

04H/16F Current Switches



Specifications - Installation and Operating Instructions

Description

The 04F/16F Series are solid-state switches that operate when the AC current level sensed by the internal current transformer exceeds a fixed or adjustable trip point. Internal circuits are totally powered by induction from the conductor being monitored. There is zero off-state leakage current in the solid-state relay output that can switch AC or DC circuits. The LED indication option eliminates the need for meters when setting the adjustable trip point of the current switch. Solid-core and split-core models are available.



SPLIT MODELS

SOLID MODELS

Application

Current switch monitor all types of fans, pumps, heating elements, motors, lamps, and relays.

Features

- Auto-ranging up to 200A
- Power induced from monitored conductor
- True digital switching and very low leakage
- Small compact size
- Easy field adjustment with status LED's
- Choice of output rating
- Fixed or adjustable setpoint

Specifications

Input Range	0-200A AC
Setpoint Range	SD models : 0.5 (±0.2) - 200 Amps SP models : 1.5 (±0.2) - 200 Amps
Jumper Amp-Turns	Low (none) 1-10A Medium 10-50A High 50-200A
Maximum Switch Rating	For series 16K : 0.3 A @ 135VAC/DC For series 04K : 1 A @ 240VAC
Output	Normally open
Response Time	<200 mS
Hysteresis	<1% FS max
Isolation Voltage	2000V
Operating Temperature	-30 to 70°C (-22 to 158°F)
Operating Humidity	0 to 95% (non-condensing)
Power Supply	None, self-powered
Housing Material	UL 94V-0 flammability rated ABS
Wiring Connections	Solid Core – Barrier strip Split Core – Screw terminals (14 to 22 AWG)
Certification	UL E320368, CE, Rohs compliant

Order Information

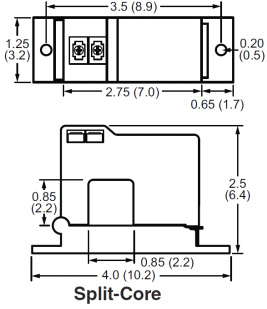
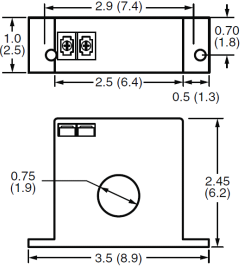
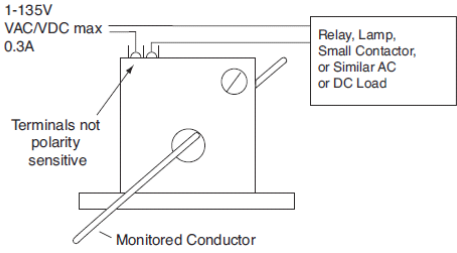
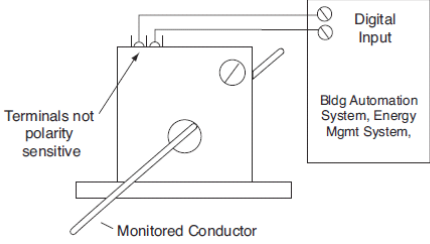
Model	Input Range	Switch Rating Max	Trip Point	Status Led
16F-SD-NO-F	0-200A AC	0.3A at 135V AC/DC	fixed at 0.5A	red
16F-SD-NO-AL	0-200A AC	0.3A at 135V AC/DC	adjustable	green/red
16F-SP-NO-F	0-200A AC	0.3A at 135V AC/DC	fixed 1A	red
16F-SP-NO-AL	0-200A AC	0.3A at 135V AC/DC	adjustable	green/red
04F-SD-NO-AL	0-200A AC	1A at 240V AC	adjustable	green/red
04F-SP-NO-AL	0-200A AC	1A at 240V AC	adjustable	green/red
04F series with no snubber extra model				
16F-SD-NC-AL	0-200A AC	0.3A at 135V AC/DC	adjustable	green/red
16F-SP-NC-AL	0-200A AC	0.3A at 135V AC/DC	adjustable	green/red
04F-SD-NC-AL	0-200A AC	1A at 240V AC	adjustable	green/red
04F-SP-NC-AL	0-200A	1A at 240V AC	adjustable	green/red
NO=Nomal Open, NC=Normal Close, SP=Split Core, SD=Solid Core				
FCF003	1-40A AC	2.5A at 120V AC	fixed at 1A	N/A



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<p>Dimension</p>  <p style="text-align: center;">Split-Core</p>	 <p style="text-align: center;">Solid-Core</p>
<p>Wiring</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>1-135V VAC/VDC max 0.3A</p> <p>Relay, Lamp, Small Contactor, or Similar AC or DC Load</p> <p>Terminals not polarity sensitive</p> <p>Monitored Conductor</p> </div> <div style="text-align: center;">  <p>Digital Input</p> <p>Bldg Automation System, Energy Mgmt System,</p> <p>Terminals not polarity sensitive</p> <p>Monitored Conductor</p> </div> </div>	

Operation

The output switch of all devices is normally open, when the monitored current exceeds the trip value as set by the multi-turn adjustment the switch will close. If the unit has a status LED, it will light to indicate a closed switch. Devices that also feature a power LED will indicate circuit power whenever there is sufficient current flowing in the conductor to operate the device circuitry, typically 0.5 Amp minimum for solid-core units and 1.5 Amp minimum for split-core devices.

All devices are factory set at the minimum switch point (adjustment fully clockwise). To increase the set point, while the monitored load is on, turn the adjustment counter-clockwise until the output turns off as indicated by either the status LED or a voltmeter connected across the device output to indicate an open switch. Then turn the adjustment clockwise until the LED comes back on to indicate a closed switch or a voltmeter indication is seen. The adjustment should be turned slightly clockwise past this point to ensure normal line current variations do not cause false conditions.

Installation

Disconnect and lock-out all power sources during installation as severe injury or death can result from electrical shock due to contact with high voltage conductors. Ensure all installations are in compliance with applicable electrical codes and that the installation is completed by qualified installers familiar with the standards and proper safety procedures for high-voltage installation. Never rely on status indicating devices only to determine if power is present in a Conductor.

Ensure that the output circuit to be switched is within the device switch ratings as shown in the chart, less than Switch V Max and less than Switch I Max. If the device has a selectable range selection jumper, insure it is installed in the correct position for the current being monitored. Excessive current can damage the sensor. Auto-range devices will monitor any current over the entire range of Input I Min to Input I Max Amps as shown in the table.

Solid-Core devices require that the line to be monitored be disconnected and routed through the center of the device while Split-Core units can be easily installed over existing wires without the need to disconnect the circuit.

Install the Split-Core over the conductor to be monitored and close the sensor until it latches, ensuring that the two halves are properly aligned. Operation of the sensor will be impaired if any dirt particles prevents good contact between the core pieces when the device is closed, keep the sensor clean when it is opened.

Mount the switch in a suitable location using the two mounting holes in the base of the unit. The conductor may be looped more than once through the sensor to multiply the sensitivity but this also divides the maximum currents.

Connect the switch circuit to the two screw terminals using ring or fork type terminals. Typical connections are shown in the wiring examples. The switches are not polarity sensitive and operate as a "dry contact".