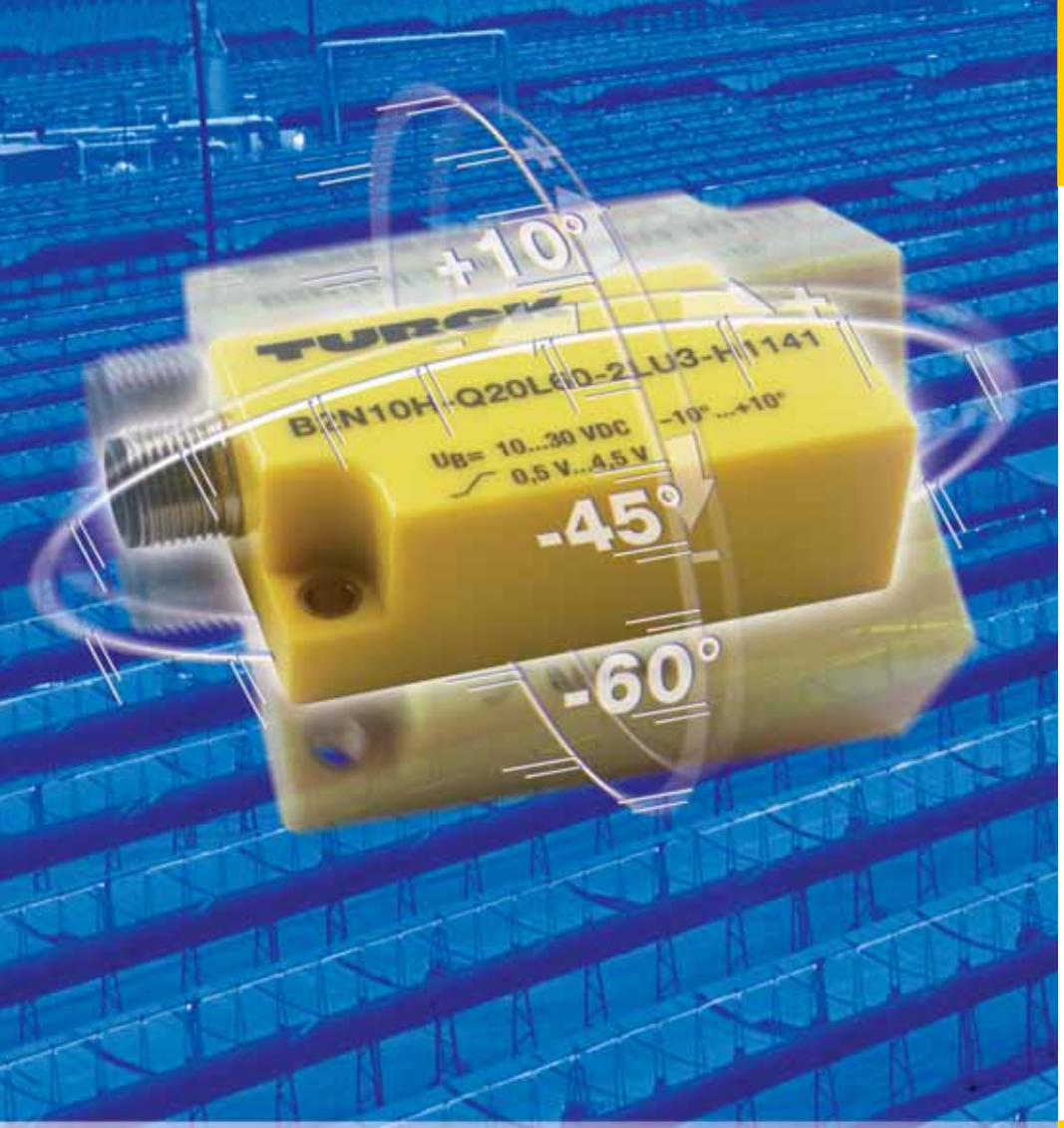


TURCK

Industrial Automation

INCLINOMETER FOR SLOPE ANGLES

By inclination is meant, the relative angular tilt to the horizon or perpendicular. Any deviation from this home position (perpendicular) can be detected quickly and precisely with inclinometers made by the sensor specialist TURCK. Inclinometers make use of the local gravity i.e. acceleration of gravity for the measurement of angular tilt. The MEMS technology (Micro-Electro-Mechanic-Systems) on which the inclinometer is based, enables multiple application solutions for machines, roboters, vehicles and airplanes, agricultural and construction machinery, solar plants, transport devices or automatically adjustable furniture.

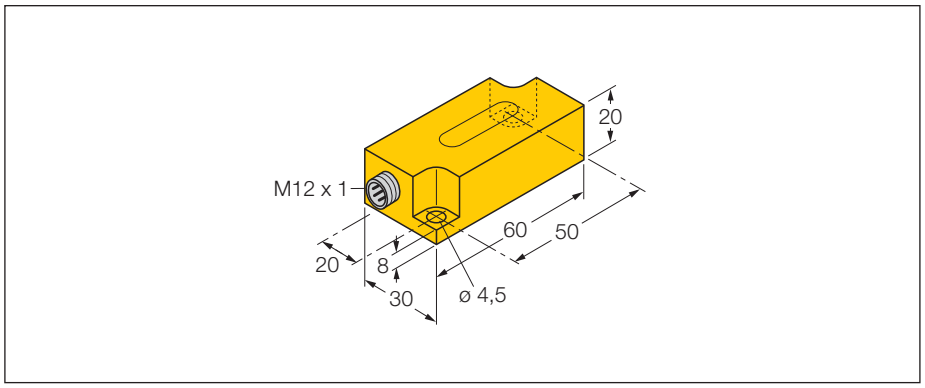
The core piece of the new inclinometer is a micromechnical capacitive sensor element. A capacitive accelerometer basically consists of two parallely arranged “plate” electrodes with a dielectric placed in the middle. If the sensor is accelerated, the dielectric moves and thus the capacity relation between both electrodes is changed. The dielectric in inclinometers made by TURCK are designed as resilient pendulum

The TURCK product portfolio currently comprises inclinometers in rectangular housing Q20L60 for angular ranges of ±10°, ±45° and ± 60°. All sensors feature analog voltage outputs.

Advantages

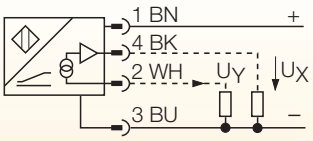
- **Small and compact rectangular housing**
- **High measuring speed**
- **Sensitive and precise**
- **Long-term stability and reliability**
- **High degree of protection**
- **Extremely robust**
- **Optimum mounting posibilities**

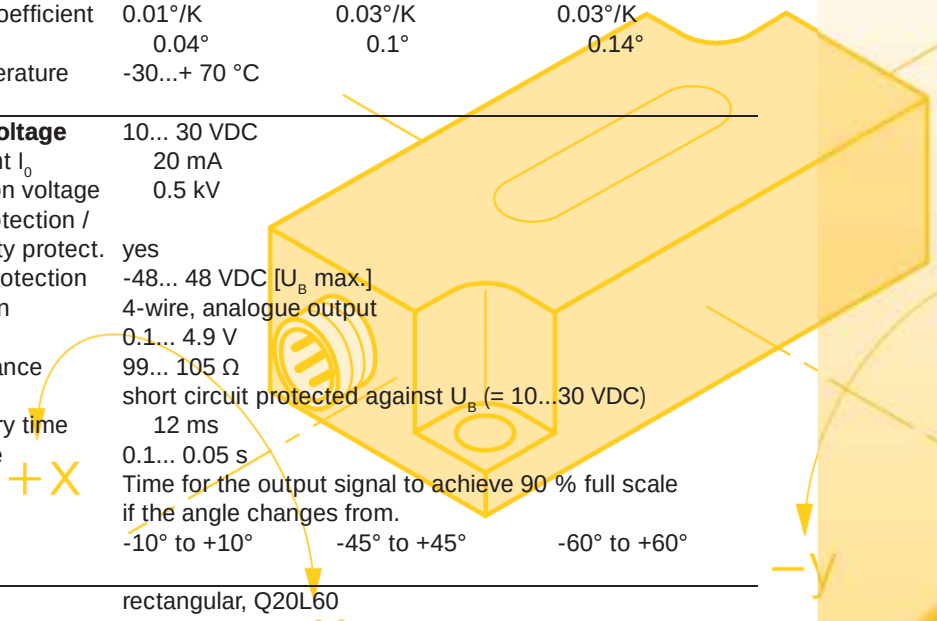
Inclinometer for slope angles

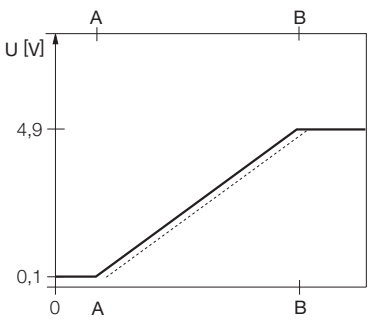


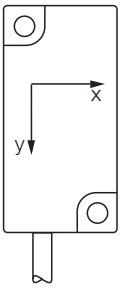
Type	B2N10H-Q20L60-2LU3-H1141	B2N45H-Q20L60-2LU3-H1141	B2N60H-Q20L60-2LU3-H1141
Ident.-no.	1534006	1534007	1534008
Measuring range [A...B]	-10... 10°	-45... 45°	-60... 60°
Repeatability	0.2 % of measuring range [A - B]		
	0.1 %, after 0.5 h warm-up time		
Temperature drift	± 0.05 % / K	± 0.025 % / K	± 0.025 % / K
Temperature coefficient	0.01°/K	0.03°/K	0.03°/K
Resolution	0.04°	0.1°	0.14°
Ambient temperature	-30...+ 70 °C		
Operational voltage	10... 30 VDC		
No-load current I_0	20 mA		
Rated insulation voltage	0.5 kV		
Wire-break protection / Reverse polarity protect.	yes		
Overvoltage protection	-48... 48 VDC [U_B max.]		
Output function	4-wire, analogue output		
Voltage output	0.1... 4.9 V		
Output impedance	99... 105 Ω		
Voltage output	short circuit protected against U_B (= 10...30 VDC)		
Output recovery time	12 ms		
Response time	0.1... 0.05 s		
	Time for the output signal to achieve 90 % full scale if the angle changes from.		
	-10° to +10°	-45° to +45°	-60° to +60°
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)		
Degree of protection	IP67		

Wiring diagram









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