



Application Examples

- Level control used in conjunction with a 4-20mA transducer.
- Monitoring and protection of 4-20mA current loops.
- Synchronising the "take up" and "roll-off" rollers for tension control on paper machines.
- DC current control for electroplating processes.
- Cable fault detection (short or open circuit).
- Charge failure or overcharge detection on battery chargers.

Features

- Failsafe feature.
- Combined overload and underload detection.
- Internal shunt for direct in-line sensing of currents up to 200mA DC.
- Adjustable response delay from 1 to 10 seconds on SP-124.
- Direct interface with DC shunt resistors.
- Separate adjustment of overload and underload thresholds.
- Latching in both modes.
- Range selector switch for 1 mA, 20 mA, 200 mA, 60 mV and 150 mV.
- LED indication for overload, underload and normal load.
- Start-up delay.
- 10A SPDT relay output.

ORDERING CODE

TYPE	SUPPLY VOLTAGE	AC/DC	RELAY CONTACTS
SP 121	230 V	AC	SPDT

Description of Operation

The SP-121 and SP-124 are precision current window comparators for DC applications. They respond to both under-current and over-current conditions. The internal shunt facilitates direct interconnection into a current loop up to 200mA. The units can also be used in conjunction with external DC shunt resistors (60 mV or 150 mV) for high current applications.

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

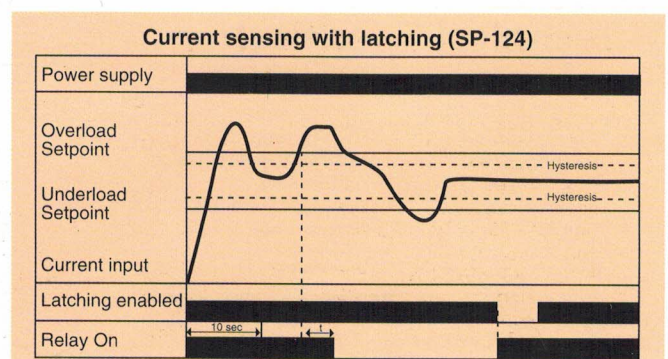
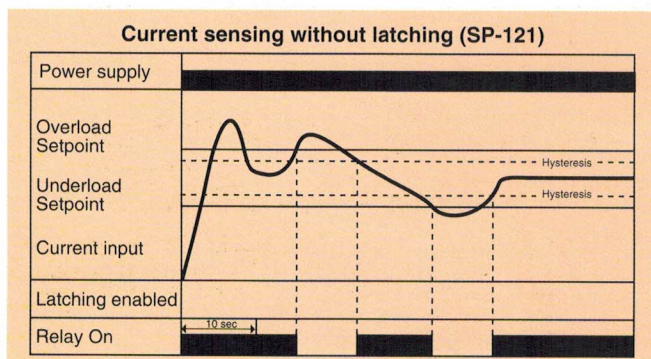
Load Sensing: The relay remains energised when the current is maintained between the set overload and underload limits. If the current rises above the set overload limit or drops below the set underload limit, the relay de-energises and the appropriate LED indicates "overload" or "underload" respectively. The relay re-energises again if the current recovers to within the set overload/underload window.

Hysteresis: Hysteresis represents the difference between the tripping point and recovery point of the unit. The hysteresis is fixed to 2% to prevent relay chatter when the load 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 appropriate LED will indicate the type of fault responsible for the tripped condition. The unit can be reset by either breaking and reapplying the 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.

Adjustable Response (SP-124): Response delay can be adjusted from 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



t = reponse delay