

Incremental Encoder with Hollow Shaft

Type RI 36-H



- 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 available on request

TECHNICAL DATA mechanical

Mounting	Clamping shaft (one side open) with front clamping ring
Coupling	spring plate
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 ⁻¹
Torque	≤ 1 Ncm
Moment of inertia	ca. 3 gcm ²
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 ² (10...2000 Hz)
Shock resistance	1000 m/s ² (6 ms)
Type of connection	1,5 m cable ¹⁾ axial or radial
Housing	aluminium
Weight	ca. 80 g

¹⁾ other cable length on request

TECHNICAL DATA electrical

General design	as per DIN EN61010-1, protection class III, contamination level 2, overvoltage class II	
Supply voltage (SELV)	with RS 422 (R, T):	5 VDC 10 %
	with push-pull (K, I):	10 ... 30 VDC ¹⁾
Power consumption	40 mA (5 VDC), 60 mA (10 VDC), 30 mA (24 VDC)	
Standard-Output version ²⁾	RS 422 (R):	A, B, N, \overline{A} , \overline{B} , \overline{N} , Alarm
	RS 422 (T):	A, B, N, \overline{A} , \overline{B} , \overline{N} , Sense
	push-pull (K):	A, B, N, Alarm
	push-pull complementary (I):	A, B, N, \overline{A} , \overline{B} , \overline{N} , Alarm

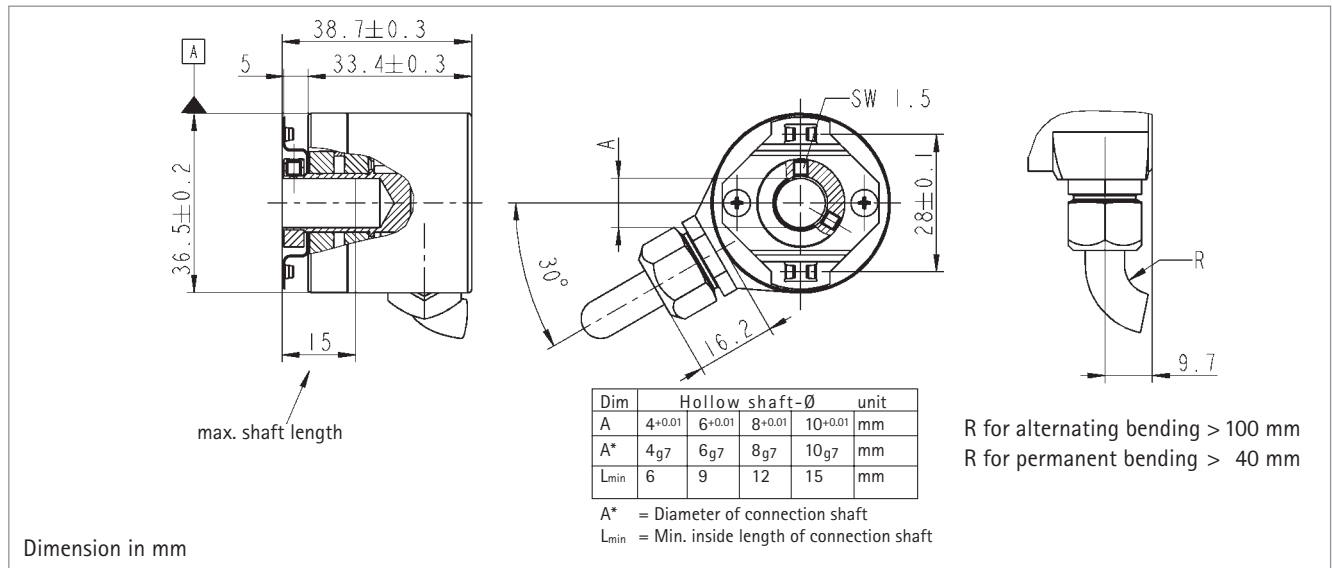
¹⁾ pole protection

²⁾ Output description and technical data see section "output"

Incremental Encoder with Hollow Shaft

Type RI 36-H

DIMENSIONED DRAWING



The spring plate as torque support must be fixed by a cylindrical pin (2.4 mm Ø) at the machine side

CONNECTION DIAGRAM

Cable PVC (A, B)	Lead Ø	Output RS 422 (R, T)	push-pull (K)	push-pull complementary (I)
red	0.5	5 VDC=	10...30 VDC=	10...30 VDC=
yellow/red	0.14	Sense V _{CC}	Sense V _{CC}	
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 ¹⁾	Alarm	Alarm
Screen ²⁾		Screen ²⁾	Screen ²⁾	Screen ²⁾

¹⁾ depending on ordering code

²⁾ connected to housing

ORDERING DATA

H Hollow shaft	Supply voltage A 5 VDC E 10 ... 30 VDC (push-pull only)	Mounting F clamping shaft	Shaft diameter O 4 mm 1 6 mm C 8 mm 2 10 mm
RI 36 - H	/	F · 3	
Number of pulses 5 ... 3600	Protection class 3 IP 64	Output T RS 422 + Sense K push-pull short circuit proof R RS 422 + Alarm I push-pull complementary	Type of connection A Cable axial B Cable radial

Incremental Shaft Encoders Type RI 58-H with Hollow Shaft



- Through shaft
- High accuracy by means of integrated flexible coupling
- Safe shaft mounting
- Application e.g.:
 - textile machines
 - motors
 - drives
 - copiers

NUMBER OF PULSES

1 / 2 / 3 / 4 / 5 / 10 / 15 / 20 / 25 / 29 / 30 / 35 / 50 / 60 / 70 / 72 / 80 / 100 / 117 / 120 / 125 / 128 / 136 / 144 / 150 / 180 / 200 / 226 / 230 / 250 / 256 / 280 / 300 / 314 / 350 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 720 / 900 / 1,000 / 1,024 / 1,250 / 1,270 / 1,500 / 1,600 / 1,800 / 1,885 / 2,000 / 2,048 / 2,400 / 2,500 / 3,000 / 3,400 / 3,480 / 3,600 / 3,925 / 4,000 / 4,096 / 5,000

Other numbers of pulses available on request

TECHNICAL DATA mechanical

Shaft diameter	10 mm hollow shaft 12 mm hollow shaft Required dimension of mounting shaft: Ø 10 mm, tolerance g8 (-0.005 ... -0.027 mm) Ø 12 mm, tolerance g8 (-0.006 ... -0.033 mm)
Balance tolerances	Misalignment axial ± 0.4 mm Misalignment parallel 0.4 mm Misalignment angular 1°
Absolute maximum speed	max. 3,000 RPM
Torque	≤ 2 Ncm (IP 64)
Moment of inertia	approx. 65 gcm ² (10 mm shaft) approx. 95 gcm ² (12 mm shaft)
Protection class (EN 60529)	Housing IP 64, bearings IP 64
Operating temperature	-10 ... +70 °C
Storage temperature	-25 ... +85 °C
Vibration proof (IEC 68-2-6)	10 g = 100 m/s ² (10 ... 2 kHz)
Shock resistance (IEC 68-2-27)	100 g = 1,000 m/s ² (6 ms)
Type of connection radial	cable, 1.5 m ¹⁾
Housing	aluminium
Flange	synchro flange
Weight	210 g approx.

¹⁾ Other cable length on request

Incremental Shaft Encoders Type RI 58-H with Hollow Shaft

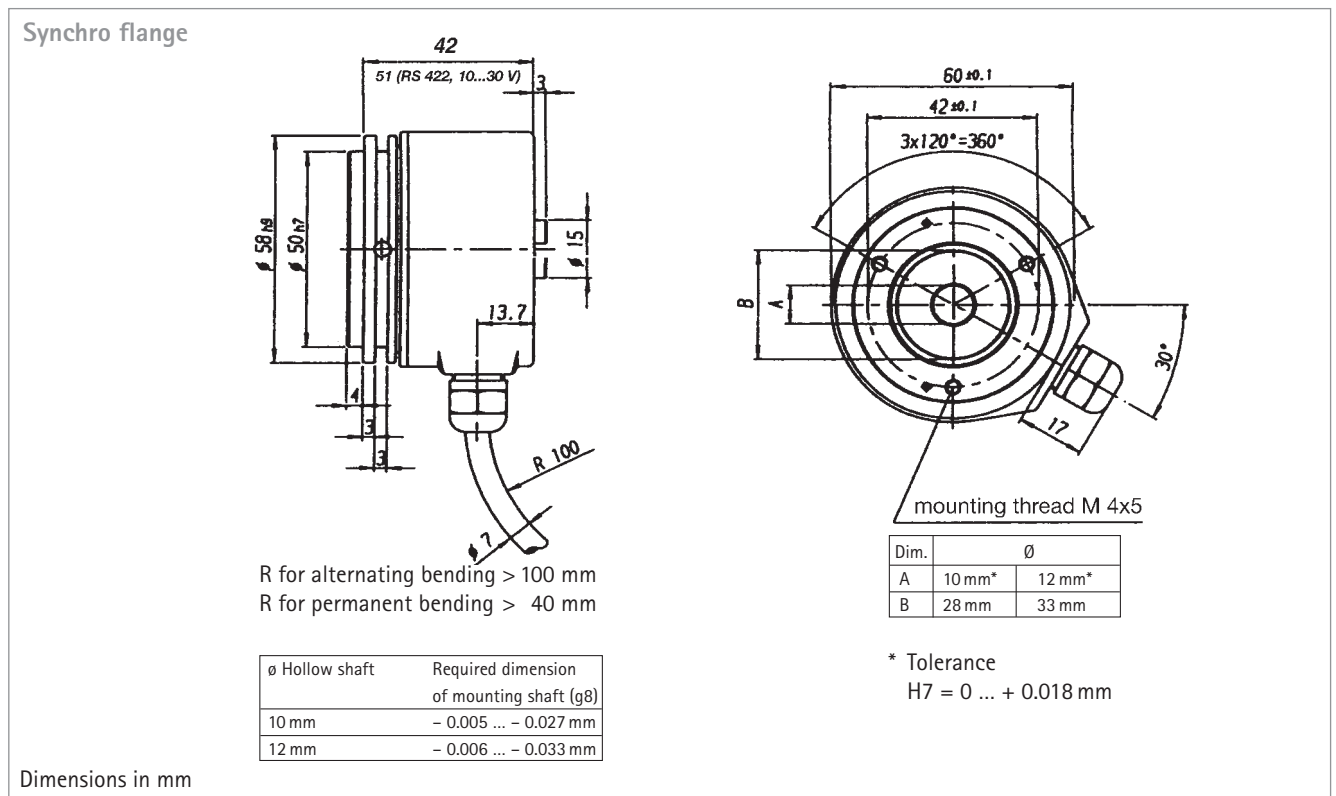
TECHNICAL DATA electrical

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

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

²⁾ Output description and technical data see section "output".

DIMENSIONED DRAWING



Incremental Shaft Encoders Type RI 58-H with Hollow Shaft

CONNECTION DIAGRAM

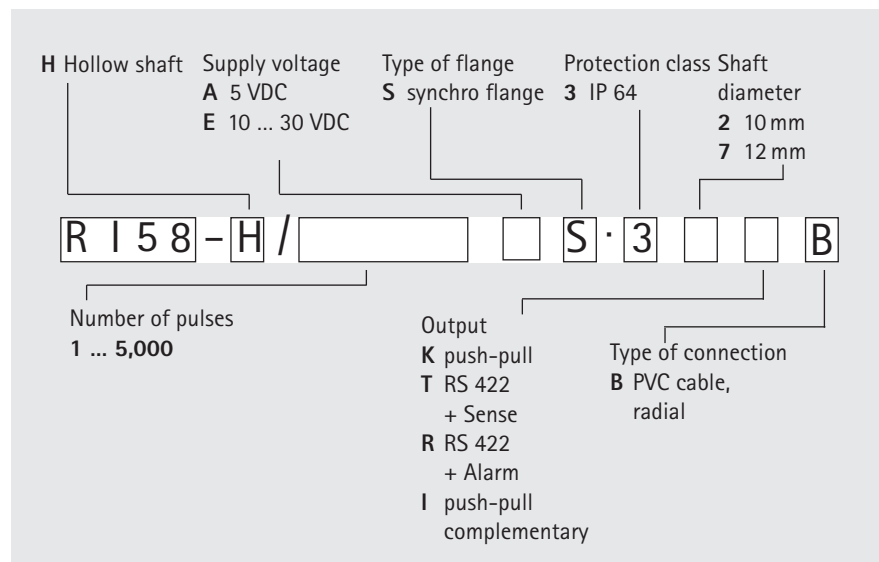
Connection cable		Output	
Colour	Lead Ø mm ²	RS 422 T and R	push-pull K and I
red	0.5 mm ²	5/10...30 VDC	10...30 VDC
red/yellow	0.14 mm ²	Sense V _{CC}	Sense V _{CC}
white	0.14 mm ²	Channel A	Channel A
white/brown	0.14 mm ²	Channel \bar{A}	Channel \bar{A} ¹⁾
green	0.14 mm ²	Channel B	Channel B
green/brown	0.14 mm ²	Channel \bar{B}	Channel \bar{B} ¹⁾
yellow	0.14 mm ²	Channel N	Channel N
yellow/brown	0.14 mm ²	Channel \bar{N}	Channel \bar{N} ¹⁾
black	0.5 mm ²	GND	GND
black/yellow	0.14 mm ²	$\bar{\text{Alarm}}$ /Sense GND ²⁾	$\bar{\text{Alarm}}$
screen ³⁾		screen ³⁾	screen ³⁾

¹⁾ only push-pull complementary (I)

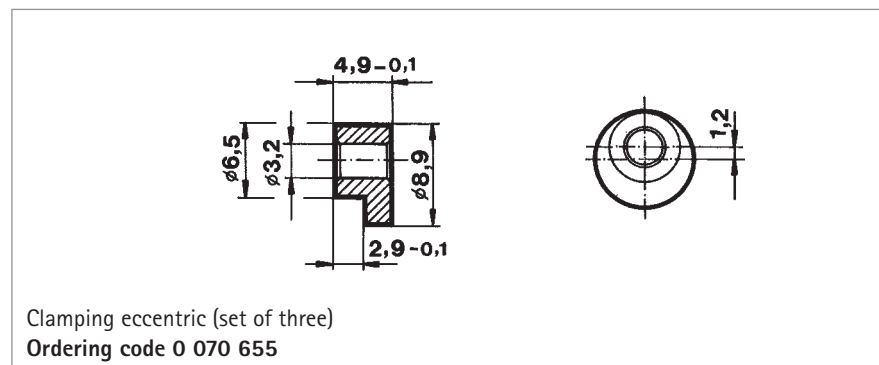
²⁾ depending on ordering code

³⁾ connected to housing

ORDERING DATA



ACCESSORIES



Incremental Shaft Encoders Type RI 58-D with Hollow Shaft



Blind shaft



Clamping shaft

- Flexible hollow shaft design up to diameter 14 mm
- Short overall length
- Easy installation by means of clamping shaft or blind shaft
- Application e.g.:
 - actuators
 - length measuring machines
 - motors
- Operating temperature up to 100 °C (RI 58 TD)

NUMBER OF PULSES RI 58-D

1 / 2 / 3 / 4 / 5 / 10 / 20 / 25 / 29 / 30 / 35 / 40 / 45 / 50 / 60 / 64 / 70 / 72 / 80 / 100 / 117 / 120 / 125 / 128 / 136 / 144 / 150 / 160 / 180 / 200 / 226 / 230 / 250 / 256 / 280 / 300 / 314 / 350 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 720 / 889 / 900 / 942 / 1000 / 1024 / 1250 / 1270 / 1500 / 1600 / 1800 / 1885 / 2000 / 2048 / 2400 / 2500 / 3000 / 3400 / 3480 / 3600 / 3925 / 4000 / 4096 / 5000

RI 58 TD

(high temperature); As above, but only within the range 4...2,500
Other numbers of pulses available on request

SHAFT VARIANTS

E = End shaft (non-through shaft)
F = Clamping shaft (non-through shaft)
D = Clamping shaft (through shaft)

TECHNICAL DATA mechanical

Mounting	synchro flange with clamping shaft or blind shaft
Shaft diameter	hollow shaft 10 mm hollow shaft 12 mm hollow shaft 14 mm (not through) required dimension of mounting shaft: Ø 10 mm, tolerance g8 (-0.005...-0.027 mm) Ø 12/14 mm, tolerance g8 (-0.006...-0.033 mm)
Absolute maximum speed	E, F: max. 6,000 RPM; D = max. 4000 min ⁻¹
Torque	≤ 1 Ncm with non-through shaft (E, F) ≤ 2 Ncm with through shaft D
Moment of inertia	F: approx. 35 gcm ² (clamping non-through shaft) E: approx. 20 gcm ² (end shaft) D: approx 60 gcm ² (clamping through shaft)
Protection class (EN 60529)	E, F: housing IP 65, bearings IP 64 D: housing IP 64, bearings IP 64
Operating temperature	-10 ... +70 °C, Option: -25 ...+100°C
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 radial	1.5 m cable ¹⁾ or connector
Housing	aluminium
Weight	E, F: 170 g approx.; D: 190 g approx.

¹⁾ Other cable length on request

Incremental Shaft Encoders Type RI 58-D with Hollow Shaft

TECHNICAL DATA electrical

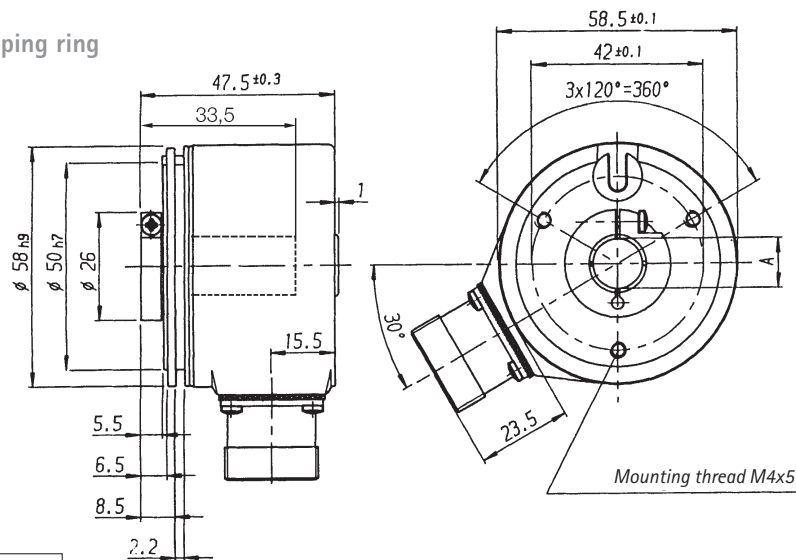
General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II	
Supply voltage (SELV)	with RS 422 + Sense (T):	5 VDC ± 10 %
	with RS 422 + Alarm (R):	5 VDC ± 10 % oder 10 ... 30 VDC ¹⁾
	with push-pull (K, I):	10 ... 30 VDC ¹⁾
Power consumption	40 mA (5 VDC), 60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

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

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

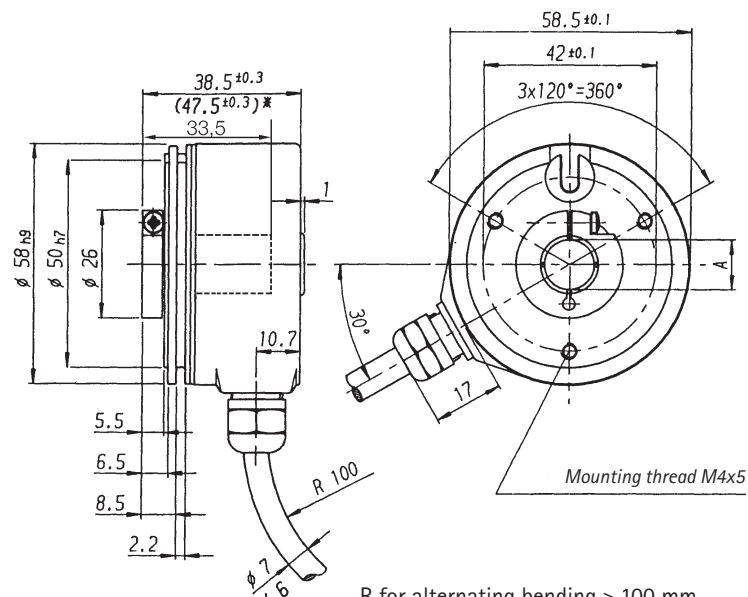
DIMENSIONED DRAWING

Mounting = F:
blind shaft with clamping ring



Dim.:	Ø of hollow shaft	Unit
A	10 ^{H7} 12 ^{H7} 14 ^{H7}	mm
A*	10 ^{g8} 12 ^{g8} 14 ^{g8}	mm

A* = Diameter of connection shaft



Dimensions in mm

*with Version 10-30 V RS 422

**with mounting F: clamping shaft; not through-going

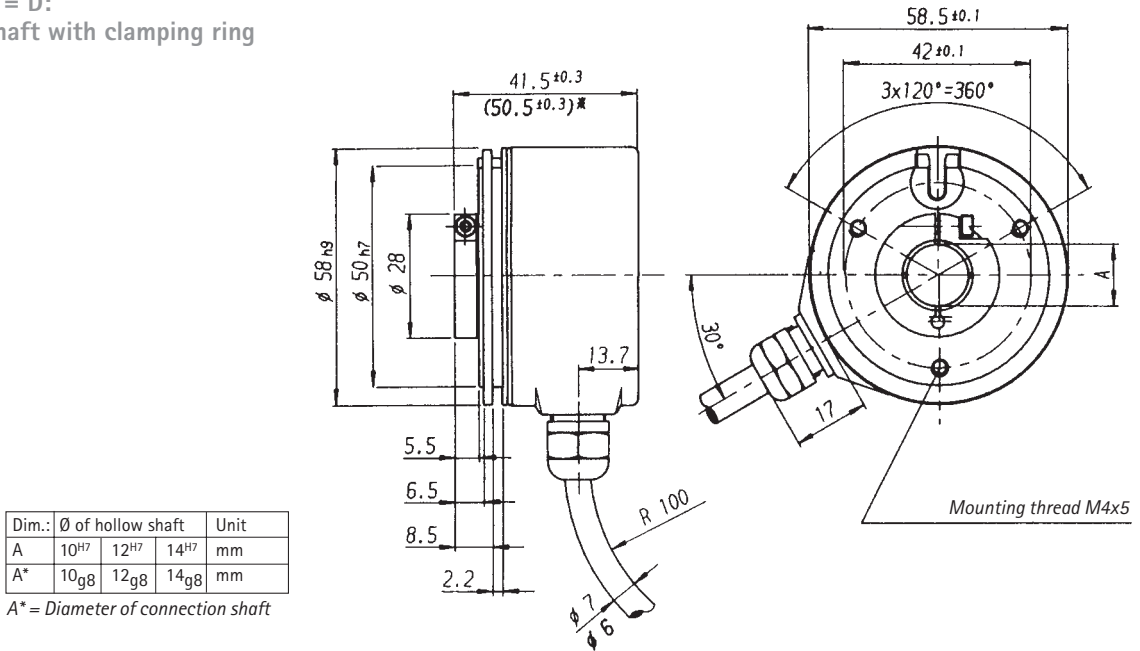
R for alternating bending > 100 mm

R for permanent bending > 40 mm

Incremental Shaft Encoders Type RI 58-D with Hollow Shaft

DIMENSIONED DRAWING

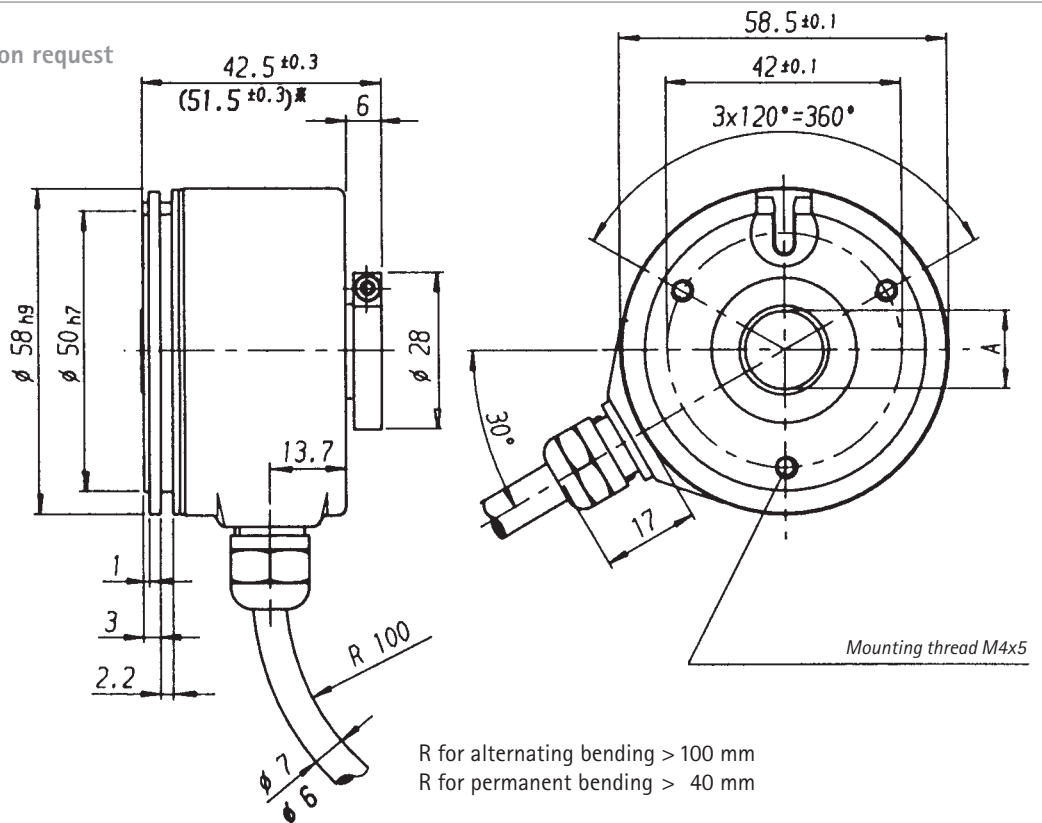
Mounting = D:
through shaft with clamping ring



* with Version 10-30 V RS 422

R for alternating bending > 100 mm
R for permanent bending > 40 mm

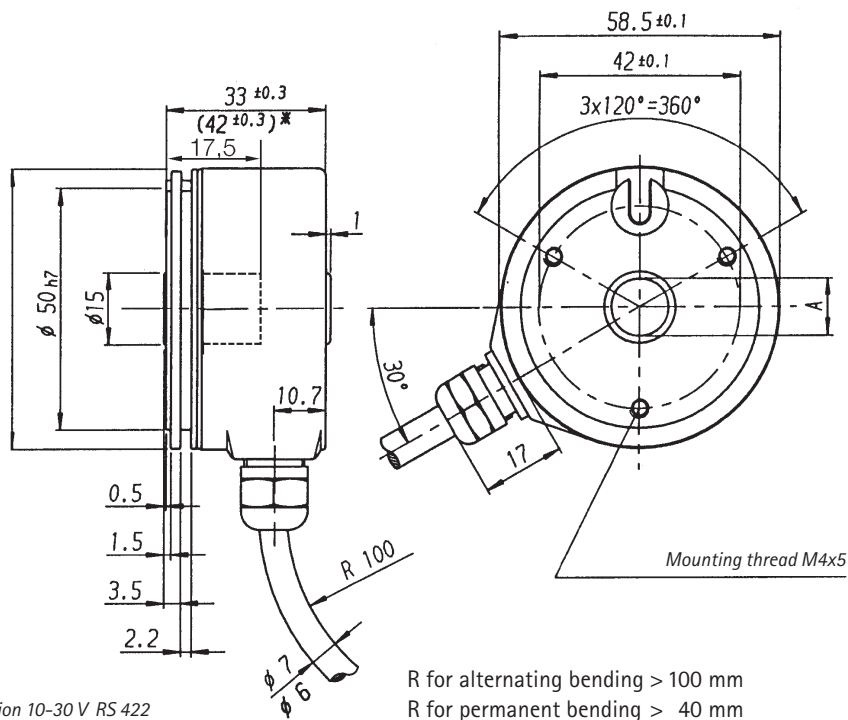
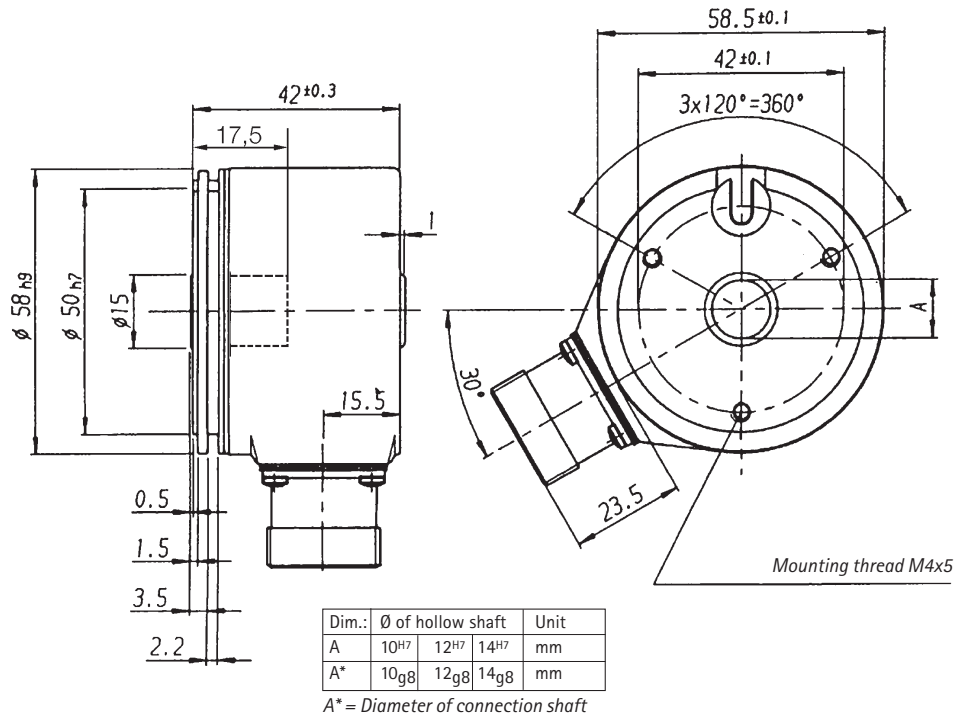
OPTION:
Clamping ring at rear on request



Incremental Shaft Encoders Type RI 58-D with Hollow Shaft

DIMENSIONED DRAWING

Mounting of version E, blind shaft
(no through shaft)



* with version 10-30V RS 422

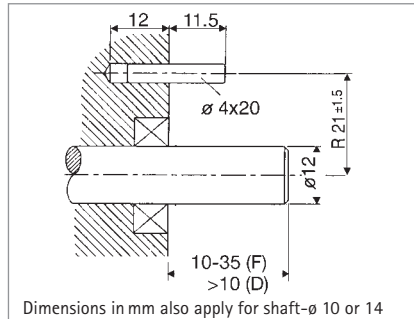
Dimensions in mm

Incremental Shaft Encoders Type RI 58-D with Hollow Shaft

MOUNTING NECESSITIES

In order to be able to compensate an axial and radial misalignment of the shaft, the encoder flange must not be fixed rigidly.

Fix the flanges by means of a stator coupling (e.g. spring plate) as torque support (see "Accessories") or by means of a cylindrical pin:



Dimensions in mm also apply for shaft- \varnothing 10 or 14

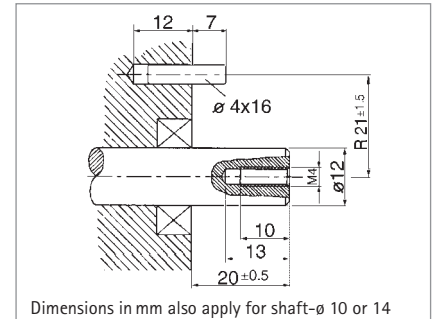
Mounting D, F (Clamping shaft)

Preparation of the machine flange¹⁾ (all mounting versions):

In the machine flange a straight pin must be installed (diameter 4x16 resp. 4x20, DIN 6325).

This pin is required as a torque support.

¹⁾ Or as an option: stator coupling as torque support



Dimensions in mm also apply for shaft- \varnothing 10 or 14

Mounting E (Blind shaft)

Preparation of the drive shaft (only in mounting = E):

The drive shaft must be provided with a threaded bore M 4 x 10:

This bore accepts the fastening screw of the shaft encoder.

CONNECTION DIAGRAM CABLE PVC

Cable PVC	RS 422	RS 422	Output circuit	push-pull (K)	push-pull complementary (I)
Colour	+ Sense (T)	+ Alarm (R)			
white	Channel A	Channel A		Channel A	Channel A
white/brown	Channel \bar{A}	Channel \bar{A}			Channel \bar{A}
green	Channel B	Channel B		Channel B	Channel B
green/brown	Channel \bar{B}	Channel \bar{B}			Channel \bar{B}
yellow	Channel N	Channel N		Channel N	Channel N
yellow/brown	Channel \bar{N}	Channel \bar{N}			Channel \bar{N}
yellow/black	Sense GND	$\bar{A}larm$		$\bar{A}larm$	$\bar{A}larm$
yellow/red	Sense V_{cc}	Sense V_{cc}			Sense V_{cc}
red	5 V DC=	5/10...30 V DC=	10...30 V DC=	10...30 V DC=	10...30 V DC=
black	GND	GND		GND	GND
Cable screen ¹⁾	Cable screen ¹⁾	Cable screen ¹⁾		Cable screen ¹⁾	Cable screen ¹⁾

¹⁾ connected to housing

CONNECTION DIAGRAM CABLE TPE

Cable TPE	RS 422	RS 422	Output circuit	push-pull (K)	push-pull complementary (I)
Colour	+ Sense (T)	+ Alarm (R)			
brown	Channel A	Channel A		Channel A	Channel A
green	Channel \bar{A}	Channel \bar{A}			Channel \bar{A}
grey	Channel B	Channel B		Channel B	Channel B
pink	Channel \bar{B}	Channel \bar{B}			Channel \bar{B}
red	Channel N	Channel N		Channel N	Channel N
black	Channel \bar{N}	Channel \bar{N}			Channel \bar{N}
violet (white) ²⁾	Sense GND	$\bar{A}larm$		$\bar{A}larm$	$\bar{A}larm$
blue	Sense V_{cc}	Sense V_{cc}			Sense V_{cc}
brown/green	5 V DC=	5/10...30 V DC=	10...30 V DC=	10...30 V DC=	10...30 V DC=
white/green	GND	GND		GND	GND
Cable screen ¹⁾	Cable screen ¹⁾	Cable screen ¹⁾		Cable screen ¹⁾	Cable screen ¹⁾

¹⁾ connected to housing

²⁾ white with Version Sense (T)

Incremental Shaft Encoders Type RI 58-D with Hollow Shaft

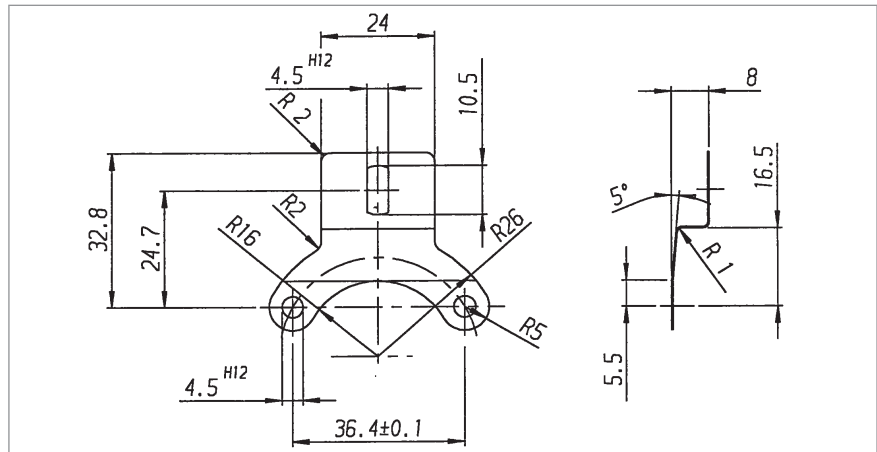
CONNECTION DIAGRAM CONNECTOR (CONIN)

Pin	RS 422 + Sense (T)	RS 422 + Alarm (R)	push-pull (K)	push-pull complementary (I)
1	Channel \bar{B}	Channel \bar{B}	N.C.	Channel \bar{B}
2	Sense V_{cc}	Sense V_{cc}	N.C.	Sense V_{cc}
3	Channel N	Channel N	Channel N	Channel N
4	Channel \bar{N}	Channel \bar{N}	N.C.	Channel \bar{N}
5	Channel A	Channel A	Channel A	Channel A
6	Channel \bar{A}	Channel \bar{A}	N.C.	Channel \bar{A}
7	N.C.	Alarm	Alarm	Alarm
8	Channel B	Channel B	Channel B	Channel B
9	N.C. ¹⁾	N.C. ¹⁾	N.C. ¹⁾	N.C. ¹⁾
10	GND	GND	GND	GND
11	Sense GND	N.C.	N.C.	N.C.
12	5 V DC=	5/10 ... 30 V DC=	10 ... 30 V DC=	10 ... 30 V DC=

¹⁾ screen with cable version with CONIN-connector

ACCESSORIES

Spring plate as stator coupling: **Ordering code 1 531 162**



ORDERING DATA

-D hollow shaft	Supply voltage	Mounting	Shaft diameter
TD hollow shaft 100° C	A 5 VDC	synchro flange with	2 10 mm
	E 10 ... 30 VDC	E blind shaft ¹⁾	7 12 mm
		F clamping shaft ¹⁾	9 14 mm ¹⁾
		D clamping shaft ²⁾	

RI 58		/								
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Number of pulses 1 ... 5,000	Output K push-pull T RS 422 + Sense R RS 422 + Alarm I push-pull complementary	Type of connection B PVC-cable radial F TPE-cable radial D CONIN-connector radial, clockwise ³⁾ H CONIN-connector radial, counter ³⁾ clockwise
Protection class 3 IP 642) 4 IP 641)		

¹⁾ Mounting E, F; no through shaft, protection class code 4

²⁾ through shaft, protection class code 3, only cable connection

³⁾ only with mounting E or F (not through going)

Incremental Shaft Encoders Type RI 76 TD with Hollow Shaft



NUMBER OF PULSES

- Through shaft with up to diameter 42 mm
- Short overall length with an outside diameter of only 76 mm
- Easy installation by means of clamping ring
- Operating temperature up to 100 °C
- Application e.g.:
 - motors
 - printing machines
 - lifts

50 / 100 / 250 / 300 / 500 / 600 / 900 / 1,000 / 1,024 / 1500 / 2,048 / 2,500 / 3,072 / 4096 / 5,000 / 9,000 / 10,000

Other numbers of pulses available on request

TECHNICAL DATA mechanical

Shaft fixation	clamping ring, front or rear
Coupling	stator coupling (spring plate)
Shaft diameter	15...42 mm (Available: 15, 16, 18, 20, 24, 25, 27, 28, 30, 32, 38, 40, 42 mm also 5/8", 1 1/8", 3/4")
Minimum length of mounting shaft	
Front clamping ring	32 mm with \varnothing 15...30, 35 mm with \varnothing > 30...42
Rear clamping ring	corresponding to total length of encoder
Max. parallel shaft misalignment	
With flexible stator coupling A (flexible)	± 2.0 mm axial, ± 0.15 mm radial
With 1 x flexible stator coupling N (torsionally rigid)	± 0.5 mm axial, ± 0.3 mm radial
With 2 x flexible stator coupling N (torsionally rigid)	± 0.3 mm axial, ± 0.2 mm radial
Absolute maximum speed	at 70° C and IP 64: 3,600 RPM for \varnothing 15...25 at 70° C and IP 64: 1,800 RPM for \varnothing > 25...42 at 70° C and IP 40: 6,000 RPM for \varnothing 15...42 at 100° C always: 1,800 RPM for \varnothing 15...42
Torque	3...10 Ncm (depending on version)
Moment of inertia	140...420 gcm ² (depending on version)
Protection class (EN 60529)	Housing IP 50, bearings IP 40
Option:	Housing IP 65, bearings IP 64
Operating temperature	-25 ...+100 °C
Storage temperature	-25...+100 °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	1.5 m cable ¹⁾ radial
Housing	aluminium
Weight	320 - 580 g (depending on version)

¹⁾ Other cable length on request

TECHNICAL DATA electrical

General design	as per DIN EN 61010, protection class III, contamination level 2, overvoltage class II	
Supply voltage (SELV)	with RS 422 (R, T):	5 VDC \pm 10 %
	with push-pull (K, I):	10 ... 30 VDC ¹⁾
Power consumption	60 mA (5 VDC), 60 mA (10 VDC), 35 mA (24 VDC)	
Standard-Output versions ²⁾	RS 422 (R):	A, B, N, \bar{A} , \bar{B} , \bar{N} , $\bar{A} \bar{A} \bar{r} \bar{m}$
	RS 422 (T):	A, B, N, \bar{A} , \bar{B} , \bar{N} , Sense
	push-pull (K):	A, B, N, $\bar{A} \bar{r} \bar{m}$
	push-pull complementary (I):	A, B, N, \bar{A} , \bar{B} , \bar{N} , $\bar{A} \bar{r} \bar{m}$

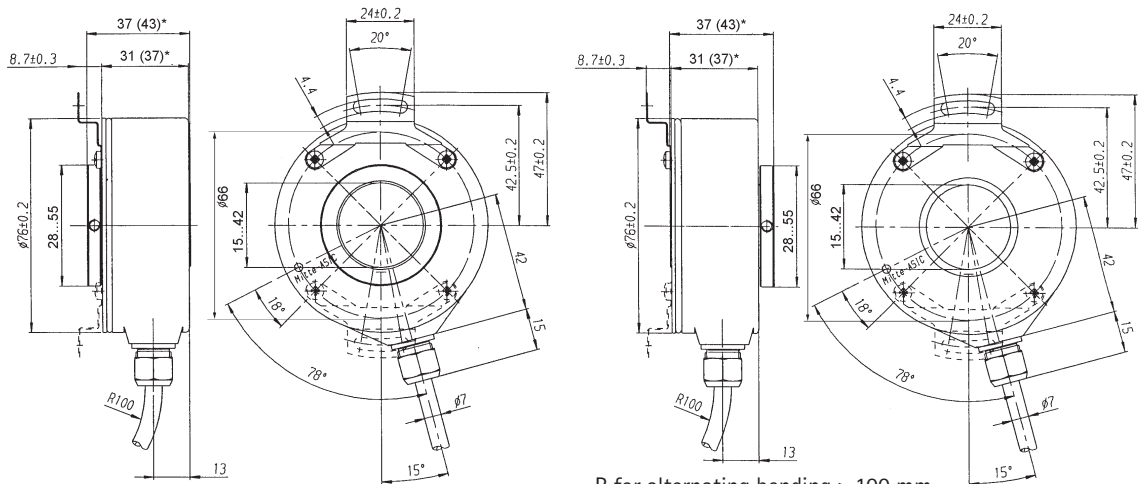
¹⁾ Pole protection with supply voltage 10 ... 30 VDC

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

Incremental Shaft Encoders Type RI 76 TD with Hollow Shaft

DIMENSIONED DRAWING

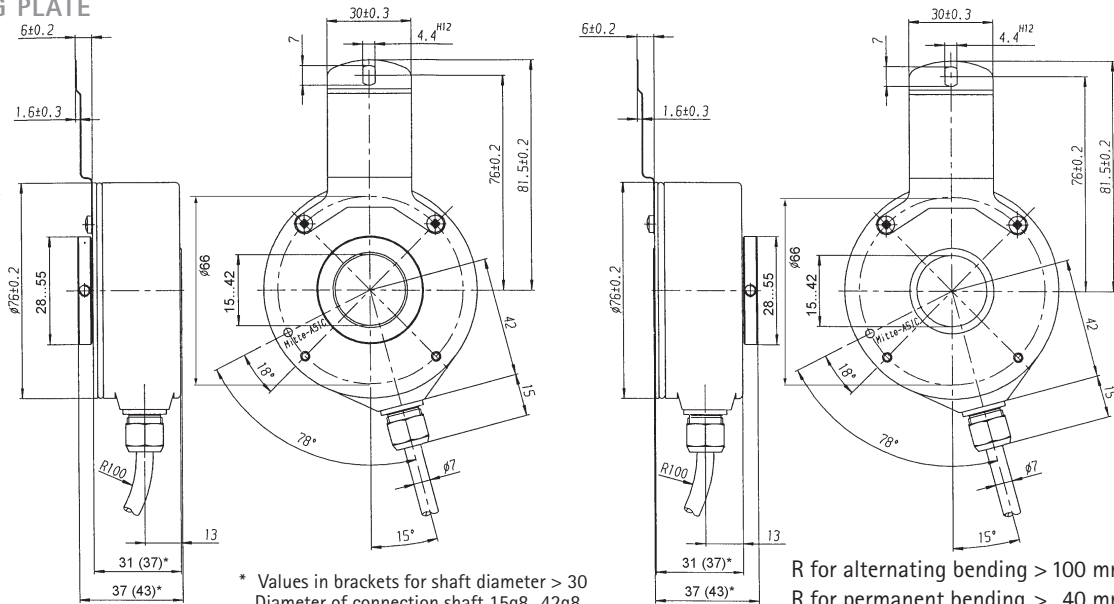
WITH SPRING PLATE "RIGID"



* Values in brackets for shaft diameter > 30
Diameter of connection shaft 15g8...42g8

R for alternating bending > 100 mm
R for permanent bending > 40 mm

WITH SPRING PLATE "FLEXIBLE"



* Values in brackets for shaft diameter > 30
Diameter of connection shaft 15g8...42g8

R for alternating bending > 100 mm
R for permanent bending > 40 mm

SHAFT CONNECTION

Shaft fixing is done through a clamping ring either on the flange or cap side. As a rule, flange side clamping is better for smaller motors as the available shaft stub is correspondingly shorter. On the other hand, cap side clamping is easier when there is sufficient shaft length available.

MOUNTING NECESSITIES

In order to compensate for axial and radial shaft eccentricity as well as any angle offset, the encoder flange may not be rigidly mounted. Please mount the flange with a flexible stator coupling (e.g. spring plate) as torque support. There are two flexible mounting plates:

- A flexible spring plate (A) for higher levels of play and lower requirements for accuracy.
- A rigid spring plate (N) for reduced play and rigid connection with reduced swing angle. This is suitable in the case of higher accuracy and dynamics requirements.

Incremental Shaft Encoders Type RI 76 TD with Hollow Shaft

CONNECTION DIAGRAM CABLE TPE

Colour (TPE)	Output circuit			
	RS 422 + Sense (T)	RS 422 + Alarm (R)	push-pull (K)	push-pull complementary (I)
brown	Channel A	Channel A	Channel A	Channel A
green	Channel \bar{A}	Channel \bar{A}		Channel \bar{A}
grey	Channel B	Channel B	Channel B	Channel B
pink	Channel \bar{B}	Channel \bar{B}		Channel \bar{B}
red	Channel N	Channel N	Channel N	Channel N
black	Channel \bar{N}	Channel \bar{N}		Channel \bar{N}
violet (white) ²⁾	Sense GND	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$
blue	Sense V_{CC}	Sense V_{CC}		Sense V_{CC}
brown/green	5 VDC=	5/10 ... 30 VDC=	10 ... 30 VDC=	10 ... 30 VDC=
white/green	GND	GND	GND	GND
Screen ¹⁾	Screen ¹⁾	Screen ¹⁾	Screen ¹⁾	Screen ¹⁾

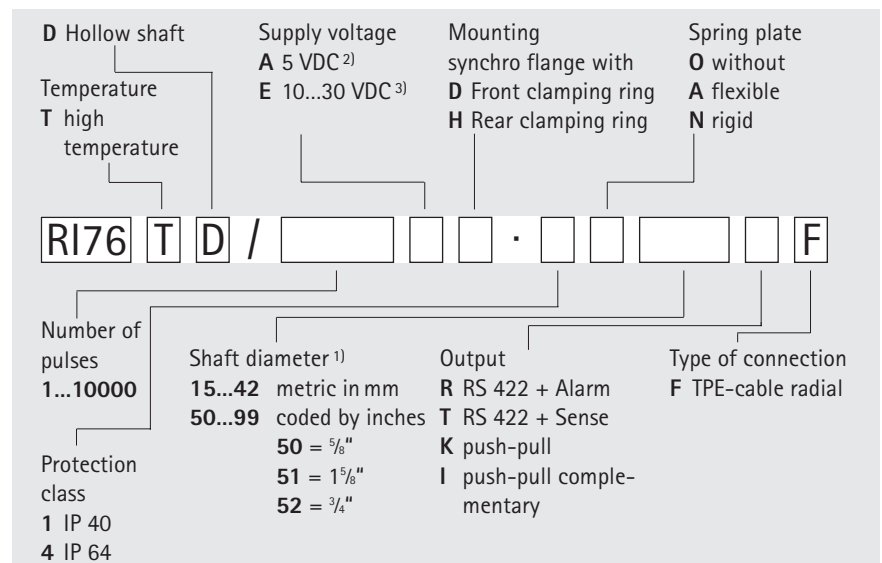
¹⁾ connected to housing

²⁾ white for RS 422 + Sense (T)

ACCESSORIES

Spring plate, flexible	Ordering code 1 533 079
Spring plate, rigid	Ordering code 1 533 078

ORDERING DATA



¹⁾Available with front clamping ring and IP 40: 15, **20**, **24**, 25, 27, 28, 30, 38, 40, 42, 50 (5/8"), 51 (15/8")
 Available with front clamping ring and IP 64: **15**, 16, 18, **20**, 24, **25**, 27, 28, 30, 32, **38**, **40**, **42**,
 50 (5/8"), 51 (15/8"), 52 (3/4")

Available with rear clamping ring and IP 40: 25, 28, 30, 32, 38, 40, 42

Available with rear clamping ring and IP 64: 20, **25**, 30, 32, 38, 40, **42**

Bold printed: preferred versions

Others: please request delivery time

²⁾ only with output R, T, K

³⁾ only with output R, K, I