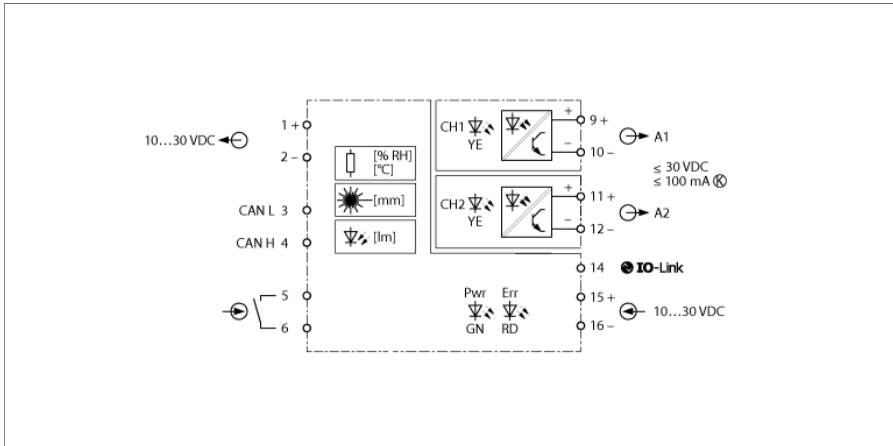


## Cabinet Guard

### Internal and External Sensors

### IM12-CCM03-MTIS-3T-IOLC/24V



The cabinet guard IM12-CCM03-MTIS-3T-IOLC/24V monitors preset environmental limits inside the control cabinet. The environmental conditions are detected by a humidity or temperature sensor, a brightness sensor and a triangulation sensor that detects an incorrectly closed cabinet door. When exceeding or falling below the set limits an error message appears on the LED display or is reported via the switching outputs and the IO-Link interface to the host control system.

The device is supplied with 24 VDC

The teaching is done manually on the device; extended parameterization is carried out via the HART interface.

The device is equipped with 8 screw terminals for connecting the power supply and switching outputs and can be mounted on a DIN rail acc. to EN 60715.

Furthermore, the device has 4 front-mounted LEDs to display the operating status (green), the error message (red) and the states of the switching outputs (2 × yellow).

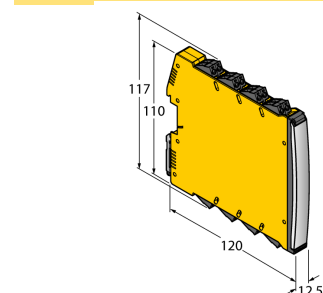
- Two potential-free contacts
- Temperature detection
- Moisture detection
- Detection of distance to cabinet door
- IO-Link parameterizable
- Connection of two devices via CAN bus
- Galvanic isolation of outputs (A1/A2)
- Removable screw terminals

# Cabinet Guard

## Internal and External Sensors

### IM12-CCM03-MTIS-3T-IOLC/24V

#### Dimensions



|                                        |                                                                                                                                     |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type designation</b>                | IM12-CCM03-MTIS-3T-IOLC/24V                                                                                                         |
| Ident-No.                              | 7570100                                                                                                                             |
| <b>Nominal voltage</b>                 | 24 VDC                                                                                                                              |
| Operating voltage range                | 10...30 VDC                                                                                                                         |
| Power consumption                      | ≤ 0.5 W                                                                                                                             |
| <b>Installed sensors CCM</b>           | Triangulation sensor 40...500 mm,<br>Humidity sensor 10...90% rel. hum.,<br>Brightness sensor<br>Temperature sensor -25 °C...+70 °C |
| Reference temperature                  | 23 °C                                                                                                                               |
| <b>Semiconductor output circuit(s)</b> |                                                                                                                                     |
| Output circuits (digital)              | 2 x transistor (potential-free) NO/NC                                                                                               |
| Switching voltage                      | ≤ 30 VDC                                                                                                                            |
| Switching current per output           | ≤ 0.1 A                                                                                                                             |
| Voltage drop                           | ≤ 1 V                                                                                                                               |
| <b>Moisture Sensor</b>                 |                                                                                                                                     |
| Accuracy max.                          | +/- 4.5 % RF in the range 10...90%                                                                                                  |
| Repeat accuracy                        | 0.2 % RF                                                                                                                            |
| <b>Temperature Sensor</b>              |                                                                                                                                     |
| Max. accuracy                          | +/- 2 °C                                                                                                                            |
| Repeat accuracy                        | 0.16 °C                                                                                                                             |
| <b>Distance Sensor</b>                 |                                                                                                                                     |
| Beam angle                             | 6 °                                                                                                                                 |
| Measuring range                        | 40...500 mm                                                                                                                         |
| Accuracy                               | +/-50 mm In the range of ≤ 500 mm                                                                                                   |
| Temperature coefficient                | +/- 30 mm in the range of ≤ 500 mm at -25°C ≤ T ≤ 70°C<br>+/- 15 mm in the range of ≤ 500 mm at 0 °C ≤ T ≤ 50 °C                    |
| Max. linearity error                   | ≤ 2 % of full scale                                                                                                                 |
| <b>Indication</b>                      |                                                                                                                                     |
| Operational readiness                  | green                                                                                                                               |
| Switching state                        | Yellow                                                                                                                              |
| Error indication                       | red                                                                                                                                 |

# Cabinet Guard

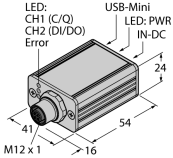
## Internal and External Sensors

### IM12-CCM03-MTIS-3T-IOLC/24V

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------|------------------|----|----------------|--|-----------------------------------|--|--|----------|--|------------|-------|--|--|--------------|--|---------------|-------------|--|--|-----------------|--|-----------------|--|--------------|----------|--|--|---------------|-----|--|--|--------------|--|--------------|--|--------------|--|--------------|--|--------------|--|--------------|----------|--|--|---------|
| <b>Protection class</b>           | IP20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Flammability class acc. to UL 94  | V-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Ambient temperature               | -25...+70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Storage temperature               | -25...+80 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Relative humidity                 | ≤ 95 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Dimensions                        | 120 x 12.5 x 117 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Weight                            | 165 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Mounting instructions             | DIN rail (NS35)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Housing material                  | Polycarbonate/ABS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Electrical connection             | Removable screw clamp terminals, 2-pin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Terminal cross-section            | 0.2...2.5 mm <sup>2</sup> (24 ... 13 AWG)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Tightening torque                 | 0.5 Nm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Tightening torque                 | 4.43 LBS-Inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Environmental conditions          | <table> <tr> <td>Operating altitude</td><td>Up to 2000 m above sea level</td></tr> <tr> <td>Pollution degree</td><td>II</td></tr> <tr> <td>Standards used</td><td></td></tr> <tr> <td>Voltage resistance and insulation</td><td></td></tr> <tr> <td></td><td>EN 50178</td></tr> <tr> <td></td><td>EN 61010-1</td></tr> <tr> <td>Shock</td><td></td></tr> <tr> <td></td><td>EN 60068-2-6</td></tr> <tr> <td></td><td>EN 60068-2-27</td></tr> <tr> <td>Temperature</td><td></td></tr> <tr> <td></td><td>EN 60068-2-1 Ad</td></tr> <tr> <td></td><td>EN 60068-2-2 Bd</td></tr> <tr> <td></td><td>EN 60068-2-1</td></tr> <tr> <td>Humidity</td><td></td></tr> <tr> <td></td><td>EN 60068-2-38</td></tr> <tr> <td>EMC</td><td></td></tr> <tr> <td></td><td>EN 61000-4-2</td></tr> <tr> <td></td><td>EN 61000-4-3</td></tr> <tr> <td></td><td>EN 61000-4-4</td></tr> <tr> <td></td><td>EN 61000-4-5</td></tr> <tr> <td></td><td>EN 61000-4-6</td></tr> <tr> <td></td><td>EN 61000-4-8</td></tr> <tr> <td>Emission</td><td></td></tr> <tr> <td></td><td>CISPR16</td></tr> </table> | Operating altitude | Up to 2000 m above sea level | Pollution degree | II | Standards used |  | Voltage resistance and insulation |  |  | EN 50178 |  | EN 61010-1 | Shock |  |  | EN 60068-2-6 |  | EN 60068-2-27 | Temperature |  |  | EN 60068-2-1 Ad |  | EN 60068-2-2 Bd |  | EN 60068-2-1 | Humidity |  |  | EN 60068-2-38 | EMC |  |  | EN 61000-4-2 |  | EN 61000-4-3 |  | EN 61000-4-4 |  | EN 61000-4-5 |  | EN 61000-4-6 |  | EN 61000-4-8 | Emission |  |  | CISPR16 |
| Operating altitude                | Up to 2000 m above sea level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Pollution degree                  | II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Standards used                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Voltage resistance and insulation |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 50178                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61010-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Shock                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Temperature                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-1 Ad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-2 Bd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Humidity                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 60068-2-38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| EMC                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | EN 61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
| Emission                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |
|                                   | CISPR16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                              |                  |    |                |  |                                   |  |  |          |  |            |       |  |  |              |  |               |             |  |  |                 |  |                 |  |              |          |  |  |               |     |  |  |              |  |              |  |              |  |              |  |              |  |              |          |  |  |         |

**Cabinet Guard**  
**Internal and External Sensors**  
**IM12-CCM03-MTIS-3T-IOLC/24V**

**Accessories**

| Type code      | Ident-No. | Description                             | Dimension drawing                                                                   |
|----------------|-----------|-----------------------------------------|-------------------------------------------------------------------------------------|
| USB-2-IOL-0002 | 6825482   | IO-Link Master with integrated USB port |  |