

# PREVENTA™ XPS Safety Relays Type 2 Perimeter Light Curtain

## Technical Data

|                                                             |           |                                                                                                                                                           |
|-------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Type</b>                                          |           | <b>XPSCE</b>                                                                                                                                              |
| <b>Category, per EN 61496-1 and EN 60825-1</b>              |           | <b>Category 2</b>                                                                                                                                         |
| <b>Power Supply</b>                                         |           |                                                                                                                                                           |
| Voltage                                                     | <b>V</b>  | 24 Vac/dc                                                                                                                                                 |
| Voltage limits                                              |           | - 20...+20% (24 Vdc), - 20...+10% (24 Vac)                                                                                                                |
| Frequency                                                   | <b>Hz</b> | 50/60                                                                                                                                                     |
| <b>Power Consumption</b>                                    |           |                                                                                                                                                           |
| 24 V                                                        | <b>VA</b> | < 11                                                                                                                                                      |
| <b>Module Fuse Protection</b>                               |           | internal electronic                                                                                                                                       |
| <b>Detector Inputs</b>                                      |           |                                                                                                                                                           |
| Number of inputs to be monitored                            |           | 1 to 4 (terminals Z1, Z2, Z3, Z4)                                                                                                                         |
| Input voltage                                               | <b>V</b>  | 24 Vdc                                                                                                                                                    |
| Detector supply voltage                                     | <b>V</b>  | 24 Vdc (terminal +U)                                                                                                                                      |
| Detector supply current                                     | <b>mA</b> | 40                                                                                                                                                        |
| <b>Muting Function Inputs</b>                               |           |                                                                                                                                                           |
| Number of muting inputs                                     |           | 1 (terminal M1)                                                                                                                                           |
| Input voltage                                               | <b>V</b>  | 24 Vdc                                                                                                                                                    |
| Maximum current                                             | <b>mA</b> | 40                                                                                                                                                        |
| <b>Outputs</b>                                              |           |                                                                                                                                                           |
| Voltage reference                                           |           | Relay Hard Contacts                                                                                                                                       |
| No. and nature of safety circuits                           |           | 2 N.O. (13-14, 23-24)                                                                                                                                     |
| AC-15 Breaking capacity                                     | <b>VA</b> | C300: inrush 1800, sealed 180                                                                                                                             |
| DC-13 Breaking capacity                                     |           | 24 V/1.5 A - L/R = 50 ms                                                                                                                                  |
| Max thermal current (Ithe)                                  | <b>A</b>  | 2.5                                                                                                                                                       |
| Output fuse protection per IEC 947-5-1, VDE 0660 Part 200 A | <b>A</b>  | 4 A fuse                                                                                                                                                  |
| Minimum current                                             | <b>mA</b> | 10                                                                                                                                                        |
| Minimum voltage                                             | <b>V</b>  | 17                                                                                                                                                        |
| <b>Muting Signaling Outputs</b>                             |           |                                                                                                                                                           |
| Number                                                      |           | 2 (terminals H1, H2)                                                                                                                                      |
| Maximum power                                               |           | 5 W / 24 Vdc                                                                                                                                              |
| <b>Additional OSSD Control Output</b>                       |           |                                                                                                                                                           |
| Number and type                                             |           | 1 solid state NPN (terminals Y33-Y34)                                                                                                                     |
| Breaking capacity                                           |           | 24 V / 20 mA, 48 V / 10 mA                                                                                                                                |
| <b>Electrical Life</b>                                      |           | See page 78                                                                                                                                               |
| <b>Response Time</b> on input change of state               | <b>ms</b> | <20                                                                                                                                                       |
| <b>Rated Insulation Voltage (Ui)</b>                        | <b>V</b>  | 300 (Pollution degree 2 per IEC 947-5-1, DIN VDE 0110 Parts 1 and 2)                                                                                      |
| <b>Rated Impulse Withstand Voltage (Uimp)</b>               | <b>kV</b> | 4 (Overvoltage category III per IEC 947-1, DIN VDE 0110 Parts 1 and 2)                                                                                    |
| <b>LED Display</b>                                          |           | 4                                                                                                                                                         |
| <b>Operating Temperature</b>                                |           | + 14 °F to + 130 °F (- 10 °C to + 55 °C)                                                                                                                  |
| <b>Storage Temperature</b>                                  |           | - 13 °F to + 185 °F (- 25 °C to + 85 °C)                                                                                                                  |
| <b>Degree of Protection per IEC 529</b>                     |           |                                                                                                                                                           |
| Terminals                                                   |           | IP 20                                                                                                                                                     |
| Housing                                                     |           | IP 40                                                                                                                                                     |
| <b>Connection</b>                                           |           |                                                                                                                                                           |
| Type                                                        |           | Captive screw-clamp terminals. Maximum wire size: 1-12 AWG (1 x 4 mm <sup>2</sup> ) without cable end, 2-14 AWG (2 x 2.5 mm <sup>2</sup> ) with cable end |

## Technical Data – XU2S Thru-beam Photoelectric Sensors

|                                         |           |                                                                                                                                       |
|-----------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Certification</b>                    |           | <b>CE per EN 61496-1 and EN 60825-1</b>                                                                                               |
| <b>Rated Supply Voltage</b>             | <b>V</b>  | 12-24 dc (reverse polarity protected)                                                                                                 |
| <b>Voltage Limits</b>                   | <b>V</b>  | 10-30 dc                                                                                                                              |
| <b>Current Switching Capacity</b>       | <b>mA</b> | < 100 (short circuit protected and overload protected)                                                                                |
| <b>Voltage Drop</b>                     | <b>V</b>  | < 1.5                                                                                                                                 |
| <b>Current Consumption, no-load</b>     | <b>mA</b> | < 35                                                                                                                                  |
| <b>Maximum Switching Capacity</b>       | <b>Hz</b> | 500                                                                                                                                   |
| <b>Time Delay</b>                       | <b>ms</b> | ≤ 1                                                                                                                                   |
| <b>Vibration Resistance</b>             |           | 7 g (f=10...55 Hz), conforming to IEC 68-2-26                                                                                         |
| <b>Shock Resistance</b>                 |           | 30 g, along 3 axes: 3-times, conforming to IEC 68-2-27                                                                                |
| <b>Materials</b>                        |           | Enclosure: nickel-plated brass (infra-red detectors), Lenses PMMA                                                                     |
| <b>Nominal Sensing Distance</b>         |           |                                                                                                                                       |
| Infra-red detectors                     |           | 26.24 ft. (8 m)                                                                                                                       |
| <b>Operating Temperature</b>            |           |                                                                                                                                       |
| Infra-red detectors                     |           | - 13 °F to + 130 °F (- 25 °C to + 55 °C)                                                                                              |
| <b>Storage Temperature</b>              |           | - 40 °F to + 158 °F (- 40° to + 70 °C)                                                                                                |
| <b>Degree of protection per IEC 529</b> |           | IP 67                                                                                                                                 |
| <b>Connection Type</b>                  |           |                                                                                                                                       |
| Cable                                   |           | PVC cable, 0.20 in (5 mm) diameter, 4 x 22 AWG (0.34 mm <sup>2</sup> ). For thru-beam transmitter, 3 x 22 AWG (0.34 mm <sup>2</sup> ) |
| Connector                               |           | M12 male, 4-pin connector                                                                                                             |

# PREVENTA™ XPS Safety Relays

## Type 2 Perimeter Light Curtain



XPSCE●●●●●

### XPS Safety Relays and Thru-Beam Photoelectric Sensors with Test Input

The XPSCE and up to 4 of the XU2S photoelectric sensors below can be used to make a Type 2 perimeter light curtain for body detection that meets European standard EN 61496 parts 1 and 2, and EN 60825-1.

The muting function of the XPSCE allows for the transfer of materials through the light curtain without opening the main circuit. This function requires the use of two additional sensors, either the thru-beam type XU2M18PP340, or polarized retro-reflective type XU9M18PP340 and must be used in the dark operate mode. For more information, refer to page 134 of this catalog or the instruction manual.

### Applying Type 2 Perimeter Light Curtains

When designing an application or installing any light curtain, the user must follow all applicable codes, standards and regulations. Some of the US standards which must be followed are: ANSI B11.1 through B11.20, OSHA 29 CFR 1910, and ANSI/RIA R15.06 standards. Some of the European standards which must be followed are: EN 292-1, EN 292-2, EN 60204-1, pr EN 999, EN 294, and EN 811. There may be other national and local standards that may also need to be followed.

*Appendix A (pages 173 to 183 of this catalog) provides information on the installation, use, maintenance and testing of light curtains. This section must be read and followed prior to installation and use of any light curtain.*

### XPS Safety Relays

Use only XU2S Photoelectric Sensors as listed below.

| Description                                                         | Type of associated detectors | No. of safety circuits | Additional solid state outputs | Power supply | Catalog number | Weight lb. (kg) |
|---------------------------------------------------------------------|------------------------------|------------------------|--------------------------------|--------------|----------------|-----------------|
| Safety modules for monitoring photoelectric sensors with test input | PNP                          | 2                      | 1                              | 24 Vdc       | XPSCEP5141     | 12 (0.350)      |
|                                                                     | NPN                          | 2                      | 1                              | 24 Vdc       | XPSCEN5141     | 12 (0.350)      |



XU2S18●P340L5



XU2S18●P340D



XU2S18●P340WL5



XU2S18KP340L5T



XU2S18KP340WL5T



XU2S18●P340DR



XU2S18●P340WL5R

### Thru-Beam Photoelectric Sensors (DC) with Test Input

For use with XPSCE safety relays listed above.  
All receivers are programmable for light or dark switching.  
Range is 26.2 ft. (8 m) for infra-red sensing.  
Cable length is 16.4 ft. (5 m).  
Connector is 4 pin micro type — DC.

| Description ★                                | Beam type | Body type | Connection | Catalog number  | Weight lb. (kg) |
|----------------------------------------------|-----------|-----------|------------|-----------------|-----------------|
| Thru-beam pair PNP■ (transmitter + receiver) | Infra-red | Straight  | cable      | XU2S18PP340L5   | 17 (0.485)      |
|                                              |           |           | connector  | XU2S18PP340D    | 5.5 (0.155)     |
|                                              |           | 90° head  | cable      | XU2S18PP340WL5  | 17 (0.485)      |
|                                              |           |           | connector  | XU2S18PP340WD   | 5.5 (0.155)     |
| Thru-beam pair NPN▲ (transmitter + receiver) | Infra-red | Straight  | cable      | XU2S18NP340L5   | 17 (0.485)      |
|                                              |           |           | connector  | XU2S18NP340D    | 5.5 (0.155)     |
|                                              |           | 90° head  | cable      | XU2S18NP340WL5  | 17 (0.485)      |
|                                              |           |           | connector  | XU2S18NP340WD   | 5.5 (0.155)     |
| Thru-beam transmitter only●                  | Infra-red | Straight  | cable      | XU2S18KP340L5T  | 8.3 (0.235)     |
|                                              |           |           | connector  | XU2S18KP340DT   | 2.6 (0.075)     |
|                                              |           | 90° head  | cable      | XU2S18KP340WL5T | 8.3 (0.235)     |
|                                              |           |           | connector  | XU2S18KP340WDT  | 2.6 (0.075)     |
| Thru-beam receiver only (PNP)■               | Infra-red | Straight  | cable      | XU2S18PP340L5R  | 8.8 (0.250)     |
|                                              |           |           | connector  | XU2S18PP340DR   | 2.8 (0.080)     |
|                                              |           | 90° head  | cable      | XU2S18PP340WL5R | 8.8 (0.250)     |
|                                              |           |           | connector  | XU2S18PP340WDR  | 2.8 (0.080)     |
| Thru-beam receiver only (NPN)▲               | Infra-red | Straight  | cable      | XU2S18NP340L5R  | 8.8 (0.250)     |
|                                              |           |           | connector  | XU2S18NP340DR   | 2.8 (0.080)     |
|                                              |           | 90° head  | cable      | XU2S18NP340WL5R | 8.8 (0.250)     |
|                                              |           |           | connector  | XU2S18NP340WDR  | 2.8 (0.080)     |

■ For use with XPSCEP5141.  
▲ For use with XPSCEN5141.

● For use with either XPSCEP5141 or XPSCEN5141.  
★ Dimensions for sensors on page 171.

Dimensions.....147-148



File: E164869  
CCN: NRKH



File: LR44087-94  
Class: 3211 03

