

BI15-EM30-AP45XLD-H1141

Inductive Sensor – For Use in Vehicle Board Nets



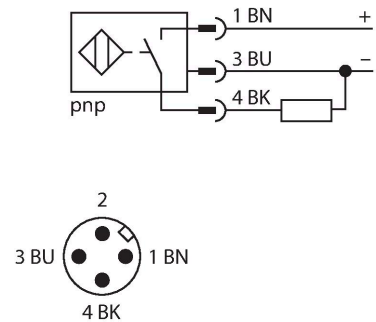
Features

- 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 3-wire, 8.4...65 VDC
- NO contact, PNP output
- M12 x 1 male connector
- E1 type approval from German federal office for motor vehicles

Technical data

Type	BI15-EM30-AP45XLD-H1141
ID	1584020
General data	
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	$\leq \pm 10\%$ $\leq \pm 15\%$, $\leq -25\text{ °C}$ v $\geq +70\text{ °C}$
Hysteresis	3...15 %
Electrical data	
Operating voltage	8.6...65 VDC
Residual ripple	$\leq 10\% U_{ss}$
DC rated operational current	$\leq 200\text{ mA}$
No-load current	15 mA
Residual current	$\leq 0.1\text{ mA}$
Isolation test voltage	$\leq 0.5\text{ kV}$
Short-circuit protection	yes / Cyclic
Voltage drop at I_o	$\leq 1.8\text{ V}$
Wire breakage/Reverse polarity protection	yes / Complete
Output function	3-wire, NO 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

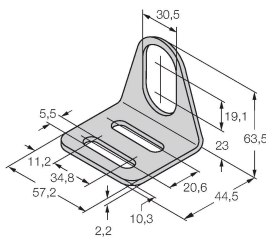


Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Diameter active area B	Ø 30 mm

Accessories

MW-30

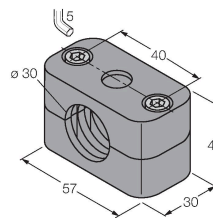
6945005



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

Wiring accessories

Dimension drawing

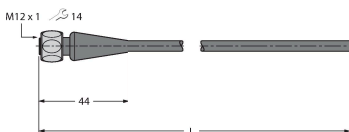
Type

ID

RKH4-2/TFE

6935482

Connection cable, M12 female connector, straight, 3-pin, stainless steel coupling nut, cable length: 2 m, jacket material: PVC, gray; temperature range: -25...+80 °C



Dimension drawing

Type
RKH4-2/TFG

ID
6934384

Connection cable, M12 female connector, straight, 3-pin, stainless steel coupling nut, cable length: 2 m, jacket material: TPE, gray; temperature range: -40...+105 °C

