

## Specifications

Power Supply	None - Self powered
Output	Isolated Solid State Switch
Output Rating (maximums)	NOU: 0.30 A @ 135 VAC/VDC NCU: 0.20 A @ 135 VAC/VDC
Off State Leakage	<10 uA
Response Time	200 ms
Setpoint Range	Solid-Core: 1.5 - 150 A Split-Core: 2.8 - 150 A
Setpoint	Self Learning Microprocessor based.
-OL	Overload : 125% of load
-UL	Underload : 85% of load
-OU	Over/Underload (operating window): 85-125% of load
Hysteresis	5% of Setpoint
Isolation Voltage	UL listed to 1270 VAC
Frequency Range	6-100 Hz
Case	UL94 V-0 Flammability rated
Sensing Aperture	-FT: 0.74" (18.8 mm) diameter -SP: 0.85" (21.6 mm) square
Environmental	-4 to 122 °F (-20 to 50°C) 0-95% RH, Non-condensing Pollution Degree 2 Altitude to 6561 ft (2000 meters)
Listings	UL/cUL, CE

### For products intended for the EU market, the following is applicable to the CE compliance of the product:

The ASM Series may comply with EN 61010-1 CAT III 300 V max line-to-neutral measurement category. If insulated cable is used for the primary circuit, the voltage rating of the measurement category can be improved according to the characteristics given by the cable manufacturer.

#### Warning! Risk of danger

Safe operation can only be guaranteed if the sensor is used for the purpose it was designed for and within limits of the technical specifications. When this symbol is used, it means you must consult all documentation to understand the nature of potential hazards and the action required to avoid them.

#### Warning! Risk of shock

When operating the sensor certain parts may carry hazardous live voltage (e.g. primary conductors, power supply). The sensor should not be put into operation if the installation is not complete.



## Model Number Key

ASM - NOU - OL - FT

#### CASE STYLE:

FT - Solid-Core, Top Terminals  
SP - Split-Core

#### OPERATION:

OL - Overload  
UL - Underload  
OU - Over/Underload

#### OUTPUT:

NOU - Normally Open  
NCU - Normally Closed

#### SENSOR TYPE:

ASM - Self-Calibrating Current Operated Switch

## Ranges & Maximum Amps

TYPE	RANGE	MAXIMUM INPUT AMPS		
		CONTINUOUS	6 SEC.	1 SEC.
SOLID-CORE	1.5 - 150 A	150 A	500 A	1000 A
SPLIT-CORE	2.8 - 150 A	150 A	500 A	1000 A

## Know Your Power



### Other NK Technologies Products Include:

AC & DC Current Transducers and Switches  
1φ & 3φ Voltage and Power Transducers  
Current Transformers (CTs)  
Ground Fault Protection Relays



## NK Technologies

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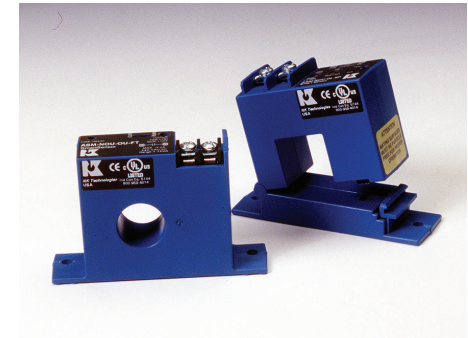
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# INSTRUCTIONS



## ASM SERIES

Self-Calibrating Current Operated Switch  
Universal (AC or DC) Output

## Quick "How To" Guide

- Run the wire you are monitoring through the aperture.
- Mount the sensor to a surface if needed or secure to conductor with a nylon tie.
- Connect output wiring.
  - Use up to 22-14 AWG copper wires rated 75°C minimum and tighten to 9 in-lbs torque.
  - Make sure the load matches the output shown on the sensors' label.
- Allow Sensor to "Learn" the load.
  - Turn load "On".
  - Slide the Function Switch from "RUN" to "CLR" (clear).
  - Observe LED flash fast (>2/Sec) for a few seconds, then slow (~2 Sec). The sensor has "learned" the load and is calibrated.
  - Slide the function switch back to "RUN" for normal operation.

## Description

ASM Series are solid-state current operated switches. They operate (switch) when the current level through the hole falls within the setpoint “window”. This “window” is automatically set at 85% to 125% of the normal load current. Internal circuits are totally powered by induction from the line being monitored. The N.O. output contacts are rated 0.3 A up to 135 VAC or VDC. This “Universal” output make them well suited for application in automation systems.

## Installation

### For All Versions

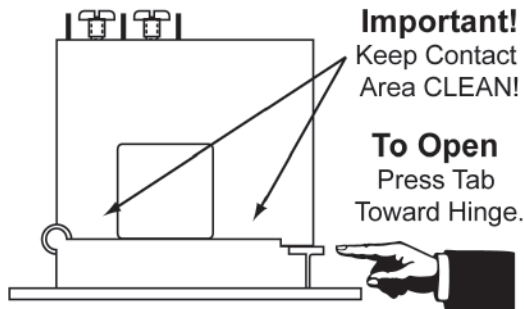
Run wire to be monitored through opening in the sensor.

ASM switches work in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. They can be mounted in any position or hung directly on wires with a wire tie. Just leave at least one inch distance 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 the wire in the opening, press the hinged portion firmly downward until a definite click is heard and the tab pops out fully.

### KEEP SPLIT-CORE SENSORS CLEAN.

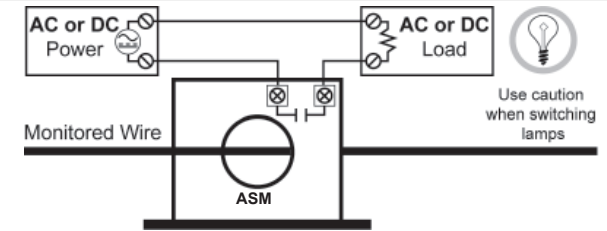


Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow grit or dirt onto the grease in the contact area. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

## Output Wiring

Connect control or monitoring wires to the sensor. Use up to 22-14 AWG copper wire and tighten terminals to 9 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 controlling lamps.



## Setpoint Adjustment

ASM Series has an internal microprocessor that “Learns” your load characteristics and calibrates the setpoint and establishes where the output changes state.

### Initial Calibration

1. The ASM is shipped with Function Switch in the “RUN” position.
2. After installation is complete and the load is operating properly, slide this switch to “CLR” (clear).
3. The LED will flash quickly (<2 Sec/Flash) during the learning period. When the LED flashes slowly (~2 sec), the sensor is calibrated.
4. Once the calibration point is established, flip the Function Switch back to “RUN”.

5. LED flashes quickly when there is current outside the normal operating range.

### Re-Calibration

If the load or conditions change, you may need to recalibrate the sensor. Use the same procedure as for initial installation, step 2 to step 5.

Re-calibration will not be needed unless the motor or other drive components are changed, or the monitored load is modified. The ASM will hold the calibrated trip point in memory until the switch is pushed to the “CLR” (clear) position.

## Operation

	NO-OU	NC-OU	NO-OL	NC-OL	NO-UL	NC-UL
125%	LED fast Output Open	LED fast Output Closed	LED fast Output Closed	LED fast Output Open		
Calibration	LED slow	LED slow	LED slow	LED slow	LED slow	LED slow
	Output Closed	Output Open	Output Open	Output Closed	Output Closed	Output Open
85%	LED fast Output Open	LED fast Output Closed			LED fast Output Open	LED fast Output Closed
<2.8 A (split-core) <1.5 A (solid-core)	LED off	LED off	LED off	LED off	LED off	LED off

Dark area shows where the sensor output has tripped, or changed state. Note that the monitored circuit may be energized with no LED showing.

## Trouble Shooting

### 1. Sensor is always tripped

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

### 3. Sensor will not calibrate

- A. Push the switch back to “CLR”, then again to “RUN”. The load through the sensor should be steady for a few seconds so the sensor can learn the normal current value.
- B. The switch is very small and recessed into the housing. Use a small screwdriver to be sure that you have moved the actuating handle to the correct position.