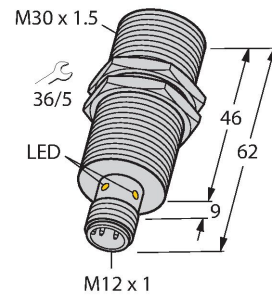


# BI15-EM30-VP45XLD-H1141

## Inductive Sensor – For Use in Vehicle Board Nets



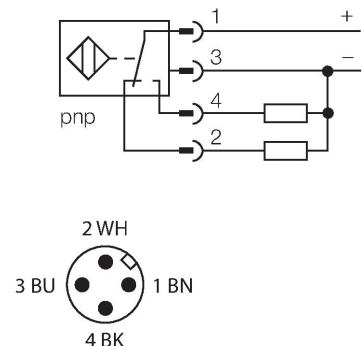
### Features

- M30 × 1.5 threaded tube
- Stainless steel, 1.4301
- For vehicle board nets, 12 V and 24 V
- Increased interference immunity 100 V/m radiated acc. ISO 11452-4 and 100 mA BCI acc. to ISO 11452-2
- Load-dump protection acc. to DIN ISO 7637-2 (SAE J 113-11)
- Extended temperature range
- High protection class IP68/IP69K
- Protection against salt spray and rapid temperature change
- Laser engraved label, permanently legible
- DC 4-wire, 8.4...65 VDC
- Changeover contact, PNP output
- M12 x 1 male connector

### Technical data

|                                        |                                                                                          |
|----------------------------------------|------------------------------------------------------------------------------------------|
| Type                                   | BI15-EM30-VP45XLD-H1141                                                                  |
| ID                                     | 1584026                                                                                  |
| <b>General data</b>                    |                                                                                          |
| Rated switching distance               | 15 mm                                                                                    |
| Mounting conditions                    | Flush                                                                                    |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                                                              |
| Correction factors                     | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4                                      |
| Repeat accuracy                        | $\leq 2 \%$ of full scale                                                                |
| Temperature drift                      | $\leq \pm 10 \%$<br>$\leq \pm 15 \%, \leq -25^\circ\text{C} \vee \geq +70^\circ\text{C}$ |
| Hysteresis                             | 3...15 %                                                                                 |
| <b>Electrical data</b>                 |                                                                                          |
| Operating voltage $U_B$                | 8.6...65 VDC                                                                             |
| Ripple $U_{rs}$                        | $\leq 10 \%$ $U_{Bmax}$                                                                  |
| DC rated operating current $I_B$       | $\leq 200$ mA                                                                            |
| No-load current                        | $\leq 15$ mA                                                                             |
| Residual current                       | $\leq 0.1$ mA                                                                            |
| Isolation test voltage                 | 0.5 kV                                                                                   |
| Short-circuit protection               | yes/Cyclic                                                                               |
| Voltage drop at $I_B$                  | $\leq 1.8$ V                                                                             |
| Wire break/reverse polarity protection | yes/Complete                                                                             |
| Output function                        | 4-wire, Complementary contact, PNP                                                       |
| Load-dump protection (DIN ISO 7637-2)  | Severity degree IV/Level 4                                                               |

### Wiring diagram



### Functional principle

Maximum reliability even under the most extreme environmental conditions is guaranteed by our sensors for mobile applications. TURCK's inductive sensors for extremely hostile industrial environments not only meet, but even exceed the requirements of the protection classes IP68 and IP69. Applied in vehicles for road construction or in agricultural machines, these sensors excel in high vibration and shock resistance and they withstand fast temperature cycles.

## Technical data

Switching frequency 0.5 kHz

### Mechanical data

Design Threaded barrel, M30 x 1.5

Dimensions 62 mm

Housing material Stainless steel, 1.4301 (AISI 304)

Active area material Plastic, PA12-GF30

Max. tightening torque of housing nut 75 Nm

Electrical connection Connector, M12 x 1

### Environmental conditions

Ambient temperature -40...+85 °C

Temperature changes (EN60068-2-14) -40... +85 °C; 20 cycles

Vibration resistance 55 Hz (1 mm)

Vibration resistance (EN 60068-2-6) 20 g; 10...3000 Hz; 50 cycles; 3 axes

Shock resistance 30 g (11 ms)

Shock resistance (EN 60068-2-27) 150 g; 6 ms ½ sine; 3 x each; 3 axes

Continuous shock resistance (EN 60068-2-29) 100 g; 11 ms ½ sine; 3 x each; 3 axes

Salt spray test (EN 60068-2-52) Severity degree 5 (4 test cycles)

Protection class  
IP68  
IP69K

MTTF 2283 years acc. to SN 29500 (Ed. 99) 40 °C

Switching state LED, Yellow

| 12 V Bordnet      |    |    |    |    |    |    |
|-------------------|----|----|----|----|----|----|
| Impulse           | 1  | 2  | 3a | 3b | 4  | 5  |
| Severity level    | IV | IV | IV | IV | IV | IV |
| Failure criterion | C  | C  | A  | A  | C  | C  |

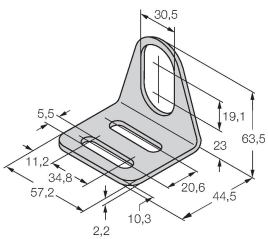
| 24 V Bordnet      |     |    |    |    |     |    |
|-------------------|-----|----|----|----|-----|----|
| Impulse           | 1   | 2  | 3a | 3b | 4   | 5  |
| Severity level    | III | IV | IV | IV | III | IV |
| Failure criterion | C   | C  | A  | A  | A   | C  |

Mounting instructions

| Mounting instructions/Description                                                  |                        |
|------------------------------------------------------------------------------------|------------------------|
|  | Distance D             |
|                                                                                    | 2 x B                  |
|                                                                                    | Distance W             |
|                                                                                    | 3 x Sn                 |
|                                                                                    | Distance T             |
|                                                                                    | 3 x B                  |
|                                                                                    | Distance S             |
|                                                                                    | 1.5 x B                |
|                                                                                    | Distance G             |
|                                                                                    | 6 x Sn                 |
|                                                                                    | Diameter active area B |
|                                                                                    | Ø 30 mm                |

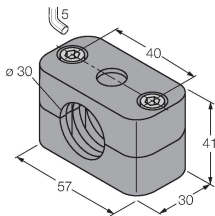
Accessories

MW30 6945005



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-30 6901319



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene