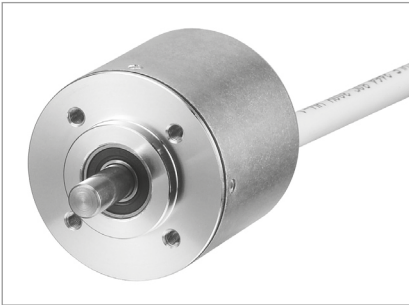


## Incremental

## Solid shaft



- Miniature industry standard encoder for high numbers of pulses
- High reliability
- Applications: CNC axles, machine tools, robots, special purpose machines, high-speed winding machines



### NUMBER OF PULSES

5 / 10 / 20 / 25 / 28 / 32 / 50 / 60 / 72 / 100 / 128 / 144 / 200 / 250 / 256 / 288 / 300 / 360 / 400 / 500 / 512 / 600 / 720 / 900 / 1000 / 1024 / 1250 / 1500 / 2000 / 2048 / 2500 / 3000 / 3600  
 Other number of pulses on request

### TECHNICAL DATA mechanical

Housing diameter	36 mm
Shaft diameter	6 mm / 6.35 mm (Solid shaft)
Flange (Mounting of housing)	Synchro flange, Pilot flange
Protection class shaft input (EN 60529)	IP64
Protection class housing (EN 60529)	IP64
Shaft load axial / radial	5 N / 10 N
Max. speed	max. 10 000 rpm
Starting torque typ.	≤ 0.3 Ncm
Moment of inertia	approx. 2.8 gcm <sup>2</sup>
Vibration resistance (DIN EN 60068-2-6)	100 m/s <sup>2</sup> (10 ... 2000 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s <sup>2</sup> (6 ms)
Operating temperature	-10 °C ... +70 °C
Storage temperature	-25 °C ... +85 °C
Material housing	Aluminum
Weight	approx. 80 g
Connection	Cable, axial or radial M16 (Binder), axial or radial

### TECHNICAL DATA electrical

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II
Supply voltage <sup>1</sup>	RS422 + Alarm (R), RS422 + Sense (T): DC 5 V ±10 % Push-pull (K), Push-pull antivalent (I): DC 10-30 V
Current w/o load typ.	40 mA (DC 5 V), 60 mA (DC 10 V), 30 mA (DC 24 V)
Max. pulse frequency	RS422: 300 kHz Push-pull: 200 kHz
Standard output versions <sup>2</sup>	RS422 + Sense (T): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , Sense RS422 + Alarm (R): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , $\bar{Alarm}$ Push-pull (K): A, B, N, $\bar{Alarm}$ Push-pull complementary (I): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , $\bar{Alarm}$
Pulse width error	± max. 25° electrical
Number of pulses	5 ... 3600
Alarm output	NPN-O.C., max. 5 mA

Incremental

Solid shaft

**TECHNICAL DATA**  
electrical (continued)

Pulse shape	Square wave
Pulse duty factor	1:1

<sup>1</sup> With push-pull (K) and push-pull complementary (I); pole protection  
<sup>2</sup> Output description and technical data see chapter "Technical basics"

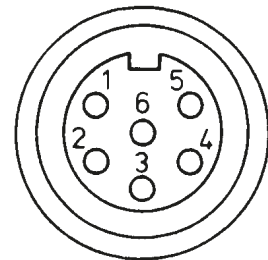
**ELECTRICAL CONNECTIONS**  
Cable PVC

Cable PVC (A, B)		Output		
Colour	Lead mm <sup>2</sup>	RS422 (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	$\bar{\text{Alarm}}$ /Sense GND <sup>1</sup>	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$
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

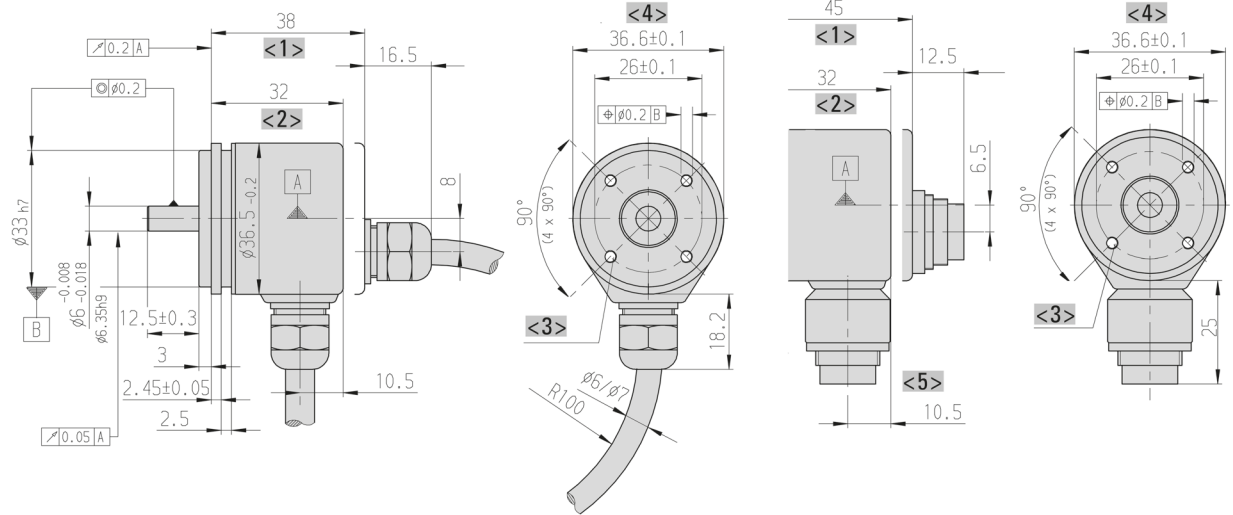
**ELECTRICAL CONNECTIONS**  
M16 connector (Binder), 6 pole

Description (push-pull)	Pin
DC 10 - 30 V	1
Channel A	2
Channel N	3
Channel B	4
$\bar{\text{Alarm}}$	5
GND	6



DIMENSIONED DRAWINGS

Synchro flange

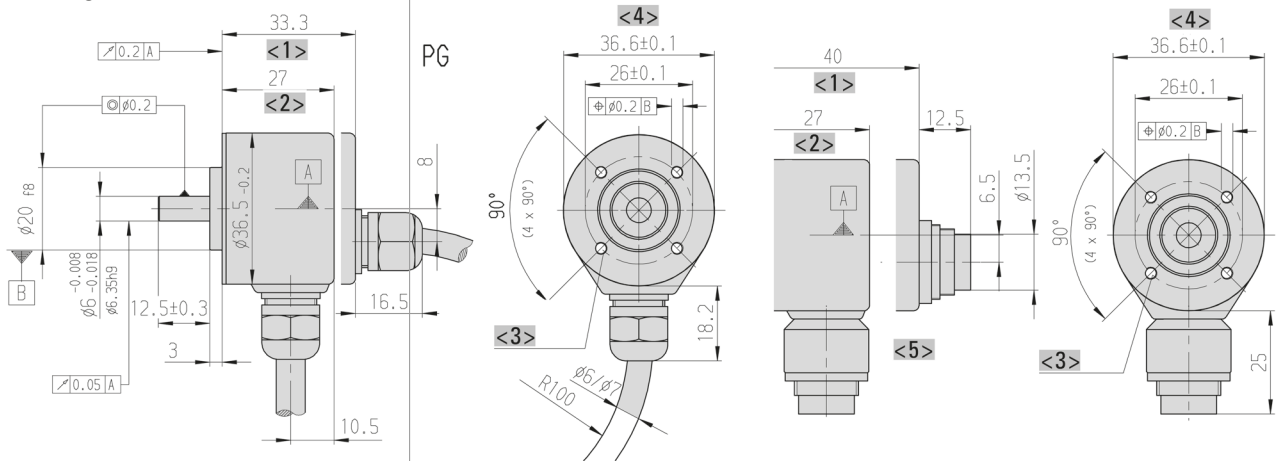


- <1> axial
- <2> radial
- <3> mounting thread M3x5
- <4> Housing

- <5> 6 pole (pins)
- Cable bending radius R for flexible installation  $\geq 100$  mm
- Cable bending radius R for fixed installation  $\geq 40$  mm

Dimensions in mm

Pilot flange



- <1> axial
- <2> radial
- <3> mounting thread M3x5
- <4> Housing

- <5> 6 pole (pins)
- Cable bending radius R for flexible installation  $\geq 100$  mm
- Cable bending radius R for fixed installation  $\geq 40$  mm

Dimensions in mm

ORDERING INFORMATION

Type	Number of pulses	Supply voltage <sup>1</sup>	Flange, Protection, Shaft	Output <sup>2</sup>	Connection <sup>3</sup>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>RI36-0</b>	<b>5 ... 3600</b>	<b>A</b> DC 5 V <b>E</b> DC 10 - 30 V	<b>S.31</b> Synchro, IP64, 6 mm <b>S.35</b> Synchro, IP64, 6.35 mm <b>R.31</b> Pilot, IP64, 6 mm <b>R.35</b> Pilot, IP64, 6,35 mm	<b>R</b> RS422 +Alarm <b>T</b> RS422 +Sense <b>K</b> Push-pull <b>I</b> Push-pull complementary	<b>A</b> Cable, axial <b>B</b> Cable, radial <b>E-I</b> M23 connector (Conin) at 1 m TPE cable, cw <b>E-D</b> M23 connector (Conin) at 1 m TPE cable, ccw <b>J</b> M16 connector (Binder), 6 pole, radial <b>N</b> M16 connector (Binder), 6 pole, axial

<sup>1</sup> DC 10 - 30 V only with output push-pull (K) and push-pull complementary (I)

<sup>2</sup> Output code "K" and "I": short-circuit-proof

<sup>3</sup> For Output Code "N" und "J" (M16): only push-pull

ORDERING INFORMATION

Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. For variants with connector on cable end please add cable length code in between. Further cable lengths on request.

Code	Cable length
without code	1.5 m
-D0	3 m
-F0	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

Example:

Cable 3 m length: ... B - D0

Cable mit 3 m length and M23 connectorr, cw: ... B - D0 - I

ACCESSORIES

see chapter "Accessories"