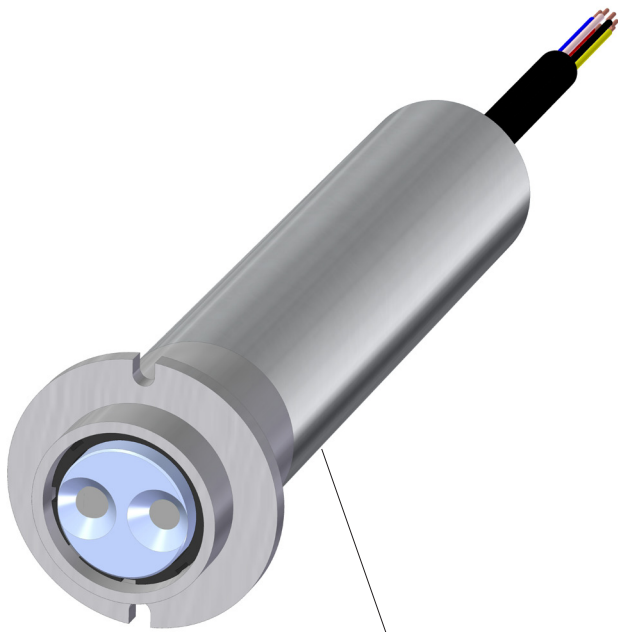


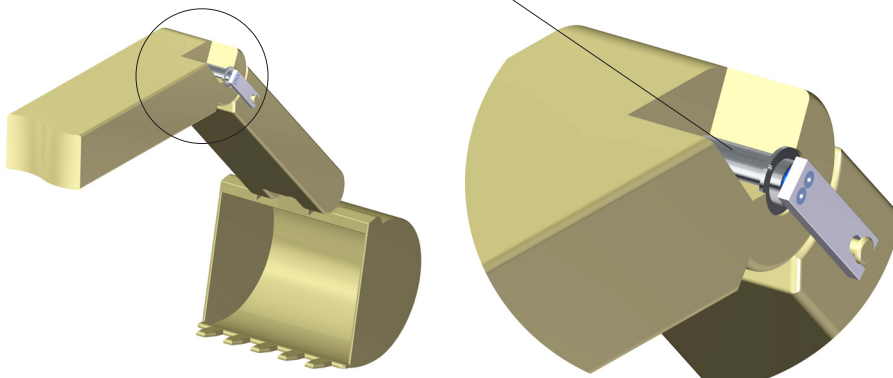
Integrated Pin Joint Encoder Series TBA 37

Document no: TBA 13064 DE
Date: 24.07.2014



TBX 37

- Robust design for rough applications in cranes and agricultural machines
- Available interfaces are: CANopen Safety with SIL2 (see datasheet: [TBN 13080](#))
- Protection type IP69 K
- Straight forward assembly



Design and function

- Robust stainless steel housing.
- Electronic circuit with ASICs, Hall elements and interface electronics in one encapsulated chamber
- The analog interface is realized using a 12-bit D/A converter
- Electrical connections via cable with open ends (optional with super seal plug).

Function

This encoder can be integrated inside the "Pin Joint" of heavy machinery equipment. The mounting is straightforward. This encoder is completely integrated in the joint and avoids external parts.

**Integrated Pin Joint Encoder
Series TBA 37**

Technical Data

Electrical data/ Node

- Sensor system: ASICs with Hall-Elements
- Supply voltage: 11 bis 36 VDC
- Power consumption: < 1.8 W

- Measuring range: up to 360°

- D/A-Converter: 12 Bit
- Code sense: CW* or CCW

- Resolution: ± 0.3 %, optional ± 0.15 % (for 360°)

- Repeatability: ± 0.02 % (for 360°)
- Temperature drift: < 0.008 % / ° K typ. (for 360°)

Electrical data

- Current output: 4 to 20 mA
- Load resistance: 0 ... 500 Ω

Mechanical data

- Operating speed: 500 min⁻¹
- Angular acceleration: 10⁵ rad/s² max.

- Inertial mass (rotor): 20 gcm²
- Operating torque: ≤ 2 Ncm
- Starting torque: ≤ 3 Ncm

- Perm. Shaft load: 100 N axial, 500 N radial
- Bearing service life: ≥ 10⁹ revolutions **
- Weight: ca. 0,3 kg

Environmental data

- Operating temp. range: - 40 °C to + 85 °C
- Storage temp.range: - 40 °C to + 100 °C (without packaging)

- Resistance
 - to shock: 500 m/s² ; 11 ms
DIN EN 60068-2-27
 - to vibration: 500 m/s² ;10 Hz ... 2000 Hz
DIN EN 60068-2-6

- EMV-standards: DIN EN 61 000 - 6 - 2 Immission (Burst/ESD/etc..)
DIN EN 61 000 - 6 - 4 Emission

- Protection grade: IP69 K
(DIN EN 60529)

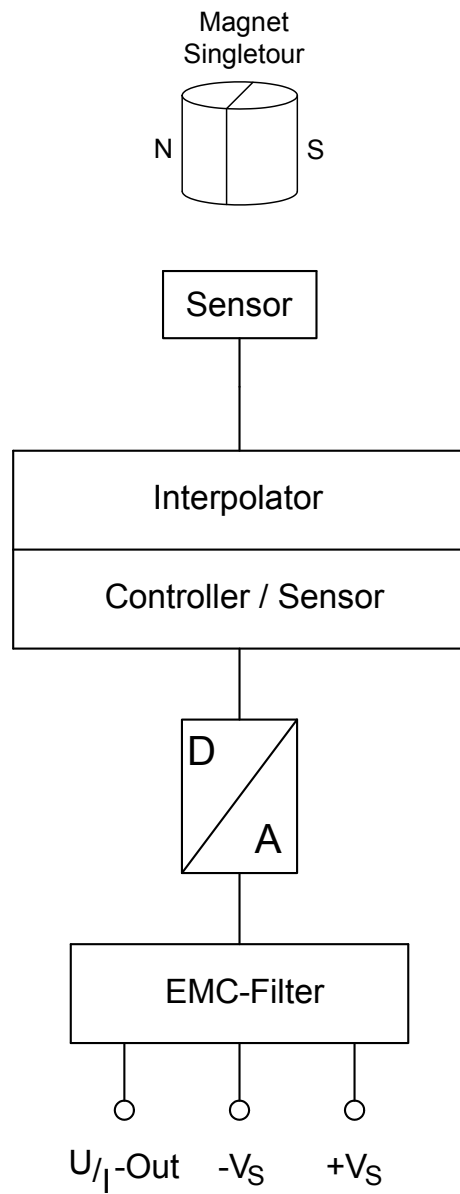
*) CW = Increasing (CCW=Decreasing) signal when looking at the shaft while the shaft is turning right.

***) These values apply at maximum shaft load. Higher values are achievable at lower loads.

Integrated Pin Joint Encoder
Series TBA 37

Electrical connector

Block diagram



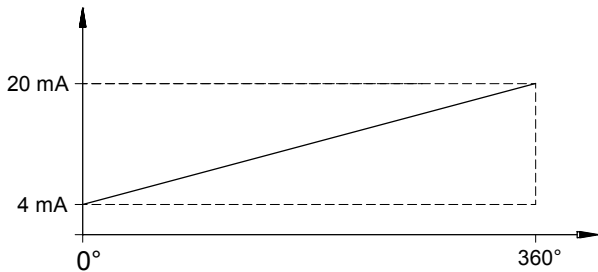
**Integrated Pin Joint Encoder
Series TBA 37**

Measuring range setting

Standard Measuring range

The standard setting is adjusted to 360° (characteristic curve).

Characteristic curve: Measuring range 360° (Output B)



Output circuits

Output B



Electrical connections, Connector arrangement

Electrical connection

- Cabel with open ends (optional with super seal plug)

Connector arrangement

Pin.No.	Wire color	Connected to
1	white	+U _S
2	green	I out
3	green	-U _S
4	n. c.	-

**Integrated Pin Joint Encoder
Series TBA 37**

Order number

TBA	37	M	S	360	W	K	B	01
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Electrical and / or mechanical variants*

01 Standard

Output signal:

B 4 - 20 mA

Electrical connection:

K Cable 1 m

Signal sense

W CW

C CCW (optional)

Measuring range:

360° Measuring range

Housing material:

S Stainless steel

Flange:

M Mounting flange

Design form:

37 mm ø Flange diameter

Model:

TBA TBA

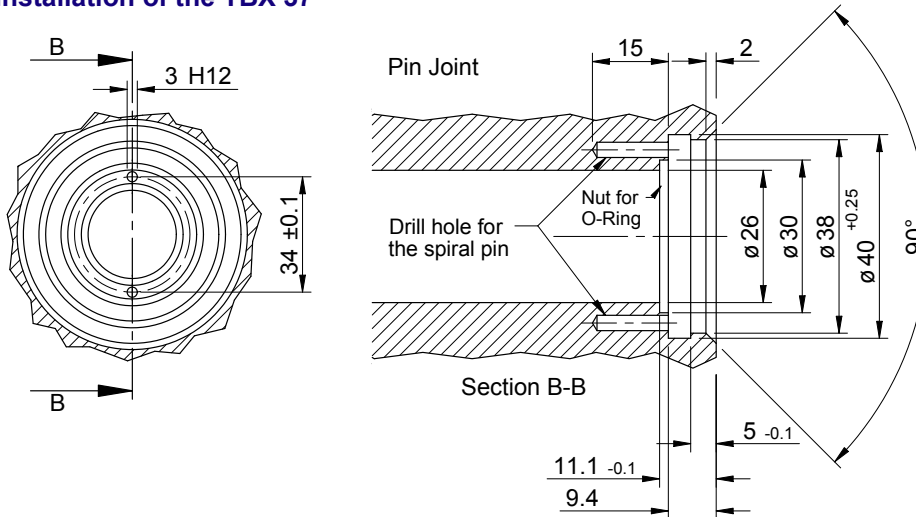
* The basic versions according to the data sheet bear the number 01. Deviations are identified with a variant number and are documented in the factory.

**Integrated Pin Joint Encoder
Series TBA 37**

Installation drawing

Dimensions in mm

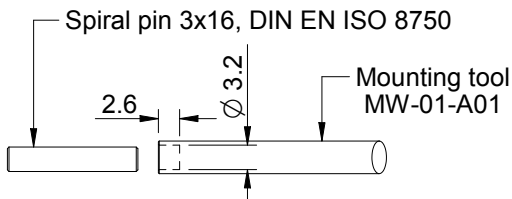
**Possible interpretation of the customer's
Pin Joint for installation of the TBX 37**



Mounting accessories

Mounting accessories:	Spiral pin	2 x DIN EN ISO 8750, phosphatized and oiled (optional VA)
	Seeger-Ring	1 x J38, DIN 472, phosphatized and oiled (optional VA)
	Screws	2 x DIN 7991-M5x8
	O-Ring	1 x O-Ring 25x2,5 NBR
	Mounting tool	1 x MW-01-A01

Order number: **MZ-TBX37-01**



The mounting tool is used to press the spiral pin into the drill holes until the mounting tool touches the $\varnothing 40$ level.

Arm to be fixed on the encoder

Custom made arms can be delivered by TWK.

