

Application Examples

- Overload protection on cranes and hoists.
- Underload detection on conveyors. Conveyor belt slip-tear alarm or simple load control of conveyors.
- Simple and inexpensive load control on small industrial or agricultural installations.
- Monitoring and controlling loads on generator sets.
- Detection of blocked extruders on plastic moulding machines.
- Overload detection of single phase motors.
- Lift door control. Quickly responds to lift doors closing on foreign objects.

Features

- Failsafe feature.
- Internal shunt for direct in-line current sensing (AC or DC).
- Adjustable response delay of 0,1 to 10 seconds on SP-103.
- 1A or 5A, AC or DC input range (programmable).
- Direct interface with conventional current transformers.
- Trip point adjustable on percentage scale.
- Hysteresis adjustable 5-30%.
- Programmable for overload or underload detection.
- Latching on overload or underload (programmable).
- Start-up delay.
- 10A SPDT relay output.



ORDERING CODE

TYPE	SUPPLY VOLTAGE	AC/DC	RELAY CONTACTS
SP 100	230 V	AC	SPDT

Description of Operation

The SP-100 and SP-103 are precision current monitors for both AC and DC applications. They can be programmed for either overload sensing or underload sensing. The internal shunt facilitates direct connection into a current loop up to 5A (continuous).

AC Monitoring: The units interface readily with conventional current transformers (1A or 5A secondary rating). For applications with current-to-voltage transformers refer to SP-101.

DC Monitoring: The units are polarity sensitive and will not respond to current in the reverse direction. To monitor currents in excess of 5ADC, refer to the SP-101.

Start-up Delay: When power is applied to the module, the relay energises immediately, ignoring abnormal load conditions experienced during start-up.

Overload Sensing: When programmed for overload sensing, the relay will de-energise if the current exceeds the set limit. The relay will switch on again if the current drops by a certain percentage below the set overload threshold. This percentage hysteresis is adjustable.

Underload Sensing: When programmed for minimum load sensing, the relay will de-energise if the current drops below the set limit. The relay will switch on again if the current rises by a certain percentage above the set underload threshold. This percentage hysteresis is adjustable.

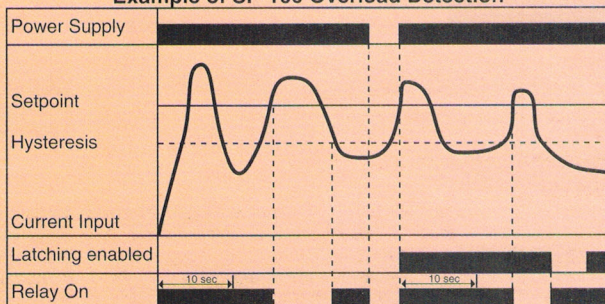
Hysteresis: Hysteresis represents the difference between the tripping point and recovery point of the unit. The hysteresis can be adjusted as a percentage of set-point to prevent relay chatter or hunting when the load current fluctuates around the set limit.

Latching: When latching is armed, the relay will not recover from a tripped condition, but will remain de-energised until reset. The unit can be reset by either breaking and re-applying power supply to the unit or by momentarily disabling the latching circuit (eg. push-to-open button). During the start-up delay, the latching circuit is disabled automatically (see wiring and connection diagram).

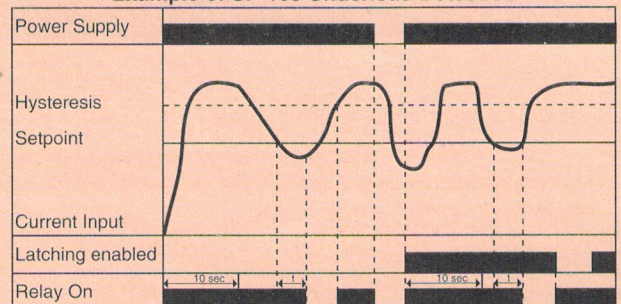
Adjustable Response (SP-103): Response delay can be adjusted from 0,1 to 10 seconds. When a trip condition is detected, the relay will only de-energise after the set response time (a delayed recovery is also available on special order).

Operational Diagrams

Example of SP-100 Overload Detection



Example of SP-103 Underload Detection



$t =$ response delay