



Angle Sensor HAT 3836

Magnetic	absolute	Singleturn, 18 Bit
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CANopen

Functional Safety
PL d
SIL 2

CANopen
safety easy to use

Description:

HAT 3836 is a high resolution absolute measuring Singleturn angle sensor. Thanks to its contactless magnetic measuring method and its robust design, HAT 3836 is ideally suited for rotational angle measurement in mobile machines as well as in industrial applications.

The sensor version designed for applications with increased functional safety meets the safety requirements according to SIL2 (IEC 61508) bzw. PL d (ISO 13849).

The sensor is therefore ideally suited for mobile machines and industrial applications, especially in applications with increased safety requirements and wherever high-resolution data recording is required.

Technical Data:

Input data	
Type ¹⁾	Solid shaft / D-contour
Type	Absolute Singleturn
Mechanical adjusting angle	360° continuous rotation
Measurement range	0 .. 360°
Direction of rotation	No orientation restrictions
Max. speed	1000 min ⁻¹
Starting torque	< 5 Ncm
Max. axial load	60 N
Max. radial load	100 N
Shaft material	Stainless steel
Housing material	Stainless steel
Output data	
Output signal ¹⁾	CANopen (Safety)
Resolution	18 Bit
Accuracy at RT	±0.1° typ. ±0.2° max.
Accuracy beyond temperature range	0.05° / 10K typ. 0.1° / 10K max.
Repeatability	≤ ± 0.05°
Angle increase	Factory-set (cw / ccw)
Ambient conditions	
Operating temperature range	-40 .. +185°F
Storage temperature range	-40 .. +185 °F
Protection class to DIN 60529	IP 67
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6: 2010	7.5 mm (5 Hz ≤ f < 8.2 Hz) 2 g (8.2 Hz ≤ f < 2000 Hz)
Shock resistance to DIN EN 60068-2-27: 2011	20 g (11 ms in 3 axes)
Safety-related data	
Performance Level ²⁾	
Based on	DIN EN ISO 13849-1:2008
PL	d
Architecture	Category 2
Safety Integrity Level ²⁾	
Based on	DIN EN 61508:2010
SIL	2
Other data	
Supply voltage	9 .. 36 VDC
Residual ripple of supply voltage	≤ 5% U _b
Power consumption	< 1.4 W
Electrical connection ¹⁾	Male M12x1, 5 pole
Life time	1.5 * 10 ⁹ rotations at 1000 min ⁻¹
Weight	approx. 180 g

Note: Reverse polarity protection of the supply voltage, excess voltage and short circuit protection are provided.

¹⁾ Other models on request

²⁾ SIL2, PLd Certificates pending.

Model Code:

HAT 38 36 – FXX – XXXX – P01 – XXXX – XXX – (S2PD) – 000

Resolution

8 = 18 Bit

Flange diameter

36 = 36 mm

Signal output

F11 = CANopen

F13 = CANopen Safety

Measuring range in ° and rotational direction

360R = 360°, clockwise rotation

360L = 360°, anti-clockwise

Electrical connection ¹⁾

P01 = Installation plug M12x1; 5 pole, axial

Mechanical connection ¹⁾

V126 = Solid shaft, length 12 mm, diameter 6 mm

D126 = D-contour, length 12 mm, diameter 6 mm

Fixing type

M01 = Synchro flange with 4 threaded bores

(Functional safety) ²⁾

S2PD = SIL2 gem. IEC 61508 und PLd – Kat 2 gem. DIN EN 13849-1

Modification

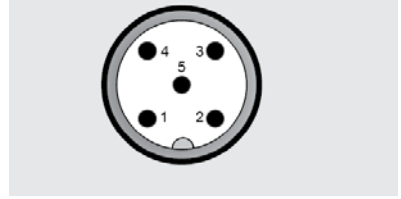
000 = Standard

Note: ¹⁾ Other models on request.

²⁾ Only in conjunction with CANopen Safety

Pin Connection:

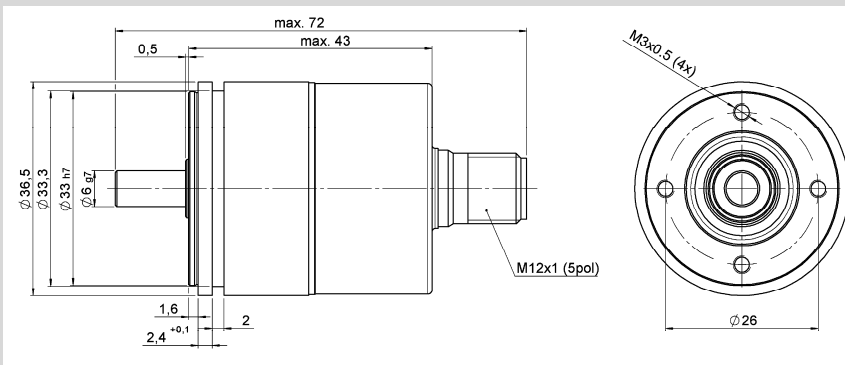
M12x1, 5-polig



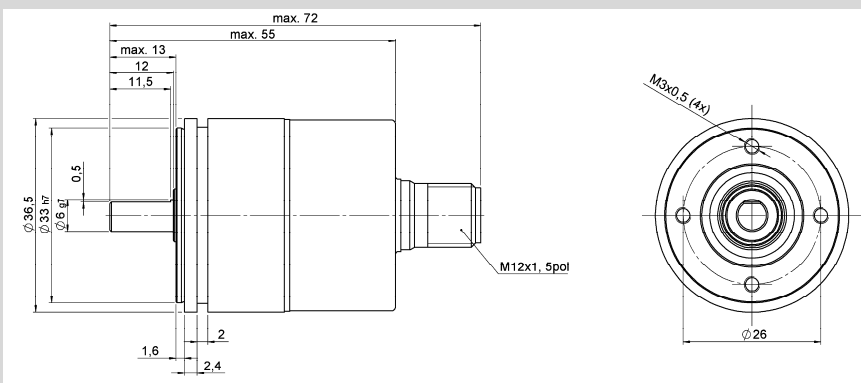
PIN	Assignment	Description
1	n.c.	
2	+U _b	Supply+
3	-U _b	Supply-
4	CAN_H	Bus line dominant high
5	CAN_L	Bus line dominant low

Dimensions:

Solid shaft:



D-contour:



Note:

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described please contact the relevant technical department. Subject to technical modifications.

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