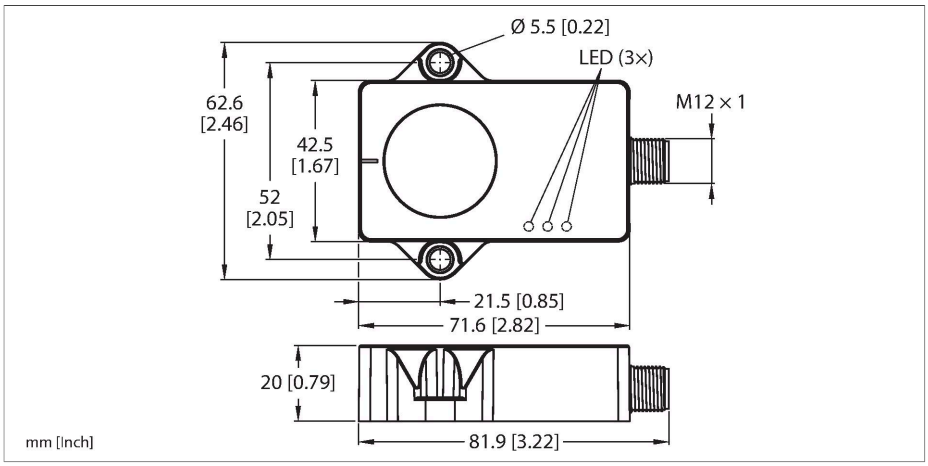
B2NF85H-QR20-2UPN6X3-H1141
Dynamic Inclinometer – With Switching Outputs



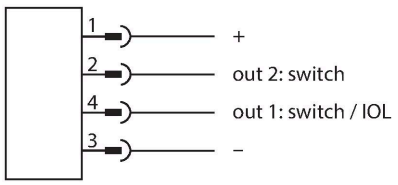
Technical data

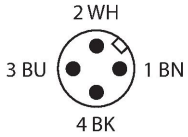
Type	B2NF85H-QR20-2UPN6X3-H1141
ID	100026932
Measuring principle	Combination of gyroscopes and accelerometers
General data	
Measuring range	-85…85 °
Number of measuring axes	2
Repeat accuracy	≤ 0.06 % of full scale
Temperature drift	≤ ± 0.012 %/K
Electrical data	
Operating voltage U_B	10…30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
DC rated operating current I_e	≤ 200 mA
Isolation test voltage	0.5 kV
Wire break/reverse polarity protection	yes
Output function	4-pin, NO/NC, PNP/NPN
Current consumption	< 50 mA
Mechanical data	
Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Housing material	Plastic, Ultem
Electrical connection	Connector, M12 × 1
Environmental conditions	
Ambient temperature	-40…+85 °C
Temperature changes (EN60068-2-14)	-40… +85 °C; 20 cycles
Vibration resistance (EN 60068-2-6)	20 g; 5 h/axis; 3 axes
Shock resistance (EN 60068-2-27)	200 g; 4 ms ½ sine

Features

- Rectangular, plastic, Ultem
- Status displayed via LED
- Angle detection via two axis with ±85 ° measuring range and two freely configurable switching outputs (PNP/NPN)
- High protection class IP68/IP69K
- Protected against salt spray and rapid temperature change
- 10…30 V DC
- Male connector, M12 × 1, 4-pin
- Parameterization via IO-Link with USB-2-IOL-0002

Wiring diagram





Functional principle

The dynamic inclinometers use an acceleration measuring cell and a gyroscope sensor to determine angles. Influences caused by vibrations or interfering acceleration are minimized by applying an intelligent fusion algorithm to the acceleration data and the rotation rate values. This enables the sensor to output a robust signal with impressive precision and speed, even in moving, dynamic applications.

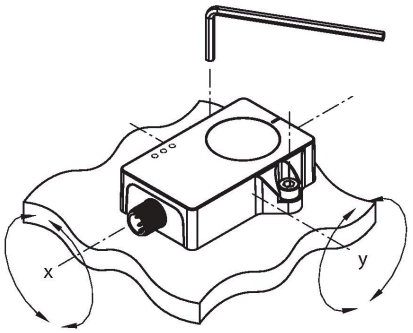
Technical data

Protection class	IP68 IP69K
MTTF	548 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED, Green
Switching state	2 × LEDs, Yellow
UL certificate	E351232

The robust sensors are positioned with the cast side on a flat surface so that the casting compound is covered. The sensor is then secured with two screws.

Mounting instructions

Mounting instructions/Description

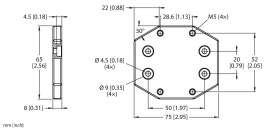


4 mm
3 Nm

The measuring principle used makes mounting and commissioning the device easy, e.g. because being adjacent to metal does not interfere with the measuring principle.
A green LED indicates whether the sensor is being properly supplied with power.
The green flashing LED indicates that the parameterization interface is active.
One yellow LED per inclination axis acts as a zero position indicator to aid commissioning. It is constantly illuminated when the position of the inclinometer is in a window of ±0.5° around the center point. The LED flashes with increasing frequency the nearer the sensor gets to the center point position. This function is disabled in the factory setting.
In the factory setting, the switching outputs in PNP logic have a range of ±3° from the zero-point position. Within this switching window, one output is switched per detection axis. The yellow LEDs indicate the switching status of the outputs.

Accessories

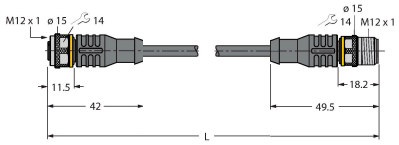
AP-Q20L60-QR20	100029224

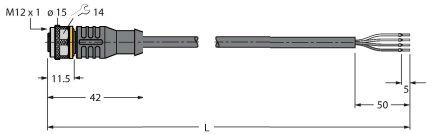


Adapter plate for mounting the QR20 housing with mounting holes for the Q20L60 housing

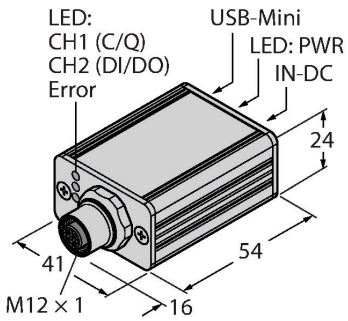
Accessories

Dimension drawing	Type	ID	
	RKC4.4T-2-RSC4.4T/TXL	6625608	Extension cable, M12 female connector, straight, 4-pin to M12 male connector, straight, 4-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



Dimension drawing	Type	ID	
	RKC4.4T-2/TXL	6625503	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval

Accessories

Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port