

Specifications

Power Required	24VAC/VDC (22-26 volts)
Output	Two Independent Single Pole, Double Throw Mechanical Relay
Contact Rating	1A @ 120VAC, 2A 30VDC
Response Time	40-120 ms
Hysteresis	4% of setpoint
Set Point Ranges	Adjustable 1-20, 2-35, 4-65, 8-120, 15-200, 25-400A
Setpoint Adjust	Two 3/4-turn potentiometers
Isolation Voltage	tested to 5KV
Frequency Range	40-65Hz
Sensing Aperture	1.31" (33.3mm)
Operating	-4 to 122 °F (-20 to 50 °C)
Environmental	0-95% RH, Non Condensing
Approvals	UL/cUL listed E129625

For products intended for the EU market, the following is applicable to the CE compliance of the product:

The ASP Series may comply with EN 61010-1 CAT III 300V max line-to-neutral measurement category. If insulated cable is used for the primary circuit, the voltage rating of the measurement category can be improved according to the characteristics given by the cable manufacturer.

Use twisted pair for all connections.

24 Volt AC or DC Power Supply

Fuse at 5 amps maximum

Overvoltage Category I

Warning! Risk of danger

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



Warning! Risk of shock

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



Model Number Key

ASP 2 - DPT - 24U - FD

CASE STYLE:

FD -- Fixed Core, DIN or panel mounted

POWER SUPPLY:

24U -- 24VAC/DC

OUTPUT (Mechanical Relay):

DPT -- Dual Single Pole, Double Throw Relays, 1A @ 120 VAC or 2A at 30 VDC

RANGE:

1 -- 1 - 20 A	4 -- 8 - 120 A
2 -- 2 - 35 A	5 -- 15 - 220 A
3 -- 4 - 65A	6 -- 25 - 400 A

SENSOR TYPE:

ASP -- Powered AC current operated relay, two independent trip points

Know Your Power



Other NK Technologies Products Include:

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



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INSTRUCTIONS



ASP SERIES

Powered AC Current Operated Relay
Dual Setpoints, Dual Relay Outputs

Quick "How To" Guide

1. Route monitored wire through aperture.
2. Mount the sensor to a DIN rail or panel.
3. Connect power supply and output wiring.
 - A. Use 22-14 AWG copper wires, tighten terminals to 5-7 inch-pounds torque.
 - B. Ensure supply power and load matches that shown on sensor label.
4. Adjust Setpoints
 - A. Use trip adjust potentiometers to select setpoints.
 - B. LED shows Green with power supply connected, Amber when the current has exceeded the setpoint.

Description

ASP Series products are powered, current-operated switches which trigger when sensed current levels exceed the adjusted setpoint. There are two independent setpoints, one for higher than normal current and another for lower than normal, or one for alarm at too high and the second for shut down at an excessive current level.

Installation

ASP switches can be located in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. Mounting can be made in any position to a panel or a DIN rail, or hung directly on wires with a wire tie. Keep at least one inch clearance between sensor and other magnetic devices. Run wire to be monitored through aperture (opening) in the sensor. For power supply and output wiring, use 22-14 AWG copper wire and tighten terminals to 5-7 inch-pounds torque. Be sure the output load requirement does not exceed the contact rating.

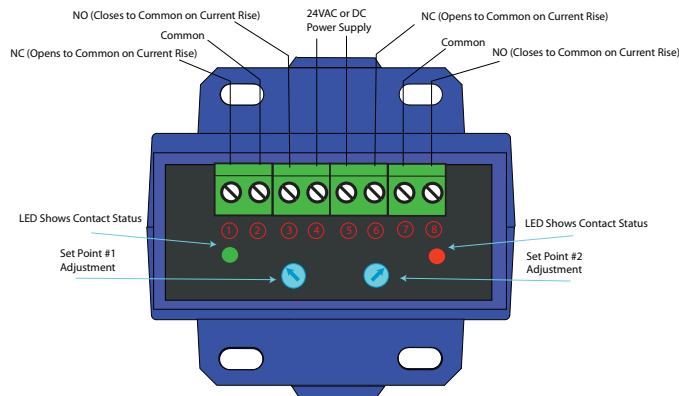
Connect power supply to terminals 4 and 5 on the sensor. Check to ensure supply power matches voltage and type required by sensor. Once powered, the LEDs on the unit should indicate unit is on by glowing green.

Connect output wiring to be controlled by Setpoint #1 to terminals 1-2 for the normally closed (opens on current rise) or 2-3 for the normally open (closes on current rise) contact.

Connect output wiring to be controlled by Setpoint #2 to terminals 6-7 for the normally closed (opens on current rise) or 7-8 for the normally open (closes on current rise) contact.

Note that if unit is powered and monitored conductor has current flow, the output contacts may change state depending on setpoint adjustment settings.

Power Supply and Output Wiring



Setpoint Adjustment

ASP Series setpoints are adjusted through two 3/4-turn pots which have arrow indication of the selected value. The arrow points to the current magnitude which will cause the output relay(s) to energize or change state. Possible to control one DC circuit and one AC circuit.

Typical Adjustment

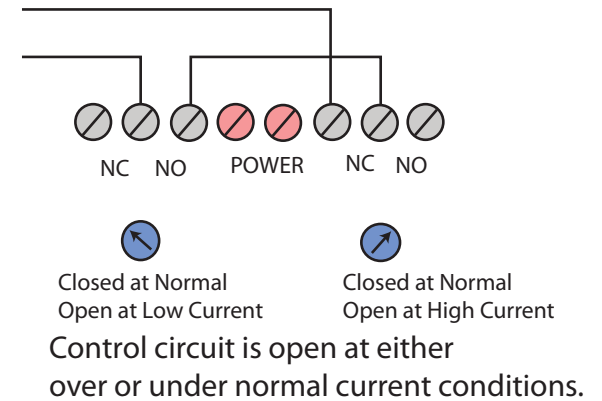
1. Turn the **setpoint** adjustment pot #1 to the point where you want the first relay to change state.
2. Turn the **setpoint** adjustment pot #2 to the point where you want the second relay to change state.
3. Thread the load conductor(s) through the sensing aperture. If multiple conductors are used to power the monitored load, each conductor must be connected to the same phase.
4. Energize the sensor with 22-26 volts, AC or DC.
5. Both indicating LEDs will be illuminated Green.
6. After energizing the monitored load, if the current used is over the adjustment level of Setpoint #1 the LED will change to Amber to indicate that the output relay has changed state.
7. When the monitored current exceeds the level of Setpoint #2, that LED will also change from Green to Amber.
8. The most common use would be to adjust Setpoint #1 to be in the tripped condition during normal load operation, reverting to "normal" if current falls below that point; and to have Setpoint #2 adjusted so it is "untripped during normal operation, and change state in an over current condition.
9. The output contacts are floating, and can be wired in parallel (OR wiring) or in series (AND wiring) for a two wire over/under switch action. See Application Examples.

Trouble Shooting

1. **Sensor is always tripped**
 - A. The setpoints 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 setpoints 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. $\text{Sensed Amps} = (\text{Actual Amps}) \times (\text{Number of Loops})$. 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).*
3. **LEDs do not illuminate**
 - A. Power supply is not energized.
 - B. Power supplied is less than 22 or higher than 26 volts.

Application Examples

Series Over/Under Current Window (AND wiring)



Parallel Connection Current Alarm (OR wiring)

