PRODUCT INFORMATION

TRAFFIC MANAGEMENT ACCESSORY

SERIAL RELAY OPTION (SRO)

1 CONTENT

2   USER SAFETY WARNING

Please read the entire document carefully before using the device.

INSTALLATION

Please pay attention to the details below before installing and connecting the device:

- Only use provided or approved equipment for the operation.
- Only skilled and instructed persons shall install and connect the device.
- All connectors are pin-coded and fit in only one position.
- Be cautious when using the device on or around active roadways and pay attention to moving traffic.
- Make sure that test procedures are in accordance with local safety policies and procedures as well as company practices.

OPERATION

Using an SRO does not influence the sensor performance.

Please note that the device is not waterproof. Take care of proper rain coverage when working outside. Do not operate the device if the device itself or any cables are damaged.

Do not dispose electrical and electronic equipment in household trash.

TECHNICAL SERVICE

Only use provided or approved equipment for operation.

Do not attempt to service or repair this device:

- No user-maintainable parts are contained in the device.
- To avoid electrical shock, do not remove or open the cover.
- Unauthorized opening will void all warranties.
- smartmicro is not liable for any damages or harms caused by unauthorized attempts to open or repair the device.

3   SERIAL RELAY OPTION FOR UMRR-11 & TRUGRD SENSORS

The Serial Relay Option (SRO) is an add-on module to the standard smartmicro sensor. It can be attached to the back of the sensor. The SRO offers 8 hardware relays and surge protection in addition to the sensors CAN or RS485 or Ethernet communication interface.

With the SRO, you can implement your relay-based applications without the need for an additional controller unit.

3.1   ATTACHMENT TO SENSOR

The SRO is attached to the sensor using the threaded holes on the **back** of the sensor. Please consider this in case you design your own bracket or integrate the sensor in another housing.

Note: The threaded holes on the sides of the sensor are intended for the attachment of the sensor to the bracket, not the SRO. The following picture explains the position of all threaded holes available on the rear side of the sensor.
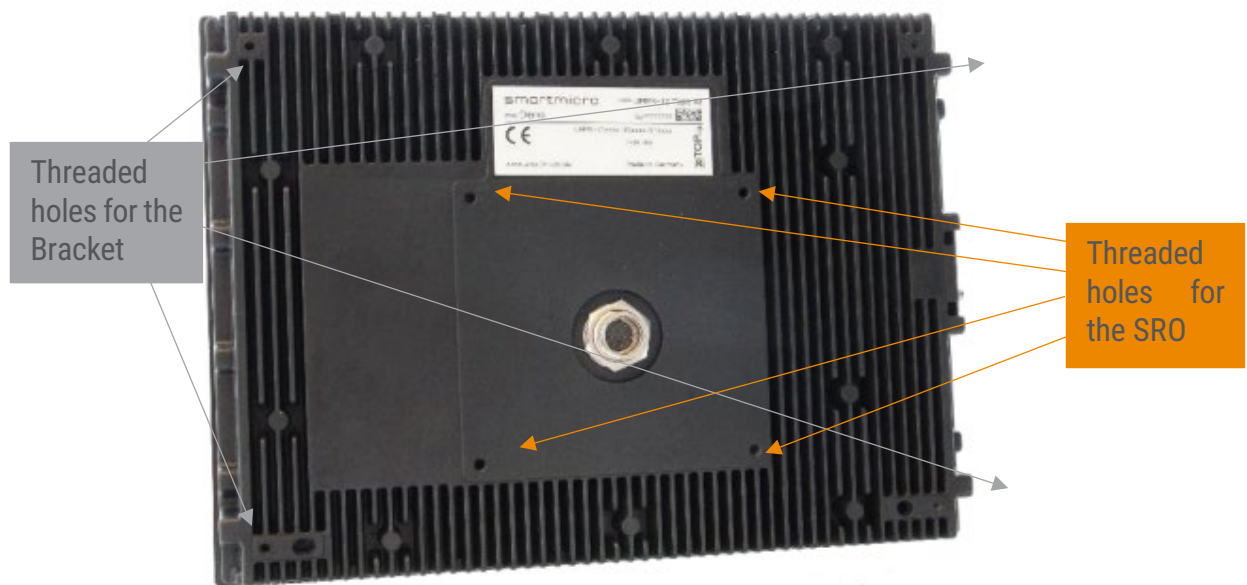

Figure 1: Threaded holes on the rear side of the sensor

3.2 FEATURES

- Works with standard UMRR-11 and TRUGRD sensors[1]
- No additional controller needed
- 8 configurable solid-state relays, normally closed (NC)[2]
- Provides an easy-to-use universal electrical interface through a terminal block.
- Field installable. Just insert cable, tighten and tighten the four captive screws.
- Surge protection on power, communication, and relay lines
- Robust: The SRO-01xxxx is watertight and almost unbreakable.
- Integrates into smartmicro's Brackets.

3.3 SRO SPECIFICATIONS

Parameter	Details
Mechanical	
Weight	205 g[3]	7.23 oz excluding cable
Height	79.8 mm	31.42 in excluding cable outlet ca. 116 mm	4.57 in including cable outlet
Width	84 mm	3.31 in
Depth	29 mm	1.14 in
Supported Cables	
Supported cable diameter	9 - 13 mm	0.35 – 0.51 in (smaller diameter available on request)
Supported conductor cross section range	$0.25 \ mm^2 – 0.75 \ mm^2$ AWG24 - AWG20
Others	
Surge protection of power lines	Compliant to IEC 61000-4-2 (ESD) and IEC 61000-4-4, Class 4 (fast transients)

[1] UMRR-11 is supported for units delivered starting May 2018
[2] Normally Open available on request.
[3] Additional weight to the smartmicro sensor.

Parameter	Details
Surge protection of data lines and relay channels	Compliant to IEC 61000-4-2 (ESD) and IEC 61000-4-4, Class 4 (fast transients)
Relay Voltage Band	-36...+36 V
Max. Switching Current	1000 mA[4]
Ambient Temperature	-40°C ... +85°C	-40...+185°F
IP	67

[4] Load current at 25°C and a switching cycle of 1 second

3.4 PINOUT

The pinout is printed on the SRO board. The signal names in the upper right directly correspond to the terminal blocks in the lower left.

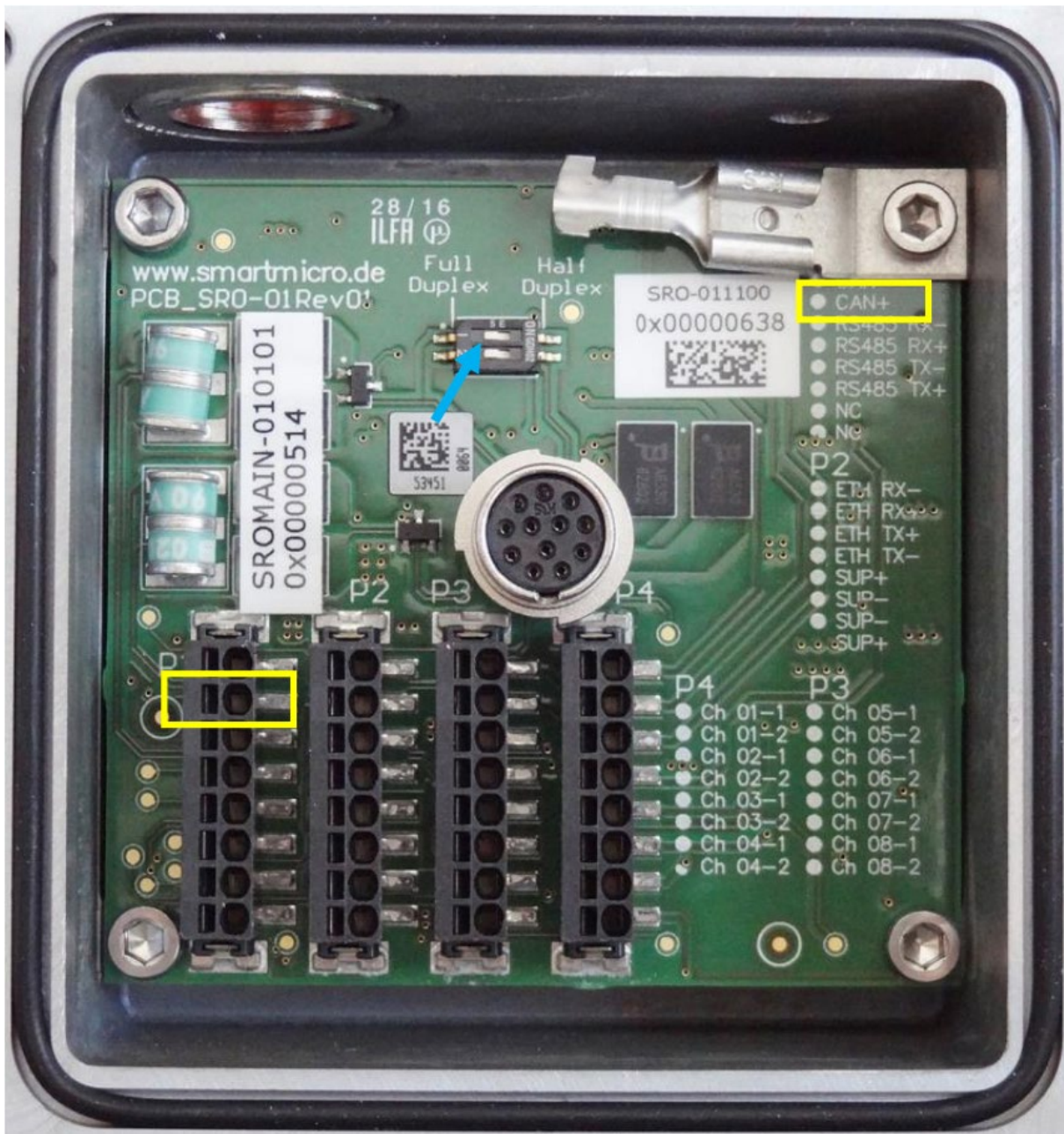Example: The yellow boxes in Figure 5 indicate the terminal block for "CAN High" signal.

Figure 5: SRO-01xxxx pinout and jumpers

3.5 VARIANTS

The following SRO variants are available:

SRO Variant	Supported Sensor
SRO-01**10**xx	UMRR-11 Type 44 UMRR-11 Type 45
SRO-01**11**xx	TRURGD TRUGRD Stream TRUGRD LR

Note: the variant can be changed by the user by rotation of the PCB inside the housing by 180 degrees.

3.6 DIP SWITCH

Refer to Figure 5 to find the 2 blue marked dip switches.

The two dip switches are bridges between pins 3 and 5 / pins 4 and 6 of the terminal block. Those bridges must be open for full duplex RS485 operation and must be closed for half-duplex RS485.

Please note dip switches are set for full duplex RS485 as delivered. Change the switches to "half duplex" for half-duplex RS485 operation.

UMRR-11 as well as TRUGRD sensors are operating in full duplex mode.

4 FIELD CABLE FOR SRO

smartmicro approved unique cable type of Medikabel, manufacturer part no. 9DB281231C01 for use with SRO and SRO2. For more details, please contact info@smartmicro.de.

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