Your Global Automation Partner

QR20-IOL | QR20-2UPN
Dynamic Inclinometers

MEMS and Gyroscope Fused

In its new generation of inclinometers Turck has fused accelerometer technology (MEMS) with gyroscope technology so that shocks and vibration can be masked out much more effectively than with conventional signal filters. The B1NF and B2NF single and two-axis inclinometers thus enable a previously unknown degree of dynamic measurement that even allows use in high-speed control circuits on moving or vibrating machines.

The extremely robust IP68/69K sensors output their signal either via two switching outputs or IO-Link COM3, the latest and fastest version of the digital interface. IO-Link also enables the device to be adapted easily to application requirements, such as with regard to zero setting. Additional information, such as the operating hours of the sensor or its ambient temperature, can also be provided for condition monitoring. The patent pending "spirit level function" simplifies device installation. The flashing of an LED is used here to indicate the horizontal position of the sensor. This therefore ensures the error-free and reliable installation of the sensor without any accessories before it is fully set up in the IO-Link master. The use of translucent plastic for the LEDs eliminates the potential weak points in the housing arising from LED lenses.

The devices can also be used for positioning and balancing applications or for dancer arm monitoring in the textile, printing packaging industries. Turck is initially offering four variants on the market: for dynamic applications with the B1NF single-axis and B2NF two-axis inclinometers and the B1N and B2N for static applications.

Your Benefits

- Fast and reliable measurements despite mechanical interference
- Optimizes every control loop thanks to fusion technology
- Fast commissioning due to spirit level function
- Robust, compact and shock resistant up to 200 g
- Additional information such as temperature, self-test, operating hours

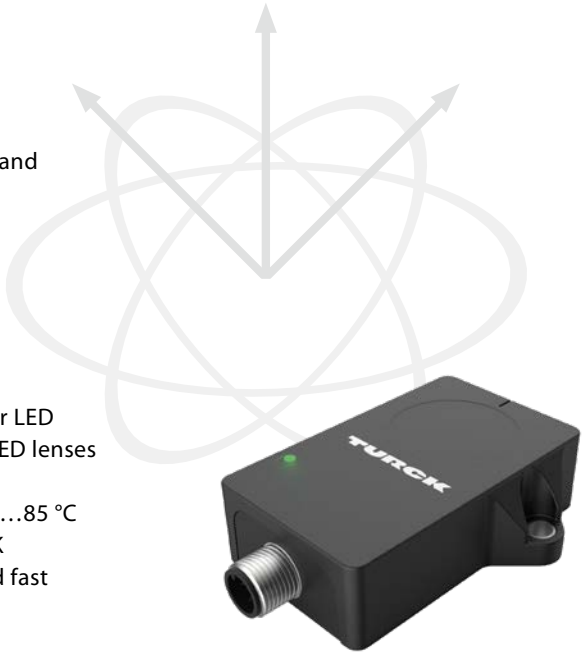
IO-Link

Products are linked to further information.

Inclinometers with Fusion Technology

Key features

- Fused sensor signal from MEMS and gyroscope for highest dynamics
- Easy installation and commissioning due to LED water spirit function
- Shock resistant up to 200 g
- Fast IO-Link COM3 interface or PNP/NPN output
- Thanks to translucent plastics for LED display, no interference-prone LED lenses required
- Temperature detection from -40…85 °C
- High protection class IP68/IP69K
- Protection against salt spray and fast temperature changes
- 18…30 VDC
- Connector, M12 × 1, 4-pin



Innnovative functional principle

To determine angles, the dynamic inclinometers use not only an acceleration measuring cell, but also a gyroscope sensor. Influences caused by vibrations or interfering acceleration are minimized by means of an intelligent fusion algorithm from 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.

Device overview

ID	Type designation	Measuring range	Function
Inclinometers with IO-Link			
100020900	B1NF360V-QR20-IOLX3-H1141	1-axis, 0 to 360°	Inclinometer with gyroscope function, dynamic application
100020901	B2NF85H-QR20-IOLX3-H1141	2-axis, ±85°	Inclinometer with gyroscope function, dynamic application
100025084	B1N360V-QR20-IOLX3-H1141	1-axis, 0 to 360°	Inclinometer, static application
100025086	B2N85H-QR20-IOLX3-H1141	2-axis, ±85°	Inclinometer, static application
Inclinometers with 2 × PNP/NPN switching output			
100026931	B1NF360V-QR20-2UPN6X3-H1141	1-axis, 0 bis 360°	Inclinometer with gyroscope function, dynamic application
100026932	B2NF85H-QR20-2UPN6X3-H1141	2-axis, ±85°	Inclinometer with gyroscope function, dynamic application
100026933	B1N360V-QR20-2UPN6X3-H1141	1-axis, 0 bis 360°	Inclinometer, static application
100026934	B2N85H-QR20-2UPN6X3-H1141	2-axis, ±85°	Inclinometer, static application

Typical fields of application




Static and dynamic applications from the energy to the textile industry

Products are linked to further information.

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