



Angular Position

Dual Axis with Analog Output

TURCK's standard product is a low-profile dual axis (X and Y) inclinometer with standard angular ranges of $\pm 10^\circ$, $\pm 45^\circ$, $\pm 60^\circ$, and $\pm 85^\circ$, with additional ranges optional. Each axis has independent outputs. The 5 VDC version is a ratiometric design and the power is limited to 4.75 to 5.25 VDC. This means that the output is proportional to the supply voltage. The 10–30 VDC supply units are regulated and the output is fixed regardless.

Features

- $\pm 10^\circ$, $\pm 45^\circ$, $\pm 60^\circ$, $\pm 85^\circ$
- Current 4–20mA, 10–30 VDC
- Voltage output 0.1–4.9V, 10–30 VDC
- Voltage output 0.1–4.9V @ 5 VDC
- Teachable zero point up to $\pm 15\%$ with teach adapter VB2-SP4
- FM Class 1, Div. 2 approved when used with Guard-Q20L60 and approved cordset



Single Axis 360° with Analog Output

When a larger range is required or only one axis is necessary, the single axis 360° inclinometer has an adjustable measuring range and allows for programming a specified span within the 360°. The teach function is simple and can be done in seconds. In addition, this version comes with two outputs in one device. The first output increases with clockwise rotation (CW). The second output increases with counter-clockwise rotation (CCW).

Features

- Measuring range is adjustable via teach adapter VB2-SP4
- Current 4–20mA output
- Voltage 0.1–4.9V output
- Vertical mount only
- Factory default is 1° to 360°
- FM Class 1, Div. 2 approved when used with Guard-Q20L60 and approved cordset



Technical Specifications – Q42

Voltage	10–30 VDC	Vibration	55 Hz (1mm)
Protection	IP68	Max. Linear Deviation	$\pm 0.2^\circ$ (10° or 360°) $\pm 0.3^\circ$, (45°) $\pm 0.4^\circ$ (60°)
Operating Temp.	-40 to +70° C (-40 to +158° F)	Baud Rate	10 kBit/s to 1 MBit/s
Housing	PA12	Interface	CANopen
Shock Resistance	30 G (11ms)		

Mfr.'s Model No.	Angular Range	Resolution	Zero Point Calibration	Price
Dual Axis — Analog Output, 4–20mA, $\leq 200\Omega$ Load Resistance, $\pm 0.3^\circ$ Absolute Accuracy, $\pm 0.05^\circ$ K Temp. Drift, 0.01°/K Temp. Coef.				
B2N10H-Q20L60-2LI2-H1151	$\pm 10^\circ$	$< 0.04^\circ$	$\pm 5^\circ$	\$426.00
Dual Axis — Analog Output, 4–20mA, $\leq 200\Omega$ Load Resistance, $\pm 0.5^\circ$ Absolute Accuracy, $\pm 0.025^\circ$ K Temp. Drift, 0.03°/K Temp. Coef.				
B2N45H-Q20L60-2LI2-H1151	$\pm 45^\circ$	$< 0.1^\circ$	$\pm 15^\circ$	\$426.00
B2N60H-Q20L60-2LI2-H1151	$\pm 60^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$426.00
B2N60H-Q20L60-2LI2-H1151/S97	$\pm 60^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$557.00
B2N85H-Q20L60-2LI2-H1151	$\pm 85^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$426.00
Dual Axis — Analog Output, 0.1–4.9V, $\geq 40k\Omega$ Load Resistance, $\pm 0.3^\circ$ Absolute Accuracy, $\pm 0.05^\circ$ K Temp. Drift, 0.05°/K Temp. Coef.				
B2N10H-Q20L60-2LU3-H1151	$\pm 10^\circ$	$< 0.04^\circ$	$\pm 5^\circ$	\$426.00
Dual Axis — Analog Output, 0.1–4.9V, $\geq 40k\Omega$ Load Resistance, $\pm 0.5^\circ$ Absolute Accuracy, $\pm 0.025^\circ$ K Temp. Drift, 0.03°/K Temp. Coef.				
B2N45H-Q20L60-2LU3-H1151	$\pm 45^\circ$	$< 0.1^\circ$	$\pm 15^\circ$	\$426.00
B2N45H-Q20L60-2LU3-H1151/S97	$\pm 45^\circ$	$< 0.1^\circ$	$\pm 15^\circ$	\$557.00
B2N60H-Q20L60-2LU3-H1151	$\pm 60^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$426.00
B2N60H-Q20L60-2LU3/S97	$\pm 60^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$557.00
B2N85H-Q20L60-2LU3-H1151	$\pm 85^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$426.00
B2N85H-Q20L60-2LU3/S97	$\pm 85^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$557.00
Dual Axis — Analog Output, Ratiometric 0.1–4.9V @ 5 VDC, $\geq 40k\Omega$ Load Resistance, $\pm 0.3^\circ$ Absolute Accuracy, $\pm 0.05^\circ$ K Temp. Drift, 0.01°/K Temp. Coef.				
B2N10H-Q20L60-2LU5-H1151	$\pm 10^\circ$	$< 0.04^\circ$	$\pm 5^\circ$	\$457.00

Single Axis 360° with Two Discrete Switchpoints

This version has dual discrete outputs that are programmable as either normally open or normally closed with an adjustable span within the full angular range 0° to 360°.

Features

- Two switchpoints (PNP, N.O. or N.C.), hysteresis, and span are all adjustable with teach adapter VB2-SP5
- Switch state indication by LEDs



Single and Dual Axis with CANopen Interface

A standard CANopen interface according to CiA DS-301/CiA DSP-410. All measured values and parameters are accessible via the object directory (OD).

Features

- Transmit data object (TPDO1) with four operating modes
- Service-data object (Standard-SDO)
- Error message via emergency object
- Monitoring functions heartbeat as well as nodeguarding/lifeguarding
- Memory and recovery function of all parameters
- Indication of status and error via two-color LED
- Setting of node ID as well as baud rate via object dictionary
- Freely configurable limit frequency (digital filter)
- Configuration of the minimal change of angle for TPDO1 send event
- Optional monitoring of internal device temperature



Technical Specifications – Q20L60

Voltage	10–30 VDC/Ratiometric: 4.75–5.25 VDC	Housing	Polycarbonate
Protection	IP68	Shock Resistance	30 G (11ms)
Operating Temp.	-30 to +70° C (-22 to +158° F)	Vibration	55 Hz (1mm)
/S97 Option	-40 to +70° C (-40 to +158° F)	Repeatability	$\leq 0.2\%$ of measuring range IA-BI, $\leq 0.1\%$ after warmup time of 0.5h

Mfr.'s Model No.	Angular Range	Resolution	Zero Point Calibration	Price
Dual Axis — Analog Output, Ratiometric 0.1–4.9V @ 5 VDC, $\geq 40k\Omega$ Load Resistance, $\pm 0.5^\circ$ Absolute Accuracy, $\pm 0.025^\circ$ K Temp. Drift, 0.03°/K Temp. Coef.				
B2N45H-Q20L60-2LU5-H1151	$\pm 45^\circ$	$< 0.1^\circ$	$\pm 15^\circ$	\$457.00
B2N60H-Q20L60-2LU5-H1151	$\pm 60^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$457.00
B2N85H-Q20L60-2LU5-H1151	$\pm 85^\circ$	$< 0.14^\circ$	$\pm 15^\circ$	\$457.00
Single Axis 360° — Analog Output, Adjustable Measuring Range 4–20mA, $\leq 200\Omega$ Load Resistance, $\pm 0.5^\circ$ Absolute Accuracy, 0.03°/K Temp. Coef.				
B1N360V-Q20L60-2LI2-H1151	360°	$< 0.14^\circ$	N/A	\$426.00
Single Axis 360° — Analog Output, Adjustable Measuring Range 0.1–4.9V, $\geq 40k\Omega$ Load Resistance $\pm 0.5^\circ$ Absolute Accuracy, 0.03°/K Temp. Coef.				
B1N360V-Q20L60-2LU3-H1151	360°	$< 0.14^\circ$	N/A	\$426.00
Single Axis 360° — Digital Output, PNP, N.C./N.O. Programmable, Adjustable Switchpoints, $\leq 500mA$ Load Resistance, $\pm 0.5^\circ$ Absolute Accuracy, $\pm 0.003^\circ$ K Temp. Drift, 0.03°/K Temp. Coef.				
B1N360V-Q20L60-2UP6X3-H1151	360°	$< 0.14^\circ$	N/A	\$426.00
Single Axis — CANopen Interface, $\pm 0.1^\circ$ Absolute Accuracy, 0.008°/K Temp. Coef.				
B1N360V-Q42-CN2-2H1150	360°	$< 0.01^\circ$	N/A	\$525.00
Dual Axis — CANopen Interface, $\pm 0.1^\circ$ Absolute Accuracy, 0.008°/K Temp. Coef.				
B2N10H-Q42-CN2-2H1150	$\pm 10^\circ$	$\leq 0.05^\circ$	N/A	\$525.00
B2N45H-Q42-CN2-2H1150	$\pm 45^\circ$	$\leq 0.1^\circ$	N/A	\$525.00
B2N60H-Q42-CN2-2H1150	$\pm 60^\circ$	$\leq 0.1^\circ$	N/A	\$525.00