

POWER MONITORING & PROTECTION

FUNCTIONAL DEVICES CURRENT SWITCH AND RELAY

RIBX SERIES

DESCRIPTION

The Functional Devices Relay in a Box **RIBX Series** provides a unique and cost-effective solution to on/off motor control and current sensing status indication. Combined in a single, convenient junction box with high- and low-voltage separation are a control relay and a current sensing status switch. A three-position closed/open/auto switch is available to override the output of the relay. This versatile product allows both control and status sensing of electrical loads by a BAS, all in a self-contained, easy-to-install housing.

FEATURES

- *Cost-effective current sensing with a control relay*
- *Self-contained housing with high and low voltage separation*
- *LED indication of relay and current sensor trip*
- *Optional relay contact override switch*
- *Plenum-rated housing*
- *UL 916 Energy Management and UL 864 Fire*



**RIBX Solid-Core
Remote Current
Sensing**



**RIBX Internal
Current Sensing**



**RIBX Split-Core
Remote Current
Sensing**

Functional
Devices, Inc. **RIB**



SPECIFICATIONS

Frequency	50/60 Hz
Switch Rating	30 VAC/VDC @ 0.4A maximum
LED Indication	
LED#1	ON Relay activated
LED#2	ON Current trip point exceeded
Response Time	20mS
Relay	
Life Rating	10 million cycles minimum mechanical
Coil Pull In Voltage	
10- 30 VAC/VDC models	9 VAC, 10 VDC
24 VAC/VDC models	18 VAC, 22 VDC
Coil Drop Out Voltage	
10-30 VAC/VDC models	2.1 VAC, 2.8 VDC
24 VAC/VDC models	3 VAC, 3.8 VDC
Off State Leakage	< .03 mA @ 30 VAC/VDC

On State Voltage Drop	<0.3 VAC/VDC @ 0.1A <1.6 VAC/VDC @ 0.4A
Lead Wires	16" (40.6 cm) 600V Rated
Operating Temperature	-30° to 140°F (-34° to 60°C)
Operating Humidity	5 to 95% (non-condensing)
Dimensions	
Enclosure	4"H x 4"W x 1.8"D (10.2 x 10.2 x 4.6 cm), NEMA 1 with 1/2" NPT
Solid Core	1.86" x 1.46" (3 x 3.71 cm)
Split Core	2.52" x 2.0" (6.4 x 5.08 cm)
Window Size	
Solid Core	0.5" (1.27 cm)
Split Core	0.52" x 0.52" (1.32 x 1.32 cm)
Weight	1 lb (0.45 Kg)
Approvals	UL File #E68805 (UL 916) and #S7312 (UL 864), CE, RoHs
Warranty	1 year

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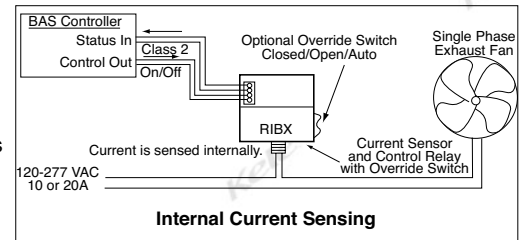
RIBX SERIES



APPLICATION

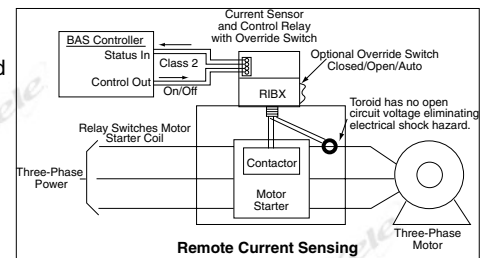
Internal Current Sensing (for single-phase loads)

Models with internal current-sensing are great for direct-control and current-sensing of exhaust fans, pumps, and other single-phase electrical loads up to 20A. The control relay contacts of these models wire directly in series with single-phase motors using the wires that exit the housing through the 1/2" conduit hub. The current of the load is sensed within the housing. Low-voltage wiring from the controller for the control relay coil and status switch enter the separate Class 2 wiring compartment in the housing through star bushings or conduit and are connected to screw terminals.



Remote Current Sensing (for loads with motor starters)

Models with remote current-sensing are great for control and status sensing of electrical loads that require a motor starter. The control relay contacts of these models are wired in series with the motor starter coil using the two wires that exit the housing through the 1/2" conduit hub. Currents up to 150A are sensed externally with a current sensing ring connected to the two gray wires that also exit through the 1/2" conduit hub. Low-voltage wiring from the controller for the control relay coil and status switch enter the separate Class 2 wiring compartment in the housing through star bushings or conduit and are connected to screw terminals.



ORDERING INFORMATION

MODEL	CURRENT SENSING	CURRENT SENSING RANGE/THRESHOLD	OVER SW	RELAY CONTACT RATINGS *	RELAY CONTACT WIRING	RELAY COIL AND CURRENT SWITCH
RIBXLC A	Internal	0.5-10A/Adjustable	—	10A resistive 120/240/277 VAC - 28 VDC	1-SPDT Relay (blue) N.C. (yellow) COM (orange) N.O.	Relay input current 33 mA @ 10 VAC 13 mA @ 10 VDC 35 mA @ 12 VAC 15 mA @ 12 VDC 46 mA @ 24 VAC 18 mA @ 24 VDC 55 mA @ 30 VAC 20 mA @ 30 VDC Relay coil wiring 10-30 VAC/VDC Common Current switch wiring Current Sensor Status
RIBXLC E A		0.125-5A/Adjustable		480 VA pilot duty 277 VAC		
RIBXLC F		0.5-10A/Fixed, 0.5A		480 VA ballast 277 VAC 600W tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C.		
RIBXLC J A	Split-core	3-150A/Adjustable	—	1/3 hp for N.O. 120/240 VAC		
RIBXLC J F		3-150A/Fixed, 3A		1/6 hp for N.C. 120/240 VAC		
RIBXLC R A	Solid-core	1.25-150A/Adjustable	—	1/4 hp for N.O. 277 VAC		
RIBXLC R F		1.25-150A/Fixed, 1.25A		1/8 hp for N.C. 277 VAC		
RIBXLS A	Internal	0.5-10A/Adjustable	Yes	10A resistive 277 VAC	1-SPDT Relay (orange) Closed (orange) Open (orange) Auto	Relay input current 50 mA @ 18 VAC 33 mA @ 22 VDC 83 mA @ 24 VAC 35 mA @ 24 VDC 47 mA @ 30 VDC Relay coil wiring 24 VAC/VDC Common Current switch output Current Sensor Status
RIBXLS E A		0.125-5A/Adjustable		480 VA pilot duty 277 VAC		
RIBXLS F		0.5-10A/Fixed, 0.5A		480 VA ballast 277 VAC 600W tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C.		
RIBXLS J A	Split-core	3-150A/Adjustable	—	1/3 hp for N.O. 120/240 VAC		
RIBXLS J F		3-150A/Fixed, 3A		1/6 hp for N.C. 120/240 VAC		
RIBXLS R A	Solid-core	1.25-150A/Adjustable	—	1/4 hp for N.O. 277 VAC		
RIBXLS R F		1.25-150A/Fixed, 1.25A		1/8 hp for N.C. 277 VAC		
RIBX24 B A	Internal	0.5-20A/Adjustable	—	20A resistive 277 VAC	1-SPDT Relay (blue) N.C. (yellow) COM (orange) N.O.	Relay input current 50 mA @ 18 VAC 33 mA @ 22 VDC 83 mA @ 24 VAC 35 mA @ 24 VDC 47 mA @ 30 VDC Relay coil wiring 24 VAC/VDC Common Current switch output Current Sensor Status
RIBX24 B F		0.5-20A/Fixed, 0.5A		1110 VA pilot duty 277 VAC 770 VA pilot duty 120 VAC 20A ballast 277 VAC N.O. 10A ballast 277 VAC N.C. 10A tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C.		
RIBX24 S B A	Internal	0.5-20A/Adjustable	Yes	2 hp 277 VAC	1-SPDT Relay (orange) Closed (orange) Open (orange) Auto	
RIBX24 S B F		0.5-20A/Fixed, 0.5A		1 hp 277 VAC		
RIBX243 P A	Internal	0.5-20A/Adjustable	—	20A resistive @ 300 VAC, 28 VDC 20A ballast @ 277-480 VAC 15A resistive @ 600 VAC 770 VA pilot duty @ 120 VAC, 1 Ph 1158 VA pilot duty @ 240 VAC, 1 Ph 1110 VA pilot duty @ 277 VAC, 1 Ph 1640 VA pilot duty @ 480 VAC, 1 Ph 1466 VA pilot duty @ 240 VAC, 1 Ph 2112 VA pilot duty @ 480 VAC, 1 Ph Heavy Pilot Duty @ 600 VAC	(blue) N.O. (blue) N.O. (yellow) N.O. (yellow) N.O. (orange) N.O. (orange) N.O.	Relay input current 210 mA @ 24 VAC 154 mA @ 30 VDC Relay coil wiring 24 VAC/VDC Common Current switch output Current Sensor Status
RIBX243 P F		0.5-20A/Fixed, 0.5A		7.5 HP @ 480 VAC, 3 Ph 5 HP @ 240 VAC, 3 Ph 3 HP @ 480-600 VAC, 1 Ph 2 HP @ 240-277 VAC, 1 Ph 1 HP @ 120 VAC, 1 Ph		
RIBXF	Internal	0.5-30A/Fixed, 0.5A	—	Current switch only	Current Sensor Wiring	Current switch wiring Current Sensor Status
RIBXA	Internal	0.5-30A/Adjustable	—	Current switch only	Internal Models	
RIBXRF	Solid-core	1.25-150A/Fixed, 1.25A	—	Current switch only	Current Sensor (purple)	
RIBXRA	Solid-core	1.25-150A/Adjustable	—	Current switch only	Current Sensor (purple)	
RIBXJF	Split-core	3-150A/Fixed, 3A	—	Current switch only	Solid- and split-core models	
RIBXJA	Split-core	3-150A/Adjustable	—	Current switch only	Current Sensor (gray)	

Note: ⚠ Internal yellow jumper determines if SPST contacts are N.O. or N.C. ⚠ Can be ordered N.C. by adding **-NC** after model number.
 * Not rated for electronic ballast.