

## Specifications

Power Required	24VAC/VDC or 120VAC, Refer to Model Key
Power Consumption	45mA (24 volt power) 15mA (120 volt power)
Output Switch	Single Pole, Double Throw Mechanical Relay
Switch Rating	<u>SPDT</u> - 1A @ 120VAC, 2A 30VDC (resistive)
Start Delay	Adjustable 0.5 to 16 seconds
Response Time	0.50 to 1.00 seconds
Hysteresis	Constant 5% of setpoint
Set Point Range	Adjustable 50-800A across four model choices
Setpoint Adjust	1/2-turn potentiometer
Start Delay Adjust	1/2-turn potentiometer
Isolation Voltage	Tested to 5000 VAC
Frequency Range	40-100Hz
Sensing Aperture	1.19"(30.2 mm) X 2.20"(56.3 mm)
Operating Temp.	-4 to 122 °F (-20 to 50 °C) (surrounding sensor)
Environmental	0-95% RH, non-condensing Pollution Degree 2 Overvoltage category II Altitude to 2000 meters
Approvals	UL/ cUL Listed

## Model Number Key

**ASXP 4 - SDT - 120 - MS**

**CASE STYLE:**  
MS -- Split Core

**POWER SUPPLY:**  
120 -- 120VAC  
24U -- 24VAC/DC

**OUTPUT (Mechanical Relay):**  
SDT -- Single Pole, Double Throw Relay,  
1A @ 120 VAC or 2A at 30 VDC

### RANGE:

- 2 - 50 - 200 Amps
- 4 - 100 - 400 Amps
- 6 - 150 - 600 Amps
- 8 - 200 to 800 Amps

### SENSOR TYPE:

ASXP -- Powered AC current operated switch with time delay on start

## 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



## ASXP-MS SERIES Powered AC Current Operated Switch with Integral Time Delay

### Quick "How To" Guide

1. Route monitored wire(s) through aperture.
2. Mount the sensor (if required).
3. Connect power supply and output wiring.
  - A. Use 22-14 AWG copper wires only.
  - B. Ensure supply power and load matches that shown on sensor label.
  - C. Select output action using "Mode Switch". See "Output Action" table for details.
4. Adjust Setpoint and Time Delay.
  - A. Use trip adjust potentiometer to choose setpoint.
  - B. Use delay potentiometer to select delay (seconds) before contact action on initial energization (start) of monitored circuit.

## Description

ASXP Series products are powered, current-operated switches which trigger when sensed current levels exceed the adjusted setpoint. Models are provided with NO and NC mechanical relay contacts. Contact action can be delayed on **start up** for up to 16 seconds by turning the Time Delay Adjustment on the side of the sensor base.

## Installation

ASXP switches can be located in the same environment as motors, contactors, heaters, pull-boxes, and other electrical devices or enclosures. Mounting can be directly to a standard DIN rail, attached to a back panel using #8 screws in through the mounting holes in the base in any position or hung directly on the conductors with a wire tie. Ensure at least one inch clearance exists between sensor and other magnetic devices. Carefully pry the clips away from the vertical side legs, and remove the top bar. Snap the top piece back into position once the sensor is positioned around the conductor(s). Centering the monitored conductor will improve the output accuracy only slightly. The sensor is not polarity sensitive in that the conductor can pass through in either direction. The output contact is mechanical, so not polarity sensitive. The power supply connection is also not polarity sensitive. For control or monitoring wiring, use 22 to 14 AWG copper wire and tighten terminals to 7 inch-pounds torque. Be sure the output load does not exceed the switch rating. Connect power supply to terminals 4 and 5 on the sensor. Check to ensure supply power matches voltage and type required by sensor. Use circuit protection to protect the power supply wires in the remotely possibility of a short. Once powered, the LED on the unit should indicate unit is on by glowing green.

## Output Action

Use the mode switch to select “normal” or “fail-safe” output action.

	Fail-Safe		Normal	
	Power On	Power Off	Power On	Power Off
N.O.	Closes	Opens	Open	Open
N.C.	Opens	Closes	Closed	Closed
	Current High	Current Low	Current High	Current Low
N.O.	Opens	Closes	Closes	Opens
N.C.	Closes	Opens	Opens	Closes

Connect output wiring to terminals 2 and 3 for the normally open (closes on current rise) or 1 and 2 for the normally closed (opens on current rise) contact. (Normal setting). Note that if unit is powered and monitored conductor has current flow, the output contacts may change depending on setpoint and time delay settings.

## Setpoint Adjustment

ASXP-MS Series setpoint and start time delay are adjusted through two 1/2-turn pots which have arrow indication of the selected value. The unit comes from the factory with setpoint set to its maximum (fully clockwise CW) and time delay set to the lowest level (fully counter-clockwise CCW).

### Typical Adjustment

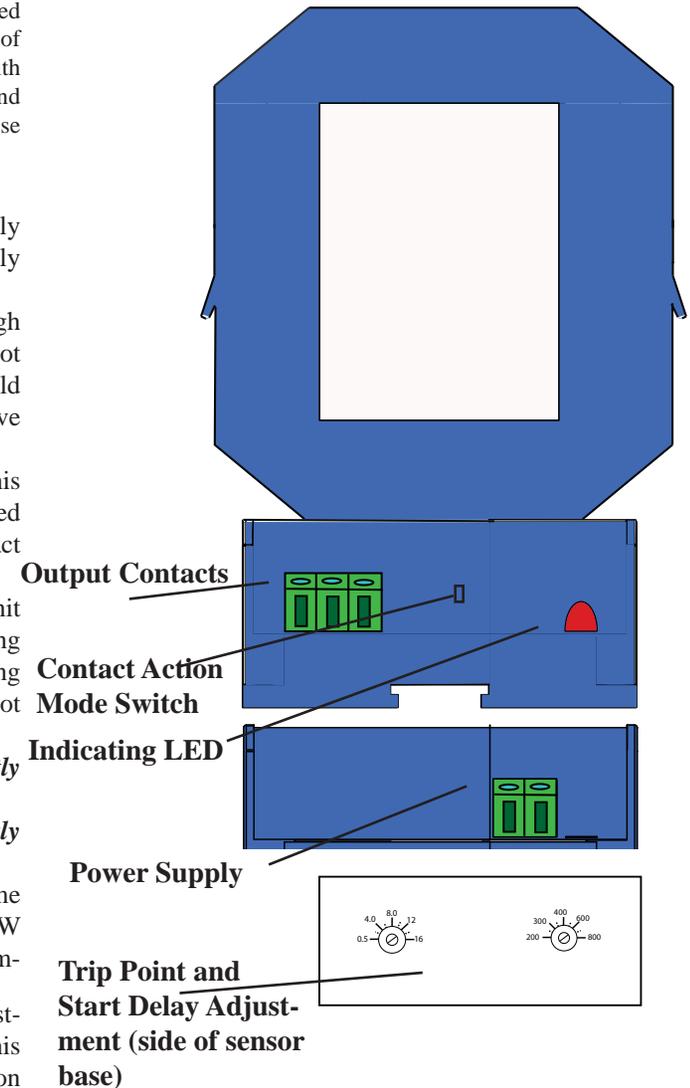
1. Turn the **Trip** pot to minimum setpoint. (Fully CCW,). Ensure **Delay** pot is at 0.5 sec. (Fully CCW).
2. Ensure normal operating current running through sensor. The output should be tripped since the pot is at its minimum setpoint and bi-color LED should change from green to red, indicating contacts have changed state. See Output Action table
3. Turn the **Trip** pot CW until the unit un-trips. This is indicated by the LED changing color from red to green and by the changing of the output contact status.
4. Now turn the **Trip** pot CCW slowly until the unit trips again. It is now set at the current level being monitored. This value can be confirmed by reading the trip point from the graded scale of the trip pot on the label.
  - A. To Set UNDERLOAD - Turn pot *slightly* CW.
  - B. To Set OVERLOAD - Turn pot *slightly* CCW.
5. Adjust the **Delay** of the contact action in the same fashion. Increase time delay by turning pot CW to desired value using scale on Delay potentiometer.

The sensor will delay contact action for an adjustable period, between 0.5 and 16 seconds. After this period has elapsed, the output will change state on current rise.

## Trouble Shooting

1. **Sensor is always tripped**
  - A. The setpoint may be too low. *Turn pot CW to increase setpoint.*
  - B. Contact has been overloaded and 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*

## Power Supply and Output Wiring



*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).*