

## Specifications

Power Required	None - self powered
Output Switch	Isolated Solid State Switch
Switch Rating	<u>NOU</u> - N.O. 0.15A, 240 VAC/VDC <u>NCU</u> - N.C. 0.2A, 135 VAC/VDC
Off State Leakage	NONE
Response Time	0.120 Second
Hysteresis	Approx 5% of Setpoint
Set Point Ranges	Fixed Core: 1-150 A Split Core: 1.75-150A
Setpoint, -GO Option	Fixed Core: 0.75 A Max trip Split Core: 1.25A Max trip
Setpoint Adjust	4 Turn potentiometer (FF, SP) 15 Turn Potentiometer (FT)
Isolation Voltage	UL Listed to 1,270 VAC Tested to 5,000 VAC
Frequency Range	6-100Hz
Sensing Aperture	-FF 0.55" (14mm) -FT 0.75" (19mm) -SP 0.85" (21.7mm)
Environmental	-58 to 149 DegF (-50 to 65 DegC) 0-95% RH, Non Condensing
Listings	UL and ULC Listed CE Certified

## Ranges & Maximum Amps

### Adjustable Sensors

TYPE	RANGE	MAXIMUM INPUT AMPS		
		CONTINUOUS	6 SEC.	1 SEC.
FIXED CORE	1-150 A	150A	400A	1000A
SPLIT CORE	1.75-150A	150A	400A	1000A

### Fixed Setpoint Sensors (-GO)

TYPE	MAX TRIP POINT	MAXIMUM INPUT AMPS		
		CONTINUOUS	6 SEC.	1 SEC.
FIXED CORE, NCU	0.75A	250A	400A	1000A
FIXED CORE, NOU	0.75A	250A	400A	1000A
SPLIT CORE, NCU	1.25A	250A	400A	1000A
SPLIT CORE, NOU	1.25A	250A	400A	1000A

## Model Number Key

AS1 - NOU - FF - GO

### OPTIONS:

GO - Go/No-Go Sensor  
NL NoLED  
-- With LED (Blank)

### CASE STYLE:

FF - Fixed Core, Front Terminals  
FT - Fixed Core, Top Terminals  
SP - Split-Core

### OUTPUT (Solid State Switch):

NOU - Normally Open, 0.15A, 240 VAC/VDC  
NCU - Normally Closed, 0.2A, 135 VAC/VDC

### SENSOR TYPE:

AS1 - AC current operated switch with a single extended range

## Know Your Power



### Other NK Technologies Products Include:

AC & DC Current Transducers  
AC & DC Current Operated Switches  
1 $\phi$  & 3 $\phi$  Power Transducers  
Current & Potential Transformers (CTs&PTs)



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# INSTRUCTIONS



## AS1 SERIES

AC Current Operated Switch  
Single Extended Range, Universal Output

## Quick "How To" Guide

1. Run the wire to be monitored through aperture.
2. Mount the sensor.
3. Connect output wiring.
  - A. Use up to 14 AWG copper wires.
  - B. Ensure load matches the output shown on the sensor label.
4. Adjust Setpoint
  - A. Use the potentiometer to adjust the setpoint.

## Description

AS1 Series are self-powered, solid-state current-operated switches which trigger when the 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

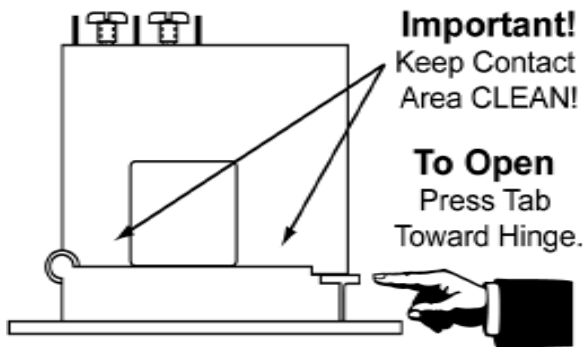
### For All Versions

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.

### Split-Core Versions (-SP Suffix)

Press the tab in the direction as shown to open the sensor. After placing wire in aperture, press the hinged portion firmly downward until a click is heard and the tab pops out fully.



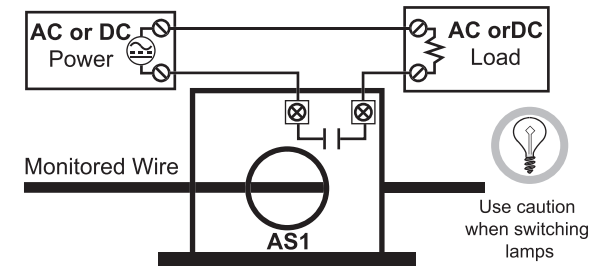
### KEEP SPLIT-CORE SENSORS CLEAN.

Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow grit or dirt onto the grease in the contact area. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

## Output Wiring

Connect control or monitoring wires to the sensor. Use up to 14 AWG copper wire and tighten terminals to 5 inch-pounds torque. Be sure the output load does not exceed the switch rating.

**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 Series **SETPOINT** is adjusted with a 4-turn potentiometer (-FF and -SP) or a 15-turn potentiometer (-FT). 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 (4 or 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		SMART-LED (If Present)
	-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.)

## 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)

### 2. Sensor will not trip

- A. The setpoint may be too high. Turn pot CW to decrease setpoint.

- B. Split Core models: The core contact area may be dirty. Open the sensor and clean the contact area.
- C. 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.
- D. Switch has been overloaded and contacts are burned out. Check the output load, remembering to include inrush on inductive loads (coils, motors, ballasts).