

## Specifications

Power Required	None, self-powered
Output Switch	Isolated solid-state switch with bypass
Bypass	Auto: AC current operates output Closed: Output is “tripped”
Output Rating	<u>NOU</u> - N.O. 0.15A, 240 VAC/VDC (General use) <u>NCU</u> - N.C. 0.2A, 135 VAC/VDC (General use)
Off-State Leakage	<10 $\mu$ A
Response Time	120 ms max
Hysteresis	5% of Setpoint
Setpoint Range	1-150 A
Setpoint Adjustment	15 Turn potentiometer (FT)
Isolation Voltage	Tested to 1480 VAC
Frequency Range	6-100 Hz
Sensing Aperture	-FT 0.74” (18.8 mm)
Environmental	-4 to 122°F (-20 to 50°C) 0-95% RH, Non-condensing Pollution Degree 2 Altitude to 6561 ft (2000 meters)
Listings	Designed for UL/cUL approval

## Ranges & Maximum Amps

### Adjustable Sensors

TYPE	RANGE	MAXIMUM INPUT AMPS		
		CONTINUOUS	6 SEC	1 SEC
SOLID-CORE	1-150 A	150 A	400 A	1000 A

## Model Number Key

**AS1 - NOU - FT - Y39**



### CASE STYLE:

FT - Solid-Core, Top Terminals

### OUTPUT (Solid-State Switch):

NOU - Normally Open, 0.15 A, 240 VAC/VDC

NCU - Normally Closed, 0.2 A, 135 VAC/VDC

### SENSOR TYPE:

AS1 - AC current operated switch with a single extended range

## Know Your Power



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AC & DC Current Transducers  
AC & DC Current Operated Switches  
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# INSTRUCTIONS



## AS1 -Y39

**AC Current Operated Switch  
Single Extended Range, Universal Output  
With Manual Output ByPass**

### Quick “How To” Guide

- Run the wire to be monitored through aperture.
- Mount the sensor.
- Connect output wiring.
  - Use 22-14 AWG copper wires, rated 75°C minimum. Tighten to 7 inch pounds.
  - Ensure load matches the output shown on the sensor label.
- Adjust Setpoint.
  - Use the potentiometer to adjust the setpoint.
- Bypass.
  - Use the bypass switch on the top of the switch to manually close (NOU) or Open (NCU) the sensor output without energizing the monitored load.

## Description

AS1 Series are self-powered, solid-state current-operated switches which trigger when the AC current level sensed through the aperture exceeds the adjusted setpoint. The solid state output contacts can switch AC or DC; this “universal” output makes them well suited for application in automation systems.

## Installation

### For All Versions

Run wire to be monitored through aperture (opening) in the sensor.

AS1 switches can be located in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. Mounting can be done in any position or hung directly on wires with a wire tie. Ensure at least one inch clearance exists between sensor and other magnetic devices.

## Output Wiring

Connect control or monitoring wires to the sensor. Use 22-14 AWG copper wire rated 75°C minimum and tighten terminals to 7 inch-pounds torque. Be sure the output load does not exceed the switch rating. Maximum load across the sensor terminals cannot exceed 150 mA (NOU) or 200 mA (NCU).

**CAUTION** Incandescent lamps can have “Cold Filament Inrush” current of up to 10 times their rated amperage. Use caution when switching lamps.

## Setpoint Adjustment

AS1-Y39 Series **SETPOINT** is adjusted with 15-turn potentiometer. The pot is shipped factory set to the lowest setpoint, fully clockwise (CW). Turning the pot counter-clockwise (CCW) will increase the setpoint. The pot has a slip-clutch to prevent damage at either end of its rotation. To determine where the adjustment is, turn the pot all the way CW. This will return it to the minimum setpoint.

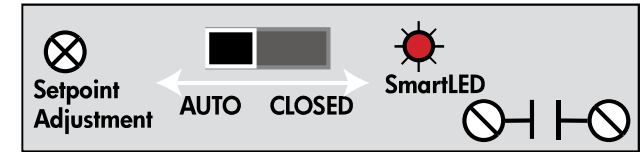
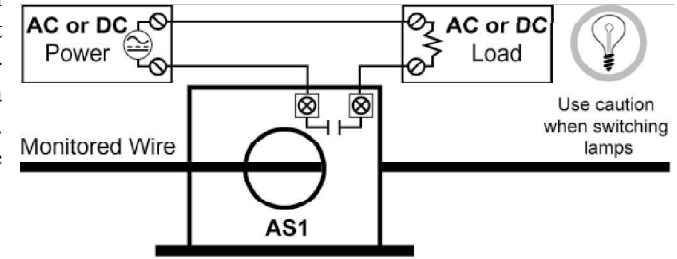
### Adjustment Notes:

1. Output contacts are solid-state. Check output status by applying voltage to the contacts and reading the voltage drop across the contacts. An Ohmmeter set on “Continuity” will give misleading results.
2. It is recommended that setpoint be adjusted to allow for voltage variations of 10-15%.

### Typical Adjustment

1. Turn the pot to minimum setpoint (15 turns CW).
2. Have normal operating current running through sensor. The output should be tripped since the pot is at its minimum setpoint. For units with LED, it should be flashing fast (2 to 3 times per second).
3. Turn the pot CCW until the unit un-trips. This is indicated by the slow flashing of the LED (once every 2 to 3 seconds), or by the changing of the output switch status.
4. Now turn the pot CW slowly until the unit trips again. It now set at the current level being monitored.
  - A. To Set UNDERLOAD - Turn the pot about 1/8 turn further CW.
  - B. To Set OVERLOAD - Turn the pot about 1/8 turn further CCW.

MONITORED AMPS	OUTPUT - <u>AUTO POSITION</u>		SMART-LED
	-NCU Normally Closed	-NOU Normally Open	
None or <Minimum	Closed	Open	Off
Below trip level	Closed	Open	SLOW (2 Sec)
Above trip level	Open	Closed	FAST (0.5 Sec)
	OUTPUT - <u>BYPASS POSITION</u>		
Any Current Level	Open	Closed	Fast, Slow or Off



## Trouble Shooting

1. **Sensor is always tripped**
  - A. The setpoint may be too low. *Turn pot CCW to increase setpoint.*
  - B. Switch has been overloaded and contacts are burned out. *Check the output load, remembering to include inrush on inductive loads (coils, motors, ballasts).*
  - C. Bypass switch is activated. *Check that the switch is set is the “AUTO” position (push handle to the left).*
2. **Sensor will not trip**
  - A. The setpoint may be too high. *Turn pot CW to decrease setpoint.*
  - B. Monitored current is below minimum required. *Loop the monitored wire several times through the aperture until the “sensed” current rises above minimum. Sensed Amps = (Actual Amps) x (Number of Loops). Count loops on the inside of the aperture.*
  - C. Switch has been overloaded and contacts are burned out. *Check the output load, remembering to include inrush on inductive loads (coils, motors, ballasts).*
  - D. Bypass switch position. *Check that the bypass switch position is set to “AUTO”.*