

# Absolute Encoders Type RX 70 TS, TM, TP

EX

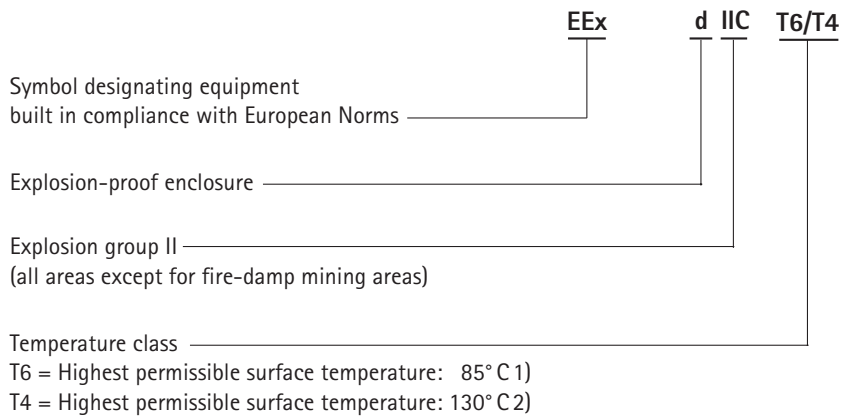


## EX-CLASSIFICATION

- Encoder for explosion-protection type II
- Top reliability
- Application e.g.:
  - enamelling production lines
  - surfacing machines
  - bottling machines
  - mixers
  - silo works
- For incremental EX encoders, see "Absolute Encoders Type RX 70-I"
- **New:** Profibus DP on request



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

## 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 <sup>2</sup>
Protection class (EN 60529)	Housing IP 65, bearings IP 64
General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II
Operating temperature	-10 ... +40 °C (EEx d IIC T6) -20 ... +60 °C (EEx d IIC T4)
Storage temperature	-25 ... +85 °C
Vibration proof (IEC 68-2-6)	10 g = 100 m/s <sup>2</sup> (10...2,000 Hz)
Shock resistance (IEC 68-2-27)	100 g = 1,000 m/s <sup>2</sup> (6 ms)
Connection	5 m cable axial <sup>1)</sup> for fixed layout
Size	Ø 70 mm
Flange	Clamping flange, holes 3 x M6
Weight	1,400 g approx.
Bearing life	1 x 10 <sup>10</sup> revolutions (typ.) at 35% of full rated shaft load 1 x 10 <sup>9</sup> revolutions (typ.) at 75% of full rated shaft load 1 x 10 <sup>8</sup> 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)

<sup>1)</sup> Other cable length on request

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## DIMENSIONED DRAWINGS

see section "Absolute Encoders – dimensioned drawings"

## TECHNICAL DATA electrical

	RX 70 TS and TM	RX 70 TP
Interface	serial (SSI)	serial (SSI)
Resolution	RX 70 TS: 4,096 incr. (12 Bit) 8,192 incr. (13 Bit) RX 70 TM: 4,096 incr./4,096 turns (24 Bit) 8,192 incr./4,096 turns (25 Bit)	programmable max 4,096 incr./4096 turns (24 Bit)
Linearity	$\pm \frac{1}{2}$ LSB	$\pm \frac{1}{2}$ LSB
Type of code	Gray, Binary	Gray, Binary (programmable)
Supply voltage	10 ... 30 VDC <sup>1)</sup> (SELV)	10 ... 30 VDC <sup>1)</sup> (SELV)
Power consumption	max. 2 W	max. 2.5 W
Baud rate	70 KB ... 1.5 MB	70 KB ... 1.5 MB
Inputs	Direction	Direction, Preset 1, Preset 2
Output drivers	RS 422	RS 422
Alarm output	Alarm bit	Alarm bit programmable
Paritybit	on request	Parity bit programmable
Max. cable length	400 m <sup>2)</sup>	400 m <sup>2)</sup>

<sup>1)</sup> Pole protection

<sup>2)</sup> refer to "Recommended data transmission rate for SSI"

## RECOMMENDED DATA TRANSMISSION RATE FOR SSI

The maximum data transmission rate depends on the length of cable:

Cable length	Baud rate
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

## CONNECTION DIAGRAM

Cable No.	SSI-Interface RX 70 TS, TM	RX 70 TP
6		RS 232 RxD
5		RS 232 TxD
10	$\overline{\text{Clock}}$	$\overline{\text{Clock}}$
9	Clock	Clock
8	$\overline{\text{Data}}$	$\overline{\text{Data}}$
7	Data	Data
3	$\overline{\text{Direction}}$	Direction
4	0 V-signal output	0 V-signal output
1		Preset 1
2		Preset 2
11	0 V (Supply voltage)	0 V (Supply voltage)
12	10 ... 30 VDC	10 ... 30 VDC
screen	Cable screen connected to housing	
screw terminal	for additional connection of an earth conductor	

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## ORDERING DATA

