

Specifications

Power Supply	120 VAC (108-132 V) or 24 VDC (22-26 V)
Power Consumption	<2 VA
Output Switch	SPDT Relay
Contact Rating	1 A @ 125 VAC, 2 A @ 30 VDC
Response Time	Adjustable 0.5 to 12 seconds
Hysteresis	5%
Set Point Range	10-1200 Amps
Setpoint Adjust	Two Digital Rotary Switches plus one +1,000 amp slide switch (US Patent 9747776)
Analog Signal	4-20 mA (0-1200 AAC)
Accuracy	+/-2%, True RMS
Output Limit	23 mA, 600 ohm maximum
Analog Response Time	600 ms (to 90% step change)
Isolation Voltage	UL listed to 2200 VAC
Frequency Range	10-100 Hz
Case	UL94 V-0 Flammability rated
Sensing Aperture	1.76" (44.7 mm)
Environmental	-4 to 122°F (-20 to 50°C) Surrounding air 0-95% RH, Non-condensing Pollution Degree 2 Altitude to 6561 ft (2000 meters)
Listings	UL/cUL

Trip Point Adjustment

The ATS current relay utilizes a revolutionary method to set the trip point where the primary current actuates the relay output. One ten position rotary selector sets the trip point in increments of ten amps, between zero and 90. A second rotary selector adjusts in increments of 100 amps, between zero and 900 amps. A two position slide switch allows for either zero or 1000 amps. The maximum trip point is 1200 amps, and any setting above this maximum will cause the unit setting to remain at 1200.

The output can be delayed up to 12 seconds to allow for short periods of over current conditions to keep the relay from changing state.

Model Number Key

ATS - 420 - SDT - 24D - DL

CASE STYLE:

DL - Large DIN Rail Mounting

POWER SUPPLY:

24D - 24 VDC

120 - 120 VAC

CONTACT OUTPUT:

SDT - SPDT Relay, 1 A @ 125 VAC,
2 A @ 30 VDC

ANALOG OUTPUT:

420 - 4-20 mA, 0-1200 A range

SENSOR TYPE:

ATS - AC current operated transducer/switch with adjustable time delay, rotary set point adjustment and analog

Know Your Power



Other NK Technologies Products Include:

AC & DC Current Transducers
AC & DC Current Operated Switches
1 ϕ & 3 ϕ Power Transducers
Current & Potential Transformers (CTs&PTs)



NK Technologies



INSTRUCTIONS



ATS SERIES

**AC Current Transducer/Switch
Adjustable Range with SPDT Output,
Adjustable Delay and Analog Signal**

Quick "How To" Guide

1. Mount the sensor to the DIN rail.
2. Run the wire to be monitored through aperture.
3. Connect output wiring.
 - A. Use 22-12 AWG 60/75°C copper conductors only and tighten terminals to 6 in-lbs.
 - B. Ensure the power supply voltage matches the model you are installing. Energize the power.
4. Adjust Setpoint.
 - A. Flip the "X1000" slide switch to set the fourth digit value (0=<1000 A, 1=1000 A).
 - B. Turn the "X100" rotary switch to the third digit target value (0=<100A, 1=100 A, 2=200A, etc.).
 - C. Turn the "X10" rotary switch to the second digit target value (0=<10A, 1=10 A, 2=20 A, etc.).
5. Adjust relay delay time.
 - A. Set desired delay time (0.5-12 seconds) with rotary switch.

Description

ATS Series are externally powered, current-operated relays with 0-1200 A analog signal. The relay triggers when sensed current levels exceed the adjusted setpoint. The relay action is fail safe, so loss of power to the sensor will create an over current trip. Contact action on current increase can be delayed for up to 12 seconds by using the Time Delay Adjust selector.

Installation

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

Run wire to be monitored through aperture (opening) in the sensor. The direction that the wire passes through the opening is not important.

Connect the output relay contact to the load to be switched, being sure that the load does not exceed the capacity of the output contact. The relay is designed to operate in a fail safe mode. When the sensor has power supplied to it, the relay will actuate. The contact that is open “out of the box” or at “shelf state” will immediately close, and the closed contact will open.

Connect the power supply voltage to the appropriate terminals, being sure that the supplied power matches the sensor designed voltage. For 24 VDC, term. 7 is positive, terminal 6 is negative.

Energize the sensor power supply.

The green “POWER” LED will light.

Set the desired trip point and the time delay adjustments.

When the primary current exceeds the trip point, the “TRIP” red LED will light.

If used, connect a panel meter or controller input module to the analog output terminals of the sensor. Note that when the relay output is set to trip at a current value of 150 amps or less, the analog signal will be capped at 6 mA, if the trip point is between 160 and 300 amps, the analog output will be capped at 8 mA. Using a trip point setting of 310 amps or more will allow the analog signal to rise to 20 mA at 1200 amps, capped at 23 mA.

Output Wiring

Connect control or monitoring wires to the sensor. Use up to 22-12 AWG copper wire and tighten terminals to 6 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.

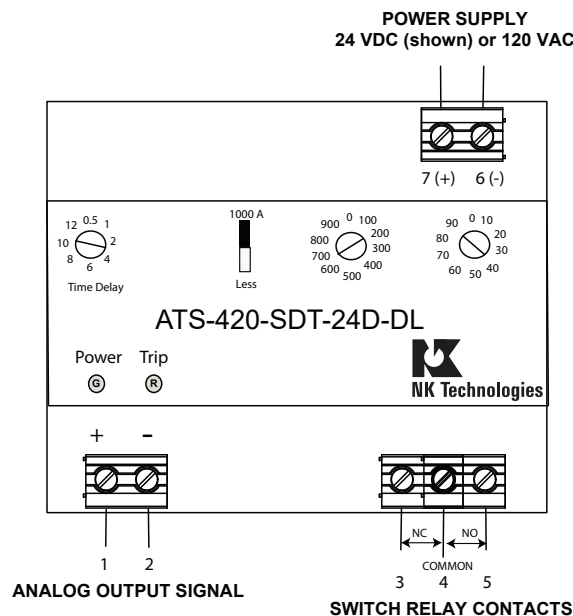
Setpoint Adjustment

ATS Series setpoint and time delay are adjusted using a patented rotary switch method. The switch on the right side of the sensor adjusts for 0 to 90 amps in 10 amp increments. The second switch adjusts the trip point between 0 and 900 amps in 100 amps increments. A two position switch selects a trip point of either 0 or 1000 amps. To set a trip point of 520 amps, the first switch is turned to a value of 2, shown with an arrow on the adjustment knob and the label. The second switch is turned to the value 5, and the slide switch is set to zero or off.

To set a value of 1100 amps, set the first switch to zero, the second to 1, and the third to 1 (1000) or on.

If delay before operation is needed, turn the time delay rotary switch to the value needed.

See drawing below:



Trouble Shooting

1. Sensor is always tripped.

- A. The setpoint may be too low. *Turn the rotary switches to the proper setting for the current monitored.*
- 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 the rotary switches to the proper value.*
- B. Monitored current is below minimum required. This sensor is designed to monitor high current, and can be set to trip at a minimum of 10 amps.
- C. 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 trips on energization of monitored load.

- A. Set the delay before actuation to a higher level.

4. Relay trips as soon as power is applied.

- A. This is by design, providing fail safe reliability.