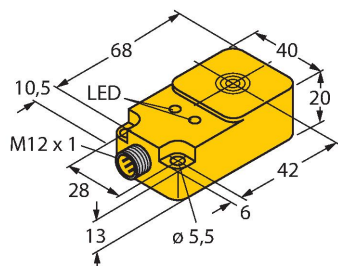


BI20-Q20-AP45X2LD-H1141

Inductive Sensor – For Use in Vehicle Board Nets



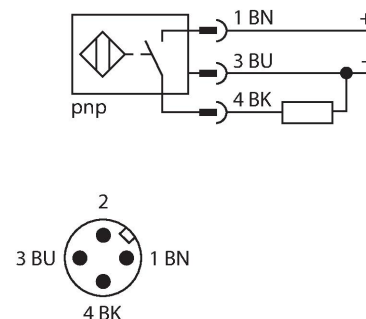
Features

- Rectangular, height 20 mm
- Active face on top
- Plastic, PBT-GF30-V0
- 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	BI20-Q20-AP45X2LD-H1141
ID	1584040
General data	
Rated switching distance	20 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	≤ 2 % of full scale
Temperature drift	$\leq \pm 10$ % $\leq \pm 15$ %, ≤ -25 °C $\vee \geq +70$ °C
Hysteresis	3...15 %
Electrical data	
Operating voltage	8.6...65 VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current	15 mA
Residual current	≤ 0.1 mA
Isolation test voltage	≤ 0.5 kV
Short-circuit protection	yes / Cyclic
Voltage drop at I_o	≤ 1.8 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
Switching frequency	0.5 kHz
Mechanical data	
Design	Rectangular, Q20

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.

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

Technical data

Dimensions	68 x 40 x 20 mm
Housing material	Plastic, PBT-GF30-V0
Active area material	PBT-GF30-V0
Electrical connection	Connector, M12 × 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 × each; 3 axes
Continuous shock resistance (EN 60068-2-29)	100 g; 11 ms ½ sine; 3 × 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
Power-on indication	LED, Green
Switching state	LED, Yellow

Mounting instructions

Mounting instructions/Description

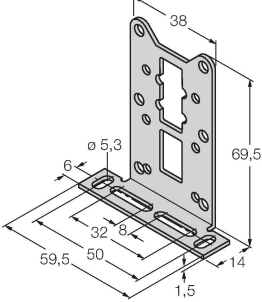
The image contains two technical diagrams illustrating the mounting of a yellow sensor unit on a grey panel. The left diagram is a side view showing two sensor units mounted on a raised section of the panel. Dimension lines indicate: 'B' as the width of the sensor, 'S' as the distance between the sensors, 'D' as the distance from the panel edge to the first sensor, and 'W' as the total width of the mounting area. The right diagram is a top view showing a single sensor unit and its footprint on the panel. Dimension 'G' indicates the distance from the panel edge to the sensor unit.

Distance D	1.5 x B
Distance W	3 x Sn
Distance S	1 x B
Distance G	6 x Sn
Width active area	40 mm
B	

Accessories

MW-Q14/Q20	6945006
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Mounting bracket for rectangular Q14 or Q20; material VA 1.4301



Accessories

Dimension drawing	Type	ID	
	RKC4T-2/TEL	6625010	

Connection cable, M12 female connector, straight, 3-pin, cable length: 2 m, jacket material: PVC, black; cULus approval

