

## Specifications

Power Required	None - self powered
Output Switch	Isolated Solid State Switch
Switch Rating	<u>DODC</u> - N.O. 1A @ 30VDC
Off State Leakage	<10 MICROAMPS
Response Time	100 mS
Hysteresis	< 8% of Setpoint
Set Point Ranges	A Contact: Adjustable 0.75A - 20A B Contact: Adjustable 0.75A - 20A
Start-up Delay	2.0 Seconds (fixed)
Setpoint Adjust	4 Turn potentiometer
Isolation Voltage	Designed to meet UL508 requirements to 1,270 VAC Tested to 5,000 VAC
Frequency Range	6-100Hz
Sensing Aperture	-FL 0.75" (19mm)
Environmental	-58 to 149 Deg F (-50 to 65 Deg C) 0-95% RH, Non Condensing

## Ranges & Maximum Amps

TYPE	RANGE	MAXIMUM INPUT AMPS		
		CONTINUOUS	6 SEC.	1 SEC.
FIXED CORE	0.75- 20 A	50A	200A	400A
FIXED CORE	20-50 A	50A	200A	400A

## Model Number Key

**AS1 - DODC - FL**

### CASE STYLE:

FL - Fixed Core, Top Terminals

### OUTPUT (Solid State Switch):

DODC - Dual Normally Open, 1.0A @ 30VDC

### SENSOR TYPE:

AS1 - AC current operated switch with single range  
0.75A -- 20A

AS2 - AC current operated switch with single range  
20A -- 50A

## 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)



## NK Technologies

500 Division Ave., Campbell, CA 95008  
800-959-4014 or +1-408-871-7510 Phone  
+1-408-871-7515 FAX

sales@nktechnologies.com, www.nktechnologies.com



# INSTRUCTIONS



**AC Current Operated Switch  
With Dual 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

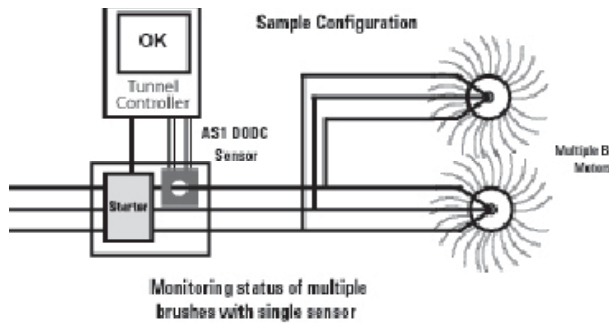
AS1 Series are self-powered, solid-state current-operated switches which trigger when the current level sensed through the aperture exceeds the adjusted setpoint. The solid state output contacts can switch DC low voltage only; up to 30 VDC, and up to one amp.

## Installation

### For All Versions

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

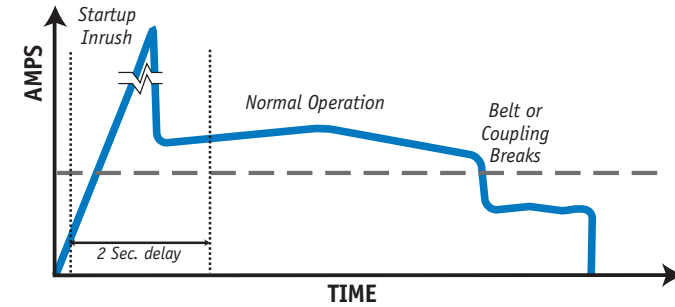
AS1 switches can be located in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. Mounting can be done in any position or hung directly on wires with a wire tie. Ensure at least one inch clearance exists between sensor and other magnetic devices.



## 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. The pot is shipped factory set to the lowest setpoint, fully clockwise (CCW). Turning the pot counter-clockwise (CW) 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 CCW. 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. Both “A” and “B” contacts are adjustable. Turn the pots to minimum setpoint (4 turns CCW). Each contact has a delay before closing of two seconds, but only during the initial start up. This delay is not adjustable, but after the

sensor is in normal monitoring mode, the contacts will close nearly instantaneously after current rise over the setpoint.

2. Have normal operating current running through sensor. Provided the monitored current is above 0.75A, both outputs should be tripped since the trip points are at their minimums. LEDs indicate the status of the contacts; slow flashing (once every 2 to 3 seconds) indicates untripped while fast flashing (2 to 3 times per second) indicates contacts are tripped.
3. Turn the pot for each contact setpoint adjustment CW until the unit un-trips. This is indicated by the slow flashing of the LED and by the changing of the output switch status. The contacts are fully isolated from each other.
4. 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 (or less) farther CCW.
  - B. To Set OVERLOAD - Turn the pot about 1/8 turn (or less) farther CW.

## 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.

B. Monitored current is below minimum required. Loop the monitored wire several times through the aperture until the “sensed” current rises above minimum.  $Sensed\ Amps = (Actual\ Amps) \times (Number\ of\ Loops)$ . 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).