

Clips onto standard 35mm 'Top Hat' DIN rail



Plug and Socket connectors for easy wiring.

The **Micha** Theft Loop Monitor provides a simple method of securing PV modules against unauthorised removal. A simple single-core cable, looped through unused mounting holes in the module frames, has both ends terminated at the monitor. Any attempt to remove the PV module will require breaking the loop, thus triggering a siren or signalling other equipment via a volt-free contact.

The monitor features an Over-Ride switch, which short circuits the external loop, and can be used to disable the siren output during installation, or to silence the siren in the event of an acknowledged module theft.

The monitor is available in nominal 24VDC and 48VDC versions.

**Operation.**

During normal operation, a fused supply is fed out through a loop and the return feed energises a double-pole relay. In the event the loop is broken, the relay de-energises, and one contact connects a fused supply to the siren output.

In non-latching mode, the second relay contact can be used as a volt-free signal for connection to other monitoring equipment (SCADA etc.)

In latching mode, the second relay contact is used to maintain an alarm condition in the event the external loop is broken and then reconnected.

*(Refer to the wiring diagrams on the second page.)*

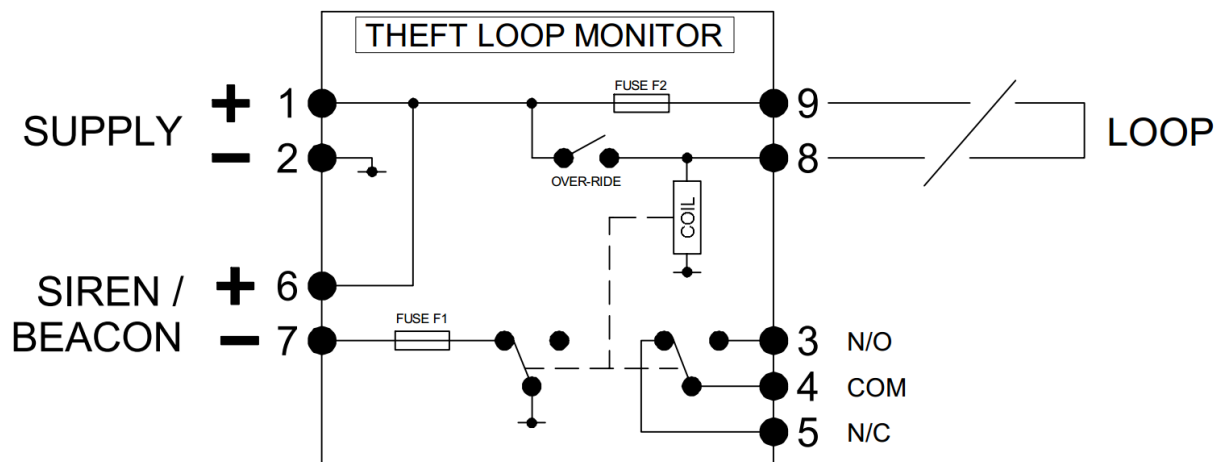
The monitor includes three LED's:

- Yellow: Indicates the Over-Ride switch is in use.
- Red: Indicates the external loop has been broken (unless Over-Ride switch is active)
- Green: Indicates the external loop is intact (with or without Over-Ride switch active)

**Specifications:**

24VDC version:	Part Number: 102 686
48VDC version:	Part Number: 103 348
Operating Voltage:	24V version: 18VDC to 36VDC 48V version: 36VDC to 72VDC
Operating current (relay energised)	Approx. 400mW at nominal system voltage
Alarm current:	Depends on sounder/beacon module connected; max 0.2A
Dimensions:	68mm(W) x 82mm(H) x 58mm (above mounting plate)   0.09kg
Connectors:	Rising-clamp, plug and socket type; 2.5mm <sup>2</sup> max.
DIN-Rail Housing:	Green UL94V0 flame-retardant PA

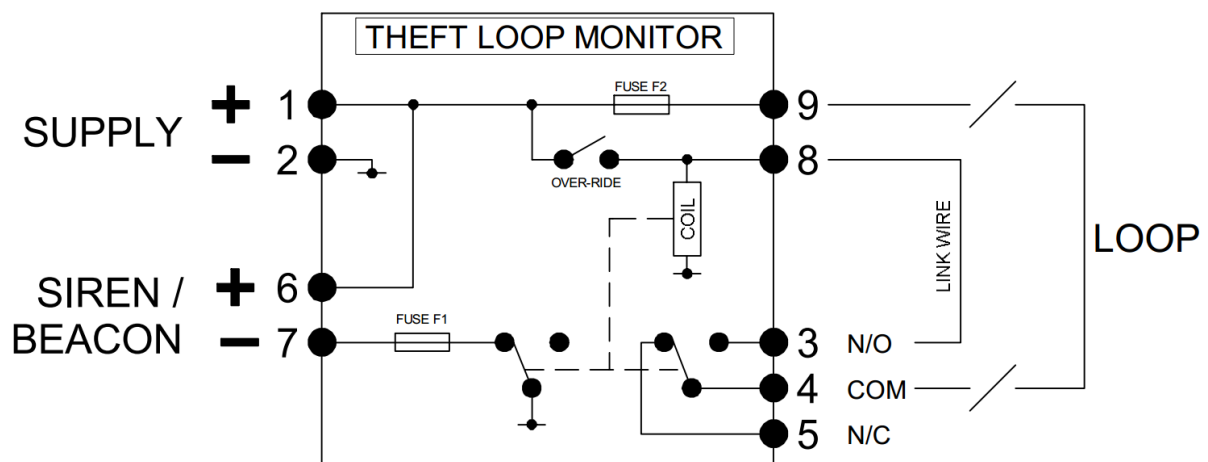
Non-Latching wiring diagram:



*Figure 1: Non-Latching Wiring*

Note that the relay contacts are shown in the de-energised (alarm condition) state. When the loop is intact, and the relay energised, terminals 3 & 4 would appear as a closed contact.

Latching wiring diagram:



*Figure 2: Latched Alarm Wiring*

If a latched alarm is required, the external loop should be wired through the second contact of the relay as shown in Fig 2 above.

When the loop has been successfully wired, momentarily activate the Over-Ride switch. This will energise the relay, and the loop circuit will remain complete for as long as the external loop is unbroken.

Make sure the Over-Ride switch is deactivated for monitoring.

In Latching mode, if the loop is broken, the alarm will trigger, but will not reset with reconnection of the loop until the Over-Ride switch is again activated.