDT,
XDX: 4PDT
XFX: 6PDT

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110-125 **ADD "D" FOR DC COILS**

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
AC OPERATED, DUAL COIL, 15 AMP			
385XDX-120A	4PDT	120 VAC	4800/4800 Ω
DC OPERATED, 15 AMP			
385XDX-12D	4PDT	12 VDC	85/85 Ω
385XDX-24D	4PDT	24 VDC	340/340 Ω

RETROFITS POTTER & BRUMFIELD KUB
SEE END OF SECTION 5 FOR CROSS REFERENCE

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311 SEQUENCE (STEPPER) RELAY

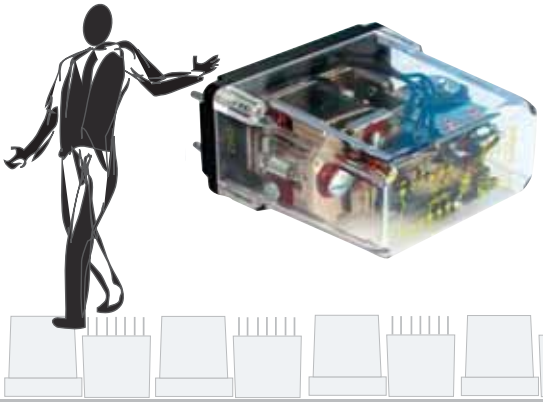
c UL us
UL Recognized
File No. E7104

FEATURES	BENEFITS
INDUSTRIAL PLUG-IN CONSTRUCTION:	RUGGED & RELIABLE
TRANSFER ON RELEASE VERSION AVAILABLE :	EXTRA LONG LIFE WHEN LOAD IS ENERGIZED ONLY WHEN THE 311'S COIL IS ON.
NON-STANDARD SEQUENCES AVAILABLE	CAN BE CUSTOMIZED WITH ANY SEQUENCE DIVISIBLE INTO EIGHT

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	110
Resistance Tolerance:	% ±	10
Coil Power AC (50/60 Hz):	VA	5
Coil Power DC:	W	2
Insulation System Per UL Standard 1446:		Class B (130ºC)
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):	A	5
Contact Rating AC Voltage:	V	120
Contact Rating DC Amperes (DC1):	A	5
Contact Rating DC Voltage:	V	30
Horse Power (AC):	HP	None
Horse Power (AC):	HP	None
Pilot Duty (60 Hz):		Not applicable
Minimum Recommended Load:	ma	100 @ 5 VDC or 0.5 W
TIMING		
Operate Time:	ms	35
Release Time:	ms	30
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	1500
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	1500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
TEMPERATURE		
Operating, AC Lower:	ºC	-10
Operating, AC Upper:	ºC	+60
Operating, DC Lower:	ºC	-10
Operating, DC Upper:	ºC	+60
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Molded plastic
Enclosure Material:		Clear Polycarbonate
Cover Protection Category:	IP	50
Weight:	grams	190

THE CLASS A311 RELAY IS A SEQUENCING VERSION OF THE CLASS 219 GENERAL PURPOSE RELAY. CONTACTS TRANSFER ON EACH IMPULSE TO THE COIL. MODELS ARE AVAILABLE WITH CONTACTS TRANSFERRING WHEN COIL IS ENERGIZED OR WHEN DE-ENERGIZED. A DOUBLE CAM MOVEMENT, ONE CAM PER SNAP SWITCH, ALLOWS ONE OR BOTH CONTACTS TO BE ENERGIZED OR DE-ENERGIZED WITH THE CAM ROTATING ONE HALF STEP WHEN THE COIL IS ENERGIZED AND THE OTHER HALF STEP WHEN THE COIL IS DE-ENERGIZED ASSURES RELIABLE SEQUENCING OF THE TWO SPDT SNAP SWITCHES.

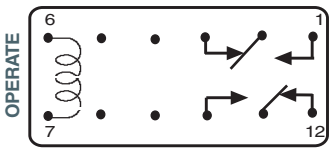


311 SEQUENCE (STEPPER) RELAY

Magnecraft Struthers-Dunn Your Contact for Industrial Relays

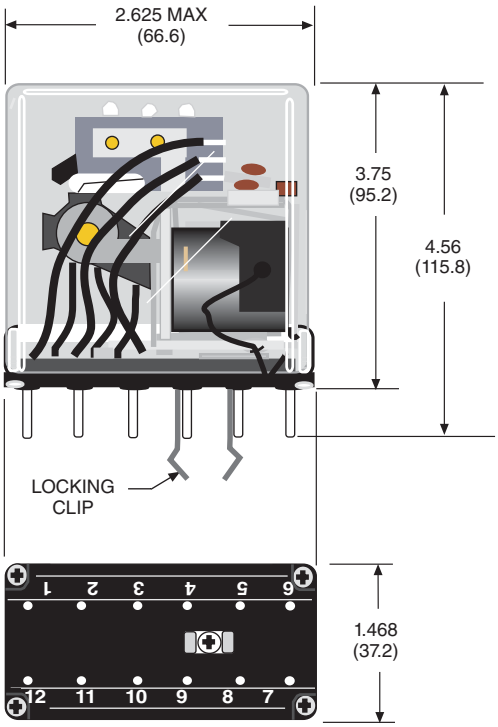
DPDT, 5 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



A311XBXP
A311XBXPR*
(DPDT)
TRANSFER ON RELEASE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



ORDERING CODE

A311	XBX	P	R	L	-120A

CLASS:
A311 INDUSTRIAL PLUG-IN , SEQUENCE RELAY, 5 AMP, DPDT

CONTACT ARRANGEMENTS:
XBX: DPDT

STANDARD FEATURES:
PLUG-IN WITH POLYCARBONATE COVER: **CODE P**

CONTACT TRANSFER:
WHEN COIL IS ENERGIZED: **NO CODE**
WHEN COIL IS DE-ENERGIZED: **CODE R**

OPTIONS:
INDICATOR LAMP: **CODE L**
COIL SUPPRESSION: **CODE V**

COIL VOLTAGE:
6, 12, 24, 120, 240 **ADD "A" FOR AC COILS**
6, 12, 24, 48, 110-125 **ADD "D" FOR DC COILS**

Mating Socket
27390D
See section 7

STANDARD PART NUMBERS	COIL MEASURED @ 25 °C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED, 5 AMP		
A311XBXP-120A	120 VAC	540 Ω
A311XBXP-240A	240 VAC	1815 Ω
A311XBXPR-120A	120 VAC	540 Ω
DC OPERATED, 5 AMP		
A311XBXP-24D	24 VDC	250 Ω
A311XBXPR-24D	24 VDC	250 Ω

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CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	MIDTEX
711XBXC-12D	KUR-11D15-12	619-11B200
711XBXC-24D	KUR-11D15-24	619-11C200
711XBXC-48D	KUR-11D15-48	619-11D200
711XBXC-110D	KUR-11D15-110	619-11F200

MAGNECRAFT & STRUTHERS-DUNN	IDEC
755XBXC-24A	RR2KP-U-AC24
755XBXC-120A	RR2KP-U-AC120
755XBXC-240A	RR2KP-U-AC240
755XBXCD-12D	RR2KP-U-DC12
755XBXCD-24D	RR2KP-U-DC24
755XBXCD-110D	RR2KP-U-DC110

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD
W388AMLCPX-9	285XBXC-120A	KUL11A15S-120
W388MLCPX-6	285XBXC-12D	KUL11D15S-12
W388MLCPX-7	285XBXC-24D	KUL11D15S-24
W388ML2CPX-6	285XBXCD-12D	KUL11D15D-12
W388ML2CPX-7	285XBXCD-24D	KUL11D15D-24

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD
385XDX-120A	KB-17AG-120 OR KUB-17A15-120
385XDX-12D	KB-17DG-12 OR KUB-17D15-12
385XDX-24D	KB-17DG-24 OR KUB-17D15-24

U. S. A.

MAGNECRAFT & STRUTHERS-DUNN
700 ORANGE STREET
DARLINGTON, SC. 29532-3739
TEL.: (843) 393-5421 FAX: (843) 393-4123
WEBSITE: www.magnecraft.com
EMAIL: info@magnecraft.com

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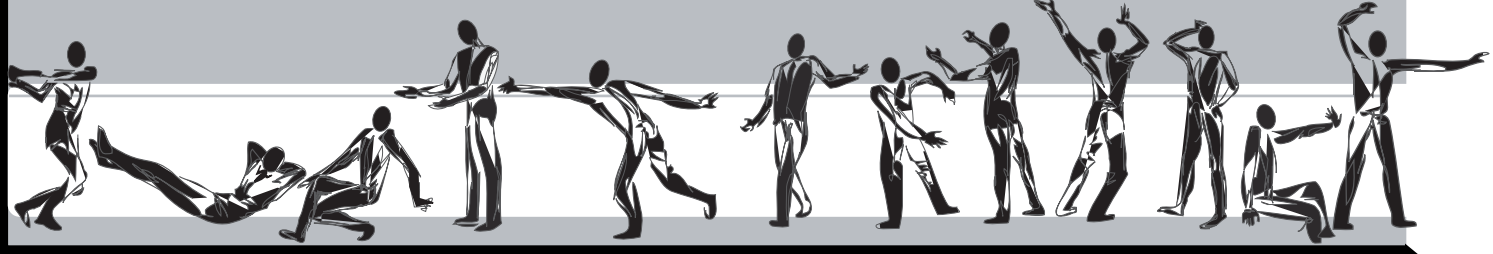
MAGNECRAFT & STRUTHERS-DUNN
OFFICE MUNICH
FORSTENRIEDER ALLEE 227
D 81476 MUNCHEN/GERMANY
TEL.: 4989 75080310 FAX: 4989 7559344
EMAIL: renatesteinback@magnecraft.de

FOR LATCHING RELAYS APPLICATION ENGINEERING ASSISTANCE

Joe Zintel, PRODUCT MANAGER
FAX: (847) 441-2522
EMAIL: jzintel@magnecraft.com



THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 6

PRINTED CIRCUIT BOARD RELAYS AND REED RELAYS

1 TO 30 AMPERES

117SIP
107DIP
171DIP
172DIP
102VX/HVX
7
49
976
60
276

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PRINTED CIRCUIT BOARD REED RELAYS

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	117SIP, 107DIP, 171DIP/172DIP	102VX & 102HVX	7
			
L X W X H (INCHES)	0.290 x 0.280 x 0.750/0.275 x 0.300 x 0.750	0.65 x 0.76 x 2.67	0.410 x 0.410 x 0.553
FEATURES	• SPST - NO OR NC - EPOXY MOLDED CONSTRUCTION • STANDARD 0.1 GRID SPACING	• SPST - NO EPOXY ENCAPSULATED HIGH VOLTAGE REED • SWITCHING UP TO 10 MA @ 5,000 VDC 5 MA @10,000 VDC	• MICRO MINIATURE SIZE • CONFORMS TO FCC PART 68.302, 1500V SURGERE SISTANCE, FCC 68.304, 1000V DIELECTRIC STRENGTH • EXCELLENT R.F. SWITCHING CHARACTERISTICS • HIGH SHOCK & VIBRATION RESISTANCE • PRINTED CIRCUIT BOARD MOUNTING ON 0.1 GRID
COIL	**UNITS**			
Standard Voltage AC:	50/60 Hz	-	-	-
DC:		5/6, 12, 24	12, 24	5/6, 12, 24
Coil Power AC (60 Hz):	VA	Not applicable	Not applicable	Not applicable
Coil Power DC:	W	117SIP, 107DIP: 0.050 to 0.288, 171DIP: 0.050 to 0.270 172DIP: 0125 to 0.540	0.5 to 1.5	0.2
Minimum Recommended Load:	W			0.75
CONTACTS				
Contact Configuration:		**SPST-N. O., SPST-N. C.**	**SPST- N. O.**	**SPDT, DPDT**
Contact Material:		Rhodium	Tungsten	Gold clad silver
Contact Resistance (Initial):	m Ohms	100	200	100
Contact Rating AC Amperes (AC1):	A	117SIP/107DIP/171DIP: 0.5, 172 DIP: 0.25	Not applicable	STST 2, DPDT 0.6
Contact Rating AC Voltage:	V	117SIP/107DIP:120, 171DIP/172 DIP: 60	Not applicable	STST 120, DPDT 100
Contact Rating DC Amperes (DC1):	A	0.5	0.010 / 0.005	2
Contact Rating DC Voltage:	V	117SIP/107DIP: 200,171DIP/172 DIP:100	5,000 / 10,000	24
Contact Rating:		4 to 10	Not applicable	
General Purpose Rating (75%-80%):	VA	Not applicable	Not applicable	
Horse Power (AC):	Hp	Not applicable	Not applicable	
TIMING				
Operate Time:	ms	1	1	4
Release Time:	ms	1	1	5
DIELECTRIC STRENGTH				
Coil to Contacts:	V rms	500	1200	500
Insulation Resistance:	megohms minimum@VDC	1000 @ 500	1000 @ 500	1000 @ 500
TEMPERATURE				
Operating, AC Lower:	°C	Not applicable	Not applicable	Not applicable
Operating, AC Upper:	°C	Not applicable	Not applicable	Not applicable
Operating, DC Lower:	°C	-40	- 40	- 35
Operating, DC Upper:	°C	+85	+85	+70
Storage, Lower:	°C	-40	- 40	- 40
Storage, Upper:	°C	+105	+105	+105
LIFE EXPECTANCY				
Electrical @ Rated Load (AC1):	operations	50,000,000	1,000,000	100,000
Mechanical @ no Load :	operations	100,000,000	10,000,000	100,000,000
MISCELLANEOUS				
Cover Protection Category:	IP	67	67	67
Weight:	grams	1	49	2.7
AGENCY APPROVALS				c UL us UL Recognized File No. E52197
PAGE NUMBER		PAGE 6 - 8	PAGE 9	PAGE 10, 11

49	976	60	276
			
MANUFACTURED UNDER ISO 9002 QS 9000	*MANUFACTURED UNDER ISO 9002 QS 9000*		
1.25 x 0.759 x 1.14	**1.161 x 0.512 x 1.000**	**1.10 x 0.600/0.895 x 0.745**	**0.807 x 0.50 x 0.394**
DUST COVERED APPROXIMATELY 1.1 CUBIC INCHVOLUME 3.5 AND 10 AMPERES PC BOARD MOUNT	EPOXY SEALED IMMERSION CLEANABLE MEETS 8 MILLIMETER SPACING COIL TO CONTACTS MEETS 4KV DIELECTRIC WITHSTANDING VOLTAGE	MINIATURE SIZE CONFORMS TO FCC PART 68.302, 1500V SURGE RESISTANCE, FCC 68.304, 1000V DIELECTRIC STRENGTH EXCELLENT R.F. SWITCHING CHARACTERISTICS HIGH SHOCK & VIBRATION RESISTANCE PRINTED CIRCUIT BOARD MOUNTING ON 0.1 GRID	SUBMINIATURE EPOXY SEALED MMERSION CLEANABLE STANDARD 0.1 GRID PATTERN SINGLE SIDE STABLE DESIGN 5KV SURGE RESISTANCE COIL TO FRAME
- 6, 12, 24	6, 12, 24, 110 / 120, 220 / 240 6, 12, 24, 48, 110 / 125	- 6, 12, 24, 48	- 6, 12, 24
Not applicable 0.4	1.2 0.54	Not applicable 0.33	Not applicable 0.2
		0.75	
SPDT	**SPDT & DPDT**	**SPDT, DPDT**	**SPST NO, SPDT**
Silver gold clad plated/silver	Silver alloy	Gold clad silver	Silver alloy
100		100	100
3 / 5 / 10 120 / 120 / 270		SPST: 2, DPDT: 0.6 SPST: 120, DPDT: 100	SPST NO: 10, SPDT: 7 240
3 / 5 / 10 28 / 28 / 28		2 24	SPST NO: 10, SPDT: 7 30
			SPST NO: 2500, SPDT: 1750
1/3 @ 120			SPST NO: 1/6 @ 120 SPDT: 1/10 @ 120
10 7		4 5	10 10
1500	5000	500	2000
1000 @ 500	1000 @ 500	1000 @ 500	1000 @ 500
Not applicable Not applicable	-20 +55	Not applicable Not applicable	Not applicable Not applicable
-55 +85	-20 +55	-35 +70	-40 +70
-55 +130	-40 +80	-35 +105	-40 +100
100,000	100,000	100,000	100,000
50,000	10,000,000	100,000,000	10,000,000
50	67	67	67
42	17	SPDT: 2.5, DPDT: 9	5.5
C US UL Recognized File No. E52197	C US UL Recognized File No. E191122 TÜV	C US UL Recognized File No. E52197	C US UL Recognized File No. E190964
PAGE 12, 13	PAGE 14, 15	PAGE 16, 17	PAGE 18

APPLICATION DATA

HOW REED RELAYS WORK

The term reed relay covers dry reed relays and mercury-wetted contact relays, all of which use hermetically sealed reed switches. In both types, the reeds (thin, flat blades) serve multiple functions - as conductor, contacts, springs, and magnetic armatures.

DRY REED RELAYS

Dry reed relays have become an important factor in the relay field. They have the advantage of being hermetically sealed and resistant to atmospheric contamination. They have fast operate and release times and when operated within their rated contact loads, have very long life. A typical dry reed switch capsule is shown in Figure 1.

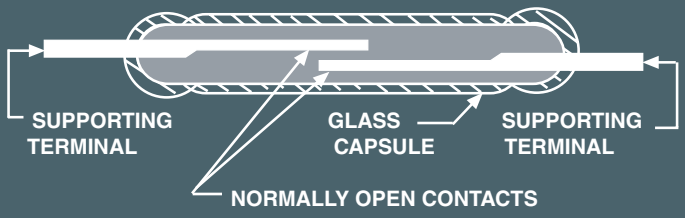


Figure 1. Construction of Switch Capsule of Typical Dry Reed switch (SPST-NO)

In the basic SPST-NO design, two opposing blades are sealed into a narrow glass capsule and overlapped at their free ends. The contact area is plated typically with rhodium to produce a low contact resistance when contacts are drawn together. The capsule is made of glass and filled with a dry inert gas and then sealed. The capsule is surrounded by an electromagnetic coil. When the coil is energized, the normally open contacts are brought together; when the coil voltage is removed, the blades separate by their own spring tension. Some reeds contain permanent magnets for magnetic biasing to achieve normally closed contacts (SPST-NC) or SPDT contact combinations. The current rating, which is dependent upon the size of the blade and the type and amount of plating, may range from low level to 1 amp. Effective contact protection is essential when switching loads other then dry resistive loads.

CONTACT COMBINATIONS.

The switches used in dry reed relays provide SPST-NO, SPST-NC, SPDT contact combinations. The SPST-NO corresponds with the basic switch capsule design (Fig.1). The SPST-NC results from a combination of the SPST-NO switch and a permanent magnet strong enough to pull the contacts closed but able to open when coil voltage is applied to the relay coil. In typical true SPDT designs, the armature is mechanically tensioned against the normally closed contact, and is moved to the normally open contact upon application of a magnetic field. The SPDT contact combination can also be achieved by joining a SPST-NO switch with an appropriately adjusted SPST-NC switch, and jumping one side of both switches together to form the movable contact system. Latching contacts, defined as contacts which remain in the position to which they were driven, and stay in that position when coil power is removed from the relay coil.

Latching switches are manufactured by using a SPST-NO contact, and biasing it with a permanent magnetic that is strong enough to hold the contacts closed, but not strong enough to hold the contact closed when coil power is applied to the coil. The switching process is than reversed by simply reversing the relay coil polarity to close the switch, or by employing a second coil with a reverse field.

MAGNETIC FIELDS

Reed relays in general can be characterized as susceptible to the influences of external magnetic fields. It is important to keep reed relays at a proper distance from each other because of the possibility of magnetic-interaction between them. Proper magnetic shielding must be used to contain stray magnetic fields. When installing reed relays into equipment, one should be aware of the devices within that equipment which can produce magnetic fields. The relays being installed into that equipment should be positioned as far away as possible from any stray magnetic fields and should be shielded to prevent false operations.

ELECTRICAL CHARACTERISTICS

SENSITIVITY: The input power required to operate dry reed relays is determined by the sensitivity of the particular reed switch used, by the number of switches operated by the coil, by the permanent magnet biasing (if used), and the efficiency of the coil and the effectiveness of its coupling to the blades. Minimum input required to effect closure ranges from the very low milliwatt level for a single sensitive capsule to several watts for multipole relays.

OPERATE TIME: The coil time constant, overdrive on the coil, and the characteristics of the reed switch determine operate time. With the maximum overdrive voltage applied to the coil, reed relays will operate in approximately the 200 microsecond range. When driven at rated coil voltage, usually the relays will operate at about one millisecond.

RELEASE TIME: With the coil unsuppressed, dry reed switch contacts release in a fraction of a millisecond. SPST-NO contacts will open in as little as 50 microseconds. Magnetically biased SPST-NC and SPDT switches reclose from 100 microseconds to 1 millisecond respectively. If the relay coil is suppressed, release times are increased. Diode suppression can delay release times for several milliseconds, depending on coil characteristics, coil voltage, and reed release characteristics.

CONTACT BOUNCE

Dry reed contacts bounce on closure as with any other hard contact relay.The duration of bounce on a Dry reed switch is typically very short, and is in part dependent on drive level. In some of the faster devices, the sum of the operate time and bounce is relatively constant. As drive is increased, the operate time decreases with bounce time increasing. The normally closed contacts of a SPDT switch bounce more then the normally open contacts. Magnetically biased SPST-NC contacts exhibit essentially the same bounce characteristics as SPST-NO switches.

APPLICATION DATA

CONTACT RESISTANCE

The reeds (blades) in a dry reed switch are made of magnetic material which has a high volume resistivity, terminal-to-terminal resistance is somewhat higher than in some other types of relays. Typical specification limits for initial resistance of a SPST-NO reed relay is 0.200 ohms max (200 milliohms).

INSULATION RESISTANCE

A dry reed switch made in a properly controlled internal atmosphere will have an insulation resistance of 10^{12} to 10^{13} ohms or greater. When it is assembled into a relay, parallel insulation paths reduce this to typical values of 10^{13} ohms. Depending on the particular manner of relay construction, exposure to high humidity or contaminating environments can appreciably lower final insulation resistance.

CAPACITANCE

Reed capsules typically have low terminal-to-terminal capacitance. However, in the typicall relay structure where the switch is surrounded by a coil, capacitance from each reed to the coil act to increase capacitance many times. If the increased capacitance is objectionable, it can be reduced by placing a grounded electrostatic shield between the switch and coil.

DIELECTRIC WITHSTAND VOLTAGE

With the exception of the High-Voltage dry reed switches (capsules that are pressurized or evacuated), the dielectric strength limitation of relays is determined by the ampere turn sensitivity of the switches used. A typical limit is 200 VAC. The dielectric withstand voltage between switch and coil terminals is typically 500 VAC.

THERMAL EMF

Since thermally generated voltages result from thermal gradients within the relay assembly, relays built to minimize this effect often use sensitive switches to reduce required coil power, and thermally conductive materials to reduce temperature gradients. Latching relays, which may be operated by a short duration pulse, are often used if the operational rate is not changed for longer periods of time because coil power is not required to keep the relay in the on or off position after the initial turn on or turn off pulse.

NOISE

Noise is defined as a voltage appearing between terminals of a switch for a few milliseconds following closure of the contacts. It occurs because the reeds (blades) are moving in a magnetic field and because voltages are produced within them by magnetostrictive effects. From an application standpoint, noise is important if the signal switched by the reed is to be used within a few milliseconds immediately following closure of the contacts. When noise is critical in an application, a peak-to-peak limit must be established by measurement techniques, including filters which must be specified for that particular switching application.

ENVIRONMENTAL CHARACTERISTICS

Reed relays are used in essentially the same environments as other types of relays. Factors influencing their ability to function would be temperature extremes beyond specified limits

VIBRATION

The reed switch structure, with so few elements free to move, has a better defined response to vibration than other relay types. With vibration inputs reasonably separated from the resonant frequency, the reed relay will withstand relatively high inputs, 20 g's or more. At resonance of the reeds, the typical device can fail at very low input levels. Typical resonance frequency is 2000 hz.

SHOCK

Dry reed relays will withstand relatively high levels of shock. SPST-NO contacts are usually rated to pass 30 to 50 g's, 11 milliseconds, half sign wave shock, without false operation of contacts. Switches exposed to a magnetic field that keep the contacts in a closed position, such as in the biased latching form, demonstrate somewhat lower resistance to shock. Normally closed contacts of mechanically biased SPDT switches may also fail at lower shock levels.

TEMPERATURE

Differential expansion or contraction of reed switches and materials used in relay assemblies can lead to fracture of the switches. Reed relays are capable of withstanding temperature cycling or temperature shock over a range of at least -50 C to + 100 C. These limits should be applied to the application to prevent switch failure.

CONTACT PROTECTION

Tungsten lamp, inductive and capacitive discharge load are extremely detrimental to reed switches and reduce life considerably. Illustrated below are typical suppression circuits which are necessary for maximum contact life.

Figure 3

Initial cold filament turn-on current is often 16 times higher than the rated operating current of the lamp. A current limiting resistor in series with the load, or a bleeder resistor across the contacts will suppress the inrush current. The same circuits can be used with capacitive loads, as shown in Figure 3.

Figure 4

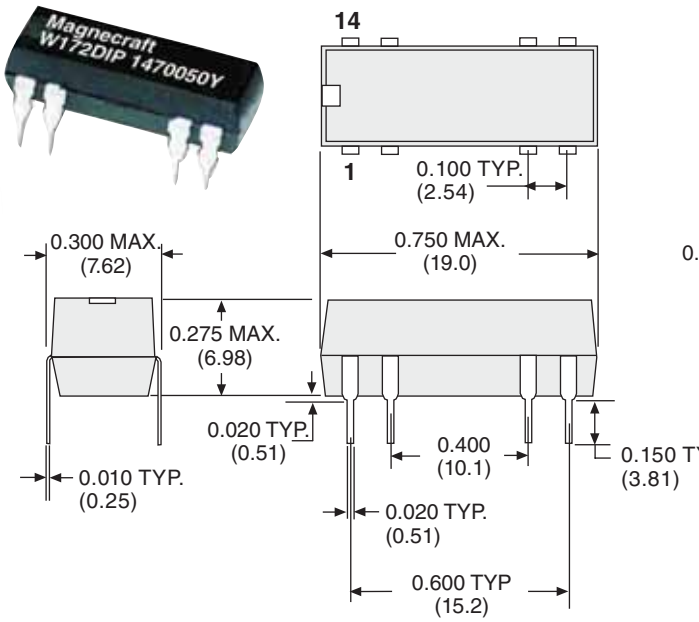
DC inductive loads call for either a diode or a thyristor to be placed across the load. These circuits are necessary to protect the contacts when inductive loads are to be switched in a circuit, as shown in Figure 4.

SIP & DIP MINIATURE REED RELAYS

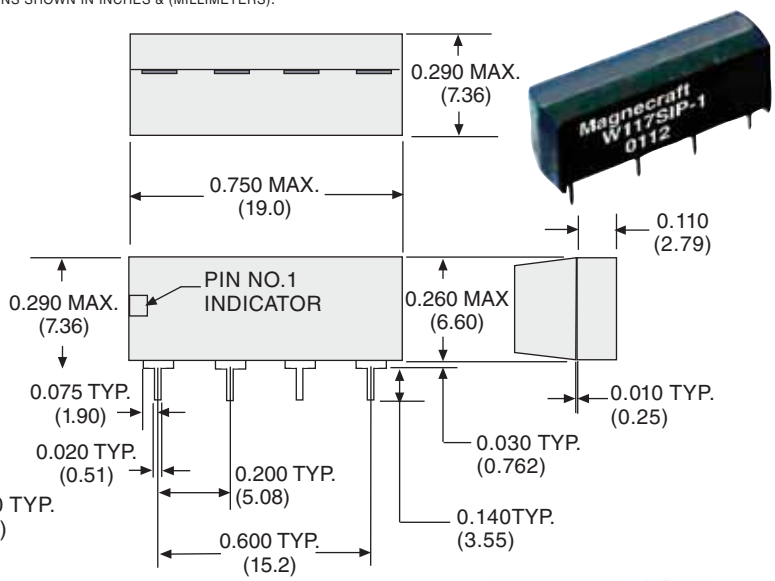
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

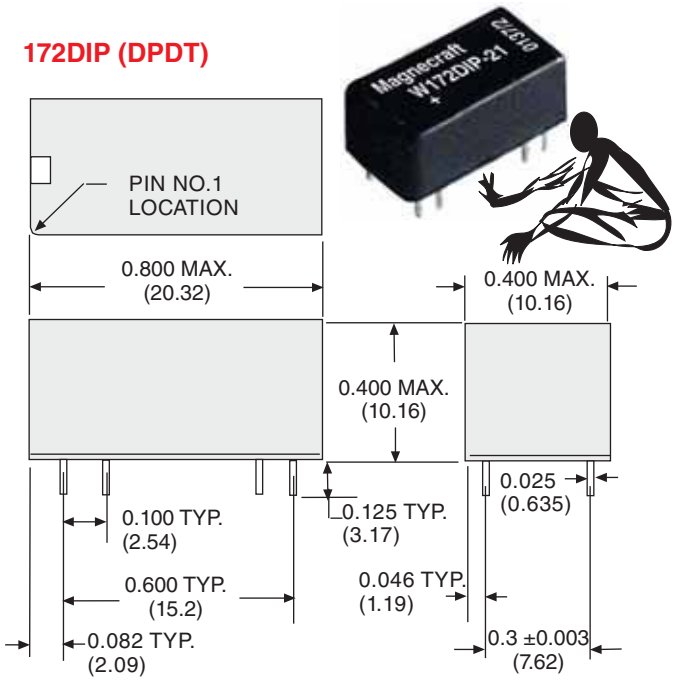
107DIP, 171DIP, 172DIP(SPDT)



117SIP



172DIP (DPDT)



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not applicable
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	Not applicable
Coil Power DC:	W	117SIP, 107DIP: 0.050 to 0.288 171DIP: 0.050 to 0.270 172DIP: 0125 to 0.540
CONTACTS		
Contact Material:		RHODIUM
Contact Rating AC Amperes (AC1):	A	117SIP, 107DIP, 171DIP: 0.5 172 DIP: 0.25
Contact Rating AC Voltage:	V	117SIP, 107DIP: 120 171DIP, 172 DIP: 60
Contact Rating DC Amperes (DC1):	A	0.5
Contact Rating DC Voltage:	V	100
Contact Rating :	VA	117SIP, 107DIP, 171DIP: 10 172 DIP: SPDT 4, DPDT 10
General Purpose Rating (75%-80%):		Not applicable
Horse Power (AC):	HP	Not applicable
Pilot Duty (60 Hz):		Not applicable
VA Rating Make:	VA	Not applicable
VA Rating Break:	VA	Not applicable
Minimum Recommended Load:	ma	10 or 0.05 Watt
TIMING		
Operate Time:	ms	1
Release Time:	ms	1
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	500
Across Open Contacts:	V rms	150
Pole to Pole:	V rms	Not applicable
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	20

	UNITS	
SHOCK RESISTANCE		
Functional:	g's	50
TEMPERATURE		
Operating, AC Lower:	°C	Not applicable
Operating, AC Upper:	°C	Not applicable
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+85
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	50,000,000
Mechanical @ no Load :	operations	100,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Glass
Enclosure Material:		Thermo set plastic
Cover Protection Category:	IP	67
Weight:	grams	1

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

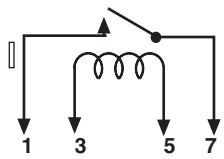
SIP & DIP MINIATURE REED RELAYS

SPST NO OR NC, DPST NO, 0.5 AMP

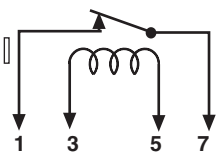
STANDARD PART NUMBERS	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)	NOMINAL POWER (mW)
SPST - N. O., 0.5 AMP			
W117SIP-1	5	500 Ω	50
W117SIP-3	12	1000 Ω	144
W117SIP-5	24	2000 Ω	288
SPST - N. C., 0.5 AMP			
W117SIP-22	5	500 Ω	50
W117SIP-23	12	1200 Ω	120
W117SIP-24	24	2200 Ω	270

WIRING DIAGRAM (TOP VIEWED)

SPST - NO

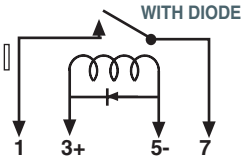


SPST - NC

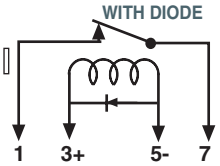


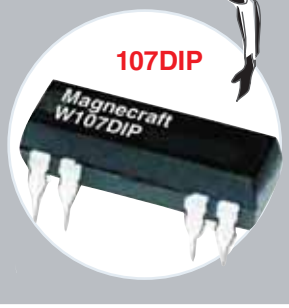
SPST - N. O. WITH CLAMPING DIODE, 0.5 AMP			
W117SIP-6	5	500 Ω	50
W117SIP-8	12	1000 Ω	144
W117SIP-10	24	2000 Ω	288
SPST - N. C. WITH CLAMPING DIODE, 0.5 AMP			
W117SIP-18	5	500 Ω	50
W117SIP-25	12	1200 Ω	120
W117SIP-26	24	2200 Ω	220

SPST - NO WITH DIODE



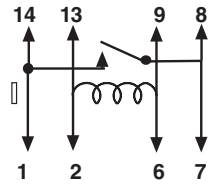
SPST - NC WITH DIODE



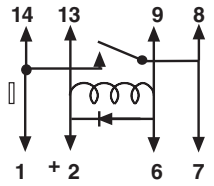


SPST - N. O., 0.5 AMP			
W107DIP-1	5	500 ý	50
W107DIP-3	12	1000 Ω	144
W107DIP-4	24	2000 Ω	288
SPST - N. O. WITH CLAMPING DIODE, 0.5 AMP			
W107DIP-5	5	500 Ω	50
W107DIP-7	12	1000 Ω	144
W107DIP-8	24	2000 Ω	288

SPST - NO

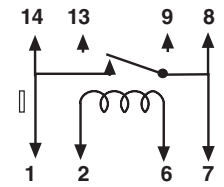


SPST - NO WITH DIODE

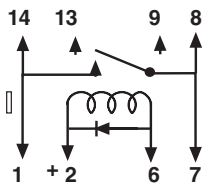


SPST - N. O., 0.5 AMP			
W171DIP-2	5	500 Ω	50
W171DIP-4	12	1200 Ω	120
W171DIP-5	24	2200 Ω	270
SPST - N. O. WITH CLAMPING DIODE, 0.5 AMP			
W171DIP-7	5	500 Ω	50
W171DIP-9	12	1000 Ω	144
W171DIP-10	24	2200 Ω	270

SPST - NO

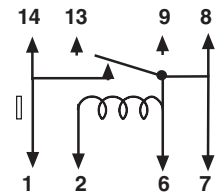


SPST - NO WITH DIODE

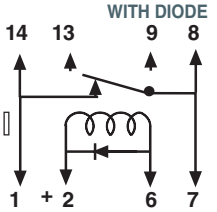


SPST - N. C., 0.5 AMP			
W171DIP-12	5	200 Ω	50
W171DIP-14	12	1200 Ω	120
W171DIP-15	24	2200 Ω	270
SPST - N. C. WITH CLAMPING DIODE, 0.5 AMP			
W171DIP-17	5	500 Ω	50
W171DIP-19	12	1200 Ω	120
W171DIP-20	24	2200 Ω	270

SPST - NC

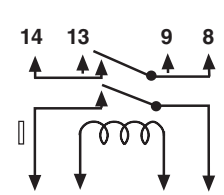


SPST - NC WITH DIODE

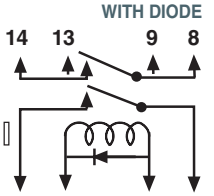


DPST - N. O., 0.5 AMP			
W171DIP-21	5	500 Ω	50
W171DIP-23	12	1000 Ω	144
W171DIP-24	24	2200 Ω	270
DPST - N. O. WITH CLAMPING DIODE, 0.5 AMP			
W171DIP-25	5	500 Ω	50
W171DIP-27	12	1000 Ω	144
W171DIP-28	24	2200 Ω	270

DPST - NO



DPST - NO WITH DIODE



WHEN SPACING SIP RELAYS, THE RELAYS REQUIRE 1/2 INCH SPACING FROM THE SIDE OF THE ADJACENT RELAYS.

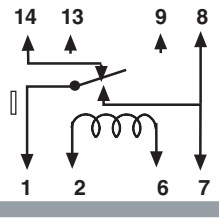
DIP MINIATURE REED RELAYS

SPDT NO, DPDT, 0.25 AMP

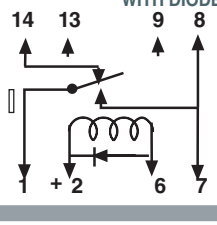
STANDARD PART NUMBERS	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)	NOMINAL POWER (mW)
SPDT, 0.25 AMP			
W172DIP-1	5	200 Ω	125
W172DIP-3	12	500 Ω	300
W172DIP-4	24	2200 Ω	270
SPDT WITH CLAMPING DIODE, 0.25 AMP			
W172DIP-5	5	200 Ω	125
W172DIP-7	12	500 Ω	300
W172DIP-8	24	2200 Ω	270

WIRING DIAGRAM
(TOP VIEWED)

SPDT

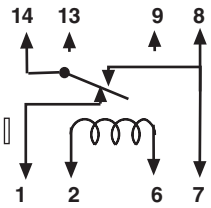


SPDT WITH DIODE

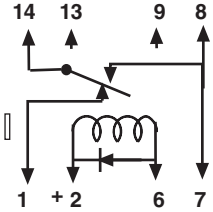


SPDT, 0.25 AMP			
W172DIP-31	5	200 Ω	125
W172DIP-33	12	500 Ω	290
W172DIP-34	24	2200 Ω	270
SPDT WITH CLAMPING DIODE, 0.25 AMP			
W172DIP-35	5	200 Ω	125
W172DIP-37	12	500 Ω	290
W172DIP-38	24	2200 Ω	270

SPDT

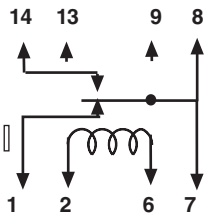


SPDT WITH DIODE

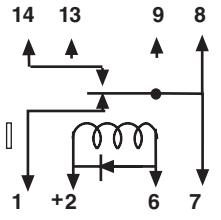


SPDT, 0.25 AMP			
W172DIP-141	5	200 Ω	125
W172DIP-145	12	1000 Ω	144
W172DIP-146	24	3200 Ω	180
SPDT WITH CLAMPING DIODE, 0.25 AMP			
W172DIP-147	5	200 Ω	125
W172DIP-149	12	1000 Ω	144
W172DIP-150	24	3200 Ω	180

SPDT

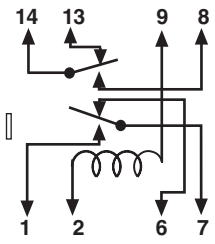


SPDT WITH DIODE

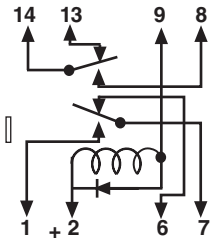


DPDT, 0.25 AMP			
W172DIP-17	5	46 Ω	540
W172DIP-19	12	266 Ω	540
W172DIP-20	24	1066 Ω	540
DPDT WITH CLAMPING DIODE, 0.25 AMP			
W172DIP-21	5	46Ω	540
W172DIP-23	12	266 Ω	540
W172DIP-24	24	1066 Ω	540

DPDT

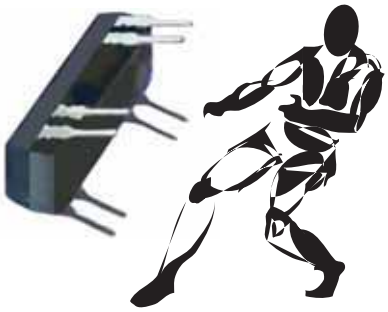


DPDT WITH DIODE



SEE END OF SECTION 6 FOR CROSS REFERENCE

WHEN SPACING DIP RELAYS, THE RELAYS REQUIRE 1/2 INCH SPACING FROM THE SIDE OF THE ADJACENT RELAYS.



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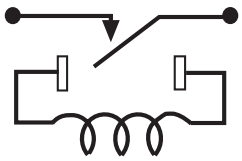
102VX & 102HVX HIGH VOLTAGE SWITCHING RELAY

SPST - N.O., 5 TO 10 MILLIAMPS

EPOXY ENCAPSULATED HIGH VOLTAGE REED.
SPST-NO TUNGSTEN CONTACTS SWITCHES LOADS
UP 10 MA @ 5000 VOLTS DC CLASS 102HV SAME AS ABOVE EXCEPT:
SWITCHES 10,000 VOLTS WITH LOADS UP TO 5 mA DC

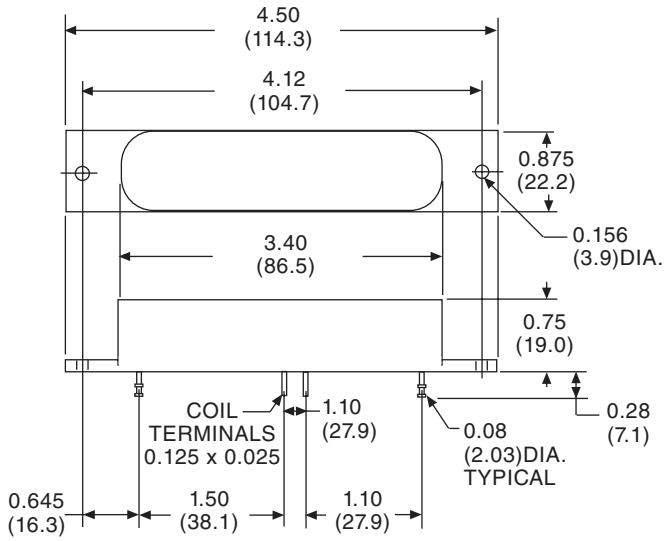
WIRING DIAGRAM
(TOP VIEWED



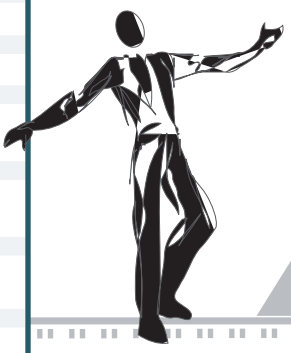
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not applicable
Pull-in Voltage DC:≤	% of nominal	75
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	Not applicable
Coil Power DC:	W	0.5 to 1.5
CONTACTS		
Contact Material:		TUNGSTEN
Contact Rating AC Amperes (AC1):	A	Not applicable
Contact Rating AC Voltage:	V	Not applicable
Contact Rating DC Amperes (DC1):	A	0.010 / 0.005
Contact Rating DC Voltage:	V	5,000 / 10,000
Contact Rating :	VA	Not applicable
General Purpose Rating (75%-80%):		Not applicable
Horse Power (AC):	HP	Not applicable
Pilot Duty (60 Hz):		Not applicable
VA Rating Make:	VA	Not applicable
VA Rating Break:	VA	Not applicable
Minimum Recommended Load:	ma	Not applicable
TIMING		
Operate Time:	ms	1
Release Time:	ms	1
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	12,000
Across Open Contacts:	V rms	12,000
Pole to Pole:	V rms	12,000
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	10
SHOCK RESISTANCE		
Functional:	g's	30
TEMPERATURE		
Operating, AC Lower:	°C	Not applicable
Operating, AC Upper:	°C	Not applicable
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+85
Storage, Lower:	°C	-40
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	1,000,000
Mechanical @ no Load :	operations	100,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Glass
Enclosure Material:		Thermo set plastic
Cover Protection Category:	IP	67
Weight:	grams	49

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Do not use wire heavier than #22 AWG. Excess stress on terminals could cause damage to internal components



STANDARD PART NUMBERS	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)	NOMINAL POWER (mW)
5,000 VOLTS NORMALLY OPEN, 10 MILLIAMPS			
W102VX-49	6 VDC	70 Ω	500 mW
W102VX-50	12 VDC	250 Ω	580 mW
W102VX-51	24 VDC	1000 Ω	580 mW
10,000 VOLTS NORMALLY OPEN, 5 MILLIAMPS			
W102HVX-3	24 VDC	400 Ω	1.5 Watts

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7 PRINTED CIRCUIT BOARD SUBMINIATURE RELAY

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THE CLASS 7 SUBMINIATURE HIGH RELIABILITY INDUSTRIAL GRADE RELAY HAS EXCELLENT R.F. SWITCHING CHARACTERISTICS.

R.F. PERFORMANCE TABLE

FREQUENCY (MHZ)	INSERTION LOSS (DB) COMMON TO N.O. OR N.C. CONTACTS	VSWR COMMON TO N.O. OR N.C. CONTACTS	ISOLATION (DB) N.O. OR N.C. CONTACTS TO COIL
10	0.05	1.03:1	65
50	0.10	1.04:1	50
100	0.30	1.05:1	42
200	0.50	1.06:1	35
300	0.60	1.07:1	31
400	0.65	1.08:1	29
500	0.75	1.10:1	28

**** AVAILABLE WITH SPDT OR DPDT BIFURCATED GOLD CLAD SILVER-PALLADIUM CROSS BAR CONTACTS- RATED FOR LOW LEVEL TO 2.0 AMP SWITCHING.***

**** REQUIRES ONLY .155 SQUARE INCH OF CIRCUIT BOARD SPACE.***

**** TOTAL VOLUME OF SLIGHTLY MORE THAN A CUBIC CENTIMETER.***

**** CONFORMS TO FCC PART 68.302. 1500 V PEAK SURGE RESISTANCE.***

**** CONFORMS TO FCC PART 68.304. 1000 V DIELECTRIC WITHSTANDING VOLTAGE.***

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not applicable
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	120
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	Not applicable
Coil Power DC:	W	0.2
Maximum Coil Dissipation, DC:		0.75 Watt (DC)
CONTACTS		
Contact Material:	A	Gold clad silver
Contact Rating AC Amperes (AC1):	V	STST 2, DPDT 0.6
Contact Rating AC Voltage:	A	STST 120, DPDT 100
Contact Rating DC Amperes (DC1):	V	2
Contact Rating DC Voltage:	VA	24
TIMING		
Operate Time:	ms	4
Release Time:	ms	5
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	500
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500

	UNITS	
VIBRATION RESISTANCE		
Functional:	g's	15
SHOCK RESISTANCE		
Functional:	g's	50
TEMPERATURE		
Operating, AC Lower:	°C	Not applicable
Operating, AC Upper:	°C	Not applicable
Operating, DC Lower:	°C	-35
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-35
Storage, Upper:	°C	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	100,000,000
MISCELLANEOUS		
Operating Position:		Any
Enclosure Material:		UL 94v-0 plastic epoxy seal
Cover Protection Category:	IP	67
Weight:	grams	2.7

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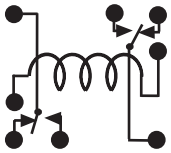
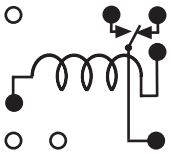
7 PRINTED CIRCUIT BOARD SUBMINIATURE RELAY

SPST & DPDT 2 AMPS

WIRING DIAGRAM
(TOP VIEWED

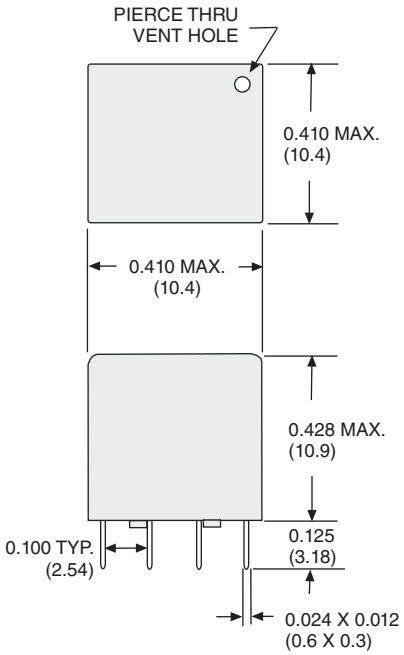


DPDT

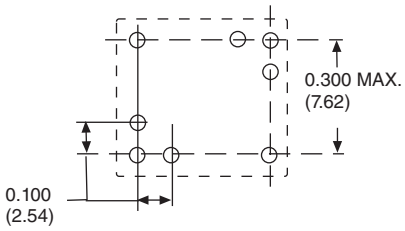


SPDT

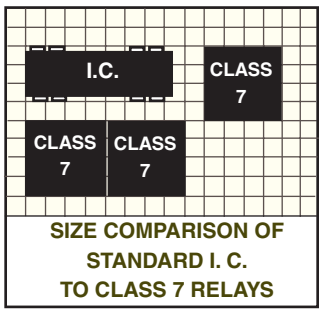
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(BOTTOM VIEW)



TOP VIEW SHOWN AT ACTUAL SIZE ON 0.1 GRID



SIZE COMPARISON OF STANDARD I. C. TO CLASS 7 RELAYS

THE CLASS 7 RELAYS CAN BE DENSELY PACKED TOGETHER WITHOUT MAGNETIC INTERACTION FROM ADJACENT RELAYS.

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C	
		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
W7PCX-1	SPDT	5 VDC	75 Ω
W7PCX-3	SPDT	12 VDC	440 Ω
W7PCX-4	SPDT	24 VDC	1550 Ω
W7PCX-5	DPDT	5 VDC	75 Ω
W7PCX-7	DPDT	12 VDC	440 Ω
W7PCX-8	DPDT	24 VDC	1550 Ω

49 PRINTED CIRCUIT BOARD ENCLOSED RELAY

c UL us
UL Recognized
File No. E52197

ONLY 1.1 CUBIC INCHES.
VARIETY OF MOUNTING CONFIGURATIONS.
TAPPED MOUNTING HOLES (49R1C4).
TV 5 RATING AVAILABLE.
STANDARD PILOT DUTY 240 VAC. MAGNETIC MOTOR CONTROLLER RATING 1/3 HP AT 120VAC.

UL CONTACT LOAD RATINGS TABLE

CONTACT MATERIAL	TYPE	LOAD	VOLTAGE
SILVER	3AMP	3 AMP	28 VDC, 120 VAC
		15 AMP	28 VDC, 150 VAC, N. O. ONLY
SILVER ALLOY	5AMP	5 AMP	28 VDC, 120 VAC
		TV-3	120 VAC
		PILOT DUTY	B300 (120/240 VAC)
SILVER ALLOY	10AMP	10 AMP	120/240 VAC
		10AMP	28 VDC
		10AMP	277 VAC
		1/3 HP	120 VAC
			240 VAC, N. O. ONLY
		1/8 HP	277 VAC, N. C. ONLY
		TUNGSTEN	2 AMP, 240W, 120 VAC, N. C. ONLY
			5 AMP, 600W, 120 VAC, N. O. ONLY
		1/4 HP	277 VAC, N. O. ONLY
		BALLAST	1.7 AMP @ 277 VAC
		1/6 HP	120/240 VAC, N. C. ONLY
		15 AMP	28 VDC, 150 VAC, N. O. ONLY
		480 VAC	2 AMP MAX, 240/270 VAC
		PILOT DUTY	B300 (120/240 VAC)
		TV-5	120 VAC, N. O. ONLY
		TV-3	120 VAC

MANUFACTURED UNDER ISO 9002 & QS 9000

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	
Pull-in Voltage DC:≤	% of nominal	Not applicable
Dropout Voltage AC (50/60 Hz):≥	% of nominal	80
Dropout Voltage DC:≥	% of nominal	Not applicable
Maximum Voltage:	% of nominal	10
Resistance:	% ±	120
Coil Power AC (60 Hz):	VA	10
Coil Power DC:	W	Not applicable
Duty:		0.4
		Continuous
CONTACTS		
Contact Material:		
Contact Rating AC Amperes (AC1):	A	Silver gold clad plated/silver
Contact Rating AC Voltage:	V	3 / 5 / 10
Contact Rating DC Amperes (DC1):	A	120 / 120 / 270
Contact Rating DC Voltage:	V	3 / 5 / 10
Horse Power (AC):	Hp	28 / 28 / 28
Pilot Duty (60 Hz):		1/3 @ 120
		B300
TIMING		
Operate Time:	ms	
Release Time:	ms	10
		7
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	
Across Open Contacts:	V rms	1500
Pole to Pole:	V rms	500
Contacts to Frame:	V rms	1500
Insulation Resistance:	megohms minimum @VDC	Not applicable 1000 @ 500

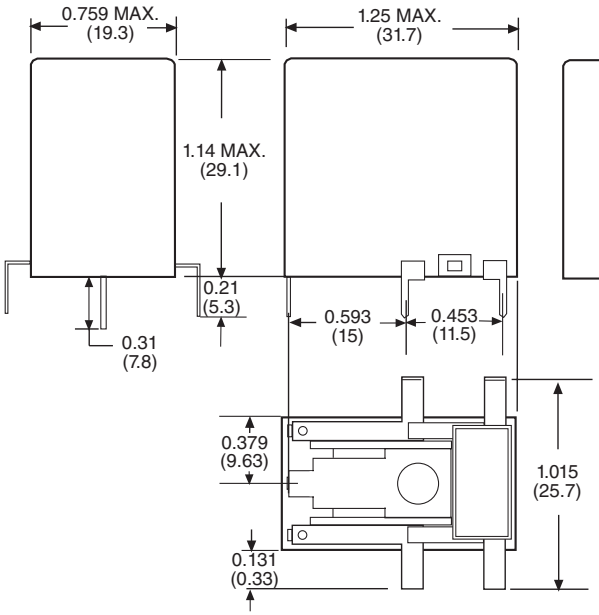
	UNITS	
VIBRATION RESISTANCE		
Functional:	g's	1.65 DA 10-55Hz
SHOCK RESISTANCE		
Functional:	g's	10
TEMPERATURE		
Operating, AC Lower:	°C	Not applicable
Operating, AC Upper:	°C	Not applicable
Operating, DC Lower:	°C	-55
Operating, DC Upper:	°C	+85
Storage, Lower:	°C	-55
Storage, Upper:	°C	+130
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	50,000
MISCELLANEOUS		
Operating Position:		Any
Enclosure Material:		UL 94v-0 plastic epoxy seal
Cover Protection Category:	IP	50
Weight:	grams	42

SPDT, 3, 5 & 10 AMPS

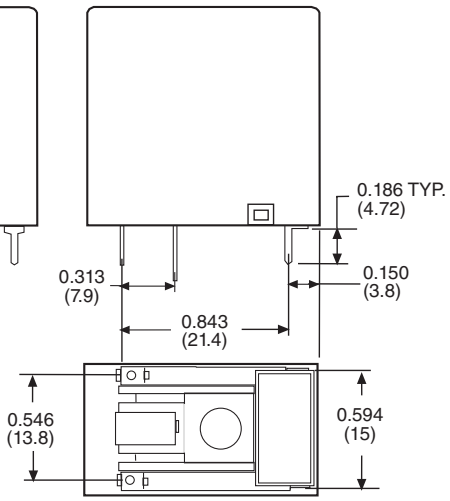
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

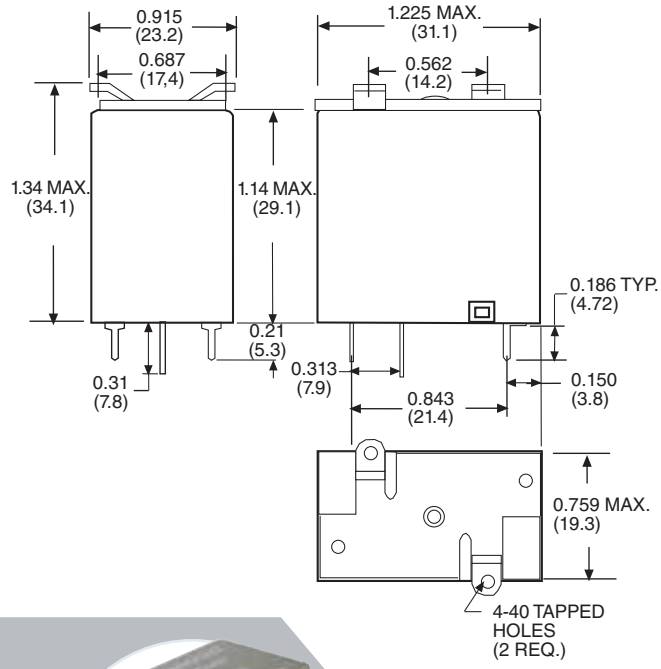
STYLE RE1C2



STYLE RE1C1

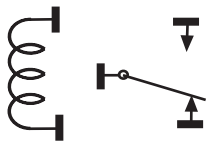


STYLE R1C4

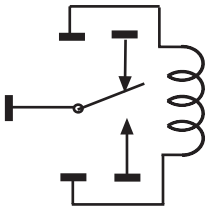


WIRING DIAGRAM
(TOP VIEWED

STYLE RE1C1
R1C4



STYLE RE1C2



STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
STYLE RE1C1, 3 AMP			
W49RE1C1VG-3DC-SIL	SPDT	3 VDC	90 Ω
W49RE1C1VG-5DC-SIL	SPDT	5 VDC	235 Ω
W49RE1C1VG-12DC-SIL	SPDT	12 VDC	1350 Ω
W49RE1C2VF-6DC-SIL	SPDT	6 VDC	410 Ω
W49RE1C2VF-12DC-SIL	SPDT	12 VDC	1640 Ω
W49RE1C2VF-24DC-SIL	SPDT	24 VDC	6560 Ω
STYLE RE1C1 AND RE1C2, 5 AMP			
W49RE1C1VG-5DC-SCO	SPDT	5 VDC	235 Ω
W49RE1C1VG-12DC-SCO	SPDT	12 VDC	1350 Ω
W49RE1C1VG-24DC-SCO	SPDT	24 VDC	5400 Ω
W49RE1C2VF-6DC-SCO	SPDT	6 VDC	410 Ω
W49RE1C2VF-12DC-SCO	SPDT	12 VDC	1640 Ω
W49RE1C2VF-24DC-SCO	SPDT	24 VDC	6560 Ω
STYLE RE1C1, 10 AMP			
W49RE1C1VW-5DC-SCO	SPDT	5 VDC	100 Ω
W49RE1C1VW-12DC-SCO	SPDT	12 VDC	600 Ω
W49RE1C1VW-24DC-SCO	SPDT	24 VDC	2400 Ω
SOLDER TERMINALS, BRACKET MOUNTING STYLE RE1C4, 10 AMP			
W49R1C4VG-5DC-SCO	SPDT	5 VDC	235 Ω
W49R1C4VG-12DC-SCO	SPDT	12 VDC	1350 Ω
STYLE RE1C4, 10 AMP			
W49R1C4VW-5DC-SCO	SPDT	5 VDC	100 Ω
W49R1C4VW-24DC-SCO	SPDT	24 VDC	2400 Ω

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976 PRINTED CIRCUIT BOARD SLIM - LINE RELAY

UL CONTACT LOAD RATINGS TABLE

c UL us
UL Recognized
File No. E52197

LOAD	LOAD VOLTAGE	DPDT FIGURE " A "	SPDT FIGURE " B "	SPDT FIGURE " C "
RESISTIVE	250 VAC	5 AMP	20 AMP (120 VAC)	12 AMP
	30 VDC	5 AMP	20AMP	12 AMP
	250 VAC	7 AMP (N.O.)	16 AMP (UL - TUV.)	10 AMP(TUV)
	30 VDC	7 AMP (N.O.)	16 AMP (UL - TUV.)	10 AMP(TUV)
INDUCTIVE	250 VAC	*2 AMP	*8 AMP	*5 AMP
	30 VDC	†2 AMP	†8 AMP	†5 AMP
TV		DPST - N.O.	SPST - N.O.	SPDT - N.O.
		TV - 3	TV - 8	TV - 5

* COSØ = 0.4 (TUV)
† L/R = 7mS (TUV)

MANUFACTURED UNDER ISO 9002 & QS 9000

UL CLASS "F" COIL INSULATION SYSTEM AVAILABLE.
AC COIL VOLTAGES.
UL RATED TV-3, TV-5 OR TV-8, N. O. ONLY.
CONTACTS RATED UP TO 20 AMP.
8 MILLIMETERS MINIMUM. CLEARANCE. COIL TO CONTACTS.
DIELECTRIC STRENGTH: 5,000 V rms.

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	85
Pull-in Voltage DC:≤	% of nominal	75
Dropout Voltage AC (50/60 Hz):≥	% of nominal	30
Dropout Voltage DC:≥	% of nominal	110
Maximum Voltage:	% of nominal	120
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	1.2
Coil Power DC:	W	5.4
Duty:		Continuous
CONTACTS		
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):	A	See table
Contact Rating AC Voltage:	V	See table
Contact Rating DC Amperes (DC1):	A	See table
Contact Rating DC Voltage:	V	See table
Horse Power (AC):	Hp	10
Pilot Duty (60 Hz):		7
TIMING		
Operate Time:	ms	15
Release Time:	ms	10
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	5000
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	2500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500

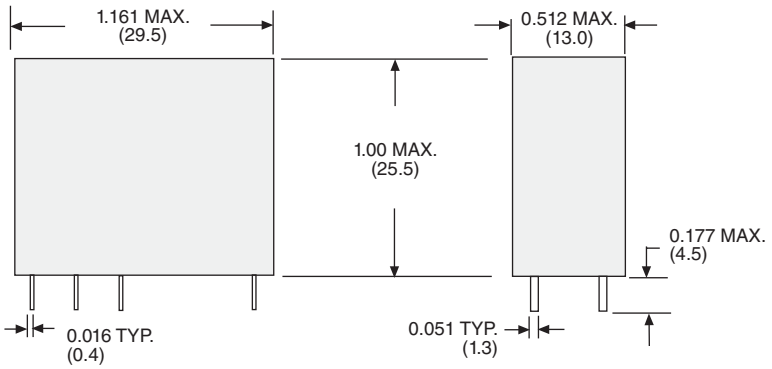
	UNITS	
VIBRATION RESISTANCE		
Functional:	g's	1.65 DA 10-55Hz
SHOCK RESISTANCE		
Functional:	g's	10
TEMPERATURE		
Operating, AC Lower:	ºC	-20
Operating, AC Upper:	ºC	+55
Operating, DC Lower:	ºC	-40
Operating, DC Upper:	ºC	+80
Storage, Lower:	ºC	-40
Storage, Upper:	ºC	+80
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	50,000
MISCELLANEOUS		
Operating Position:		Any
Enclosure Material:		Plastic, epoxy sealed, suitable for automatic circuit board processing. After cleaning process, pierce a small hole in cover for venting
Cover Protection Category:	IP	67
Weight:	grams	17

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

976 PRINTED CIRCUIT BOARD SLIM - LINE RELAY

SPDT & DPDT
5, 12 & 20 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



WIRING DIAGRAM
(TOP VIEWED

FIG. "A"

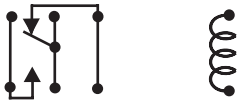


FIG. "B"

FIG. "C"

PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(BOTTOM VIEW)

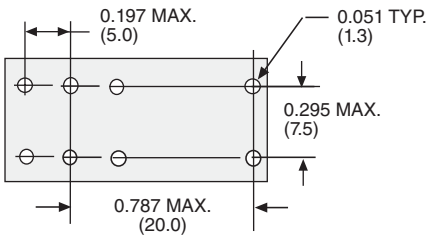


FIG. "A"

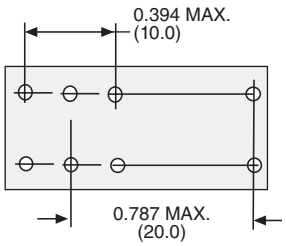


FIG. "B"

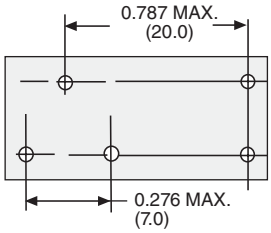


FIG. "C"

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	COIL MEASURED @ 25 °C NOMINAL RESISTANCE (OHMS)
DC OPERATED COIL, FIG. "A", 5 AMP			
976XBXH-5D / 76EURCPCX-61	DPDT	5 VDC	47 Ω
976XBXH-6D / 76EURCPCX-62	DPDT	6 VDC	68 Ω
976XBXH-12D / 76EURCPCX-63	DPDT	12 VDC	270 Ω
976XBXH-24D / 76EURCPCX-64	DPDT	24 VDC	1100 Ω
DC OPERATED COIL, FIG. "B", 20 AMP			
976XAX97H-5D / 76EURCPCX-146	SPDT	5 VDC	47 Ω
976XAX97H-6D / 76EURCPCX-147	SPDT	6 VDC	68 Ω
976XAX97H-12D / 76EURCPCX-148	SPDT	12 VDC	270 Ω
976XAX97H-24D / 76EURCPCX-149	SPDT	24 VDC	1100 Ω
DC OPERATED COIL, FIG. "C", 12 AMP			
976XAXH-5D / 76EURCPCX-14	SPDT	5 VDC	47 Ω
976XAXH-6D / 76EURCPCX-15	SPDT	6 VDC	68 Ω
976XAXH-12D / 76EURCPCX-16	SPDT	12 VDC	270 Ω
976XAXH-24D / 76EURCPCX-17	SPDT	24 VDC	1100 Ω
AC OPERATED COIL, FIG. "A", 5 AMP			
976XBXH-24A	DPDT	24 VAC	250 Ω
976XBXH-120A	DPDT	120 VAC	5,600 Ω
976XBXH-240A	DPDT	240 VAC	22000 Ω
AC OPERATED COIL, FIG. "B", 20 AMP			
976XAX97H-24A	SPDT	24 VAC	250 Ω
976XAX97H-120A	SPDT	120 VAC	5,600 Ω
976XAX97H-240A	SPDT	240 VAC	22000 Ω
AC OPERATED COIL, FIG. "C", 12 AMP			
976XAXH-24A	SPDT	24 VAC	250 Ω
976XAXH-120A	SPDT	120 VAC	5,600 Ω
976XAXH-240A	SPDT	240 VAC	22000 Ω

OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER.
CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

60 PRINTED CIRCUIT BOARD MINIATURE RELAY

R.F. PERFORMANCE TABLE

c UL us
UL Recognized
File No. E52197

FREQUENCY (MHZ)	INSERTION LOSS (DB) COMMON TO N.O. OR N.C. CONTACTS	VSWR COMMON TO N.O. OR N.C. CONTACTS	ISOLATION (DB) N.O. OR N.C. CONTACTS TO COIL
10	0.05	1.03:1	65
50	0.10	1.04:1	50
100	0.30	1.05:1	42
200	0.50	1.06:1	35
300	0.60	1.07:1	31
400	0.65	1.08:1	29
500	0.75	1.10:1	28

** AVAILABLE WITH SPDT OR DPDT BIFURCATED GOLD CLAD SILVER-PALLADIUM CROSS BAR CONTACTS- RATED FOR LOW LEVEL TO 2.0 AMP SWITCHING.*
** REQUIRES ONLY .155 SQUARE INCH OF CIRCUIT BOARD SPACE.*
** TOTAL VOLUME OF LESS THAN A CUBIC CENTIMETER.*
** CONFORMS TO FCC PART 68.302. 1500 V PEAK SURGE RESISTANCE.*
** CONFORMS TO FCC PART 68.304. 1000 V DIELECTRIC WITHSTANDING VOLTAGE.*

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not applicable
Pull-in Voltage DC:≤	% of nominal	80
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	120
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	Not applicable
Coil Power DC:	W	0.33
Maximum Coil Dissipation, DC:		0.75 Watt (DC)
CONTACTS		
Contact Material:		Gold clad silver
Contact Rating AC Amperes (AC1):	A	STST 2, DPDT 0.6
Contact Rating AC Voltage:	V	STST 120, DPDT 100
Contact Rating DC Amperes (DC1):	A	2
Contact Rating DC Voltage:	V	24
TIMING		
Operate Time:	ms	4
Release Time:	ms	5
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	500
Across Open Contacts:	V rms	500
Pole to Pole:	V rms	500
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum @VDC	1000 @ 500

	UNITS	
VIBRATION RESISTANCE		
Functional:	g's	15
SHOCK RESISTANCE		
Functional:	g's	50
TEMPERATURE		
Operating, AC Lower:	ºC	Not applicable
Operating, AC Upper:	ºC	Not applicable
Operating, DC Lower:	ºC	-35
Operating, DC Upper:	ºC	+70
Storage, Lower:	ºC	-35
Storage, Upper:	ºC	+105
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	100,000,000
MISCELLANEOUS		
Operating Position:		Any
Enclosure Material:		UL 94v-0 plastic epoxy seal
Cover Protection Category:	IP	67
Weight:	grams	SPDT: 2.5, DPDT: 9

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Magnecraft
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Your Contact for Industrial Relays

SPST & DPDT 2 MPS

WIRING DIAGRAM
(TOP VIEWED

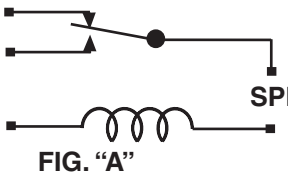


FIG. "A"

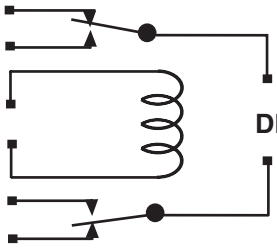
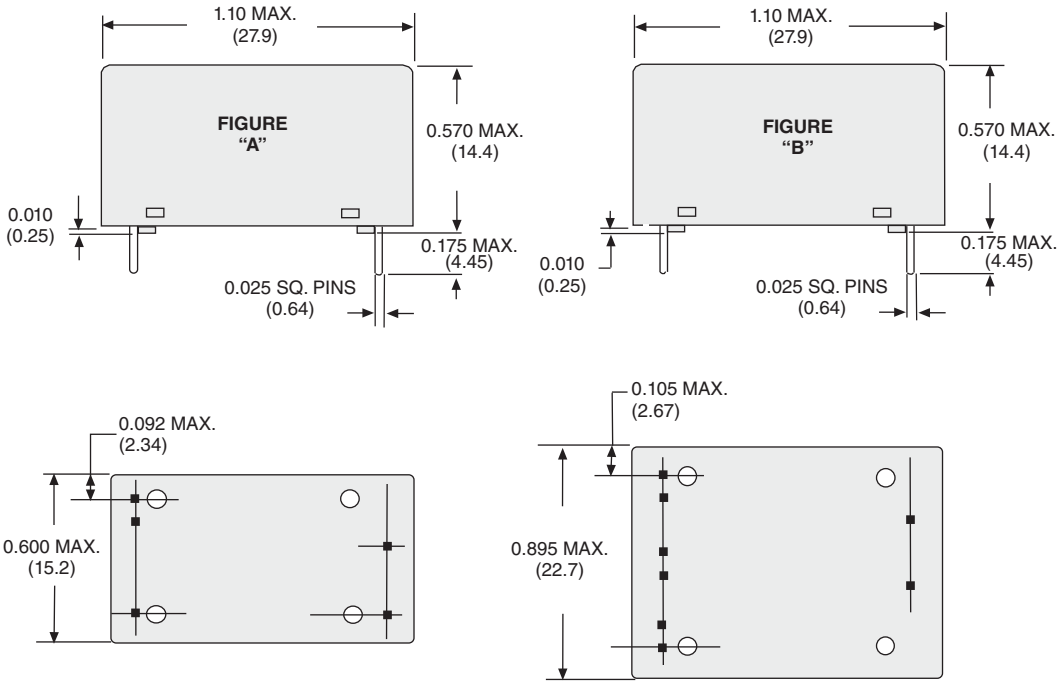
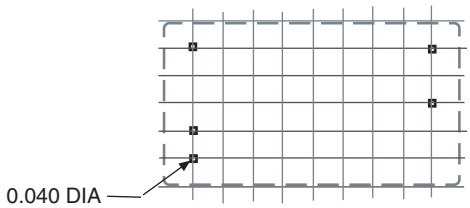


FIG. "B"

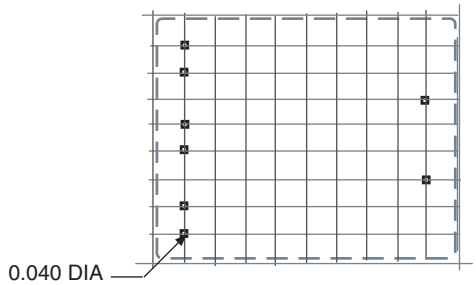
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW SHOWN AT ACTUAL SIZE ON 0.1 GRID)



W60HE1S



W60HE2S

STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
FIG. "A", 2 AMP			
W60HE1S-5DC	SPDT	5 VDC	75 Ω
W60HE1S-12DC	SPDT	12 VDC	440 Ω
W60HE1S-24DC	SPDT	24 VDC	1550 Ω
W60HE1S-48DC	SPDT	48 VDC	5250 Ω
FIG. "B", 2 AMP			
W60HE2S-5DC	DPDT	5 VDC	75 Ω
W60HE2S-12DC	DPDT	12 VDC	440 Ω
W60HE2S-24DC	DPDT	24 VDC	1550 Ω
W60HE2S-48DC	DPDT	48 VDC	5250 Ω

276 PRINTED CIRCUIT BOARD LOW PROFILE POWER RELAY

SPST-N.O. & SPDT, 7 & 10 AMPS

c UL us
UL Recognized
File No. E190964

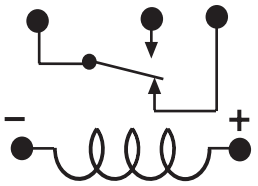
CE
COMPLIES WITH REQUIREMENTS OF
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

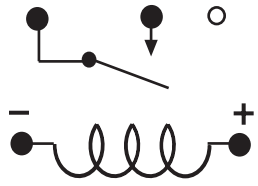
UL CONTACT LOAD RATINGS TABLE

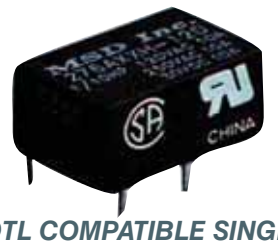
LOAD	LOAD VOLTAGE/ CURRENT	SPST-NO	SPDT
RESISTIVE	240 VAC 30 VDC	10 AMP 10 AMP	7 AMP 7 AMP
MOTOR	120 VAC	1/6 HP	1/10 HP
*POWER	WATTS (VDC)	300 WATTS 2500 VA	210 WATTS 1750 VA

* Voltage and Power Ratings in the table Above are Independent Maximums and no Single Value is to be Exceeded.

WIRING DIAGRAM





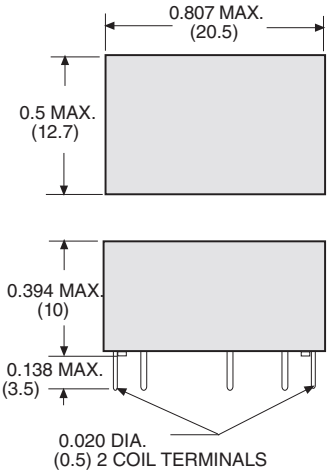


GENERAL SPECIFICATIONS (@ 25°C)

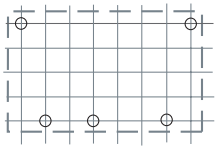
	UNITS	
COIL		
Pull-in Voltage AC (50/60 Hz):≤	% of nominal	Not applicable
Pull-in Voltage DC:≤	% of nominal	70
Dropout Voltage AC (50/60 Hz):≥	% of nominal	Not applicable
Dropout Voltage DC:≥	% of nominal	10
Maximum Voltage:	% of nominal	110
Resistance:	% ±	10
Coil Power AC (60 Hz):	VA	Not applicable
Coil Power DC:	W	0.2
CONTACTS		
Contact Material:		Silver alloy
Contact Rating AC Amperes (AC1):	A	SPST NO: 10, SPDT: 7
Contact Rating AC Voltage:	V	240
Contact Rating DC Amperes (DC1):	A	SPST NO: 10, SPDT: 7
Contact Rating DC Voltage:	V	30
Contact Rating :	VA	SPST NO: 2500, SPDT: 1750
Horse Power (AC):	HP	SPST NO: 1/6 @ 120
Pilot Duty (60 Hz):		SPDT: 1/10 @ 120
TIMING		
Operate Time:	ms	10
Release Time:	ms	10
DIELECTRIC STRENGTH		
Coil to Contacts:	V rms	2000
Across Open Contacts:	V rms	1000
Pole to Pole:	V rms	Not applicable
Contacts to Frame:	V rms	Not applicable
Insulation Resistance:	megohms minimum@VDC	1000 @ 500
VIBRATION RESISTANCE		
Functional:	g's	1.5 DA 10-55Hz
SHOCK RESISTANCE		
Functional:	g's	30
TEMPERATURE		
Operating, AC Lower:	°C	Not applicable
Operating, AC Upper:	°C	Not applicable
Operating, DC Lower:	°C	-40
Operating, DC Upper:	°C	+70
Storage, Lower:	°C	-40
Storage, Upper:	°C	+100
LIFE EXPECTANCY		
Electrical @ Rated Load (AC1):	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Insulation Material:		Glass
Enclosure Material:		UL 94v-0 plastic epoxy seal
Cover Protection Category:	IP	67
Weight:	grams	5.5

DTL COMPATIBLE SINGLE-SIDE STABLE DESIGN. 5KV SURGE RESISTANCE COIL TO CONTACT MEETS INTERNATIONAL SPACING OF 4 mm.

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



PRINTED CIRCUIT MOUNTING HOLE LAYOUT
(TOP VIEW SHOWN AT ACTUAL SIZE ON 0.1 GRID)



STANDARD PART NUMBERS	CONTACT CONFIGU-RATION	COIL MEASURED @ 25 °C NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
10 AMP			
276AXXH-5D	SPST-NO	5 VDC	125 Ω
276AXXH-6D	SPST-NO	6 VDC	180 Ω
276AXXH-12D	SPST-NO	12 VDC	720 Ω
276AXXH-24D	SPST-NO	24 VDC	2880 Ω
7 AMP			
276XAXH-5D	SPDT	5 VDC	125 Ω
276XAXH-6D	SPDT	6 VDC	180 Ω
276XAXH-12D	SPDT	12 VDC	720 Ω
276XAXH-24D	SPDT	24 VDC	2880 Ω

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MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	GORDOS	HAMLIN	MEDER	CLARE	COTO	
W117SIP-1	JWS-117-1	741A-9	3621A0500	SIL05-1A75-71L	DSS41A05	90010500	
W117SIP-3	JWS-117-3	741A-3	3621A1200	SIL12-1A75-71L	DSS41A12	90011201	
W117SIP-5	JWS-117-5	741A-7	3621A2400	SIL24-1A75-71L	DSS41A24		
W117SIP-22	JWS-117-12	741B-3			DSS41B05		
W117SIP-23	JWS-117-14	741B-5			DSS41B12		
W117SIP-24	JWS-117-15	741B-8			DSS41B24		
W117SIP-6	JWS-117-6	741B-10	3621A0510	SIL05-1A75-71D	DSS41A05B		
W117SIP-8	JWS-117-8	741A-4	3621A1210	SIL12-1A75-71D	DSS41A12B		
W117SIP-10	JWS-117-110	741A-8	3621A2410	SIL24-1A75-71D	DSS41A24B		
W117SIP-18	JWS-117-17	741B-4			DSS41B05B		
W117SIP-25	JWS-117-19	741B-6			DSS41B12B		
W117SIP-26	JWS-117-30	741B-8			DSS41B24B		
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	GORDOS		MEDER	CLARE		
W107DIP-1	JWD-107-1	831A-3		DIP05-1A75-11L	PRMA10037		
W107DIP-3	JWD-107-3	831A-5		DIP12-1A75-11L	PRMA10038		
W107DIP-4		831A-7		DIP24-1A75-11L	PRMA10039		
W107DIP-5	JWD-107-5	831A-4		DIP05-1A75-11D	PRMA10037B		
W107DIP-7	JWD-107-7	831A-6		DIP12-1A75-11D	PRMA10038B		
W107DIP-8		831A-8		DIP24-1A75-11D	PRMA10039B		
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	GORDOS	HAMLIN	MEDER	CLARE	COTO	COTO SPARTIN
W171DIP-2		831A-3	721A0500	DIP05-1A75-11L	PRMA1A05	80010500	8L01-05-001
W171DIP-4		831A-5	721A1200	DIP12-1A75-11L	PRMA1A12	80011200	8L01-12-001
W171DIP-5	JWD-171-5	831A-7	721A2400	DIP24-1A75-11L	PRMA1A24		8L01-24-001
W171DIP-7		831A-4	721A0510	DIP05-1A75-11D	PRMA1A05B	80010510	8L01-05-011
W171DIP-9		831A-6	721A1210	DIP12-1A75-11D	PRMA1A12B	80011210	8L01-12-011
W171DIP-10	JWD-171-10	831A-8	721A2410	DIP24-1A75-11D	PRMA1A24B		8L01-24-011
W171DIP-12	JWD-171-12	831B-3	721B0500	DIP05-1B75-11L	PRMA1B05	80210500	8L21-05-001
W171DIP-14	JWD-171-14	831B-5	721B1200	DIP12-1B75-11L	PRMA1B12	80211200	8L21-12-001
W171DIP-15	JWD-171-15	831B-7	721B2400	DIP24-1B75-11L	PRMA1B24		8L21-24-001
W171DIP-17	JWD-171-17	831B-4	721B0510	DIP05-1B75-11D	PRMA1B05B	80210510	8L21-05-011
W171DIP-19	JWD-171-19	831B-6	721B1210	DIP12-1B75-11D	PRMA1B12B	80211210	8L21-12-011
W171DIP-20	JWD-171-20	831B-8	721B2410	DIP24-1B75-11D	PRMA1B24B		8L21-24-011
W171DIP-21	JWD-171-21	832A-3	722A0500	DIP05-2A75-21L	PRMA2A05	80020500	8L02-05-001
W171DIP-23	JWD-171-23	832B-5	722A1200	DIP12-2A75-21L	PRMA2A12	80021200	8L02-12-001
W171DIP-24	JWD-171-24	832B-7	722A2400	DIP24-2A75-21L	PRMA2A24		8L02-24-001
W171DIP-25	JWD-171-25	832B-4	722A0510	DIP05-2A75-21D	PRMA2A05B	80020510	8L02-05-011
W171DIP-27	JWD-171-27	832B-6	722A1210	DIP12-2A75-21D	PRMA2A12B	80021210	8L02-12-011
W171DIP-28	JWD-171-28	831B-8	722A2410	DIP24-2A75-21D	PRMA2A24B		8L02-24-011
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	GORDOS	HAMLIN	MEDER	CLARE	COTO	
W172DIP-1	JWD-172-1	836C-1	721R0500				
W172DIP-3	JWD-172-3	836C-3	721R1200				
W172DIP-4	JWD-172-4	836C-5	721R2400				
W172DIP-5	JWD-172-5	836C-2	721R0510				
W172DIP-7	JWD-172-7	836C-4	721R1210				
W172DIP-8	JWD-172-8	836C-6	721R2410				
W172DIP-17		835C-1					
W172DIP-19		835C-3					
W172DIP-20		835C-5					
W172DIP-21		835C-2					
W172DIP-23		835C-4					
W172DIP-24		835C-6					
W172DIP-141	JWD-172-155	831C-1	721C0500	DIP05-1C75-51L	PRMA1C05	80410500	
W172DIP-145	JWD-172-157	831C-3	721C1200	DIP12-1C75-51L	PRMA1C12	80411200	
W172DIP-146	JWD-172-158	831C-5	721C2400	DIP24-1C75-51L	PRMA1C24		
W172DIP-147	JWD-172-159	831C-2	721C0510	DIP05-1C75-51D	PRMA1C05B	80410510	
W172DIP-149	JWD-172-161	831C-4	721C1210	DIP12-1C75-51D	PRMA1C12B	80411210	
W172DIP-150	JWD-172-162	831C-6	721C2410	DIP24-1C75-51D	PRMA1C24B		
W172DIP-31		831C-1	721E0500			80510500	
W172DIP-33		831C-3	721E1200			80511200	
W172DIP-34		831C-5	721E2400				

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	HAMLIN	COTO
W172DIP-35	721E0510	80510510
W172DIP-37	721E1210	80511210
W172DIP-38	721E2410	

MAGNECRAFT & STRUTHERS-DUNN	MIDTEX
W7PCX-1	MMS105
W7PCX-3	MMS102
W7PCX-4	MMS124
W7PCX-5	MMS205
W7PCX-7	MMS212
W7PCX-8	MMS224

MAGNECRAFT & STRUTHERS-DUNN	CORNELL DUBILIER
W49RE1C1VG-3DC-SIL	653-3K
W49RE1C1VG-5DC-SIL	653-6K
W49RE1C1VG-12DC-SIL	653-12K
W49RE1C1VG-5DC-SCO	603-6B
W49RE1C1VG-12DC-SCO	603-12B
W49RE1C1VG-24DC-SCO	603-24B
W49RE1C1VW-5DC-SCO	613-6B
W49RE1C1VW-12DC-SCO	613-12B
W49RE1C1VW-24DC-SCO	613-24B

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	OMRON	AMERICAN ZETTLER	AROMAT
976XBXH-5D / 76EURCPCX-61	RTE24005F	G2R-24-DC5	AZ733-2C-5DE	JW2SN-DC5V
976XBXH-6D / 76EURCPCX-62	RTE24006F	G2R-24-DC6	AZ733-2C-6DE	JW2SN-DC6V
976XBXH-12D / 76EURCPCX-63	RTE24012F	G2R-24-DC12	AZ733-2C-12DE	JW2SN-DC12V
976XBXH-24D / 76EURCPCX-64	RTE24024F	G2R-24-DC24	AZ733-2C-24DE	JW2SN-DC24V
976XAX97H-5D / 76EURCPCX-146	RTD14005F	G2R-1-E-DC5	AZ755-1C-5DE	NOT AVAILABLE
976XAX97H-6D / 76EURCPCX-147	RTD14006F	G2R-1-E-DC6	AZ755-1C-6DE	NOT AVAILABLE
976XAX97H-12D / 76EURCPCX-148	RTD14012F	G2R-1-E-DC12	AZ755-1C-12DE	NOT AVAILABLE
976XAX97H-24D / 76EURCPCX-149	RTD14024F	G2R-1-E-DC24	AZ755-1C-24DE	NOT AVAILABLE
976XAX97H-48D / 76EURCPCX-150	RTD14048F	G2R-1-E-DC48	AZ755-1C-48DE	NOT AVAILABLE
976XAXH-5D / 76EURCPCX-14	RTB14005F	G2R-14-DC5	NOT AVAILABLE	JW1FSN-DC5V
976XAXH-6D / 76EURCPCX-15	RTB14006F	G2R-14-DC6	NOT AVAILABLE	JW1FSN-DC6V
976XAXH-12D / 76EURCPCX-16	RTB14012F	G2R-14-DC12	NOT AVAILABLE	JW1FSN-DC12V
976XAXH-24D / 76EURCPCX-17	RTB14024F	G2R-14-DC24	NOT AVAILABLE	JW1FSN-DC24V
976XAXH-48D / 76EURCPCX-18	RTB14048F	G2R-14-DC48	NOT AVAILABLE	JW1FSN-DC48V
110VDC COIL AVAILABLE ON CLASS 976				
976XBXH-24A	RTE24524	G2R-24-AC24		
976XBXH-120A	RTE24615	G2R-24-AC120		
976XBXH-240A	RTE24730	G2R-24-AC240		
976XAX97H-24A	RTD34524	G2R-1-E-AC24		
976XAX97H-120A	RTD34615	G2R-1-E-AC120		
976XAX97H-240A	RTD34730	G2R-1-E-AC240		
976XAXH-24A	RTB14524	G2R-14-AC24		
976XAXH-120A	RTB14615	G2R-14-AC120		
976XAXH-240A	RTB14730	G2R-14-AC240		

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD
W60HE1S-5DC	R50E2Y1-5V
W60HE1S-12DC	R50E2Y1-12V
W60HE1S-24DC	R50E2Y1-24V
W60HE1S-48DC	R50E2Y1-48V
W60HE2S-5DC	R50E2Y2-5V
W60HE2S-12DC	R50E2Y2-12V
W60HE2S-24DC	R50E2Y2-24V
W60HE2S-48DC	R50E2Y2-48V

U. S. A.

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FOR REED RELAYS APPLICATION ENGINEERING ASSISTANCE

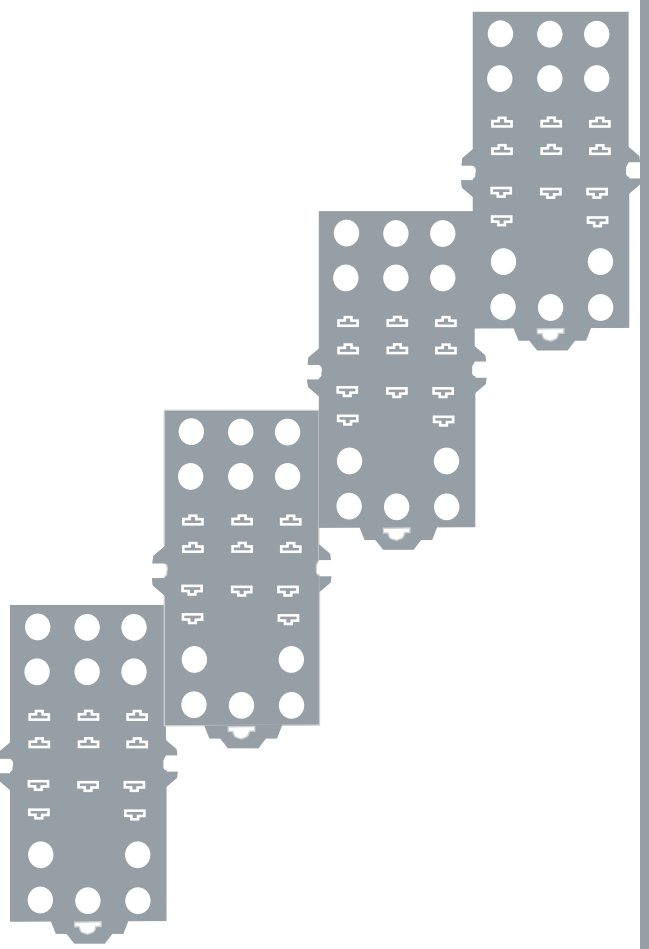
Joe Zintel, PRODUCT MANAGER
FAX: (847) 441-2522
EMAIL: jzintel@magnecraft.com

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

SECTION 7

SOCKETS AND ACCESSORIES

5 TO 25 AMPERES
250 TO 600 VOLTS



SCREW TERMINAL "ICE CUBE" SOCKETS

SCREW TERMINAL OCTAL SOCKETS

SCREW TERMINAL SQUARE BASE SOCKETS

CHASSIS MOUNT SOCKETS

PRINTED CIRCUIT MOUNT SOCKETS

SOCKET MODULES & ACCESSORIES

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

SCREW TERMINAL "ICE CUBE" SOCKET SELECTION GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	70-781D-1	70-461-1	70-459-1
		 MANUFACTURED UNDER ISO 9001	 MANUFACTURED UNDER ISO 9001
L X W X H (INCHES)	2.66 x 0.791 x 1.12	2.55 x 1.21 x 1.015	2.02 x 1.18 x 1.236
FEATURES	BLADE STYLE 5 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	BLADE STYLE 14 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	BLADE STYLE 8 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS
FINGER SAFE PER IP 20	YES	NO	NO
WIRING TERMINATIONS	SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES
CONSTRUCTION			
Width:	19.6 mm	30.7 mm	30 mm
Module Compatible:	No	No	No
1 Piece Solderless Track And Terminals System:	Yes	Yes	Yes
Logic Style: I-O Separation:	No	No	No
Coil Jumper Buss System Available:	No	No	No
ELECTRICAL RATING			
Nominal Voltage Rating:	300 Volts	300 Volts	300 Volts
Nominal Current Rating:	15 Amps	10 Amps	10 Amps
DIELECTRIC STRENGTH			
Output to Adjacent Terminals:	2500 V rms	1600 V rms	2000 V rms
Output to Input Terminals:	2500 V rms	1600 V rms	2000 V rms
Terminals to Rail Chassis	2500 V rms	1600 V rms	2000 V rms
TEMPERATURE			
Operating, Lower:	-40 °C	-40 °C	-40 °C
Operating, Lower:	+80 °C	+80 °C	+80 °C
MISCELLANEOUS			
Protection Category (finger safe):	20 IP	N /A IP	N /A IP
Weight:	32 grams	42 grams	50 grams
UL Listing Available:	UL Listed When Used With 781 Relay	UL Listed When Used With 782, 782H Relays	UL Listed When Used With 782 Relay
AGENCY APPROVALS	c UL us UL Recognized File No. E70550; 40787; CE	c UL us UL Recognized File No. E70550; 40787; CE	c UL us UL Recognized File No. E70550; 40787; CE
PAGE NUMBER	PAGE 11	PAGE 12	PAGE 13

SCREW TERMINAL "ICE CUBE" SOCKET SELECTION GUIDE

70-782D-1	70-783D-1	70-784D-1
		
		MANUFACTURED UNDER ISO 9001
3.09 x 1.165 x 1.13	3.09 x 1.50 x 1.145	3.14 x 1.96 x 1.16
BLADE STYLE 8 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR 2 WAY CHASSIS MOUNT APPLICATIONS	BLADE STYLE 11 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR 2 WAY CHASSIS MOUNT APPLICATIONS	BLADE STYLE 14 PIN BASE DESIGNED FOR 35 MILLIMETER DIN TRACK OR 2 WAY CHASSIS MOUNT APPLICATIONS
YES	YES	YES
SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES
29.4	38	50
Yes	Yes	Yes
Yes	Yes	Yes
No	No	No
No	No	No
300	300	300
16 / 20	16	16
2000	2000	2000
2000	2000	2000
2000	2000	2000
-40	-40	-40
+80	+80	+80
20	20	20
55	62	77
UL Listed When Used With 782 Relay	UL Listed When Used With 783 Relay	UL Listed When Used With 784 Relay
c UL us UL Recognized File No. E70550 40787 CE	c UL us UL Recognized File No. E70550 40787 CE	c UL us UL Recognized File No. E70550 40787 CE
PAGE 14	PAGE 15	PAGE 16

SCREW TERMINAL OCTAL SOCKET SELECTION GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	70-464-1 & 70-465-1	70-169-1 & 70-170-1	70-750D8-1 & 70-750D11-1
	 MANUFACTURED UNDER ISO 9001	 MANUFACTURED UNDER ISO 9001	
L X W X H (INCHES)	2.02 x 1.28 x .83 / 2.05 x 1.96 x 0.97	2.25 x 2.0 x 0.62 / 2.59 x 2.52 x 0.62	3.04 x 1.42/1.40 x 1.11/1.44
FEATURES	• OCTAL STYLE 8 & 11 PIN BASE • DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	• LOW PROFILE OCTAL STYLE 8 & 11 PIN BASE • DESIGNED FOR CHASSIS MOUNT APPLICATIONS	• OCTAL STYLE 8 & 11 PIN BASE • DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS
FINGER SAFE PER IP 20	NO	NO	YES
WIRING TERMINATIONS	SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES	SCREW TERMINALS WITH CLAMPING PLATES
CONSTRUCTION	**UNITS**			
Width:	mm	32.7 & 50	50.8 & 64.2	36 & 38
Module Compatible:		No	No	Yes
1 Piece Solderless Track And Terminals System:		Yes	Yes	Yes
Options:		No No	No No	Yes Yes
Logic Style: I-O Separation:				
Coil Jumper Buss System Available:				
ELECTRICAL RATING				
Nominal Voltage Rating:	Volts	300 / 600	300	300 / 600
Nominal Current Rating:	Amps	15 / 10.5	15	16 / 5
DIELECTRIC STRENGTH				
Output to Adjacent Terminals:	V rms	2000	2000	2500
Output to Input Terminals:	V rms	2000	2000	2500
Terminals to Rail Chassis	V rms	2000	2000	2500
TEMPERATURE				
Operating, Lower:	°C	-40	-40	-40
Operating, Lower:	°C	+80	+80	+80
MISCELLANEOUS				
Protection Category (finger safe):	IP	N / A	N / A	20
Weight:	grams	40 or 57	40 or 70	60 or 78
UL Listing Available:		UL Listed When Used With 211, 750 Relays		UL Listed When Used With 750 Relay
AGENCY APPROVALS		c UL us UL Recognized File No. E70550 CSA 40787 CE	c UL us UL Recognized File No. E70550 CSA 40787 CE	c UL us UL Recognized File No. E70550 CSA 40787 CE
PAGE NUMBER		PAGE 17, 18	PAGE 19	PAGE 20, 21

SCREW TERMINAL OCTAL SOCKET SELECTION GUIDE

	70-750E8-1 & 70-750E11-1	70-750EL8-1 & 70-750SL8-1	70-750EL11-1 & 70-750SL11-1
			
	MANUFACTURED UNDER ISO 9001	MANUFACTURED UNDER ISO 9001	MANUFACTURED UNDER ISO 9001
	2.95 x 1.49 x 1.03	3.60 x 1.42 x 2.48	3.60 x 1.42 x 2.48
	◆ OCTAL STYLE 8 & 11 PIN BASE ◆ DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	◆ OCTAL STYLE 8 PIN BASE ◆ DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	◆ OCTAL STYLE 11 PIN BASE ◆ DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS
	YES	YES	YES
	RISING ELEVATOR BOX TERMINALS	RISING ELEVATOR BOX TERMINALS (EL), SCREW TERMINALS WITH CLAMPING PLATES (SL)	RISING ELEVATOR BOX TERMINALS (EL), SCREW TERMINALS WITH CLAMPING PLATES (SL)
	38	36	36
	Yes	Yes	Yes
	Yes	Yes	Yes
	Optional Flip Up Plastic ID Tag System	Optional Flip Up Plastic ID Tag System	Optional Flip Up Plastic ID Tag System
	No	Yes	Yes
	No	Yes	Yes
	300	300 / 600	300 /600
	10	16 / 5	16 / 5
	2000	2500	2500
	2000	2500	2500
	2000	2500	2500
	-40	-40	-40
	+80	+80	+80
	20	20	20
	46 or 50	50	90 or 85
	UL Listing Pending	UL Listing Pending	UL Listing Pending
	c UL us Pending, Pending, CE Pending	c UL us Pending, Pending, CE Pending	c UL us Pending, Pending, CE Pending
	PAGE 22, 23	PAGE 24	PAGE 25

SCREW TERMINAL SQUARE BASE SOCKET SELECTION GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	70-463-1	70-788EL11-1 70-788SL11-1	27390D & 33377D
			
		MANUFACTURED UNDER ISO 9001	MANUFACTURED UNDER ISO 9001
L X W X H (INCHES)	3.00 x 1.70 x 1.03	3.60 x 1.42 x 2.48	2.65/3.10 x 2.18 x 0.78
FEATURES	• BLADE STYLE 11 PIN BASE • DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	• BLADE STYLE 11 PIN BASE • DESIGNED FOR 35 MILLIMETER DIN TRACK OR CHASSIS MOUNT APPLICATIONS	• ROUND PIN STYLE 12 & 14 PIN BASE • DESIGNED OR CHASSIS MOUNT APPLICATIONS
FINGER SAFE PER IP 20	NO	YES	YES
WIRING TERMINATIONS	SCREW TERMINALS WITH CLAMPING PLATES	RISING ELEVATOR BOX TERMINALS (EL), SCREW TERMINALS WITH CLAMPING PLATES (SL)	SCREW TERMINALS WITH CLAMPING PLATES
CONSTRUCTION			
Width:	43.1 mm	36	55.3
Module Compatible:	No	Yes	No
1 Piece Solderless Track And Terminals System:	Yes	Yes	Yes
Options:		Optional Flip Up Plastic ID Tag System	
Logic Style: I-O Separation:	No	Yes	No
Coil Jumper Buss System Available:	No	Yes	No
ELECTRICAL RATING			
Nominal Voltage Rating:	300 Volts	300 /600	600
Nominal Current Rating:	15 Amps	25 / 5	10
DIELECTRIC STRENGTH			
Output to Adjacent Terminals:	2000 V rms	2500	2000
Output to Input Terminals:	2000 V rms	2500	2000
Terminals to Rail Chassis	2000 V rms	2500	2000
TEMPERATURE			
Operating, Lower:	-40 °C	-40	-40
Operating, Lower:	+80 °C	+80	+80
MISCELLANEOUS			
Protection Category (finger safe):	N / A IP	20	20
Weight:	51 grams	90 or 85	102 or 129
UL Listing Available:	UL Listed with Relays UL Listed When Used With 788, A283, 388 Relay	UL Listing pending	UL Listed When Used With 219 Relay
AGENCY APPROVALS	c UL us UL Recognized File No. E70550 SA 40787 CE	c UL us Pending SA Pending CE Pending	c UL us UL Recognized File No. E70550 SA 40787 CE
PAGE NUMBER	PAGE 26	PAGE 27	PAGE 28

CHASSIS MOUNT SOCKET SELECTION GUIDE

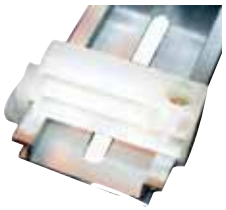
	70-781F-1	70-401-1 & 70-378-1	70-124-1 & 70-124-2	70-303-1 70-305-1 70-307-1 70-309-1	70-TR-6, 8 & 12
					
		MANUFACTURED UNDER ISO 9001	MANUFACTURED UNDER ISO 9001		
	1.22 x 0.709 x 0.750	1.158 x 0.850 x 0.750/0.627	SEE PAGE 31	SEE PAGE 32	SEE PAGE 33
	◆ BLADE STYLE 5 PIN BASE ◆ DESIGNED OR CHASSIS MOUNT APPLICATIONS	◆ BLADE STYLE 8 OR 14 PIN BASE ◆ DESIGNED FOR CHASSIS MOUNT APPLICATIONS	◆ BLADE STYLE 11 PIN BASE ◆ DESIGNED FOR CHASSIS MOUNT APPLICATIONS	◆ BLADE STYLE 8 TO 26 PIN BASE ◆ DESIGNED FOR CHASSIS MOUNT APPLICATIONS	◆ 6, 8 & 12 PIN BASE ◆ DESIGNED FOR CHASSIS MOUNT APPLICATIONS
	-	-	-	-	-
	0.110 & 0.149 SOLDER TERMINALS (EL),	0.187 OR 0.110 QC/SOLDER TERMINALS	0.187 QC/SOLDER TERMINALS	0.110 QC/SOLDER TERMINALS	0.190 SOLDER TERMINALS
	18	21.6	38.1	19.5	27.5
	No	No	No	No	No
	Yes	Yes	Yes	Yes	Yes
	No	No	No	No	No
	No	No	No	No	No
	300	300	300	300	250
	15	10 or 5	15	10 or 5	15
	2500	1500	2500	1500	2500
	2500	1500	2500	1500	2500
		1500	2500	1500	2000
	-40	-40	-40	-40	-40
	+80	+80	+80	+80	+150
	N / A	N / A	N / A	N / A	N / A
	6	6.5	12.1	4.3 to 6.9	35, 45, 50
	c UL us UL Recognized File No. E70550 CSA 40787 CE	c UL us UL Recognized File No. E70550 CSA 40787 CE	c UL us UL Recognized File No. E70550 CSA 40787 CE		c UL us Pending CSA Pending CE Pending
	PAGE 29	PAGE 30	PAGE 31	PAGE 32	PAGE 33

PRINTED CIRCUIT MOUNT SOCKET SELECTION GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

PRODUCT	70-781T-1	70-402-1 & 70-379-1	70-178-1 & 70-178-2	70-304-1 70-306-1 70-308-1 70-310-1
				
		MANUFACTURED UNDER ISO 9001	MANUFACTURED UNDER ISO 9001	
L X W X H (INCHES)	1.22 x 0.709 x 0.739	SEE PAGE 35	SEE PAGE 36	SEE PAGE 37
FEATURES	PC STYLE 5 PIN BASE DESIGNED FOR PC BOARD MOUNT APPLICATIONS	PC STYLE 8 OR 14 PIN BASE DESIGNED FOR PC BOARD MOUNT APPLICATIONS	PC STYLE 11 PIN BASE DESIGNED FOR PC BOARD MOUNT APPLICATIONS	PC STYLE 8 TO 26 PIN BASE DESIGNED FOR PC BOARD MOUNT APPLICATIONS
FINGER SAFE PER IP 20	-	-	-	-
WIRING TERMINATIONS	0.080 x 0.010 PC TERMINALS	0.080 X 0.010 (8 PIN) PC OR 0.060 X 0.010 (14 PIN) PC TERMINALS	0.060 X 0.030 PC TERMINALS	0.070 X 0.030 PC TERMINALS
CONSTRUCTION	**UNITS**			
Width:	mm	18	21.6	38.1	19.5
Module Compatible:		No	No	No	No
1 Piece Solderless Track And Terminals System:		Yes	Yes	Yes	Yes
Logic Style: I-O Separation:		No	No	No	No
Coil Jumper Buss System Available:		No	No	No	No
ELECTRICAL RATING					
Nominal Voltage Rating:	Volts	300	300	300	300
Nominal Current Rating:	Amps	15	10	15	10
DIELECTRIC STRENGTH					
Output to Adjacent Terminals:	V rms		2000	2500	1000
Output to Input Terminals:	V rms	2500	2000	2500	1000
Terminals to Rail Chassis	V rms				
TEMPERATURE					
Operating, Lower:	°C	-40	-40	-40	-40
Operating, Lower:	°C	+80	+80	+80	+80
MISCELLANEOUS					
Protection Category (finger safe):	IP	N / A	N / A	N / A	N / A
Weight:	grams	51	3.1 to 6.2	102 or 129	4.3 to 9.6
AGENCY APPROVALS		c UL us UL Recognized File No. E70550 40787	c UL us UL Recognized File No. E70550 40787	c UL us UL Recognized File No. E70550 40787	
PAGE NUMBER		PAGE 34	PAGE 35	PAGE 36	PAGE 37

ACCESSORIES

PRODUCT	70-SM	16-700DIN	16-DCLIP-1
			
L X W X H (MILLIMETERS)	34.7 or 12.4 WIDE	35 x 1000	9.27 WIDE
FEATURE	• PROTECTION MODULES • PLUG - IN COMPATIBLE WITH SELECTED SOCKETS • MOV MODULES PROTECT BY SHUNTING DAMAGING ELECTRICAL SPIKES AWAY FROM COIL • LED MODULES VERIFY POWER AT THE COIL TERMINALS • DIODE MODULE PROTECT EXTERNAL CIRCUITS FROM INDUCTIVE VOLTAGES • R/C CIRCUIT SNUBS BACK EMF OF RELAY COIL • MODULES FIT WITHIN MAXIMUM WIDTH DIMENSIONS OF THE SOCKET	• DIN RAIL • EXTRUDED ALUMINUM • 0.095 (2.41) X 0.984 (25) SLOTS FOR SCREW MOUNTING	• DIN RAIL END CLIP • PLASTIC • DESIGNED FOR USE WITH ALL 35 MILLIMETER DIN RAIL • DIN RAIL LOCKING SCREW PREVENTS DEVICES FROM MOVING ON DIN RAIL
ELECTRICAL RATING / **UNITS**			
Nominal Voltage Rating: / Volts	24, 120 / 240, 250	N / A	N / A
MATING SOCKETS:	70-750D8-1, 70-750D11-1, 70-750E8-1, 70-750E11-1, 70-750EL8/SL8-1, 70-750EL11/SL11-1, 788EL11/SL11-1, 70-782D-1, 70-783D-1, 70-784D-1,	70-750D8-1, 70-750D11-1, 70-750E8-1, 70-750E11-1, 70-750EL8/SL8-1, 70-750EL11/SL11-1, 788EL11/SL11-1, 70-782D-1, 70-783D-1, 70-784D-1, 70-781D-1,70-464-1, 70-465-1, 70-463-1, 27390D, 33377D	
AGENCY APPROVALS	CSA 168986 · UL LISTED E234203		
PAGE NUMBER	PAGE 38	PAGE 39	PAGE 39

WIRE MANAGEMENT BREAK-THROUGH

HOW TO USE THE COIL BUSS JUMPER SYSTEM

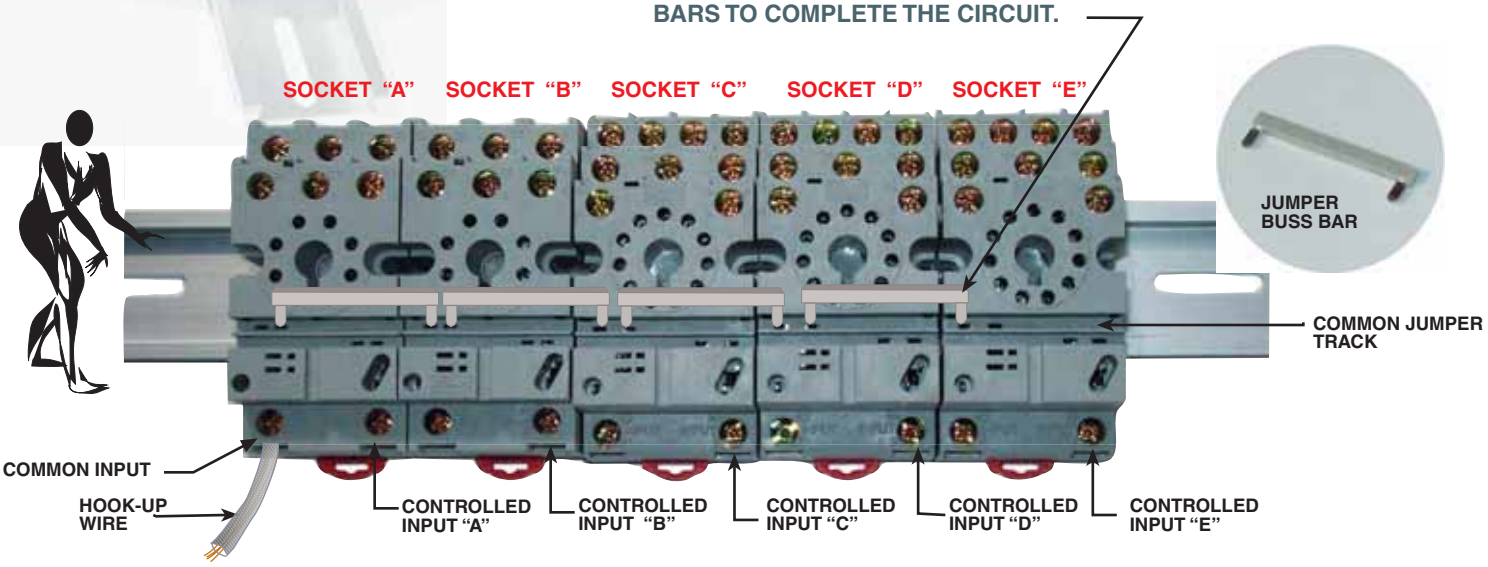
Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

TOP PLUG-IN STYLE JUMPER BUSS SOCKET TO SOCKET CONNECTION EXAMPLE

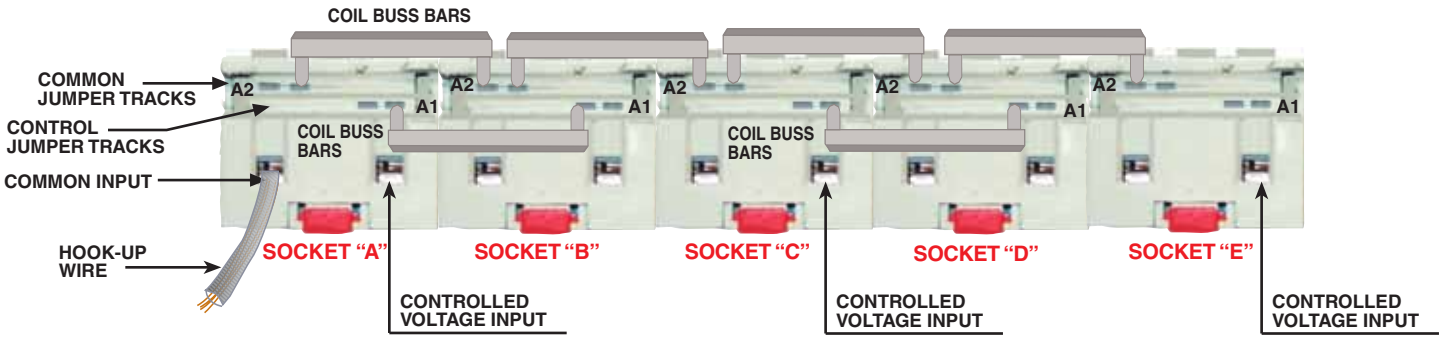
JUMPER BUSS BAR

THE OPTIONAL JUMPER BUSS BARS MAY BE CONFIGURED IN AN INFINITE NUMBER OF COMBINATIONS TO CONTROL MULTIPLE RELAY COILS AND VOLTAGE COMBINATIONS. JUMPERS ELIMINATE THE NEED TO INSERT STRIPPED JUMPER WIRES INTO THE INPUT TERMINALS. JUMPER BUSS BARS INSTALL QUICKLY AND REQUIRE NO TOOLS.

IN THE EXAMPLE BELOW, THE COMMON JUMPER BUSS BARS ALLOW ALL SOCKETS TO BE JUMPERED TO THE ADJACENT SOCKETS USING ONLY ONE HOOK UP WIRE AND FOUR (4) JUMPER BUSS BARS TO COMPLETE THE CIRCUIT.



END PLUG-IN STYLE JUMPER BUSS SOCKET TO SOCKET CONNECTION EXAMPLE



THE EXAMPLE ABOVE SHOWS SOCKETS "A" AND "B" OPERATING 2 COILS FROM ONE CONTROLLED VOLTAGE SOURCE. SOCKETS "C" AND "D" ARE OPERATING 2 RELAYS FROM ANOTHER CONTROLLED VOLTAGE SOURCE, AND SOCKET "E" IS OPERATING A SINGLE RELAY CONTROLLED FROM ONE CONTROLLED VOLTAGE SOURCE... WITH THE COMMON COIL BUSS BARS CONNECTING ALL SOCKETS.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-781D-1 5 PIN FINGER SAFE SOCKET

15 AMPS, 300 VOLTS

UL Recognized
File No. E70550

40787

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
PLASTIC HOLD DOWN CLIP AND I.D TAG SYSTEM:	ALLOWS FOR QUICK LOCKING OF RELAY IN TO SOCKETS AND REMAINS WITH SOCKET IF RELAY IS REMOVED. I.D. TAG IS IDEAL FOR CIRCUIT OR RELAY IDENTIFICATION.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.

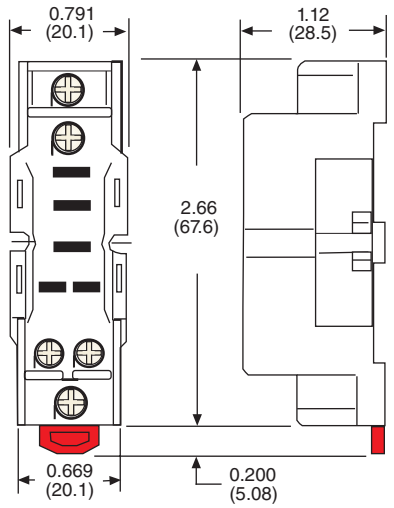
DESIGNED FOR PANEL OR DIN MOUNT.

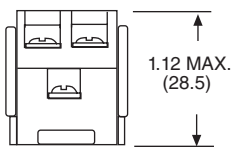
GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		5
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	32

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

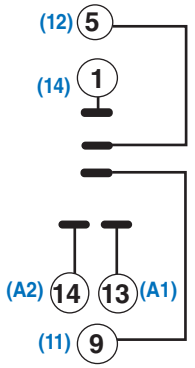




HOLD DOWN CLIP INCLUDED

WIRING DIAGRAM

(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relay
781
See section 1
Mating Hold Down Clip
16-1327

STANDARD PART NUMBER	DESCRIPTION
70 - 781D -1	5 PIN SOCKET, FINGER SAFE, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-461-1 14 PIN MINIATURE DIN/PANL MOUNT SOCKET

10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

40787

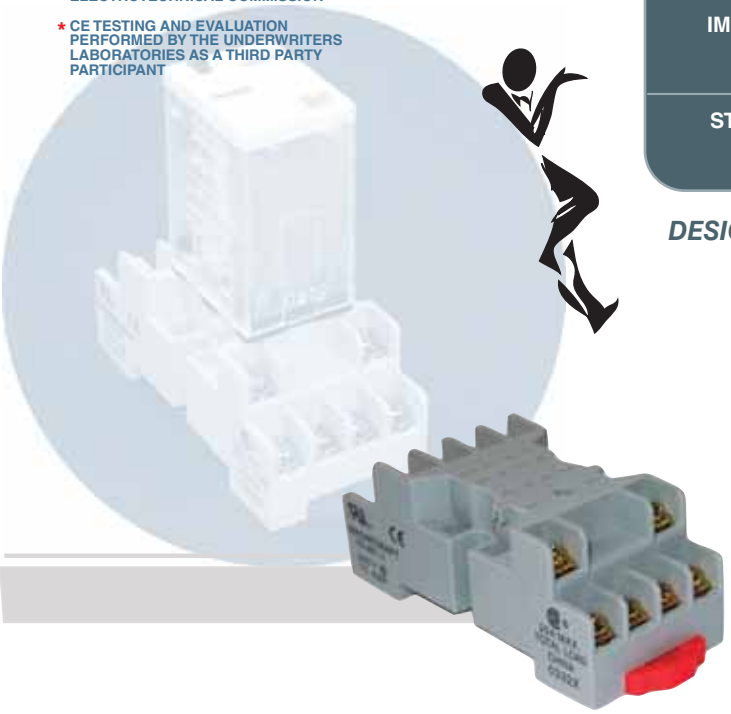
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.

DESIGNED FOR PANEL OR DIN MOUNT.

MANUFACTURED UNDER ISO 9001

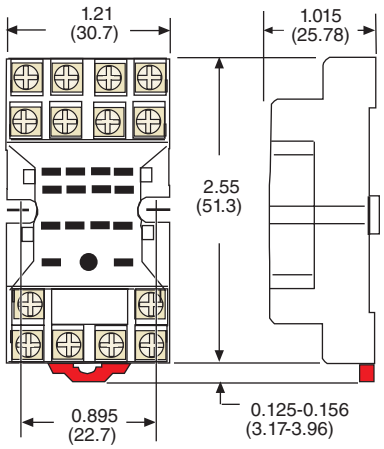


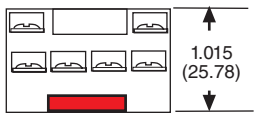
GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		14
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	1600
Output to Input Terminals:	V rms	1600
Terminals to Rail Chassis:	V rms	1600
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M2.5 x 0.45 x 5.08
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20-14 / 0.5 - 2.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	42

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



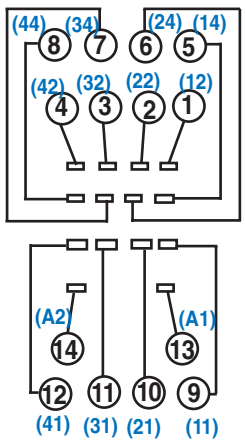


16-1342 UNIVERSAL HOLD DOWN CLIP FITS RELAY HEIGHTS FROM 1.27" TO 1.53"

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM

(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
782, 782H
See section 1
Mating Hold Down Clip
16-1342

STANDARD PART NUMBER	DESCRIPTION
70 - 461 -1	14 PIN SOCKET DIN / PANEL MOUNT SOCKET WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-459-1 8 PIN MINIATURE DIN/PANL MOUNT SOCKET

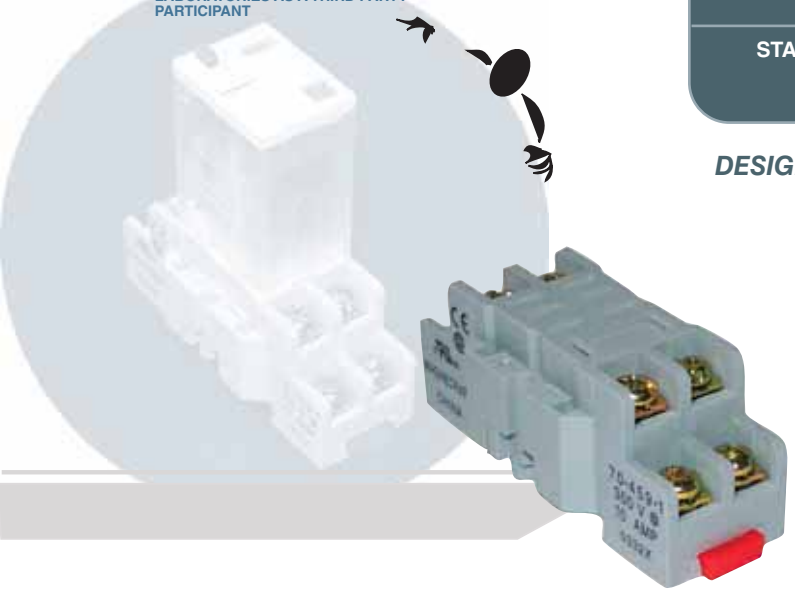
10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

CSA
40787

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.

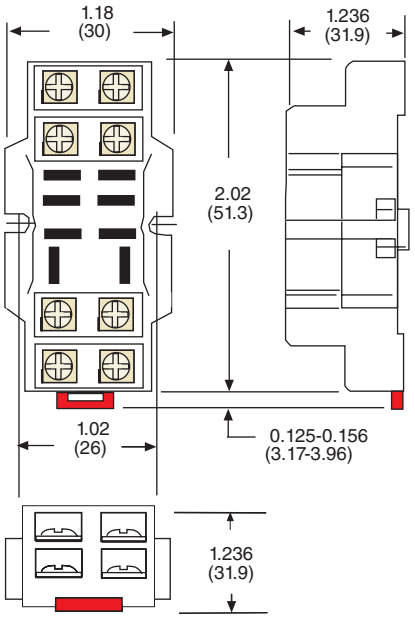
DESIGNED FOR PANEL OR DIN MOUNT.

MANUFACTURED UNDER ISO 9001

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 5.08
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20-12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	50

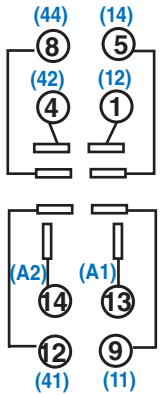
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



16-1342 UNIVERSAL HOLD DOWN CLIP FITS RELAY HEIGHTS FROM 1.27" TO 1.53"

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
782
See section 1
70S2
See section 2
Mating Hold Down Clip(782)
16-1342

STANDARD PART NUMBER	DESCRIPTION
70 - 459 -1	8 PIN SOCKET DIN / PANEL MOUNT, WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-782D-1 8 PIN FINGER SAFE SOCKET

16 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

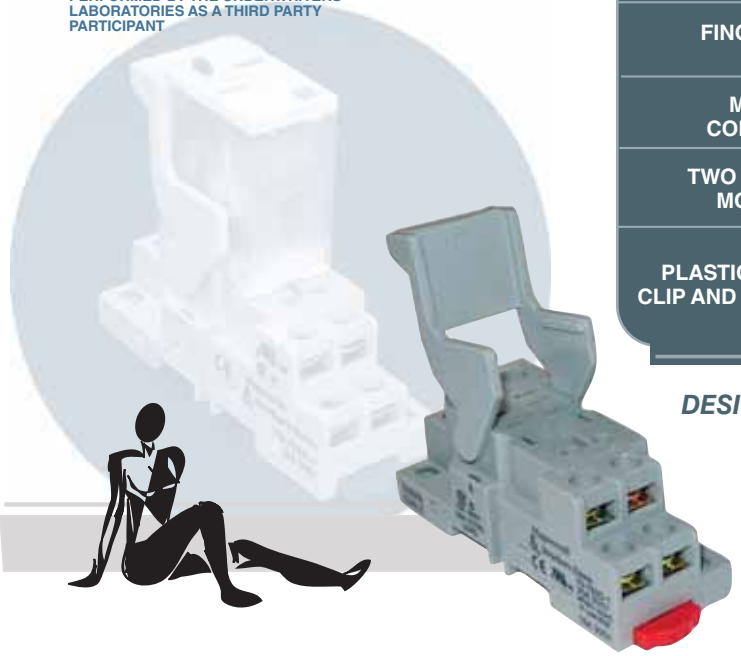
40787

20 AMPS WHEN OUTPUT TERMINALS ARE USED IN PARALLEL

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
MODULE COMPATIBLE	ALLOWS FOR OPTIONAL PROTECTION OR LED MODULES TO BE USED WITH SOCKET
TWO WAY PANEL MOUNTING:	RETROFITS BOTH IDEC AND OMRON MOUNTING, IDEAL REPLACEMENT FOR EXISTING SOCKET
PLASTIC HOLD DOWN CLIP AND I.D TAG SYSTEM:	ALLOWS FOR QUICK LOCKING OF RELAY IN TO SOCKETS AND REMAINS WITH SOCKET IF RELAY IS REMOVED. I.D. TAG IS IDEAL FOR CIRCUIT OR RELAY IDENTIFICATION.

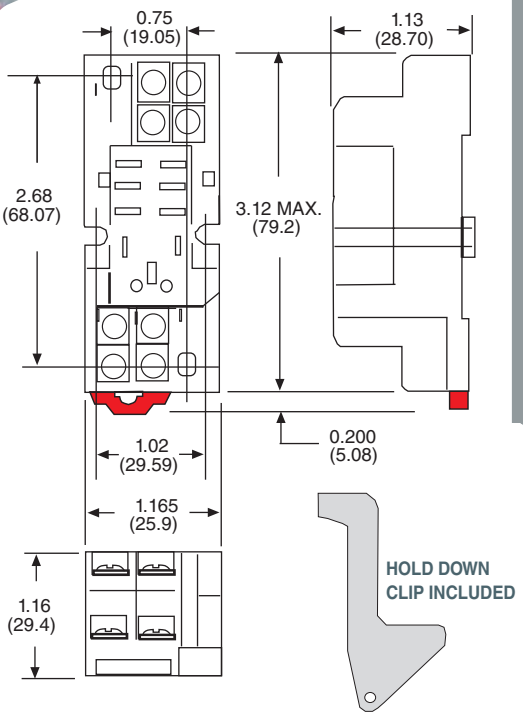
DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25°C)

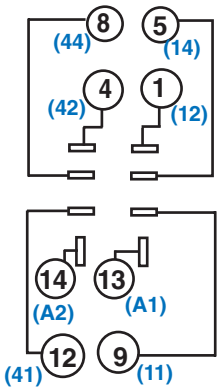
	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	16 / 20
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	55

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relay
782
See section 1
Mating Hold Down Clip
16-1349

STANDARD PART NUMBER	DESCRIPTION
70 - 782D -1	8 PIN FINGER SAFE SOCKET, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-783D-1 11 PIN FINGER SAFE SOCKET

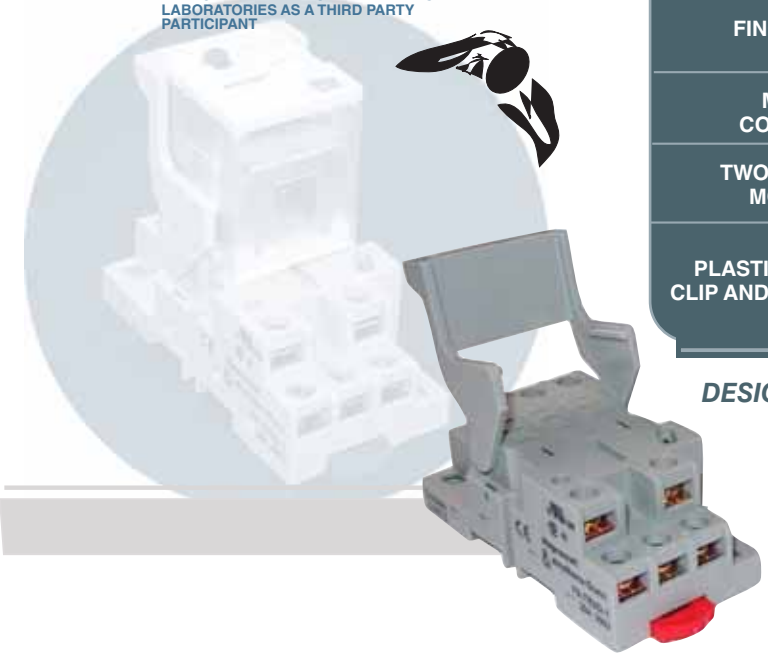
16 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

40787

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
MODULE COMPATIBLE	ALLOWS FOR OPTIONAL PROTECTION OR LED MODULES TO BE USED WITH SOCKET
TWO WAY PANEL MOUNTING:	RETROFITS BOTH IDEC AND OMRON MOUNTING, IDEAL REPLACEMENT FOR EXISTING SOCKETS
PLASTIC HOLD DOWN CLIP AND I.D TAG SYSTEM:	ALLOWS FOR QUICK LOCKING OF RELAY IN TO SOCKETS AND REMAINS WITH SOCKET IF RELAY IS REMOVED. I.D. TAG IS IDEAL FOR CIRCUIT OR RELAY IDENTIFICATION.

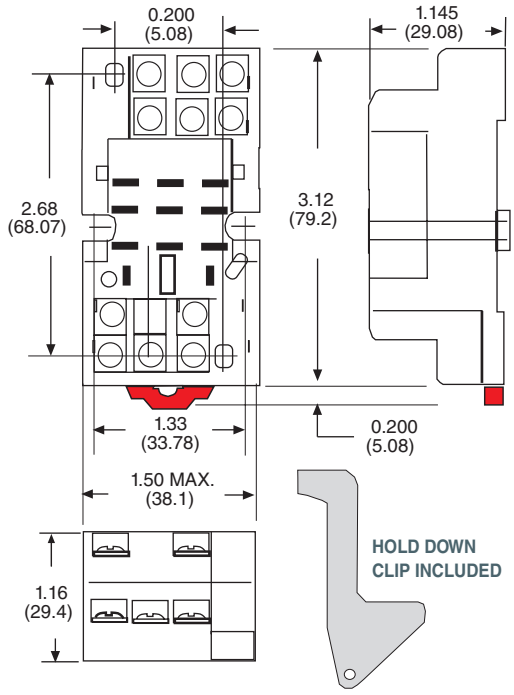
DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25°C)

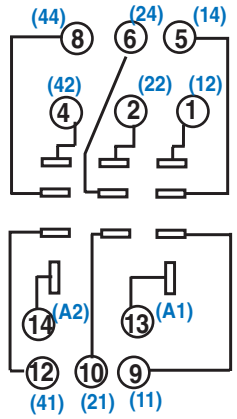
	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	16
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	62

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relay
783
See section 1
Mating Hold Down Clip
16-1350

STANDARD PART NUMBER	DESCRIPTION
70 - 783D -1	11 PIN SOCKET, FINGER SAFE, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-784D-1 14 PIN FINGER SAFE SOCKET

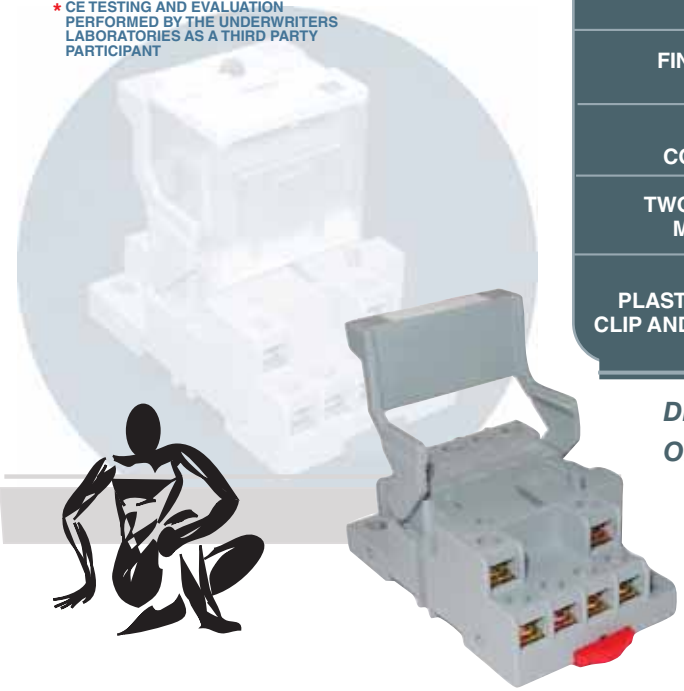
16 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

40787

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
MODULE COMPATIBLE	ALLOWS FOR OPTIONAL PROTECTION OR LED MODULES TO BE USED WITH SOCKET
TWO WAY PANEL MOUNTING:	RETROFITS BOTH IDEC AND OMRON MOUNTING, IDEAL REPLACEMENT FOR EXISTING SOCKETS
PLASTIC HOLD DOWN CLIP AND I.D TAG SYSTEM:	ALLOWS FOR QUICK LOCKING OF RELAY IN TO SOCKETS AND REMAINS WITH SOCKET IF RELAY IS REMOVED. I.D. TAG IS IDEAL FOR CIRCUIT OR RELAY IDENTIFICATION.

DESIGNED FOR PANEL OR DIN MOUNT.

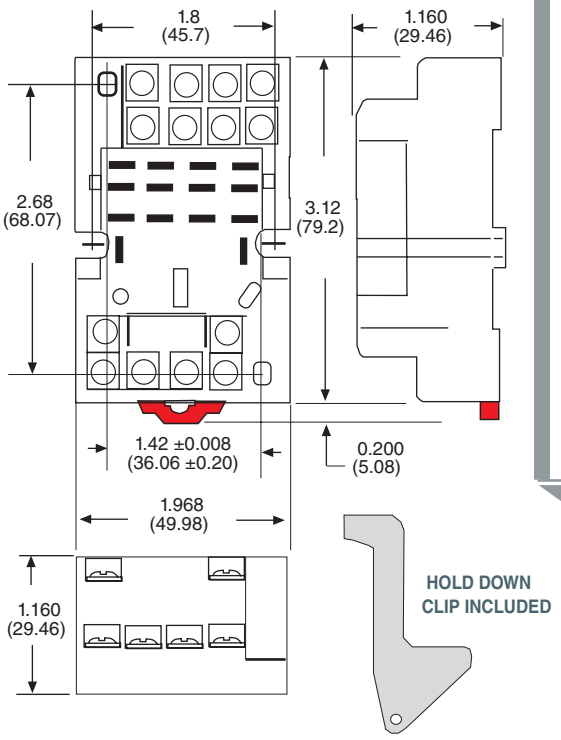
MANUFACTURED UNDER ISO 9001

GENERAL SPECIFICATIONS (@ 25°C)

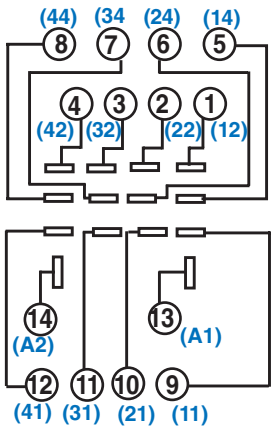
	UNITS	
NUMBER OF TERMINALS		14
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	16
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	77

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relay
784
See section 1
Mating Hold Down Clip
16-1351

STANDARD PART NUMBER	DESCRIPTION
70 - 784D -1	14 PIN SOCKET, FINGER SAFE, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-464-1 8 PIN OCTAL DIN/PANEL MOUNT SOCKET

15 AMPS, 300 VOLTS
10 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. E70550

40787

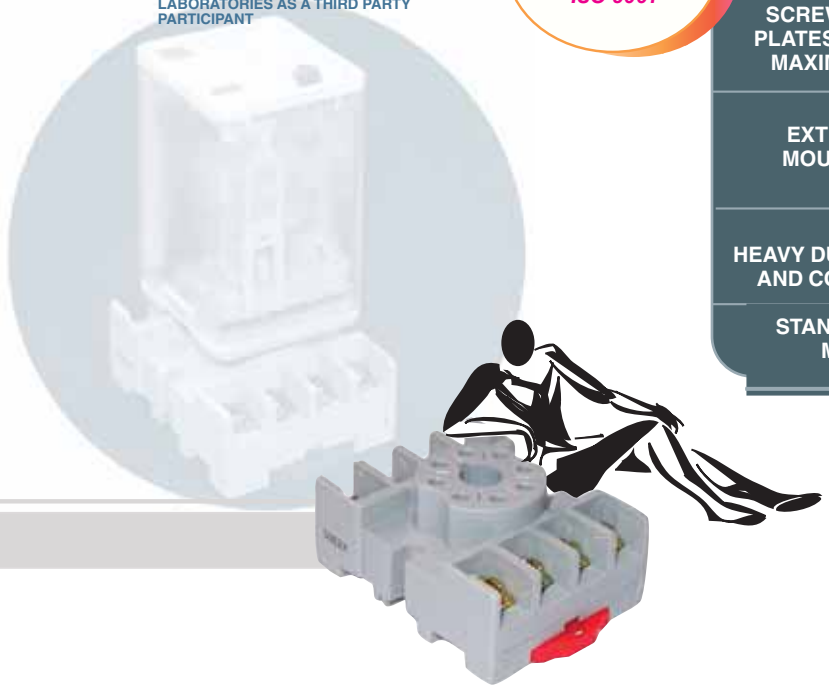
CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

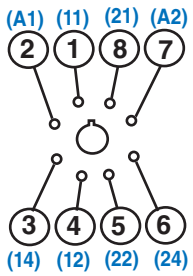
MANUFACTURED UNDER ISO 9001

FEATURES	BENEFITS
COMPLETE ISOLATION OF ALL INTERNAL METAL TRACKS AND CONTACTS:	IDEAL FOR APPLICATIONS THAT REQUIRE UP TO 600 VOLTS.
SCREWS & CLAMPING PLATES DESIGNED WITH MAXIMUM SET BACK:	ELIMINATES ARCING BETWEEN TERMINALS AND THE NEED FOR WIRE TERMINALS.
EXTENDED PANEL MOUNTING SCREW SLOTS:	ALLOWS FOR HOLE CENTERS FROM 1.29" UP 1.4". IDEAL REPLACEMENT IN MANY EXISTING SOCKET MOUNTING APPLICATIONS.
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.



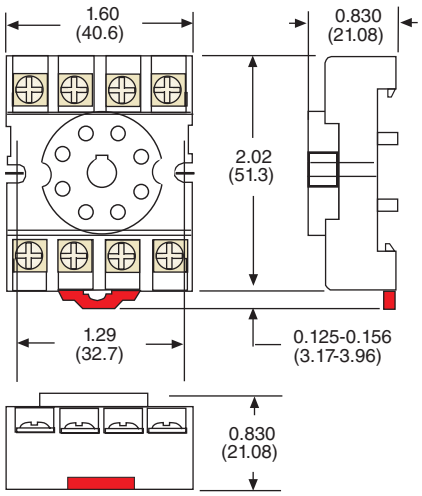
DESIGNED FOR PANEL OR DIN MOUNT.

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

Mating Relays
750XBX, 750XBXH
See section 1
211, 222, 236, TDRPRO, TDRSOXP
See section 4
Mating Hold Down Clips (750XBX, 750XBXH)
16-1344

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300 / 600
Nominal Current Rating:	Amps	15 / 10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	9 / 1.01
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	40

STANDARD PART NUMBER	DESCRIPTION
70 - 464 -1	8 PIN OCTAL SOCKET, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-465-1 11 PIN OCTAL DIN/PANEL MOUNT SOCKET

15 AMPS, 300 VOLTS
5 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. E70550

40787

CE

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

MANUFACTURED UNDER ISO 9001

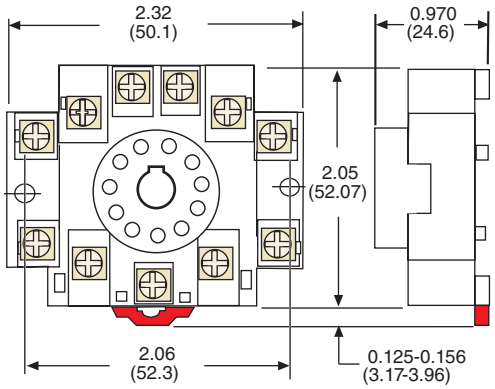
FEATURES	BENEFITS
COMPLETE ISOLATION OF ALL INTERNAL METAL TRACKS AND CONTACTS:	IDEAL FOR APPLICATIONS THAT REQUIRE UP TO 600 VOLTS.
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.

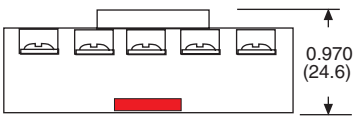
DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300 / 600
Nominal Current Rating:	Amps	15 / 5
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	-
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	9 / 1.01
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	57

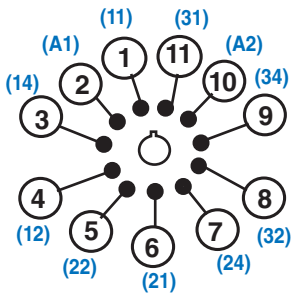
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN





HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XCX, 750XCXH
See section 1
211, TDRPRO, TDRSRXP
See section 4
755/250ML
See section 5
Mating Hold Down Clips
(750XCX, 750XCXH, 755/250ML)
16-1352
(TDRSRXP)
16-1344

STANDARD PART NUMBER	DESCRIPTION
70 - 465 -1	11 PIN OCTAL SOCKET, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-169-1 & 70-170-1 8 OR 11PIN LOW PROFILE OCTAL SCREW TERMINAL SOCKETS

15 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

40787

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

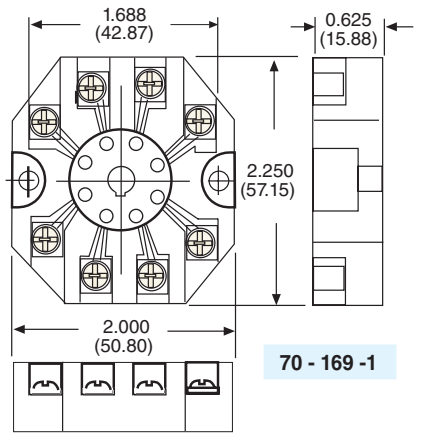
MANUFACTURED UNDER ISO 9001

FEATURES	BENEFITS
LOW PROFILE:	IDEAL IN PANEL MOUNTING APPLICATION WHERE HEIGHT IS AT A PREMIUM.
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAY TERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.

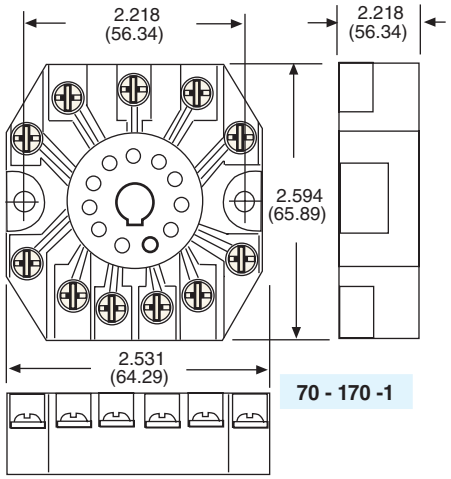
DESIGNED FOR PANEL MOUNT.

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



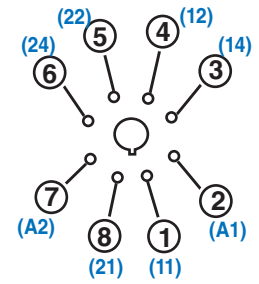
70 - 169 -1



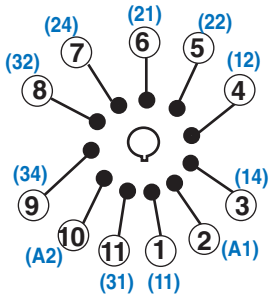
70 - 170 -1

SPRING CLIP NOT AVAILABLE

WIRING DIAGRAM
(TOP VIEW)



70 - 169 -1



70 - 170 -1

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XBX, 750XCX, 750XCXH
See section 1
211, 222, TDRPRO, TDRSRXP, TDRSOXP, 236
See section 4
755/250ML
See section 5

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		8 or 11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	9 / 1.01
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
Weight:	grams	40 or 60

STANDARD PART NUMBER	DESCRIPTION
70 - 169 -1	8 PIN OCTAL SOCKET, PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.
70 - 170 -1	11 PIN OCTAL SOCKET, PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750D8-1 LOGIC STYLE 8 PIN OCTAL SOCKET

16 AMPS, 300 VOLTS
5 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. E70550

40787

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

FEATURES	BENEFITS
ISOLATED INPUTS AND OUTPUT TERMINALS:	SEPARATES CONTROL CIRCUITS FROM LOAD CIRCUITS, PREVENTS MIS -WIRING AND POTENTIAL SHORTING BETWEEN CIRCUITS.
INTERNAL COIL BUSS JUMPER SYSTEM:	ALLOWS INPUTS TO COIL TO BE INTERNALLY CONNECTED TO ADJACENT SOCKETS OF THE SAME STYLE WITHOUT THE NEED FOR EXTERNAL WIRING BETWEEN SOCKETS.
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
36 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.

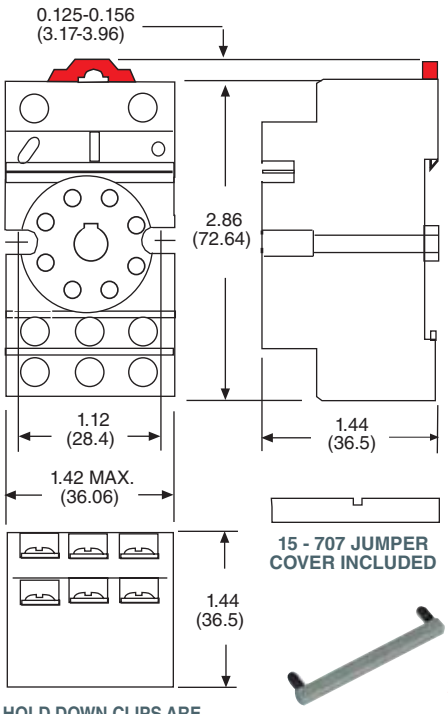
DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300 / 600
Nominal Current Rating:	Amps	16 / 5
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	2500
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	60

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

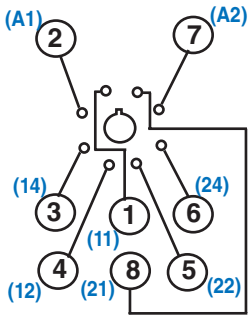


15 - 707 JUMPER COVER INCLUDED

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

COIL BUSS JUMPERS 33 - 796 ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XBX
See section 1
211, 222, 236, TDRPRO, TDRSOXP
See section 4
Mating Hold Down Clip
(750XBX) 16-1332

STANDARD PART NUMBER	DESCRIPTION
70 - 750D8 - 1	8 PIN OCTAL FINGER SAFE SOCKET, DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750D11-1 LOGIC STYLE 11 PIN OCTAL SOCKET

16 AMPS, 300 VOLTS
5 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. E70550

40787

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

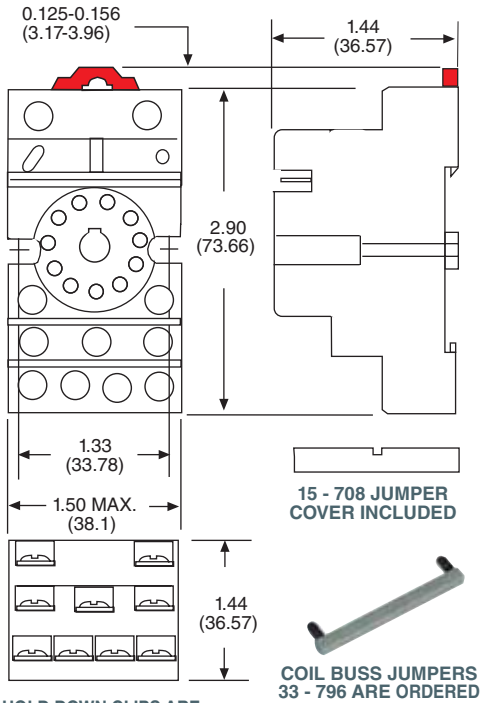
FEATURES	BENEFITS
ISOLATED INPUTS AND OUTPUT TERMINALS:	SEPARATES CONTROL CIRCUITS FROM LOAD CIRCUITS, PREVENTS MIS -WIRING AND POTENTIAL SHORTING BETWEEN CIRCUITS.
INTERNAL COIL BUSS JUMPER SYSTEM:	ALLOWS INPUTS TO COIL TO BE INTERNALLY CONNECTED TO ADJACENT SOCKETS OF THE SAME STYLE WITHOUT THE NEED FOR EXTERNAL WIRING BETWEEN SOCKETS.
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
38 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.

DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300 / 600
Nominal Current Rating:	Amps	16 / 5
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	2500
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	8 / 0.90
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	78

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

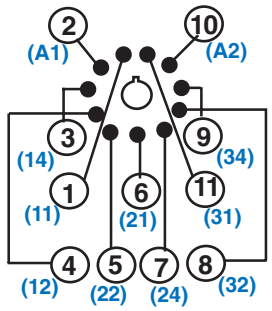


15 - 708 JUMPER COVER INCLUDED

COIL BUSS JUMPERS 33 - 796 ARE ORDERED SEPARATELY

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XCX, 750XCXH
See section 1
211, TDRPRO, TDRSRXP
See section 4
755/250ML
See section 5
Mating Hold Down Clip
(750XCX, 750XCXH, 755/250ML)
16-1332

STANDARD PART NUMBER	DESCRIPTION
70 - 750D11 - 1	11 PIN OCTAL SOCKET, FINGER SAFE DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750E8- ECONOMICAL 8 PIN OCTAL WITH RISING ELEVATOR BOX TERMINALS

10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. PENDING

PENDING

CE
PENDING

NEW

FEATURES — BENEFITS

FEATURES	BENEFITS
TWO COMMON COIL TERMINALS	SIMPLIFIES JUMPER WIRING TO ADJACENT SOCKETS
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
38 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.
OPTIONAL FLIP- UP I.D. TAGS	ALLOWS FOR ALL TERMINALS TO BE CUSTOM MARKED & IDENTIFIED
TERMINALS	RISING ELEVATOR BOX TERMINALS

MANUFACTURED UNDER ISO 9001

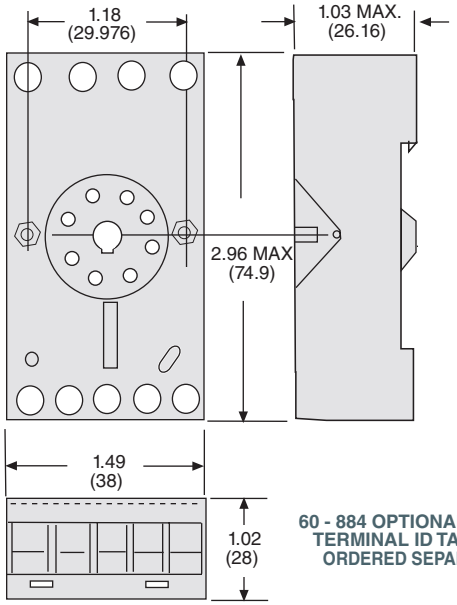
DESIGNED FOR PANEL OR DIN MOUNT.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3 x 0.05 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 14 / 0.5 - 2.0
Body Color:		Black
DIN Locking Clip Color:		N / A
Weight:	grams	50

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

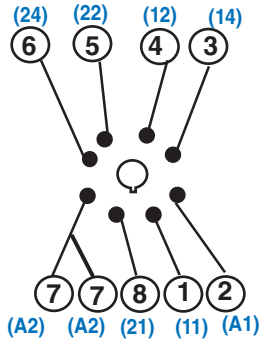


HOLD DOWN CLIPS ARE ORDERED SEPARATELY

60 - 884 OPTIONAL FLIP UP TERMINAL ID TAGS ARE ORDERED SEPARATELY

WIRING DIAGRAM

(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XBX, 750XBXH
See section 1
211, 222, 236, TDRPRO, TDRSOXP
See section 4
Mating Hold Down Clip (750XBX, 750XBXH)
16-1352

STANDARD PART NUMBER	DESCRIPTION
70 - 750E8 - 1	8 PIN OCTAL, DIN / PANEL MOUNT WITH RISING ELEVATOR BOX TERMINALS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750E11- ECONOMICAL 11 PIN OCTAL WITH RISING ELEVATOR BOX TERMINALS

10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. PENDING

CSA PENDING

CE PENDING

NEW

FEATURES	BENEFITS
TWO COMMON COIL TERMINALS	SIMPLIFIES JUMPER WIRING TO ADJACENT SOCKETS
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
38 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.
OPTIONAL FLIP- UP I.D. TAGS	ALLOWS FOR ALL TERMINALS TO BE CUSTOM MARKED & IDENTIFIED
TERMINALS	RISING ELEVATOR BOX TERMINALS

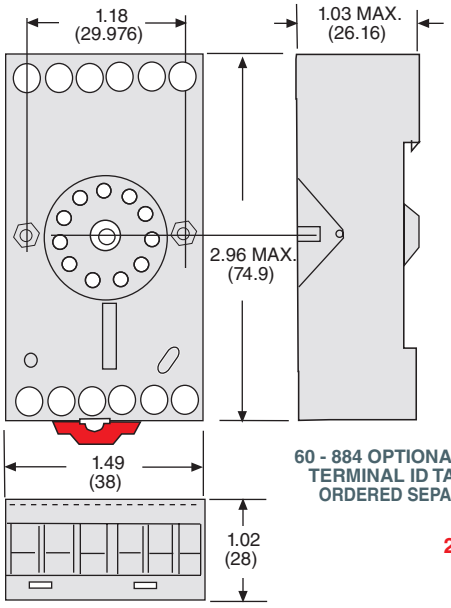
DESIGNED FOR PANEL OR DIN MOUNT.

MANUFACTURED UNDER ISO 9001

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3 x 0.05 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 14 / 0.5 - 2.0
Body Color:		Black
DIN Locking Clip Color:		N / A
Weight:	grams	50

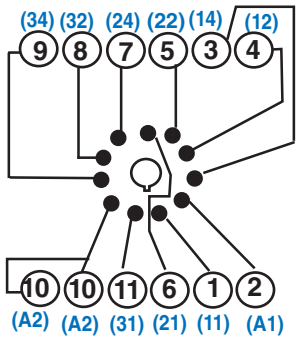
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

60 - 884 OPTIONAL FLIP UP TERMINAL ID TAGS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XCX, 750XCXH
See section 1
211, 222, 236, TDRPRO, TDRSRXP
See section 4
755/250ML
See section 5
Mating Hold Down Clips
(750XCX, 750XCXH, 755/250ML)
16-1352

STANDARD PART NUMBER	DESCRIPTION
70 - 750E11 - 1	11 PIN OCTAL, DIN / PANEL MOUNT WITH RISING ELEVATOR BOX TERMINALS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750EL8/SL8- LOGIC STYLE 8 PIN OCTAL FINGER SAFE SOCKET

16 AMPS, 300 VOLTS, 5 AMPS, 600 VOLTS

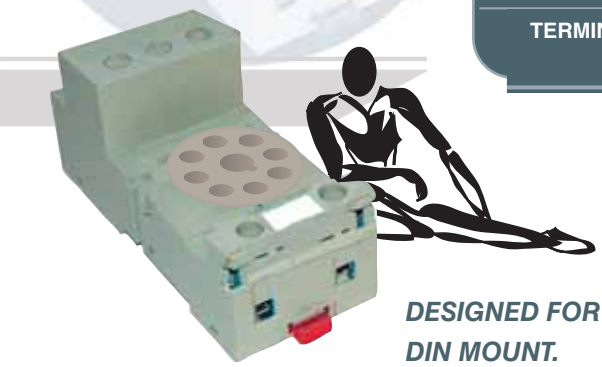
c UL us
UL Recognized
File No. PENDING

PENDING

PENDING

NEW

FEATURES	BENEFITS
ISOLATED INPUTS AND OUTPUT TERMINALS:	SEPARATES CONTROL CIRCUITS FROM LOAD CIRCUITS, PREVENTS MIS -WIRING AND POTENTIAL SHORTING BETWEEN CIRCUITS.
INTERNAL COIL BUSS JUMPER SYSTEM:	ALLOWS INPUTS TO COIL TO BE INTERNALLY CONNECTED TO ADJACENT SOCKETS OF THE SAME STYLE WITHOUT THE NEED FOR EXTERNAL WIRING BETWEEN SOCKETS.
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
36 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.
OPTIONAL FLIP- UP I.D. TAGS	ALLOWS FOR ALL TERMINALS TO BE CUSTOM MARKED & IDENTIFIED
TERMINAL CHOICE	RISING ELEVATOR BOX TERMINALS OR SCREW TERMINALS WITH CLAMPING PLATES

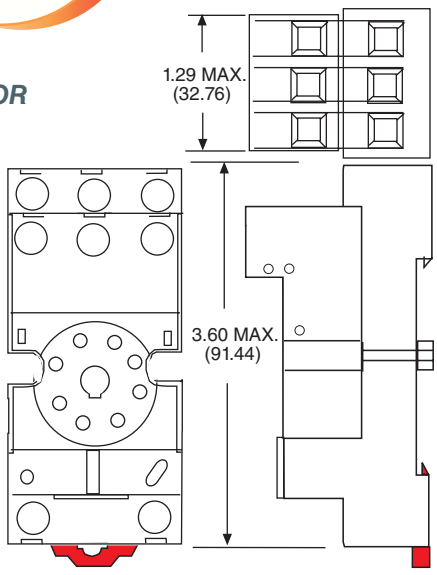


DESIGNED FOR PANEL OR DIN MOUNT.

MANUFACTURED UNDER ISO 9001

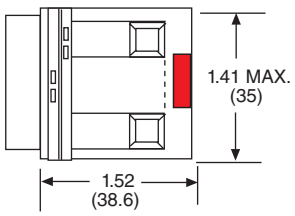
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

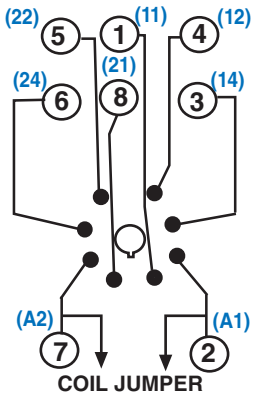
COIL BUSS JUMPERS 33 - 797 ARE ORDERED SEPARATELY



60 - 884 OPTIONAL FLIP UP TERMINAL ID TAGS ARE ORDERED SEPARATELY

WIRING DIAGRAM

(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XBX, 750XBXH
See section 1
Mating Hold Down Clips
(750XBX) 16-1343
(750XBXH) 16-1352

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	16
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	2500
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3 x 0.05 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light Gray
DIN Locking Clip Color:		Red
Weight:	grams	Pending

STANDARD PART NUMBER	DESCRIPTION
70 - 750EL8 - 1	DIN / PANEL MOUNT WITH ELEVATOR BOX TERMINALS
70 - 750SL8 - 1	DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-750EL/SL11- LOGIC STYLE 11 PIN OCTAL FINGER SAFE SOCKET

16 AMPS, 300 VOLTS, 5 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. PENDING

PENDING

PENDING

NEW

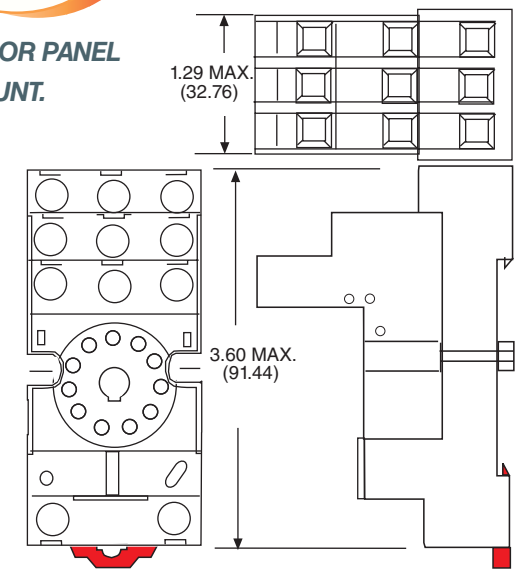
FEATURES	BENEFITS
ISOLATED INPUTS AND OUTPUT TERMINALS:	SEPARATES CONTROL CIRCUITS FROM LOAD CIRCUITS, PREVENTS MIS -WIRING AND POTENTIAL SHORTING BETWEEN CIRCUITS.
INTERNAL COIL BUSS JUMPER SYSTEM:	ALLOWS INPUTS TO COIL TO BE CONNECTED TO ADJACENT SOCKETS OF THE SAME STYLE WITHOUT THE NEED FOR EXTERNAL WIRING BETWEEN SOCKETS.
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS.
36 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.
OPTIONAL FLIP- UP I.D. TAGS	ALLOWS FOR ALL TERMINALS TO BE CUSTOM MARKED & IDENTIFIED
TERMINAL CHOICE	RISING ELEVATOR BOX TERMINALS OR SCREW TERMINALS WITH CLAMPING PLATES

MANUFACTURED UNDER ISO 9001

DESIGNED FOR PANEL OR DIN MOUNT.

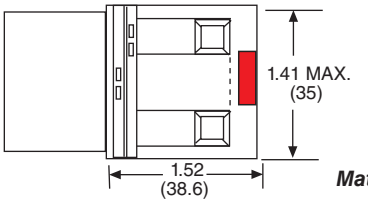
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

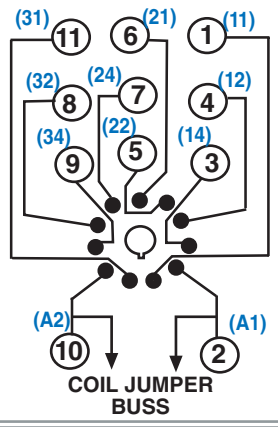
COIL BUSS JUMPERS 33 - 797 ARE ORDERED SEPARATELY



60 - 884 OPTIONAL FLIP UP TERMINAL ID TAGS ARE ORDERED SEPARATELY

WIRING DIAGRAM

(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
750XCX, 750XCXH
See section 1
TDRSRXP
See section 4
755/250ML
See section 5
Mating Hold Down Clips
(750XCX) 16-1343
(750XCXH, 755/250ML) 16-1352
(TDRSRXP) 16-1344

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	16
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	2500
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3 x 0.05 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.05 - 3.0
Body Color:		Light Gray
DIN Locking Clip Color:		Red
Weight:	grams	Pending

STANDARD PART NUMBER	DESCRIPTION
70 - 750EL11 - 1	DIN / PANEL MOUNT WITH ELEVATOR BOX TERMINALS
70 - 750SL11 - 1	DIN / PANEL MOUNT WITH SCREW TERMINALS & CLAMPING PLATES.

70-463-1 11 PIN SCREW TERMINAL SOCKET

15 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

97899

CE
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

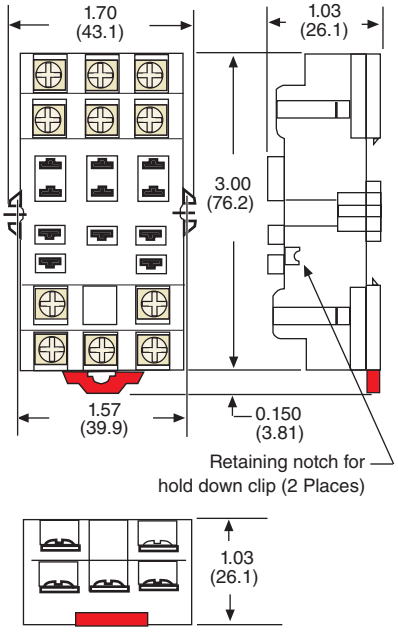
FEATURES	BENEFITS
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	ALLOWS FOR GREATER HEAT DISSIPATION AND LOWER CONTACT RESISTANCE AT THE RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.

DESIGNED FOR PANEL OR DIN MOUNT.

MANUFACTURED UNDER ISO 9001

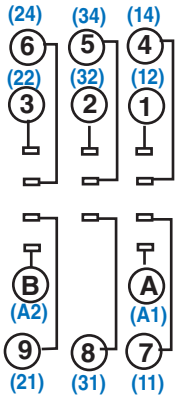
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 5.08
Screw Terminal Torque Maximum:	Lb-in / Nm	9 / 1.01
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20-12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	51

Mating Relays
788, A283
See section 1
388TDR, TDRSOXB
See section 4
Mating Hold Down Clips
(788) 16-1352
(A283) 16-1340
(388TDR) 16-1239 Long Body
(TDRSOXB) 16-1239

STANDARD PART NUMBER	DESCRIPTION
70 - 463 - 1	11 PIN SOCKET, DIN/PANEL MOUNT, WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-788EL/SL11- LOGIC STYLE 11 PIN FINGER SAFE SOCKET

Magnecraft — Struthers-Dunn — Your Contact for Industrial Relays

c UL us
UL Recognized
File No. PENDING

PENDING

PENDING

30 AMPS WHEN OUTPUT TERMINALS ARE USED IN PARALLEL

25 AMPS, 300 VOLTS

NEW

FEATURES	BENEFITS
ISOLATED INPUTS AND OUTPUT TERMINALS:	SEPARATES CONTROL CIRCUITS FROM LOAD CIRCUITS, PREVENTS MIS -WIRING AND POTENTIAL SHORTING BETWEEN CIRCUITS.
INTERNAL COIL BUSS JUMPER SYSTEM:	ALLOWS INPUTS TO COIL TO BE CONNECTED TO ADJACENT SOCKETS OF THE SAME STYLE WITHOUT THE NEED FOR EXTERNAL WIRING BETWEEN SOCKETS.
MODULE COMPATIBLE:	ALLOWS FOR OPTIONAL PROTECTION OR L.E.D. MODULES TO BE USED WITH SOCKETS .
36 MILLIMETERS WIDE:	IDEAL FOR SPACE SAVING, ALLOWS MORE SOCKETS TO BE INSTALLED ON DIN RAIL OR PANEL THAN OTHER CONVENTIONAL SOCKETS.
OPTIONAL FLIP- UP I.D. TAGS	ALLOWS FOR ALL TERMINALS TO BE CUSTOM MARKED & IDENTIFIED
TERMINAL CHOICE	RISING ELEVATOR BOX TERMINALS OR SCREW TERMINALS WITH CLAMPING PLATES
OPTIONAL PANEL MOUNT ADAPTER	ALLOWS PANEL MOUNTING TO NEW OR EXISTING APPLICATIONS
MULTI - USE PLUG - IN TERMINALS	ACCEPT 0.187 OR 0.250 PLUG - IN TERMINALS

MANUFACTURED UNDER ISO 9001

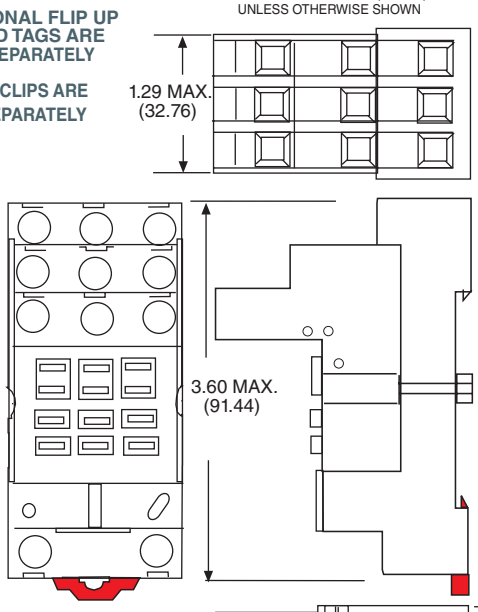
DESIGNED FOR PANEL OR DIN MOUNT

60 - 884 OPTIONAL FLIP UP TERMINAL ID TAGS ARE ORDERED SEPARATELY

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

OUTLINE DIMENSIONS

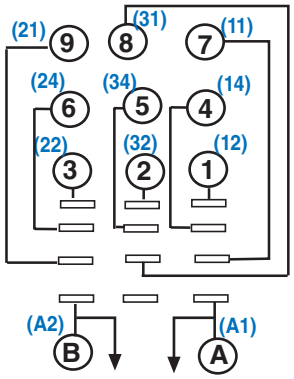
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



PANEL MOUNT ADAPTER IS ORDERED SEPARATELY

COIL BUSS JUMPERS 33 - 797 ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

Mating Relays
788, A283,388, 389
See section 1
388TDR
See section 4
Mating Hold Down Clip
*(788, A283)*16-1343

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	25 / 30
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.05 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	7 / 0.79
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	7 - 8 / 0.79 - 0.90
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 10 / 0.5 - 5.0
Body Color:		Light Gray
DIN Locking Clip Color:		Red
Weight:	grams	Pending

STANDARD PART NUMBER	DESCRIPTION
70 - 788EL11 -1	11 PIN LOGIC SOCKET, FINGER SAFE, WITH RISING ELEVATOR BOX TERMINALS
70 - 788SL11 -1	11 PIN LOGIC SOCKET, FINGER SAFE, WITH SCREW TERMINALS & CLAMPING PLATES
16 - 788C1	OPTIONAL PANEL MOUNT ADAPTER

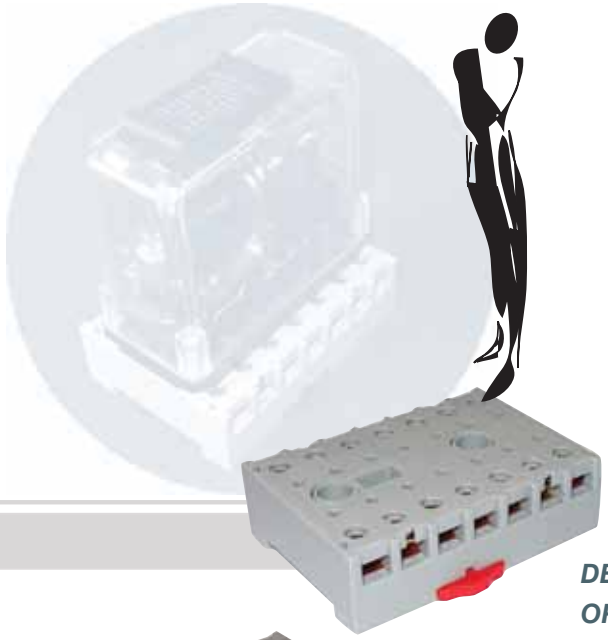
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

27390D & 33377D 12 & 14 PIN DIN/PANEL MOUNT SOCKETS

10 AMPS, 600 VOLTS

c UL us
UL Recognized
File No. E70550

40787

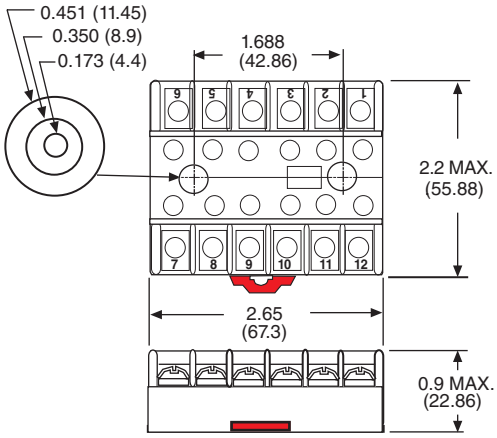


RING TERMINAL VERSIONS
AVAILABLE CONSULT FACTORY

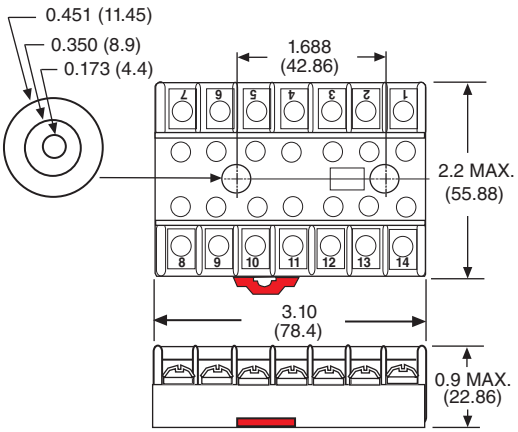
FEATURES	BENEFITS
INTEGRAL LOCKING RECEPTACLE	MATES WITH RELAY LOCKING CLIP. ELIMINATES THE NEED FOR EXTERNAL RELAY HOLD DOWN CLIPS.
HEAVY DUTY 1 PIECE TRACK AND CONTACT SYSTEM:	IDEAL FOR APPLICATIONS THAT REQUIRE UP TO 600 VOLTS.
IMPROVED CONTACT DESIGN:	ALLOWS FOR MORE AREA OF CONTACT ON RELAYTERMINALS, RESULTING IN LOWER CONTACT RESISTANCE AT RELAY TERMINALS.
STANDARD DIN RAIL MOUNTING:	FITS ALL STANDARD 35 MILLIMETER DIN TRACKS.
FINGER SAFE:	PREVENTS SHOCK TO OPERATORS BY KEEPING FINGERS AWAY FROM LIVE CIRCUITS. MEETS IP-20 REQUIREMENTS.

DESIGNED FOR PANEL OR DIN MOUNT.

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



27390D
12 PIN



33377D
14 PIN

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		12 or 14
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	600
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	2000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	IP20
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screws Terminals:		Steel, Zinc Plated
Screw Style and Size:	mm	Combination Head, M3.5 x 0.06 x 6.35
Screw Terminal Torque Maximum:	Lb-in / Nm	9 / 1.01
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	8 - 10 / 0.90 - 1.13
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 12 / 0.5 - 3.0
Body Color:		Light gray
DIN Locking Clip Color:		Red
Weight:	grams	102 or 129

Mating Relays
219
See section 1
246/247
See section 4
B255, A311
See section 5

STANDARD PART NUMBER	DESCRIPTION
27390D	12 PIN SOCKET DIN/PANEL MOUNT, WITH SCREW TERMINALS & CLAMPING PLATES.
33377D	14 PIN SOCKET DIN/PANEL MOUNT, WITH SCREW TERMINALS & CLAMPING PLATES.

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-781F CHASSIS MOUNT SOCKET

15 AMPS, 300 VOLTS

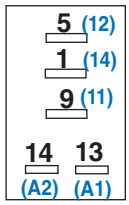
UL Recognized
File No. E70550

97899

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

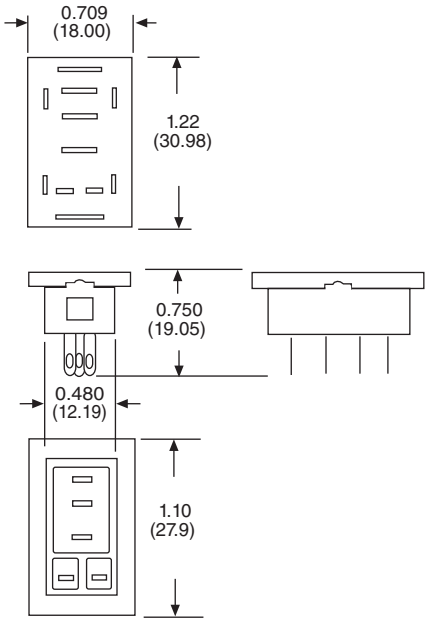
WIRING DIAGRAM
(TOP VIEW)



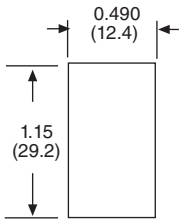
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

DESIGNED FOR CHASSIS MOUNT.

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



RECOMMENDED CHASSIS CUTOUT
TOP VIEW



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		5
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:		
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:		
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 14 / 0.5 - 2.0
Body Color:		Light gray
Weight:	grams	18

Mating Relay
781
See section 1
Mating Hold Down Clip
16-1326

STANDARD PART NUMBER	DESCRIPTION
70-781F-1	5 PIN, SOLDER TERMINALS, FOR CHASSIS MOUNT

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-378-1 & 70-401-1 CHASSIS MOUNT SOCKETS

5 & 10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

97899

COMPLIES WITH REQUIREMENTS OF

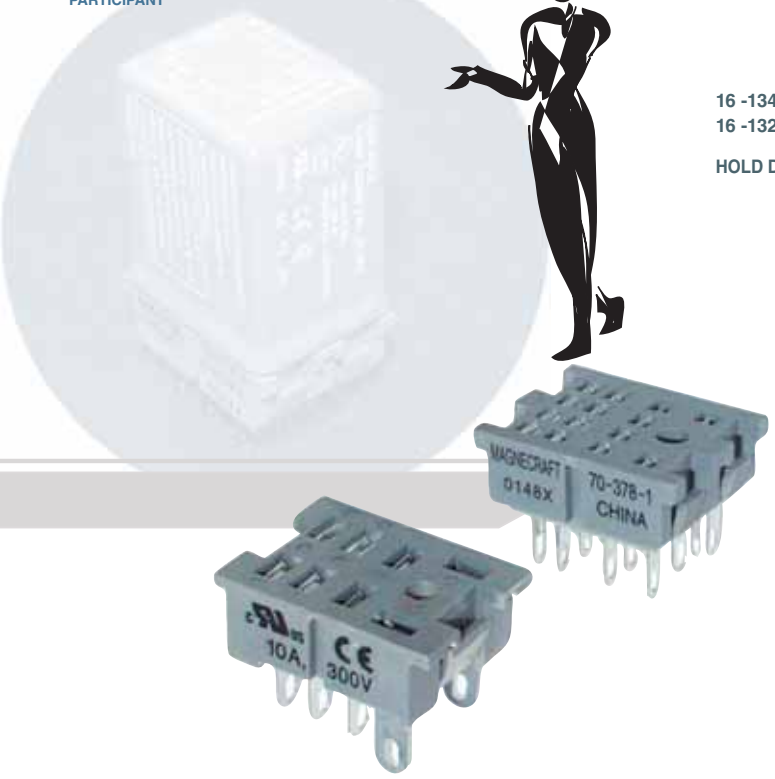
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

MANUFACTURED UNDER ISO 9001

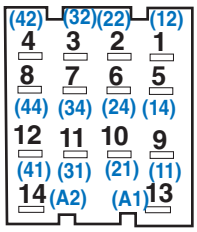
DESIGNED FOR CHASSIS MOUNT.

16 -1342 EAST-WEST HOLD DOWN CLIP
16 -1324 NORTH- SOUTH HOLD DOWN

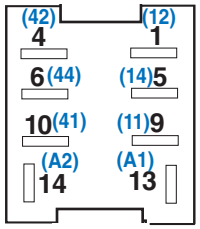
HOLD DOWN CLIPS ARE ORDERED SEPARATELY



WIRING DIAGRAM
(TOP VIEW)



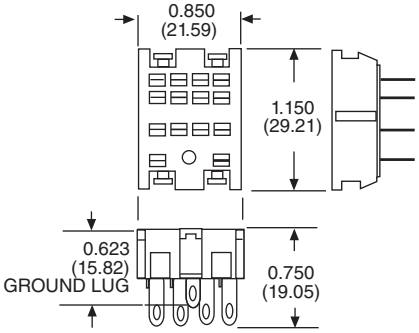
14 PIN



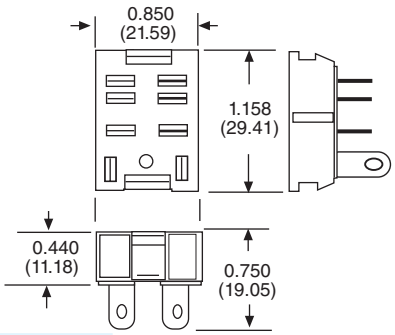
8 PIN

ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

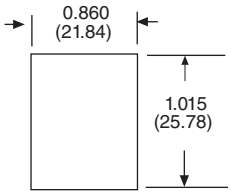


70 - 378 - 1



70 - 401 - 1

RECOMMENDED CHASSIS CUTOUT
TOP VIEW



Mating Relays
782, 782H
See section 1
Mating Hold Down Clips
(782) 16-1342
(782H) 16-1324

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8 or 14
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10 / 5
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	1500
Output to Input Terminals:	V rms	1500
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 18 / 0.5 - 1.0
Body Color:		Light gray
Weight:	grams	6.2 or 6.5

STANDARD PART NUMBER	DESCRIPTION
70 - 378- 1	14 PIN SOLDER TERMINALS - 5 AMPS
70 - 401- 1	8 PIN SOLDER TERMINALS- 10 AMPS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-124-1 & 70-124-2 CHASSIS MOUNT SOCKETS

15 AMPS, 300 VOLTS

UL Recognized
File No. E70550

97899

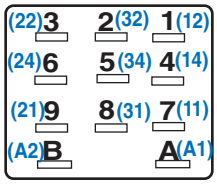
MANUFACTURED UNDER ISO 9001

DESIGNED FOR CHASSIS MOUNT

COMPLIES WITH REQUIREMENTS OF

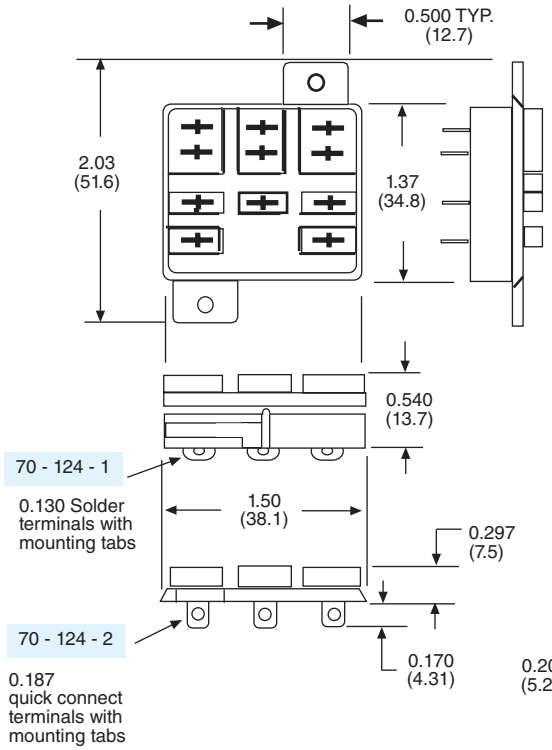
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

WIRING DIAGRAM
(TOP VIEW)

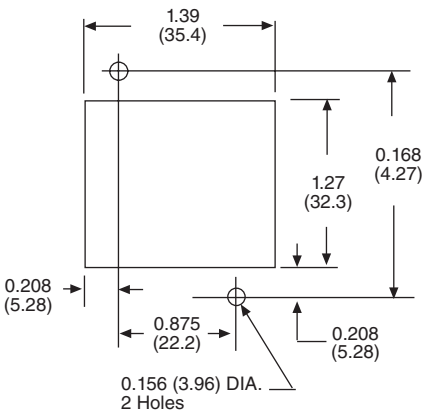


ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



RECOMMENDED CHASSIS CUTOUT
BOTTOM VIEW



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	20 - 16 / 0.5 - 1.0
Body Color:		Light gray
Weight:	grams	12.1

16-722-2 HOLD DOWN CLIP SAME AS 16-1278 EXCEPT MOUNTS TO SOCKET TABS WITH SCREWS .FOR HIGH VIBRATION APPLICATIONS

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

Mating Relays
A283, 788
See section 1
Mating Hold Down Clips
***(A283)* 16-1278**
***(388TDR)* 16-1339 Long Body**
***(788)*16-1325**

STANDARD PART NUMBER	DESCRIPTION
70 - 124 - 1	11 PIN 0.130 SOLDER TERMINALS WITH MOUNTING TABS
70 - 124 - 2	11 PIN 0.187 (4.74) QUICK CONNECT TERMINALS WITH MOUNTING TABS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

67 CHASSIS MOUNT SOCKETS

10 AMPS, 300 VOLTS

UL Recognized
File No. E70550

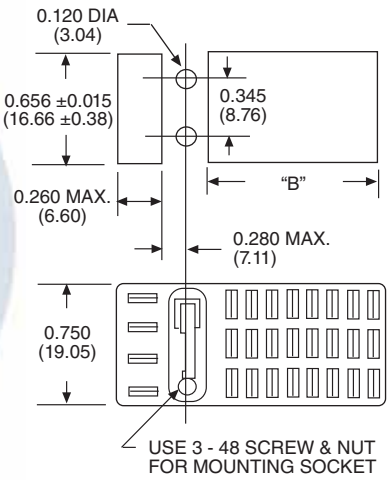
97899

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

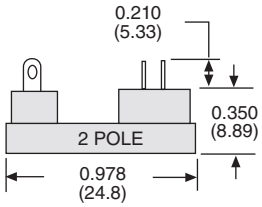
RECOMMENDED CHASSIS CUTOUT

BOTTOM VIEW

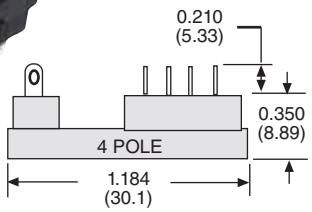


OUTLINE DIMENSIONS

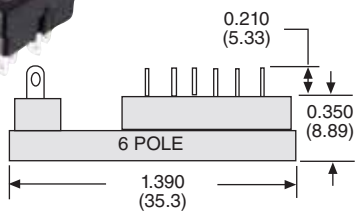
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



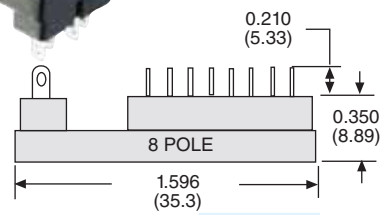
70 - 303 - 1



70 - 305 - 1

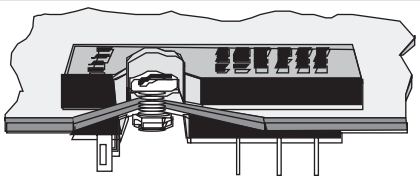


70 - 307 - 1



70 - 309 - 1

CHASSIS CUTOUT



CHASSIS CUTOUT DIMENSION "B"

SPDT DPDT	4PDT	6PDT	8PDT
0.343 (8.71)	0.562 (14.27)	0.781 (19.84)	1.00 (25.4)

HOLD DOWN CLIPS ARE INCLUDED

Mating Relay
67
See section 1
Mating Hold Down Clips
(70-303-1) 16-875-1
(70-305-1) 16-875-2
(70-307-1) 16-875-3
(70-309-1) 16-1120-8

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8, 14 or 20
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	1000
Output to Input Terminals:	V rms	1000
Terminals to Rail Chassis:	V rms	1000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		
Wire Size:	AWG/mm2	20 - 18 / 0.5 - 0.8
Body Color:		Black
Weight:	grams	4.3 - 6.9

STANDARD PART NUMBER	DESCRIPTION
70 - 303 - 1	2 POLE SOLDER TERMINALS
70 - 305 - 1	4 POLE SOLDER TERMINALS
70 - 307 - 1	6 POLE SOLDER TERMINALS
70 - 309 - 1	8 POLE SOLDER TERMINALS

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70-TR CHASSIS MOUNT SOCKETS

15 AMPS, 250 VOLTS

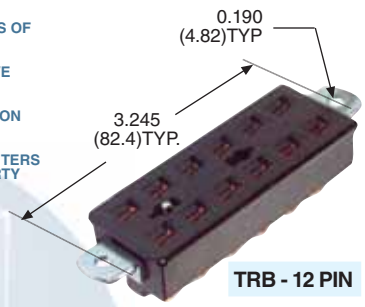
c UL us
UL Recognized
File No. Pending

Pending

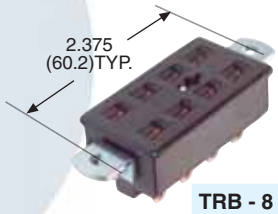
CE Pending

COMPLIES WITH REQUIREMENTS OF

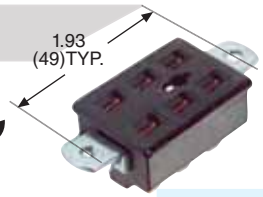
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



TRB - 12 PIN



TRB - 8 PIN

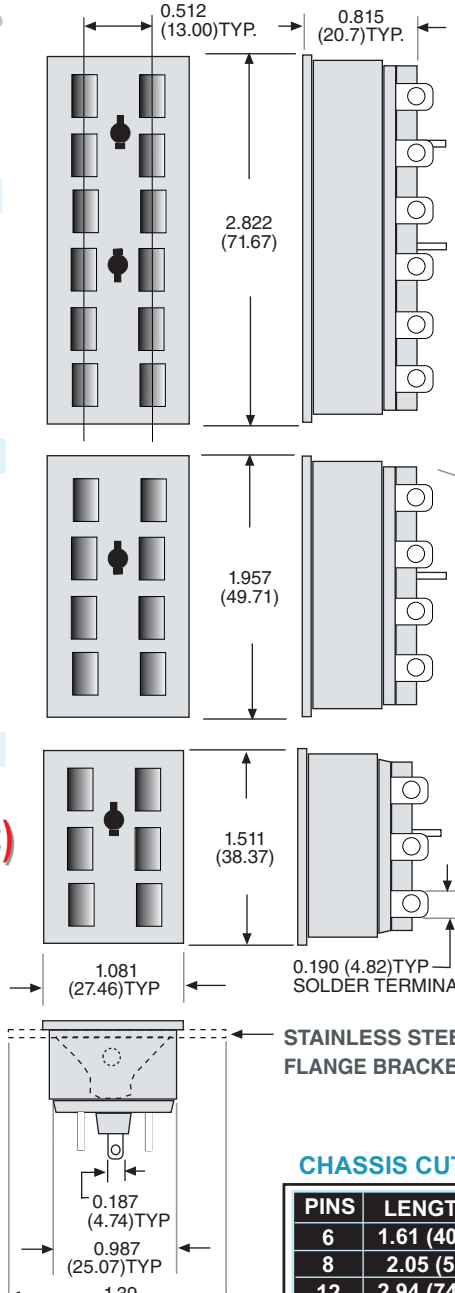


TRB - 6 PIN

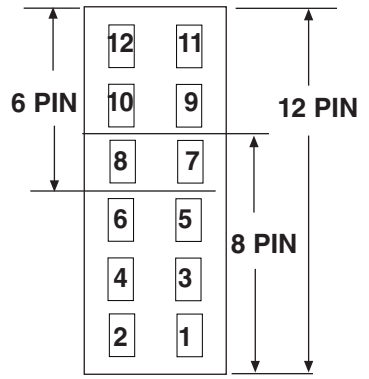
DESIGNED FOR PANEL MOUNT.

OUTLINE DIMENSIONS

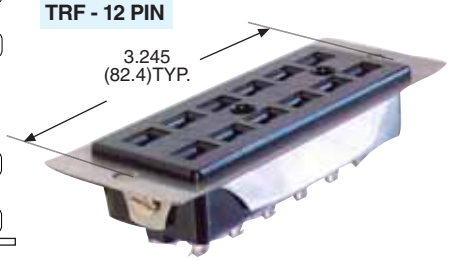
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25) UNLESS OTHERWISE SHOWN



WIRING DIAGRAM
(TOP VIEW)

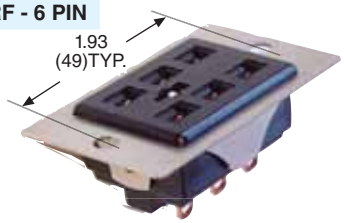


TRF - 12 PIN



TRF- 8 PIN

TRF - 6 PIN



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		6, 8 or 12
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	250
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2000
Output to Input Terminals:	V rms	2000
Terminals to Rail Chassis:	V rms	-
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	-
Internal Metal Tracks:		Phosphor Bronze
Screws Terminals:	mm	-
Screw Style and Size:		-
Screw Terminal Torque Maximum:	Lb-in / Nm	-
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+125
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		-
Wire Size:	AWG / mm	12 / 3.0
Body Color:		Black
DIN Locking Clip Color:		-
Weight:	grams	35, 45, 50

CHASSIS CUTOUT CHART

PINS	LENGTH	WIDTH
6	1.61 (40.8)	1.10 MAX (27.9)
8	2.05 (52)	
12	2.94 (74.6)	

Mating Relay
21
See section 1

STANDARD PART NUMBERS	DESCRIPTION
70-TRF6-1	6 PIN CHASSIS MOUNT WITH FLANGE BRACKET
70-TRF8-1	8 PIN CHASSIS MOUNT WITH FLANGE BRACKET
70-TRF12-1	12 PIN CHASSIS MOUNT WITH FLANGE BRACKET
70-TRB6-1	6 PIN CHASSIS MOUNT WITH END BRACKET
70-TRB8-1	8 PIN CHASSIS MOUNT WITH END BRACKET
70-TRB12-1	12 PIN CHASSIS MOUNT WITH END BRACKET

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70-781T-1 PRINTED CIRCUIT SOCKET

15 AMPS, 300 VOLTS

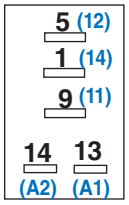
UL Recognized
File No. E70550

97899

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

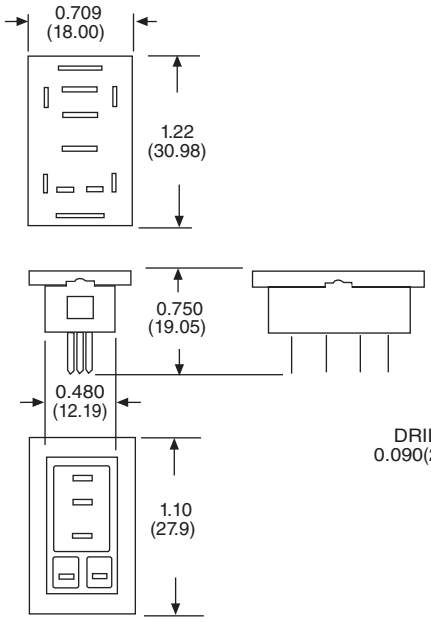
WIRING DIAGRAM
(TOP VIEW)



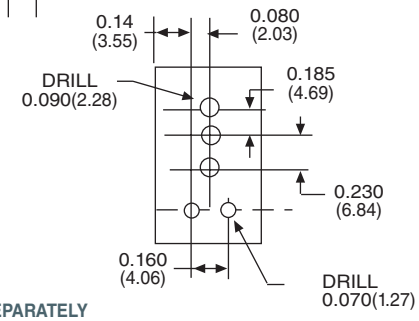
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

DESIGNED FOR PRINTED CIRCUIT BOARD

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



RECOMMENDED PRINTED CIRCUIT BOARD LAYOUT
TOP VIEW



HOLD DOWN CLIPS ARE ORDERED SEPARATELY

GENERAL SPECIFICATIONS (@ 25ºC)

	UNITS	
NUMBER OF TERMINALS		5
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:		-
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:		-
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
Screw Terminal Torque Maximum:	Lb-in / Nm	N / A
TEMPERATURE		
Operating, Lower:	ºC	-40
Operating, Upper:	ºC	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	N / A
Body Color:		Light gray
Weight:	grams	18

Mating Relay
781
See section 1
Mating Hold Down Clip
16-1326

STANDARD PART NUMBER	DESCRIPTION
70-781T - 1	5 PIN, PRINTED CIRCUIT TERMINALS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-379-1 & 70-402-1 PRINTED CIRCUIT SOCKETS

5 & 10 AMPS, 300 VOLTS

c UL us
UL Recognized
File No. E70550

CSA
97899

MANUFACTURED UNDER ISO 9001

CE
COMPLIES WITH REQUIREMENTS OF

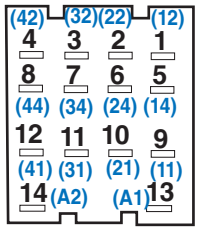
* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

DESIGNED FOR PRINTED CIRCUIT BOARD

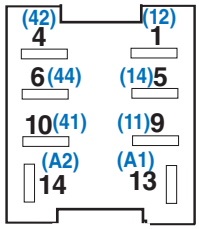
16 -1342 EAST-WEST HOLD DOWN CLIP
16 -1324 NORTH- SOUTH HOLD DOWN

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

WIRING DIAGRAM
(TOP VIEW)



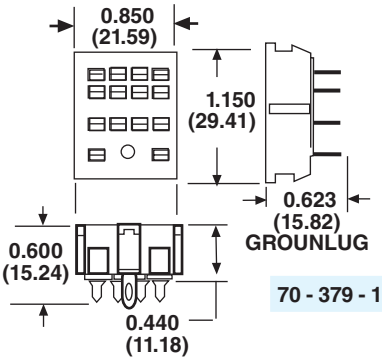
14 PIN



8 PIN

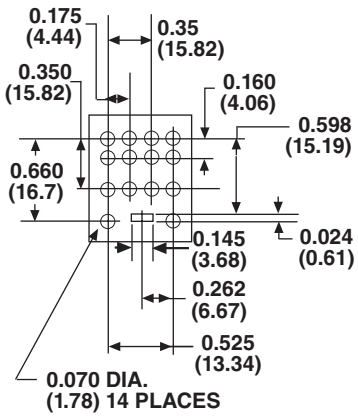
ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

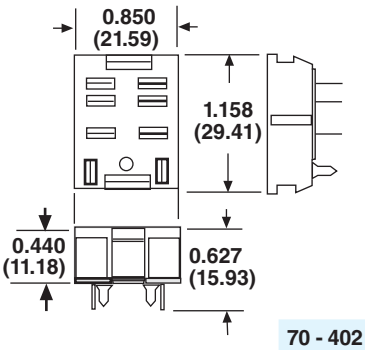
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



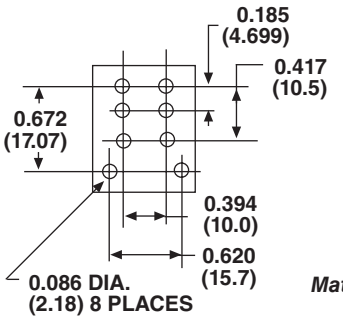
70 - 379 - 1

RECOMMENDED PRINTED CIRCUIT LAYOUT
TOP VIEW





70 - 402 - 1



Mating Relays
782, 782H
See section 1
Mating Hold Down Clips
(782) 16-1342
(782H) 16-1324

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8 or 14
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	1500
Output to Input Terminals:	V rms	1500
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	N / A
Body Color:		Light gray
Weight:	grams	5.8 or 5.9

STANDARD PART NUMBER	DESCRIPTION
70 - 379- 1	14 PIN PRINTED CIRCUIT TERMINALS - 5 AMPS
70 - 402- 1	8 PIN PRINTED CIRCUIT TERMINALS - 10 AMPS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

70-178-1 & 70-178-2 PRINTED CIRCUIT SOCKETS

15 AMPS, 300 VOLTS

UL Recognized
File No. E70550

97899

MANUFACTURED UNDER ISO 9001

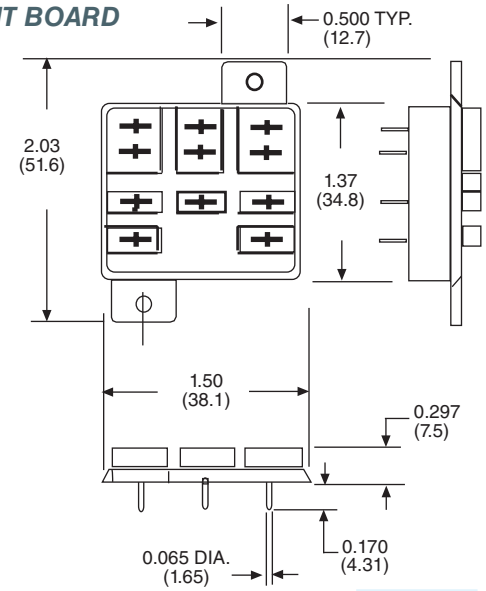
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

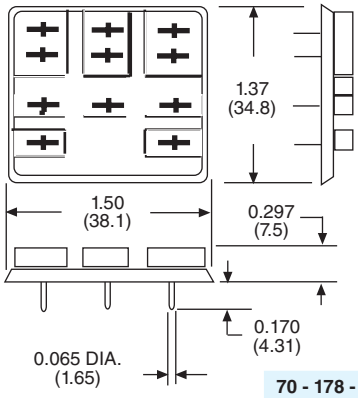
DESIGNED FOR PRINTED CIRCUIT BOARD

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN

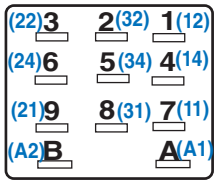


70 - 178 - 1



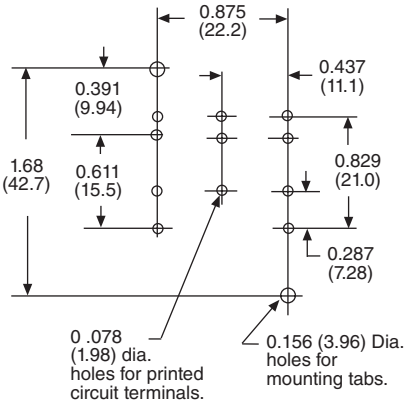
70 - 178 - 2

WIRING DIAGRAM
(TOP VIEW)



ALTERNATE NEMA OR IEC ( ) NUMBERS VIEWED FROM PIN SIDE

RECOMMENDED PRINTED CIRCUIT LAYOUT
BOTTOM VIEW



NOTE:
0.156 HOLES NOT REQUIRED WHEN USING SOCKET WITHOUT TABS

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		11
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	15
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	2500
Output to Input Terminals:	V rms	2500
Terminals to Rail Chassis:	V rms	
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		94V-0
Wire Size:	AWG/mm2	N / A
Body Color:		Light gray
Weight:	grams	80

16-722-2 HOLD DOWN CLIP SAME AS 16-1278 EXCEPT MOUNTS TO SOCKET TABS WITH SCREWS .FOR HIGH VIBRATION APPLICATIONS

HOLD DOWN CLIPS ARE ORDERED SEPARATELY

Mating Relays
A283, 388TDR, 788
See section 1
Mating Hold Down Clips
(A283) **16-1278**
(388TDR) **16-1339 Long Body**
(788) **16-1325**

STANDARD PART NUMBER	DESCRIPTION
70 - 178 - 1	11 PIN PRINTED CIRCUIT TERMINALS WITH MOUNTING TABS
70 - 178 - 2	11 PIN PRINTED CIRCUIT TERMINALS WITHOUT MOUNTING TABS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

67 PRINTED CIRCUIT SOCKETS

10 AMPS, 300 VOLTS

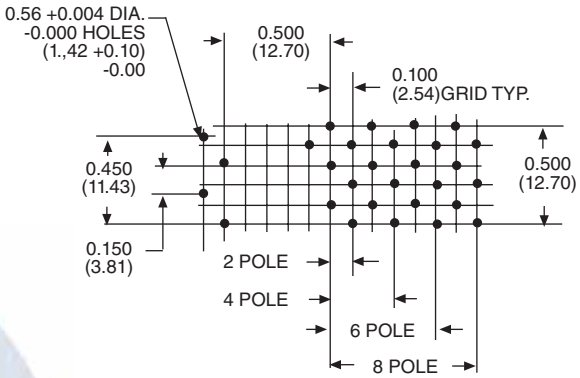
UL Recognized
File No. E70550

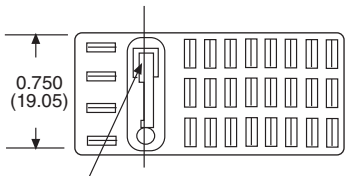
97899

COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

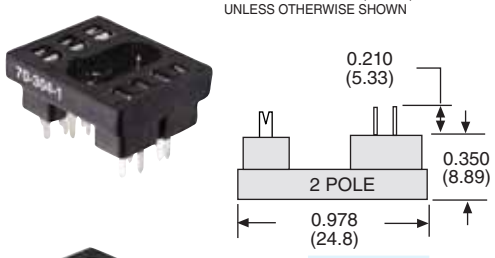
RECOMMENDED PRINTED CIRCUIT LAYOUT
TOP VIEW



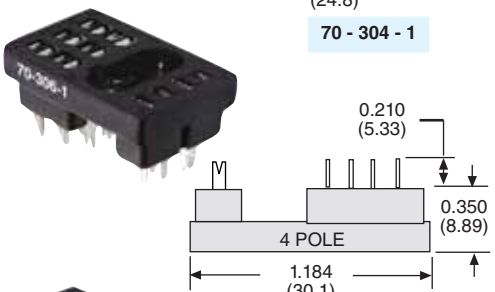


GROUND STRIP FOR 3 - 48 UN-2A STUD ON PLUG-IN STYLE RELAYS

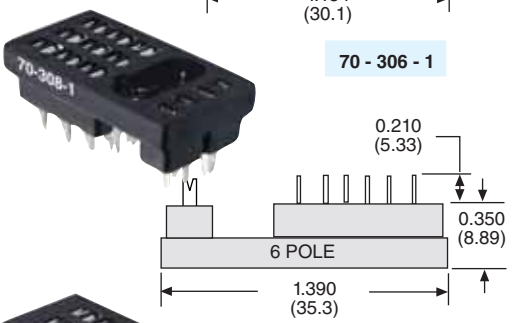
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25)
UNLESS OTHERWISE SHOWN



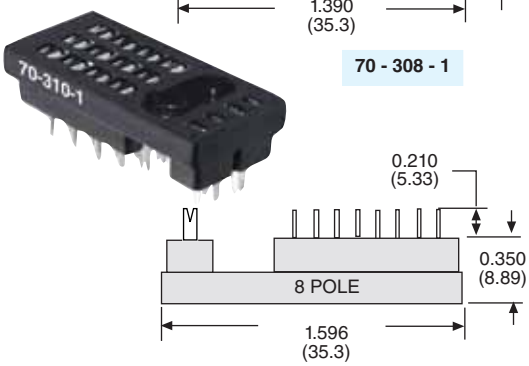
70 - 304 - 1



70 - 306 - 1



70 - 308 - 1



HOLD DOWN CLIPS ARE INCLUDED

70 - 310 - 1

NOTE:
WHEN INSTALLING SOCKET(S) INTO A PRINTED CIRCUIT BOARD, USE PLUG-IN STYLE RELAYS FOR MAXIMUM TERMINAL CONTACT WITH MATING SOCKET. PLUG-IN STYLE RELAYS HAVE A GROUNDING STUD AND ARE RECOMMENDED FOR USE WITH ALL SOCKET STYLES.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
NUMBER OF TERMINALS		8, 14 or 20
ELECTRICAL RATING		
Nominal Voltage Rating:	Volts	300
Nominal Current Rating:	Amps	10
DIELECTRIC STRENGTH		
Output to Adjacent output Terminals:	V rms	1000
Output to Input Terminals:	V rms	1000
Terminals to Rail Chassis:	V rms	1000
CONSTRUCTION		
Protection Category (Finger Safe):	IEC	N / A
Internal Metal Tracks:		Copper Alloy, Zinc Plated
TEMPERATURE		
Operating, Lower:	°C	-40
Operating, Upper:	°C	+80
MISCELLANEOUS		
Chassis Mount Screw Torque:	Lb-in / Nm	N / A
Flammability Rating:		
Wire Size:	AWG/mm2	N / A
Body Color:		Black
Weight:	grams	4.3 - 6.9

Mating Relay
67
See section 1
Mating Hold Down Clips
(70-304-1) 16-875-1
(70-306-1) 16-875-2
(70-308-1) 16-875-3
(70-310-1) 16-1120-8

STANDARD PART NUMBER	DESCRIPTION
70 - 304 - 1	2 POLE PRINTED CIRCUIT TERMINALS
70 - 306 - 1	4 POLE PRINTED CIRCUIT TERMINALS
70 - 308 - 1	6 POLE PRINTED CIRCUIT TERMINALS
70 - 310 - 1	8 POLE PRINTED CIRCUIT TERMINALS

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

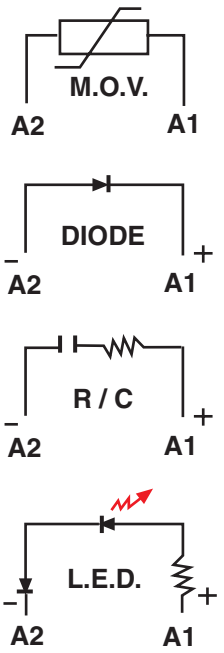
70-SM SOCKET MODULES

FEATURES — BENEFITS

c UL us
UL Recognized
File No. E70550

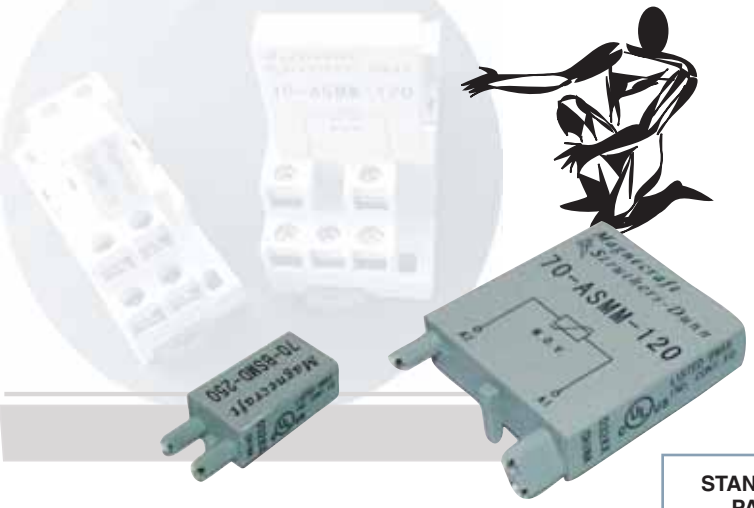
FEATURES	BENEFITS
METAL OXIDE VARISTOR CIRCUIT:	METAL OXIDE VARISTORS PROTECTS BY SHUNTING POTENTIALLY DAMAGING ELECTRICAL SPIKES AWAY FROM THE RELAY COIL. IDEAL FOR AC AND DC APPLICATIONS.
R / C CIRCUIT:	SNUBS BACK EMF OF RELAY COIL
DIODE CIRCUIT:	PROTECTS EXTERNAL DRIVE CIRCUITRY FROM INDUCTIVE VOLTAGES GENERATED WHEN REMOVING COIL VOLTAGE. IDEAL FOR DC APPLICATIONS. POLARITY SENSITIVE.
LED CIRCUIT:	LED STATUS LAMP VERIFIES POWER IS BEING SUPPLIED TO THE COIL. IDEAL FOR BOTH AC AND DC APPLICATIONS. POLARITY SENSITIVE FOR DC APPLICATION.

WIRING DIAGRAM
(VIEWED FROM PIN END)



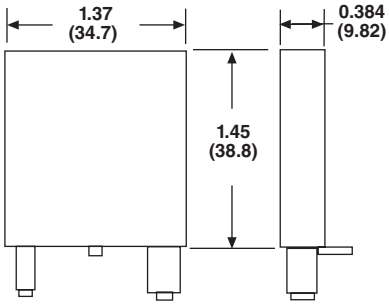
PLUGGING MODULE INTO THE SOCKET, CONNECTS THE CIRCUIT IN PARALLEL WITH THE RELAY COIL. NO ADDITIONAL WIRING REQUIRED. MODULES FIT WITHIN MAXIMUM DIMENSIONS OF RELAY AND SOCKET.

MANUFACTURED UNDER ISO 9001

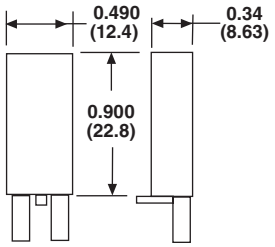


OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).
TOLERANCES : ± 0.010 (± 0.25) UNLESS OTHERWISE SHOWN

PACKAGE "A"



PACKAGE "B"



STANDARD PART NUMBERS	FUNCTION	NOMINAL INPUT VOLTAGE	PACKAGE STYLE	MATING SOCKETS
70-ASMM-24	MOV suppressor	24 VAC / VDC	A	70-783D-1
70-ASMM-120	MOV suppressor	120 VAC / VDC	A	70-784D-1
70-ASMM-240	MOV suppressor	240 VAC / VDC	A	70-750D8-1
70-ASMR-24	R / C suppressor	6 - 24 VAC/ VDC	A	70-750D11-1
70-ASMR-240	R / C suppressor	110-240 VAC / VDC	A	70-750E8-1
70-ASMD-250	Protection diode	6 - 250 VDC	A	70-750E11-1
70-ASMLG-24	LED, green	24 VAC / VDC	A	70-750EL/SL8-1
70-ASMLG-120 /240	LED, green	120/240 VAC / VDC	A	70-750EL/SL11-1
				70-788-EL/SL11-1
70-BSMM-24	MOV suppressor	24 VAC / VDC	B	70-782D-1
70-BSMM-120	MOV suppressor	120 VAC / VDC	B	
70-BSMM-240	MOV suppressor	240 VAC / VDC	B	
70-BSMD-250	Protection diode	6-250 VDC	B	
70-BSMLG-24	LED, green	24 VAC / VDC	B	
70-BSMLG-120 /240	LED, green	120/240 VAC / VDC	B	

ORDERING CODE

70 - | A | SM | M | -24

MODULE FAMILY:

PACKAGE STYLE "A" OR "B":

SOCKET MODULE:

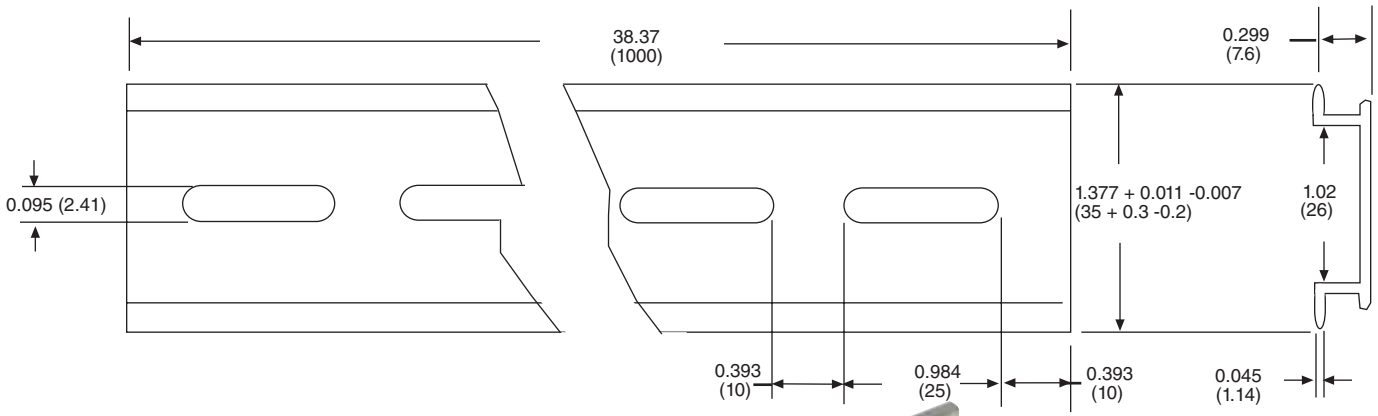
FUNCTION:
M = **M.O.V (METAL OXIDE VARISTOR)**
R = **RESISTOR / CAPACITOR**
D = **DIODE**
LG = **L.E.D., GREEN**

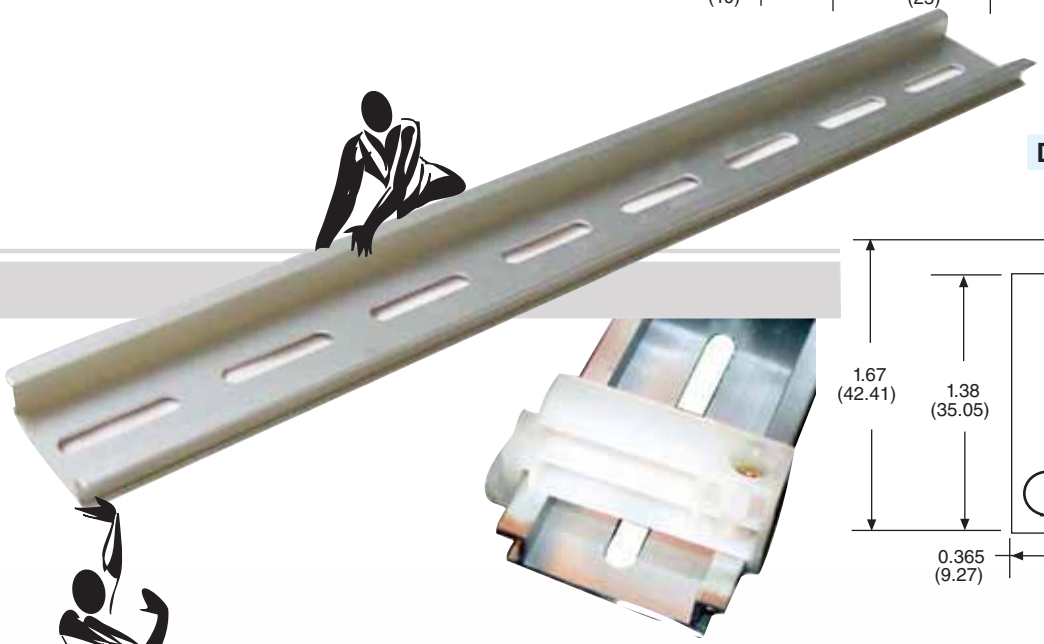
INPUT VOLTAGE:
24, 120, 240, 250

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

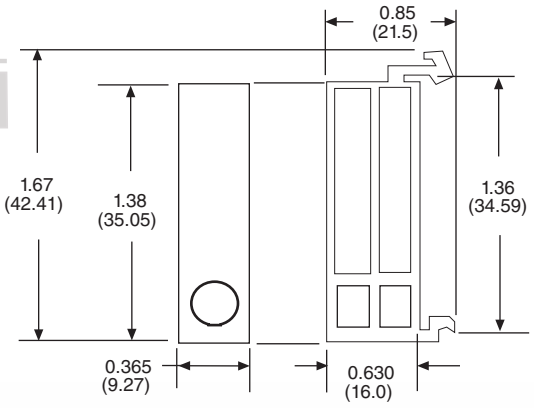
16-700DIN DIN RAIL MOUNTING TRACK

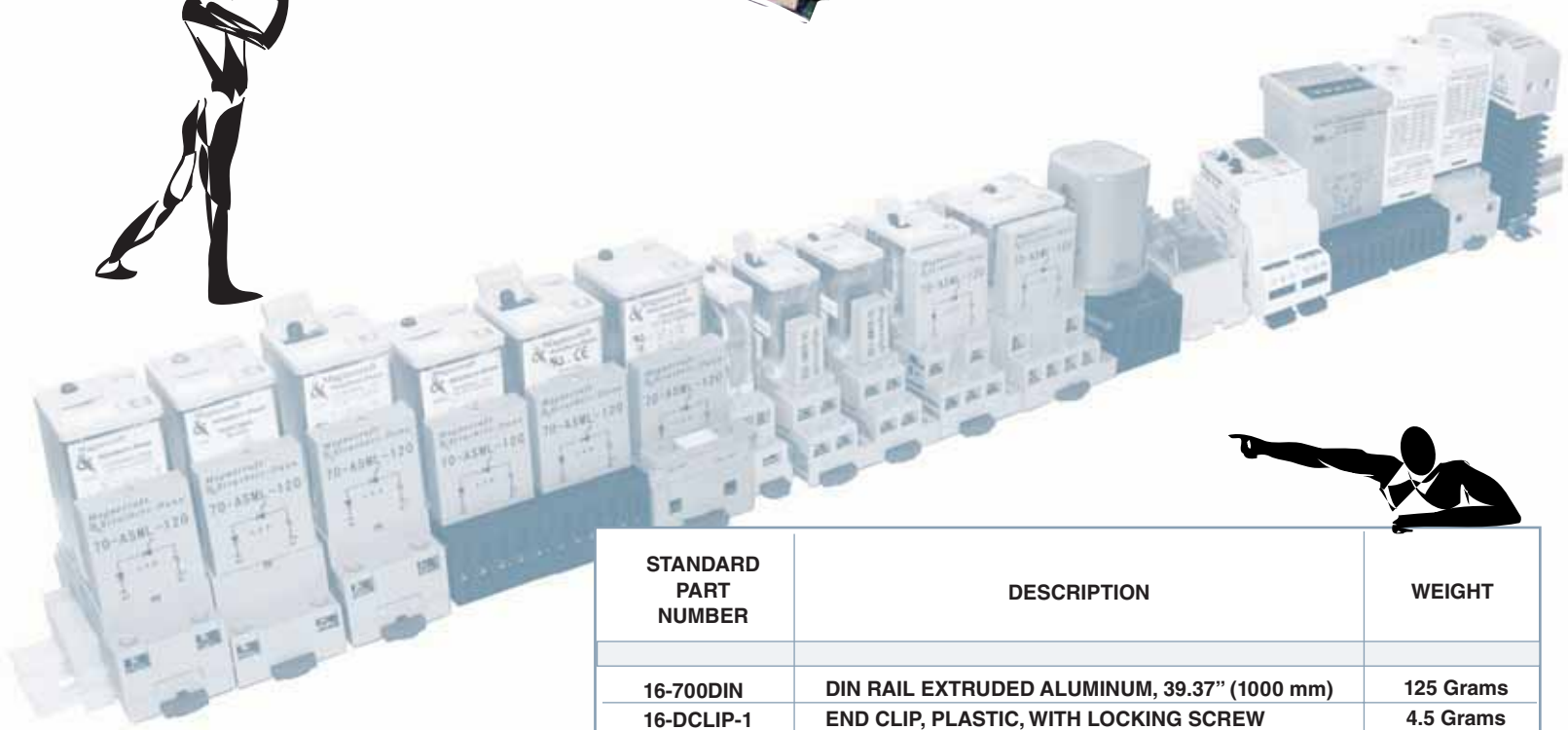
STANDARD 35 MILLIMETER WIDTH





DIN RAIL END CLIP





STANDARD PART NUMBER	DESCRIPTION	WEIGHT
16-700DIN	DIN RAIL EXTRUDED ALUMINUM, 39.37" (1000 mm)	125 Grams
16-DCLIP-1	END CLIP, PLASTIC, WITH LOCKING SCREW	4.5 Grams

CROSS REFERENCE GUIDE

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

MAGNECRAFT & STRUTHERS-DUNN	TYCO/POTTER & BRUMFIELD	IDEC	CUSTOM CONNECTOR	OMRON	FINDER	TYCO / SCHRACK	ALLEN-BRADLEY	OTHER
70-781D-1		SH1B-05						
70-461-1	27E894	SY4S-05	MT14-PC	PYF14A-E	94.44			
70-459-1	27E895	SH12B-05	GT08-PC	PTF08A-E		TM 78 700	700-HN116	GZY2 (RELPOL)
70-782D-1				PTF08A-E	96.72, 96.72.0		700-HN128	
70-783D-1		SH3B-05		PTF11A-E				
70-784D-1		SH4B-05		PTF14A-E	96.74, 96.74.0		700-HN139	
70-464-1	27E891/27E122	SR2P-06	OT06-PC	PF083A-E	90.16		700-HN125	
70-465-1	27E123 panel mount only	SR3P-06	OT11-PC	PF113A-E			700-HN126	
70-169-1								
70-170-1			RB08-PC					
70-750D8-1			RB11-PC					
70-750D11-1								
70-750E8-1					90.72.0	MT 78 745		
70-750E11-1					90.73.0	MT 78 740		PS11,PZ11 (RELPOL)
70-750EL8-1								
70-750EL11-1								
70-750SL11-1								
70-463-1	27E121/27E893 panel mount only	SR3B-05	ST11-PC		92.43.1		700-HN127	GUC11 (RELPOL)
70-788EL11-1					92.03.10			
70-788SL11-1								
27390D			SD12-PC Exept Din/panel mt					
33377D			SD14-PC Exept Din/panel mt					
70-781F-1		SH1B-51						
70-401-1	27E488	SH2B-51	GR108-SLD	PT08			700-HN117	
70-378-1	27E006	SY4S-51	MR14-SLD		94.24.0	RA 78 703	700-HN104	SU4L (RELPOL)
70-124-1	27E043	SR3B-51	CM11-SLD		92.33.0	RM 78 701	700-HN107	
70-124-2			CM11-QDC					
70-303-1	27E125					ZA 78 710		
70-305-1	27E126					ZA 78 720		
70-307-1	27E127					ZA 78 730		
70-309-1	27E211							
70-TRF6-1								S5406SB (MOLEX/BEAU) S2406SB, S406SB (CINCH/JONES)
70-TRF8-1								S5408SB (MOLEX/BEAU) S2408SB, S408SB (CINCH/JONES)
70-TRF12-1								S5412SB (MOLEX/BEAU) S2412SB, S412SB (CINCH/JONES)
70-TRB6-1								S5406AB (MOLEX/BEAU) S2406AB, S406AB (CINCH/JONES)
70-TRB8-1								S5408AB (MOLEX/BEAU) S2408AB, S408AB (CINCH/JONES)
70-TRB12-1								S5412AB (MOLEX/BEAU) S2412AB, S412AB (CINCH/JONES)

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS. CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	TYCO/POTTER & BRUMFIELD	IDEC	CUSTOM CONNECTOR	OMRON	FINDER	TYCO / SCHRACK	ALLEN-BRADLEY	OTHER
770-781T-1		SH1B-62						
70-402-1	27E489	SH2B-62	GR108-PCB	PT08-0	96.12, 96.12.0		700-HN118	
70-379-1	27E023	SY4S-61	MR14-PCB	PY14-02	94.14.0	RA 78 702	700-HN105	SU4D (RELPOL) S4-P (RELECO)
70-178-1	27E305		CM11-PCB	PY14		RM 78 702		
70-178-2			CM11-PCB-1S		92.13.0			SP-5 (RELECO)
70-304-1	27E128					ZA 78 712		
70-306-1	27E129					ZA 78 722		
70-308-1	27E130					ZA 78 732		
70-310-1	27E254							
0-ASMM-24							700-HSV1	
70-ASMM-120							700-HSV3	
70-ASMM-240							700-HSV2	
70-ASMR-24						MTM U0 524		
70-ASMR-240						MTM U0 730		
70-ASMD-250						MTM TO 0A0	700-HSMD	
70-ASMLG-24						MTM G0 024		
70-ASMLG-120/240						MTM G0 730		
70-BSMM-24						RPM U0 024		M71 (RELPOL)
70-BSMM-120								M72 (RELPOL)
70-BSMM-240								M73 (RELPOL)
70-BSMD-250			TYPE-22		99.80.3.000.00.0	PRM TO 0A0		M21N (RELPOL)
70-BSMLG-24			TYPE-62V		99.80.0.024.59.0	PRM G0 524		M61G (RELPOL)
70-BSMLG-120/240			TYPE-92V		99.80.0.230.59.0	PRM G0 730		M63G (RELPOL)
16-700DIN		BND-1000		PFP-100N				
16-DCLIP		BNL-5		PFP-M	62.1			

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FOR SOCKETS APPLICATION ENGINEERING ASSISTANCE

Chuck Johnson, PRODUCT MANAGER
FAX: (847) 441-2522
EMAIL: cjohnson@magnecraft.com

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CUSTOMER SERVICE & PRODUCT QUALITY

Pricing / Delivery / Cross-Reference / Return Authorization / Order Entry

Tel: 843/393-5778 Fax: 843/393-4123

Product Quality

Tel: 843/393-5421 Fax: 843/393-4123

Invoices

Tel: 843/393-5421 Fax: 843/393-7843

MISSION STATEMENT

Magnecraft/Struthers-Dunn **is an innovator and provider of quality relay products with a hands on commitment to staying close to customers worldwide.**

Our Goal **is to deliver defect-free products on time, all the time.**

We Pledge **ourselves to achieve these goals in a manner which assures profitability and resources to support growth.**

We Encourage **an atmosphere where diligence and hard work can exist in harmony with warmth, laughter, continuing education and personal development. We will conduct business in a way that encourages integrity in every employee, supplier and customer relationship.**

LIMITED WARRANTY

MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc. warrants its product to be free of defects in workmanship and materials for a period of one year from date of delivery to the purchaser buying direct from **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** or authorized Distributor.

This warranty includes, but is not limited to those products manufactured to specifications supplied to us by the purchaser. Any defects appearing more than one year from the date of delivery to the purchaser, shall be deemed to be due to ordinary wear and tear.

MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc. assumes no risk or liability for the suitability or unsuitability or results of the use of its products, used in combinations with any electrical or electronic components, circuits, systems, assemblies, or any other material or substances, or environments. The purchaser's right under this warranty shall consist solely of requiring **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** to repair, or in **MAGNECRAFT'S/ MSD's** sole discretion, replace, free of charge, F.O.B., factory, any defective items received at its factory within said year, as determined by **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** to be defective.

All products to be returned to **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** for evaluation under this warranty, shall first receive a Return Authorization Number. All products shall be shipped to **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** prepaid. All products received at **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** without written authorization, shall be returned at the sender's expense.

The failure to give or the giving of any advice or recommendations by **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** shall not constitute any warranty by, or impose any liability upon **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** The sole and exclusive remedy of the purchaser and the exclusive liability of **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** are outlined and stated above, **AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY AS TO MERCHANTABILITY, FITNESS FOR PURPOSE SOLD, DESCRIPTION, QUALITY, PRODUCTIVENESS, OR ANY OTHER MATTER.**

In no event shall **MAGNECRAFT ELECTRIC COMPANY/ MSD, Inc.** be liable for consequential or special damages, or for the delay in the performance of this warranty.

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Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

CLASS TO CLASS
CROSS REFERENCE

SHOW AS BASIC SERIES PART NUMBERS

MAGNECRAFT & STRUTHERS-DUNN	TYCO / POTTER & BRUMFIELD	OMRON	FINDER	IDEC	TYCO / SCHRACK	OTHER
W6	SSRT, SSR	G3NA	RSS			D1, D2, A24, HD, HA (CRYDOM)
21						**136 (** MIDTEX)
WM35, 60, 100						ZKU,ZLU,BFL,BFC (DURAKOOL) 60,260,360,35,235,335,100 (MDI)
60	R50					
67	R10	MH, MHE			ZKU, ZLU	
W9A	T9A	G7G				
W92	T92	G7L				
W107, 171,172DIP	JWD			RN		831,832 (GORDOS), 721,722 (HAMLIN)
W117SIP	JWS			RP		741 (GORDOS), 362 (HAMLIN)
W199	PRD	MGN			1-1393	900 (DELTROL)
TDRPRO	CM, CNM					
TDRSOX, SRX				RTE		700HRM (ALLEN BRADLEY) T2K (NCC)
W211	CKB,CGB,CHD,CDB,CB,CHB					
W222	CR					
A283	KU, KUP	MJN		RR1B-RR3B	RM70	268 (DELTROL)
A283 (69)	KUEP					166E (DELTROL)
388J	RM		62.32, 62.33		RM23, RM33	
388V	KUGP		62.22,62.32-33		RM53, RM63	
W389 & D	KUMP, KUHP	MJN			RMC, RMD	260, 275F (DELTROL)
389F			62.82, 62.83		RM73, RM83	
SSRDIN						CKR, MDF (CRYDOM), 841(GORDOS), RS (CONTINENTAL)
711	KUR					619 (MIDTEX)
750 & C	KRPA	MK	60.12, 60.13		MT	C2, C3(RELECO), R15(RELPOL) 700HA (ALLEN BRADLEY)
750H	KR11, KR14					
781 & C				RH1, RH1V		
782 & C		LY1, LY2, MY2, MY4	56.32, 55.34	RH2B, RH2V2	PT	C7, C9 (RELECO) R4 (RELPOL)
783 & C		LY3		RH3B		
784 & C		LY4	56.34, 56.44	RH4B, RH4V2		
788 & C	KUP		62.32, 62.33	RR2B, RR3B	RM20, RM30	C5 (RELECO) 700HB (ALLEN BRADLEY)
PM					4-1393	
976 REPLACES W76	RTB, RTE	G2R				JW1 (AROMAT)

NOTE: This Class to Class Cross reference Guide in some cases may not be an exact cross to another competitors relay class. The intent of this guide is to match the footprint and to get as close to the operating characteristics as possible. Consult with one of our Application Engineers for exact crossover.

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700 SERIES

MAGNECRAFT & STRUTHERS-DUNN'S FAMILY OF RELAYS DESIGNED FOR INDUSTRIAL CONTROL APPLICATIONS.

The new Magnecraft & Struthers-Dunn 700 series combines advanced features that make them easy and reliable to install, test and use.

- Coil status lamp
- Push button
- Push button lock down door
- Flag indicator and ID tag
- Finger grip cover & snap-on adapters for DIN rail or chassis mount
- Matching high-tech gray bodies with frosted cover. All models come with a wide choice of coil voltages, contact configurations and terminal styles.

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