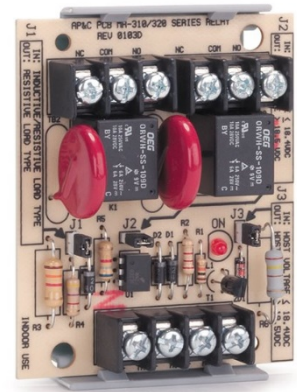


### Description

The MR-300 Series Relays Control Relays provide for the use of two differently referenced power supplies on the trip and host inputs. Both inputs are polarity sensitive and diode protected. Both the trip and host inputs are jumper selectable for dual ranges to optimize power consumption. Application configuration is easy, with reversible selectability for “LO” range ( $\leq 18.4\text{VDC}$ ) and “HI” range ( $\geq 18.5\text{VDC}$ ) trip and host inputs. The trip and host inputs are opto-isolated to guarantee non-interference between inputs or integrated systems. Each relay position contains a red LED, which indicates when the relay coil is energized. Multi-position relays may be “snapped apart” and used independently. Relays are available with snap track and mounting hardware (an optional DIN/ “A” series rail clip, TK-CL, is also available), swage type spacers, or mounted in sturdy enclosures. Both trip and host inputs are polarized, so that either or both may be supervised, and/or utilize voltage polarity reversal logic for complex, multi-criteria operations. These relay modules are suitable for use with standard TTL, Fire, Security, and many other Building Control Systems.



### Features

- Each relay position contains a red LED, which indicates when the relay coil is energized.
- Multi-position relays may be “snapped apart” and used independently.
- Available in enclosure, snap-track or spacer mounted versions and single or multi-unit assemblies. Enclosure configurations available with red or gray covers and provide 'energized on' LED viewing port(s).
- No special tools are required for installation.
- Industrial/commercial sized PCB.
- Both inputs are polarity sensitive and diode protected.
- Both the trip and host inputs are jumper selectable for dual ranges to optimize power consumption.
- Application configuration is easy, with reversible selectability for “LO” range ( $\leq 18.4\text{VDC}$ ) and “HI” range ( $\geq 18.5\text{VDC}$ ) trip and host inputs.
- The trip and host inputs are opto-isolated to guarantee non-interference between inputs or integrated systems.

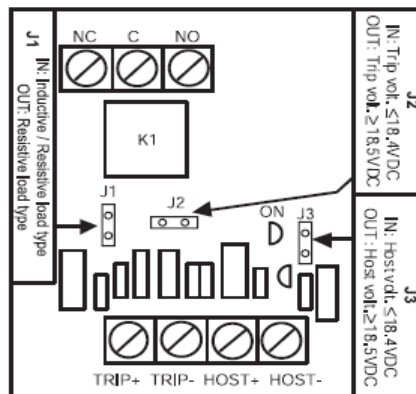
#### MR-310 SERIES

SPDT Contacts

Resistive: 10A @ 120VAC,

7A @ 24VDC/VAC

Inductive: 0.35 PF (Power Factor)



**Triggering Power Input**  
**TRIP:** 5-27.3VDC @  
 2.0-17mA (Min.- Max.)\*  
 (Polarized)

**Operating Power Input**  
**HOST:** 12-27.3VDC @  
 36-46mA (Min.- Max.)\*  
 (Polarized)

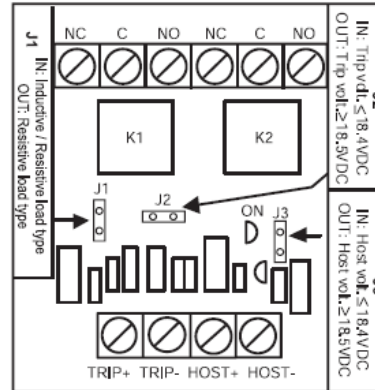
#### MR-320 SERIES

DPDT Contacts

Resistive: 10A @ 120VAC,

7A @ 24VDC/VAC

Inductive: 0.35 PF (Power Factor)



**Triggering Power Input**  
**TRIP:** 5-27.3VDC @  
 2.0-17mA (Min - Max.)\*  
 (Polarized)

**Operating Power Input**  
**HOST:** 12-27.3VDC @  
 56-79mA (Min - Max.)\*  
 (Polarized)

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Represented by:



# Low Voltage, Low Current Opto-Isolated Relays

Series MR-300

Module

## Ordering Information and Product Specification

### Jumper Configuration

| Model (Application)                      | Application Configuration |           |           |           |                          | Trip Input     |              | Host Input     |           | General System Application |   |
|--|---------------------------|-----------|-----------|-----------|--------------------------|----------------|--------------|----------------|-----------|----------------------------|---|
|  | J1 (Load)                 | J2 (Trip) | J3 (Host) | Load Type | Inductive Breaking Power | Voltage        | Current      | Voltage        | Current   |                            |   |
|  |                           |           |           |           |                          |                |              |                | MR-310    |                            | MR-320                                    |
| "A"<br>(LO trip-HI Host)                 | IN                        | IN        | OUT       | ANY       | MAXIMUM                  | 5 – 18.4VDC    | 3.2 – 17mA   | 18.5 – 27.3VDC | 38 – 46mA | 56 – 79mA                  | TTL or Security to Fire Alarm             |
| "B"<br>(LO trip-HI Host)                 | OUT                       | IN        | OUT       | RESISTIVE | MODERATE                 | 5 – 18.4VDC    | 2.5 – 13mA   | 18.5 – 27.3VDC |           |                            |   |
| "C"<br>(HI trip-LO Host)                 | IN                        | OUT       | IN        | ANY       | MAXIMUM                  | 18.5 – 27.3VDC | 2.1 – 3.3mA  | 12 – 18.4VDC   | 36 – 40mA | 69 – 73mA                  | Fire Alarm to Security                    |
| "D"<br>(HI trip-LO Host)                 | OUT                       | OUT       | IN        | RESISTIVE | MODERATE                 | 18.5 – 27.3VDC | 2.0 – 3.2 mA | 12 – 18.4VDC   |           |                            |   |
| "E"<br>(LO trip-LO Host)                 | IN                        | IN        | IN        | ANY       | MAXIMUM                  | 5 – 18.4VDC    | 3.2 – 17mA   | 12 – 18.4VDC   | 36 – 40mA | 69 – 73mA                  | TTL or Security to Security               |
| "F"<br>(LO trip-LO Host)                 | OUT                       | IN        | IN        | RESISTIVE | MODERATE                 | 5 – 18.4VDC    | 2.5 – 13mA   | 12 – 18.4VDC   |           |                            |   |
| "G"<br>(HI trip-HI Host)                 | IN                        | OUT       | OUT       | ANY       | MAXIMUM                  | 18.5 – 27.3VDC | 2.1 – 3.3mA  | 18.5 – 27.3VDC | 36 – 46mA | 56 – 79mA                  | Fire Alarm, Lighting, or Building Control |
| "H"<br>(As Shipped)<br>(HI trip-HI host) | OUT                       | OUT       | OUT       | RESISTIVE | MODERATE                 | 18.5 – 27.3VDC | 2.0 – 3.2mA  | 18.5 – 27.3VDC |           |                            |   |

| Model Number | Module Positions | Contact Configuration Per Position | Spacer Mounted (H x W x D)                 | Track Mounted (H x W x D)                  | Enclosure Mounted (H x W x D)               | Cover Material                                     |
|--------------|------------------|------------------------------------|--|--|---|--|
| MR-311/S     | 1                | SPDT                               | 3.25" (83mm) x 2.75" (70mm) x 1.44" (36mm) | 3.40" (87mm) x 2.75" (70mm) x 1.50" (38mm) | 5.13" (131mm) x 3.13" (80mm) x 2.50" (64mm) | Grey ABS<br>94V-0 Plastic<br>Red ABS 94V-0 Plastic |
| MR-321/S     |                  | DPDT                               |  |  |   |  |
| MR-311/T     |                  | SPDT                               |  |  |   |  |
| MR-321/T     |                  | DPDT                               |  |  |   |  |
| MR-311/C     |                  | SPDT                               |  |  |   |  |
| MR-321/C     |                  | DPDT                               |  |  |   |  |
| MR-311/C/R   |                  | SPDT                               |  |  |   |  |
| MR-321/C/R   |                  | DPDT                               |  |  |   |  |
| MR-312/S     | 2                | SPDT                               | 3.25" (83mm) x 2.75" (70mm) x 1.44" (36mm) | 3.40" (87mm) x 2.75" (70mm) x 1.50" (38mm) | 5.13" (131mm) x 3.13" (80mm) x 2.50" (64mm) | Grey ABS<br>94V-0 Plastic<br>Red ABS 94V-0 Plastic |
| MR-322/S     |                  | DPDT                               |  |  |   |  |
| MR-312/T     |                  | SPDT                               |  |  |   |  |
| MR-322/T     |                  | DPDT                               |  |  |   |  |
| MR-312/C     |                  | SPDT                               |  |  |   |  |
| MR-322/C     |                  | DPDT                               |  |  |   |  |
| MR-312/C/R   |                  | SPDT                               |  |  |   |  |
| MR-322/C/R   |                  | DPDT                               |  |  |   |  |
| MR-313/S     | 3                | SPDT                               | 3.25" (83mm) x 2.75" (70mm) x 1.44" (36mm) | 3.40" (87mm) x 2.75" (70mm) x 1.50" (38mm) | 5.13" (131mm) x 3.13" (80mm) x 2.50" (64mm) | Grey ABS<br>94V-0 Plastic<br>Red ABS 94V-0 Plastic |
| MR-323/S     |                  | DPDT                               |  |  |   |  |
| MR-313/T     |                  | SPDT                               |  |  |   |  |
| MR-323/T     |                  | DPDT                               |  |  |   |  |
| MR-313/C     |                  | SPDT                               |  |  |   |  |
| MR-323/C     |                  | DPDT                               |  |  |   |  |
| MR-313/C/R   |                  | SPDT                               |  |  |   |  |
| MR-323/C/R   |                  | DPDT                               |  |  |   |  |

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Represented by:



# Low Voltage, Low Current Opto-Isolated Relays

Series MR-300

Module

|                         |   |
|-------------------------|---|
| Coil Voltage            | MR-100: 24(18-35) VDC, 24(18-35) VAC, 120VAC, 230VAC<br>MR-200: 24(18-35) VDC, 24VAC, 120VAC, 230VAC<br>(Pull in voltage: 75% of nominal max. @ 25°C; Drop out voltage: 25% of nominal min. @ 25°C) |
| Polarized               | DC input only   |
| Energized LED Indicator | One per module position   |
| Current Requirement     | Per module position: MR-100 Series = 18mA / MR-200 Series = 40mA  |
| Contact Ratings         | 7A @ 28VDC / 10A (NO:1/6HP, NC:1/8HP) @ 120VAC / 7A @ 230VAC  |
| Contact Construction    | Dry Form "C"  |
| Environmental           | 32°F to 120°F (0°C to 49°C) @ 85% RH (@ 32°F), Non-condensing, Non-freezing   |
| Wiring                  | Solid or stranded; #14 to #22 AWG terminals   |
| /T Version              | 3.5" wide, low profile plastic snap track provided with mounting screws   |
| /C Version              | Backbox: 18ga CRS, plated with 1/2" conduit knockouts top and bottom  |

## Listing

UL/ULC, CSFM, MEA

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