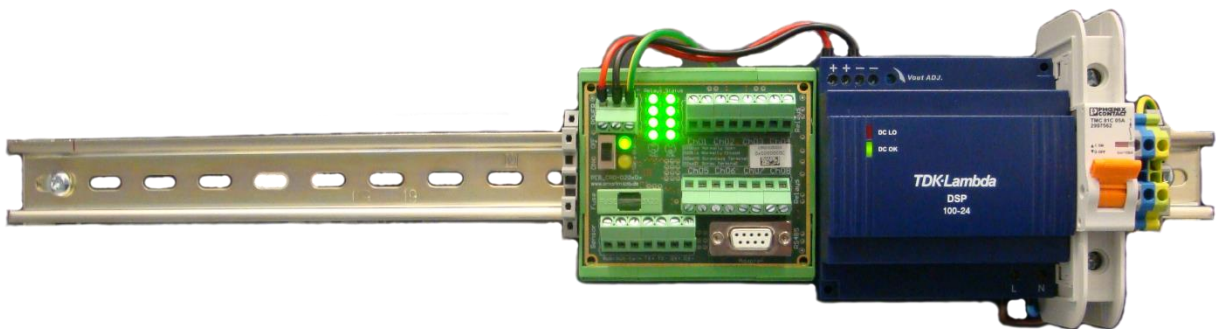# PRODUCT INFORMATION

## TRAFFIC MANAGEMENT ACCESSORY

Cabinet Relay Option (CRO)



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# CONTENT

# 1   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 a Cabinet Relay Option (CRO) 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.

## 2    PRODUCT SPECIFICATIONS

The smartmicro Cabinet Relay Option (CRO) is a hardware module that extends a smartmicro radar sensor by eight hardware relays via the standard RS485 communication interface.

It is suitable for the following traffic management sensors:

- UMRR-11 Type 44, Type 45 and Type 132
- TRUGRD (UMRR-12 Type 48)

It can be used to implement traffic applications without an additional controller unit being necessary.

The Cabinet Relay Option (CRO) provides both electrical connectors for the cables coming in from the sensor outside the cabinet and multiple stages of electrical surge suppression to protect the cabinet equipment from external surges and noise. This surge protection includes Gas Discharge Tubes (GDTs), Transient Voltage Suppression diodes (TVSs), High-Speed resettable electronic fuses (TBUs) and a replaceable fuse.

The surge protection for power, data and relay signals is designed to be compliant to IEC 61000-4-2 (ESD) and IEC 61000-4-4 (fast transients).

### 2.1    FEATURES AND APPLICATIONS

The Cabinet Relay Option (CRO) has the following features:

- Connector to one sensor cable
- Connector to power supply
- Connector for RS485 communication to PC
- Eight configurable solid-state relays per sensor (normally-closed (NC) contacts)
- Surge protection on power, communication and relay lines

## 2.2  SYSTEM LAYOUT

### FOR ONE SENSOR

The CRO Base (IDX: 01.1013.0000) consists of a rail, one CRO Module (IDX: 05.1017.0000), power supply, circuit breaker, terminal blocks and end brackets. It comes with power signals pre-wired from the factory.
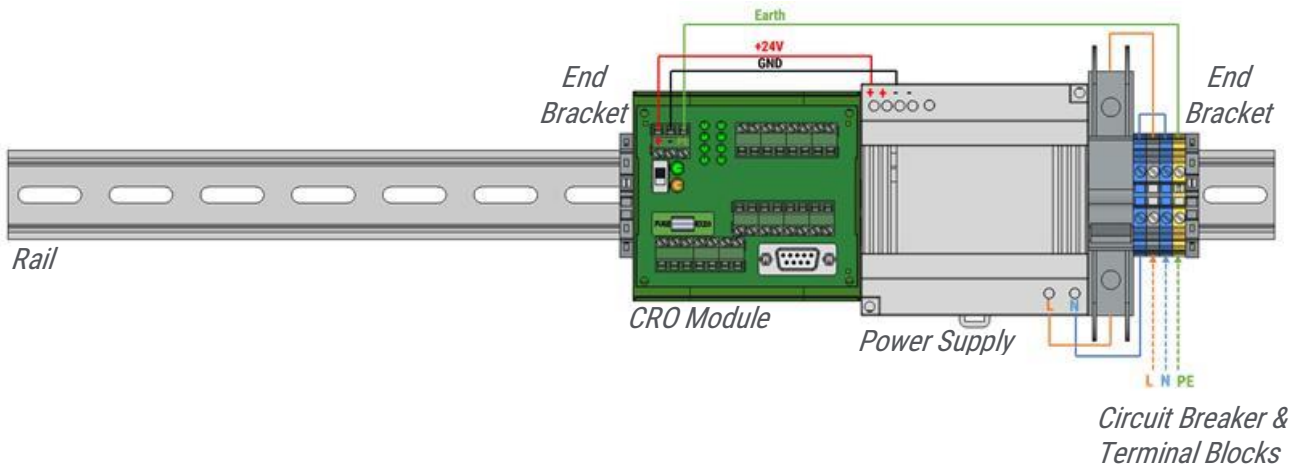


### FOR MULTIPLE SENSORS

For the use of two, three or four sensors, the CRO Base can be extended with the respective number of CRO Modules. Please note that only the first CRO Module is pre-wired.
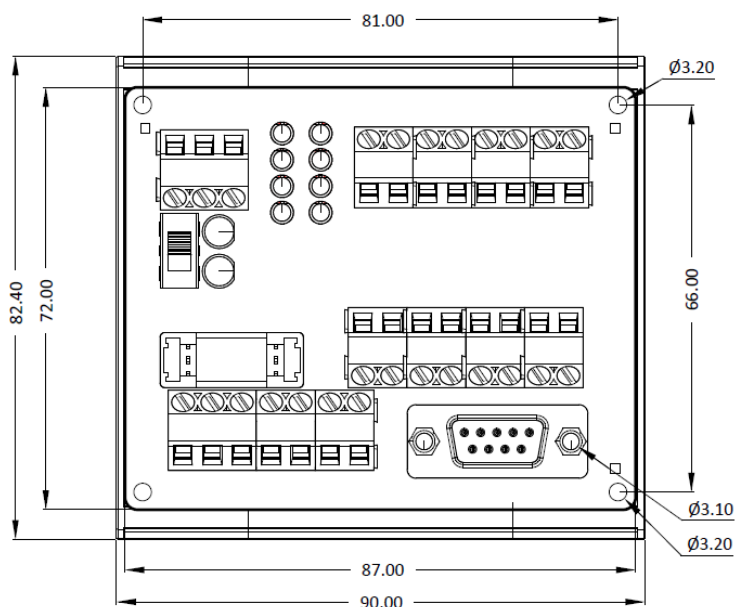
- CRO 2: for two sensors as shown below (IDX: 01.1014.0000)
- CRO 3: for three sensors (IDX: 01.1015.0000)
- CRO 4: for four sensors (IDX: 01.1016.0000)
  **Please note:** The fourth CRO Module for this option needs to be placed on an additional rail, which is included in the IDX.
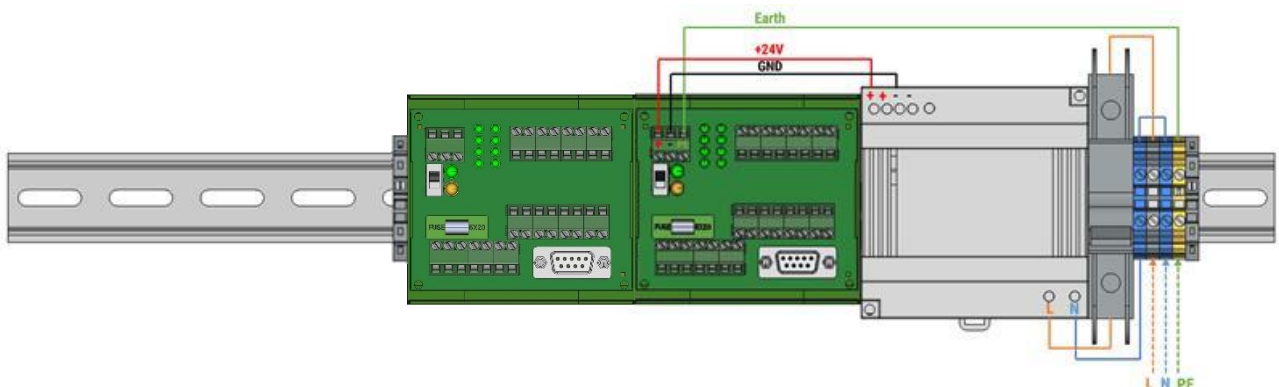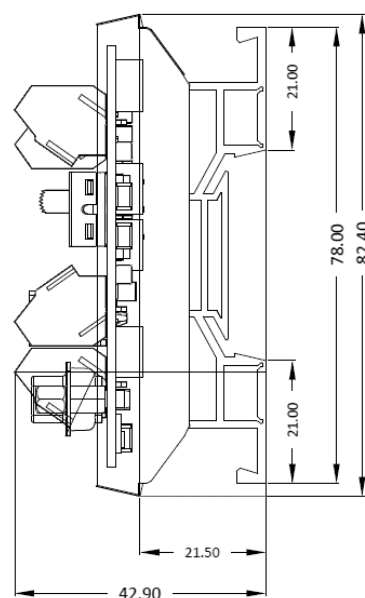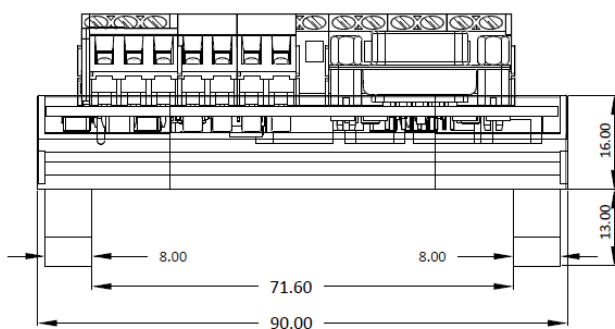
## 2.3 PRODUCT DIMENSIONS

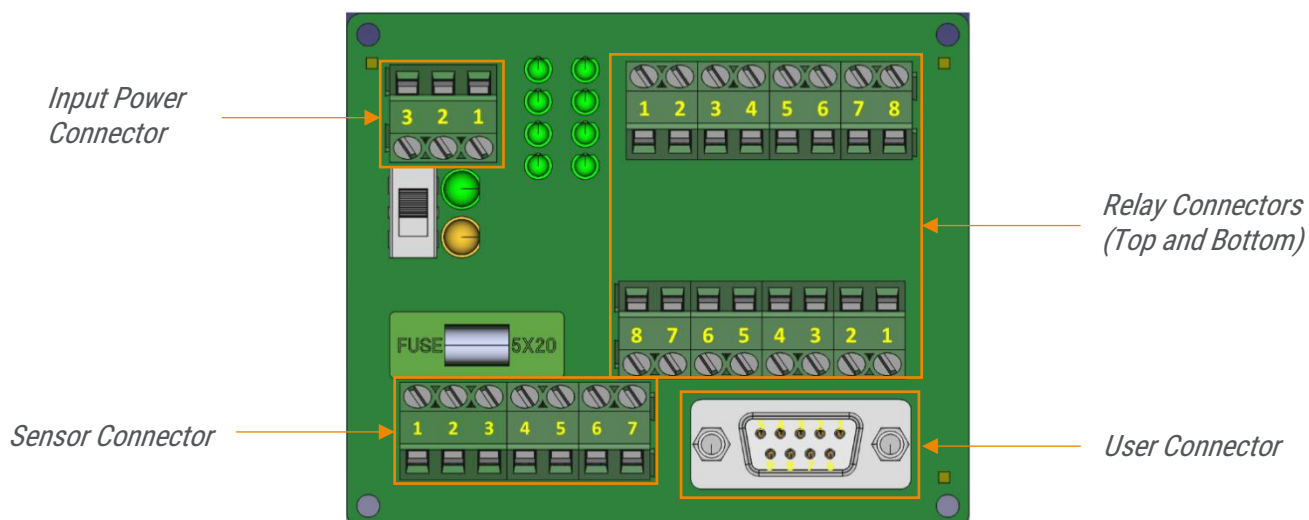All values are given in mm.



*Product Front Side*



*Product Right Side*



*Product Top Side*

## 2.4    PRODUCT CONNECTORS

Each Cabinet Relay Option (CRO) Module has connectors for input power, a sensor, relays and a user connector.



Sensor connector pin out model giving pin descriptions:

| Connector | Pin No. | Function | |
|---|---|---|---|
| Input Power Connector | 1 | Cabinet Earth | |
| | 2 | Negative Power Supply (GND) | |
| | 3 | Positive Power Supply (VCC) | |
| Sensor Connector | 1 | Sensor VCC | |
| | 2 | Sensor GND | |
| | 3 | Shield of the cable | |
| | 4 | Sensor RS485 TX H | |
| | 5 | Sensor RS485 TX L | |
| | 6 | Sensor RS485 RX H | |
| | 7 | Sensor RS485 RX L | |
| Relay Connectors | 1 | Top: Channel 01 | Bottom: Channel 08 |
| | 2 | Top: Channel 01 | Bottom: Channel 08 |
| | 3 | Top: Channel 02 | Bottom: Channel 07 |
| | 4 | Top: Channel 02 | Bottom: Channel 07 |
| | 5 | Top: Channel 03 | Bottom: Channel 06 |
| | 6 | Top: Channel 03 | Bottom: Channel 06 |
| | 7 | Top: Channel 04 | Bottom: Channel 05 |
| | 8 | Top: Channel 04 | Bottom: Channel 05 |

| User Connector | 1 | Adapter RS485 TX L |
|---|---|---|
|  | 2 | Adapter RS485 TX H |
|  | 3 | Adapter RS485 RX H |
|  | 4 | Adapter RS485 RX L |
|  | 5 | Adapter RS485 GND |
|  | 6 | NC. |
|  | 7 | NC. |
|  | 8 | NC. |
|  | 9 | NC. |

## 3  CHARACTERISTICS

| Parameter | | Typical Values (min… max.) |
|---|---|---|
| Temperature | | (-40…+85°C) \| (-40…+185°F) |
| Line Voltage | | 110 or 220V |
| Supply Voltage | | 24V |
| Relay Voltage | | (0…32V) |
| Relay Current | | (max. 500mA) |
| Outline Dimensions | Height | 82.4mm \| 3.2in |
|  | Width | 90mm \| 3.5in |
|  | Depth | 42.9mm \| 1.7in |
| Weight | | 119g \| 4.2oz |
| Supported Cables | | AWG 24-12 |
| Surge Protection of Power Lines, Data Lines & Relay Channels | | Compliant to IEC 61000-4-2 (ESD) and IEC 61000-4-4 (fast transients) |

## 4  COMPLIANCES

The Cabinet Relay Option (CRO) complies with the following regulations:

- IEC 61000-4-2 (ESD)
- IEC 61000-4-4 (fast transients)

## 5 LEGAL DISCLAIMER NOTICE

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