

## Specifications

|                         |  |
|-------------------------|--|
| Power Required          | None - self powered  |
| Output Switch           | Isolated solid state switch  |
| Switch Rating           | <u>NO/NC</u> - 1.0A @ 240VAC<br><u>NOU</u> - N.O. 0.15A @ 240 VAC/VDC<br><u>NCU</u> - N.C. 0.20A @ 135 VAC/VDC |
| Off State Leakage       | Negligible <u>NOU/NCU/NOAC</u> outputs, 2.5 mA NCAC version  |
| Response Time           | Adjustable 0.12 to 15 seconds  |
| Hysteresis              | Constant 5% of setpoint  |
| Set Point Ranges        | Fixed 1.5-12, 12-55 and 50-175 A,<br>Split Core: 2-12, 12-55 and 50-200 A                                      |
| Setpoint Adjust         | 4-turn potentiometer (SP)<br>15-turn potentiometer (FT)  |
| Isolation Voltage       | UL Listed to 1,270 VAC<br>Tested to 5,000 VAC  |
| Frequency Range         | 50-100Hz   |
| Sensing Aperture        | -FT 0.75" (19mm)<br>-SP 0.85" (21.7mm)   |
| Operating Environmental | 5 to 122° F (-15 to 50° C)<br>0-95% RH, Non Condensing   |
| Listings                | UL/cUL   |

## Ranges & Maximum Amps

### Adjustable Sensors

| TYPE       | RANGE     | MAXIMUM INPUT AMPS |        |        |
|------------|-----------|--------------------|--------|--------|
|            |           | CONTINUOUS         | 6 SEC. | 1 SEC. |
| FIXED CORE | 1.5-175 A | 150A               | 400A   | 1000A  |
| SPLIT CORE | 2-200A    | 150A               | 400A   | 1000A  |

## Model Number Key

**ASX - NOU - FT**

### CASE STYLE:

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

### OUTPUT (Solid State Switch):

NOAC - Normally Open, 1.0A @ 240 VAC only  
NCAC - Normally Closed, 1.0A @ 240 VAC only  
NOU - Normally Open, 0.15A @ 240 VAC/VDC  
NCU - Normally Closed, 0.20A @ 135 VAC/VDC

### SENSOR TYPE:

ASX - AC current operated switch with integral time delay and three field-selectable ranges

## 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



## ASX SERIES

AC Current Operated Switches  
Adjustable Range with Solid State Output  
and Integral Time Delay

### 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. Position range jumper across appropriate pins (med/high) or remove for low.
  - B. With load operating (preferred) adjust set-point using potentiometer.

## Description

ASX Series are self-powered, solid-state current-operated switches which trigger when sensed current levels exceed the adjusted setpoint. Models are available which provide NO/NC AC contacts or solid-state NO or NC “universal” contact outputs which can switch AC or DC. Contact action can be delayed for up to 15 seconds by using the Time Delay Adjust potentiometer.

## Installation

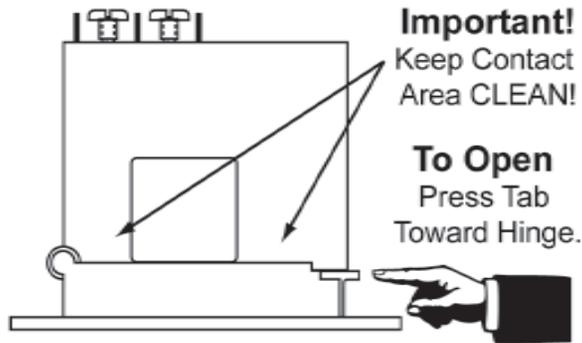
### For All Versions

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

ASX 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.

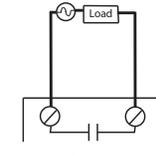
Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow grit or dirt into the grease in the contact area, particularly on core mating surfaces for -SP models. Operation can be impaired if the mating surfaces do not have good contact. 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.

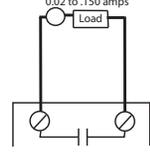
**CAUTION** Incandescent lamps can have “Cold Filament Inrush” current of up to 10 times their rated amperage. Use caution when switching lamps.

AC Power - 2 to 240 volts  
0.2 to 1.00 amps



NOAC/NCAC

AC or DC Power -  
0.2 to 240 volts  
0.02 to .150 amps



NOU/NCU

## Setpoint Adjustment

ASX Series setpoint and time delay are adjusted through two 4-turn pots (-SP models) or 15-turn pots (-FT models). The unit comes from the factory with setpoint and time delay set to the lowest level (fully counter-clockwise CCW). Turning the pots clockwise (CW) will increase their value. All pots have a slip-clutch to prevent damage at either end of their rotation. To determine where the adjustment is, turn the pot CCW for multiple turns. This will return it to its minimum value.

### 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. Identify expected Input Range and position jumper accordingly. For LOW range, remove jumper entirely. For MID or HIGH range, place jumper over proper two pins.
2. Turn the **Setpoint** pot to minimum setpoint (4 or 15 turns CCW).

## Trouble Shooting

### 1. Sensor is always tripped

- A. The setpoint may be too low. *Turn pot CW 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 CCW to decrease setpoint.*

3. Ensure 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).
4. Turn the pot CW 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.
5. Now turn the pot CCW 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 CCW.
  - B. To Set OVERLOAD - Turn the pot about 1/8 turn further CW.
6. Adjust the **Time Delay** of the contact action in the same fashion. Increase time delay by turning pot CW. For split-core models, each quarter-turn corresponds roughly to 1 sec. delay. For solid-core versions, one full turn of the potentiometer corresponds roughly to one second. Expect 10 turns to delay 15 seconds.

| MONITORED AMPS    | OUTPUT                 |                      | SMART-LED (If Present) |
|-------------------|------------------------|----------------------|------------------------|
|                   | -NC<br>Normally Closed | -NO<br>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.)        |

- 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).*