

## Industrial types



- Miniature encoder for industrial use
- Low current consumption
- High noise interference immunity
- Cable lengths of up to 100 m
- Suitable for high pulse frequencies
- High protection class
- Application e.g.:  
CNC machines, manipulators, motors,  
medical technology, textile machines

### NUMBER OF PULSES

5 / 10 / 20 / 25 / 30 / 50 / 60 / 100 / 120 / 128 / 200 / 250 / 256 / 288 / 300 / 360 / 400 / 500 / 512 / 600 / 720 / 900 / 1,000 / 1,024 / 1,250 / 1,500  
Other numbers of pulses available on request

### TECHNICAL DATA mechanical

Shaft diameter	5 mm
Absolute max. shaft load	radial 30 N / axial 15 N (6.5/3.3 lbs)
Absolute maximum speed	max. 10,000 RPM
Torque	≤ 0.2 Ncm
Moment of inertia	ca. 0.8 gcm <sup>2</sup>
Protection class (EN 60529)	Housing IP 64, bearings IP 64
Operating temperature	-10 ... +70 °C
Storage temperature	-25 ... +85 °C
Vibration performance	100 m/s <sup>2</sup> (10 ... 2000 Hz)
Shock resistance	1,000 m/s <sup>2</sup> (6 ms)
Type of connection	1.5 m cable radial/axial <sup>1)</sup> , connector axial
Housing	aluminium
Flange	S = synchro flange, R = round flange
Weight	60 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 2 lb radial load

<sup>1)</sup> Other cable length 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 (R, T):	5 VDC ± 10 %
	with push-pull (K):	10 ... 30 VDC <sup>1)</sup>
Power consumption	40 mA (5 VDC), 60 mA (10 VDC), 30 mA (24 VDC)	
Standard-Output versions <sup>2)</sup>	RS 422 (R)	A, B, N, $\overline{A}$ , $\overline{B}$ , $\overline{N}$ , $\overline{Alarm}$
	RS 422 (T)	A, B, N, $\overline{A}$ , $\overline{B}$ , $\overline{N}$ , Sense
	push-pull (K)	A, B, N, $\overline{Alarm}$

<sup>1)</sup> Pole protection

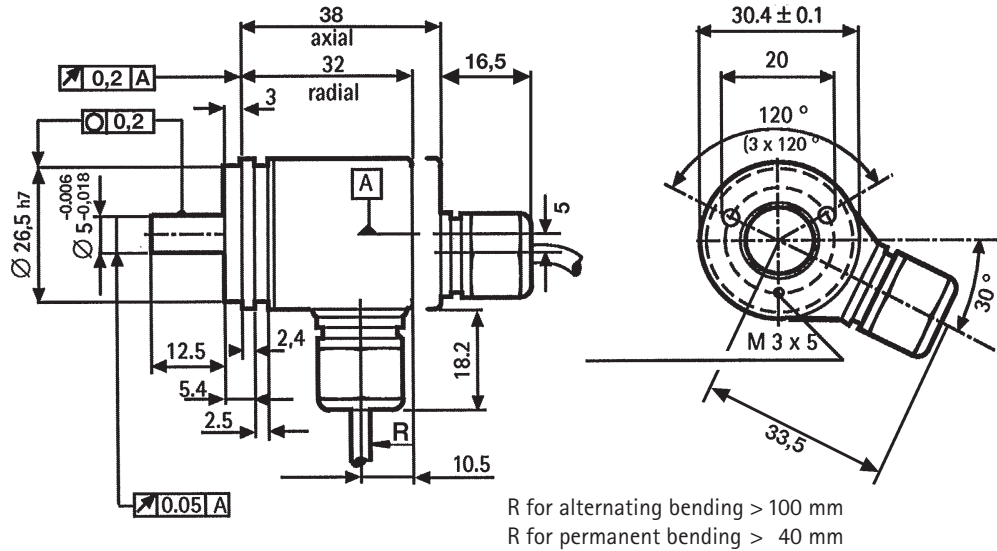
<sup>2)</sup> Output description and technical data see section „Output“.

# Incremental Shaft Encoders Industrial types

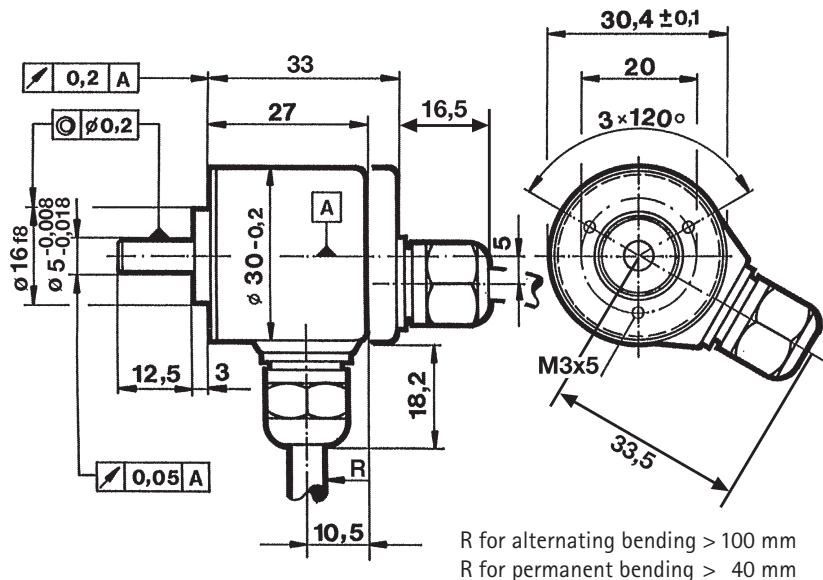
Type RI 30

## DIMENSIONED DRAWINGS (Dimensions in mm)

Synchro flange, cable

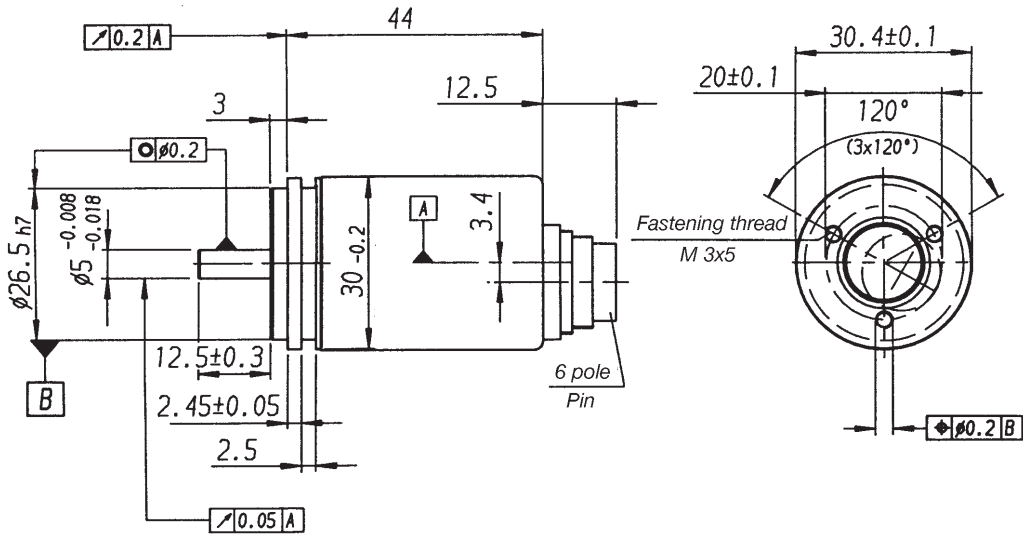


Round flange, cable

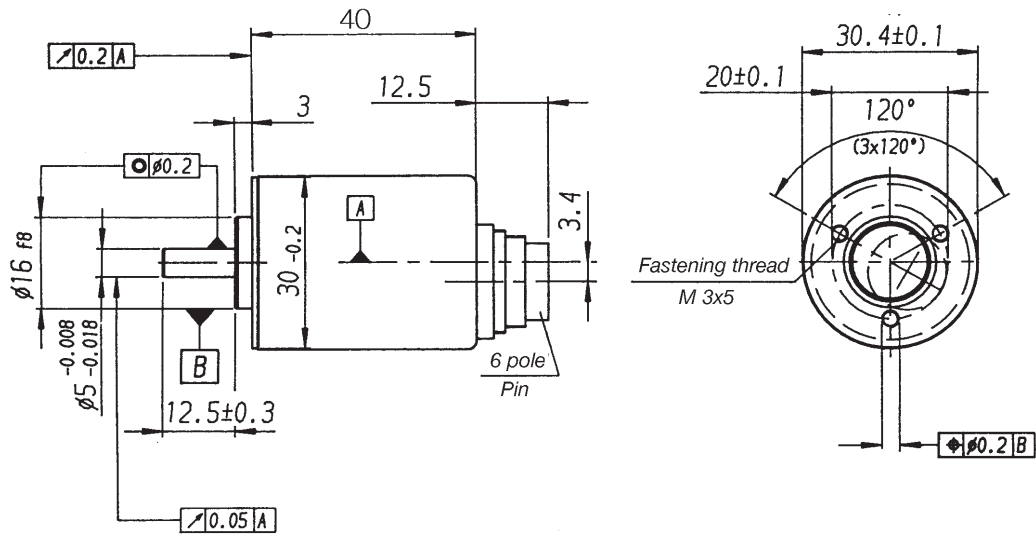


# Incremental Shaft Encoders Type RI 30 Industrial types

Synchro flange, BINDER



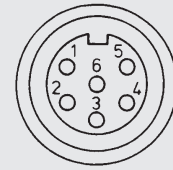
Round flange, BINDER



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### CONNECTOR 6 POLE (BINDER)

Description (push-pull)	Pin
10 ... 30 VDC	1
Channel A	2
Channel N	3
Channel B	4
Alarm	5
GND	6



### CONNECTION DIAGRAM cable

Description (push-pull)	Description (RS 422)	Lead Ø mm <sup>2</sup>	Colour
10 ... 30 VDC	5 VDC	0.5	red
	Sense V <sub>CC</sub>	0.14	yellow/red
Channel A	Channel A	0.14	white
	Channel $\bar{A}$	0.14	white/brown
Channel B	Channel B	0.14	green
	Channel $\bar{B}$	0.14	green/brown
Channel N	Channel N	0.14	yellow
	Channel $\bar{N}$	0.14	yellow/brown
GND	GND	0.5	black
Alarm	$\bar{A}$ larm/Sense GND <sup>1)</sup>	0.14	yellow/black
screen <sup>2)</sup>	screen <sup>2)</sup>		screen <sup>2)</sup>

<sup>1)</sup> depending on ordering code

<sup>2)</sup> connected to housing

### ORDERING DATA

**0** standard

Supply voltage  
**A** 5 VDC  
**E** 10 ... 30 VDC (only with push-pull)

Type of flange  
**S** synchro flange  
**R** round flange

Shaft diameter  
**4** 5 mm

**RI 30 - 0 / [ ] [ ] [ ] · 3 [ ] [ ] [ ]**

Number of pulses  
**5 ... 1,500**

Protection class  
**3** IP 64

Output  
**T** RS 422 + Sense  
**K** push-pull  
**R** RS 422 + Alarm

Type of connection  
**A** cable axial  
**B** cable radial  
**N** BINDER <sup>1)</sup>  
 6 pole, axial (only push-pull)

<sup>1)</sup> encoder connector with pins