COMMAND RELAY SERIES

Installation & Operation Instructions

A/CR-DC-5A, A/CR-DC-12A, A/CR-12DS-12A, A/CR-24AC-10A, A/CR-115AC-8A, A/CR-230AC-8A

Phone: 1-888-967-5224
Website: workaci.com

PRECAUTIONS

• This product is not intended to be used for Life or Safety applications.

• This product is not intended for use in any hazardous or classified locations.

• Disconnect and lock out all power sources before installation as severe injury or death may result from electrical shock due to contact with high voltage wires.

GENERAL INFORMATION

The Command Relay Series brings control (start/stop) functionality to your load trending and fan/pump/motor status monitoring and control applications. Each unit has a Form 1C - SPDT relay which provides both a Normally-Open "N/O" and a Normally-Closed "N/C" contact in a single device. The patented 35mm Din-Rail mounting flange will allow you to use the A/CR Series with any ACI current sensor or switch that incorporates the 35 mm din rail mounting flange. The stacking feature allows you to reduce the required panel space, since up to two devices may be stacked together during installation and saves cost since two devices can be installed as a single component. All of the command relays can also be used in panel mount applications in place of a typical general purpose relay.

MOUNTING INSTRUCTIONS

Make sure that all installations are in compliance with all national and local electrical codes. Only qualified individuals that are familiar with codes, standards, and proper safety procedures for high-voltage installations should attempt installation. The Command Relays require an external power source for the relay coils (See **Table 1** p.2). The Command Relays may be mounted in any position using the (2) #8 x 3/4" Tek screws and the mounting holes in the base or snapped directly on to the 35mm DIN rail (See **Figure 2**). The ACI current switches and sensors may be snapped directly on to the top of the command relays or multiple command relays may be snapped directly on to the top of each other. Leave a minimum distance of 1" (3 cm) between the command relays and any other magnetic devices such as contactors and transformers.

FIGURE 1: DIMENSIONS

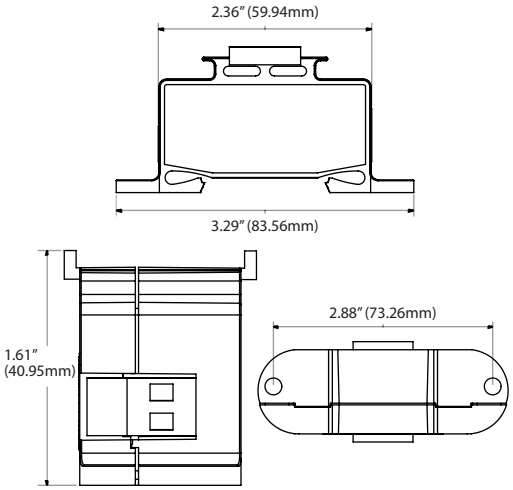

FIGURE 2: DIN RAIL INSTALLATION

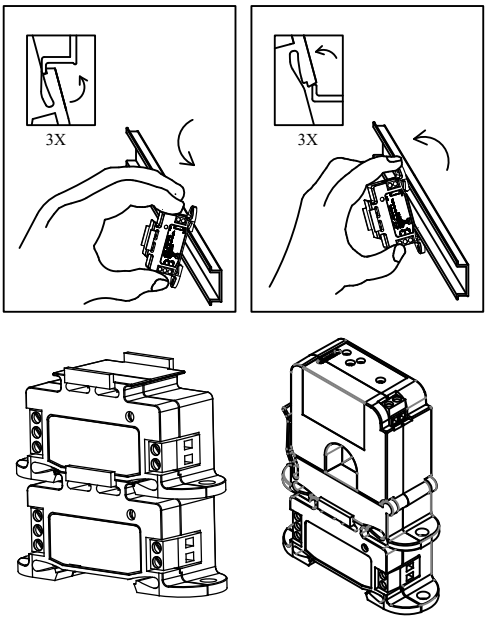

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TABLE 1: OPERATING SPECIFICATIONS

Model #	Item #	Coil Voltage	Contact Rating	Max. Switch Voltage	Max. Switch Current
A/CR-DC-5A	126773	24 VDC (23 to 31.2VDC)	5A @ 250 VAC* | 5A @ 125 VAC** 5A @ 30 VDC** | ¼ HP, 120/250/277 VAC	250 VAC, 30 VDC	5A (N/O) / 3A (N/C
A/CR-DC-12A	128210	24 VDC (20 to 31.2VDC)	12A @ 250 VAC* | 12A @ 250 VAC** | 12A @ 30 VDC** | 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	12 Amps
A/CR-12DC-12A	129176	12 VDC (10 to 15.6VDC)	12A @ 250 VAC* | 12A @ 250 VAC** | 12A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	12 Amps
A/CR-24AC-10A	128214	24 VAC (16 to 26.4VAC)	10A @ 250 VAC* | 10A @ 250 VAC** | 10A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	10 Amps
A/CR-115AC-8A	128215	115 VAC (80 to 132VAC)	8A @ 250 VAC* | 8A @ 250 VAC** | 8A @ 30 VDC* 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	8 Amps
A/CR-230AC-8A	128216	230 VAC (165 to 264VAC)	8A @ 250 VAC* | 8A @ 250 VAC** | 8A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	8 Amps

Note*: General Use | **Note**:** Resistive

WIRING INSTRUCTIONS

ACI recommends the use of a 12 to 24 AWG wires, copper wire only for all command relay coil installations. The command relay DC coil terminals are polarity sensitive. ACI recommends the use of 12 to 14 AWG wires, copper wire only for all command relay contacts (Output) installations. The maximum tightening torque to be used on the terminal block connections is 0.6 Nm or 5.3 in-lbs.

Application Notes

Figure 3, 4, and 5 is showing the use of ACI's command relay wired to the Digital Output on your BAS/PLC Controller. Figure 4 is showing the use of ACI's Go/No Go Current Switch as a Digital Input to your BAS/PLC Controller.

Figure 5 is showing the use of ACI's Current Sensors as an Analog Input to your BAS/PLC Controller.

Figure 6 is showing a Go/No/Go Current Switch in conjunction with the Command Relay to control an exhaust fan.

FIGURE 3: COMMAND RELAY WITH DIGITAL CIRCUIT

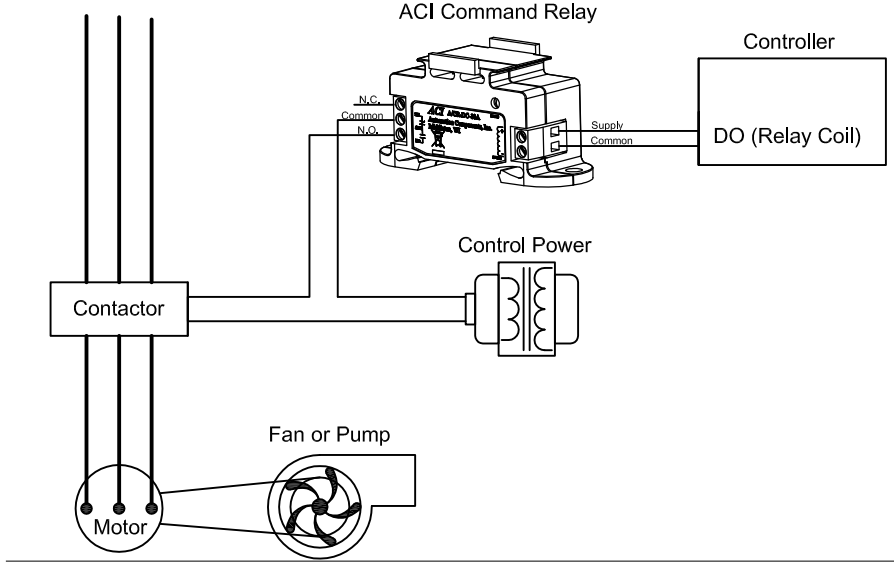

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FIGURE 4: SPLIT CORE SWITCH + COMMAND RELAY

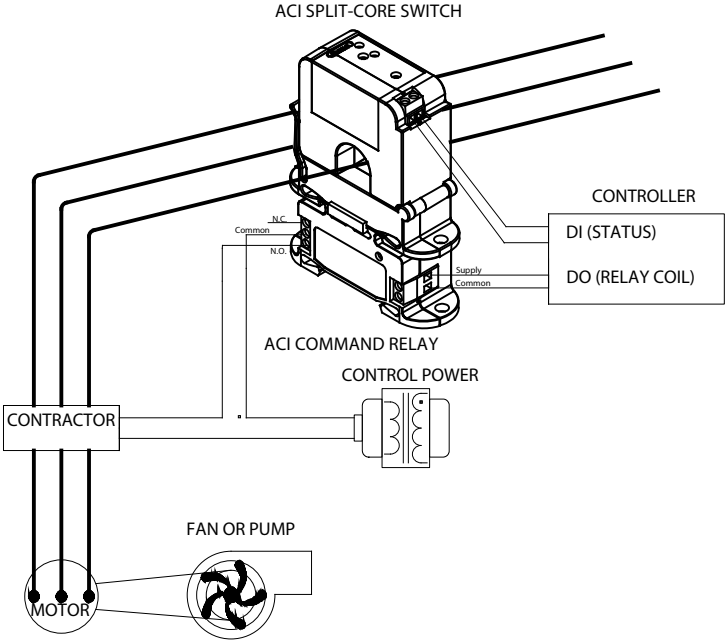

FIGURE 5: SPLIT CORE SENSOR + COMMAND RELAY

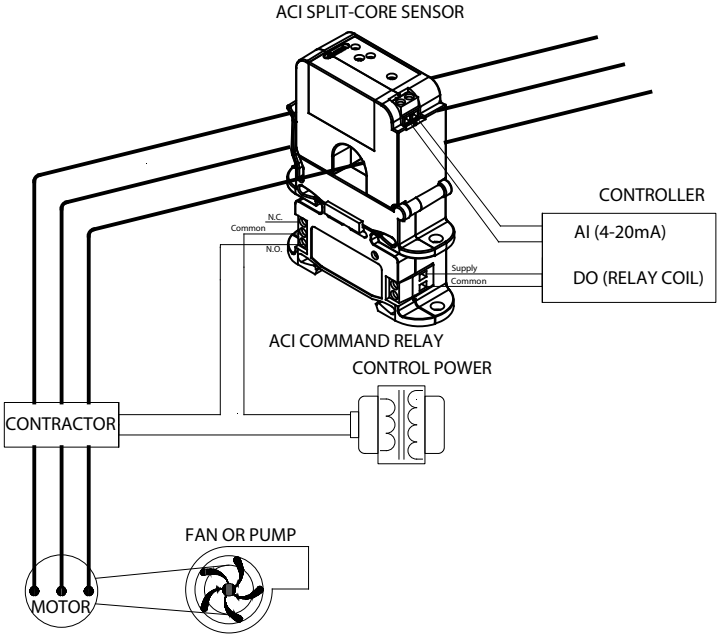

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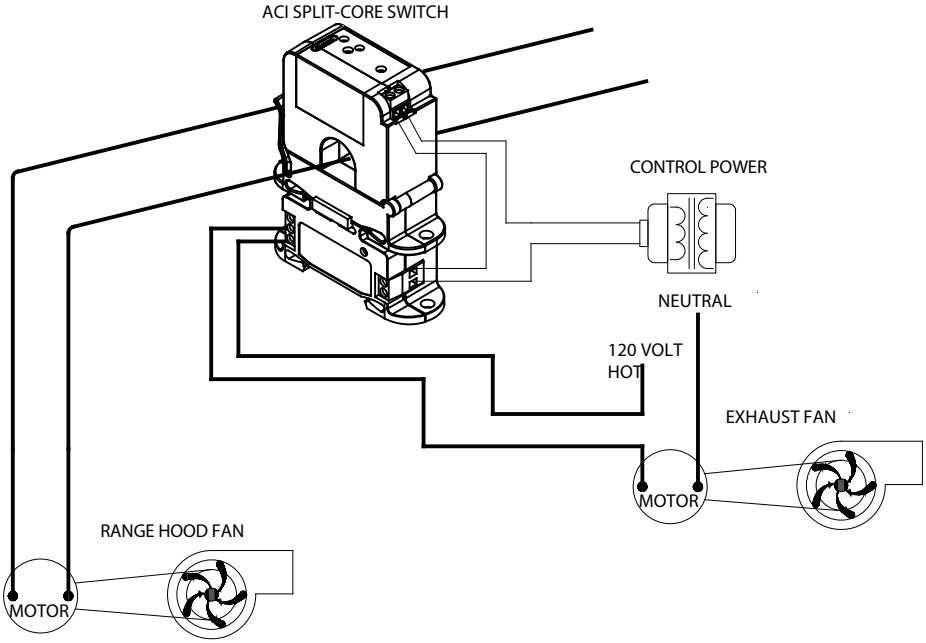
FIGURE 6: MOTOR/FAN CONTROL



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PRODUCT SPECIFICATIONS

NON-SPECIFIC INFORMATION	
Relay Type:	Electromechanical Relay
Nominal Relay Coil Voltage | Rated Current:	**A/CR-DC-5A:** 23 to 31.2 VDC, 17 mA @ 24 VDC, 60 Hz **A/CR-DC-12A:** 20 to 31.2 VDC, 17 mA @ 24 VDC, 60 Hz **A/CR-12DC-12A:** 10 to 15.6 VDC, 33.33 mA @ 12 VDC, 60 Hz **A/CR-24AC-10A:** 16 to 26.4 VAC, 28.30 mA @ 24 VAC, 60 Hz or 31.30 mA @ 24 VAC, 50 Hz **A/CR-115AC-8A:** 80 to 132 VAC, 5.35 mA @ 115 VAC, 60 Hz or 5.85 mA @ 115 VAC, 50 Hz **A/CR-230AC-8A:** 165 to 264 VAC, 2.76 mA @ 230 VAC, 60 Hz or 3.00 mA @ 230 VAC, 50 Hz
Contact Form:	Form 1C (SPDT Contact)
Relay Contact Rating:	See **Table 1 (p.2)**
Maximum Contact Switching Voltage:	See **Table 1 (p.2)**
Maximum Contact Switching Current:	See **Table 1 (p.2)**
Status LED Indications:	**Red LED "On":** Relay Energized "COM to N/O" | **Red LED "Off':** Relay De-Energized "Com to N/C"
Electrical Life (Relay):	> 30,000 Cycles, typical
Mechanical Life (Relay):	> 10,000,000 Cycles, typical
Din Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Storage Temperature | Humidity Range:	32 to 104°F (0 to 40°C) | 20% to 85% RH, non-condensing

WARRANTY

The Command Relay Series is covered by ACI's Five (5) Year Limited Warranty, which is located in the front of ACI'S SENSORS & TRANSMITTERS CATALOG or can be found on ACI's website: www.workaci.com.

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