

INCLINOMETER FOR ANGULAR TILT DETECTION



TURCK's new dual axis inclinometer sensor for angular tilt detection features compact rectangular housings, and will sense ± 10 , ± 45 , ± 60 and ± 85 degrees of angular displacement. Inclinometer sensors may be used in a wide variety of industries to solve unique feedback requirements.

At the heart of the TURCK inclinometer is a MEMS (micro-electro-mechanical system) device that incorporates a micro-electro-mechanical capacitive element into the sensor that utilizes two parallel plate electrodes, one stationary and one attached to a spring-mass system. Movement produces deflection in the non-stationary electrode. This results in a measurable change in the capacitance between the two plates that is proportional to the angle of deflection. These signals are conditioned to provide two voltage outputs (0.1 to 4.9 VDC) or two current outputs (4 to 20 mA).

The inclinometer is IP 67 rated, with a temperature range of -22 to 158°F that permits its use in many applications, including:

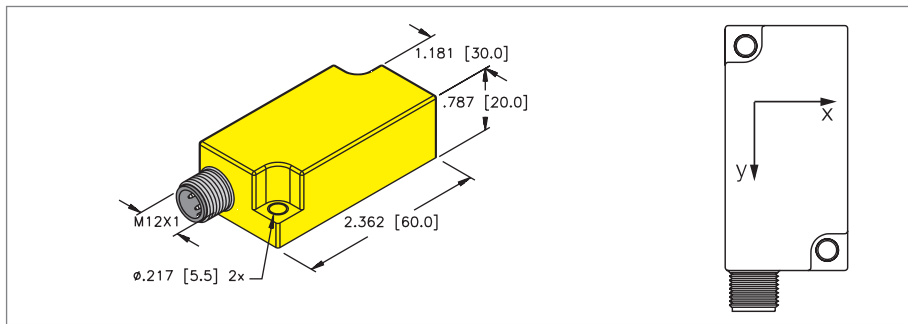
- Industrial equipment: levers, pedals, flaps, mixing machines, hydraulic jacks, dancers and rotary tables
- Mobile vehicles: cranes, fire trucks, bucket trucks and construction vehicles
- Vertical and horizontal drills used in tunnel and road construction and immersion equipment
- Offshore plants: platforms, cranes
- Conveyors



Advantages

- Compact rectangular housing
- High measuring speed
- High sensitivity and precision
- Long-term stability and reliability
- Zero-point calibration
- High degree of protection
- Shock resistant
- Versatile mounting

Inclinometer for angular tilt detection



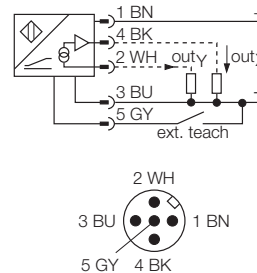
Part Number	B2N10H-Q20L60-2LU3-H1151	B2N45H-Q20L60-2LU3-H1151	B2N60H-Q20L60-2LU3-H1151	B2N85H-Q20L60-2LU3-H1151
Ident.-no.	M1534006	M1534007	M1534008	M1534027
Voltage output	0.1... 4.9 V	0.1... 4.9 V	0.1... 4.9 V	0.1... 4.9 V
Measuring range [A...B]	-10... 10°	-45... 45°	-60... 60°	-85... 85°
Temperature drift	< ± 0.05 % / K	< ± 0.025 % / K	< ± 0.025 % / K	< ± 0.025 % / K
Temperature coefficient	0.01°/K	0.03°/K	0.03°/K	0.03°/K
Resolution	< 0.04°	< 0.1°	< 0.14°	< 0.14°
Zero-point calibration	± 5°	± 15°	± 15°	± 15°
Absolute accuracy	± 0.3°	± 0.5°	± 0.5°	± 0.5°

Part Number	B2N10H-Q20L60-2Li2-H1151	B2N45H-Q20L60-2Li2-H1151	B2N60H-Q20L60-2Li2-H1151	B2N85H-Q20L60-2Li2-H1151
Ident.-no.	M1534012	M1534013	M1534014	M1534032
Current output	4... 20 mA	4... 20 mA	4... 20 mA	4... 20 mA
Measuring range [A...B]	-10... 10°	-45... 45°	-60... 60°	-85... 85°
Temperature drift	< ± 0.05 % / K	< ± 0.025 % / K	< ± 0.025 % / K	< ± 0.025 % / K
Temperature coefficient	0.01°/K	0.03°/K	0.03°/K	0.03°/K
Resolution	< 0.04°	< 0.1°	< 0.14°	< 0.14°
Zero-point calibration	± 5°	± 15°	± 15°	± 15°
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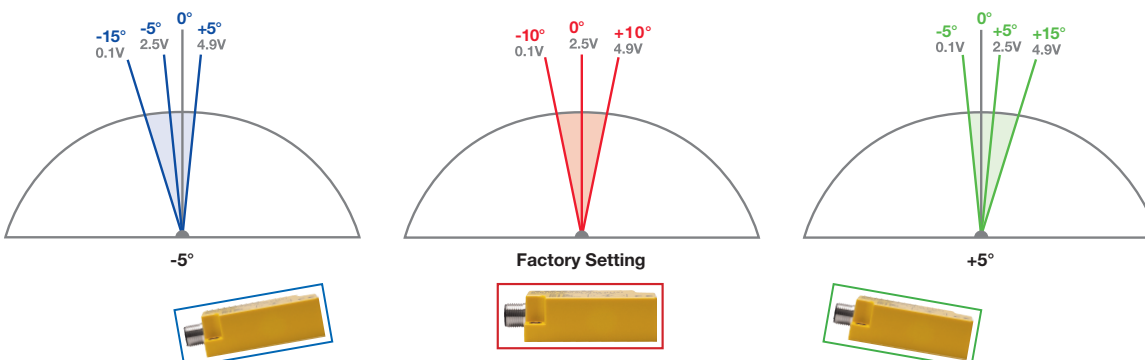
General data

Operational voltage	10... 30 VDC
No-load current I/O	< 20 mA
Rated insulation voltage	< 0.5 kV
Wire-break protection / Reverse polarity protect.	yes
Output function	4-wire, analog output
Repeatability	< 0.2 % of measuring range [A - B] < 0.1 %, after 0.5 h warm-up time
Output recovery time	< 12 ms
Response time	0.05... 0.1 s (time for the output signal to achieve 90% full scale, if the angle changes from the beginning to the end of the measuring range)
Housing	rectangular, Q20L60
Dimensions	60 x 30 x 20 mm
Housing material	plastic, PBT-GF20-V0
Connection	connector, M12 x 1
Vibration resistant	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Ambient temperature (std)	-30...+70°C (-22...+158°F)
Extended temperature	-40...+70°C (-40...+158°F) with /S97 option only
Degree of protection	IP 67

Wiring diagram



Inclinometer Teach Range Example : B2N 10H-Q20L60-2LU3-H1151



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