

Specifications

Power Required	None - self powered
Setpoint Ranges	Fixed Core: 1-6, 6-40 & 40-175 A Split Core: 1.75-6, 6-40, & 40-200A
Setpoint Adjust	4 Turn potentiometer, or 15 Turn (Suffix -FT)
Hysteresis	5% of setpoint
Isolation Voltage	UL Listed to 1,270 VAC
Frequency Range	6-100Hz
Output Switch	Isolated Solid State Switch
AC Switch Rating	1.0A@240VAC, 3A@120VAC, -FT housing only
-03 Model	10A @ 240 VAC, 15A @ 120 VAC when mounted on 1ft ² , 930cm ² metal surface.
-15 Model	Max. 3A in free air.
Off State Leakage	All models: 2.4 mA
DC Switch Rating	0.15 Amp @ 30 VDC
Off State Leakage	NODC: None, NCDC: 1.35mA
Response Time	2.5 sec. max
Housing	UL 94-V0 Flammability Rated
Terminal Torque	5-7 inch-pounds
Environmental	-20 to 50 °C (-4 to +122° F) (surrounding sensor) 0-95% RH, non-condensing Pollution Degree 2 Overvoltage Category II Altitude to 2000 meters
Current Measurement	0-200A @300V, CAT III
Approvals	UL and cUL Listed, CE

Caution! Risk of danger



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

Caution! Risk of electrical shock



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

Ranges & Maximum Amps

RANGE JUMPER	RANGE SOLID CORE	RANGE SPLIT-CORE	MAX 6 SEC.	MAX 1 SEC.
NONE	1 - 6 A	1.75 - 6 A	400 A	600 A
MID	6 - 40 A	6 - 40 A	500 A	800 A
HIGH	40 -175 A	40 -200 A	800 A	1200 A

Model Number Key

AS3 - NODC - FF - NL

OPTIONS:

Blank - Standard with LED
NL - No LED
03 - 3A@120 VAC (-FT only)
15 - 15A@120 VAC/10A@240VAC output. (-FF only)

CASE STYLE:

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

OUTPUT (Solid State):

NCAC - Normally Closed, 1.0A, 240VAC
NOAC - Normally Open, 1.0A, 240VAC
NCDC - Normally Closed, 0.15A, 30 VDC
NODC - Normally Open, 0.15A, 30VDC
AADC* - Dual Normally Open, 0.15A, 30VDC
CCDC* - 1 N.O., 1 N.C., 0.15A, 30 VDC

* each contact trip point adjustable between the range setting
-FF housing only

SENSOR TYPE:

AS3 - AC current operated switch with 3 jumper selectable ranges, adjustable setpoint and LED as standard

Know Your Power



Other NK Technologies Products Include:

AC & DC Current Transducers and Current Operated Relays
AC Ground Fault Sensors
1φ & 3φ kW Transducers
Current & Potential Transformers (CTs&PTs)



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INSTRUCTIONS



AS3 SERIES

AC Current Operated Switch w/Jumper
Selectable Range, AC or DC Output

Quick "How To" Guide

- Run the wire you are monitoring through aperture.
- Mount the sensor to a surface if needed.
- Connect output wiring.
 - Use up to 14 AWG copper wires.
 - Make sure the load matches the output shown on the sensors' label (volts, amps, AC/DC).
- Adjust Setpoint
 - Chose correct range by positioning the Range Jumper
 - Use the potentiometer to adjust the setpoint.
- Confirm Contact Operation
 - If the sensor has an LED, quick flash indicates current over the set point and output has tripped, slow flash shows current under set point, output is shelf state condition.

Description

AS3 Series are solid-state current operated switches. They operate (switch) when the current level through the sensing aperture exceeds the adjustable setpoint. Internal circuits are totally powered by induction from the line being monitored. See the Specifications for output ratings.

Installation

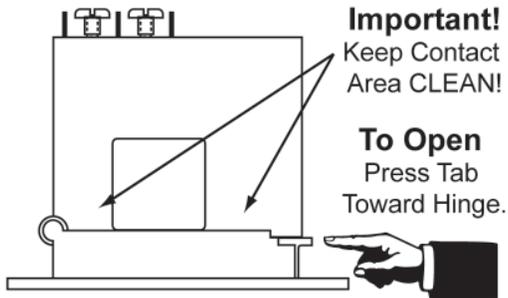
Run wire to be monitored through the opening in the sensor. These sensors will only work to monitor AC circuits.

AS3 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.

The high current solid state relay in the AS3-NxAC-FF-15 generates heat when the switched circuit rises over 3 amps. To dissipate this heat and allow the “contact” to control the full 15 amps, mount the sensor on a steel or aluminum surface of at least 1 square foot (930cm²). Thermal transfer compound is recommended.

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.



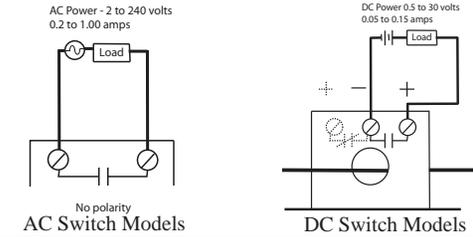
KEEP SPLIT-CORE SENSORS CLEAN.

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 14 AWG copper wire and tighten terminals to 7 inch-pounds torque. Be sure the output load does not exceed the switch rating. DC output models are polarity sensitive.

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



Setpoint Adjustment

AS3 switches have two setpoint adjustment mechanisms:

1. Select the setpoint **RANGE** with the Range Jumper.
2. Fine tune the **SETPOINT** with the 4 (or 15) turn potentiometer (pot). See the product label for the amp ranges and jumper positions.

The 4 (or 15) turn pot is shipped from the factory set fully clockwise (CW) to the lowest setpoint. 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 at least 4 times CW. This will return it to the minimum setpoint.

Adjustment Notes:

1. Output contacts are solid-state. Check output status by applying the appropriate voltage and load and then reading the voltage drop across the contacts. An Ohmmeter set on “Continuity” will give misleading results.
2. We recommend adjusting setpoint to allow for usual utility company voltage variations of 10-15%.

1. Move the jumper to the desired range. 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.
5. Dual contact models (AADC and CCDC): Each output trip point is individually adjustable between the selected range. They have no status LEDs.

MONITORED AMPS	OUTPUT TYPE		SMART-LED (If Present)
	N.O.	N.C.	
None or below range	OPEN	CLOSED	OFF
Below trip level	OPEN	CLOSED	SLOW (2 Sec)
Above trip level	CLOSED	OPEN	FAST (0.5 Sec.)

Trouble Shooting

1. **Sensor is always tripped**
 - A. The jumper may be set in a range that is too low for current being monitored. *Move jumper to the correct range.*
 - B. The setpoint may be too low. *Turn pot CCW to increase setpoint.*
 - C. Mismatched Polarity (DC Output Only). *Check polarity on output wiring, correct as needed.*
 - D. 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 jumper may be set in a range that is too high for current being monitored. *Move jumper to the correct range.*

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