



You in Control

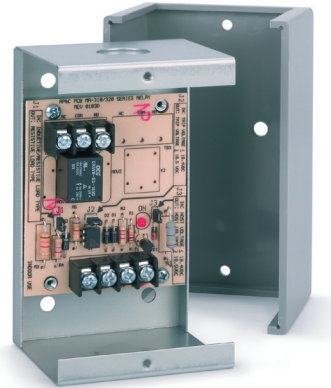
MR-310 SERIES MR-320 SERIES

LOW-VOLTAGE, LOW-CURRENT OPTO-ISOLATED RELAYS

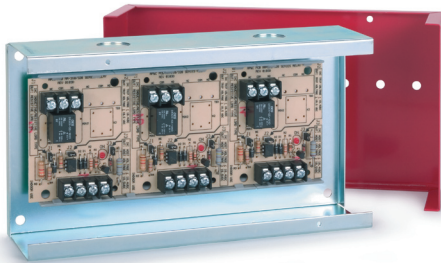
PRODUCT DESCRIPTION

The MR-310 (SPDT) and MR-320 (DPDT) Series 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.

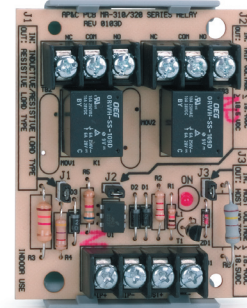


MR-311/C



MR-313/C/R

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.



MR-321/T

WIRING (TYPICAL FOR ONE MODULE POSITION)

UUKL
Smoke Control

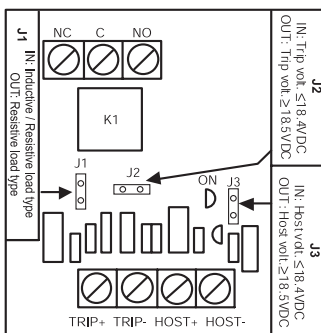


CSFM LISTED **MEA APPROVED**

UL RECOGNIZED COMPONENT



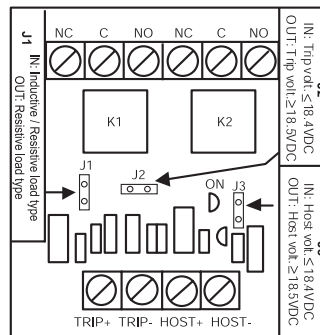
MR-310 SERIES
SPDT Contacts
Resistive: 10A @ 120VAC,
7A @ 24VDC/VAC
Inductive: 0.35 PF (Power Factor)



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)

*Refer to application specific jumper configuration programming guide (on reverse) for precise current draw requirements. Relay is shipped with J1, J2, and J3 installed in the "OUT" positions. You must program all jumpers for the proper load type and specific voltages in your application to guarantee proper relay operation.

Air Products and Controls \tilde{a}
a Brand Of Apollo America
25 Corporate Drive
Auburn Hills, MI 48326
(248) 332-3900 Phone
(888) 332-2241 Toll free
(248) 332-8807 Fax
www.ap-c.com

A
HALMA
GROUP
COMPANY

Distributed By:



MR-310 & MR-320 SERIES JUMPER CONFIGURATIONS

Modes (Application)	Application Configuration					Trip Input		Host Input		General System Applications	
	J1 (Load)	J2 (Trip)	J3 (Host)	Load Type	Inductive Breaking Power	Voltage	Current	Current			
								MR-310	MR-320		
"A" (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" (LO trip - HI host)	Out	In	Out	Resistive	Moderate	5 - 18.4VDC	2.5 - 13mA	18.5 - 27.3VDC			
"C" (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" (HI trip - LO host)	Out	Out	In	Resistive	Moderate	18.5 - 27.3VDC	2.0 - 3.2mA	12 - 18.4VDC			
"E" (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" (LO trip - LO host)	Out	In	In	Resistive	Moderate	5 - 18.4VDC	2.5 - 13mA	12 - 18.4VDC			
"G" (HI trip - HI host)	In	Out	Out	Any	Maximum	18.5 - 27.3VDC	2.1 - 3.3mA	18.5 - 27.3VDC	38 - 46mA	56 - 79mA	Fire Alarm, Lighting, or Building Control
"H" (As Shipped) (HI trip - HI host)	Out	Out	Out	Resistive	Moderate	18.5 - 27.3VDC	2.0 - 3.2mA	18.5 - 27.3VDC			

PRODUCT SPECIFICATIONS

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	UL FILE* S3403	MEA FILE 73-92-E	CSFM FILE 7300-1004	
MR-311/S	1	SPDT	3.25"(83mm)				UOXX2		:111	
MR-321/S		DPDT	2.75"(70mm) 1.44"(37mm)				UUKL2			
MR-311/T		SPDT		3.40"(87mm)			NMTR8			
MR-321/T		DPDT		2.75"(70mm) 1.50"(38mm)			PAZX2			
MR-311/C		SPDT				5.13"(131mm) 3.13"(80mm) 2.50"(64mm)	UOXX			:111
MR-321/C		DPDT					Plastic	UUKL		
MR-311/C/R		SPDT				5.13"(131mm) 9.50"(241mm) 2.50"(64mm)	Red	Vol.30		:111
MR-321/C/R		DPDT					Plastic	NMTR7		
MR-312/S	2	SPDT	3.25"(83mm) 5.50"(140mm)				UOXX2		:111	
MR-322/S		DPDT	1.44"(37mm)				UUKL2			
MR-312/T		SPDT		3.40"(87mm)			NMTR8			
MR-322/T		DPDT		6.00"(152mm) 1.50"(38mm)			PAZX2			
MR-312/C		SPDT				5.13"(131mm) 9.50"(241mm) 2.50"(64mm)	UOXX			:111
MR-322/C		DPDT					Plated	UUKL		
MR-312/C/R		SPDT				5.13"(131mm) 9.50"(241mm) 2.50"(64mm)	Red	Vol.30		:111
MR-322/C/R		DPDT					18ga	NMTR7		
MR-313/S	3	SPDT	3.25"(83mm) 8.25"(210mm)				UOXX2		:111	
MR-323/S		DPDT	1.44"(37mm)				UUKL2			
MR-313/T		SPDT		3.40"(87mm) 8.25"(210mm)			NMTR8			
MR-323/T		DPDT		1.50"(38mm)			PAZX2			
MR-313/C		SPDT				5.13"(131mm) 9.50"(241mm) 2.50"(64mm)	UOXX			:111
MR-323/C		DPDT					Plated	UUKL		
MR-313/C/R		SPDT				5.13"(131mm) 9.50"(241mm) 2.50"(64mm)	Red	Vol.30		:111
MR-323/C/R		DPDT					18ga	NMTR7		

VOLTAGE REQUIREMENTS:	Trip: 5 - 27.3VDC	Host: 12 - 27.3VDC
POLARIZED INPUT(S):	Yes, on both trip optoisolator and host coil inputs	
ENERGIZED INDICATOR:	One red LED per module position	
CURRENT REQUIREMENTS:	Refer to Jumper Configuration chart above	
CONTACT RATINGS:	Resistive load: 10A @120VAC, 7A @ 24VDC/VAC; Inductive load: 0.35 PF (Power Factor)	
CONTACT CONSTRUCTION:	Dry Form "C"	
ENVIRONMENTAL:	32°F to 120°F (0°C to 49°C) @ 93% RH (@ 32°C) Non-Condensing, Non-Freezing	
WIRING:	Solid or stranded; #14 to #22 AWG terminals	
"T" VERSIONS:	3.5" wide, low profile plastic snap track provided with mounting screws	
"S" VERSIONS:	Aluminum spacers provided with #8 X 7/8" self tapping sheet metal screws	
"C" VERSIONS:	Backbox: 18ga CRS, plated with 1/2" conduit knockouts top and bottom	

- *UOXX (UL864) = Control Unit Accessories, System; 2=Component
- *UUKL (UL864) = Smoke Control System Equipment, System; 2=Component
- *NMTR (UL508) = Miscellaneous Apparatus, System; 2=Component; 7=Certified for Canada; 8=Certified for Canada, Component
- *PAZX (UL916) = Energy Management Equipment, System; 2=Component
- *UEHX (UL2017) = General Purpose Signaling Devices and Systems, System; 2=Component

NOTICE: The information contained in this document is intended only as a summary and is subject to change without notice. The products described have specific instructional/installation documentation, which covers various technical, approval, code, limitation and liability information. Copies of this documentation along with any general product warning and limitation documents, which also contain important information, are provided with the product and are also available from Air Products and Controls Inc. The information contained in all of these documents should be considered before specifying or using the products. Any example applications shown are subject to the most current enforced local/national codes, standards, approvals, certifications, and/or the authority having jurisdiction. All of these resources, as well as the specific manufacturer of any shown or mentioned related equipment, should be consulted prior to any implementation. For further information or assistance concerning the products, contact Air Products and Controls Inc. Air Products and Controls Inc. reserves the right to change any and all documentation without notice.