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relay  
solutions

# MAGNECRAFT RELAYS



Sockets



Time  
Delay  
Relays



Latching  
Relays



Plug-In  
Relays



Power  
Relays



Solid  
State  
Relays



PCB  
Relays

[www.magnecraft.com](http://www.magnecraft.com)

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.

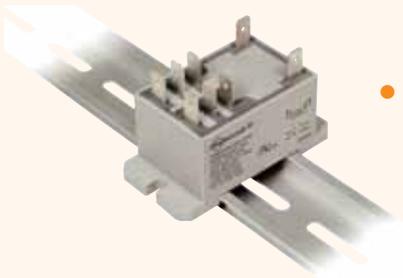
#### Product Offering Includes:



- 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.



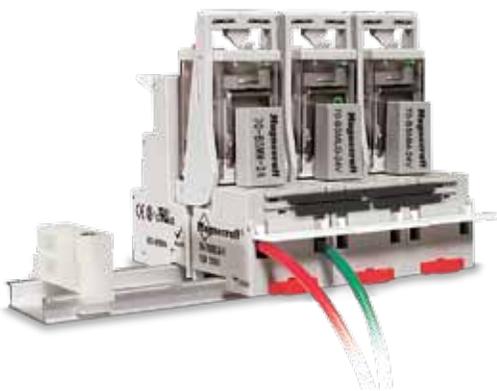
- Added functionality or protection with new socket modules including:
  - LED Status
  - Surge Protection
  - Diode Protection



- 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 The Plug-In Relay/Socket System is built to upgrade and simplify outdated control panels.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.



**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.

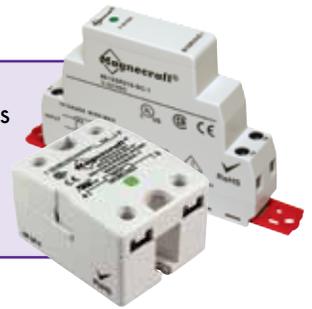
**Applications:**

- 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 power management on printed circuit boards (PCBs).



## 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?**

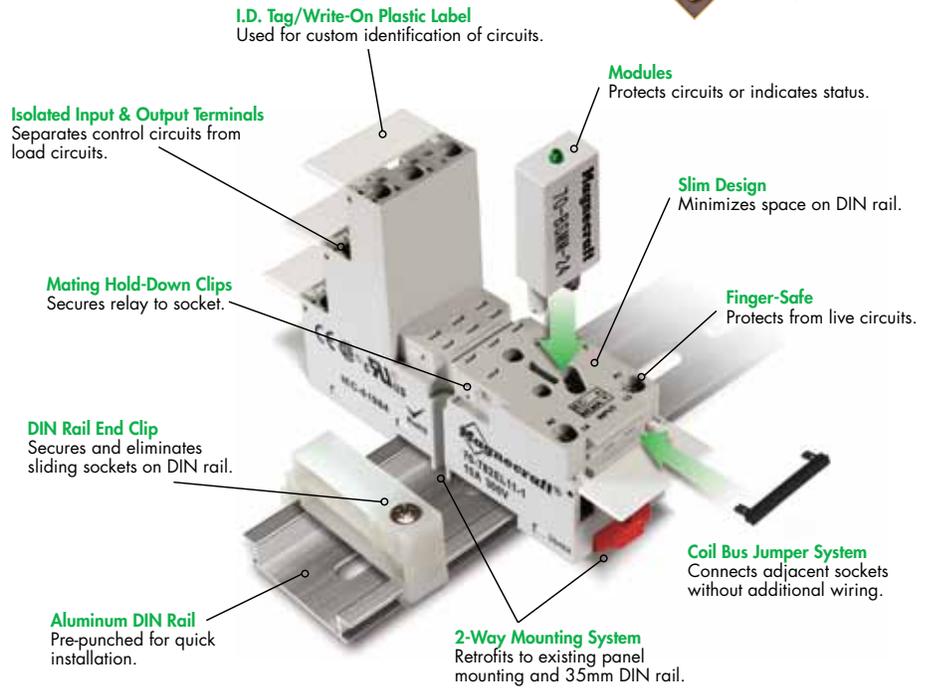
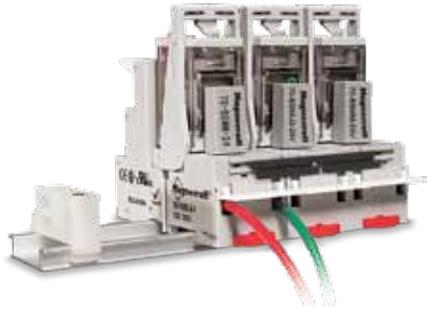
**YES** A latching or sequencing relay is required.



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

Series	Style	Terminals	Contact Configuration	Output Current	Horsepower Rating	
781		Ice Cube Power & Low-Level	Blade	SPDT	15 A	1/2 HP at 120 Vac 1 HP at 277 Vac
					3 A	–
782		Ice Cube Power & Low-Level	Blade	SPDT	20 A	1/2 HP at 120 Vac 1 HP at 250 Vac
				DPDT	15 A	1/2 HP at 120 Vac 1 HP at 250 Vac
				DPDT, 3PDT & 4PDT	10 A	1/3 HP at 120 Vac 1 HP at 277 Vac
					3 A	1/16 HP at 120 Vac
783		Ice Cube Power	Blade	3PDT	15 A	1/2 HP at 120 Vac 3/4 HP at 250 Vac
784		Ice Cube Power	Blade	4PDT	15 A	1/2 HP at 120 Vac 3/4 HP at 250 Vac
750		Ice Cube Power	Octal (8 Pin)	SPDT & DPDT	16 A	1/3 HP at 120 Vac 1/2 HP at 250 Vac
			Octal (11 Pin)	3PDT	16 A	1/3 HP at 120 Vac 1/2 HP at 250 Vac
788		Ice Cube Power	Blade	SPDT, DPDT & 3PDT	16 A	1/3 HP at 120 Vac 1/2 HP at 230 Vac
388J		Ice Cube Power	Blade	DPDT	16 A	1/3 HP at 120 Vac 1/2 HP at 600 Vac
				3PDT	16 A	1/2 HP at 120 Vac 3/4 HP at 230 Vac
782H		Hermetically Sealed	Quick Connect	DPDT & 4PDT	5 A	–
				DPDT & 4PDT	3 A	1/16 HP at 120 Vac 1/10 HP at 230 Vac
				DPDT & 4PDT	1 A	–
750H		Hermetically Sealed	Octal (8 Pin)	DPDT	12 A	1/3 HP at 120 Vac 1/2 HP at 230 Vac
					3 A	–
			Octal (11 Pin)	3PDT	12 A	1/3 HP at 120 Vac 1/2 HP at 230 Vac
					3 A	–

# The Complete System Solution!



Relay Style	Relay Series	Socket	Rated Amps	Sample Image	Pins	Terminals	Terminal Layout	Finger Safe	
Control ICE-Cube Relay	782XB1(2, 3)	70-782EL8-1	12 A		8	Spade	Logic	✓	
	782XCX	70-782EL11-1	10 A		11	Spade	Logic	✓	
	782XDX TDR782	70-782D14-1	10 A		14	Spade	Mixed	✓	
		70-782E14-1	10 A		14	Spade	Logic	✓	
		70-461-1	10 A		14	Spade	Mixed	✗	
Power ICE-Cube Relay	781XAX	70-781D5-1A	20 A		5	Spade	Mixed	✓	
	782XAX 782XBX	70-782D8-1A	16 A		8	Spade	Mixed	✓	
		70-459-1	10 A		8	Spade	Mixed	✗	
	783XCX	70-783D11-1	16 A		11	Spade	Mixed	✓	
Square Base Power Relay	784XDX	70-784D14-1A	16 A		14	Spade	Mixed	✓	
		725	70-725-1		30 A	6	Spade	Mixed	✓
		788 388J 389F TDRSRXB	70-788EL11-1		25 A	11	Spade	Logic	✓
70-463-1	15 A		11	Spade	Mixed	✗			
Octal Relay (8 Pin)	750XAX 750XBX TDRPRO5101(2) TDRSOXP	70-169-1	15 A		8	Octal	Mixed	✗	
		70-464-1	15 A		8	Octal	Mixed	✗	
		70-750DL8-1	16 A		8	Octal	Logic	✓	
		70-750E8-1	12 A		8	Octal	Mixed	✓	
		70-750EL8-1	16 A		8	Octal	Mixed	✓	
Octal Relay (11 Pin)	750XCX TDRPRO5100 TDRSRXP	70-170-1	15 A		11	Octal	Mixed	✗	
		70-465-1	15 A		11	Octal	Mixed	✗	
		70-750DL11-1	16 A		11	Octal	Logic	✓	
		70-750E11-1	12 A		11	Octal	Mixed	✓	
		70-750EL11-1	16 A		11	Octal	Logic	✓	

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

**Modules**

**LED Circuit**

Verifies that power is being supplied to the coil.

**Protection Modules:**

**Metal Oxide Varistor (MOV) Circuit**

Protects from damaging electrical spikes.

**Diode Circuit**

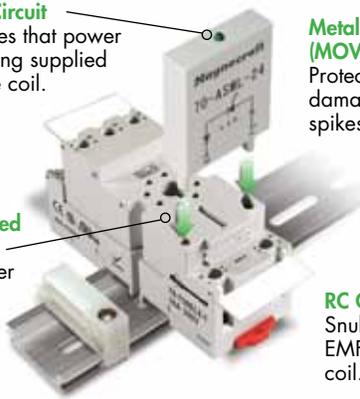
Protects from inductive voltages.

**RC Circuit**

Snubs back EMF of relay coil.

**Optimized Size**

No wider than the socket.



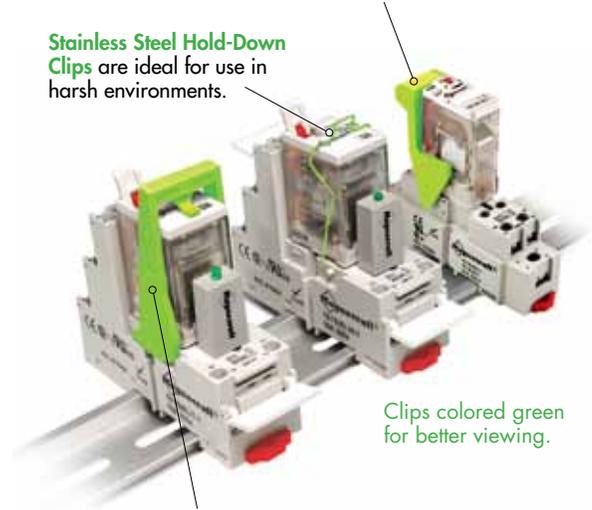
**ACCESSORIES**

Module	Clip	Bus Jumper	ID Tag/Label
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✗	✗
✓	✓	✗	✓
✗	✓	✗	✗
✓	✓	✓	✓
✓	✓	✗	✗
✓	✓	✗	✗
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✓	✓	✗	✓
✓	✓	✓	✓

**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.

**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.



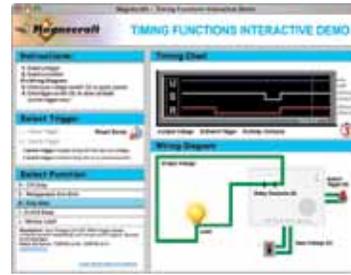
- No socket needed
- Plastic construction
- Light weight
- Low cost
- Low profile
- Narrow mounting
- Easy termination

- 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	Style	Terminals	Contact Configuration	Output Current	Horsepower Rating	
W199		Open	Screw	SPST, SPDT, DPST, DPDT, SPST-DM, SPST-DB	40 A	1.5 HP at 120/240/250/277/600 Vac
					50 A	
389F		Ice Cube	Quick Connect	SPST-NO-DM, SPDT-DM-DB, SPST-NC-DB	30 A	1 HP at 120 Vac 1.5 HP at 240/250/277/600 Vac
				SPST, SPDT, DPST, DPDT	25 A	1.5 HP at 240 Vac 1 HP at 600 Vac
300		Ice Cube	Quick Connect	SPST, SPDT, DPST, DPDT, SPST-NO-DM, SPST-NC-DB, SPST-DM-DB	30 A	1 HP at 120 Vac 2 HP at 240/250/277/600 Vac
725		Ice Cube	Quick Connect & Screw	SPST-NO	30 A	1.5 HP at 120 Vac 3.0 HP at 277 Vac
				DPST-NO	25 A	1.0 HP at 120 Vac 2.0 HP at 277 Vac
W92		Mini Power	Quick Connect	SPST-NO	30 A	1 HP at 120 Vac 3 HP at 240 Vac
				DPDT-NO DPDT-NC	30 A	1 HP at 120 Vac 3 HP at 240 Vac
					3 A	–
W9A		Mini Power	Quick Connect	SPST-NO	30 A	1 HP at 120 Vac 2 HP at 240 Vac
				SPDT	30 A	1 HP at 120 Vac 2 HP at 240 Vac
					15 A	1/4 HP at 120 Vac 1/2 HP at 240 Vac
				DPDT-NO DPDT-NC	30 A	1 HP at 120 Vac 3 HP at 240 Vac
					3 A	–

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

### Interactive Timing Demo



visit [www.magnecraft.com/timer-demo.php](http://www.magnecraft.com/timer-demo.php)

Series	Style	Contact Configuration	Output Current	Timing Range	Number of Functions	Function Type
820	Time delay relay Mini-DIN mount	SPDT (821)	15 A	100 ms to 10 Days	10	All
		DPDT (822)				
831	Voltage sensing mini-DIN mount relay	SPDT	15 A	100 ms to 10 Sec	1	On Delay
841	Current sensing mini-DIN mount relay	SPDT	15 A	100 ms to 10 Sec	1	On Delay
TDR782	Time delay relay Mini Plug-in w/Dial	DPDT	5 A	100 ms to 10 Hrs	1	On Delay
		4PDT	3 A		1	On Delay
TDRPRO	Time delay relay 1/4 DIN Panel Plug-in w/5 Digit Thumbwheel	SPDT (TDRPRO-5101) DPDT (TDRPRO-5100)	12 A	100 ms to 10 Hrs	10	All
		DPDT (TDRPRO-5102)			3	On Delay Repeat Cycle On Interval
TDRSOX	Time delay relay Plug-in w/Dial & DIP switches	DPDT	12 A	100 ms to 10 Hrs	2	On Delay Interval
TDRSRX	Time delay relay Plug-in w/Dial & DIP switches	DPDT	12 A	100 ms to 10 Hrs	2	Off Delay Retriggerable

### Time Delay Function Definitions

#### 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 & 861H Series)
- Integral heat sinks available
- Modern appearance & enhanced features
- Several styles to fit multiple applications



**CLASS 1 DIVISION 2**

861H relays are Class 1, Division 2 certified for use in hazardous locations

Series	Style	Integrated Heat Sink	Contact Configuration	Output Current Range	Input Voltage Range	Output Voltage Range
861	 Mini-DIN mount	✓	SPST-NO	8 to 10 A	3 to 32 Vdc 90 to 280 Vac	3 to 150 Vdc 24 to 480 Vac
			SPST-NO SPST-NC	15 A		
861H	 Mini-DIN mount Class 1, Division 2 Certified	✓	SPST-NO	8 to 10 A	3 to 32 Vdc 90 to 280 Vac	3 to 150 Vdc 24 to 480 Vac
			SPST-NO SPST-NC	15 A		
SSRDIN	 DIN mount	✓	SPST-NO	10 to 45 A	4 to 32 Vdc 90 to 280 Vac	0 to 60 Vdc 24 to 660 Vac
Class 6	 Puck style Panel mount	-	SPST-NO	10 to 75 A	3 to 32 Vdc 90 to 280 Vac	3 to 200 Vdc 24 to 480 Vac
			DPST-NO	10 to 25 A		
70S2	 PCB mount Solder terminals 70S2 (F)	-	SPST-NO	4 A	3 to 32 Vdc	3 to 60 Vdc 8 to 280 Vac
	 Panel mount Solder terminals 70S2 (M)			10 A		
	 Panel mount Blade terminals 70S2 (N)			5 to 12 A		
	 Panel mount Screw terminals 70S2 (S)			5 to 25 A		
	 PCB mount Solder terminals 70S2 (V)			3 to 5 A		

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

Series	Style	Terminals	Contact Configuration	Output Current	Horsepower Rating	Features
711	 Impulse Sequencing Relay	Blade (8)	DPDT	12 A	1/3 HP at 120/240 Vac	Unidirectional pulse will set and reset magnetically latched contacts - ie. "flip-flop"
712	 Alternating Relay	Pin (8 to 11)	SPDT DPDT	12 A	1/3 HP at 120/240 Vac	Toggle switch locks contacts into single state or allows the relay to alternate between two loads.
755	 Magnetic Latching Octal Relay	Pin (8)	DPDT	16 A	1/3 HP at 120/240 Vac	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 (8)	DPDT	16 A	1/3 HP at 120/240 Vac	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 (8)	SPDT DPST DPDT	30 A	1 HP at 120 Vac 2 HP at 208 Vac	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 (8)	DPDT 4PDT 6PDT	15 A	1/3 HP at 120/240 Vac	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	Style	Contact Configuration	Output Current	Output Voltage	Minimum Switching Requirement	Response Time
117SIP	 Miniature Reed Relay	SPST	0.25 to 0.5 A	120 Vac 200 Vdc	10 mA	0.45 ms
107DIP	 Miniature Reed Relay	SPST	0.25 to 0.5 A	120 Vac 100 Vdc	10 mA	1 ms
171DIP	 Miniature Reed Relay	DPST	0.25 to 0.5 A	120 Vac 100 Vdc	10 mA	1 ms
		SPST		60 Vac 100 Vdc		
172DIP	 Miniature Reed Relay	SPDT DPDT	0.25 to 0.35 A	60 Vac 100 Vdc	10 mA	1 ms
276	 Electromechanical Relay	SPDT	7 A	240 Vac 30 Vdc	100 mA	10 ms
		SPST	10 A			
976	 Electromechanical Relay	SPST	12 A	240 Vac 30 Vdc	100 mA	10 ms
			20 A	240 Vac 48 Vdc		
		DPDT	5 A	240 Vac 30 Vdc		
49	 Electromechanical Relay	SPDT	15 A	277 Vac 28 Vdc	100 mA	25 ms
			10 A			
			5 A	120 Vac 28 Vdc		
			15 A	150 Vac 28 Vdc		
			3 A			