a brand of Schneider Electric

Magnecraft

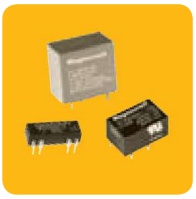
Your Contact for Industrial Relays

MAGNECRAFT
RELAYS

Sockets

Time Delay Relays

Energy Conserving Relays



Plug-In Relays

Power Relays

Solid State Relays

PCB Relays

www.magnecraft.com

Offered by

Newark™

Commitment to Continuous INNOVATION

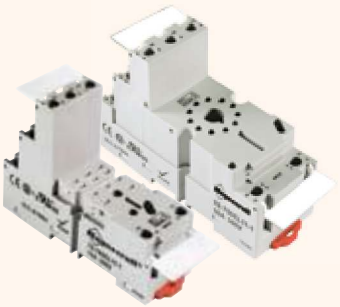
Why Magnecraft?

Over 50 Years of Innovation...

Magnecraft is proud to be recognized as the most innovative and quality-conscious name in the industry. We stay ahead by creating the most cost-effective, highest-rated and feature-rich relays and sockets available.

Product Offering Includes:

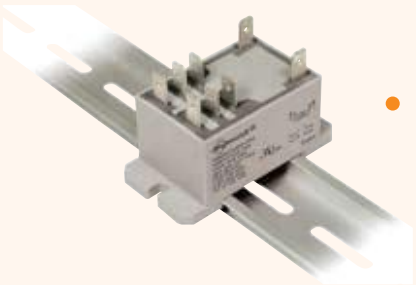
- Full-featured plug-in relays which are faster and easier to troubleshoot.



- Upgraded sockets with finger-safe, logic-style design for a cleaner panel layout.

- Added functionality or protection with new socket modules including:
  - LED Status
  - Surge Protection
  - Diode Protection

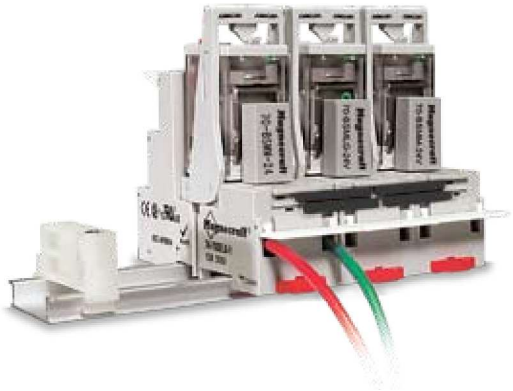
- Socket bus jumpers which allow connections to adjacent sockets without additional wiring.



- Relays with DIN mount capability.

- Most products are UL registered or listed, CSA approved, CE certified and RoHS compliant.

Complete Relay System



A Complete System: relays, sockets, modules, bus jumpers, ejector clips and ID tags.

Electrical control panels often require modification, which can be time consuming, difficult and unsafe. Our quality parts are designed to work together as a complete system to save time and energy. The Plug-In Relay/Socket System is built to upgrade and simplify outdated control panels.

Complete System Solution (Relay, Socket and Accessories)

- Saves time on installation
- Increases productivity
- Increases reliability
- Reduces downtime due to malfunction

Relay System is UL Listed, eliminating the need for users to self-certify their system.

Relay Categories

General Purpose Relays are available in many different package styles such as full-featured, plain cover and flange mount. Most are compatible with a choice of sockets and accessories.

Applications:
- Building automation
- Pumps & fans
- Heating & cooling

Applications:
- Lighting
- Motors
- Machinery

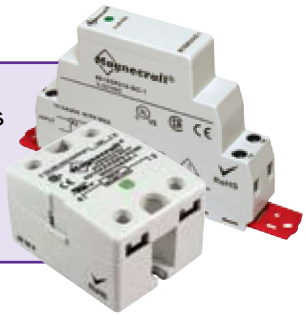
Power Relays are used to control circuits that exceed 10 amps. They are capable of switching high voltage DC loads and multiple HP motors.

Timing & Sensing Relays are used to control and monitor circuits. The purpose of a time delay relay is to control an event based on time. Sensing relays monitor and react to a voltage or current.

Applications:
- Security/Alarms
- Lighting
- Circuit protection

Applications:
- Packaging equipment
- Hospital
- Flashing lights

Solid State Relays are electronic control devices that have no moving parts. They are suitable for applications that have high cycle rates and require reliable and silent operations.



Latching & Sequencing Relays - utilize impulses to control switching and/or to conserve energy. When the control power is removed, the contacts remain in the closed state. This means they consume energy only for a moment while switching.

Applications:
- Pumps & fans
- Solar powered circuits
- Mining equipment

Applications:
- Computers
- Business machines
- Consumer appliances

Printed Circuit Board Relays are compact devices used for high power and low level applications that require printed circuit board assembly.

How To Choose A Type Of Relay

Does the application require a high cycle rate (multiple operations per minute)?

YES *A solid state relay is appropriate.*

Which mounting style is required?

→ **DIN Mount -** *Includes integrated heat sink.*

→ **Panel Mount -** *Requires heat sink.*

NO *An electromechanical relay is appropriate.*

A. Will the relay be mounted on a printed circuit board?

YES *A printed circuit board (PCB) relay is required.*

NO *An industrial purpose relay is appropriate.*

Is the load current greater than 16 Amps?

YES *A power relay is required.*

NO *A general purpose relay is adequate.*

B. Is a customized reaction to control power required?

YES *A time delay or sensing relay is required.*

What is the type of reaction?

→ **Duration of circuit response -** *A time delay relay is required.*

→ **Reaction to system power levels -** *A voltage or current-sensing relay is required.*

C. Does the relay need to be controlled with an electrical pulse, i.e. energy conservation applications?

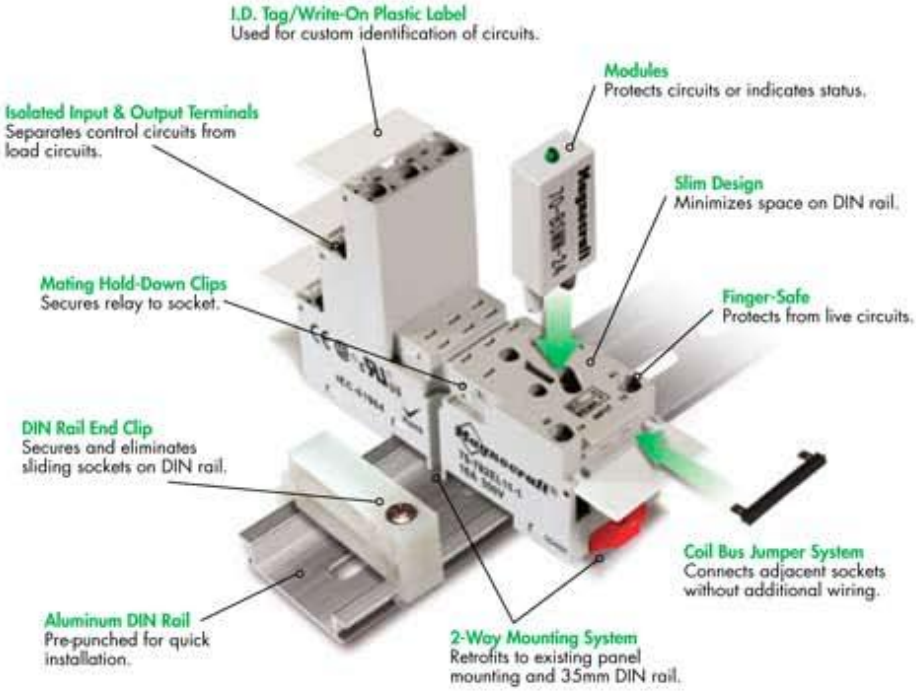
YES *A latching or sequencing relay is required.*

Magnecraft

- Socket compatible
- Multiple feature & operation combinations available
- Optional accessories
- Direct replacement for MRO
- Hermetically sealed versions for hazardous locations

Series	Terminals	Contact Forms	Rated Amps	HP Rating
781 	Spade	SPDT	15A	1/2HP @120VAC 1HP @277VAC
			3A	–
782 	Spade	SPDT	20A	1/2HP @120VAC 1HP @250VAC
		DPDT	15A	1/2HP @120VAC 1HP @250VAC
		DPDT, 3PDT & 4PDT	10A	1/3HP @120VAC 1HP @277VAC
			3A	1/16HP @120VAC
783 	Spade	3PDT	15A	1/2HP @120VAC 3/4HP @250VAC
784 	Spade	4PDT	15A	1/2HP @120VAC 3/4HP @250VAC
750 	Octal (8 Pin)	SPDT & DPDT	16A	1/3HP @120VAC 1/2HP @250VAC
	Octal (11Pin)	3PDT	16A	1/3HP @120VAC 1/2HP @250VAC
788 	Spade	SPDT, DPDT & 3PDT	16A	1/3HP @120VAC 1/2HP @230VAC
388J 	Spade	DPDT	16A	1/3HP @120VAC 1/2HP @600VAC
		3PDT	16A	1/2HP @120VAC 3/4HP @230VAC
782H Hermetic 	Quick Connect	DPDT & 4PDT	5A	–
		DPDT & 4PDT	3A	1/16HP @120VAC 1/10HP @230VAC
		DPDT & 4PDT	1A	–
750H Hermetic 	Octal (8 Pin)	DPDT	12A	1/3HP @120VAC 1/2HP @230VAC
			3A	–
	Octal (11 Pin)	4PDT	12A	1/3HP @120VAC 1/2HP @230VAC
			3A	–

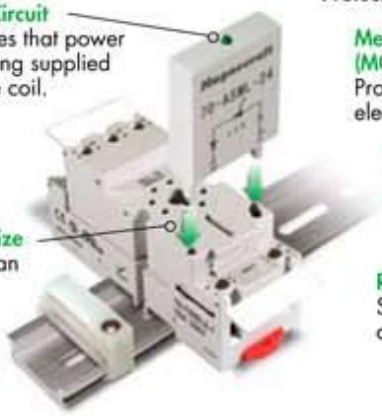
The Complete System Solution!



Relay Style	Relay Series	Socket	Rated Amps	Sample Image	Pins	Terminals	Terminal Layout	Finger Safe
Control ICE-Cube Relay	782XBX1(2, 3)	70-782EL8-1	12A		8	Spade	Logic	✔
	782XCX	70-782EL11-1	10A		11	Spade	Logic	✔
	782XDX TDR782	70-782D14-1	10A		14	Spade	Mixed	✔
		70-782E14-1	10A		14	Spade	Logic	✔
		70-461-1	10A		14	Spade	Mixed	✘
		70-782EL14-1	10A		14	Spade	Logic	✔
Power ICE-Cube Relay	781XAX	70-781D5-1A	20A		5	Spade	Mixed	✔
	782XAX 782XBX	70-782D8-1	16A		8	Spade	Mixed	✔
		70-459-1	10A		8	Spade	Mixed	✘
	783XCX	70-783D11-1	16A		11	Spade	Mixed	✔
	784XDX	70-784D14-1	16A		14	Spade	Mixed	✔
Square Base Power Relay	788 388J 389F TDRSRXB	70-788EL11-1	25A		11	Spade	Logic	✔
		70-463-1	15A		11	Spade	Mixed	✘
Octal Relay (8 Pin)	750XAX 750XBX TDRPRO5101(2) TDRSOXP	70-169-1	15A		8	Octal	Mixed	✘
		70-464-1	15A		8	Octal	Mixed	✘
		70-750DL8-1	16A		8	Octal	Logic	✔
		70-750E8-1	12A		8	Octal	Mixed	✔
		70-750EL8-1	16A		8	Octal	Mixed	✔
Octal Relay (11 Pin)	750XCX TDRPRO5100 TDRSRXP	70-170-1	15A		11	Octal	Mixed	✘
		70-465-1	15A		11	Octal	Mixed	✘
		70-750DL11-1	16A		11	Octal	Logic	✔
		70-750E11-1	12A		11	Octal	Mixed	✔
		70-750EL11-1	16A		11	Octal	Logic	✔

Note: Additional Panel Mount and Printed Circuit Sockets adaptor available for most spade terminal relays.

Modules



Protection Modules:

Metal Oxide Varistor (MOV) Circuit
Protects from damaging electrical spikes.

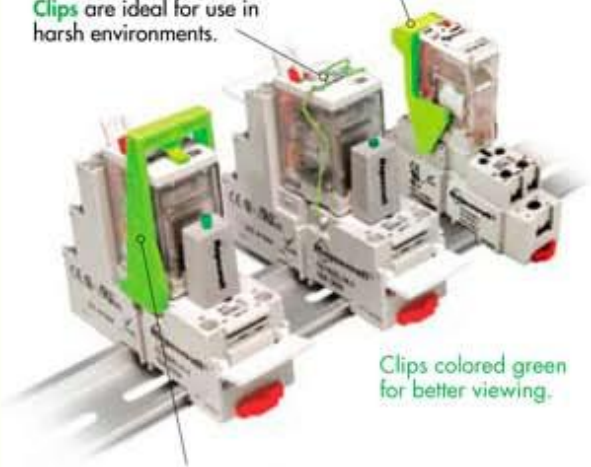
Diode Circuit
Protects from inductive voltages.

RC Circuit
Snubs back EMF of relay coil.

Clips

I.D. Clips allow easy identification of circuits in multi-relay applications.

Stainless Steel Hold-Down Clips are ideal for use in harsh environments.



Clips colored green for better viewing.

Plastic Ejector Clips firmly secure and easily eject relays.

ACCESSORIES			
Module	Clip	Bus Jumper	ID Tag/ Label
✔	✔	✔	✔
✔	✔	✔	✔
✔	✔	✘	✘
✔	✔	✘	✔
✘	✔	✘	✘
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✔	✔	✘	✔
✔	✔	✔	✔

Relay Adapters

DIN Adapters allow relays to be mounted directly on a DIN rail.

Flange Adapters allow relays to be mounted directly on a panel.

- No socket needed
- Plastic construction
- Light weight
- Low cost
- Low profile
- Narrow mounting
- Easy termination

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- Rated up to 50 Amps
- Socket compatible versions
- Epoxy sealed versions available
- Optional blowout magnet for high DC switching
- Several mounting, feature & operation combinations to fit multiple applications

Series	Type	Terminals	Contact Forms	Rated Amps	HP Rating
W199 	Open Style	Screw	SPST, SPDT, DPST, DPDT, SPST-DM, SPST-DB	40A	1.5HP @120/240/250/277/600VAC
				50A	
389F 	Ice Cube	Quick Connect	SPST-NO-DM, SPDT-DM-DB, SPST-NC-DB	30A	1HP @120VAC 1.5HP @240/250/277/600VAC
			SPST, SPDT, DPST, DPDT	25A	1.5HP @240VAC 1 HP @600VAC
300 	Ice Cube	Quick Connect	SPST, SPDT, DPST, DPDT, SPST-NO-DM, SPST-NC-DB, SPST-DM-DB	30A	1HP @120VAC 2HP @240/250/277/600VAC
W92 	Mini Power	Quick Connect	SPST-NO	30A	1HP @120VAC 3HP @240VAC
			DPDT-NO DPDT-NC	30A	1HP @120VAC 3HP @240VAC
				3A	–
W9A 	Mini Power	Quick Connect	SPST-NO	30A	1HP @120VAC 2HP @240VAC
			SPDT	30A	1HP @120VAC 2HP @240VAC
				15A	1/4HP @120VAC 1/2HP @240VAC
			DPDT-NO DPDT-NC	30A	1HP @120VAC 3HP @240VAC
				3A	–

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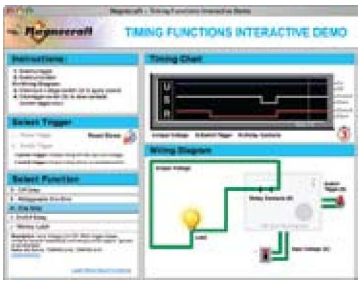
- Up to 10 timing functions
- Switching up to 4 pole (4PDT)
- Timing ranges up to 10 days
- DIN or panel mounting styles

NEW!

Interactive Timing Demo



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Series	Style	Type	Contact Forms	Rated Amps	Timing Range	Number of Functions	Function Type
821 	Mini-DIN	Timer	SPDT	15A	100ms to 10 Days	10	All
822 	Mini-DIN	Timer	DPDT	15A	100ms to 10 Days	10	All
831 	Mini-DIN	Voltage Sensing	SPDT	15A	100ms to 10 Sec	1	On Delay
841 	Mini-DIN	Current Sensing	SPDT	15A	100ms to 10 Sec	1	On Delay
TDR782 	Mini Plug-in w/Dial	Timer	DPDT	5A	100ms to 10 Hrs	1	On Delay
			4PDT	3A	100ms to 10 Hrs	1	On Delay
TDRPRO-5100 	1/4 DIN Panel Plug-in w/5 Digit Thumbwheel	Timer	SPDT DPDT	12A	100ms to 10 Hrs	10	All
			DPDT	12A		3	On Delay Repeat Cycle On Interval
TDRSOX 	Plug-in w/ Dial & DIP switches	Timer	DPDT	12A	100ms to 10 Hrs	2	On Delay Interval
TDRSRX			DPDT	12A	100ms to 10 Hrs	2	Off Delay Retriggerable

Functions

Power Trigger

Function	Description
On Delay	Contacts transfer after pre-set time.
Repeat Cycle (Starting Open)	Contacts wait for pre-set time before cycling.
Interval	Contacts transfer immediately, and release after pre-set time.
Repeat Cycle (Starting Closed)	Contacts transfer immediately and start repeat cycle.
Pulse Generator	Contacts transfer for a 0.5 pulse after pre-set time.

Switch Trigger

Function	Description
Off Delay	Contacts transfer when trigger is closed. Timing function begins after trigger is released.
Retriggerable One Shot	Contacts transfer when trigger is closed and timing function begins. Re-set any time.
One Shot	Contacts transfer when trigger is closed and timing function begins. Ignores re-set attempts.
On/Off Delay	Contacts transfer after pre-set time when trigger is closed; then transfer back after same time length.
Memory Latch	Contacts transfer each time trigger closes.

- 100% solid state design
- Industry-first design (861 Series)
- Integral heat sinks available
- Modern appearance & enhanced features
- Several styles to fit multiple applications

Series		Style	Integral Heat Sink	Contact Forms	Maximum Rated Current	Voltage	
						Input (control)	Output (load)
861		Mini-DIN	✔	SPST-NO	10A	DC AC	AC
					8A		
				SPST-NO SPST-NC	15A	DC	DC
SSRDIN		DIN	✔	SPST-NO SPST-NC	40A	DC AC	AC
Class 6		Puck	–	SPST-NO SPST-NC DPST-NO	90A	DC AC	AC
				SPST-NO SPST-NC DPST-NO	125A	DC	AC
				SPST-NO	25A		
				DPST-NO	25A		
				SPST-NO	40A		DC
70S2		PCB	–	SPST-NO	5A	DC	AC
					3A		DC
		Flange - Terminal	–	SPST-NO	25A	DC	AC
					5A		DC
		Flange - Solder	–	SPST-NO	10A	DC	AC
					3A		DC
					6A		AC
		Plug-in	–	SPST-NO	4A	DC	AC
					3A		DC
W226		Flange - Plug-in	–	SPST-NO	7A	DC	AC

Magnecraft

- Ideal for energy conservation
- Single & dual coil control
- Switching up to 6 pole (6PDT)
- Optional LED indicator
- Several styles to fit multiple applications

Series	Type	Terminals	Contact Forms	Socket Pins	Rated Amps	HP Rating	Features
711 	Impulse Sequencing Relay	Blade	DPDT	8	12A	1/3HP @ 120/240VAC	Unidirectional pulse will set and reset magnetically latched contacts - ie. "flip-flop"
712 	Alternating Relay	Pin	SPDT DPDT	8 8 & 11	12A	1/3HP @ 120/240VAC	Toggle switch locks contacts into single state or allows the relay to alternate between two loads.
755 	Magnetic Latching Octal Relay	Pin	DPDT	8	16A	1/3HP @ 120/240VAC	Single coil control allows a 2 or 3 wire control circuit; the contacts transfer and reset when a polarity sensitive voltage is applied to the coil.
785 	Magnetic Latching Square Base Relay	Spade	DPDT	8	16A	1/3HP @ 120/240VAC	Single coil control allows a 2 wire control circuit; the contacts transfer and reset when a polarity sensitive voltage is applied to the coil. Dual coil controls allows a 4 wire control circuit, the contacts transfer and reset when voltage is directed to specific coils.
303 	Magnetic Latching Power Relay	Spade	SPDT DPST DPDT	8	30A	1HP @ 120VAC 2HP @ 208VAC	Single coil control allows a 2 wire control circuit; the contacts transfer and reset when a polarity sensitive voltage is applied to the coil. Dual coil control allows a 4 wire control circuit, the contacts transfer and reset when voltage is directed to specific coils.
385 	Mechanical Latching Relay	Spade	DPDT 4PDT 6PDT	8	15A	1/3HP @ 120/240VAC	Dual coil construction controls up to 6 poles. The contacts are mechanically latched

- Space saving package design
- Single & Double pole switching
- Ratings from 0.25 to 20 Amps
- Wave solderable
- Sealed for wash-down process

Series	Type	Contact Forms	Rated Amps	Switching VAC	Switching VDC	Switching Min Switch	Switching Response
117SIP 	Miniature Reed Relay	SPST	.5A	120VAC	200VDC	10ma	.45ms
107DIP 	Miniature Reed Relay	SPST	.5A	120VAC	100VDC	10ma	1ms
171DIP 	Miniature Reed Relay	DPST	.5A	120VAC	100VDC	10ma	1ms
		SPST		60VAC			
172DIP 	Miniature Reed Relay	SPDT DPDT	.25A	60VAC	100VDC	10ma	1ms
276 	Electromechanical	SPDT	7A	240 HZ	30VDC	100ma	10ms
		SPST	10A				
976 	Electromechanical	SPST	12A	240 HZ	30VDC	100ma	10ms
			20A	240 VAC	48VDC		
		DPDT	5A	240VAC	30VDC		
49 	Electromechanical	SPDT	15A	277AC	28VDC	100ma	25ms
			10A				
			5A	120VAC			
			15	150VAC			
			3A				

SECTION 3

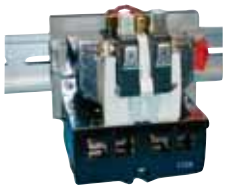
POWER RELAYS AND CONTACTORS

15 TO 300 AMPERES

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

Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

POWER RELAYS & CONTACTORS

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 US UL Recognized File No. E43641; SA; UL LISTED 367G UL Listed File No. E43641; CE	c US UL Recognized File No. E43641; SA; UL LISTED 367G UL Listed File No. E43641	c US UL Recognized File No. E43641; SA
PAGE NUMBER		PAGE 4, 5, 6, 8	PAGE 7, 8	PAGE 9, 10

	MDR	B101
		
	SEE PAGE 13	2.84 x 2.80 x 2.90
	◆ 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)	◆ 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
	120, 240 24	Not Applicable 12, 24, 48
	7 to 26.4 3.1 to 9.1	Not Applicable 10
	Class B (130 ºC)	Class B (130 ºC)
	VARIOUS	**SPST-NO-DM, SPST-NC-DB**
	Mercury	Silver alloy
	2	50
	See General specifications sheet	100
	See General specifications sheet	240
	See General specifications sheet	100
	See General specifications sheet	28
	50 80 to 100	60 30
	2650	1500
	1000 @ 500	1000 @ 500
	-40 +60	Not Applicable Not Applicable
	-40 +60	-40 +65
	-55 +100	-55 +100
	100,000	100,000
	5,000,000	5,000,000
	370 to 1078	370
	LISTED 367G UL Listed File No. E52197	LISTED 367G UL Listed File No. E52197
	PAGE 11 - 14	PAGE 15, 16

199 OPEN STYLE POWER RELAYS

Magnecraft
Strathers-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

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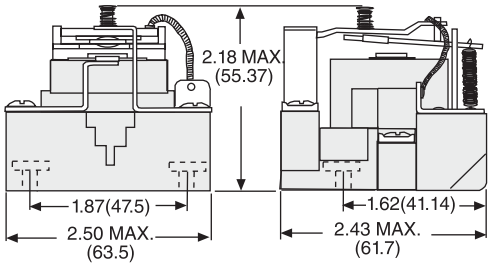
UP TO 50 AMPS

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

199 SPDT

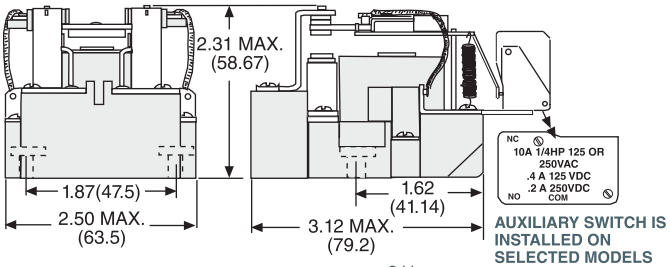
40 AMP, 1-1/2 Hp



227 grams

199 DPDT

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

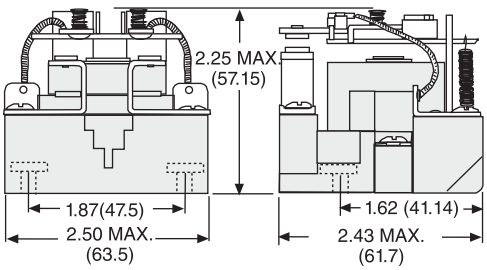


AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS

311 grams

199 DPST-NO

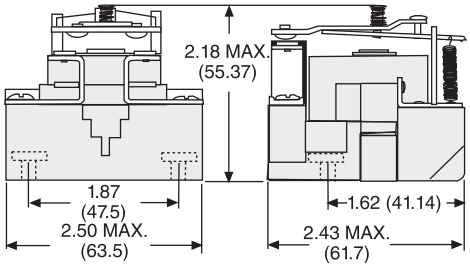
40 AMP, 1-1/2 Hp PER POLE
2 Hp - 2 POLE SWITCHING



255 grams

199 SPST-NO-DM

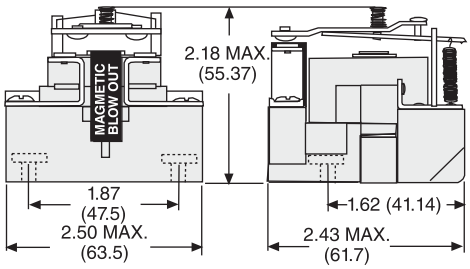
40 AMP, 2 Hp



227 grams

199DB SPST-NO-DM

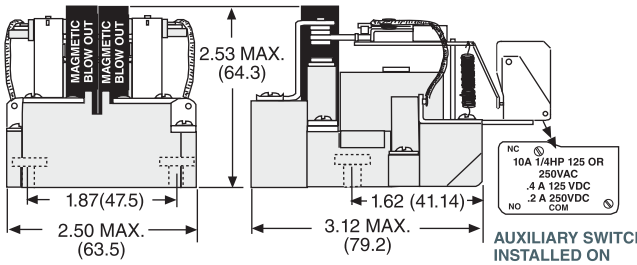
WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING 20 AMP, 110 VDC



228 grams

199B DPDT

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

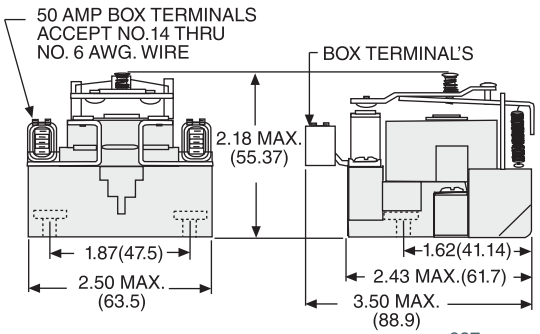


AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS

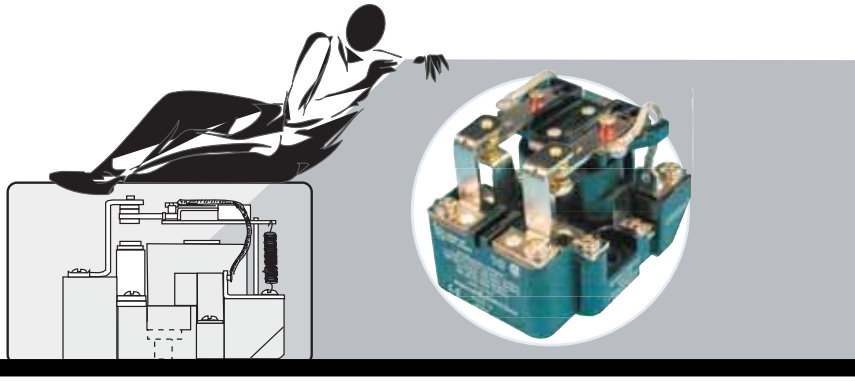
312 grams

199DE SPST-NO-DM

WITH BOX TERMINALS.
50 AMP, 2 Hp



227 grams

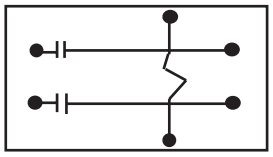


199 OPEN STYLE POWER RELAYS

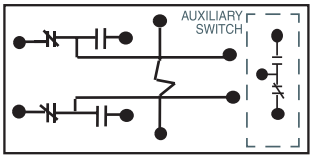
Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

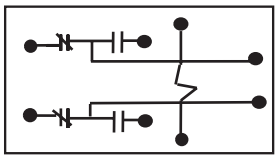
UP TO 50 AMPS

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

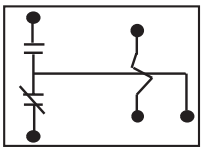


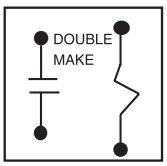
199 DPDT
40 AMP, 1-1/2 Hp PER POLE, 2 Hp-2 POLE SWITCHING



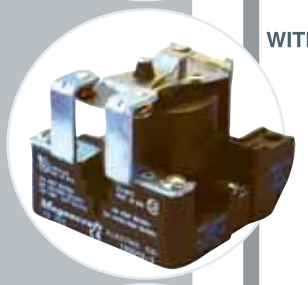


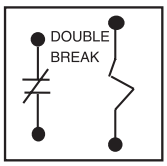
199 SPDT
40 AMP, 1-1/2 Hp



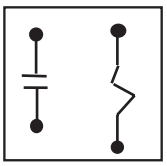


199DB SPST-NO-DM
WITH MAGNETIC BLOWOUT FOR DC ARC QUENCHING 20 AMP, 110 VDC

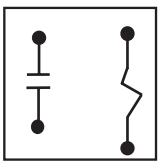




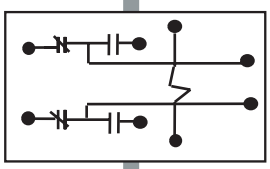
199 SPST-NC-DB
40 AMP, 2 Hp

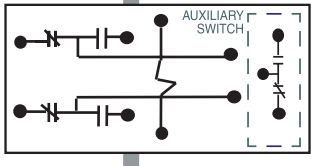


199 SPST-NO-DM
40 AMP, 2 Hp



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

WIRING DIAGRAM
(VIEWED FROM TOP)

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

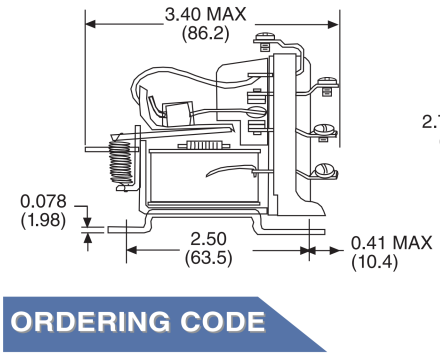
DC COILS		AC COILS	
NOMAINAL INPUT VOLTAGE	DC RESISTANCE IN OHMS ±10%	NOMAINAL INPUT VOLTAGE	DC RESISTANCE IN OHMS ±10%
6	8.2		
12	33	12 VAC 50/60 Hz	1.4
24	132	24 VAC 50/60 Hz	5.0
48	526	120 VAC 50/60 Hz	120
110	2760	240 VAC 50/60 Hz	587
125	3570		

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

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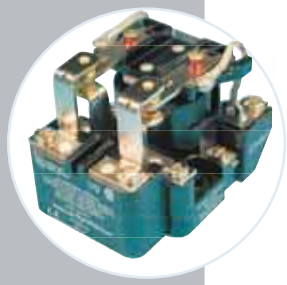
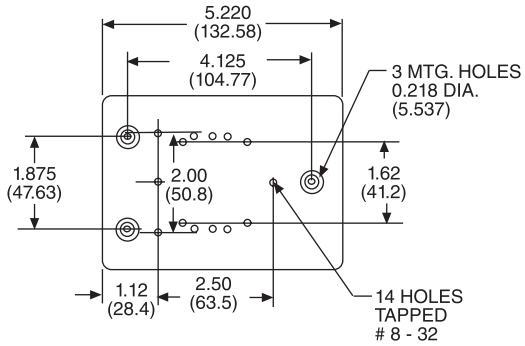
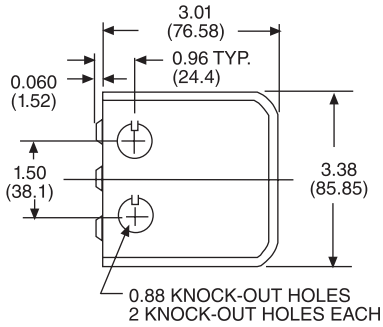
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

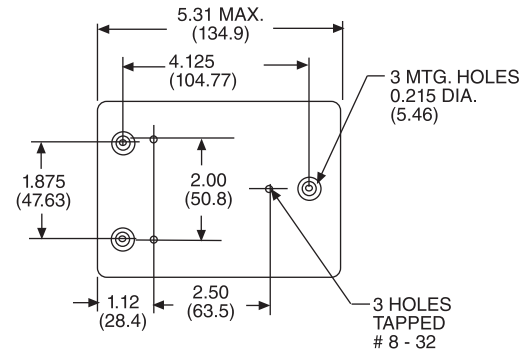


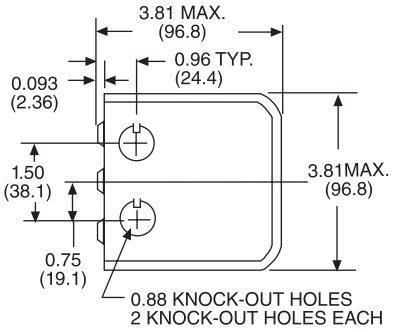
199





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

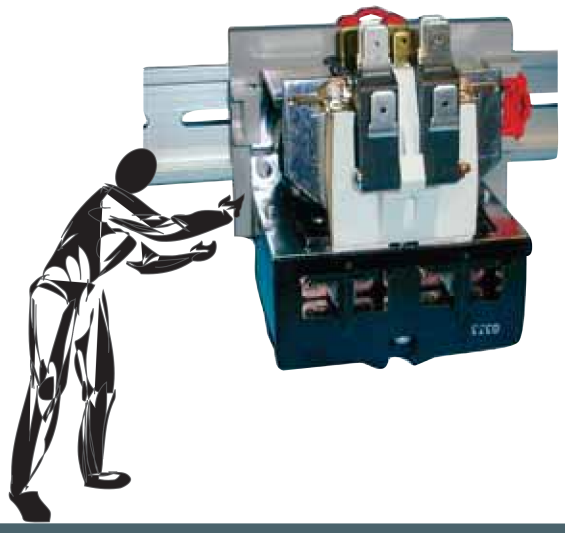
LOAD VOLTAGE	PHASE	MOTOR LOAD	RESISTIVE LOAD
120 VAC	1-2-3	1 HP	15 AMPS (AC1)
240 VAC	1	1.5 HP	10 AMPS (AC1)
240 VAC	2-3	3 HP	10 AMPS (AC1)
480/600 VAC	2-3	3 HP	5 AMPS (AC1)
30 VDC	-	-	15 AMPS (DC1)
125 VDC	-	-	5 AMPS (DC1)

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.



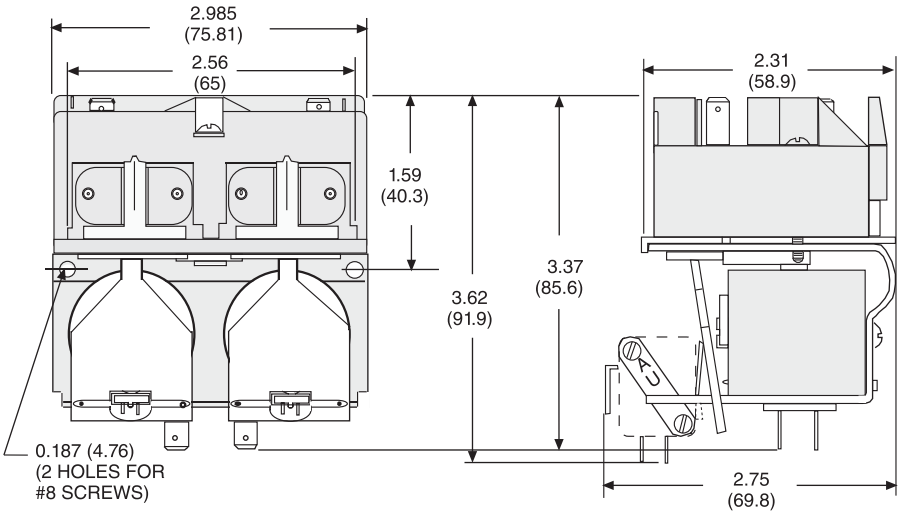
PHONE: (843) 393-5778 FAX: (843) 393-4123
EMAIL: info@magnecraft.com

A275 MOTOR REVERSING CONTACTOR

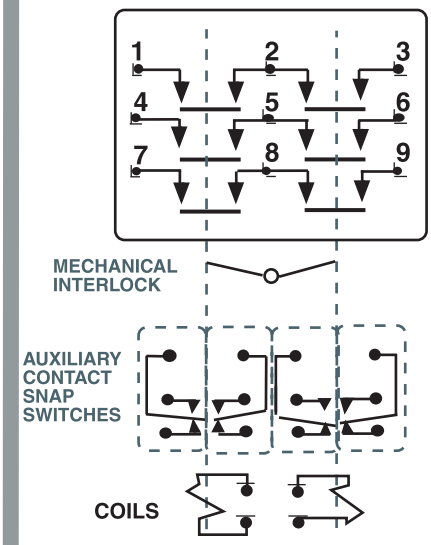
UP TO 3 HP, 15 AMPS

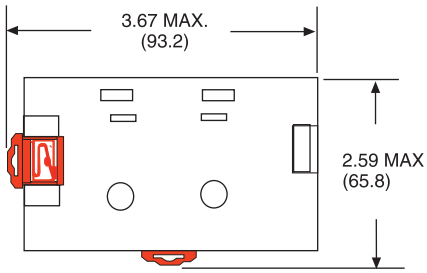
OUTLINE DIMENSIONS

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

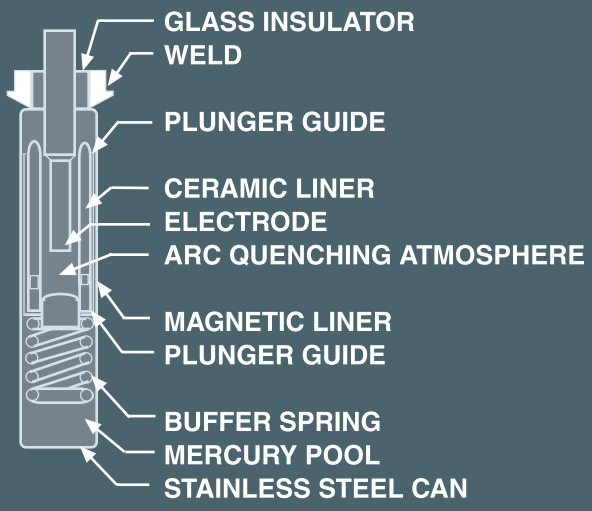
OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR DETAILS

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

APPLICATION DATA

Magnecraft & Struthers-Dunn
Your Contact for Industrial Relays

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		HP		MOTOR AMPS	
			NO	NC	1Ø	3Ø	1Ø	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 (@ 25°C)

	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 °C)
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:	°C	-40
Operating, AC Upper:	°C	+60
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	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.

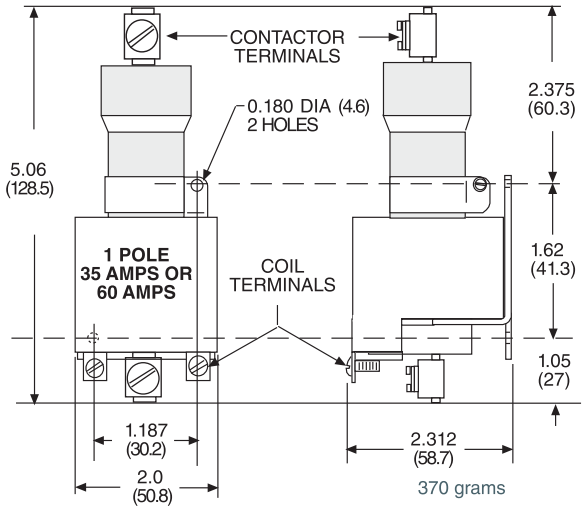
PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

Magnecraft Struthers-Dunn
Your Contact for Industrial Relays

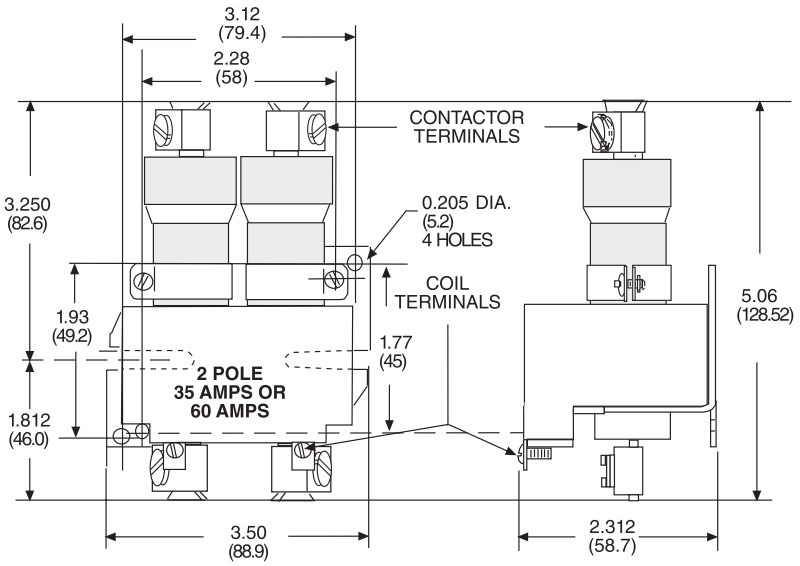
1, 2 & 3 POLES 35, 60 AMPS
1 POLE 100 AMPS

OUTLINE DIMENSIONS

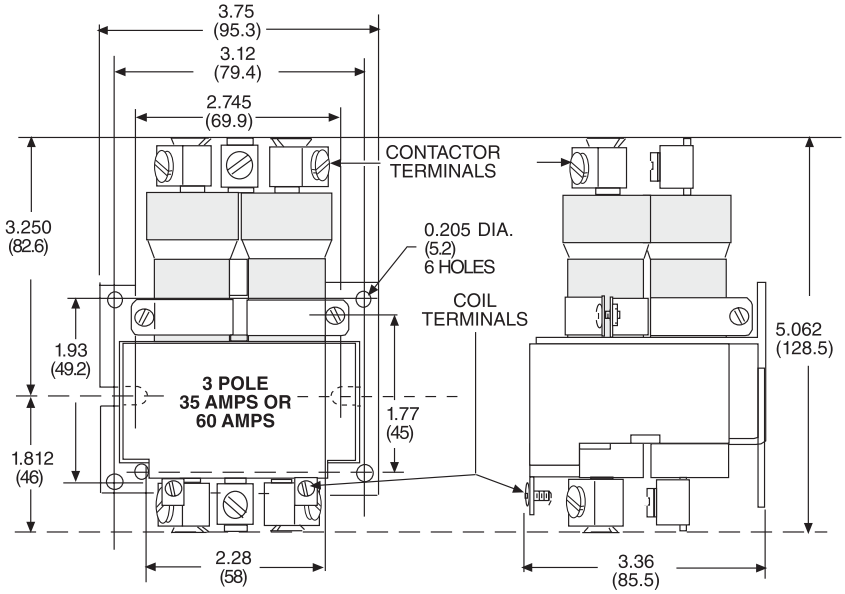
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



370 grams

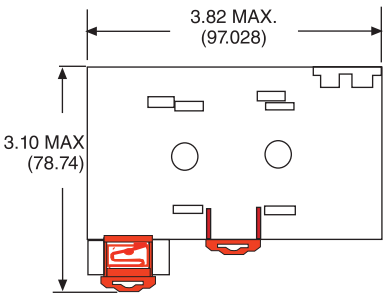


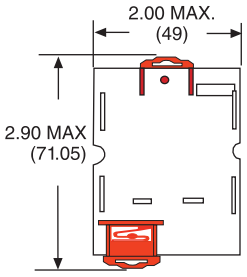
738 grams

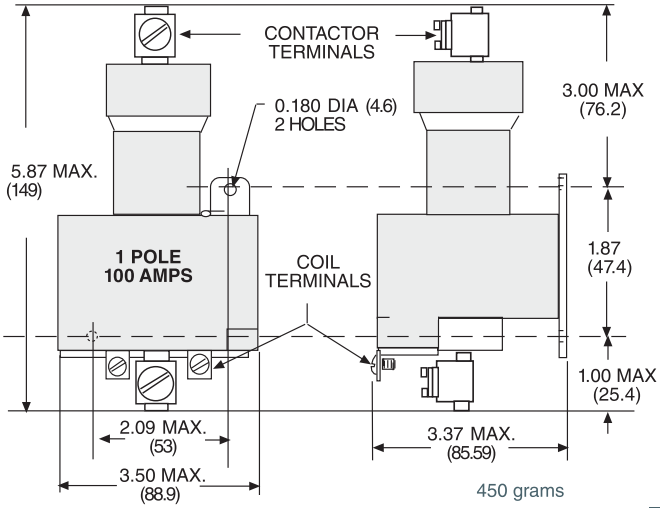


1078 grams

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

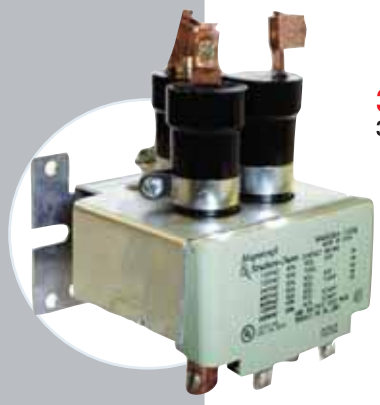
Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

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

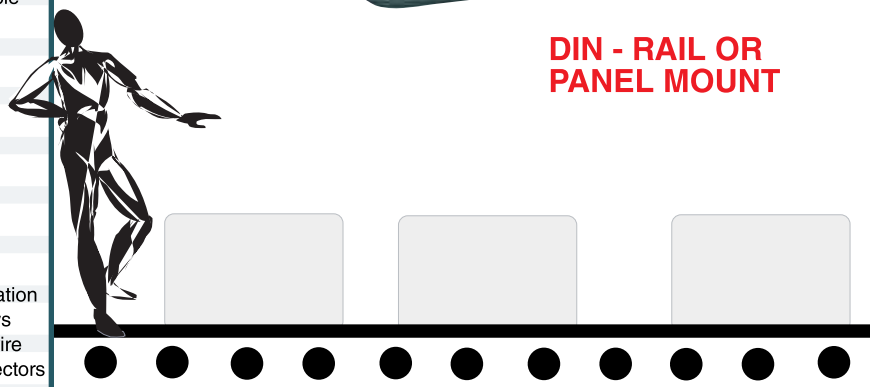
UP TO 240 VAC 50/60 Hz	100 A, RESISTIVE (AC1)
28 VDC	100 A, RESISTIVE (DC1)

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 (@ 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 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 °C)
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:	°C	Not Applicable
Operating, AC Upper:	°C	Not Applicable
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	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

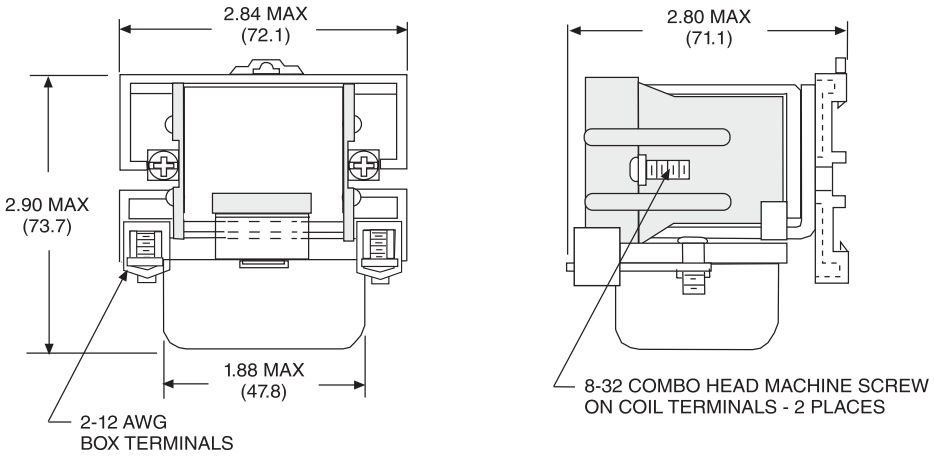


PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

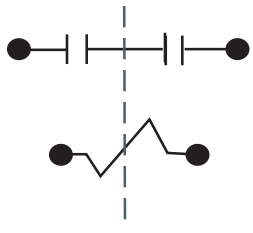
B101 100 AMP CONTACTOR

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

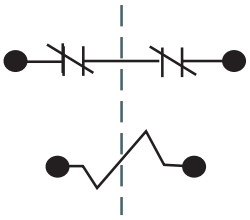
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



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

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