

SC-300

Control Module for Namur Sensors

SLIMLINE

MONITORING RELAYS



ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY	RELAY CONTACTS
SC	300	230V	AC	SP

SEE PAGE 94 FOR ORDERING OPTIONS

Features

- Failsafe feature.
- Direct interfaces with Namur two-wire proximity sensors (inductive, capacitive and opto-electronic).
- Sensor cable fault detection with LED indication (open circuit, short circuit).
- Proximity switching in hostile supply voltage environments (transients, surges).
- High reliability proximity switching compared to limit switches.
- Cost efficient sensor replacement.
- Cost efficient module replacement.
- 2 Wire sensor installation.
- Impervious to interference between sensor and amplifier over long cable runs.
- Low power sensor signal to DIN 19234.
- Control module available in voltages from 12V DC to 525V AC.
- 10A SPDT single pole or 2 x 5A double pole relay outputs.

Description of Operation

The **SC-300** is a control module for NAMUR sensors (DIN 19234). It converts the low current signal of the sensor into a relay switching action. Monitoring the current flow to the sensor, it will detect cable faults such as open circuits or short circuit conditions. The unit can be configured for target response or space response, thus providing failsafe operation. A LED indicates whenever a target is registered by the sensor.

Target Response: If the sensor is connected to the target response input (pin 5), the relay will energise when the sensor registers a target. When no target is sensed, the relay will de-energise.

Space Response: If the sensor is wired to the space response input (pin 7), the relay will de-energise when the sensor registers a target. When no target is sensed, the relay will energise.

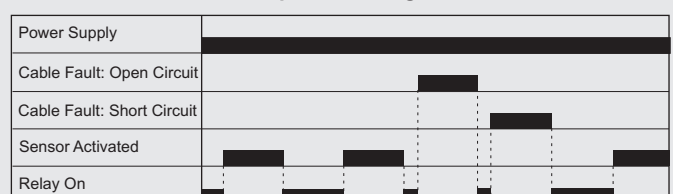
Cable Fault: When cable fault occurs on the sensor line, the relay de-energise and LED 3 on the module will indicate a fault condition. When the cable fault is an open circuit (cable fracture), both the "cable fault" LED and the "input sensing" LED will illuminate. If the fault is a short circuit in the cable, only the "cable fault" LED will illuminate.

Operational Diagrams

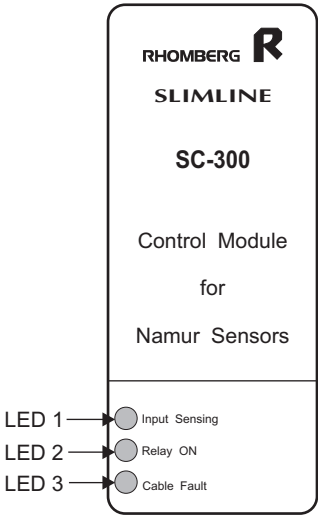
Target Sensing



Space Sensing



Description of Controls



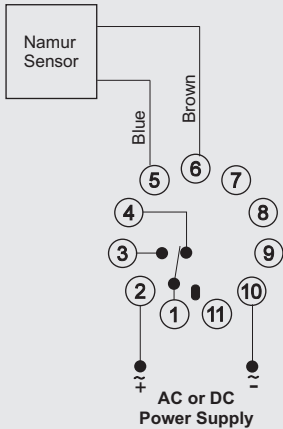
- LED 1: The LED marked “**Input Sensing**” illuminates when the namur sensor detects a target. It also illuminates if the sensor is disconnected or the sensor leads are severed (open circuit).
- LED 2: The LED marked “**Relay ON**” illuminates when the relay is energised .
- LED 3: The LED marked “**Cable Fault**” illuminates when:
- a short circuit occurs on the sensor leads.
 - an open circuit occurs on the sensor leads or the sensor is disconnected.
- Note:** An **Open Circuit** condition will cause both LED 1 as well as LED 3 to illuminate. A **Short Circuit** condition will cause only LED 3 to illuminate.

Wiring and Connection

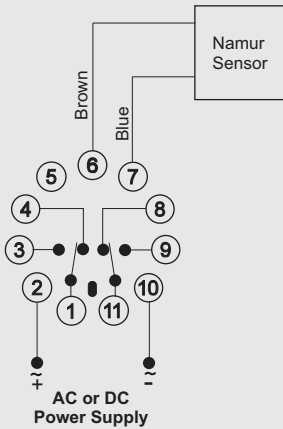
Power Supply	
Phase/Positive	2
Neutral/Negative	10

Relay Contacts SPDT	
Normally open	1+3
Normally closed	1+4
Relay Contacts DPDT	
Normally open	1+3
Normally closed	1+4
Normally open	11+9
Normally closed	11+8

NAMUR Sensor Input	
Target sensing:	Connect the brown wire to pin 6. Connect the blue wire to pin 5.
Space sensing:	Connect the brown wire to pin 6. Connect the blue wire to pin 7.



APPLICATION 1
Target sensing



APPLICATION 2
Space sensing

Note: For further information on our NAMUR sensors refer to our Detector catalogue.

Technical Specifications

POWER SUPPLY	
AC:	Supply voltage: 12, 24, 110, 230, 400, 415, 525V ±15% Isolation (sensor input to power supply): 2kV Power consumption: 3VA (approx.) 6VA for 415, 525V (approx.)
DC:	Supply voltage: 10-30V, 48, 60, 110V ±15% Isolation: no galvanic isolation Power consumption: 100mA (10-30V), 30mA for higher ranges

SENSOR INPUT	
Type:	NAMUR (DIN 19234)
Maximum Sensing Speed:	25Hz
Short Circuit Current:	20mA DC
Open circuit voltage:	8,2V DC