

Incremental Shaft Encoders Type RX 70 TI

Industrial types

EX



- Encoder for explosion-protection type II
- Top reliability
- Application e.g.:
 - enamelling production lines
 - finishing machines
 - bottling machines
 - mixers
 - silo works
- For absolute EX encoders, see "Absolute Encoders Type RX 70-TS, TM, TP"



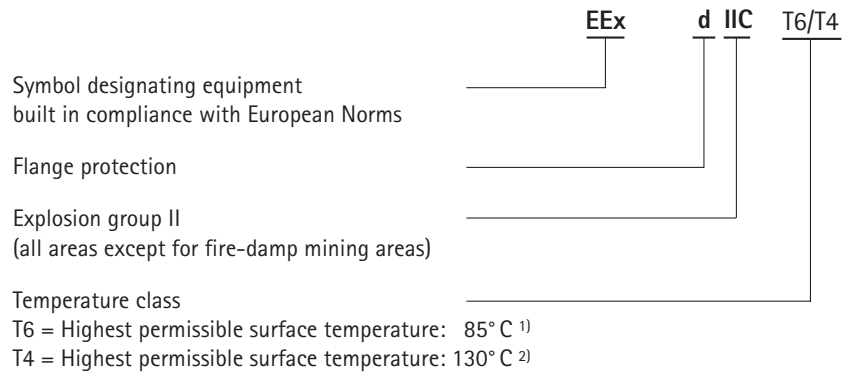
NUMBER OF PULSES

1 / 2 / 3 / 4 / 5 / 10 / 15 / 20 / 25 / 29 / 30 / 35 / 40 / 50 / 60 / 64 / 70 / 72 / 80 / 100 / 117 / 120 / 125 / 127 / 128 / 136 / 144 / 150 / 180 / 200 / 226 / 230 / 250 / 256 / 280 / 300 / 314 / 350 / 356 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 635 / 720 / 750 / 889 / 900 / 942 / 1,000 / 1,024 / 1,125 / 1,200 / 1,250 / 1,270 / 1,500 / 1,600 / 1,800 / 1,885 / 1,979 / 2,000 / 2,048 / 2,400 / 2,500 / 3,000 / 3,400 / 3,480 / 3,600 / 3,750 / 3,925 / 3,958 / 3,968 / 4,000 / 4,096 / 4,445 / 4,800 / 5,000 / 5,400 / 6,000 / 6,875 / 7,200 / 7,680 / 7,854 / 8,000 / 8,192 / 9,000 / 10,000

Other numbers of pulses available on request.

EX-CLASSIFICATION

Hengstler EXPLOSION-PROOF shaft encoders are classified according to EEx d IIC T6/T4 (according to EN 50014 and EN 50018)
Certificate of conformity: BVS 95.D.2027



¹⁾ EEx d IIC T6: max. speed = 6,000 RPM

²⁾ EEx d IIC T4: max. speed = 10,000 RPM

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TECHNICAL DATA mechanical

Shaft diameter	10 mm
Absolute max. shaft load	radial 160 N / axial 107 N (35/24 lbs)
Absolute maximum speed	10,000 RPM (EEx d IIC T4) 6,000 RPM (EEx d IIC T6)
Torque	≤ 1 Ncm
Moment of inertia	ca. 20 gcm ²
Protection class (EN 60529)	Housing IP 65, bearings IP 64
Operating temperature	-20 ... +60 °C (EEx d IIC T4) -10 ... +40 °C (EEx d IIC T6)
Storage temperature	-25 ... +85 °C
Vibration proof (IEC 68-2-6)	10 g = 100 m/s ² (10...2,000 Hz)
Shock resistance (IEC 68-2-27)	100 g = 1,000 m/s ² (6 ms)
Type of connection	5 m cable axial ¹⁾ for fixed layout
Size	Ø 70 mm
Flange	Clamping flange, holes 3 x M6
Weight	approx. 1,400 g
Bearing life	1 x 10 ¹⁰ revolutions (typ.) at 35 % of full rated shaft load 1 x 10 ⁹ revolutions (typ.) at 75 % of full rated shaft load 1 x 10 ⁸ revolutions (typ.) at 100 % of full rated shaft load For example 30,000 h at 6,000 RPM with a 13 lb radial load (10 mm or 9.52 mm shaft)

¹⁾ Other cable lengths on request

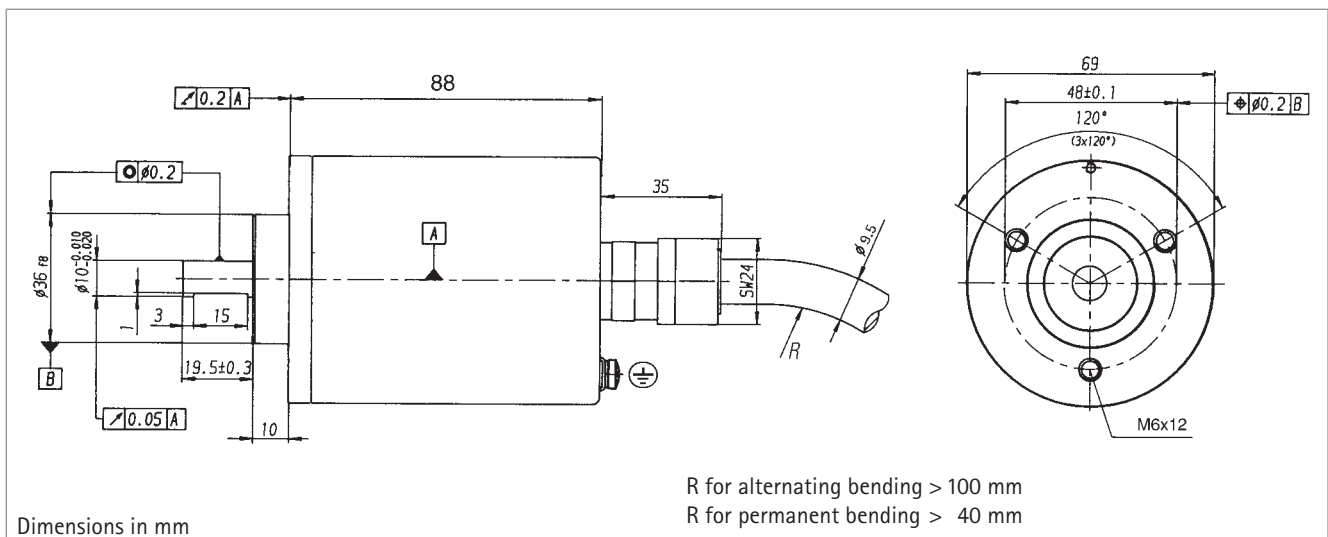
TECHNICAL DATA electrical

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II	
Supply voltage (SELV)	with RS 422 + Sense (T): 5VDC ± 10 % with RS 422 + Alarm (R): 5VDC ± 10 % oder 10 ... 30 VDC ¹⁾ with push-pull (K, I): 10 ... 30VDC ¹⁾	
Power consumption	40 mA (5 VDC), 60 mA (10 VDC), 30 mA (24 VDC)	
Standard- Output versions ²⁾	RS 422 (R):	A, B, N, \bar{A} , \bar{B} , \bar{N} , Alarm
	RS 422 (T):	A, B, N, \bar{A} , \bar{B} , \bar{N} , Sense
	push-pull (K):	A, B, N, Alarm
	push-pull complementary (I):	A, B, N, \bar{A} , \bar{B} , \bar{N} , Alarm

¹⁾ Pole protection with supply voltage 10 ... 30 VDC

²⁾ Output description and technical data see section „output“.

DIMENSIONED DRAWING



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CONNECTION DIAGRAM

Cable No.	Output			
	RS 422+ Sense (T)	RS 422+ Alarm (R)	push-pull (K)	push-pull complementary (I)
12	5 VDC	5/10...30 VDC	10...30 VDC	10...30 VDC
11	GND	GND	GND	GND
10	Sense V _{cc}			
9	Sense GND			
1	Channel A	Channel A	Channel A	Channel A
2	Channel \bar{A}	Channel \bar{A}		Channel \bar{A}
3	Channel B	Channel B	Channel B	Channel B
4	Channel \bar{B}	Channel \bar{B}		Channel \bar{B}
5	Channel N	Channel N	Channel N	Channel N
6	Channel \bar{N}	Channel \bar{N}		Channel \bar{N}
7		Alarm	Alarm	Alarm
screen	Cable screen connected to housing			
Screw terminal	for additional connection of an earth conductor			

ORDERING DATA

I Incremental Supply voltage
A 5 VDC¹⁾
E 10 ... 30 VDC²⁾ Type of flange
K Clamping flange Shaft
2 10 mm

R X 7 0 T I / **K · 4** **2** **A**

Number of pulses
1 ... 10,000 Protection class
4 IP 64 Output
K push-pull short circuit proof
T RS 422 + Sense
I push-pull complementary
R RS 422 + Alarm Connection
A PVC cable, axial (5 m)

¹⁾ with output T, R

²⁾ with output K, I, R