

## Industrial types

## Hollow shaft



- miniature industry encoder for high number of pulses
- short mounting length
- easy mounting procedure
- Application e.g.:
  - Motors
  - Machine tools
  - Packaging Machines
  - Robots
  - Automated SMD equipment

### NUMBER OF PULSES

5 / 10 / 20 / 25 / 50 / 60 / 100 / 200 / 250 / 300 / 360 / 500 / 600 / 720 / 1000 / 1024 / 1250 / 1500 / 2000 / 2048 / 2500 / 3000 / 3600  
 Other number of pulses on request

### TECHNICAL DATA mechanical

Mounting	Clamping shaft (one side open) with clamping ring front
Coupling	Hubshaft with tether
Shaft diameter	4, 6, 8, 10 mm hollow shaft
Angular shaft misalignment max.	±0.15 mm radial, ±0.5 mm axial
Absolute max. speed	max. 10 000 min <sup>-1</sup>
Torque	≤ 1 Ncm
Moment of inertia	approx. 3 gcm <sup>2</sup>
Protection class (EN 60529)	Housing IP64, bearings IP64
Operating temperature	-10 ... +70 °C
Storage temperature	-25 ... +85 °C
Vibration resistance	100 m/s <sup>2</sup> (10 ... 2000 Hz)
Shock resistance	1000 m/s <sup>2</sup> (6 ms)
Connection	1.5 m cable <sup>1</sup> axial or radial
Housing	Aluminium
Weight	approx. 80 g

<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):	DC 5 V ± 10 %
	with push-pull (K, I):	DC 10 - 30 V <sup>2</sup>
Max. current w/o load	40 mA (DC 5 V), 60 mA (DC 10 V), 30 mA (DC 24 V)	
Standard output versions <sup>3</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, $\overline{Alarm}$
	push-pull complementary (I):	A, B, N, $\overline{A}$ , $\overline{B}$ , $\overline{N}$ , $\overline{Alarm}$

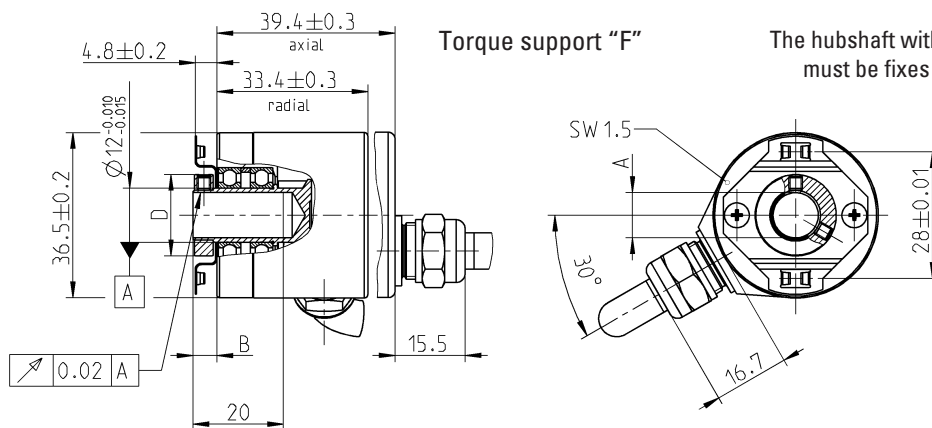
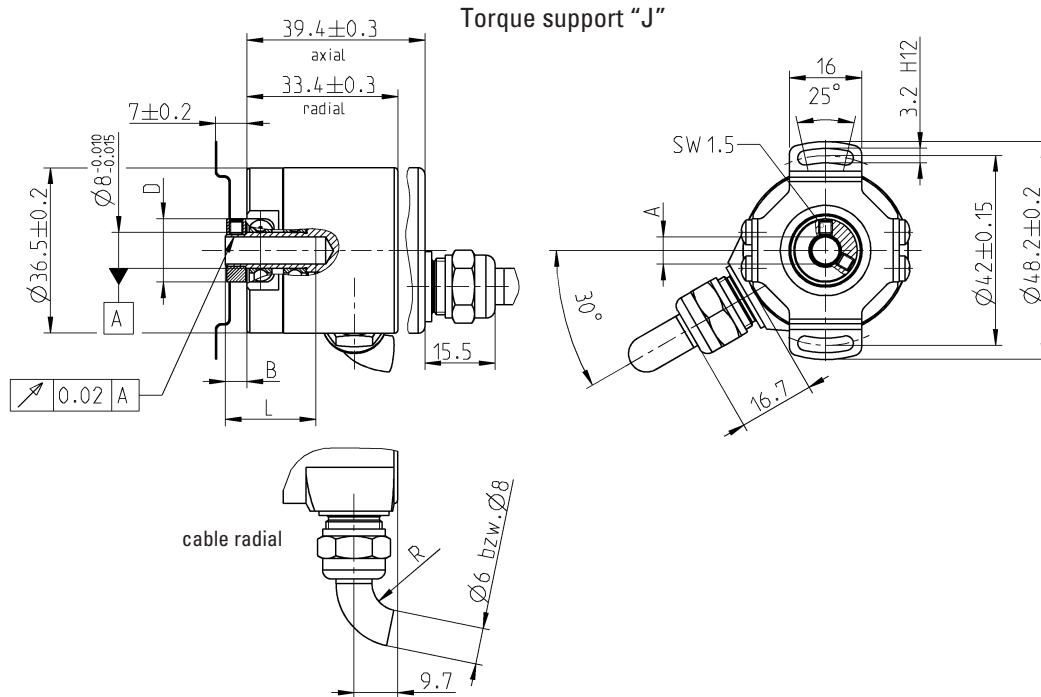
<sup>2</sup> Pole protection

<sup>3</sup> Output description and technical data see chapter "Technical basics"

# Incremental Shaft Encoders Industrial types

# Type RI 36-H Hollow shaft

## DIMENSIONAL DRAWINGS



The hubshaft with tether (F) as torque support must be fixed by a cylindrical pin (2.4 mm  $\phi$ ) at the machine side

Dim.:	Hollow shaft $\phi$				Unit
A	4 $^{+0.01}$	6 $^{+0.01}$	8 $^{+0.01}$	10 $^{+0.01}$	mm
A*	4 g7	10 g7	8 g7	10 g7	mm
B	4.8 $\pm$ 0.2	4.8 $\pm$ 0.2	5.3 $\pm$ 0.2	5.3 $\pm$ 0.2	mm
D	12	14	16	18	mm
L min	6	9	12	15	mm
L max	20	20	20	20	mm

A\* = diameter of connection shaft  
 B = space between housing and shaft  
 D =  $\phi$  clamping ring  
 L = length of connection shaft

R for alternating bending  $\geq 100$  mm  
 R for permanent bending  $\leq 40$  mm

Tightening torque of set screw 15 Ncm

Dimensions in mm

### PIN ASSIGNMENT

Cable PVC (A, B)		Output		
Colour	Litze mm <sup>2</sup>	RS 422 (R, T)	push-pull (K)	push-pull complementary (I)
red	0.5	DC 5 V	DC 10 - 30 V	DC 10 - 30 V
yellow/red	0.14	Sense V <sub>CC</sub>		Sense V <sub>CC</sub>
white	0.14	Channel A	Channel A	Channel A
white/brown	0.14	Channel $\bar{A}$		Channel $\bar{A}$
green	0.14	Channel B	Channel B	Channel B
green/brown	0.14	Channel $\bar{B}$		Channel $\bar{B}$
yellow	0.14	Channel N	Channel N	Channel N
yellow/brown	0.14	Channel $\bar{N}$		Channel $\bar{N}$
black	0.5	GND	GND	GND
yellow/black	0.14	Alarm / Sense GND <sup>1</sup>	Alarm	Alarm
screen <sup>2</sup>		screen <sup>2</sup>	screen <sup>2</sup>	screen <sup>2</sup>

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

<sup>2</sup> connected with encoder housing

### ORDERING INFORMATION

Type	Model	Number of pulses	Supply voltage	Flange, Protection, Shaft	Output	Connection
<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>RI36-</b>	<b>H</b> Hollow shaft	<b>5 ... 3 600</b>	<b>A</b> DC 5 V <b>E</b> DC 10 - 30 V (only with push-pull)	<b>F.30</b> Clamping, IP64, 4 mm * <b>F.31</b> Clamping, IP64, 6 mm * <b>F.3C</b> Clamping, IP64, 8 mm * <b>F.32</b> Clamping, IP64, 10 mm * <b>J.30</b> Clamping, IP64, 4 mm ** <b>J.31</b> Clamping, IP64, 6 mm ** <b>J.3C</b> Clamping, IP64, 8 mm ** <b>J.32</b> Clamping, IP64, 10 mm **	<b>T</b> RS 422 + Sense <b>K</b> push-pull short circuit proof <b>R</b> RS 422 + Alarm <b>I</b> push-pull complementary	<b>A</b> Cable axial <b>B</b> Cable radial
* Fixing of hubshaft with tether by cylindrical pin ** Fixing of hubshaft with tether by oblong hole						