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### Important Note

The information shown in these documents is for guidance only. No liability is accepted for any errors or omissions. The designer or user is solely responsible for the safe and proper application of the parts, assemblies or equipment described.

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## Incremental

## Hollow Shaft



- Direct mounting without coupling
- Through hollow shaft Ø 14 mm and 15 mm
- Easy installation by means of clamping ring
- Fixing of flange by means of a stator coupling or set screw
- Applications: actuators, motors



<b>NUMBER OF PULSES</b>	RI 58-G	50 / 360 / 500 / 1000 / 1024 / 2000 / 2048 / 2500 / 3600 / 4096 / 5000
<b>NUMBER OF PULSES</b>	RI 58TG	50 / 360 / 500 / 1000 / 1024 / 2000 / 2048 / 2500

### TECHNICAL DATA mechanical

Housing diameter	58 mm
Shaft diameter	14 mm / 15 mm (Through hollow shaft)
Flange (Mounting of housing)	Synchro flange
Mounting of shaft	Front clamping ring, Rear clamping ring
Protection class shaft input (EN 60529)	IP64
Protection class housing (EN 60529)	IP64
Shaft tolerance	Ø 14/ 15 mm, tolerance g8
Max. speed	max. 4000 rpm
Torque	≤ 2 Ncm
Moment of inertia	approx. 60 gcm <sup>2</sup>
Vibration resistance (DIN EN 60068-2-6)	10 g = 100 m/s <sup>2</sup> (10 ... 2000 Hz)
Shock resistance (DIN EN 60068-2-27)	100 g = 1000 m/s <sup>2</sup> (6 ms)
Operating temperature	RI 58-G: -10 °C ... +70 °C RI 58TG: -10 °C ... +100 °C
Storage temperature	-25 °C ... +85 °C
Material housing	Aluminum
Weight	approx. 210 g
Connection	Cable, 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 + Sense (T): DC 5 V ±10 % RS422 + Alarm (R): ± 10% DC 5 V or DC 10 - 30 V Push-pull (K), Push-pull antivalent (I): DC 10-30 V
Max. current w/o load	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 + Alarm (R): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , $\overline{\text{Alarm}}$ RS422 + Sense (T): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , Sense Push-pull (K): A, B, N, $\overline{\text{Alarm}}$ Push-pull complementary (I): A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$ , $\overline{\text{Alarm}}$

## Incremental

## Hollow Shaft

### TECHNICAL DATA electrical (continued)

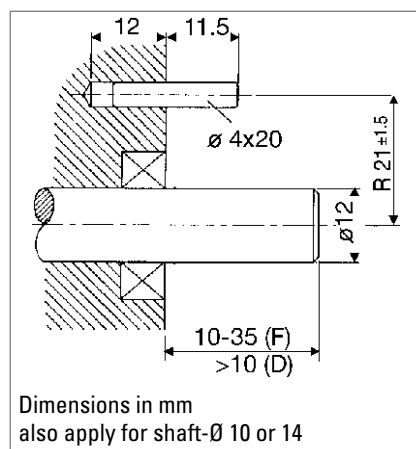
Pulse width error	± max. 25° electrical
Number of pulses	50 ... 2500
Alarm output	NPN-O.C., max. 5 mA
Pulse shape	Square wave
Pulse duty factor	1:1

<sup>1</sup> With push-pull (K): pole protection

<sup>2</sup> Output description and technical data see chapter "Technical basics"

### 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. hubshaft with tether) as torque support (see "Accessories") or by means of a cylindrical pin:



Mounting = D, F (Clamping ring)

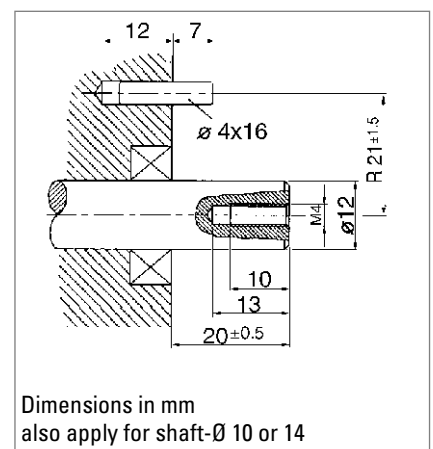
#### Preparation of the machine flange <sup>1</sup>

**(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.

<sup>1</sup> Or as an option: stator coupling as torque support



Mounting = E (mounting with center screw)

#### 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.

**Incremental**

**Hollow Shaft**

**ELECTRICAL CONNECTIONS**

**Cable PVC**

Cable PVC Colour	Output circuit			
	RS422 + Sense (T)	RS422 + Alarm (R)	push-pull (K)	push-pull complementary (I)
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	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$
yellow/red	Sense $V_{CC}$	Sense $V_{CC}$		Sense $V_{CC}$
red	DC 5 V	DC 5 / 10 - 30 V	DC 10 - 30 V	DC 10 - 30 V
black	GND	GND	GND	GND
Cable screen <sup>1</sup>	Cable screen <sup>1</sup>	Cable screen <sup>1</sup>	Cable screen <sup>1</sup>	Cable screen <sup>1</sup>

<sup>1</sup> connected with encoder housing

**ELECTRICAL CONNECTIONS**

**Cable TPE**

Cable TPE Colour	Output circuit			
	RS422 + Sense (T)	RS422 + 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) <sup>1</sup>	Sense GND	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$	$\bar{\text{Alarm}}$
blue	Sense $V_{CC}$	Sense $V_{CC}$		Sense $V_{CC}$
brown/green	DC 5 V	DC 5 / 10 - 30 V	DC 10 - 30 V	DC 10 - 30 V
white/green	GND	GND	GND	GND
Cable screen <sup>2</sup>	Cable screen <sup>2</sup>	Cable screen <sup>2</sup>	Cable screen <sup>2</sup>	Cable screen <sup>2</sup>

<sup>1</sup> white with RS422 + Sense (T)

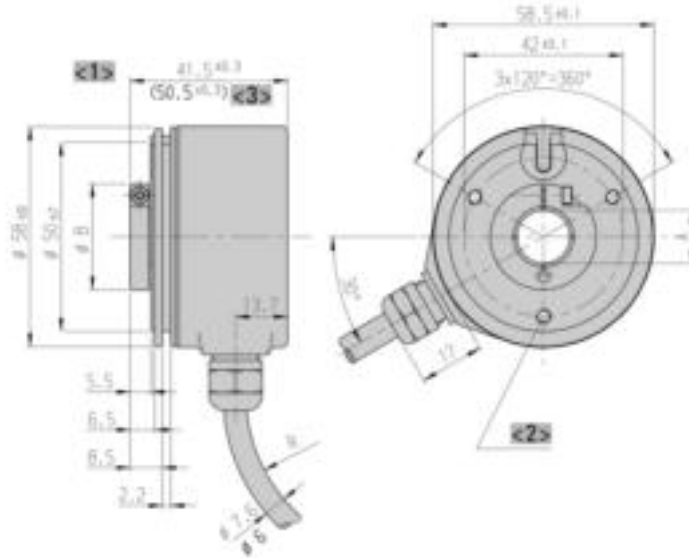
<sup>2</sup> connected with encoder housing

# Standard Industrial Types RI 58-G / RI 58TG

## Incremental Hollow Shaft

### DIMENSIONED DRAWINGS

Mounting D: Through hollow shaft with clamping ring front



Dim.	Hollow shaft Ø		Unit
A	14 <sup>H7</sup>	15 <sup>H7</sup>	mm
A*	14 <sup>g8</sup>	15 <sup>g8</sup>	mm
B	30	30	mm

A\* = diameter of connection shaft

- <1> View turned 60°
  - <2> mounting thread M4x5
  - <3> value in brackets with version DC 10 - 30 V, RS422
- Cable bending radius R for flexible installation ≥ 100 mm  
 Cable bending radius R for fixed installation ≥ 40 mm

Dimensions in mm

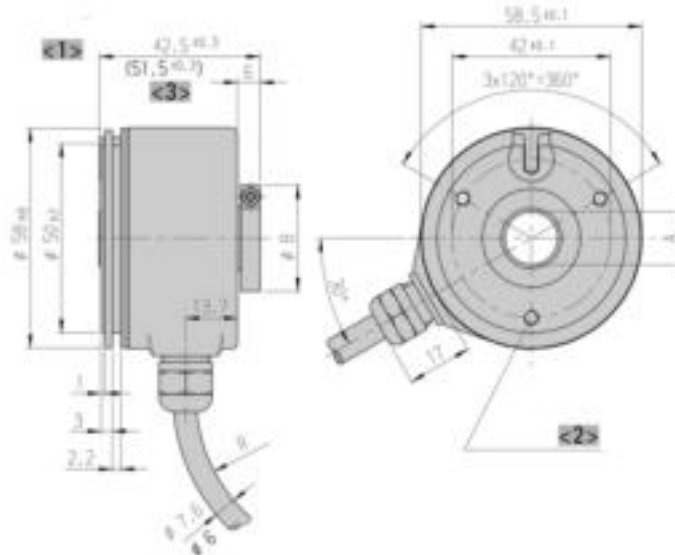
# Standard Industrial Types RI 58-G / RI 58TG

## Incremental

## Hollow Shaft

### DIMENSIONED DRAWINGS (continued)

Mounting H optional: Through hollow shaft with clamping ring rear on request



Dim.	Hollow shaft Ø		Unit
A	14 <sup>H7</sup>	15 <sup>H7</sup>	mm
A*	14 <sup>g8</sup>	15 <sup>g8</sup>	mm
B	30	30	mm

A\* = diameter of connection shaft

<1> View turned 60°

<2> mounting thread M4x5

<3> value in brackets with version DC 10 - 30 V, RS422

Cable bending radius R for flexible installation ≥ 100 mm

Cable bending radius R for fixed installation ≥ 40 mm

Dimensions in mm

### ORDERING INFORMATION

Type	Number of pulses	Supply voltage <sup>1,2</sup>	Flange, Protection, Shaft <sup>3</sup>	Output	Connection
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>RI58-G</b> <b>RI58TG</b>	RI 58-G: <b>50 ...</b> <b>2500</b> RI 58TG: <b>50 ...</b> <b>5000</b>	<b>A</b> DC 5 V <b>E</b> DC 10 - 30 V	<b>D.39</b> Through hollow shaft with clamping ring front, IP64, 14 mm <b>D.3D</b> Through hollow shaft with clamping ring front, IP64, 15 mm <b>H.39</b> Through hollow shaft with clamping ring rear, IP64, 14 mm <b>H.3D</b> Through hollow shaft with clamping ring rear, IP64, 15 mm	<b>R</b> RS422 +Alarm (RI 58-G) <b>T</b> RS422 +Sense <b>K</b> Push-pull <b>I</b> Push-pull complementary <b>R</b> RS422 +Alarm +Sense (RI 58TG)	<b>B</b> PVC cable, radial <b>F</b> TPE cable, radial <b>D</b> M23 connector (Conin), 12 pole, radial, cw (RI 58-G) <b>H</b> M23 connector (Conin), 12 pole, radial, ccw (RI 58-G)

<sup>1</sup> DC 5 V: only with output "T", "R" available

<sup>2</sup> DC 10 - 30 V: only with output "K", "I", "R" available

<sup>3</sup> IP67 on cover with connector only if IP67 mating connector mounted properly.