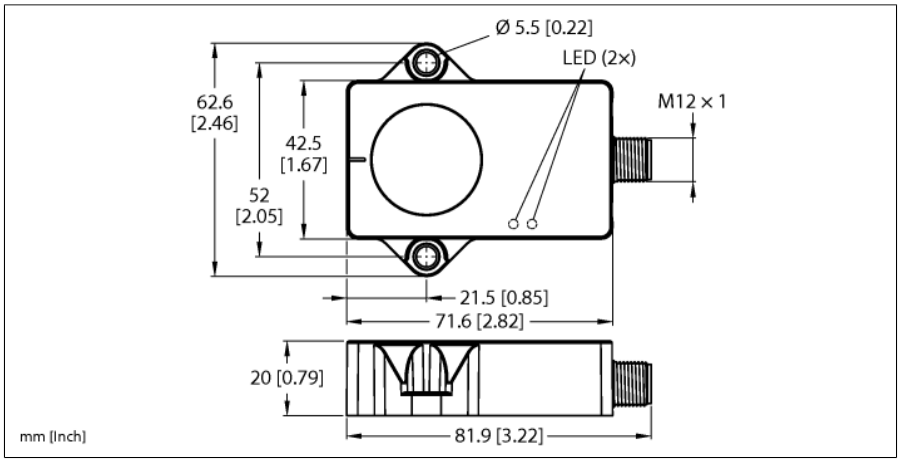
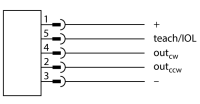
Inclinometer
With Analog Outputs
B1N360V-QR20-2LI2X3-H1151

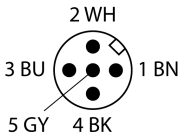


Type	B1N360V-QR20-2LI2X3-H1151
ID	100030753
Measuring principle	Acceleration
General data	
Resolution	16 bit
Measuring range	0…360°
Number of measuring axes	1
Repeat accuracy	≤ 0.05 % of full scale
Linearity deviation	≤ 0.2 %
Temperature drift	≤ ± 0.006 %/K
Electrical data	
Operating voltage U_B	15…30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
Isolation test voltage	0.5 kV
Short-circuit protection	yes
Wire break/reverse polarity protection	yes/yes
Output function	5-pin, Analog output
Current output	4…20 mA
Load resistance voltage output	≥ 4.7 kΩ
Load resistance current output	≤ 0.4 kΩ
Current consumption	< 80 mA
Mechanical data	
Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Housing material	Plastic, Ultem
Electrical connection	Connector, M12 × 1

- Rectangular, plastic, Ultem
- Status displayed via LED
- Angle detection via one axis with 360 ° measuring range
- High protection class IP68/IP69K
- Protected against salt spray and rapid temperature change
- 15…30 VDC
- M12 × 1 male connector, 5-pin
- Two counter-running 4…20 mA analog outputs improve machine safety through redundancy
- The start, end and center point of the measuring range can be adjusted using teach adaptor TX1-Q20L60
- Individual parameterization possible with USB-2-IOL-0002

Wiring Diagram





Functional principle

The inclinometers use an acceleration measuring cell to determine the angle. The Earth's gravity is used as a reference. If the inclinometer changes its angle relative to the Earth's gravity, this is detected by the acceleration measuring cell.

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.

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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)	150 g; 4 ms ½ sine
Protection class	IP68 IP69K
MTTF	297 years acc. to SN 29500 (Ed. 99) 40 °C

Power-on indication	LED, Green
Measuring range display	LED, yellow
UL certificate	E351232

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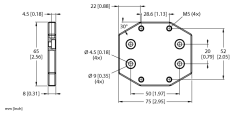
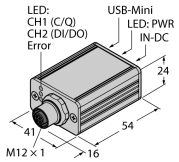
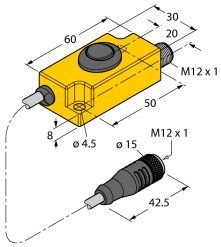
Accessories

Type code	Ident no.		Dimension drawing
AP-Q20L60-QR20	100029224	Adapter plate for mounting the QR20 housing with mounting holes for the Q20L60 housing	

Function accessories

Type code	Ident no.		Dimension drawing
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors	

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