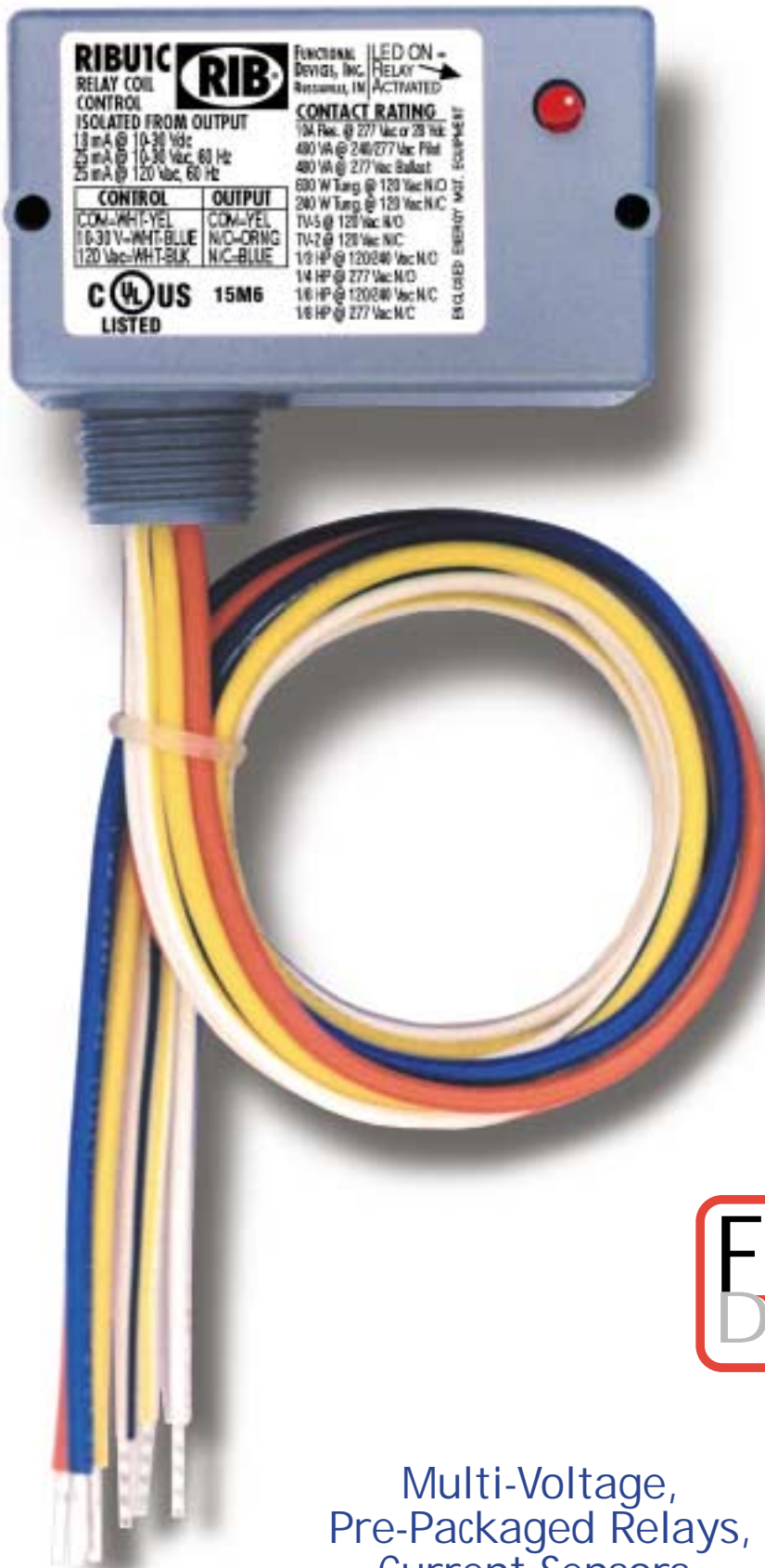


# October 2001

A538C



**RIB**  
RELAY COIL CONTROL  
ISOLATED FROM OUTPUT  
1.8 mA @ 10-30 Vdc  
25 mA @ 10-30 Vac, 60 Hz  
25 mA @ 120 Vac, 60 Hz

CONTROL	OUTPUT
COM-WHT-YEL	COM-YEL
110-30 V-WHT-BLUE	N/C-ORNG
120 Vac-WHT-BLK	N/C-BLUE

**UL** US LISTED 15M6

FUNCTIONAL DEVICES, INC.  
RUSSIAVILLE, IN

LED ON - RELAY ACTIVATED

**CONTACT RATING**  
1/4 HP @ 277 Vac or 25 Vdc  
400 VA @ 240/277 Vac Phil  
400 VA @ 277 Vac Ballast  
600 W Tung @ 120 Vac N/C  
240 W Tung @ 120 Vac N/C  
TV-5 @ 120 Vac N/C  
TV-2 @ 120 Vac N/C  
1/8 HP @ 120/240 Vac N/C  
1/8 HP @ 277 Vac N/C  
1/8 HP @ 120/240 Vac N/C  
1/8 HP @ 277 Vac N/C

ENCLOSED ENERGY MGT. EQUIPMENT

*The Original*  
Relay In A Box®



LISTED  
UL916  
UL864



MADE IN U.S.A.

**Functional**  
Devices, Inc.

Multi-Voltage,  
Pre-Packaged Relays,  
Current Sensors,  
& Accessories

310 S. Union Street  
P.O. Box 368  
Russiaville, IN 46979-0368  
(765) 883-5538  
(800) 888-5538 (Orders Only)  
(765) 883-7505 FAX  
E-Mail [rib@functionaldevices.com](mailto:rib@functionaldevices.com)  
<http://www.functionaldevices.com>

# Table Of Contents

<b>PILOT RELAYS</b>		<b>10 to 15 Amp Relays</b>	<b>Page</b>	<b>5</b>	<b>Pilot</b>
Enclosed Style		Enclosed (all wires exit through nipple)	Page	6	
T Style		With Class 2 wiring compartment	Page	7	
Panel Style		Track Mount	Page	8	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	9	
<b>POWER RELAYS</b>		<b>20 to 30 Amp Relays</b>	<b>Page</b>	<b>29</b>	<b>Power</b>
Enclosed style		Enclosed (all wires exit through nipple)	Page	30	
T Style		With Class 2 wiring compartment	Page	31	
Panel Style		Track Mount	Page	31	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	32	
<b>X SERIES</b>		<b>Current Sensors</b>	<b>Page</b>	<b>47</b>	<b>X-Series</b>
T Style with Pilot relays		With Class 2 wiring compartment	Page	48	
T Style with Power relays		With Class 2 wiring compartment	Page	49	
Panel Style with Power relays		Track Mounted	Page	49	
T Style Sensor Only		With Class 2 wiring compartment	Page	50	
Panel Style Sensor Only		Track Mounted	Page	50	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	51	
<b>OPTOISOLATED RELAYS</b>		<b>Very low coil current Relays with auxiliary power</b>	<b>Page</b>	<b>71</b>	<b>Optoisolated</b>
T Style Pilot		With Class 2 wiring compartment	Page	72	
T Style Power		With Class 2 wiring compartment	Page	72	
Panel Style Power		Track Mounted	Page	72	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	73	
<b>POLARIZED RELAYS</b>		<b>10 to 20 Amp Polarized Relays</b>	<b>Page</b>	<b>79</b>	<b>Polarized</b>
Enclosed Pilot relays		10 Amp Enclosed (all wires exit through nipple)	Page	80	
T Style with Power relays		20 Amp with Class 2 wiring compartment	Page	80	
Enclosed Power relays		20 Amp Enclosed (all wires exit through nipple)	Page	80	
Panel Style Pilot Relays		10 Amp Track Mount	Page	80	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	81	
<b>ACCESSORIES</b>		<b>Mounting Track</b>	<b>Page</b>	<b>85</b>	<b>Accessories</b>
Mounting Accessories		Track for mounting relays	Page	86	
Specification Sheets		Data Sheets for Proposals & Submittals	Page	87	
<b>APPLICATION NOTES</b>		<b>Typical Applications</b>	<b>Page</b>	<b>90</b>	
<b>ABOUT A RELAY</b>		<b>Explanation of an Electromechanical Relay</b>	<b>Page</b>	<b>92</b>	
<b>GLOSSARY</b>		<b>Glossary of Terms</b>	<b>Page</b>	<b>93</b>	
<b>INDEX</b>		<b>Alpha-Numeric Index</b>	<b>Page</b>	<b>94</b>	

### Pilot Series



The Pilot Series contains one or more relays that are rated at 10 or 15 Amps. They have been packaged to save the installer the time, trouble and expense of buying separate components (relay, LED indicator, socket, mounting rail, transient protection and housing) and assembling them on the job or at the shop. Pilot relays are available in Enclosed, T, or Panel style. Most of the relays have inductive, resistive, motor, ballast and tungsten ratings. An externally visible LED indicates the status of the coil of the relay. Internal circuitry protects the control equipment from voltage spikes commonly expected from the coil of the relay. The (Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay. See application notes 3 and 4 on page 90.

### Power Series



The Power Series contains relays that are rated at 20 or 30 Amp. Triple pole models can switch up to 7.5 HP. They have been packaged to save the installer the time, trouble and expense of buying separate components (relay, LED indicator, socket, mounting rail, transient protection and housing) and assembling them on the job or at the shop. Power relays are available in Enclosed, T, or Panel style. Most of the relays have inductive, resistive, motor, ballast and tungsten ratings. An externally visible LED indicates the status of the coil of the relay. Internal circuitry protects the control equipment from voltage spikes commonly expected from the coil of the relay. The (Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay.

### X Series



The "X" Series contains current sensors with or without a 10 or 20 Amp relay. An internal 10 Amp relay can be used to activate an external contactor, and currents up to 150 Amps are sensed externally, with a Solid or Split current sensing ring. Internal 20 Amp units control and sense up to 20 Amp loads, without the use of an external current ring, greatly reducing installation time. The (Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay. Models are available with fixed, or adjustable current sensing trigger points, or with voltage out, in T or Panel Style. The class 2 wiring compartment of the T Style eliminates the need for a "J" box. Externally visible LEDs indicate the status of the relay coil and current sensor trigger. See application notes 1-7 on pages 90 and 91.

**Optoisolated Series**



The optoisolated series of relays may be used when the controller does not have sufficient coil drive power available to energize a relay of the desired contact rating. The actual power to energize the relay is derived from a power source which can be 10-30 Vac/dc, 24 Vac/dc, 120 Vac, 208-277 Vac, 480 Vac, or the power can be brought out on a separate pair of wires from the controller along with the control output. The voltage output of the controller is used to turn on an optoisolator that connects the power source to the coil of the relay. The optoisolator isolates the class 2 output of the controller from the high voltage of the local power source. Using this approach, an LED output, or low current analog output, of a controller can be used to control up to a double pole 20 Amp relay with a 3 horsepower rating. Optoisolated relays are available in T and Panel style. See application notes 11 and 12 on page 91.

**Polarized Series**



The polarized RIB series is equivalent to the standard RIB series except for the coil which is polarized. The "FA" in the model name stands for Fire Alarm. These relays are designed for operation in systems that require supervision from controllers and utilize end-of-line resistors. The relay can also be operated from A/C voltage (non-polarized) if desired. See application note 8 on page 91.

**Accessories**



Mounting options include plastic track for snap-mounting circuit boards. One style of track is screw mounted to the back surface of any cabinet and is available in 4" and in 2.75" widths. Another style of track, AdapTrack<sup>®</sup>, snaps onto any of the three most popular DIN rails. In turn it can accommodate a 4" wide circuit board.

For information regarding Functional Devices, Inc. enclosures and additional accessories, please refer to the A568A Red-E<sup>™</sup> Catalog.

# Device Packaging

## ENCLOSED STYLE

All wires exit from the nipple



MINI 1.7" x 2.8" x 1.5" with 1/2" NPT nipple



MEDIUM 2.3" x 3.2" x 1.8" with 1/2" or 3/4" NPT nipple

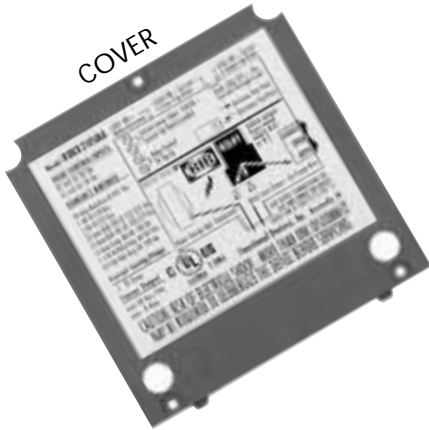


LARGE 4" x 4" x 1.8" with 1/2" NPT nipple

## T STYLE

Class 2 wiring compartment for high / low voltage separation

CLASS 2 WIRING  
COMPARTMENT WITH  
TERMINAL STRIPS



LOW VOLTAGE ENTRANCES  
for conduit or jacketed cable

HIGH VOLTAGE  
WIRES

## PANEL STYLE

Open relays & current sensors for snap-in-track mounting

INPUT  
TERMINAL  
CONNECTIONS



OUTPUT  
TERMINAL  
CONNECTIONS



MOUNTING TRACK

For 4" or 2.75" circuit boards  
For 4" circuit boards onto DIN rails



# Pilot Relays

Pilot Relays

Pilot Relays

Pilot Relays

Pilot Relays

# Pilot Series

## 10 & 15 Amp Relays

The following tables are separated into Enclosed, T, and Panel styles. These tables give a brief summary of the product specifications. Complete specification sheets are on the pages following the tables.

The PILOT Series contains relays that are rated at 10 or 15 Amps. They have been packaged to save the installer the time, trouble and expense of buying separate components (relay, LED indicator, socket, mounting rail, transient protection and housing) and assembling them on the job or at the shop.

In spite of being called PILOT relays, most of the relays have inductive, resistive, motor, ballast and tungsten ratings. The coil of most of the relays can be powered by more than one voltage. An externally visible LED indicates the status of the coil of the relay.

The (Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay. Pilot Series relays are available in Enclosed, T, and Panel Style packaging, for an explanation of packaging styles see page 4.

### Quick Reference Chart - For details see specification sheets

ENCLOSED STYLE PILOT RELAYS																					
MODEL #	COIL VOLTAGE INPUT				CONTACT TYPE	CONTACT RATINGS								SPEC. PAGE							
	( ac/dc )		( ac )			RESISTIVE				MOTOR	LIGHTING	INDUCTIVE	VERRIDE		GOLD	NOTES					
	10	24	30	120	208	240	277	Amps	5	10	15	20	HP	BALLAST	TUNGSTEN	PILOT DUTY	SWITCH	FLASH			
RIBU1C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		9
RIBU1C-N4	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•	NEW	9
RIBH1C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		9
RIBU2C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		10
RIBH2C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		10
RIBL3C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		10
RIBL4C	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA		•		11
RIBU1S	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	1	•		11
RIBH1S	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	1	•		11
RIBU1SM	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	1 PLUS MONITOR	•		12
RIBH1SM	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	1 PLUS MONITOR	•		12
RIBU2SC	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	1	•		12
RIBU2S2	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	2	•		13
RIB2401D	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/8			180VA				13
RIB2402D	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/8			180VA				13
RIBU1SC	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	2	•	*	14
RIBH1SC	UL	█	█	█	█	█	█	█	█	█	█	█	█	1/3	480VA	600W	480VA	2	•	*	14

\* = See Application Notes 9 & 10 on Page 91

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

# Pilot Series

## 10 & 15 Amp Relays

Quick Reference Chart - For details see specification sheets

T STYLE PILOT RELAYS																							
MODEL #	COIL VOLTAGE INPUT							CONTACT TYPE		CONTACT RATINGS													
	( ac/dc )			( ac )				1 RELAY	2 RELAYS	RESISTIVE				MOTOR	LIGHTING		INDUCTIVE	OVERRIDE	GOLD	SPEC. PAGE			
	10	24	30	120	208	240	277			AMPS	5	10	15	20	HP	BALLAST	TUNGSTEN	PILOT DUTY	SWITCH		FLASH	NOTES	
RIBTU1C	UL	█	█	█				1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA		•		14	
RIBTH1C	UL	█	█		█	█		1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA		•		15	
RIBTU2C	UL	█	█		█			2 RELAYS		2 SPDT	█	█			1/3	480VA	600W	480VA		•		15	
RIBTH2C	UL	█	█		█			2 RELAYS		2 SPDT	█	█			1/3	480VA	600W	480VA		•		15	
RIBU1CW	UL	█	█		█			1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA		•		16	
RIBH1CW	UL	█	█		█			1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA		•		16	
RIBTU1S	UL	█	█		█			1 RELAY		SPST	█	█			1/3	480VA	600W	480VA	1	•		16	
RIBTH1S	UL	█	█		█			1 RELAY		SPST	█	█			1/3	480VA	600W	480VA	1	•		17	
RIBTU1SC	UL	█	█		█			1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA	2	•	*	17	
RIBTH1SC	UL	█	█		█			1 RELAY		SPDT	█	█			1/3	480VA	600W	480VA	2	•	*	17	
RIBT2401D	UL	█		█				1 RELAY		DPDT	█	█			1/8	180VA		180VA				NEW	18
RIBT2401SD	UL	█		█				1 RELAY		DPST	█	█			1/8	180VA		180VA	1			NEW	18

\* = See Application Notes 9 & 10 on Page 91

= UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada































# Pilot Series

## 10 & 15 Amp Relays

Quick Reference Chart - For details see specification sheets

### PANEL STYLE PILOT RELAYS

MODEL #	COIL VOLTAGE INPUT						CONTACT TYPE	CONTACT RATINGS							SPEC. PAGE	
	(  )	( ac/dc )	( ac )	( ac )	( ac )	( ac )		RESISTIVE	MOTOR	LIGHTING	INDUCTIVE	OVERRIDE	GOLD	NOTES		
	10	24	30	120	208	240	277	Amps 10 15 20	HP	BALLAST	TUNGSTEN	PILOT DUTY	SWITCH	FLASH		
RIBM12C		■										470VA				18
RIBM12S		■										470VA	1			19
RIBM24C		■										470VA				19
RIBM24S		■										470VA	1			19
RIBM2401D		■		■								180VA				20
RIBM2402D		■			■							180VA				20
RIBMU1C		■		■								480VA	600W	480VA	•	20
RIBMH1C		■			■							480VA	600W	480VA	•	21
RIBMU2C		■		■								480VA	600W	480VA	•	21
RIBMH2C		■			■							480VA	600W	480VA	•	21
RIBMU1S		■		■								480VA	600W	480VA	1 •	22
RIBMH1S		■			■							480VA	600W	480VA	1 •	22
RIBMU1SM		■		■								480VA	600W	480VA	1 PLUS MONITOR •	22
RIBMH1SM		■			■							480VA	600W	480VA	1 PLUS MONITOR •	23
RIBMU1SC		■		■								480VA	600W	480VA	2 • *	23
RIBMH1SC		■			■							480VA	600W	480VA	2 • *	23
RIBM12C		■										470VA				24
RIBM12S		■										470VA	1			24
RIBM24C		■										470VA				24
RIBM24S		■										470VA	1			25
RIBM2401D		■		■								180VA			NEW	25
RIBMNU1C		■		■								480VA	600W	480VA	•	25
RIBMNH1C		■			■							480VA	600W	480VA	•	26
RIBMNU1S		■		■								480VA	600W	480VA	1 •	26
RIBMNH1S		■			■							480VA	600W	480VA	1 •	26
RIBMNU1SM		■		■								480VA	600W	480VA	1 PLUS MONITOR •	27
RIBMNH1SM		■			■							480VA	600W	480VA	1 PLUS MONITOR •	27

\* = See Application Notes 9 & 10 on Page 91

 = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

# Model RIBU1C

Enclosed Pilot Relay 10Amp SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



## COIL CURRENT

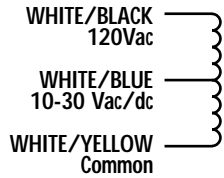
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

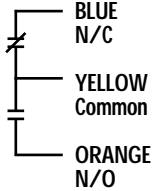
## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.7" x 2.8" x 1.5" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

# Model RIBU1C-N4

Enclosed Pilot Relay 10Amp SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE:**  
NEMA 4X Enclosure



## COIL CURRENT

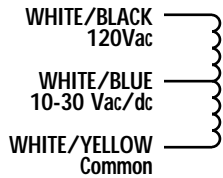
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

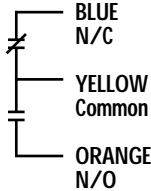
## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.7" x 2.8" x 1.5" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 4X  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

# Model RIBH1C

Enclosed Pilot Relay 10Amp SPDT 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



## COIL CURRENT

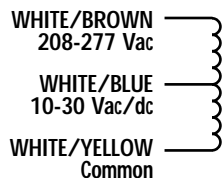
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

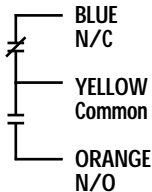
## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.7" x 2.8" x 1.5" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

# Model RIBU2C

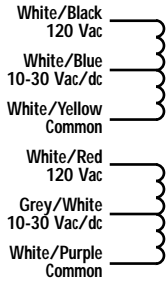
Enclosed Pilot Relays 2 10Amp SPDT 10-30Vac/dc/120Vac



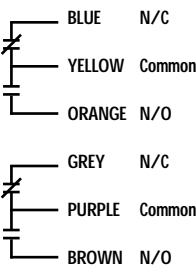
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBH2C

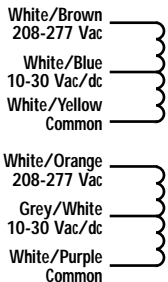
Enclosed Relays 10Amp 2 SPDT 10-30Vac/dc/208-277Vac



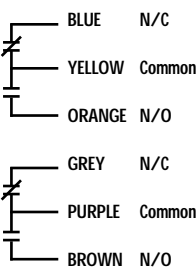
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBL3C

Enclosed Relays 10Amp 3 SPST-NO 10-30Vac/dc

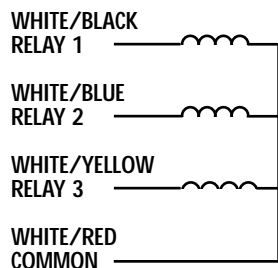


Functional Devices, Inc. A538C 10/1/01

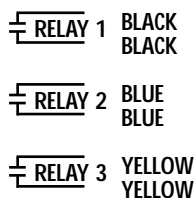
**NOTE:** Can be ordered Normally Closed. Consult factory.



### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** Three (3) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

All Relay Coils 10-30 Vac/dc

# Model RIBL4C

Enclosed Pilot Relays 10Amp 3 SPST-NO + 1 SPDT 10-30Vac/dc

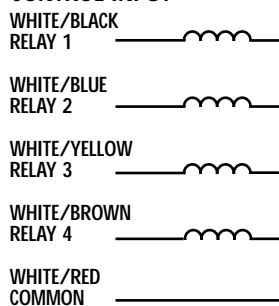


Functional Devices, Inc. A538C 10/1/01

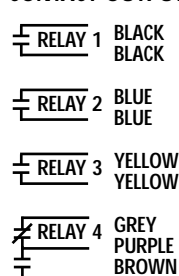
**NOTE:** Can be ordered Normally Closed. Consult factory.



## CONTROL INPUT



## CONTACT OUTPUT



All Relay Coils 10-30 Vac/dc

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** Three (3) SPST + 1 SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

COIL CURRENT	
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBU1S

Enclosed Relay 10Amp SPST-NO + Override 10-30Vac/dc/120Vac

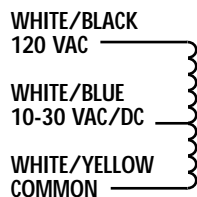


Functional Devices, Inc. A538C 10/1/01

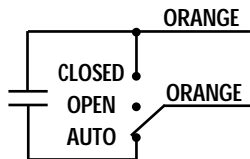
**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** Yes

COIL CURRENT	
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBH1S

Enclosed Relay 10Amp SPST-NO + Override 10-30Vac/dc/208-277Vac

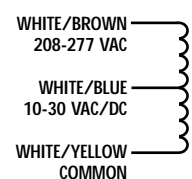


Functional Devices, Inc. A538C 10/1/01

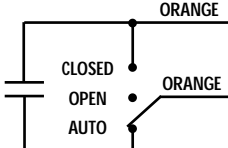
**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** Yes

COIL CURRENT	
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBU1SM

Enclosed Relay 10Amp SPST-NO + Override + Monitor 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE: Can be ordered Normally Closed by adding -NC after the model number.**

Second pole of override switch can be connected to digital-in of controller to monitor position of override switch. Rating of second pole is 277 Vac max & 5 Amp max.



### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT = 2.1 Vac / 2.8 Vdc**  
**PULL IN = 9 Vac / 10 Vdc**

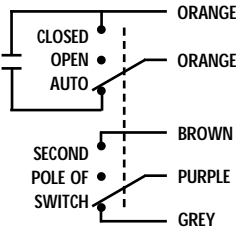
### CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT

WHITE/BLACK 120 VAC  
WHITE/BLUE 10-30 VAC/DC  
WHITE/YELLOW COMMON

### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes + monitor

# Model RIBH1SM

Enclosed Relay 10Amp SPST-NO + Override + Monitor 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE: Can be ordered Normally Closed by adding -NC after the model number.**

Second pole of override switch can be connected to digital in of controller to monitor position of override switch. Rating of second pole is 277 Vac max & 5 Amp max.



### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT = 2.1 Vac / 2.8 Vdc**  
**PULL IN = 9 Vac / 10 Vdc**

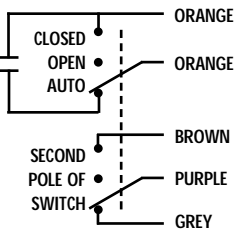
### CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT

WHITE/BROWN 208-277 VAC  
WHITE/BLUE 10-30 VAC/DC  
WHITE/YELLOW COMMON

### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes +monitor

# Model RIBU2SC

Enclosed Relays 10Amp 1 SPST-NO + Override + 1 SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE: Can be ordered Normally Closed by adding -NC after the model number.**



### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT = 2.1 Vac / 2.8 Vdc**  
**PULL IN = 9 Vac / 10 Vdc**

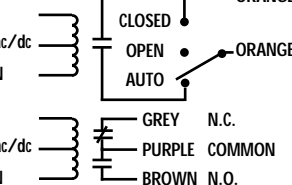
### CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT

WHITE/BLACK 120 Vac  
or WHITE/BLUE 10-30 Vac/dc  
WHITE/YELLOW COMMON  
WHITE/RED 120 Vac  
or GREY/WHITE 10-30 Vac/dc  
WHITE/PURPLE COMMON

### CONTACT OUTPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST + One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes (1)

# Model RIBU2S2

Enclosed Relays 10Amp 2 SPST-NO + 2 Overrides 10-30Vac/dc/120Vac

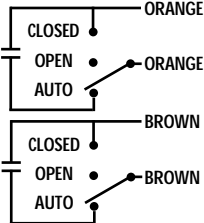


Functional Devices, Inc. A538C 10/1/01

**CONTROL INPUT**

- WHITE/BLACK 120 Vac
- or WHITE/BLUE 10-30 Vac/dc
- WHITE/YELLOW COMMON
  
- WHITE/RED 120 Vac
- or GREY/WHITE 10-30 Vac/dc
- WHITE/PURPLE COMMON

**CONTACT OUTPUT**



**NOTE:**  
Can be ordered Normally Closed by adding -NC after the model number.



- Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz
- # Relays & Contact Type** Two (2) SPST
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** Yes
- Override Switch** Yes (2)

**COIL CURRENT**

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

**CONTACT RATINGS**

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIB2401D

Enclosed Relay 10Amp DPDT 24Vac/dc/120Vac

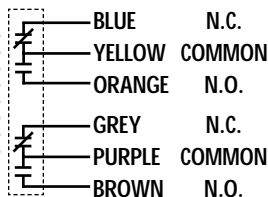


Functional Devices, Inc. A538C 10/1/01

**CONTROL INPUT**

- WHITE/BLACK 120 Vac
- WHITE/BLUE 24 Vac/dc
- WHITE/YELLOW COMMON

**CONTACT OUTPUT**



- Coil Voltage Input** 24 Vac / dc, 120 Vac; 50-60 Hz
- # Relays & Contact Type** One (1) DPDT
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 1.7" x 2.8" x 1.5" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** No
- Override Switch** No



**COIL CURRENT**

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
28 mA @ 120 Vac	

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 20 Vdc

**CONTACT RATINGS**

10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP	120 Vac

# Model RIB2402D

Enclosed Relay 10Amp DPDT 24Vac/dc/208-277Vac

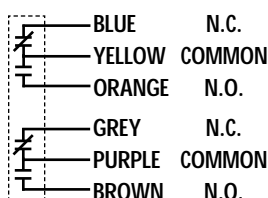


Functional Devices, Inc. A538C 10/1/01

**CONTROL INPUT**

- WHITE/BROWN 208-277 Vac
- WHITE/BLUE 24 Vac/dc
- WHITE/YELLOW COMMON

**CONTACT OUTPUT**



- Coil Voltage Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz
- # Relays & Contact Type** One (1) DPDT
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 1.7" x 2.8" x 1.5" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** No
- Override Switch** No



**COIL CURRENT**

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
32 mA @ 208-277 Vac	

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 20 Vdc

**CONTACT RATINGS**

10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP	120 Vac

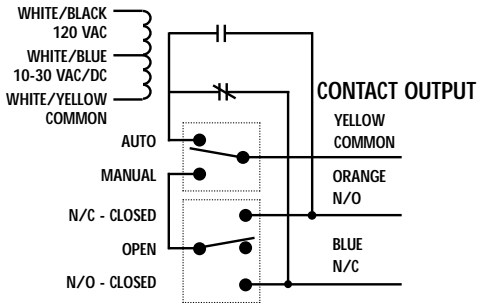
# Model RIBU1SC

Enclosed Relay 10Amp SPDT + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes (2)

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

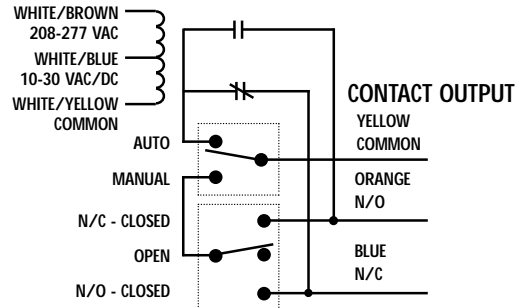
# Model RIBH1SC

Enclosed Relay 10Amp SPDT + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes (2)

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

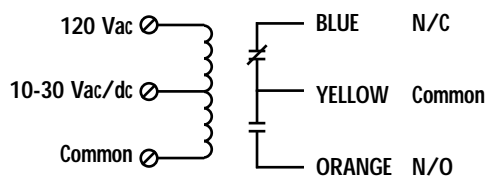
# Model RIBTU1C

Enclosed Relay Hi/Low sep 10Amp SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

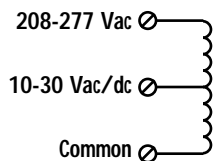
# Model RIBTH1C

Enclosed Relay Hi/Low sep 10Amp SPDT 10-30Vac/dc/208-277Vac

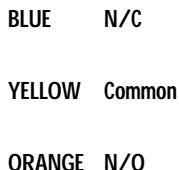


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

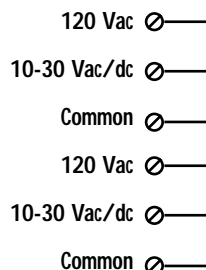
# Model RIBTU2C

Enclosed Relays Hi/Low sep 10Amp 2 SPDT 10-30Vac/dc/120Vac

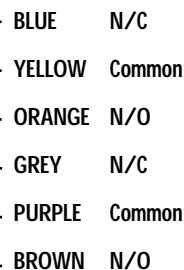


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

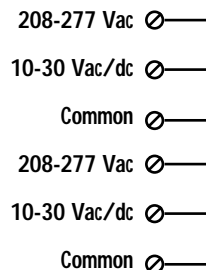
# Model RIBTH2C

Enclosed Relays Hi/Low sep 10Amp 2 SPDT 10-30Vac/dc/208-277Vac

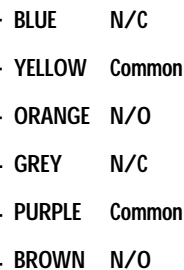


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac



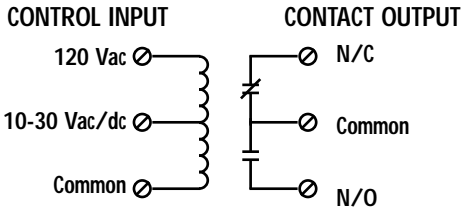
# Model RIBU1CW

Enclosed Pilot Relay Hi/Low sep. 15Amp SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

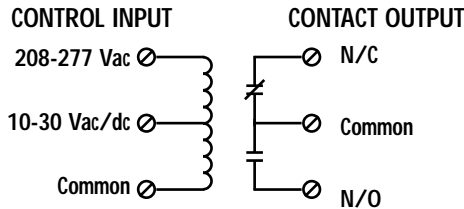
# Model RIBH1CW

Enclosed Pilot Relay Hi/Low sep. 15Amp SPDT 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBTU1S

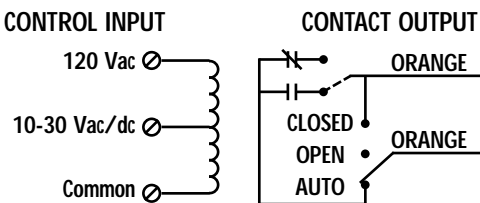
Enclosed Relay Hi/Low sep 10Amp SPST + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE:** Normally open or Normally closed selected by yellow jumper wire

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal Plenum, NEMA 1  
**Housing Rating** Gold Flash Yes  
**Override Switch** Yes

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBTH1S

Enclosed Relay Hi/Low sep 10Amp SPST + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE:** Normally open or normally closed selected by yellow jumper wire

Shown without cover



## COIL CURRENT

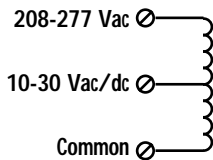
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

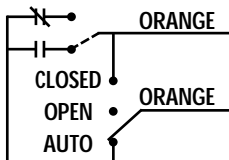
## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



<b>Coil Voltage Input</b>	10-30 Vac / dc, 208-277 Vac; 50-60 Hz
<b># Relays &amp; Contact Type</b>	One (1) SPST
<b>Expected Relay Life</b>	10 million cycles minimum mechanical
<b>Operating Temperature</b>	-30 to 140° F
<b>Relay Status</b>	LED On = Activated
<b>Dimensions</b>	4" x 4" x 1.8" with 1/2" NPT nipple
<b>Wire Length</b>	16"
<b>Approvals</b>	UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
<b>Housing Rating</b>	Plenum, NEMA 1
<b>Gold Flash</b>	Yes
<b>Override Switch</b>	Yes

# Model RIBTU1SC

Enclosed Relay Hi/Low sep 10Amp SPDT + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

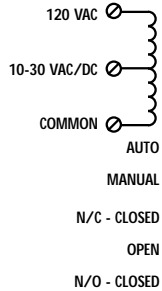
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

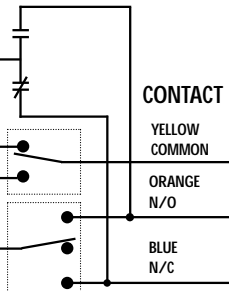
## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



<b>Coil Voltage Input</b>	10-30 Vac / dc, 120 Vac; 50-60 Hz
<b># Relays &amp; Contact Type</b>	One (1) SPDT
<b>Expected Relay Life</b>	10 million cycles minimum mechanical
<b>Operating Temperature</b>	-30 to 140° F
<b>Relay Status</b>	LED On = Activated
<b>Dimensions</b>	4" x 4" x 1.8" with 1/2" NPT nipple
<b>Wire Length</b>	16"
<b>Approvals</b>	UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
<b>Housing Rating</b>	Plenum, NEMA 1
<b>Gold Flash</b>	Yes
<b>Override Switch</b>	Yes (2)

# Model RIBTH1SC

Enclosed Relay Hi/Low sep 10Amp SPDT + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

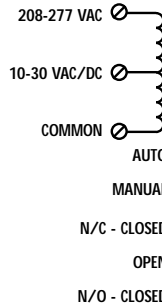
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

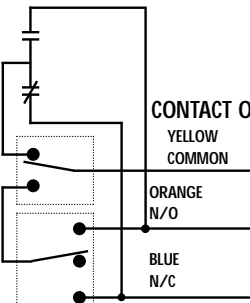
## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



<b>Coil Voltage Input</b>	10-30 Vac / dc, 208-277 Vac; 50-60 Hz
<b># Relays &amp; Contact Type</b>	One (1) SPDT
<b>Expected Relay Life</b>	10 million cycles minimum mechanical
<b>Operating Temperature</b>	-30 to 140° F
<b>Relay Status</b>	LED On = Activated
<b>Dimensions</b>	4" x 4" x 1.8" with 1/2" NPT nipple
<b>Wire Length</b>	16"
<b>Approvals</b>	UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
<b>Housing Rating</b>	Plenum, NEMA 1
<b>Gold Flash</b>	Yes
<b>Override Switch</b>	Yes (2)

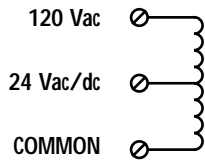
# Model RIBT2401D

Enclosed Relay, Hi/Low Sep, 10 Amp, DPDT, 24Vac/Vdc 120 Vac

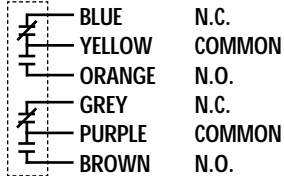


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Shown without cover



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT Nipple  
 Wire Length 16"  
 Approvals UL Listed UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
28 mA @ 120 Vac	

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 20 Vdc

### CONTACT RATINGS

10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP for N.C.	120 Vac

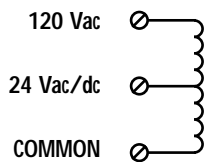
# Model RIBT2401SD

Enclosed Relay, Hi/Low Sep, 10 Amp, DPST, 24Vac/Vdc 120 Vac

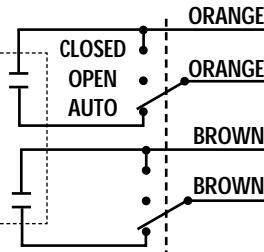


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Shown without cover



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) DPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT Nipple  
 Wire Length 16"  
 Approvals UL Listed UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch Yes

### COIL CURRENT

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
28 mA @ 120 Vac	

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 20 Vdc

### CONTACT RATINGS

10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP for N.C.	120 Vac

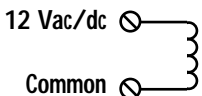
# Model RIBM12C

4" Track-Mount Relay 15Amp SPDT 12Vac/dc

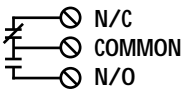


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 12 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

DROP OUT = 2 Vac / 2.5 Vdc  
 PULL IN = 9 Vac / 11 Vdc

### CONTACT RATINGS

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

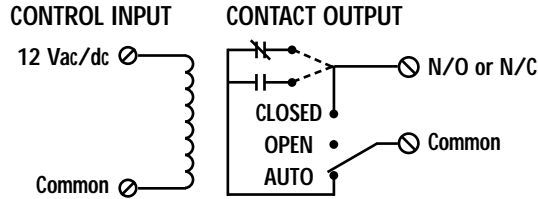
# Model RIBM12S

4" Track-Mount Relay 15Amp SPST + Override 12Vac/dc



Functional Devices, Inc. A538C 10/1/01

NOTE: Must cut appropriate jumper to select N.O. or N.C.



Coil Voltage Input 12 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

**COIL CURRENT**

48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

DROP OUT = 2 Vac / 2.5 Vdc  
 PULL IN = 9 Vac / 11 Vdc

**CONTACT RATINGS**

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

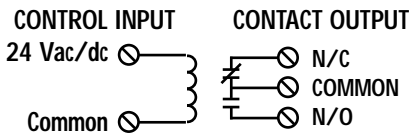
# Model RIBM24C

4" Track-Mount Relay 15Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No



**COIL CURRENT**

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

**CONTACT RATINGS**

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

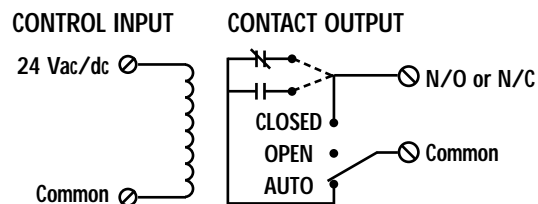
# Model RIBM24S

4" Track-Mount Relay 15Amp SPST + Override 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

NOTE: Must cut appropriate jumper to select N.O. or N.C.



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

**COIL CURRENT**

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

**CONTACT RATINGS**

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

# Model RIBM2401D

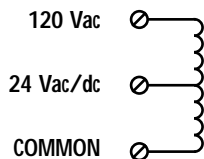
4" Track-Mount Relay 10Amp DPDT 24Vac/dc/120Vac



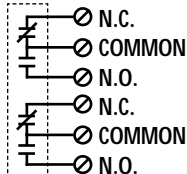
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
28 mA @ 120 Vac	

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 20 Vdc

### CONTACT RATINGS

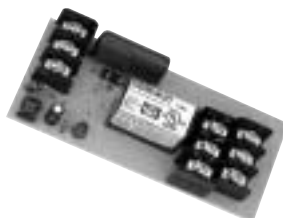
10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP	120 Vac

# Model RIBM2402D

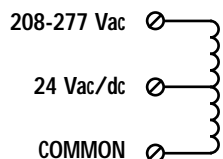
4" Track-Mount Relay 10Amp DPDT 24Vac/dc/208-277Vac



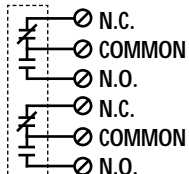
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

22 mA @ 18 Vac	18 mA @ 20 Vdc
29 mA @ 24 Vac	22 mA @ 24 Vdc
36 mA @ 30 Vac	32 mA @ 30 Vdc
32 mA @ 208-277 Vac	

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 20 Vdc

### CONTACT RATINGS

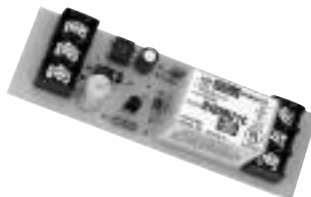
10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP	120 Vac

# Model RIBMU1C

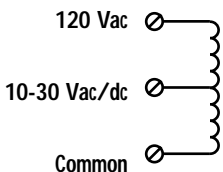
4" Track-Mount Relay 15Amp SPDT 10-30Vac/dc/120Vac



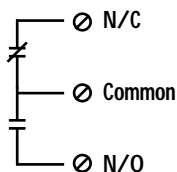
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 10-30 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash Yes  
 Override Switch No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

DROP OUT = 2.1 Vac / 2.8 Vdc  
 PULL IN = 9 Vac / 10 Vdc

### CONTACT RATINGS

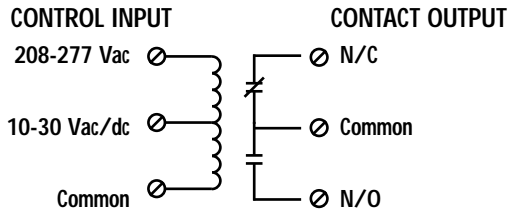
10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMH1C

4" Track-Mount Relay 15Amp SPDT 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.25" x 4" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes

**COIL CURRENT**

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

**CONTACT RATINGS**

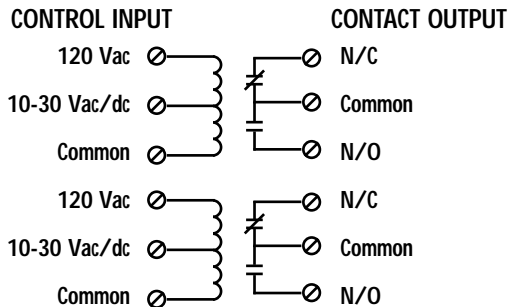
10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMU2C

4" Track-Mount Relays 15Amp 2 SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.45" x 4" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes

**COIL CURRENT**

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

**CONTACT RATINGS**

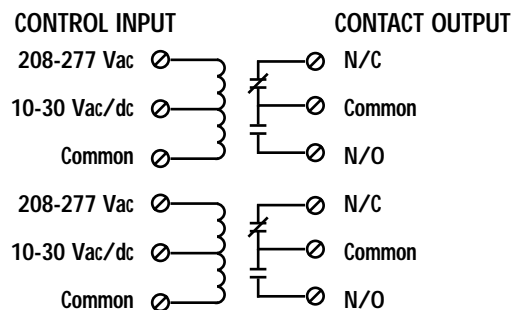
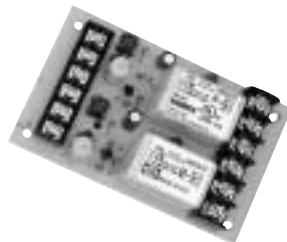
10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMH2C

4" Track-Mount Relays 15Amp 2 SPDT 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.45" x 4" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes

**COIL CURRENT**

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

**CONTACT RATINGS**

10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMU1S

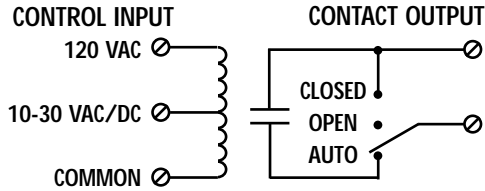
4" Track-Mount Relay 15Amp SPST-NO + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



Coil Voltage Input 10-30 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash Yes  
 Override Switch Yes

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMH1S

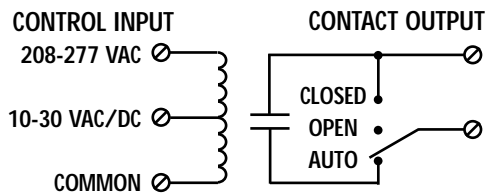
4" Track-Mount Relay 15Amp SPST-NO + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



Coil Voltage Input 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash Yes  
 Override Switch Yes

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

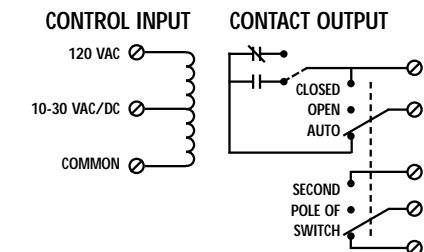
# Model RIBMU1SM

4" Track-Mount Relay 15Amp SPST + Override + Monitor 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**Note:** Can be changed to Normally Closed by moving the yellow jumper wire



Coil Voltage Input 10-30 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash Yes  
 Override Switch Yes (with monitor)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

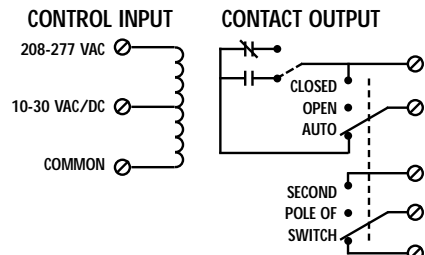
Second pole of override switch can be connected to digital-in of controller to monitor position of override switch.  
 Rating of this second pole is 50 Vac/dc, 0.25 Amps max.

# Model RIBMH1SM

4" Track-Mount Relay 15Amp SPST + Override + Monitor 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



Second pole of override switch can be connected to digital-in of controller to monitor position of override switch.

Rating of this second pole is 50 Vac/dc, 0.25 Amps max.

Note: Can be changed to Normally Closed by moving the yellow jumper wire



- Coil Voltage Input 10-30 Vac / dc, 208-277 Vac; 50-60 Hz
- # Relays & Contact Type One (1) SPST
- Expected Relay Life 10 million cycles minimum mechanical
- Operating Temperature -30 to 140° F
- Relay Status LED On = Activated
- Dimensions 2" x 4" x 1.75"
- Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Gold Flash Yes
- Override Switch Yes (with monitor)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

### CONTACT RATINGS

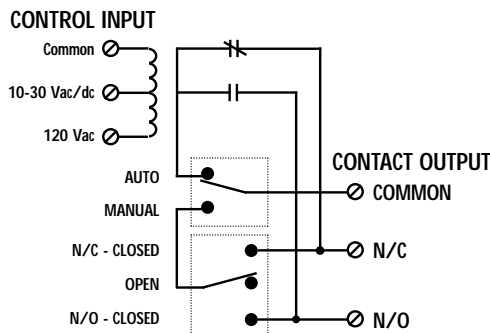
10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMU1SC

4" Track-Mount Relay 15Amp SPDT + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



- Coil Voltage Input 10-30 Vac / dc, 120 Vac; 50-60 Hz
- # Relays & Contact Type One (1) SPDT
- Expected Relay Life 10 million cycles minimum mechanical
- Operating Temperature -30 to 140° F
- Relay Status LED On = Activated
- Dimensions 1.5" x 4" x 1.75"
- Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Gold Flash Yes
- Override Switch Yes (2)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

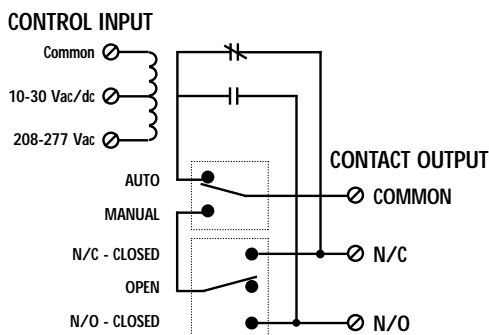


# Model RIBMH1SC

4" Track-Mount Relay 15Amp SPDT + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



- Coil Voltage Input 10-30 Vac / dc, 208-277 Vac; 50-60 Hz
- # Relays & Contact Type One (1) SPDT
- Expected Relay Life 10 million cycles minimum mechanical
- Operating Temperature -30 to 140° F
- Relay Status LED On = Activated
- Dimensions 1.5" x 4" x 1.75"
- Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal
- Gold Flash Yes
- Override Switch Yes (2)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac



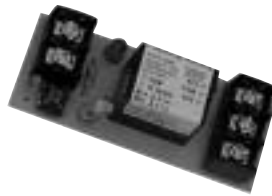


# Model RIBMN12C

2.75" Track-Mount Relay 15Amp SPDT 12Vac/dc



Functional Devices, Inc. A538C 10/1/01



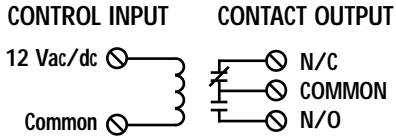
### COIL CURRENT

48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

**DROP OUT** = 2 Vac / 2.5 Vdc  
**PULL IN** = 9 Vac / 11 Vdc

### CONTACT RATINGS

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac



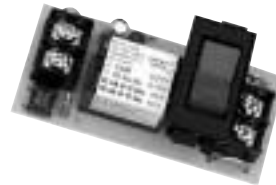
**Coil Voltage Input** 12 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.1" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No

# Model RIBMN12S

2.75" Track-Mount Relay 15Amp SPST + Override 12Vac/dc



Functional Devices, Inc. A538C 10/1/01



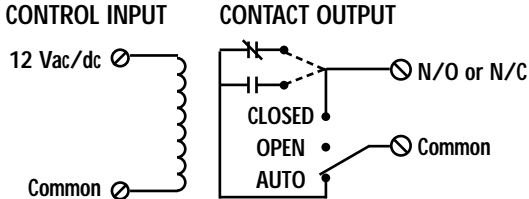
### COIL CURRENT

48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

**DROP OUT** = 2 Vac / 2.5 Vdc  
**PULL IN** = 9 Vac / 11 Vdc

### CONTACT RATINGS

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac



**NOTE: Must cut appropriate jumper to select N.O. or N.C.**

**Coil Voltage Input** 12 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.1" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** Yes

# Model RIBMN24C

2.75" Track-Mount Relay 15Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01



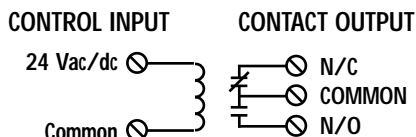
### COIL CURRENT

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

### CONTACT RATINGS

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.1" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No

# Model RIBMN24S

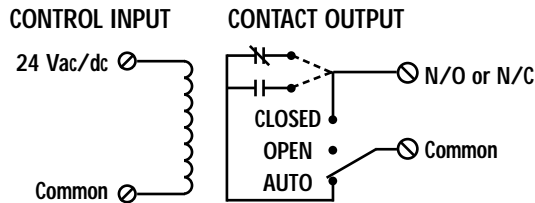
2.75" Track-Mount Relay 15Amp SPST + Override 24Vac/dc



Functional Devices, Inc. A538C 10/1/01



**NOTE: Must cut appropriate jumper to select N.O. or N.C.**



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.1" x 2.75" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

### COIL CURRENT

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

### CONTACT RATINGS

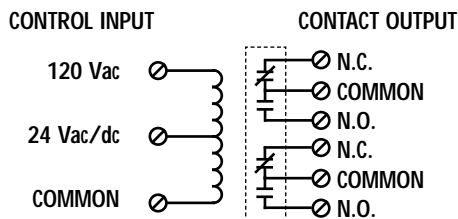
15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

# Model RIBMN2401D

2.75" Track-Mount Relay 10Amp DPDT 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 2.75" x 1.75"  
 Approvals UL Listed UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

22 mA @ 18 Vac
29 mA @ 24 Vac
36 mA @ 30 Vac
28 mA @ 120 Vac

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 20 Vdc

### CONTACT RATINGS

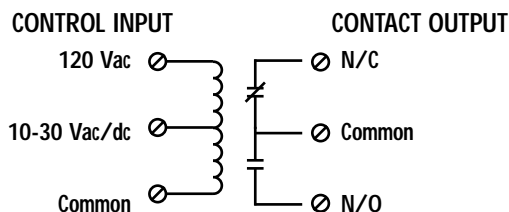
10 Amp resistive	30 Vdc
10 Amp resistive	277 Vac
180 VA Pilot Duty	120 Vac
1/8 HP for N.C.	120 Vac

# Model RIBMNU1C

2.75" Track-Mount Relay 15Amp SPDT 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



Coil Voltage Input 10-30 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 2.75" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash Yes  
 Override Switch No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

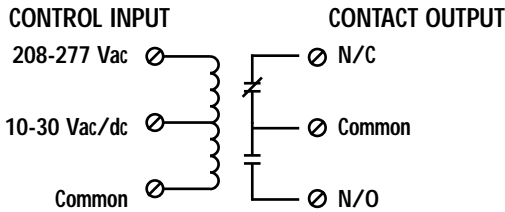
10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMNH1C

2.75" Track-Mount Relay 15Amp SPDT 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.7" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes/No

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

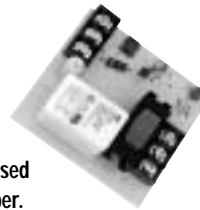
10 Amp Resistive	120-277 Vac, 28 Vdc
15 Amp Resistive	150 Vac, 28 Vdc
15 Amp Inductive	150 Vac
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMNU1S

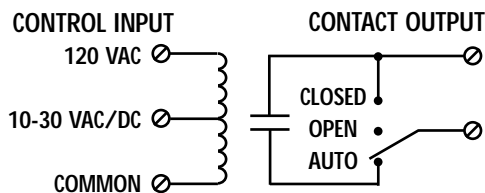
2.75" Track-Mount Relay 15Amp SPST-NO + Override 10-30Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.5" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes/Yes

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

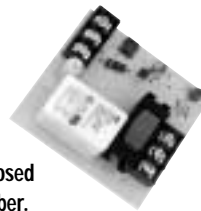
10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBMNH1S

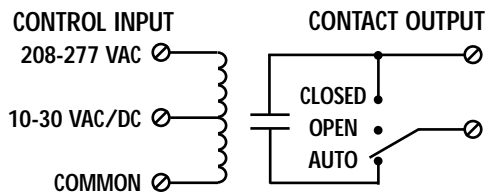
2.75" Track-Mount Relay 15Amp SPST-NO + Override 10-30Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.5" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal

**Gold Flash Override Switch** Yes/Yes

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

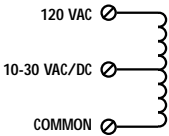
# Model RIBMNU1SM

2.75" Track-Mount Relay 15Amp SPST + Override + monitor 10-30Vac/dc/120Vac

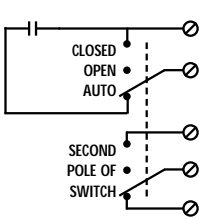


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Second pole of override switch can be connected to digital-in of controller to monitor position of override switch.  
Rating of this second pole is 50 Vac/dc, 0.25 Amps max.

**Coil Voltage Input** 10-30 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 3.4" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** Yes  
**Override Switch** Yes (with monitor)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
25 mA @ 120 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

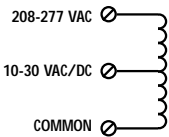
# Model RIBMNH1SM

2.75" Track-Mount Relay 15Amp SPST-NO + Override + monitor 10-30Vac/dc/208-277Vac

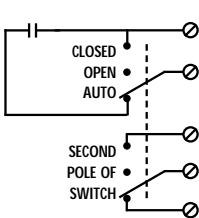


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Second pole of override switch can be connected to digital-in of controller to monitor position of override switch.  
Rating of this second is 50 Vac/dc, 0.25 Amps max.

**Coil Voltage Input** 10-30 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 3.4" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** Yes  
**Override Switch** Yes (with monitor)

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc
35 mA @ 208-277 Vac	

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp Resistive	277 Vac
15 Amp Resistive	150 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac





# Power Relays

## Power Relays

## Power Relays

## Power Relays

## Power Relays

Power

# Power Series

## 20 & 30 Amp Relays

The POWER Series contains relays that are rated at 20 or 30 Amp. They have been packaged to save the installer the time, trouble and expense of buying separate components (relay, LED indicator, socket, mounting rail, transient protection and housing) and assembling them on the job or at the shop.

(Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay. Power Series relays are available in Enclosed, T, and Panel Style packaging, for an explanation of packaging styles see page 4.

Most of the Power relays have inductive, resistive, motor, ballast and tungsten ratings. The coil of many of the relays can be powered by more than one voltage. An externally visible LED indicates the status of the coil of the relay. The

The tables below are separated into Enclosed, T, and Panel styles. These tables give a brief summary of the product specifications. Complete specification sheets are on the pages following the tables.

Power

### Quick Reference Chart - For details see specification sheets

#### ENCLOSED STYLE POWER RELAYS

MODEL #	COIL VOLTAGE INPUT								CONTACT TYPE			CONTACT RATINGS							SPEC. PAGE		
	( ac/dc )				( ac )				1 RELAY	RELAY SYMBOL	CONTACT TYPE	RESISTIVE			MOTOR	LIGHTING		INDUCTIVE		VERRIDE SWITCH	NOTES
	10	24	30	120	208	240	277	480				Amps	10	20	30	HP	BALLAST	TUNGSTEN		PILOT DUTY	
RIB2401B	UL	■	■						1 RELAY		SPDT	■			2	20A	1200W	1110VA			32
RIB2402B	UL	■			■	■			1 RELAY		SPDT	■			2	20A	1200W	1110VA			32
RIB2401SB	UL	■	■						1 RELAY		SPST	■			2	20A	1200W	1110VA	1		32
RIB2402SB	UL	■			■	■			1 RELAY		SPST	■			2	20A	1200W	1110VA	1		33
RIB24P	UL	■							1 RELAY		DPDT	■			3	20A		1640VA			33
RIB01P	UL			■					1 RELAY		DPDT	■			3	20A		1640VA			33
RIB02P	UL				■	■			1 RELAY		DPDT	■			3	20A		1640VA			34
RIB04P	UL						■		1 RELAY		DPDT	■			3	20A		1640VA			34
RIB24Z	UL	■							1 RELAY		1 SPST NO 1 SPST NC	■	■		3	20A		1640VA			34
RIB24S2	UL	■							1 RELAY		DPST	■			2	20A	1200W	1110VA	DOUBLE POLE		35
RIB2401SBC	UL	■	■						1 RELAY		SPDT	■			2	20A	1200W	1110VA	2	*	35
RIB2402SBC	UL	■			■	■			1 RELAY		SPDT	■			2	20A	1200W	1110VA	2	*	35
RIB243P	UL	■							1 RELAY		TPST	■			7.5	20A		2122VA			36
RIB013P	UL			■					1 RELAY		TPST	■			7.5	20A		2122VA			36
RIB023P	UL				■	■			1 RELAY		TPST	■			7.5	20A		2122VA			36
RIB043P	UL						■		1 RELAY		TPST	■			7.5	20A		2122VA			37
RIB24P30	UL	■							1 RELAY		DPDT	■	■		3	20A		1640VA			37

\* = See Application Notes 9 & 10 on Page 91

= UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

Quick Reference Chart - For details see specification sheets

T STYLE POWER RELAYS																								
MODEL #	COIL VOLTAGE INPUT	ac/dc			ac				CONTACT TYPE	CONTACT RATINGS			INDUCTIVE PILOT DUTY	OVERRIDE SWITCH	NOTES	SPEC. PAGE								
		10	24	30	120	208	240	277		480	RESISTIVE Amps	MOTOR HP					LIGHTING BALLAST	TUNGSTEN						
RIBT24B		■							1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA				37
RIBT2401B		■			■				1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA				38
RIBT2402B		■				■			1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA				38
RIBT242B		■					■		2 RELAYS		2 SPDT	■	■	■	■	■	2	20A	1200W	1110VA				38
RIBT243B		■							3 RELAYS		2 SPST 1 SPDT	■	■	■	■	■	2	20A	1200W	1110VA				39
RIBT24SB		■							1 RELAY		SPST	■	■	■	■	■	2	20A	1200W	1110VA	1			39
RIBT2401SB		■			■				1 RELAY		SPST	■	■	■	■	■	2	20A	1200W	1110VA	1			39
RIBT2402SB		■				■			1 RELAY		SPST	■	■	■	■	■	2	20A	1200W	1110VA	1			40
RIBT2401SBC		■			■				1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA	2	*		40
RIBT2402SBC		■				■			1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA	2	*		40
RIBT24P		■							1 RELAY		DPDT	■	■	■	■	■	3	20A		1640VA				41
RIBT24Z		■							1 RELAY		1 SPST NO 1 SPST NC	■	■	■	■	■	3	20A		1640VA				41
RIBT243P		■							1 RELAY		TPST	■	■	■	■	■	7.5	20A		2122VA				41

Power

PANEL STYLE POWER RELAYS																								
MODEL #	COIL VOLTAGE INPUT	ac/dc			ac				CONTACT TYPE	CONTACT RATINGS			INDUCTIVE PILOT DUTY	OVERRIDE SWITCH	NOTES	SPEC. PAGE								
		10	24	30	120	208	240	277		480	RESISTIVE Amps	MOTOR HP					LIGHTING BALLAST	TUNGSTEN						
RIBM2401B		■			■				1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA				42
RIBM2402B		■				■			1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA				42
RIBM2401SB		■			■				1 RELAY		SPST	■	■	■	■	■	2	20A	1200W	1110VA	1			42
RIBM2402SB		■				■			1 RELAY		SPST	■	■	■	■	■	2	20A	1200W	1110VA	1			43
RIBM24PL		■							1 RELAY		DPST	■	■	■	■	■	3	20A		1640VA				43
RIBM24ZN		■							1 RELAY		DPDT	■	■	■	■	■	3	20A		1640VA				43
RIBM24ZL		■							1 RELAY		DPST	■	■	■	■	■	3	20A		1640VA				44
RIBM2401SBC		■			■				1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA	2	*		44
RIBM2402SBC		■				■			1 RELAY		SPDT	■	■	■	■	■	2	20A	1200W	1110VA	2	*		44
RIBM243PN		■							1 RELAY		TPDT	■	■	■	■	■	7.5	20A		1640VA				45
RIBM013PN					■				1 RELAY		TPDT	■	■	■	■	■	7.5	20A		1640VA				45
RIBM023PN						■			1 RELAY		TPDT	■	■	■	■	■	7.5	20A		1640VA				45
RIBM043PN								■	1 RELAY		TPDT	■	■	■	■	■	7.5	20A		1640VA				46
RIBM24PL		■							1 RELAY		DPST	■	■	■	■	■	3	20A		1640VA				46

\* = See Application Notes 9 & 10 on Page 91

= UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

= UL Component Recognized, U.S. and Canada



# Model RIB2401B

Enclosed Relay 20Amp SPDT 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

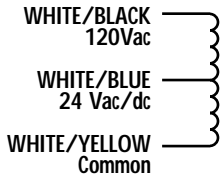
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

POWER

# Model RIB2402B

Enclosed Relay 20Amp SPDT 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

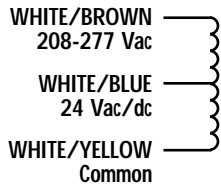
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

# Model RIB2401SB

Enclosed Relay 20Amp SPST-NO + Override 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



### COIL CURRENT

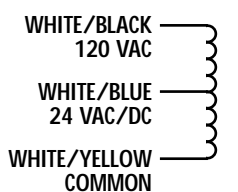
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

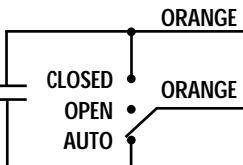
### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

# Model RIB2402SB

Enclosed Relay 20Amp SPST-NO + Override 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

NOTE: Can be ordered Normally Closed by adding -NC after the model number.



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

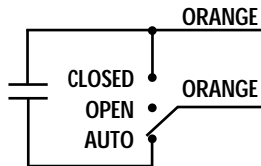
## CONTROL INPUT

WHITE/BROWN  
208-277 VAC

WHITE/BLUE  
24 VAC/DC

WHITE/YELLOW  
COMMON

## CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch Yes

POWER

# Model RIB24P

Enclosed Relay 20Amp DPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) DPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

## COIL CURRENT

100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

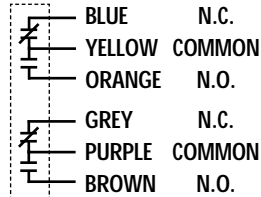
20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc, 15 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

## CONTROL INPUT

WHITE/YELLOW  
24 Vac/dc

WHITE/YELLOW

## CONTACT OUTPUT



# Model RIB01P

Enclosed Relay 20Amp DPDT 120Vac



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 120 Vac 50-60 Hz  
# Relays & Contact Type One (1) DPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

## COIL CURRENT

95 mA @ 120 Vac

DROP OUT = 35 Vac  
PULL IN = 85 Vac

## CONTACT RATINGS

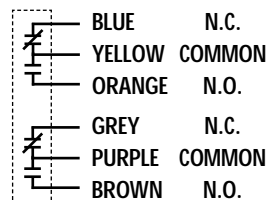
20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc, 15 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

## CONTROL INPUT

WHITE/BLACK  
120 VAC

WHITE/BLACK

## CONTACT OUTPUT



# Model RIB02P

Enclosed Relay 20Amp DPDT 208-277Vac



Functional Devices, Inc. A538C 10/1/01



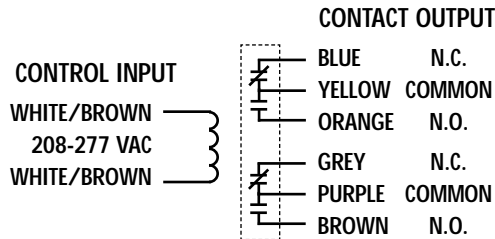
## COIL CURRENT

95 mA @ 208-277 Vac

DROP OUT = 60 Vac  
PULL IN = 160 Vac

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc, 15 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac



**Coil Voltage Input** 208-277 Vac 50-60 Hz  
**# Relays & Contact Type** One (1) DPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

Power

# Model RIB04P

Enclosed Relay 20Amp DPDT 480Vac



Functional Devices, Inc. A538C 10/1/01



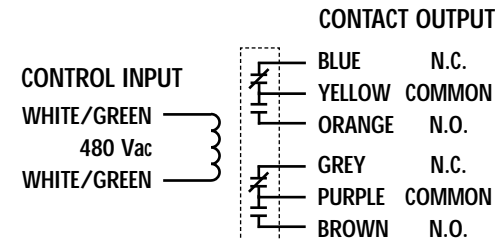
## COIL CURRENT

95 mA @ 480 Vac

DROP OUT = 140 Vac  
PULL IN = 340 Vac

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc, 15 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac



**Coil Voltage Input** 480 Vac 50-60 Hz  
**# Relays & Contact Type** One (1) DPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

# Model RIB24Z

Enclosed Relay 30Amp SPST-NO + SPST-NC 24Vac/dc



Functional Devices, Inc. A538C 10/1/01



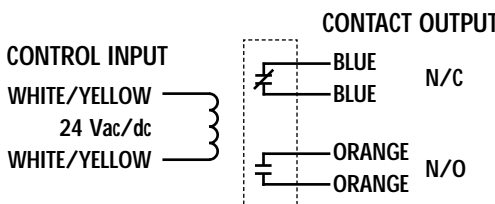
## COIL CURRENT

100 mA @ 20 Vac      50 mA @ 20 Vdc  
 125 mA @ 24 Vac      50 mA @ 24 Vdc  
                                  70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

25 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
30 Amp resistive	300 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST NO + SPST NC  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 2.3" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

# Model RIB24S2

Enclosed Relay 20Amp DPST-NO + DP Override 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



### COIL CURRENT

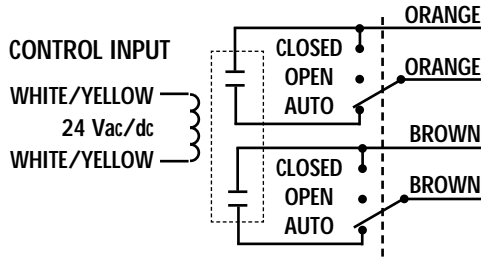
100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
10 Amp Tungsten	120 Vac
20 Amp Ballast	277 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) DPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal

**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

# Model RIB2401SBC

Enclosed Relay 20Amp SPDT + Override 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

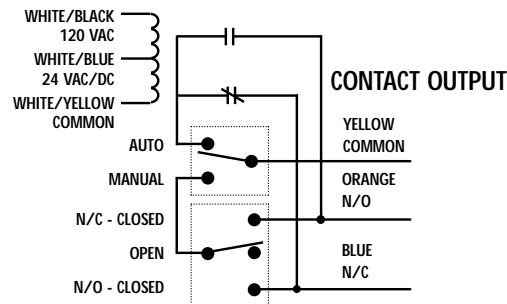
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



**Coil Voltage Input** 24 Vac / dc, 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal

**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

# Model RIB2402SBC

Enclosed Relay 20Amp SPDT + Override 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

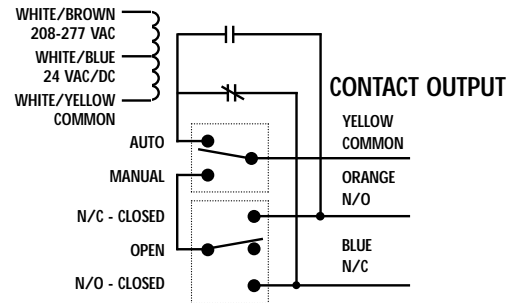
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



**Coil Voltage Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal

**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

# Model RIB243P

Enclosed Relay 20Amp TPST-NO 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

NOTE: Can be ordered Normally Closed by adding -NC after the model number.



### COIL CURRENT

190 mA @ 24 Vac 140 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc

PULL IN = 20 Vac / 20 Vdc

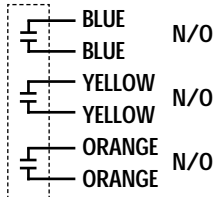
### CONTACT RATINGS

20 Amp resistive	300 Vac, 28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac
770 VA	120 Vac, 1 Ph
1158 VA	240 Vac, 1 Ph
1110 VA	277 Vac, 1 Ph
1640 VA	480 Vac, 1 Ph
1466 VA	240 Vac, 3 Ph
2112 VA	480 Vac, 3 Ph
Heavy Pilot Duty	600 Vac

### CONTROL INPUT

WHITE/YELLOW  
24 VAC  
WHITE/YELLOW

### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

# Model RIB013P

Enclosed Relay 20Amp TPST-NO 120Vac



Functional Devices, Inc. A538C 10/1/01

NOTE: Can be ordered Normally Closed by adding -NC after the model number.



### COIL CURRENT

140 mA @ 120 Vac

DROP OUT = 35 Vac

PULL IN = 85 Vac

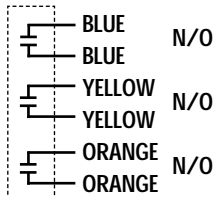
### CONTACT RATINGS

20 Amp resistive	300 Vac, 28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac
770 VA	120 Vac, 1 Ph
1158 VA	240 Vac, 1 Ph
1110 VA	277 Vac, 1 Ph
1640 VA	480 Vac, 1 Ph
1466 VA	240 Vac, 3 Ph
2112 VA	480 Vac, 3 Ph
Heavy Pilot Duty	600 Vac

### CONTROL INPUT

WHITE/BLACK  
120 VAC  
WHITE/BLACK

### CONTACT OUTPUT



Coil Voltage Input 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

# Model RIB023P

Enclosed Relay 20Amp TPST-NO 208-277Vac/dc



Functional Devices, Inc. A538C 10/1/01

NOTE: Can be ordered Normally Closed by adding -NC after the model number.



### COIL CURRENT

170 mA @ 208-277 Vac

DROP OUT = 60 Vac

PULL IN = 160 Vac

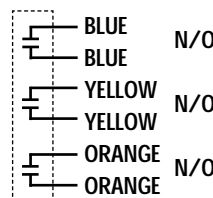
### CONTACT RATINGS

20 Amp resistive	300 Vac, 28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac
770 VA	120 Vac, 1 Ph
1158 VA	240 Vac, 1 Ph
1110 VA	277 Vac, 1 Ph
1640 VA	480 Vac, 1 Ph
1466 VA	240 Vac, 3 Ph
2112 VA	480 Vac, 3 Ph
Heavy Pilot Duty	600 Vac

### CONTROL INPUT

WHITE/BROWN  
208-277 VAC  
WHITE/BROWN

### CONTACT OUTPUT



Coil Voltage Input 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

POWER

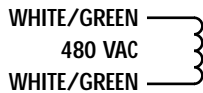
# Model RIB043P

Enclosed Relay 20Amp TPST-NO 480Vac

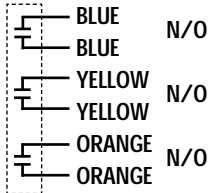


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



NOTE: Can be ordered Normally Closed by adding -NC after the model number.



Coil Voltage Input 480 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal

Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

120 mA @ 480 Vac

DROP OUT = 140 Vac

PULL IN = 340 Vac

### CONTACT RATINGS

20 Amp resistive	300 Vac, 28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac
770 VA	120 Vac, 1 Ph
1158 VA	240 Vac, 1 Ph
1110 VA	277 Vac, 1 Ph
1640 VA	480 Vac, 1 Ph
1466 VA	240 Vac, 3 Ph
2112 VA	480 Vac, 3 Ph
Heavy Pilot Duty	600 Vac

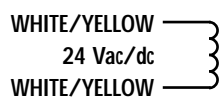
# Model RIB24P30

Enclosed Relay 30Amp DPDT 24Vac/dc

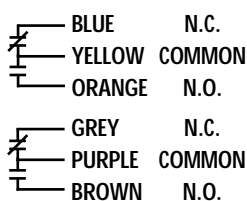


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.3" x 3.2" x 1.8" with 3/4" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal

Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

100 mA @ 20 Vac

125 mA @ 24 Vac

50 mA @ 20 Vdc

50 mA @ 24 Vdc

70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc

PULL IN = 20 Vac / 20 Vdc

### CONTACT RATINGS

30 Amp resistive	300 Vac
25 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac



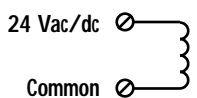
# Model RIBT24B

Enclosed Relay Hi/Low sep 20Amp SPDT 24Vac/dc

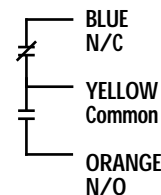


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



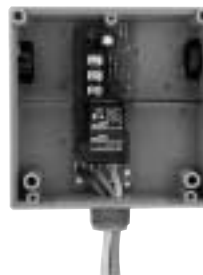
### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal

Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

Shown without cover



### COIL CURRENT

45 mA @ 18 Vac

75 mA @ 24 Vac

30 mA @ 22 Vdc

32 mA @ 24 Vdc

42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc

PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

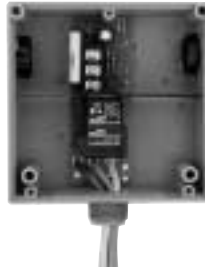
# Model RIBT2401B

Enclosed Relay Hi/Low sep 20Amp SPDT 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

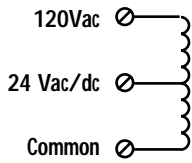
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

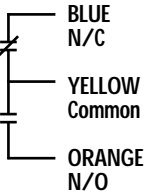
## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

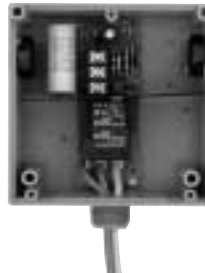
# Model RIBT2402B

Enclosed Relay Hi/Low sep 20Amp SPDT 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

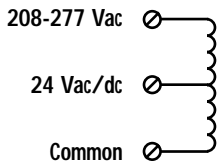
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

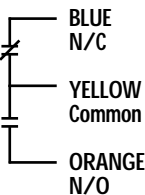
## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

# Model RIBT242B

Enclosed Relays Hi/Low sep 20Amp 2 SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

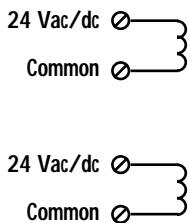
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

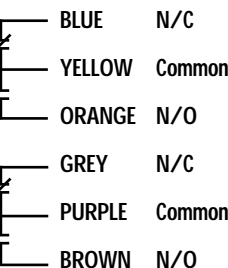
## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type Two (2) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

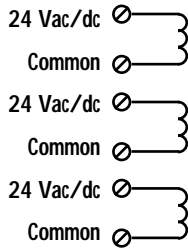
# Model RIBT243B

Enclosed Relay Hi/Low sep 20Amp 2 SPST + 1 SPDT 24Vac/dc

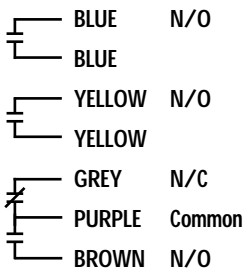


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT

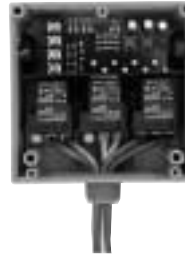


## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** Two (2) SPST + One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

Shown without cover



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

# Model RIBT24SB

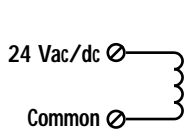
Enclosed Relay Hi/Low sep 20Amp SPST + Override 24Vac/dc



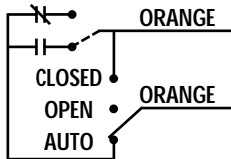
Functional Devices, Inc. A538C 10/1/01

**NOTE:** Normally open or normally closed selected by yellow jumper wire

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

Shown without cover



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

# Model RIBT2401SB

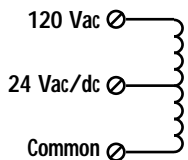
Enclosed Relay Hi/Low sep 20Amp SPST + Override 24Vac/dc/120Vac



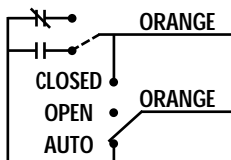
Functional Devices, Inc. A538C 10/1/01

**NOTE:** Normally open or normally closed selected by yellow jumper wire

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 120 Vac; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes

Shown without cover



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

POWER



# Model RIBT2402SB

Enclosed Relay Hi/Low sep 20Amp SPST + Override 24Vac/dc/208-277Vac



**NOTE:** Normally open or normally closed selected by yellow jumper wire

Functional Devices, Inc. A538C 10/1/01

Shown without cover



### COIL CURRENT

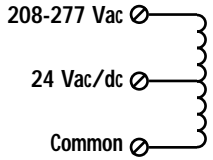
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

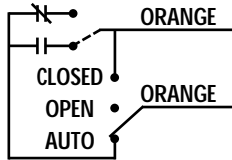
### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



- Coil Voltage Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz
- # Relays & Contact Type** One (1) SPST
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** No
- Override Switch** Yes

# Model RIBT2401SBC

Enclosed Relay Hi/Low sep 20Amp SPDT + Override 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



### COIL CURRENT

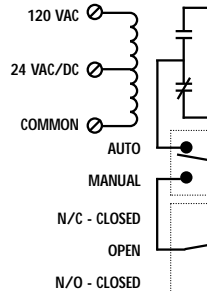
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

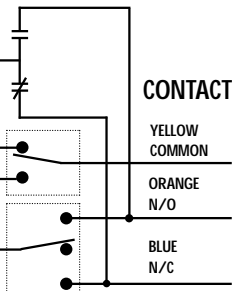
### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



- Coil Voltage Input** 24 Vac / dc, 120 Vac; 50-60 Hz
- # Relays & Contact Type** One (1) SPDT
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** No
- Override Switch** Yes

# Model RIBT2402SBC

Enclosed Relay Hi/Low sep 20Amp SPDT + Override 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



### COIL CURRENT

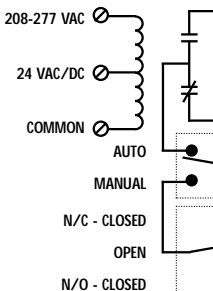
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

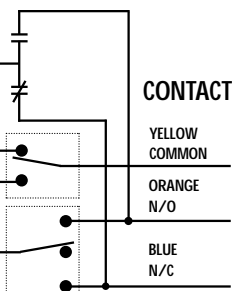
### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

### CONTROL INPUT



### CONTACT OUTPUT



- Coil Voltage Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz
- # Relays & Contact Type** One (1) SPDT
- Expected Relay Life** 10 million cycles minimum mechanical
- Operating Temperature** -30 to 140° F
- Relay Status** LED On = Activated
- Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length** 16"
- Approvals** UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal
- Housing Rating** Plenum, NEMA 1
- Gold Flash** No
- Override Switch** Yes

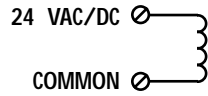
# Model RIBT24P

Enclosed Relay Hi/Low sep 20Amp DPDT 24Vac/dc

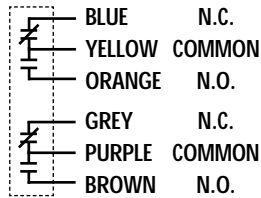


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) DPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

Shown without cover



## COIL CURRENT

100 mA @ 20 Vac    50 mA @ 20 Vdc  
 125 mA @ 24 Vac    50 mA @ 24 Vdc  
                               70 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive    300 Vac  
 20 Amp resistive    28 Vdc, 15 Vdc  
 15 Amp resistive    600 Vac  
 1 HP    120 Vac  
 2 HP    240-277 Vac  
 3 HP    480-600 Vac  
 20 Amp Ballast    277-480 Vac  
 770 VA Pilot Duty    120 Vac  
 1,158 VA Pilot Duty    240 Vac  
 1,110 VA Pilot Duty    277 Vac  
 1,640 VA Pilot Duty    480 Vac

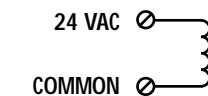
# Model RIBT24Z

Enclosed Relay Hi/Low sep 30Amp 1 SPST-NO + 1 SPST-NC 24Vac/dc

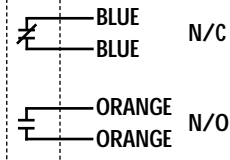


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT

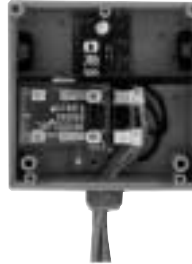


## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST NO + SPST NC  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

Shown without cover



## COIL CURRENT

100 mA @ 20 Vac    50 mA @ 20 Vdc  
 125 mA @ 24 Vac    50 mA @ 24 Vdc  
                               70 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

## CONTACT RATINGS

25 Amp resistive    28 Vdc  
 15 Amp resistive    600 Vac  
 30 Amp resistive    300 Vac  
 1 HP    120 Vac  
 2 HP    240-277 Vac  
 3 HP    480-600 Vac  
 20 Amp Ballast    277-480 Vac  
 770 VA Pilot Duty    120 Vac  
 1,158 VA Pilot Duty    240 Vac  
 1,110 VA Pilot Duty    277 Vac  
 1,640 VA Pilot Duty    480 Vac

# Model RIBT243P

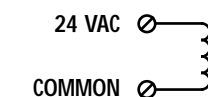
Enclosed Relay Hi/Low sep 20Amp TPST-NO 24Vac/dc



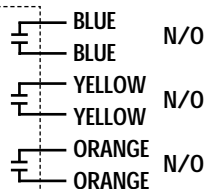
Functional Devices, Inc. A538C 10/1/01

**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) TPST-NO  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

Shown without cover



## COIL CURRENT

190 mA @ 24 Vac    140 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive    300 Vac  
 20 Amp resistive    28 Vdc  
 15 Amp resistive    600 Vac  
 1 HP    120 Vac, 1 Ph  
 2 HP    240-277 Vac, 1 Ph  
 3 HP    480-600 Vac, 1 Ph  
 5 HP    240 Vac, 3 Ph  
 7.5 HP    480 Vac, 3 Ph  
 20 Amp Ballast    277-480 Vac

# Model RIBM2401B

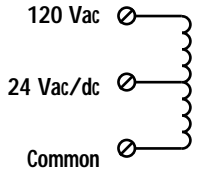
4" Track-Mount Relay 20Amp SPDT 24Vac/dc/120Vac



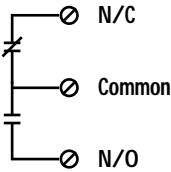
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

POWER

# Model RIBM2402B

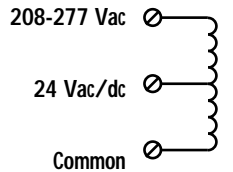
Enclosed Relay 20Amp SPDT 24Vac/dc/208-277Vac



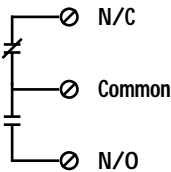
Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.25" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

# Model RIBM2401SB

4" Track-Mount Relay 20Amp SPST + Override, 24Vac/dc/120Vac

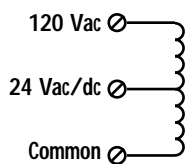


Functional Devices, Inc. A538C 10/1/01

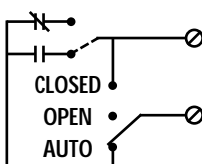
NOTE: Normally open or normally closed selected by yellow jumper wire



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.6" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

# Model RIBM2402SB

4" Track-Mount Relay 20Amp SPST + Override 24Vac/dc/208-277Vac

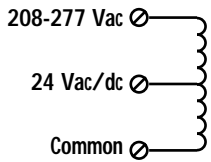


Functional Devices, Inc. A538C 10/1/01

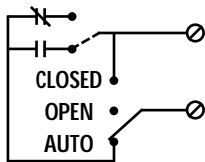
NOTE: Normally open or normally closed selected by yellow jumper wire



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.6" x 4" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

**COIL CURRENT**

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

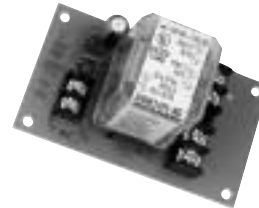
# Model RIBM24PL

4" Track-Mount Relay 20Amp DPST-NO 24Vac/dc

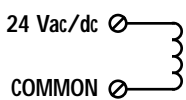


Functional Devices, Inc. A538C 10/1/01

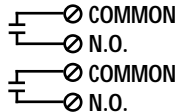
NOTE: Can be ordered Normally Closed by adding -NC after the model number.



### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) DPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.35" x 4" x 2.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**

100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

# Model RIBM24ZN

4" Track-Mount Relay 30Amp DPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) DPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.6" x 4" x 1.75"  
 Approvals UL Component Recognized; U.S., Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**

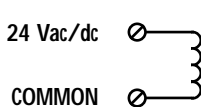
100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

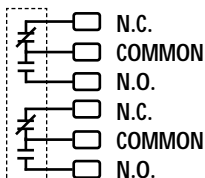
### CONTACT RATINGS

30 Amp resistive	300 Vac
25 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
1-1/2 HP	240 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
NEMA B600 Pilot Duty	

### CONTROL INPUT



### CONTACT OUTPUT



# Model RIBM24ZL

4" Track-Mount Relay 30Amp DPST-NO 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

NOTE: Can be ordered Normally Closed by adding -NC after the model number.



## COIL CURRENT

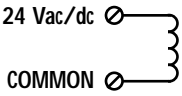
100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

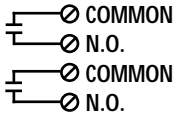
## CONTACT RATINGS

30 Amp resistive	300 Vac
25 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,109 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

## CONTROL INPUT



## CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) DPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.35" x 4" x 1.75"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Gold Flash No  
Override Switch No

POWER

# Model RIBM2401SBC

4" Track-Mount Relay 20Amp SPDT + Override 24Vac/dc/120Vac



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 24 Vac / dc, 120 Vac; 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.35" x 4" x 1.75"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Gold Flash No  
Override Switch Yes

## COIL CURRENT

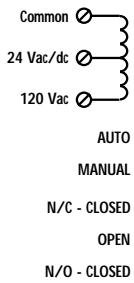
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
42 mA @ 120 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

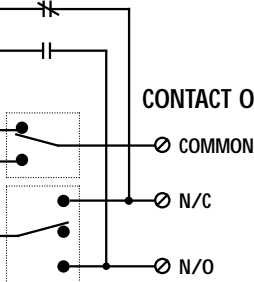
## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



# Model RIBM2402SBC

4" Track-Mount Relay 20Amp SPDT + Override 24Vac/dc/208-277Vac



Functional Devices, Inc. A538C 10/1/01

Coil Voltage Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.35" x 4" x 1.75"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Gold Flash No  
Override Switch Yes

## COIL CURRENT

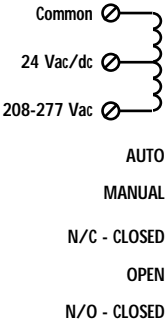
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
62 mA @ 208-277 Vac	42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

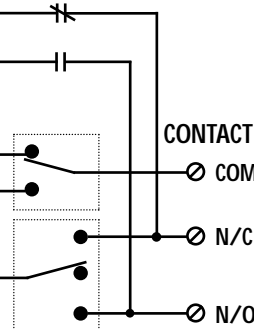
## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



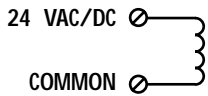
# Model RIBM243PN

4" Track-Mount Relay 20Amp TPDT 24Vac/dc

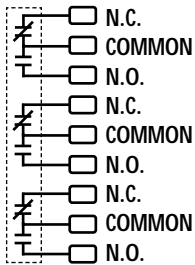


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc: 50-60 Hz  
 # Relays & Contact Type One (1) TPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.45" x 4" x 1.75"  
 Approvals UL Component Recognized: U.S., Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**  
 190 mA @ 24 Vac 140 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac



POWER

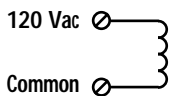
# Model RIBM013PN

4" Track-Mount Relay 20Amp TPDT 120Vac

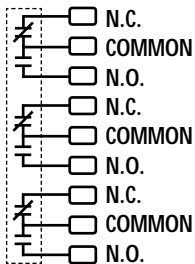


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 120 Vac 50-60 Hz  
 # Relays & Contact Type One (1) TPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.45" x 4" x 1.75"  
 Approvals UL Component Recognized: U.S., Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**  
 140 mA @ 120 Vac

**DROP OUT** = 35 Vac  
**PULL IN** = 85 Vac

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac



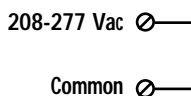
# Model RIBM023PN

4" Track-Mount Relay 20Amp TPDT 208-277Vac

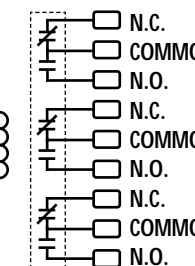


Functional Devices, Inc. A538C 10/1/01

### CONTROL INPUT



### CONTACT OUTPUT



Coil Voltage Input 208-277 Vac 50-60 Hz  
 # Relays & Contact Type One (1) TPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.45" x 4" x 1.75"  
 Approvals UL Component Recognized: U.S., Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**  
 170 mA @ 208-277 Vac

**DROP OUT** = 60 Vac  
**PULL IN** = 160 Vac

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac



# Model RIBM043PN

4" Track-Mount Relay 20Amp TPDT 480Vac



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

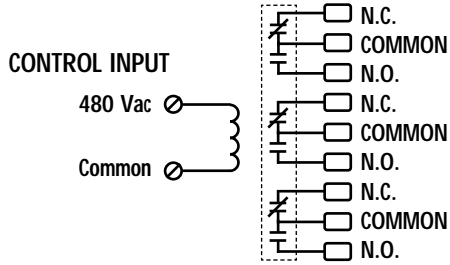
120 mA @ 480 Vac

**DROP OUT** = 140 Vac  
**PULL IN** = 340 Vac

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac

### CONTACT OUTPUT



**Coil Voltage Input** 480 Vac 50-60 Hz  
**# Relays & Contact Type** One (1) TPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.45" x 4" x 1.75"  
**Approvals** UL Component Recognized; U.S., Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No

Power

# Model RIBMN24PL

2.75" Track-Mount Relay 20Amp DPST-NO 24ac/dc



Functional Devices, Inc. A538C 10/1/01



### COIL CURRENT

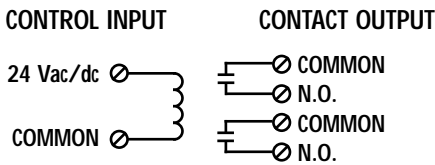
100 mA @ 20 Vac      50 mA @ 20 Vdc  
 125 mA @ 24 Vac      50 mA @ 24 Vdc  
                                  70 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

### CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

### CONTACT OUTPUT



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.

**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) DPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.35" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No



X-Series

X-Series

X-Series

X-Series

X-Series

X-Series



# X Series

## Relays with Current Sensors & Current Sensors Only.

The "X" Series contains current sensors with or without a 10 or 20 Amp relay. An internal 10 Amp relay can be used to activate an external contactor, and currents up to 150 Amps are sensed externally with a Solid or Split current sensing ring. Other units control and sense up to 20 Amp loads, without the use of an external current ring, greatly reducing installation time. Models are available with fixed, or adjustable current sensing trigger points, or with voltage out. Externally visible LEDs indicate the status of the relay coil and current sensor trigger. The (Closed-Open-Auto) override switch, available on certain models, is a true override switch located on the load side of the relay.

X Series models have been packaged to save the installer the time, trouble and expense of buying separate components (current sensor, relay, LED indicator, socket, mounting rail and housing) and assembling them on the job or at the shop. The class 2 wiring compartment of the T Style eliminates the need for a "J" box. X Series models are available in T or Panel Style packaging (see page 4).

The tables below are separated into T, and Panel styles. These tables give a brief summary of the product specifications. Complete specification sheets are on the pages following the tables.

### Quick Reference Chart - For details see specification sheets

#### T STYLE PILOT RELAYS WITH CURRENT SENSORS

MODEL #	COIL VOLTAGE ( ac/dc ) 10 24 30	CONTACT TYPE	CONTROL RELAY		SENSOR RANGE						CONTACT RATINGS				OVERRIDE SWITCH	SENSOR TYPE	SENSOR THRESHOLD	NOTES	SPEC. PAGE			
			Amp	0	1/8	1/2	3	5	10	20	30	150	MOTOR HP	LIGHTING BALLAST						TUNGSTEN	INDUCTIVE PILOT DUTY	
RIBXLCF	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Internal	Fixed	*	51
RIBXLCA	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Internal	Adjustable	*	51
RIBXLCV	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Internal	Analog		51
RIBXLCEA	UL	1 RELAY	SPDT											1/3			345VA		Internal	Adjustable	*	52
RIBXLCEV	UL	1 RELAY	SPDT											1/3			345VA		Internal	Analog		52
RIBXLSF	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Internal	Fixed	*	52
RIBXLSA	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Internal	Adjustable	*	53
RIBXLSV	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Internal	Analog		53
RIBXLSEA	UL	1 RELAY	SPST											1/3			345VA	1	Internal	Adjustable	*	53
RIBXLSEV	UL	1 RELAY	SPST											1/3			345VA	1	Internal	Analog		54
RIBXLCRF	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Ring	Fixed	*	54
RIBXLCRA	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Ring	Adjustable	*	55
RIBXLCJF	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Split	Fixed	*	55
RIBXLCJA	UL	1 RELAY	SPDT											1/3	480VA	600W	480VA		Split	Adjustable	*	56
RIBXLSRF	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Ring	Fixed	*	56
RIBXLSRA	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Ring	Adjustable	*	57
RIBXLSJF	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Split	Fixed	*	57
RIBXLSJA	UL	1 RELAY	SPST											1/3	480VA	600W	480VA	1	Split	Adjustable	*	58

\* = See Application Notes on Pages 90 & 91

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

Quick Reference Chart - For details see specification sheets

T STYLE POWER RELAYS WITH CURRENT SENSORS																											
MODEL #	COIL VOLTAGE ( ac/dc ) 24	CONTACT TYPE	CONTROL RELAY		SENSOR RANGE					CONTACT RATINGS																	
			Amp	0	1/8	1/2	3	5	10	20	30	MOTOR HP	LIGHTING BALLAST TUNGSTEN	INDUCTIVE PILOT DUTY	OVERRIDE SWITCH	SENSOR TYPE	SENSOR THRESHOLD	NOTES	SPEC. PAGE								
RIBX24BF	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Fixed	*	58
RIBX24BA	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Adjustable	*	59
RIBX24BV	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Analog		59
RIBX24SBF	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Fixed	*	59	
RIBX24SBA	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Adjustable	*	60	
RIBX24SBV	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Analog		60	
RIBX243PF	UL	1 RELAY	TPST																7.5	20A		1640VA		Internal	Fixed		60
RIBX243PA	UL	1 RELAY	TPST																7.5	20A		1640VA		Internal	Adjustable		61
RIBX243PV	UL	1 RELAY	TPST																7.5	20A		1640VA		Internal	Analog		61

\* = See Application Note 1 on Page 90

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

PANEL STYLE RELAYS WITH CURRENT SENSORS																											
MODEL #	COIL VOLTAGE ( ac/dc ) 24	CONTACT TYPE	CONTROL RELAY		SENSOR RANGE					CONTACT RATINGS																	
			Amp	0	1/8	1/2	1.5	5	10	20	30	MOTOR HP	LIGHTING BALLAST TUNGSTEN	INDUCTIVE PILOT DUTY	OVERRIDE SWITCH	SENSOR TYPE	SENSOR THRESHOLD	NOTES	SPEC. PAGE								
RIBMX24BF	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Fixed	*	61
RIBMX24BA	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Adjustable	*	62
RIBMX24BV	UL	1 RELAY	SPDT																2	20A	1200W	1110VA		Internal	Analog		62
RIBMX24BEA	UL	1 RELAY	SPDT																1/2			453VA		Internal	Adjustable	*	62
RIBMX24BEV	UL	1 RELAY	SPDT																1/2			453VA		Internal	Analog		63
RIBMX24SBF	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Fixed	*	63	
RIBMX24SBA	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Adjustable	*	63	
RIBMX24SBV	UL	1 RELAY	SPST															1	20A	1200W	1110VA		Internal	Analog		64	
RIBMX24SBEA	UL	1 RELAY	SPST																1/2			453VA	1	Internal	Adjustable	*	64
RIBMX24SBEV	UL	1 RELAY	SPST																1/2			453VA	1	Internal	Analog		64

\* = See Application Note 5 on Page 90

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

X-Series

Quick Reference Chart - For details see specification sheets

**T STYLE CURRENT SENSOR ONLY**

MODEL #	SENSOR RANGE										SENSOR OUTPUT			SENSOR TYPE	THRESHOLD	NOTES	SPEC. PAGE		
	Amp 0	1/8	1/2	3	5	10	20	30	150										
RIBXF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Fixed		65
RIBXA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Adjustable		65
RIBXV	UL												Voltage Out		0-5 Vdc, 0-10 Vdc	Internal	Analog		65
RIBXEA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Adjustable		66
RIBXEV	UL												Voltage Out		0-5 Vdc, 0-10 Vdc	Internal	Analog		66
RIBXRF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Ring	Fixed	*	66
RIBXRA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Ring	Adjustable	*	67
RIBXJF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Split	Fixed		67
RIBXJA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Split	Adjustable		67

\* = See Application Note 4 on Page 90

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

**PANEL STYLE CURRENT SENSOR ONLY**

MODEL #	SENSOR RANGE										SENSOR OUTPUT			SENSOR TYPE	SENSOR THRESHOLD	NOTES	SPEC. PAGE		
	Amp 0	1/8	1/2	3	5	10	20	30	150										
RIBMXF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Fixed		68
RIBMXA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Adjustable		68
RIBMXV	UL												Voltage Out		0-5 Vdc, 0-10 Vdc	Internal	Analog		68
RIBMXEA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Internal	Adjustable		69
RIBMXEV	UL												Voltage Out		0-5 Vdc, 0-10 Vdc	Internal	Analog		69
RIBMXRF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Ring	Fixed		69
RIBMXRA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Ring	Adjustable		70
RIBMXJF	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Split	Fixed		70
RIBMXJA	UL												Solid State	SPST	30 Vac/dc, .4 Amps max.	Split	Adjustable		70

\* = See Application Note 6 on Page 90

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

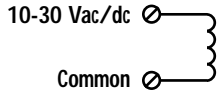
# Model RIBXLCF

Enclosed Internal Fix Current Sensor + Relay 10Amp SPDT 10-30Vac/dc

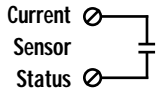


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## Sensor Feedback



## CONTACT OUTPUT



**Solid State Contact**  
30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Fixed, .5 Amps  
**Sensor range** .5 - 10 Amps

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

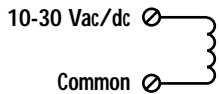
# Model RIBXLCA

Enclosed Internal Adj Current Sensor + Relay 10Amp SPDT 10-30Vac/dc

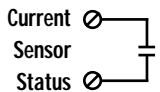


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## Sensor Feedback



## CONTACT OUTPUT



**Solid State Contact**  
30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .5 - 10 Amps  
**Sensor range** .5 - 10 Amps

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

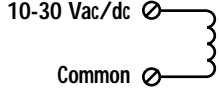
# Model RIBXLCV

Enclosed Internal Current Transducer + Relay 10Amp SPDT 10-30Vac/dc

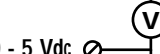


Functional Devices, Inc. A538C 10/1/01

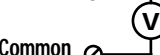
## CONTROL INPUT



## 0 - 10 Vdc



## 0 - 5 Vdc



## Common

## CONTACT OUTPUT



**Current Sensor Voltage Output**  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIIPPLE < 10 mVdc

Shown without cover



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** Internal, with voltage output  
**Sensor Threshold** 0 - 10 Amps  
**Sensor range** 0 - 10 Amps

## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

X-Series

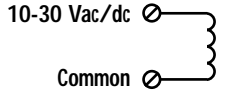
# Model RIBXLCEA

Enclosed Internal Adj Low Current Sensor + Relay 5Amp SPDT 10-30Vac/dc

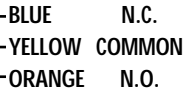


Functional Devices, Inc. A538C 10/1/01

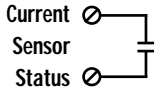
## CONTROL INPUT



## CONTACT OUTPUT



## Sensor Feedback



**Solid State Contact**  
30 Vac/dc, 4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**Coil Voltage Input** 10-30 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .125 - 5 Amps  
**Sensor range** .125 - 5 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
345 VA Pilot Duty	120/240 N.O.
211 VA Pilot Duty	120/240 N.C.
268 VA Pilot Duty	277 Vac N.O.
175 VA Pilot Duty	277 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

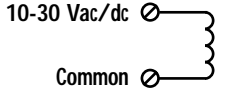
# Model RIBXLCEV

Enclosed Internal Low Current Transducer + Relay 5Amp SPDT 10-30Vac/dc

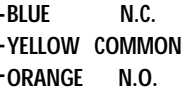


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



## 0 - 10 Vdc



## 0 - 5 Vdc



## Common



**Current Sensor Voltage Output**  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
RIPPLE < 10 mVdc

**Coil Voltage Input** 10-30 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** Internal, with voltage output  
**Sensor Threshold** 0 - 5 Amps  
**Sensor range** 0 - 5 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
345 VA Pilot Duty	120/240 N.O.
211 VA Pilot Duty	120/240 N.C.
268 VA Pilot Duty	277 Vac N.O.
175 VA Pilot Duty	277 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

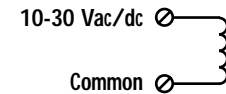
# Model RIBXLSF

Enclosed Internal Fix Current Sensor + Relay 10Amp SPST + Override 10-30Vac/dc

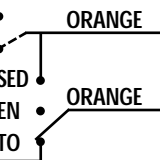


Functional Devices, Inc. A538C 10/1/01

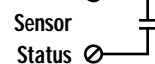
## CONTROL INPUT



## CONTACT OUTPUT



## Current Sensor Status



**Solid State Contact**  
30 Vac/dc, 4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**NOTE:** Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 10-30 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Fixed, .5 Amps  
**Sensor range** .5 - 10 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBXLSA

Enclosed Internal Adj Current Sensor + Relay 10Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

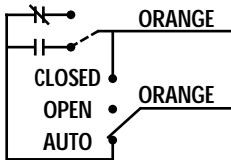
## CONTACT OUTPUT

### CONTROL INPUT

10-30 Vac/dc

Common

Current Sensor Status



### Solid State Contact

30 Vac/dc, 4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**NOTE:** Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .5 - 10 Amps  
**Sensor range** .5 - 10 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBXLSV

Enclosed Internal Current Transducer + Relay 10Amp SPDT + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

## CONTACT OUTPUT

### CONTROL INPUT

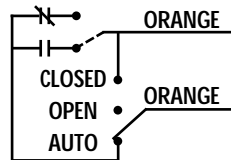
10-30 Vac/dc

Common

0 - 10 Vdc

0 - 5 Vdc

Common



### Current Sensor Voltage Output

Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% Full scale  
VRIIPPLE < 10 mVdc

**NOTE:** Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes  
**Current Sensor Type** Internal, with voltage output  
**Sensor Threshold** 0 - 10 Amps  
**Sensor range** 0 - 10 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBXLSEA

Enclosed Internal Adj Low Current Sensor + 5Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

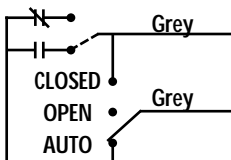
## CONTACT OUTPUT

### CONTROL INPUT

10-30 Vac/dc

Common

Current Sensor Status



### Solid State Contact

30 Vac/dc, 4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**NOTE:** Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .125 - 5 Amps  
**Sensor range** .125 - 5 Amps

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
345 VA Pilot Duty	120/240 N.O.
211 VA Pilot Duty	120/240 N.C.
268 VA Pilot Duty	277 Vac N.O.
175 VA Pilot Duty	277 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

X-Series

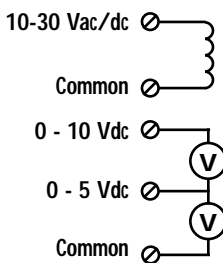
# Model RIBXLSEV

Enclosed Internal Current Transducer + Relay 10Amp SPDT + Override 10-30Vac/dc

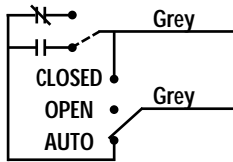


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



**Current Sensor Voltage Output**  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIPPLE < 10 mVdc

**NOTE:** Normally open or normally closed selected by yellow jumper wire

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
345 VA Pilot Duty	120/240 N.O.
211 VA Pilot Duty	120/240 N.C.
268 VA Pilot Duty	277 Vac N.O.
175 VA Pilot Duty	277 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
**Housing Rating** Gold Flash  
**Override Switch** Yes  
**Current Sensor Type** Internal, with voltage output  
**Sensor Threshold** 0 - 5 Amps  
**Sensor range** 0 - 5 Amps

# Model RIBXLCRF

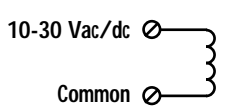
Enclosed Remote Fix Current Sensor + Relay 10Amp SPDT 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

**Solid State Contact**  
30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

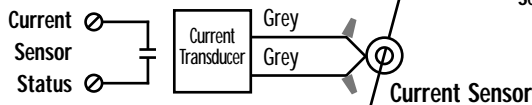
## CONTROL INPUT



## CONTACT OUTPUT



## Sensor Feedback



Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
**Housing Rating** Gold Flash  
**Override Switch** No  
**Current Sensor Type** External, with contact status  
**CS Inside Diameter** .75"  
**CS Outside Diameter** 2.28"  
**Sensor Threshold** Fixed, 3 Amps  
**Sensor range** 3 - 150 Amps

# Model RIBXLCRA

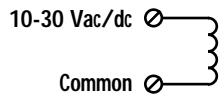
Enclosed Remote Adj Current Sensor + Relay 10Amp SPDT 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

**Solid State Contact**  
 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open),  
 leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed),  
 voltage drop < .3 Vac/dc @ .1 Amp,  
 < 1.6 Vac/dc @ .4 Amp

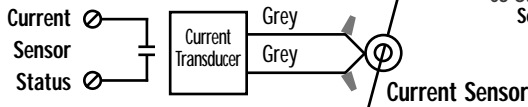
### CONTROL INPUT



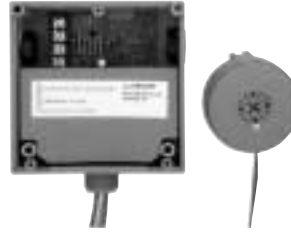
### CONTACT OUTPUT



### Sensor Feedback



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
**Housing Rating** Yes  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** External, with contact status  
**CS Inside Diameter** .75"  
**CS Outside Diameter** 2.28"  
**Sensor Threshold** Adjustable, 3 - 150 Amps  
**Sensor range** 3 - 150 Amps

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

# Model RIBXLCJF

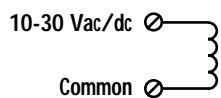
Enclosed Split-Ring Adj Current Sensor + Relay 10Amp SPDT 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

**Solid State Contact**  
 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open),  
 leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed),  
 voltage drop < .3 Vac/dc @ .1 Amp,  
 < 1.6 Vac/dc @ .4 Amp

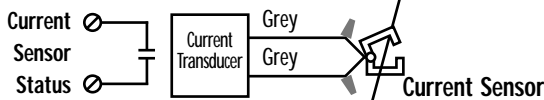
### CONTROL INPUT



### CONTACT OUTPUT



### Sensor Feedback



Shown without cover



**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Enclosure Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
**Housing Rating** Yes  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** External Split Ring, with contact status  
**CS Inside Dimensions** .92" x .9"  
**CS Outside Dimensions** 3.75" x 2.85"  
**Sensor Threshold** Fixed, 10 Amps  
**Sensor range** 10 - 150 Amps

### COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 2.8 Vdc  
**PULL IN** = 9 Vac / 10 Vdc

### CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac



# Model RIBXLCJA

Enclosed Split-Ring Adj Current Sensor + Relay 10Amp SPDT 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

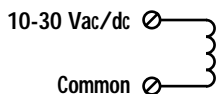
10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

## Solid State Contact

30 Vac/dc, 4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Enclosure Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** No  
**Current Sensor Type** External Split Ring, with contact status  
**CS Inside Dimensions** .92" x .9"  
**CS Outside Dimensions** 3.75" x 2.85"  
**Sensor Threshold** Adjustable, 10 - 150 Amps  
**Sensor range** 10 - 150 Amps

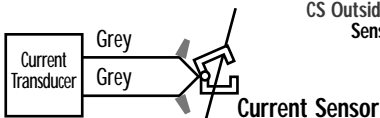
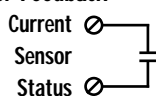
## CONTROL INPUT



## CONTACT OUTPUT



## Sensor Feedback



X-Series

# Model RIBXLSRF

Enclosed Remote Fix Current Sensor + Relay 10Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

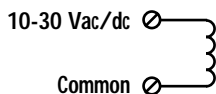
## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

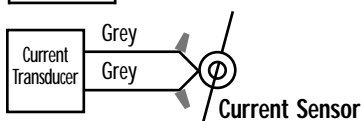
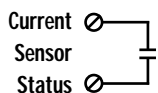
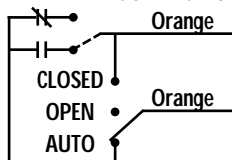
NOTE: Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 10-30 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** Yes  
**Override Switch** Yes  
**Current Sensor Type** External, with contact status  
**CS Inside Diameter** .75"  
**CS Outside Diameter** 2.28"  
**Sensor Threshold** Fixed, 3 Amps  
**Sensor range** 3 - 150 Amps

## CONTROL INPUT



## CONTACT OUTPUT



Solid State Contact: 30 Vac/dc, 4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

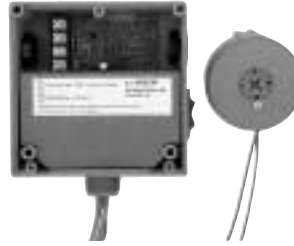
# Model RIBXLSRA

Enclosed Remote Adj Current Sensor + Relay 10Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

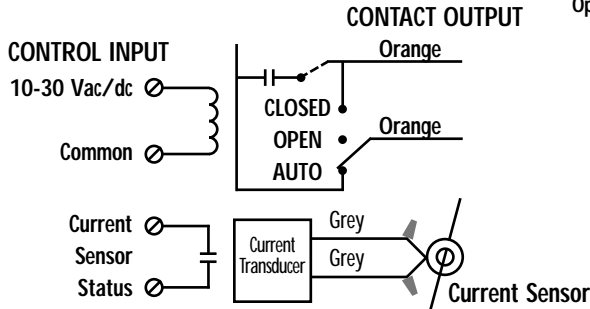
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

NOTE: Normally open or normally closed selected by yellow jumper wire



Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

- Coil Voltage Input: 10-30 Vac / dc; 50-60 Hz
- # Relays & Contact Type: One (1) SPDT
- Expected Relay Life: 10 million cycles minimum mechanical
- Operating Temperature: -30 to 140° F
- Relay Status: LED On = Activated
- Dimensions: 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length: 16"
- Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal
- Housing Rating: Plenum, NEMA 1
- Gold Flash: Yes
- Override Switch: No
- Current Sensor Type: External, with contact status
- CS Inside Diameter: .75"
- CS Outside Diameter: 2.28"
- Sensor Threshold: Adjustable, 3 - 150 Amps
- Sensor range: 3 - 150 Amps

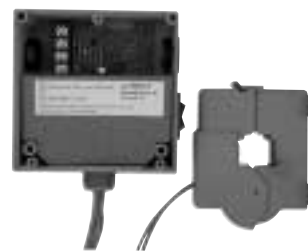
# Model RIBXLSJF

Enclosed Split-Ring Fix Current Sensor + 10Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

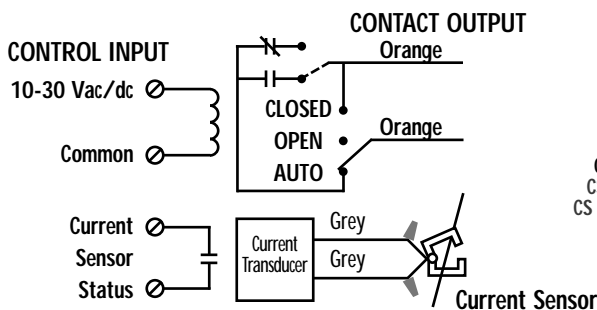
30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

NOTE: Normally open or normally closed selected by yellow jumper wire



Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

- Coil Voltage Input: 10-30 Vac / dc; 50-60 Hz
- # Relays & Contact Type: One (1) SPDT
- Expected Relay Life: 10 million cycles minimum mechanical
- Operating Temperature: -30 to 140° F
- Relay Status: LED On = Activated
- Dimensions: 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length: 16"
- Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal
- Housing Rating: Plenum, NEMA 1
- Gold Flash: Yes
- Override Switch: Yes
- Current Sensor Type: External, with contact status
- CS Inside Dimensions: .92" x .9"
- CS Outside Dimensions: 3.75" x 2.85"
- Sensor Threshold: Fixed, 3 Amps
- Sensor range: 3 - 150 Amps

X-Series

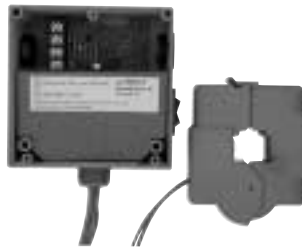
# Model RIBXLSJA

Enclosed Split-Ring Adj Current Sensor + 10Amp SPST + Override 10-30Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

30 mA @ 10 Vac	12 mA @ 10 Vdc
32 mA @ 12 Vac	14 mA @ 12 Vdc
42 mA @ 24 Vac	16 mA @ 24 Vdc
50 mA @ 30 Vac	18 mA @ 30 Vdc

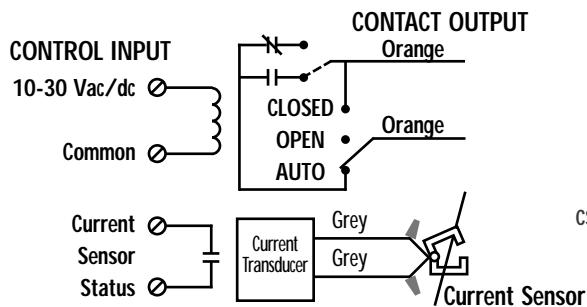
DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

Coil Voltage Input 10-30 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash Yes  
Override Switch No  
Current Sensor Type External, with contact status  
CS Inside Dimensions .92" x .9"  
CS Outside Dimensions 3.75" x 2.85"  
Sensor Threshold Adjustable, 3 - 150 Amps  
Sensor range 3 - 150 Amps

NOTE: Normally open or normally closed selected by yellow jumper wire



Solid State Contact: 30 Vac/dc, .4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBX24BF

Enclosed Internal Fix Current Sensor + Relay 20Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

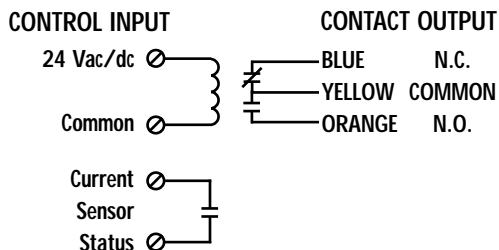
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No  
Current Sensor Type Internal, with contact status  
Sensor Threshold Fixed, .5 Amps  
Sensor range .5 - 20 Amps



Solid State Contact: 30 Vac/dc, .4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

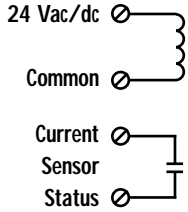
# Model RIBX24BA

Enclosed Internal Adj Current Sensor + Relay 20Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .5 - 20 Amps  
**Sensor range** .5 - 20 Amps

## COIL CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive      277 Vac  
1110 VA Pilot Duty      277 Vac  
770 VA Pilot Duty      120 Vac  
20 Amp Ballast      277 Vac N.O.  
10 Amp Ballast      277 Vac N.C.  
10 Amp Tungsten      120 Vac N.O.  
240 Watt Tungsten      120 Vac N.C.  
2 HP      277 Vac  
1 HP      120 Vac

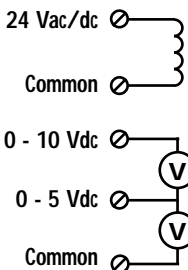
# Model RIBX24BV

Enclosed Internal Current Transducer + Relay 20Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



**Current Sensor Voltage Output**  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIPPLE < 10 mVdc

Shown without cover



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** Internal, with Voltage Output  
**Sensor Threshold** 0 - 20 Amps  
**Sensor range** 0 - 20 Amps

## COIL CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive      277 Vac  
1110 VA Pilot Duty      277 Vac  
770 VA Pilot Duty      120 Vac  
20 Amp Ballast      277 Vac N.O.  
10 Amp Ballast      277 Vac N.C.  
10 Amp Tungsten      120 Vac N.O.  
240 Watt Tungsten      120 Vac N.C.  
2 HP      277 Vac  
1 HP      120 Vac

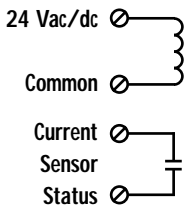
# Model RIBX24SBF

Enclosed Internal Fix Current Sensor + Relay 20Amp SPST + Override 24Vac/dc

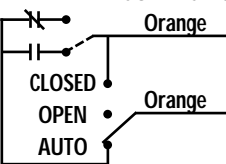


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



**NOTE:** Normally open or normally closed selected by yellow jumper wire

**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** Yes  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Fixed, .5 Amps  
**Sensor range** .5 - 20 Amps

## COIL CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive      277 Vac  
1110 VA Pilot Duty      277 Vac  
770 VA Pilot Duty      120 Vac  
20 Amp Ballast      277 Vac N.O.  
10 Amp Ballast      277 Vac N.C.  
10 Amp Tungsten      120 Vac N.O.  
240 Watt Tungsten      120 Vac N.C.  
2 HP      277 Vac  
1 HP      120 Vac

X-Series

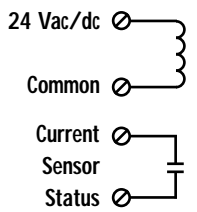
# Model RIBX24SBA

Enclosed Internal Adj Current Sensor + Relay 20Amp SPST + Override 24Vac/dc

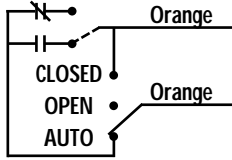


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



NOTE: Normally open or normally closed selected by yellow jumper wire

Shown without cover



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash  
Override Switch No  
Current Sensor Type Internal, with contact status  
Sensor Threshold Adjustable, .5 - 20 Amps  
Sensor range .5 - 20 Amps

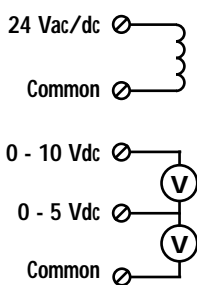
# Model RIBX24SBV

Enclosed Internal Current Transducer + Relay 20Amp SPST + Override 24Vac/dc

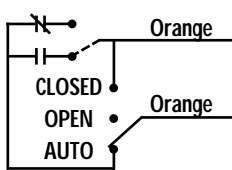


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



NOTE: Normally open or normally closed selected by yellow jumper wire

Shown without cover



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

Current Sensor Voltage Output  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIIPPLE < 10 mVdc

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash  
Override Switch Yes  
Current Sensor Type Internal, with Voltage Output  
Sensor Threshold 0 - 20 Amps  
Sensor range 0 - 20 Amps

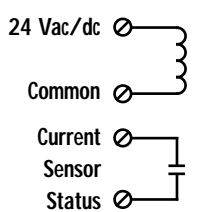
# Model RIBX243PF

Enclosed Internal Fixed Current Sensor + Relay 20Amp TPST 24Vac/dc

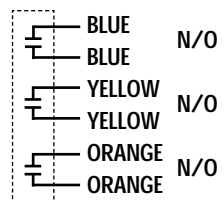


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



NOTE: Can be ordered Normally Closed by adding -NC after the model number.

Shown without cover



## COIL CURRENT

190 mA @ 24 Vac	140 mA @ 30 Vdc
-----------------	-----------------

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) TPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, UL864, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash  
Override Switch No  
Current Sensor Type Internal, with contact status  
Sensor Threshold Fixed, .5 Amps  
Sensor range .5 - 20 Amps

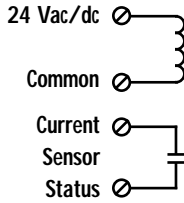
# Model RIBX243PA

Enclosed Internal Adj Current Sensor + Relay 20Amp TPST 24Vac/dc

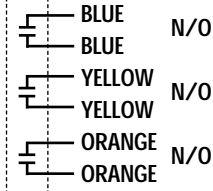


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



Solid State Contact: 30 Vac/dc, .4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

NOTE: Can be ordered Normally Closed by adding -NC after the model number.

Shown without cover



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating No  
 Gold Flash No  
 Override Switch No  
 Current Sensor Type Internal, with contact status  
 Sensor Threshold Adjustable, .5 - 20 Amps  
 Sensor range .5 - 20 Amps

## COIL CURRENT

190 mA @ 24 Vac 140 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac

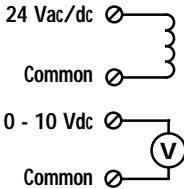
# Model RIBX243PV

Enclosed Internal Current Transducer + Relay 20Amp TPST 24Vac/dc

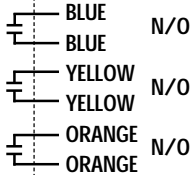


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



### Current Sensor Voltage Output

Voltage output is proportional to current sensor range

Minimum Input Impedance = 30K ohms

Accuracy +/- 1% full scale

VRIPPLE < 10 mVdc

NOTE: Can be ordered Normally Closed by adding -NC after the model number.  
 Can be ordered with 0 - 5 Vdc Voltage Output. Consult factory.

Shown without cover



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) TPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating No  
 Gold Flash No  
 Override Switch No  
 Current Sensor Type Internal, with Voltage Output  
 Sensor Threshold 0 - 20 Amps  
 Sensor range 0 - 20 Amps

## COIL CURRENT

190 mA @ 24 Vac 140 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac, 1 Ph
2 HP	240-277 Vac, 1 Ph
3 HP	480-600 Vac, 1 Ph
5 HP	240 Vac, 3 Ph
7.5 HP	480 Vac, 3 Ph
20 Amp Ballast	277-480 Vac

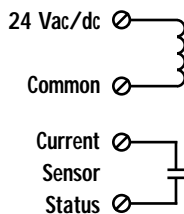
# Model RIBMX24BF

4" Track-Mount Internal Fixed Current Sensor + Relay 20Amp SPDT 24Vac/dc

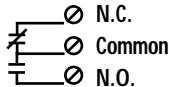


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



Solid State Contact: 30 Vac/dc, .4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.95" x 4" x 1.25"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No  
 Current Sensor Type Internal, with contact status  
 Sensor Threshold Fixed, .5 Amps  
 Sensor range .5 - 20 Amps

## COIL CURRENT

45 mA @ 18 Vac 30 mA @ 22 Vdc  
 75 mA @ 24 Vac 32 mA @ 24 Vdc  
 42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

X-Series

# Model RIBMX24BA

4" Track-Mount Internal Adj Current Sensor + Relay 20Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

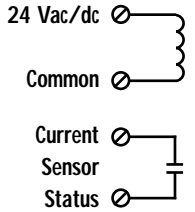


## COIL CURRENT

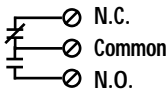
45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.95" x 4" x 1.25"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .5 - 20 Amps  
**Sensor range** .5 - 20 Amps

## CONTACT RATINGS

20 Amp resistive      277 Vac  
1110 VA Pilot Duty      277 Vac  
770 VA Pilot Duty      120 Vac  
20 Amp Ballast      277 Vac N.O.  
10 Amp Ballast      277 Vac N.C.  
10 Amp Tungsten      120 Vac N.O.  
240 Watt Tungsten      120 Vac N.C.  
2 HP      277 Vac  
1 HP      120 Vac

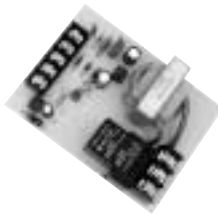
Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMX24BV

4" Track-Mount Internal Current Transducer + Relay 20Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

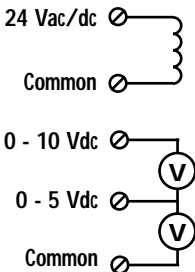


## COIL CURRENT

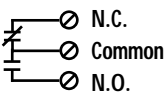
45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.95" x 4" x 1.25"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** Internal, with Voltage Output  
**Sensor Threshold** 0 - 20 Amps  
**Sensor range** 0 - 20 Amps

## CONTACT RATINGS

20 Amp resistive      277 Vac  
1110 VA Pilot Duty      277 Vac  
770 VA Pilot Duty      120 Vac  
20 Amp Ballast      277 Vac N.O.  
10 Amp Ballast      277 Vac N.C.  
10 Amp Tungsten      120 Vac N.O.  
240 Watt Tungsten      120 Vac N.C.  
2 HP      277 Vac  
1 HP      120 Vac

**Current Sensor Voltage Output**  
Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIIPPLE < 10 mVdc

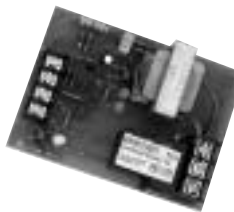
Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMX24BEA

4" Track-Mount Internal Adj Low Current Sensor + Relay 5Amp SPDT 24Vac/dc



Functional Devices, Inc. A538C 10/1/01

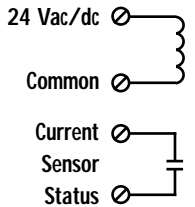


## COIL CURRENT

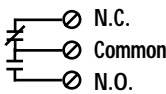
45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.95" x 4" x 1.25"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .125 - 5 Amps  
**Sensor range** .125 - 5 Amps

## CONTACT RATINGS

5 Amp resistive      277 Vac  
453 VA Pilot Duty      277 Vac  
211 VA Pilot Duty      120 Vac  
1/2 HP      277 Vac  
1/6 HP      120 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

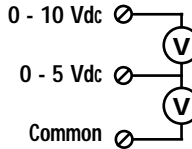
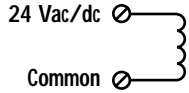
# Model RIBMX24BEV

4" Track-Mount Internal Low Current Transducer + Relay 5Amp SPDT 24Vac/dc

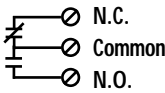


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



### Current Sensor Voltage Output

Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIPPLE < 10 mVac

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.95" x 4" x 1.25"  
Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
Gold Flash No  
Override Switch No  
Current Sensor Type Internal, with Voltage Output  
Sensor Threshold 0 - 5 Amps  
Sensor range 0 - 5 Amps

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

5 Amp resistive	277 Vac
453 VA Pilot Duty	277 Vac
211 VA Pilot Duty	120 Vac
1/2 HP	277 Vac
1/6 HP	120 Vac

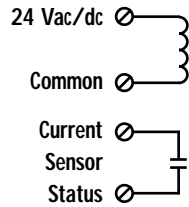
# Model RIBMX24SBF

4" Track-Mount Int Fixed Current Sensor + 20Amp SPST-NO + Override 24Vac/dc

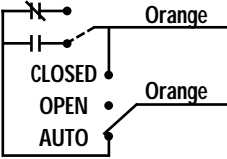


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



NOTE: Normally open or normally closed selected by yellow jumper wire

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.95" x 4" x 1.25"  
Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
Gold Flash No  
Override Switch Yes  
Current Sensor Type Internal, with contact status  
Sensor Threshold Fixed, .5 Amps  
Sensor range .5 - 20 Amps

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

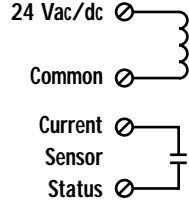
# Model RIBMX24SBA

4" Track-Mount Int Adj Current Sensor + Relay 20Amp SPST-NO + Override 24Vac/dc

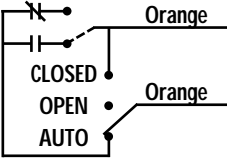


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



NOTE: Normally open or normally closed selected by yellow jumper wire

Coil Voltage Input 24 Vac / dc; 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.95" x 4" x 1.25"  
Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
Gold Flash No  
Override Switch Yes  
Current Sensor Type Internal, with contact status  
Sensor Threshold Adjustable, .5 - 20 Amps  
Sensor range .5 - 20 Amps

### COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

### CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.  
When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

X-Series



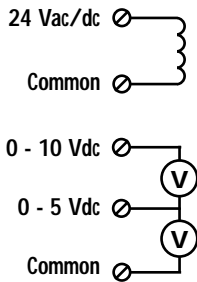
# Model RIBMX24SBV

4" Track-Mount Internal Current Transducer + 20Amp SPST-NO + Override 24Vac/dc

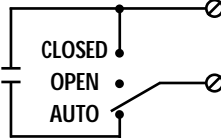


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



## CONTACT OUTPUT



### Current Sensor Voltage Output

Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIPPLE < 10 mVdc

**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1110 VA Pilot Duty	277 Vac
770 VA Pilot Duty	120 Vac
20 Amp Ballast	277 Vac N.O.
10 Amp Ballast	277 Vac N.C.
10 Amp Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
2 HP	277 Vac
1 HP	120 Vac

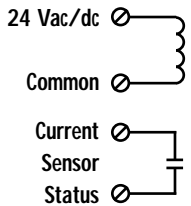
# Model RIBMX24SBEA

4" Track-Mount Int Adj Low Current Sensor + 5Amp SPST-NO + Override 24Vac/dc

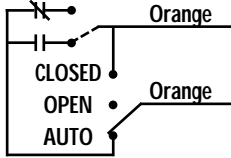


Functional Devices, Inc. A538C 10/1/01

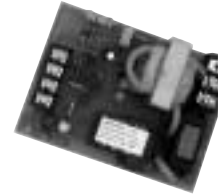
## CONTROL INPUT



## CONTACT OUTPUT



**NOTE:** Normally open or normally closed selected by yellow jumper wire



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
453 VA Pilot Duty	277 Vac
211 VA Pilot Duty	120 Vac
1/2 HP	277 Vac
1/6 HP	120 Vac

Solid State Contact: 30 Vac/dc, .4 amp max.

When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.

When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.95" x 4" x 1.25"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** Yes  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .125 - 5 Amps  
**Sensor range** .125 - 5 Amps

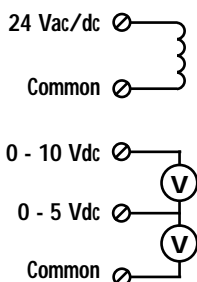
# Model RIBMX24SBEV

4" Track-Mount Internal Low Current Transducer + 5Amp SPST-NO + Override 24Vac/dc

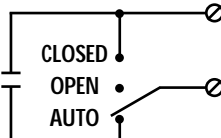


Functional Devices, Inc. A538C 10/1/01

## CONTROL INPUT



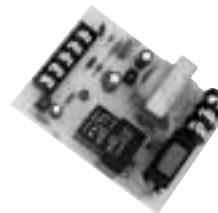
## CONTACT OUTPUT



### Current Sensor Voltage Output

Voltage output is proportional to current sensor range  
Minimum Input Impedance = 30K ohms  
Accuracy +/- 1% full scale  
VRIPPLE < 10 mVdc

**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.



## COIL CURRENT

45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

5 Amp resistive	277 Vac
453 VA Pilot Duty	277 Vac
211 VA Pilot Duty	120 Vac
1/2 HP	277 Vac
1/6 HP	120 Vac

**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.95" x 4" x 1.25"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** Yes  
**Current Sensor Type** Internal, with Voltage Output  
**Sensor Threshold** 0 - 5 Amps  
**Sensor range** 0 - 5 Amps

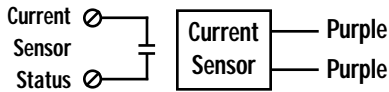
X-Series

# Model RIBXF

Enclosed Internal Fixed Current Sensor .5-30 Amps



Functional Devices, Inc. A538C 10/1/01



Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



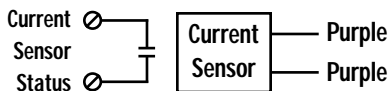
**Operating Temperature** -30 to 140° F  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Fixed, .5 Amps  
**Sensor range** .5 - 30 Amps

# Model RIBXA

Enclosed Internal Adjustable Current Sensor .5-30 Amps



Functional Devices, Inc. A538C 10/1/01



Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



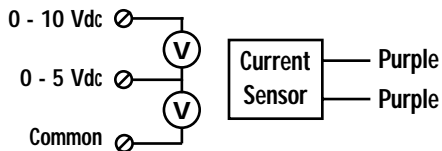
**Operating Temperature** -30 to 140° F  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Current Sensor Type** Internal, with contact status  
**Sensor Threshold** Adjustable, .5 - 30 Amps  
**Sensor range** .5 - 30 Amps

# Model RIBXV

Enclosed Internal Current Transducer 0-30 Amps



Functional Devices, Inc. A538C 10/1/01



**Current Sensor Voltage Output**  
 Voltage output is proportional to current sensor range  
 Minimum Input Impedance = 30K ohms  
 Accuracy +/- 1% full scale  
 V<sub>RIIPPLE</sub> < 10 mV<sub>ac</sub>

Shown without cover



**Operating Temperature** -30 to 140° F  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Current Sensor Type** Internal, with Voltage Output  
**Sensor Threshold** 0 - 30 Amps  
**Sensor range** 0 - 30 Amps

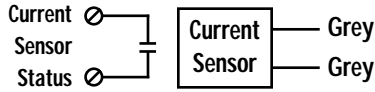
X-Series

# Model RIBXEA

Enclosed Internal Adj Low Current Sensor .125-5 Amps



Functional Devices, Inc. A538C 10/1/01



Shown without cover



- Operating Temperature: -30 to 140° F
- Dimensions: 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length: 16"
- Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal, Plenum, NEMA 1
- Housing Rating: Plenum, NEMA 1
- Current Sensor Type: Internal, with contact status
- Sensor Threshold: Adjustable, .125 - 5 Amps
- Sensor range: .125 - 5 Amps

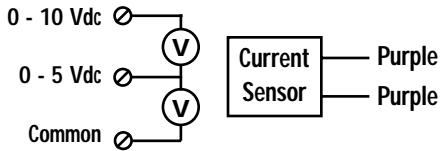
Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBXEV

Enclosed Internal Low Current Transducer 0-5 Amps



Functional Devices, Inc. A538C 10/1/01



**Current Sensor Voltage Output**  
 Voltage output is proportional to current sensor range  
 Minimum Input Impedance = 30K ohms  
 Accuracy +/- 1% full scale  
 RIPPLE < 10 mVdc

Shown without cover



- Operating Temperature: -30 to 140° F
- Dimensions: 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length: 16"
- Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal, Plenum, NEMA 1
- Housing Rating: Plenum, NEMA 1
- Current Sensor Type: Internal, with Voltage Output
- Sensor Threshold: 0 - 5 Amps
- Sensor range: 0 - 5 Amps

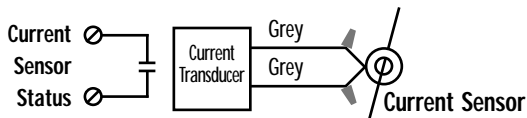
X-Series

# Model RIBXRF

Enclosed Remote Fixed Current Sensor 3-150 Amps



Functional Devices, Inc. A538C 10/1/01



Shown without cover



- Operating Temperature: -30 to 140° F
- Dimensions: 4" x 4" x 1.8" with 1/2" NPT nipple
- Wire Length: 16"
- Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal, Plenum, NEMA 1
- Housing Rating: Plenum, NEMA 1
- Current Sensor Type: External, with contact status
- Sensor Threshold: Fixed, 3 Amps
- Sensor range: 3 - 150 Amps
- Current Transformer Ring: .75"
- CT Inside Diameter: .75"
- CT Outside Diameter: 2.28"

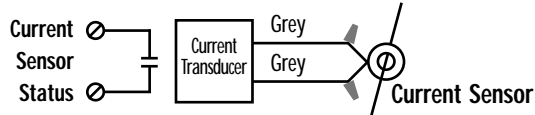
Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBXRA

Enclosed Remote Adjustable Current Sensor 3-150 Amps



Functional Devices, Inc. A538C 10/1/01



Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



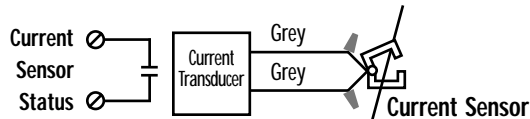
Operating Temperature -30 to 140° F  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating Plenum, NEMA 1  
 Current Sensor Type External, with contact status  
 Sensor Threshold Adjustable, 3 - 150 Amps  
 Sensor range 3 - 150 Amps  
 Current Transformer Ring  
 CT Inside Diameter .75"  
 CT Outside Diameter 2.28"

# Model RIBXJF

Enclosed Split-Ring Fixed Current Sensor 10-150 Amps



Functional Devices, Inc. A538C 10/1/01



Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



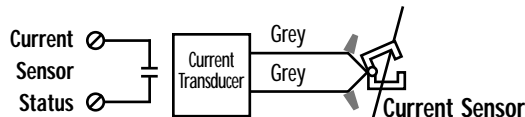
Operating Temperature -30 to 140° F  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating Plenum, NEMA 1  
 Current Sensor Type External Split Ring, with contact status  
 Sensor Threshold Fixed, 10 Amps  
 Sensor range 10 - 150 Amps  
 Current Transformer Split  
 CT Inside Dimensions .92" x .9"  
 CT Outside Dimensions 3.75" x 2.85"

# Model RIBXJA

Enclosed Split-Ring Adjustable Current Sensor 10-150 Amps



Functional Devices, Inc. A538C 10/1/01



Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

Shown without cover



Operating Temperature -30 to 140° F  
 Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating Plenum, NEMA 1  
 Current Sensor Type External Split Ring, with contact status  
 Sensor Threshold Adjustable, 10 - 150 Amps  
 Sensor range 10 - 150 Amps  
 Current Transformer Split  
 CT Inside Dimensions .92" x .9"  
 CT Outside Dimensions 3.75" x 2.85"

X-Series

# Model RIBMXF

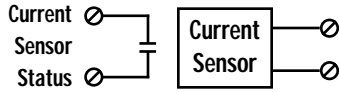
4" Track-Mount Internal Fixed Current Sensor .5-20 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature: -30 to 140° F  
 Dimensions: 1.7" x 4" x 1.25"  
 Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal  
 Current Sensor Type: Internal, with contact status  
 Sensor Threshold: Fixed, .5 Amps  
 Sensor range: .5 - 30 Amps



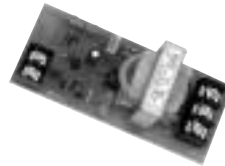
Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMXA

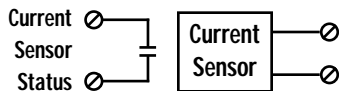
4" Track-Mount Internal Adjustable Current Sensor .5-20 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature: -30 to 140° F  
 Dimensions: 1.7" x 4" x 1.25"  
 Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal  
 Current Sensor Type: Internal, with contact status  
 Sensor Threshold: Adjustable, .5 - 30 Amps  
 Sensor range: .5 - 30 Amps



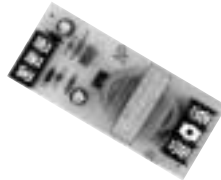
Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMXV

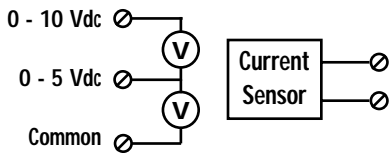
4" Track-Mount Internal Current Transducer 0-20 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature: -30 to 140° F  
 Dimensions: 1.7" x 4" x 1.25"  
 Wire Length: 16"  
 Approvals: UL Listed, UL916, UL864, C-UL Canada, California State Fire Marshal  
 Current Sensor Type: Internal, with Voltage Output  
 Sensor Threshold: 0 - 30 Amps  
 Sensor range: 0 - 30 Amps



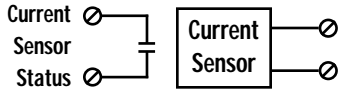
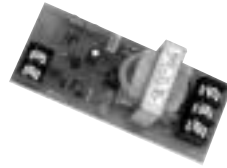
**Current Sensor Voltage Output**  
 Voltage output is proportional to current sensor range  
 Minimum Input Impedance = 30K ohms  
 Accuracy +/- 1% full scale  
 V<sub>RIIPPLE</sub> < 10 mV<sub>ac</sub>

# Model RIBMXEA

4" Track-Mount Internal Adjustable Low Current Sensor .125-5 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Current Sensor Type Internal, with contact status  
 Sensor Threshold Adjustable, .125 - 5 Amps  
 Sensor range .125 - 5 Amps

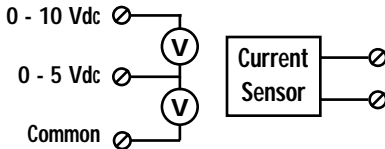
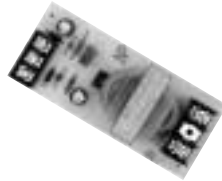
Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMXEV

4" Track-Mount Internal Low Current Transducer 0-5 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Current Sensor Type Internal, with Voltage Output  
 Sensor Threshold 0 - 5 Amps  
 Sensor range 0 - 5 Amps

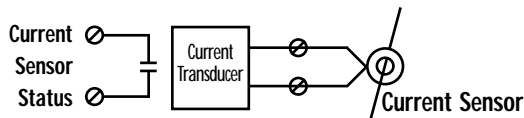
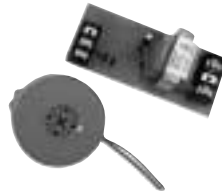
**Current Sensor Voltage Output**  
 Voltage output is proportional to current sensor range  
 Minimum Input Impedance = 30K ohms  
 Accuracy +/- 1% full scale  
 RIPPLE < 10 mVdc

# Model RIBMXRF

4" Track-Mount Remote Fixed Current Sensor 3-150 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Current Sensor Type External, with contact status  
 CS Inside Diameter .75"  
 CS Outside Diameter 2.28"  
 Sensor Threshold Fixed, 3 Amps  
 Sensor range 3 - 150 Amps

Solid State Contact: 30 Vac/dc, .4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

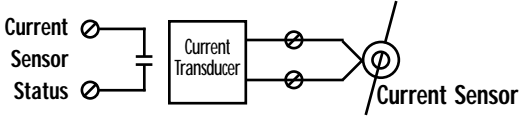
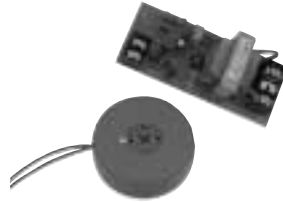
X-Series

# Model RIBMXRA

4" Track-Mount Remote Adjustable Current Sensor 3-150 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating  
 Current Sensor Type External, with contact status  
 CS Inside Diameter .75"  
 CS Outside Diameter 2.28"  
 Sensor Threshold Adjustable, 3 - 150 Amps  
 Sensor range 3 - 150 Amps

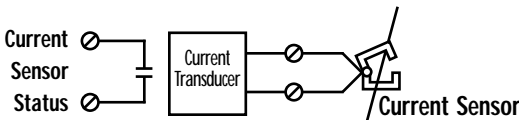
Solid State Contact: 30 Vac/dc, 4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMXJF

Enclosed Split-Ring Fixed Current Sensor 10-150 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating  
 Current Sensor Type External Split Ring, with contact status  
 CS Inside Dimensions .92" x .9"  
 CS Outside Dimensions 3.75" x 2.85"  
 Sensor Threshold Fixed, 10 Amps  
 Sensor range 10 - 150 Amps

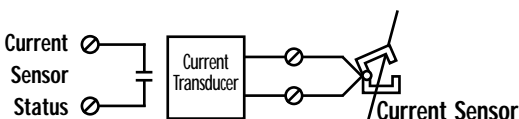
Solid State Contact: 30 Vac/dc, 4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

# Model RIBMXJA

Enclosed Split-Ring Adjustable Current Sensor 10-150 Amps



Functional Devices, Inc. A538C 10/1/01



Operating Temperature -30 to 140° F  
 Dimensions 1.7" x 4" x 1.25"  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Plenum, NEMA 1  
 Housing Rating  
 Current Sensor Type External Split Ring, with contact status  
 CS Inside Dimensions .92" x .9"  
 CS Outside Dimensions 3.75" x 2.85"  
 Sensor Threshold Adjustable, 10 - 150 Amps  
 Sensor range 10 - 150 Amps

Solid State Contact: 30 Vac/dc, 4 amp max.  
 When Current Sensor status off (open), leakage < 30 uA @ 30 Vac/dc.  
 When Current Sensor Status on (closed), voltage drop < .3 Vac/dc @ .1 Amp, < 1.6 Vac/dc @ .4 Amp

X-Series



Optoisolated Relays

Optoisolated Relays

Optoisolated Relays

Optoisolated Relays

Optoisolated Relays

Optoisolated



# Optoisolated Series

## T & Panel Style Optoisolated Relays 10 & 20 Amp

This series of relays is used when the controller does not have sufficient coil drive power available to energize a relay of the desired contact rating. The power to energize the relay is derived from a local power source which can be 10-30 Vac/dc, 24 Vac/dc, 120 Vac or 208-277 Vac.

Using this approach, an LED or an analog output of a controller can be used to control up to a 2 pole 20 Amp relay, with a 3 horsepower rating. Optoisolated relays are available in T and Panel Style packaging, for an explanation of packaging styles see page 4.

The voltage output of the controller is used to turn on an optoisolator that connects the local power source to the coil of the relay. The optoisolator isolates the class 2 output of the controller from the high voltage of the local power source.

The tables below are separated into T, and Panel styles. These tables give a brief summary of the product specifications. Complete specification sheets are on the pages following the tables.

### Quick Reference Chart - For details see specification sheets

#### T STYLE OPTOISOLATED PILOT RELAYS

MODEL #	CONTROL VOLTAGE		SUPPLY VOLTAGE		CONTACT TYPE	CONTACT RATINGS										OVERRIDE SWITCH	NOTES	SPEC. PAGE			
	(5)	(10)	(24)	(30)		(120)	(208)	(240)	(277)	RESISTIVE	MOTOR	LIGHTING	INDUCTIVE								
		ac/dc								AMPS	10	15	20	25	HP	BALLAST	TUNGSTEN	PILOT DUTY			
RIBTELC	UL				1 RELAY	SPDT									1/3	480VA	600W	480VA		*	73
RIBTELS	UL				1 RELAY	SPST									1/3	480VA	600W	480VA	1	*	73

#### T STYLE OPTOISOLATED POWER RELAYS

MODEL #	CONTROL VOLTAGE		SUPPLY VOLTAGE		CONTACT TYPE	CONTACT RATINGS										OVERRIDE SWITCH	NOTES	SPEC. PAGE			
	(5)	(10)	(24)	(30)		(120)	(208)	(240)	(277)	RESISTIVE	MOTOR	LIGHTING	INDUCTIVE								
		ac/dc								AMPS	10	15	20	25	HP	BALLAST	TUNGSTEN	PILOT DUTY			
RIBTE24B	UL				1 RELAYS	SPDT									2	20A	1200W	1110VA		*	73
RIBTE01B	UL				1 RELAY	SPDT									2	20A	1200W	1110VA		*	74
RIBTE02B	UL				1 RELAY	SPDT									2	20A	1200W	1110VA		*	74
RIBTE24SB	UL				1 RELAY	SPST									2	20A	1200W	1110VA	1	*	74
RIBTE01SB	UL				1 RELAY	SPST									2	20A	1200W	1110VA	1	*	75
RIBTE02SB	UL				1 RELAY	SPST									2	20A	1200W	1110VA	1	*	75
RIBTE24P	UL				1 RELAY	DPDT									3	20A		1640VA		*	75
RIBTE01P	UL				1 RELAY	DPDT									3	20A		1640VA		*	76
RIBTE02P	UL				1 RELAY	DPDT									3	20A		1640VA		*	76

#### PANEL STYLE OPTOISOLATED POWER RELAYS

MODEL #	CONTROL VOLTAGE		SUPPLY VOLTAGE		CONTACT TYPE	CONTACT RATINGS										OVERRIDE SWITCH	NOTES	SPEC. PAGE			
	(5)	(10)	(24)	(30)		(120)	(208)	(240)	(277)	RESISTIVE	MOTOR	LIGHTING	INDUCTIVE								
		ac/dc								AMPS	10	15	20	25	HP	BALLAST	TUNGSTEN	PILOT DUTY			
RIBME2401B	UL				1 RELAYS	SPDT									2	20A	1200W	1110VA		*	76
RIBME2402B	UL				1 RELAY	SPDT									2	20A	1200W	1110VA		*	77
RIBME2401SB	UL				1 RELAY	SPST									2	20A	1200W	1110VA	1	*	77
RIBME2402SB	UL				1 RELAY	SPST									2	20A	1200W	1110VA	1	*	77
RIBME2401P	UL				1 RELAY	DPST									3	20A		1640VA		*	78
RIBME2402P	UL				1 RELAY	DPST									3	20A		1640VA		*	78

\* = See Application Notes 11 & 12 on Page 91

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

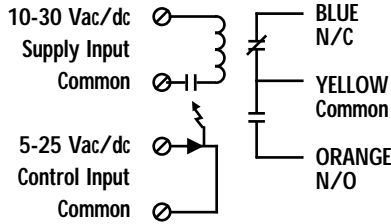
Optoisolated

# Model RIBTELC

Enclosed Relay Hi/Low sep 10Amp SPDT  
10-30Vac/dc power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5Vdc  
.9 mA @ 10Vdc  
1 mA @ 12Vdc  
2 mA @ 24Vdc  
3 mA @ 24Vac  
(Non Polarized)

## POWER INPUT CURRENT

30 mA @ 10 Vac      12 mA @ 10 Vdc  
32 mA @ 12 Vac      14 mA @ 12 Vdc  
42 mA @ 24 Vac      16 mA @ 24 Vdc  
50 mA @ 30 Vac      18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
10 Amp resistive	28 Vdc
480 VA Pilot Duty	240-277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

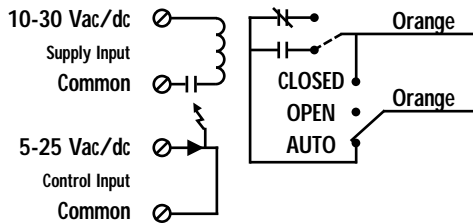
Supply Input 10-30 Vac / dc, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash Yes  
Override Switch No

# Model RIBTELS

Enclosed Relay Hi/Low sep 10Amp SPST +  
Override 10-30Vac/dc power + 5-25Vac/dc



Functional Devices, Inc. A538C 10/1/01



Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12Vdc  
2 mA @ 24Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

30 mA @ 10 Vac      12 mA @ 10 Vdc  
32 mA @ 12 Vac      14 mA @ 12 Vdc  
42 mA @ 24 Vac      16 mA @ 24 Vdc  
50 mA @ 30 Vac      18 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 2.8 Vdc  
PULL IN = 9 Vac / 10 Vdc

## CONTACT RATINGS

10 Amp resistive	120-277 Vac
480 VA Pilot Duty	277 Vac
480 VA Ballast	277 Vac
600 Watt Tungsten	120 Vac N.O.
240 Watt Tungsten	120 Vac N.C.
1/3 HP for N.O.	120-240 Vac
1/6 HP for N.C.	120-240 Vac
1/4 HP for N.O.	277 Vac
1/8 HP for N.C.	277 Vac

Supply Input 10-30 Vac / dc, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash Yes  
Override Switch Yes

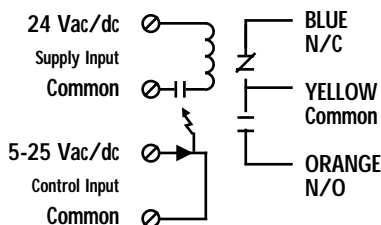
NOTE: Normally open or normally closed selected by yellow jumper wire

# Model RIBTE24B

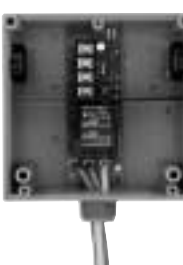
Enclosed Relay Hi/Low sep 20Amp SPDT  
24Vac/dc power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

Supply Input 24 Vac / dc, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Plenum, NEMA 1  
Housing Rating Gold Flash No  
Override Switch No

Optoisolated

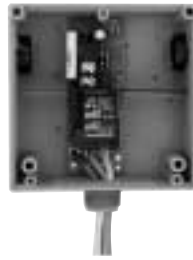
# Model RIBTE01B

Enclosed Relay Hi/Low sep 20Amp SPDT  
120Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

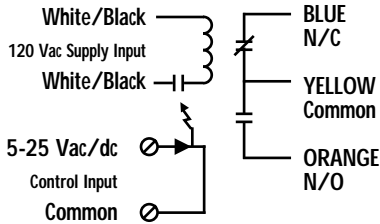
## POWER INPUT CURRENT

42 mA @ 120 Vac

DROP OUT = 35 Vac  
PULL IN = 85 Vac

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac



Supply Input 120 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal

Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

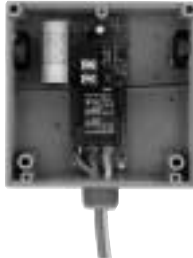
# Model RIBTE02B

Enclosed Relay Hi/Low sep 20Amp SPDT  
208-277Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

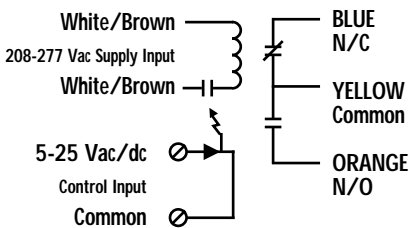
## POWER INPUT CURRENT

62 mA @ 208-277 Vac

DROP OUT = 60 Vac  
PULL IN = 160 Vac

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac



Supply Input 208-277 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal

Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

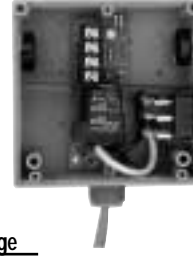
# Model RIBTE24SB

Enclosed Relay Hi/Low sep 20Amp SPST +  
override 24Vac/dc power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

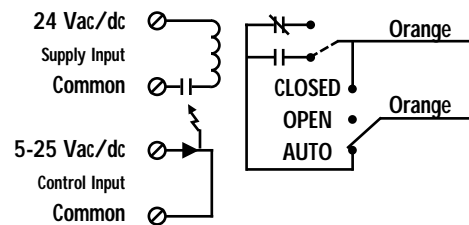
## POWER INPUT CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
75 mA @ 24 Vac      32 mA @ 24 Vdc  
42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac



Supply Input 24 Vac / dc, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal

Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch Yes

NOTE: Normally open or normally closed selected by yellow jumper wire

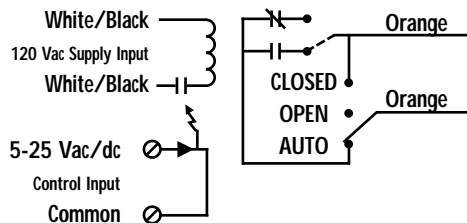
OptoIsolated

# Model RIBTE01SB

Enclosed Relay Hi/Low sep 20Amp SPST  
+ Override 120Vac power + 5-25Vac/dc



Functional Devices, Inc. A538C 10/1/01



NOTE: Normally open or normally closed selected by yellow jumper wire

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

42 mA @ 120 Vac

DROP OUT = 35 Vac  
PULL IN = 85 Vac

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

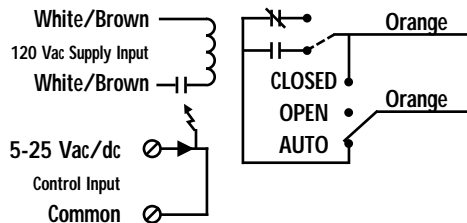
Supply Input 120 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch Yes

# Model RIBTE02SB

Enclosed Relay Hi/Low sep 20Amp SPST +  
Override 208-277Vac power + 5-25Vac/dc



Functional Devices, Inc. A538C 10/1/01



NOTE: Normally open or normally closed selected by yellow jumper wire

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

62 mA @ 208-277 Vac

DROP OUT = 60 Vac  
PULL IN = 160 Vac

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

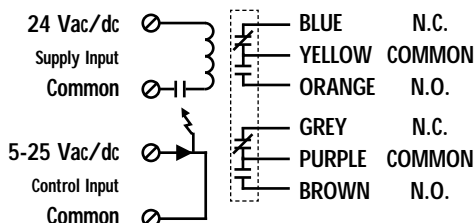
Supply Input 208-277 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch Yes

# Model RIBTE24P

Enclosed Relay Hi/Low sep 20Amp DPDT  
24Vac/dc power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



NOTE: Normally open or normally closed selected by yellow jumper wire

Shown without cover



## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

Supply Input 24 Vac / dc; 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) DPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

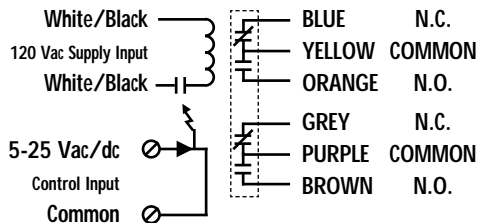
# Model RIBTE01P

Enclosed Relay Hi/Low sep 20Amp DPDT  
120Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01

Shown without cover



Supply Input 120 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) DPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

100 mA @ 120 Vac

DROP OUT = 35 Vac  
PULL IN = 85 Vac

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

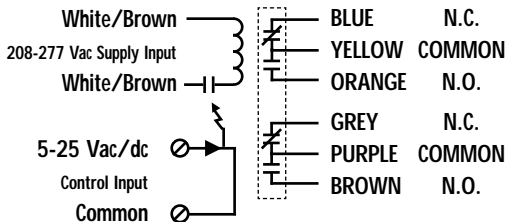
# Model RIBTE02P

Enclosed Relay Hi/Low sep 20Amp DPDT 208-277Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01

Shown without cover



Supply Input 208-277 Vac, 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) DPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 4" x 4" x 1.8" with 1/2" NPT nipple  
Wire Length 16"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Housing Rating Plenum, NEMA 1  
Gold Flash No  
Override Switch No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CONTROL

100 mA @ 208-277 Vac

DROP OUT = 60 Vac  
PULL IN = 160 Vac

## CONTACT RATINGS

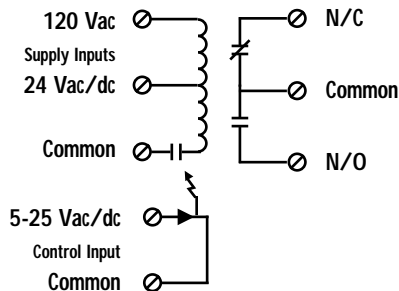
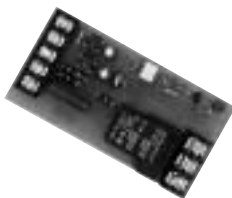
20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

# Model RIBME2401B

4" Track-Mount Relay 20Amp SPDT  
24Vac/dc/120Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



Supply Input 24 Vac / dc, 120 Vac; 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) SPDT  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 2.05" x 4" x 1.75"  
Approvals UL Listed, UL916, C-UL Canada  
California State Fire Marshal  
Gold Flash No  
Override Switch No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vac  
(Non Polarized)

## POWER INPUT CURRENT

45 mA @ 18 Vac    30 mA @ 22 Vac  
75 mA @ 24 Vac    32 mA @ 24 Vdc  
42 mA @ 120 Vac    42 mA @ 30 Vdc

DROP OUT = 2.1 Vac / 3.8 Vdc  
PULL IN = 18 Vac / 22 Vdc

## CONTACT RATINGS

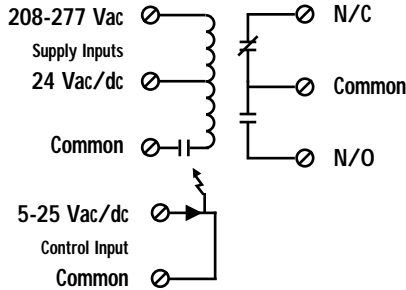
20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
2 Amp Tungsten N.C.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

# Model RIBME2402B

4" Track-Mount Relay 20Amp SPDT 24Vac/dc/208-277Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



**Supply Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz  
**Control Input** 5-25 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.05" x 4" x 1.75"  
**Approvals** UL Listed, UL916, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
 .9 mA @ 10 Vdc  
 1 mA @ 12 Vdc  
 2 mA @ 24 Vdc  
 3 mA @ 24 Vdc  
 (Non Polarized)

## POWER INPUT CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
 75 mA @ 24 Vac      32 mA @ 24 Vdc  
 62 mA @ 208-277 Vac      42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

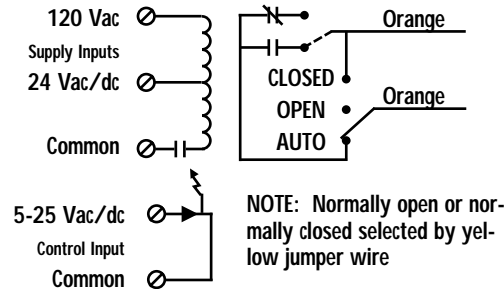
20 Amp resistive      277 Vac  
 1 HP      120 Vac  
 2 HP      277 Vac  
 20 Amp Ballast N.O.      120/277 Vac  
 10 Amp Ballast N.C.      120/277 Vac  
 10 Amp Tungsten N.O.      120 Vac  
 2 Amp Tungsten N.C.      120 Vac  
 770 VA Pilot Duty      120 Vac  
 1,110 VA Pilot Duty      277 Vac

# Model RIBME2401SB

4" Track-Mount Relay 20Amp SPST + Override  
 24Vac/dc/120Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



**Supply Input** 24 Vac / dc, 120 Vac; 50-60 Hz  
**Control Input** 5-25 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.55" x 4" x 1.75"  
**Approvals** UL Listed, UL916, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** Yes

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
 .9 mA @ 10 Vdc  
 1 mA @ 12 Vdc  
 2 mA @ 24 Vdc  
 3 mA @ 24 Vdc  
 (Non Polarized)

## POWER INPUT CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
 75 mA @ 24 Vac      32 mA @ 24 Vdc  
 42 mA @ 120 Vac      42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

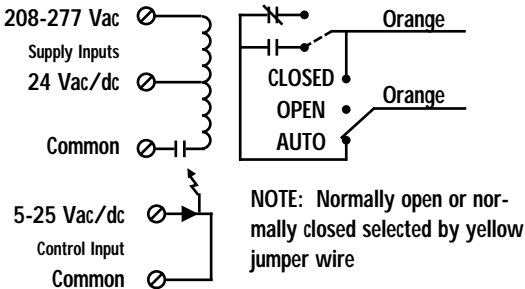
20 Amp resistive      277 Vac  
 1 HP      120 Vac  
 2 HP      277 Vac  
 20 Amp Ballast N.O.      120/277 Vac  
 10 Amp Ballast N.C.      120/277 Vac  
 10 Amp Tungsten N.O.      120 Vac  
 2 Amp Tungsten N.C.      120 Vac  
 770 VA Pilot Duty      120 Vac  
 1,110 VA Pilot Duty      277 Vac

# Model RIBME2402SB

4" Track-Mount Relay 20Amp SPST + Override  
 24Vac/dc/120Vac power + 5-25Vac/dc



Functional Devices, Inc. A538C 10/1/01



**Supply Input** 24 Vac / dc, 208-277 Vac; 50-60 Hz  
**Control Input** 5-25 Vac / dc, 50-60 Hz  
**# Relays & Contact Type** One (1) SPST  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.55" x 4" x 1.75"  
**Approvals** UL Listed, UL916, C-UL Canada  
 California State Fire Marshal  
**Gold Flash** No  
**Override Switch** Yes

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
 .9 mA @ 10 Vdc  
 1 mA @ 12 Vdc  
 2 mA @ 24 Vdc  
 3 mA @ 24 Vdc  
 (Non Polarized)

## POWER INPUT CURRENT

45 mA @ 18 Vac      30 mA @ 22 Vdc  
 75 mA @ 24 Vac      32 mA @ 24 Vdc  
 62 mA @ 208-277 Vac      42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive      277 Vac  
 1 HP      120 Vac  
 2 HP      277 Vac  
 20 Amp Ballast N.O.      120/277 Vac  
 10 Amp Ballast N.C.      120/277 Vac  
 10 Amp Tungsten N.O.      120 Vac  
 2 Amp Tungsten N.C.      120 Vac  
 770 VA Pilot Duty      120 Vac  
 1,110 VA Pilot Duty      277 Vac

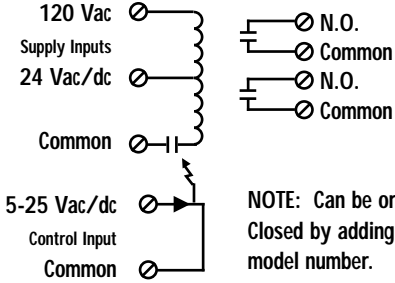
Optoisolated

# Model RIBME2401P

4" Track-Mount Relay 20Amp DPST  
24Vac/dc/120Vac power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.

Supply Input 24 Vac / dc, 120 Vac; 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) DPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 3.1" x 4" x 2.75"  
Approvals UL Listed, UL916, C-UL Canada, California State Fire Marshal  
Gold Flash No  
Override Switch No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vdc  
(Non Polarized)

## POWER INPUT CURRENT

100 mA @ 20 Vac    50 mA @ 20 Vdc  
125 mA @ 24 Vac    50 mA @ 24 Vdc  
95 mA @ 120 Vac    70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

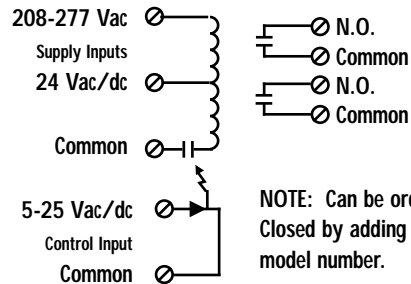
20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

# Model RIBME2402P

4" Track-Mount Relay 20Amp DPST  
24Vac/dc/208-277 power + 5-25Vac/dc control



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Can be ordered Normally Closed by adding -NC after the model number.

Supply Input 24 Vac / dc, 208-277 Vac; 50-60 Hz  
Control Input 5-25 Vac / dc, 50-60 Hz  
# Relays & Contact Type One (1) DPST  
Expected Relay Life 10 million cycles minimum mechanical  
Operating Temperature -30 to 140° F  
Relay Status LED On = Activated  
Dimensions 3.1" x 4" x 2.75"  
Approvals UL Listed, UL916, C-UL Canada, California State Fire Marshal  
Gold Flash No  
Override Switch No

## CONTROL INPUT CURRENT

.4 mA @ 5 Vdc  
.9 mA @ 10 Vdc  
1 mA @ 12 Vdc  
2 mA @ 24 Vdc  
3 mA @ 24 Vdc  
(Non Polarized)

## POWER INPUT CURRENT

100 mA @ 20 Vac    50 mA @ 20 Vdc  
125 mA @ 24 Vac    50 mA @ 24 Vdc  
95 mA @ 208-277 Vac    70 mA @ 30 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
PULL IN = 20 Vac / 20 Vdc

## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

Optoisolated



Polarized Relays

Polarized Relays

Polarized Relays

Polarized Relays

Polarized Relays

Polarized



# Polarized Series

## 10 to 20 Amp Polarized Relays

The POLARIZED RIB series is equivalent to the standard RIB series except for the coil which is polarized. We are currently offering nine polarized relays, most of which have a similar non-polarized counterpart. The "FA" in the model name stands for Fire Alarm. These relays

are designed for operation in systems that require supervision from controllers and utilize end-of-line resistors. The relay can also be operated from A/C voltage (non-polarized) if desired.

### Quick Reference Chart - For details see specification sheets

POLARIZED RELAYS																						
MODEL #	UL	COIL VOLTAGE INPUT							CONTACT TYPE	CONTACT RATINGS												
		( ac/dc )			( ac )					RESISTIVE	MOTOR	LIGHTING		INDUCTIVE	VERRIDE	NOTES	SPEC.					
		12	24	30	120	208	240	277	480	1 RELAY		Amps	10	20	30	HP	BALLAST	TUNGSTEN	PILOT DUTY	SWITCH		PAGE
RIB12C-FA	UL	■								1 RELAY		■				1/2			470VA	NO	NEW*	81
RIB24C-FA	UL		■							1 RELAY		■				1/2			470VA	NO	NEW*	81
RIB24S-FA	UL		■							1 RELAY		■				1/2			470VA	YES	NEW*	81
RIBT24B-FA	UL		■							1 RELAY		■	■			2	20A	1200W	1100VA	NO	NEW*	82
RIB24P-FA	UL		■							1 RELAY		■	■			3	20A		1640VA	NO	NEW*	82
RIBMN12C-FA	UL	■								1 RELAY		■				1/2			470VA	NO	NEW*	82
RIBMN24C-FA	UL		■							1 RELAY		■				1/2			470VA	NO	NEW*	83
RIBMN12S-FA	UL	■								1 RELAY		■				1/2			470VA	YES	NEW*	83
RIBMN24S-FA	UL		■							1 RELAY		■				1/2			470VA	YES	NEW*	83

\* = See Application Note 8 on Page 91

UL = UL Listed: UL916 Energy Management, UL864 Fire; UL Listed Canada

Polarized

# Model RIB12C-FA

Enclosed Relay, 10 Amp, SPDT, Polarized 12 Vdc and Vac

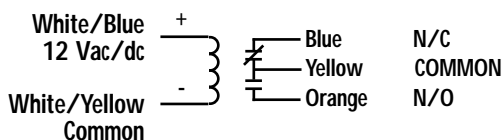


Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT

### CONTACT OUTPUT



Coil Voltage Input 12 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 2.8 x 1.5" with 1/2" NPT Nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

48 mA @ 10 Vac      26 mA @ 11 Vdc  
 56 mA @ 12 Vac      32 mA @ 12 Vdc

DROP OUT = 2 Vac / 2.5 Vdc  
 PULL IN = 9 Vac / 11 Vdc

### CONTACT RATINGS

10 Amp General use      125/250 Vac  
 10 Amp Resistive      30 Vdc  
 1/2 HP      125-250 Vac  
 470 VA Pilot Duty      120-240 Vac

# Model RIB24C-FA

Enclosed Relay, 10 Amp, SPDT, Polarized 24 Vdc and Vac

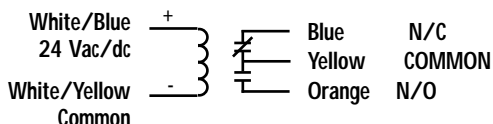


Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT

### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 2.8" x 1.8" with 1/2" NPT Nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch No

### COIL CURRENT

24 mA @ 20 Vac      13 mA @ 20 Vdc  
 28 mA @ 24 Vac      16 mA @ 24 Vdc  
 44 mA @ 35 Vac      25 mA @ 35 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

### CONTACT RATINGS

10 Amp General Use      125/250 Vac  
 10 Amp Resistive      30 Vdc  
 1/2 HP      125-250 Vac  
 470 VA Pilot Duty      120-240 Vac

# Model RIB24S-FA

Enclosed Relay 10 Amp SPST + Override, Polarized 24 Vdc and Vac

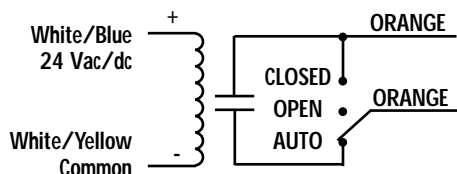


Functional Devices, Inc. A538C 10/1/01



### CONTROL INPUT

### CONTACT OUTPUT



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.7" x 2.8" x 1.8" with 1/2" NPT Nipple  
 Wire Length 16"  
 Approvals UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
 Housing Rating Plenum, NEMA 1  
 Gold Flash No  
 Override Switch Yes

### COIL CURRENT

24 mA @ 20 Vac      13 mA @ 20 Vdc  
 28 mA @ 24 Vac      16 mA @ 24 Vdc  
 44 mA @ 35 Vac      25 mA @ 35 Vdc

DROP OUT = 3 Vac / 3.8 Vdc  
 PULL IN = 20 Vac / 20 Vdc

### CONTACT RATINGS

10 Amp General use      125/250 Vac  
 10 Amp Resistive      30 Vdc  
 1/2 HP      125-250 Vac  
 470 VA Pilot Duty      120-240 Vac

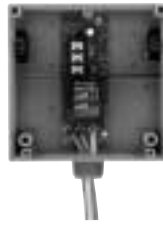
# Model RIBT24B-FA

Enclosed Relay Hi/Low sep 20 Amp SPDT Polarized 24 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01

Shown without cover



## COIL CURRENT

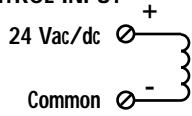
45 mA @ 18 Vac	30 mA @ 22 Vdc
75 mA @ 24 Vac	32 mA @ 24 Vdc
	42 mA @ 30 Vdc

**DROP OUT** = 2.1 Vac / 3.8 Vdc  
**PULL IN** = 18 Vac / 22 Vdc

## CONTACT RATINGS

20 Amp resistive	277 Vac
1 HP	120 Vac
2 HP	277 Vac
20 Amp Ballast N.O.	120/277 Vac
10 Amp Ballast N.C.	120/277 Vac
10 Amp Tungsten N.O.	120 Vac
770 VA Pilot Duty	120 Vac
1,110 VA Pilot Duty	277 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 4" x 4" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

# Model RIB24P-FA

Enclosed Relay 20 Amp DPDT, Polarized 24 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01



## COIL CURRENT

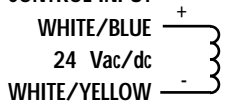
100 mA @ 20 Vac	50 mA @ 20 Vdc
125 mA @ 24 Vac	50 mA @ 24 Vdc
	70 mA @ 30 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

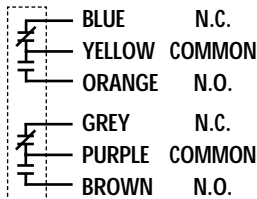
## CONTACT RATINGS

20 Amp resistive	300 Vac
20 Amp resistive	28 Vdc, 15 Vdc
15 Amp resistive	600 Vac
1 HP	120 Vac
2 HP	240-277 Vac
3 HP	480-600 Vac
20 Amp Ballast	277-480 Vac
770 VA Pilot Duty	120 Vac
1,158 VA Pilot Duty	240 Vac
1,110 VA Pilot Duty	277 Vac
1,640 VA Pilot Duty	480 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 24 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) DPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 2.3" x 3.2" x 1.8" with 1/2" NPT nipple  
**Wire Length** 16"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Housing Rating** Plenum, NEMA 1  
**Gold Flash** No  
**Override Switch** No

# Model RIBMN12C-FA

2.75" Track-Mount Relay, 15 Amp, SPDT, Polarized 12 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01



## COIL CURRENT

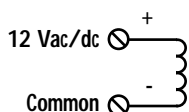
48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

**DROP OUT** = 2 Vac / 2.5 Vdc  
**PULL IN** = 9 Vac / 11 Vdc

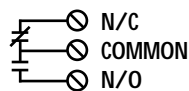
## CONTACT RATINGS

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

## CONTROL INPUT



## CONTACT OUTPUT



**Coil Voltage Input** 12 Vac / dc; 50-60 Hz  
**# Relays & Contact Type** One (1) SPDT  
**Expected Relay Life** 10 million cycles minimum mechanical  
**Operating Temperature** -30 to 140° F  
**Relay Status** LED On = Activated  
**Dimensions** 1.1" x 2.75" x 1.75"  
**Approvals** UL Listed, UL916, UL864, C-UL Canada California State Fire Marshal  
**Gold Flash** No  
**Override Switch** No

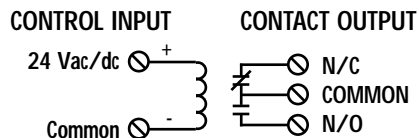
Polarized

# Model RIBMN24C-FA

2.75" Track-Mount Relay, 15 Amp, SPDT, Polarized 24 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPDT  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.1" x 2.75" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch No

**COIL CURRENT**

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

**CONTACT RATINGS**

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

# Model RIBMN12S-FA

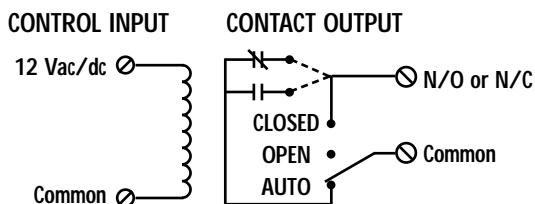
Enclosed Relay, 15 Amp, SPST + Override Polarized 12 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Must cut appropriate jumper to select N.O. or N.C.



Coil Voltage Input 12 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 2.3" x 3.2" x 1.8" with 1/2" NPT Nipple  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

**COIL CURRENT**

48 mA @ 10 Vac	26 mA @ 11 Vdc
56 mA @ 12 Vac	32 mA @ 12 Vdc

**DROP OUT** = 2 Vac / 2.5 Vdc  
**PULL IN** = 9 Vac / 11 Vdc

**CONTACT RATINGS**

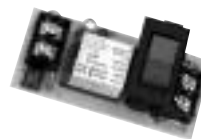
15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac

# Model RIBMN24S-FA

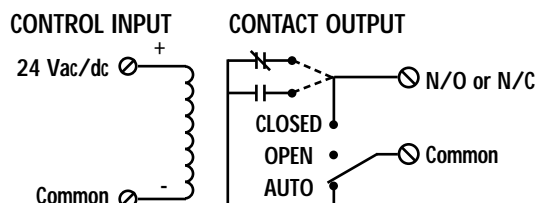
2.75" Track-Mount Relay 15 Amp SPST + Override, Polarized 24 Vdc and Vac



Functional Devices, Inc. A538C 10/1/01



**NOTE:** Must cut appropriate jumper to select N.O. or N.C.



Coil Voltage Input 24 Vac / dc; 50-60 Hz  
 # Relays & Contact Type One (1) SPST  
 Expected Relay Life 10 million cycles minimum mechanical  
 Operating Temperature -30 to 140° F  
 Relay Status LED On = Activated  
 Dimensions 1.1" x 2.75" x 1.75"  
 Approvals UL Listed, UL916, UL864, C-UL Canada  
 California State Fire Marshal  
 Gold Flash No  
 Override Switch Yes

**COIL CURRENT**

24 mA @ 20 Vac	13 mA @ 20 Vdc
28 mA @ 24 Vac	16 mA @ 24 Vdc
44 mA @ 35 Vac	25 mA @ 35 Vdc

**DROP OUT** = 3 Vac / 3.8 Vdc  
**PULL IN** = 20 Vac / 20 Vdc

**CONTACT RATINGS**

15 Amp General Use	125 Vac
10 Amp General use	250 Vac
10 Amp Resistive	30 Vdc
1/2 HP	125-250 Vac
470 VA Pilot Duty	120-240 Vac



**Functional**  
Devices, Inc.





Accessories

Accessories

Accessories

Accessories

Accessories

Accessories

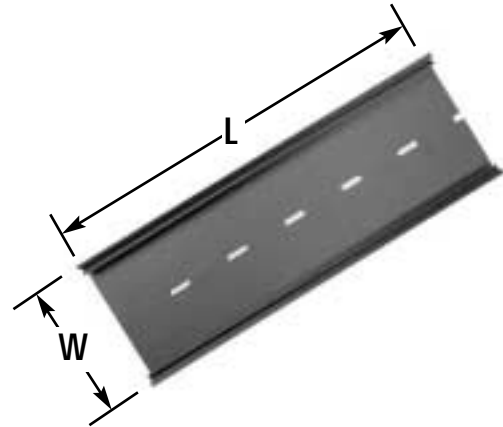
# Accessories

## Track Mounting Accessories

The table below provides a brief description of the available types of mounting track. There are two styles of track to choose from. One style of track is screw mounted to the back surface of any cabinet and is available in 4" and in 2.75" widths. Another style of track, AdapTrack<sup>®</sup>, snaps onto any of the three most popular DIN rails. In turn it can easily accommodate a 4" wide circuit board.



AdapTrack<sup>®</sup>



Mounting Track

### Quick Reference Chart - For details see specification sheets

ACCESSORIES			
MODEL #		DESCRIPTION	PAGE
MT4-2		4"W x 2"L screw mounted track for mounting one panel relay or current sensor	87
MT4-12		4"W x 12"L screw mounted track for mounting several panel relays or current sensors	87
MT4-48		4"W x 48"L screw mounted track for cutting to length desired by user	87
MT212-2		2.75"W x 2"L screw mounted track for mounting one panel relay or current sensor	87
MT212-6		2.75"W x 6"L screw mounted track for mounting one panel relay or current sensor	88
MT212-12		2.75"W x 12"L screw mounted track for mounting several panel relays or current sensors	88
MT212-48		2.75"W x 48"L screw mounted track for cutting to length desired by user	88
AT4-2		4"W x 2"L AdapTrack <sup>®</sup> for DIN rail mounting one panel relay or current sensor	88
AT4-3		4"W x 3"L AdapTrack <sup>®</sup> for DIN rail mounting one panel relay or current sensor	89
AT4-12		4"W x 12"L AdapTrack <sup>®</sup> for DIN rail mounting several panel relays or current sensors	89
AT4-48		4"W x 48"L AdapTrack <sup>®</sup> for cutting to length desired by user	89

= UL Component Recognized, U.S. and Canada

## Model MT4-2

2" of 4" Wide Mounting Track



MT4 Mounting Track can be screw mounted to any flat surface to provide mounting for 4" wide panel style relays.

Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 2"L  
Flame Rated 94-5V



## Model MT4-12

12" of 4" Wide Mounting Track



MT4 Mounting Track can be screw mounted to any flat surface to provide mounting for 4" wide panel style relays.

Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 12"L  
Flame Rated 94-5V



## Model MT4-48

48" of 4" Wide Mounting Track



MT4 Mounting Track can be screw mounted to any flat surface to provide mounting for 4" wide panel style relays.

Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 48"L  
Flame Rated 94-5V



## Model MT212-2

2" of 2.75" wide Mounting Track



MT212 Mounting Track can be screw mounted to any flat surface to provide mounting for 2.75" wide panel style relays.

Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 2.75"W x 2"L  
Flame Rated 94-5V





## Model MT212-6

6" of 2.75" wide Mounting Track



MT212 Mounting Track can be screw mounted to any flat surface to provide mounting for 2.75" wide panel style relays.



Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada

Dimensions 2.75"W x 6"L

Flame Rated 94-5V

## Model MT212-12

12" of 2.75" wide Mounting Track



MT212 Mounting Track can be screw mounted to any flat surface to provide mounting for 2.75" wide panel style relays.



Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada

Dimensions 2.75"W x 12"L

Flame Rated 94-5V

## Model MT212-48

12" of 2.75" wide Mounting Track



MT212 Mounting Track can be screw mounted to any flat surface to provide mounting for 2.75" wide panel style relays.



Functional Devices, Inc. A538C 10/1/01

Approvals UL Component Recognized; U.S. and Canada

Dimensions 2.75"W x 48"L

Flame Rated 94-5V

## Model AT4-2

2" of 4" Wide AdapTrack



AT4 AdapTrack® snaps onto the three most common DIN rails to provide mounting for 4" wide panel style relays.

Approvals UL Component Recognized; U.S. and Canada

Dimensions 4"W x 2"L

Flame Rated 94-5V



DIN rail sizes:

32 mm x 15 mm asymmetrical DIN rail EN50035

35 mm x 7.5 mm symmetrical DIN rail EN50022

22.4 mm x 6.9 mm symmetrical NEMA A series rail

## Model AT4-3

3" of 4" Wide AdapTrack



Functional Devices, Inc. A538C 10/1/01

AT4 AdapTrack® snaps onto the three most common DIN rails to provide mounting for 4" wide panel style relays.

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 3"L  
Flame Rated 94-5V



DIN rail sizes:

32 mm x 15 mm asymmetrical DIN rail EN50035  
35 mm x 7.5 mm symmetrical DIN rail EN50022  
22.4 mm x 6.9 mm symmetrical NEMA A series rail

## Model AT4-12

12" of 4" Wide AdapTrack



Functional Devices, Inc. A538C 10/1/01

AT4 AdapTrack® snaps onto the three most common DIN rails to provide mounting for 4" wide panel style relays.

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 12"L  
Flame Rated 94-5V



DIN rail sizes:

32 mm x 15 mm asymmetrical DIN rail EN50035  
35 mm x 7.5 mm symmetrical DIN rail EN50022  
22.4 mm x 6.9 mm symmetrical NEMA A series rail

## Model AT4-48

48" of 4" Wide AdapTrack



Functional Devices, Inc. A538C 10/1/01

AT4 AdapTrack® snaps onto the three most common DIN rails to provide mounting for 4" wide panel style relays.

Approvals UL Component Recognized; U.S. and Canada  
Dimensions 4"W x 48"L  
Flame Rated 94-5V



DIN rail sizes:

32 mm x 15 mm asymmetrical DIN rail EN50035  
35 mm x 7.5 mm symmetrical DIN rail EN50022  
22.4 mm x 6.9 mm symmetrical NEMA A series rail

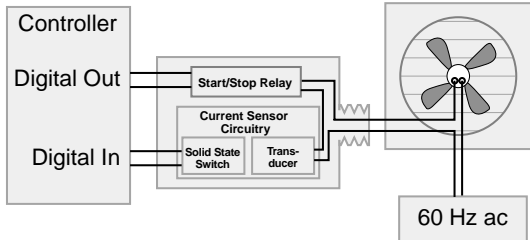
# Typical Applications

1

## Exhaust Fan

Start/Stop Relays with Internal Current Sensors measure current flow through the relay contacts, no external ring is needed.

**INTERNAL 20 AMP**  
RIBX24BF RIBX24BA  
RIBX24SBF RIBX24SBA



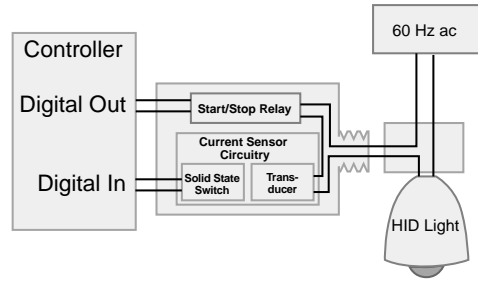
2

## HID Single Fixture

Start/Stop Relays with Internal Current Sensors measure current flow through the relay contacts, no external ring is needed.

**INTERNAL 10 AMP**  
RIBXLCF RIBXLCA  
RIBXLSF RIBXLSA  
**INTERNAL 5 AMP**  
RIBXLCEA RIBXLSEA

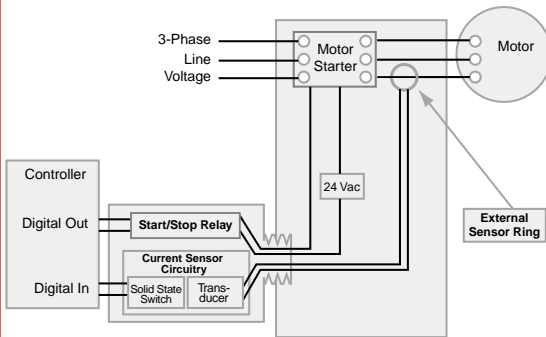
Senses current as low as 125 mA



3

## Motor Starter Application

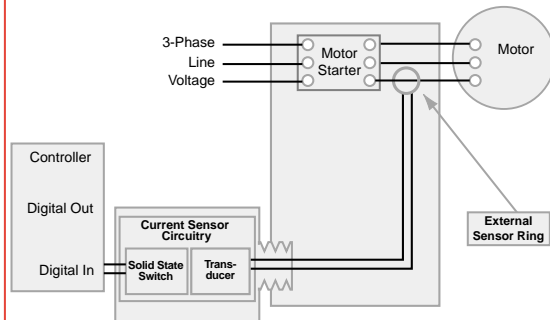
**EXTERNAL SENSOR RING**  
RIBXLCRF RIBXLCRA  
RIBXLSRF RIBXLSRA



4

## External Sensor for 1.5 to 150 Amp.

**EXTERNAL SENSOR RING**  
RIBXRF RIBXRA



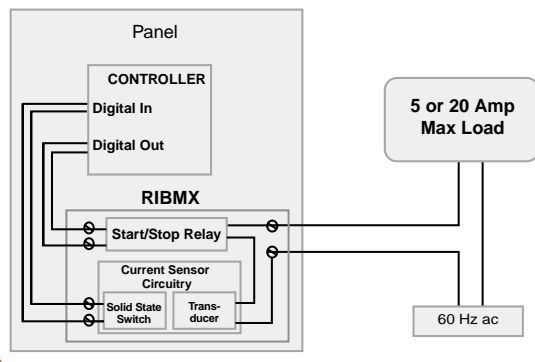
5

## Panel Mounted Relay & Internal Sensor

Start/Stop Relays with Internal Current Sensors measure current flow through the relay contacts, no external ring is needed.

**INTERNAL 20 AMP**  
RIBMX24BF RIBMX24BA  
RIBMX24SBF RIBMX24SBA  
**INTERNAL 5 AMP**  
RIBMX24BEA RIBMX24SBEA

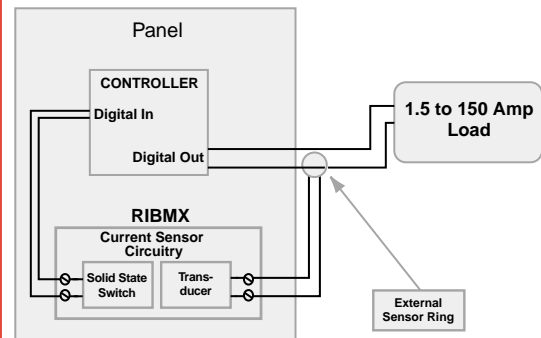
Senses current as low as 125 mA



6

## Panel Mounted External Sensor

**EXTERNAL SENSOR RING**  
RIBMXRF RIBMXRA



# Typical Applications

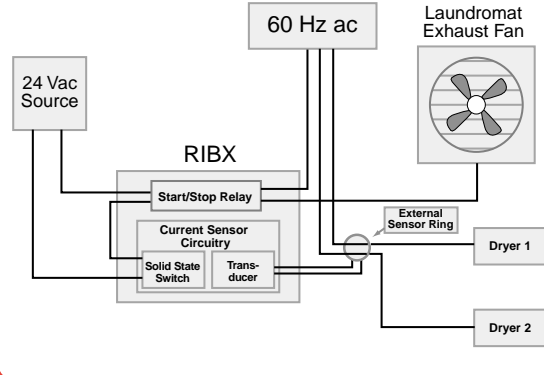
7

## Interlocking Loads

Some RIBX current sensor relays can be used to sense 1 or more loads to turn on another.

### EXTERNAL 10 AMP

RIBXLCRF	RIBXLSRF
RIBXLCRA	RIBXLCRA
RIBXLCJF	RIBXLSJF
RIBXLCJA	RIBXLSJA



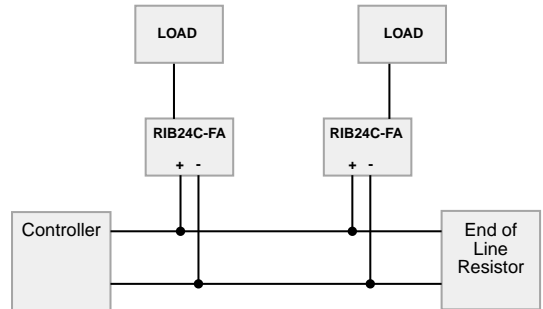
8

## Polarized Relays

For fire alarm systems, smoke control systems, etc. Relays are polarized to work in a supervised system. Relays may be turned on and off by reversing polarity.

### POLARIZED RIBS

RIB12C-FA	RIBM12C-FA
RIB24C-FA	RIBM24C-FA
RIB24S-FA	RIBM12S-FA
RIBT24B-FA	RIBM24S-FA
RIB24P-FA	



9

## Damper Motor Control

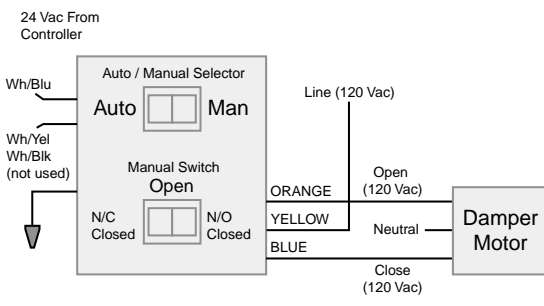
Damper motor control with true-HOA. The damper motor can be stopped in mid position for debugging. When auto/manual selector is in auto, relay controls the load. When in manual, use the manual switch to control load.

### 10 & 15 AMP MODELS

RIBU1SC	RIBTU1SC
RIBH1SC	RIBTH1SC
RIBMU1SC	RIBMH1SC

### 20 AMP MODELS

RIB2401SBC	RIBT2401SBC
RIB2402SBC	RIBT2402SBC
RIBM2401SBC	RIBM2402SBC



10

## RIBU1S vs. RIBU1SC

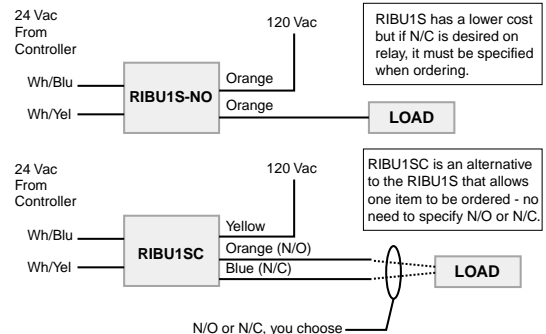
Stock model RIBU1SC for relay control applications that require true-HOA on either N/O or N/C. No jumpers and no wrong orders.

### 10 & 15 AMP MODELS

RIBU1SC	RIBTU1SC
RIBH1SC	RIBTH1SC
RIBMU1SC	RIBMH1SC

### 20 AMP MODELS

RIB2401SBC	RIBT2401SBC
RIB2402SBC	RIBT2402SBC
RIBM2401SBC	RIBM2402SBC



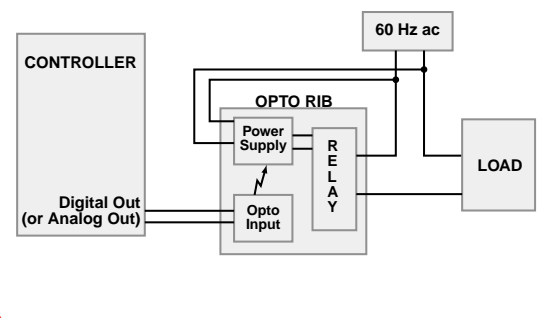
11

## High Voltage Optoisolated Relays

Optoisolated relays help isolate noisy loads from the controller. Good for controlling power relays from analog outputs.

### HIGH VOLTAGE MODELS

RIBTE01B	RIBME2401B
RIBTE02B	RIBME2402B
RIBTE01SB	RIBME2401SB
RIBTE02SB	RIBME2402SB
RIBTE01P	RIBME2401P
RIBTE02P	RIBME2402P



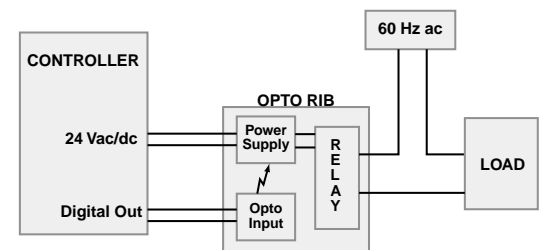
12

## Low Voltage Optoisolated Relays

Optoisolated relays help isolate noisy loads from the controller. Good for controlling power relays from analog outputs.

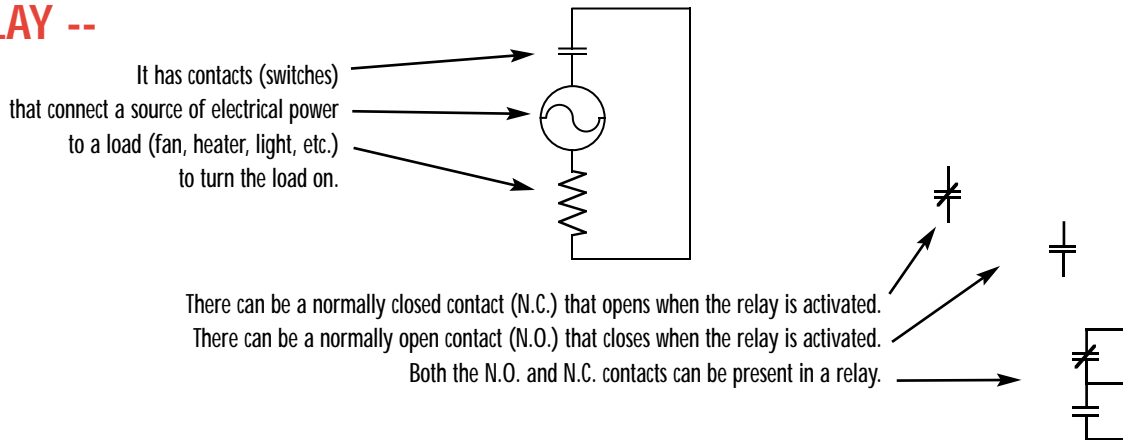
### LOW VOLTAGE MODELS

RIBTELC	RIBME2401B
RIBTELS	RIBME2402B
RIBTE24B	RIBME2401SB
RIBTE24SB	RIBME2402SB
RIBTE24P	RIBME2401P
	RIBME2402P



# About A Relay

## ABOUT A RELAY --



## THE RELAY HAS A COIL --

When a voltage is applied to the coil, the relay is activated, the N.C. opens and the N.O. closes.  
On the basis of endurance tests, the contacts are rated as to the load that they can switch without failure.  
N.O. and N.C. contacts can have identical ratings or the N.O. can have higher ratings.  
We arbitrarily call a 10 or 15 ampere relay a PILOT relay and a 20 or 30 ampere relay a POWER relay.  
PILOT relays can be approved for switching resistors, ballast, tungsten lights and motors.

## WHY DO WE NEED THE RELAY? --

In most cases, the CONTROLLER (controlling instrument) does not have enough contact rating to switch the load but it does have enough contact rating to switch the coil of a relay.

## IF THE OUTPUT VOLTAGE OF THE CONTROLLER IS TOO LOW --

The CONTROLLER can be used to energize a small relay which is used to energize a larger relay - or -  
An Optoisolator relay (requires extremely low voltage and current) can be used to switch the load.

## ANOTHER USE FOR A RELAY --

In making decisions, the CONTROLLER may need to know if a particular load is receiving power.  
If the voltage that is powering an ON load is used to activate a relay, the N.O. contact will be closed.  
Connect the N.O. contact to an input of the CONTROLLER to inform it of the status of the load.

## VOLTAGE REQUIRED TO POWER THE RELAY COIL --

For proper relay operation, the voltage applied to the coil must be of the correct value.  
If a relay can be activated by more than one voltage (24 or 120 Vac), it can be used for either of the above applications. This multiple voltage coil drive can allow the relay to be used in more applications and can reduce the number of relays that must be purchased and kept in stock.

## ABOUT A CURRENT SENSOR --

A broken fan belt on an air handler could result in no air movement even though the fan motor is powered and running. Under this circumstance, the load on the motor would be reduced and the current to the fan motor would be reduced. A current sensor in series with the input to the fan could detect the reduced current and warn the CONTROLLER. In detecting a malfunction, a current sensor is more reliable than is a relay sensing the voltage going to the load.

# Glossary

## Ballast Rating

A rating for Fluorescent and High Intensity Discharge (HID) lighting.

## Closed-Open-Auto

Describes the 3 positions of the override switch. Output closed, output open, and relay contact controls load (Auto).

(See **H/O/A**, **Override**)

## External Sensor

An external current ring or clamp that encircles a load wire and, through magnetic coupling, senses current flow. Its output is connected to a Transducer that provides an appropriate output in a class II wiring environment.

## General Use Rating

For resistive or light inductive loads.

## Gold Flash

Gold coating on the relay contacts to allow the use of dry contact sensing for digital inputs.

## H/O/A

(Hand/Off/Auto) Industry standard term for an override switch. (See **Closed-Open-Auto** and **Override**)

## HI/LOW Voltage Separation

Unique to the RIB line, a physical barrier and compartment allows for Class II (low voltage) separation. (See T & X Series)

## HP

(Horse Power) A rating for motors. (Covers FLA & LRA ratings)

## Internal Sensor

Connects in series with a load wire to sense current flow. Its output is connected to a Transducer that provides an appropriate output in a class II wiring environment.

## Inductive Rating

"Pilot Duty" A rating for controlling contactors, relays, and solenoids. (For **Motors**-See **HP**)

## Lighting

Defined in terms of **ballast** or **tungsten**.

## Load Side

Contact side of the relay.

## Monitor

A second pole on the **Closed-Open-Auto** switch allows user to sense the position of the override switch. (See **H/O/A**, **Override**)

## Motor

Defined in terms of **HP**. (Horse Power)

## Multi-Voltage Input

Ability of one unit to accept a wide range of coil voltage inputs.

## NEMA Rating

All pre-packaged RIBs are built to NEMA-1 standards. (Except the RIBU1C-N4, which is NEMA 4 Rated)

## Override

"True Override" A trademark of the RIB line which allows you to manually **start/stop** the load by controlling the contact side, not the coil side, of the unit. (See **H/O/A** and **Override**)

## Panel

RIB relay models designed for panel mounting, with terminal input/output connections, sized to fit 4" or 2.75" wide plastic track (standard or DIN mount).

## Pilot

RIB models rated for 15 Amps and less.

## Plenum Rating

All UL listed pre-packaged models have a 94-5 V flame rating and are considered acceptable to be used in air circulating applications or plenums.

## Polarized Relay

When a DC voltage is used to power the relay, the relay will only be energized if the positive voltage is present on the appropriate input of the relay. These devices are used for monitoring purposes in some fire alarm applications.

## Power

RIB models rated for 20 and 30 amp relay applications.

## Pre-Packaged

Ready assembled units saves the installer the time, trouble, and expense of buying separate components and assembling them on the job or in the shop.

## Resistive Rating

Ampere rating for electrical heating loads. (Example: Electric water heater and electric baseboard heater)

## Ring

(Donut ring/Current ring/CT) -Used for external current sensing up to 150 amps.

## Standard Ambient

30 degrees F to 140 degrees F. (FDI)

## Start/Stop

Is used to describe on/off control of loads.

## Transducer

Circuitry that converts the voltage coming from the Sensor to an appropriate output in a class II wiring environment (usually to a contact output or to a DC voltage output).

## Tungsten Rating

A rating for incandescent light. (Example-Household light bulb)

## Voltage Transient Suppression

Reducing relay coil transients that might affect a control device.

# Limited Warranty

## Functional Devices, Inc. Limited Warranty

(as defined by Magnuson-Moss Federal Trade Commission Improvement Act) W71991

These products are warranted to be free from manufacturing defects under normal use and conditions for one (1) year.

**The warranty does not apply to:**

- (a) Damage caused by accident, abuse, mishandling, or dropping;**
- (b) Units which have been subjected to unauthorized repair, opened, or taken apart;**
- (c) Units not used in accordance with directions;**
- (d) Damages exceeding the cost of the product; and**
- (e) Damages caused by lightning**

If warranty service is required during the warranty period, and if examination shall disclose to the manufacturer's satisfaction that the product was originally defective, then the manufacturer will at its option repair or replace the product without charge upon prepaid delivery of the product to the factory with proof of date of purchase. Corrections of such defects by repair to or supplying of replacements for defective parts shall constitute fulfillment of all obligations of the manufacturer.

Manufacturer shall not be liable for loss, damage, or expense directly or indirectly from the use of its product, from the failure of its product to perform as expected, or from any other cause.

The above warranty supersedes and is in lieu of all other warranties, expressed or implied, and of all other liabilities or obligations on the part of the manufacturer. No person, agent or dealer is authorized to give any warranties on behalf of the manufacturer nor to assume for the manufacturer any other liability in connection with any of its products.

For warranty service, call factory for RA number and send the warranted product prepaid with sales receipt to:  
Functional Devices, Inc.  
310 South Union Street  
Russiaville, IN 46979

**FEDERALLY REQUIRED STATEMENT:**

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state

# Index

AT4-12	86,89	RIBH1C	06,09	RIBMH1SC	08,23
AT4-2	86,88	RIBH1CW	07,16	RIBMH1SM	08,23
AT4-3	86,89	RIBH1S	06,11	RIBMH2C	08,21
AT4-48	86,89	RIBH1SC	06,14	RIBMN12C	08,24
MT212-12	86,88	RIBH1SM	06,12	RIBMN12C-FA	80,82
MT212-2	86,87	RIBH2C	06,10	RIBMN12S	08,24
MT212-48	86,88	RIBL3C	06,10	RIBMN12S-FA	80,83
MT212-6	86,88	RIBL4C	06,11	RIBMN2401D	08,25
MT4-12	86,87	RIBM013PN	31,45	RIBMN24C	08,24
MT4-2	86,87	RIBM023PN	31,45	RIBMN24C-FA	80,83
MT4-48	86,87	RIBM043PN	31,46	RIBMN24PL	31,46
RIB013P	30,36	RIBM12C	08,18	RIBMN24S	08,25
RIB01P	30,33	RIBM12S	08,19	RIBMN24S-FA	80,83
RIB023P	30,36	RIBM2401B	31,42	RIBMNH1C	08,26
RIB02P	30,34	RIBM2401D	08,20	RIBMNH1S	08,26
RIB043P	30,37	RIBM2401SB	31,42	RIBMNH1SM	08,27
RIB04P	30,34	RIBM2401SBC	31,44	RIBMNU1C	08,25
RIB12C-FA	80,81	RIBM2402D	08,13	RIBMNU1S	08,26
RIB2401B	30,32	RIBM2402SB	31,43	RIBMNU1SM	08,27
RIB2401D	06,13	RIBM2402SBC	31,44	RIBMU1C	08,20
RIB2401SB	30,32	RIBM243PN	31,45	RIBMU1S	08,22
RIB2401SBC	30,35	RIBM24C	08,19	RIBMU1SC	08,23
RIB2402B	30,32	RIBM24PL	31,43	RIBMU1SM	08,22
RIB2402D	06,13	RIBM24S	08,19	RIBMU2C	08,21
RIB2402SB	30,33	RIBM24ZL	31,44	RIBMX24BA	49,62
RIB2402SBC	30,35	RIBM24ZN	31,43	RIBMX24BEA	49,62
RIB243P	30,36	RIBME2401B	72,76	RIBMX24BEV	49,63
RIB24C-FA	80,81	RIBME2401P	72,78	RIBMX24BF	49,61
RIB24P	30,33	RIBME2401SB	72,77	RIBMX24BV	49,62
RIB24P-FA	80,82	RIBME2402B	72,77	RIBMX24SBA	49,63
RIB24P30	30,37	RIBME2402P	72,78	RIBMX24SBEA	49,64
RIB24S2	30,35	RIBME2402SB	72,77	RIBMX24SBEV	49,64
RIB24S-FA	80,81	RIBMH1C	08,21	RIBMX24SBF	49,63
RIB24Z	30,34	RIBMH1S	08,22	RIBMX24SBV	49,64



# Index

RIBMXA	50,68	RIBTELS	72,73	RIBXLCEA	48,52
RIBMXEA	50,69	RIBTH1C	07,15	RIBXLCEV	48,52
RIBMXEV	50,69	RIBTH1S	07,17	RIBXLCF	48,51
RIBMXF	50,68	RIBTH1SC	07,17	RIBXLCJA	48,56
RIBMXJA	50,70	RIBTH2C	07,15	RIBXLCJF	48,55
RIBMXJF	50,70	RIBTU1C	07,14	RIBXLCRA	48,55
RIBMXRA	50,70	RIBTU1S	07,16	RIBXLCRF	48,54
RIBMXRF	50,69	RIBTU1SC	07,17	RIBXLCV	48,51
RIBMXV	50,68	RIBTU2C	07,15	RIBXLSA	48,53
RIBT2401B	31,38	RIBU1C	06,09	RIBXLSEA	48,53
RIBT2401D	07,18	RIBU1C-N4	06,09	RIBXLSEV	48,54
RIBT2401SB	31,39	RIBU1CW	07,16	RIBXLSF	48,52
RIBT2401SBC	31,40	RIBU1S	06,11	RIBXLSJA	48,58
RIBT2402B	31,38	RIBU1SC	06,14	RIBXLSJF	48,57
RIBT2402SB	31,40	RIBU1SM	06,12	RIBXLSRA	48,57
RIBT2402SBC	31,40	RIBU2C	06,10	RIBXLSRF	48,56
RIBT242B	31,38	RIBU2S2	06,13	RIBXLSV	48,53
RIBT243B	31,39	RIBU2SC	06,12	RIBXRA	50,67
RIBT243P	31,41	RIBX243PA	49,61	RIBXRF	50,66
RIBT24B	31,37	RIBX243PF	49,60	RIBXV	50,65
RIBT24B-FA	80,82	RIBX243PV	49,61		
RIBT24P	31,41	RIBX24BA	49,59		
RIBT24SB	31,39	RIBX24BF	49,58		
RIBT24Z	31,41	RIBX24BV	49,59		
RIBTE01B	72,74	RIBX24SBA	49,60		
RIBTE01P	72,76	RIBX24SBF	49,59		
RIBTE01SB	72,75	RIBX24SBV	49,60		
RIBTE02B	72,74	RIBXA	50,65		
RIBTE02P	72,76	RIBXEA	50,66		
RIBTE02SB	72,75	RIBXEV	50,66		
RIBTE24B	72,73	RIBXF	50,65		
RIBTE24P	72,75	RIBXJA	50,67		
RIBTE24SB	72,74	RIBXJF	50,67		
RIBTELC	72,73	RIBXLCA	48,51		

# Relay In A Box®



Functional Devices, Inc.  
P.O. Box 368  
Russiaville, IN 46979

Order Toll Free  
(800)888-5538



# RIB®



©2001 Functional Devices, Inc.

All rights reserved. The following trademarks used herein  
are owned by Functional Devices, Inc.:  
RIB, Relay In A Box, RIB Logo, AdapTrack.

Printed In USA  
A538C 10/1/01