

### Hollow shaft version economy Typ 3720



- Economical version
- Compact unit size only  $\varnothing 37 \times 32$  mm
- Very easy mounting. The encoder is mounted directly on the drive shaft without couplings. This saves up to 30 % cost and 60 % clearance compared to shaft versions.
- Temperature- and ageing compensation
- Short circuit proof outputs
- Resolution up to 1024 ppr
- Protection up to IP 67
- available as explosion proof zone 2 and 22

- Flange and cover made from a new High-Tech-Material (composite material)
- High component integration leads to low profile design, high performance and economical pricing
- "Tube Tech<sup>®</sup>" cable outlet guarantees 10x higher strain relief than traditional cabling methods plus higher IP-Protection.
- 1 1/2" (37 mm) diameter housing suitable for replacing resolvers.

#### Mechanical characteristics:

Speed:	max. 6000 min <sup>-1</sup>
Rotors moment of inertia:	appr. $1,4 \times 10^{-6}$ kgm <sup>2</sup>
Starting torque:	< 0,01 Nm
Weight:	appr. 0,1 kg
Protection acc. to EN 60 529:	bearing, shaft: IP 65 cable outlet: IP67
Working temperature:	-20° C up to +70 °C <sup>1)3)</sup>
Operating temperature:	-20° C up to +80 °C <sup>2)3)</sup>
Materials:	shaft: stainless steel; housing, flange: composite PPA, 40% KF (carbon fiber) cable: PVC
Shock resistance acc. to DIN-IEC 68-2-27:	1000 m/s <sup>2</sup> , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s <sup>2</sup> , 10 ... 2000 Hz

1) At push pull output and Supply voltage > 15 V DC: max. 55 °C

2) At push pull output and Supply voltage > 15 V DC: max. 60 °C

3) Higher temperatures up to 100 °C on request

#### Pulse rates available at short notice:

10, 50, 100, 180, 200, 250, 300, 360, 400, 500, 512, 600, 1000, 1024

Other pulse rates available on request

#### Electrical characteristics:

Output circuit:	RS 422 (TTL-compatible)	Push-pull (7272)
Supply voltage:	5 V ( $\pm 5\%$ )	5 ... 30 V DC
Power consumption (no load) with inverted signal:	typ. 40 mA / max. 90 mA	typ. 50 mA/ max. 100 mA
Permissible load/channel:	max. $\pm 20$ mA	max. $\pm 20$ mA
Pulse frequency:	max. 250 kHz	max. 250 kHz
Signal level high:	min. 2,5 V	min. $U_B - 2,5$ V
Signal level low:	max. 0,5 V	max. 0,5 V
Rise time $t_r$	max. 200 ns	max. 1 $\mu$ s
Fall time $t_f$	max. 200 ns	max. 1 $\mu$ s
Short circuit proof outputs <sup>1)</sup> :	yes <sup>2)</sup>	yes
Reverse connection protection at $U_B$ :	no	no
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

1) When supply voltage correctly applied

2) Only one channel at a time:  
(at  $U_B = 5$  V short circuit to channel, 0 V, or  $+U_B$  is permitted).

#### Applications:

- Substitute for resolvers
- Packaging machines
- Electrical machines
- Vehicles
- Conveyers, elevators
- Semiconductor machines  
e.g pick & place, cutting ...
- Material handling
- Special machines.

# Rotary Measuring Technology

## Incremental hollow shaft encoder

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#### Terminal assignment

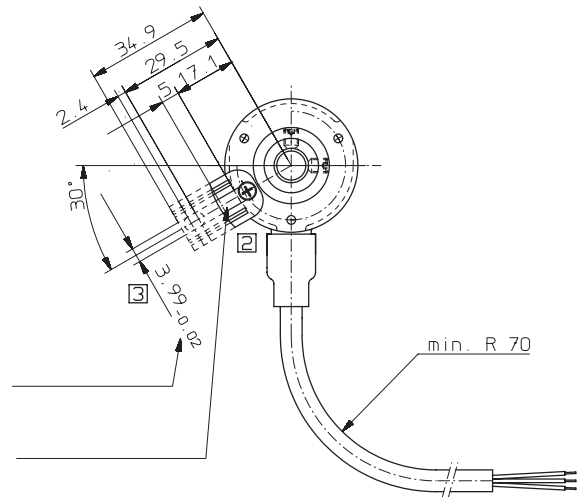
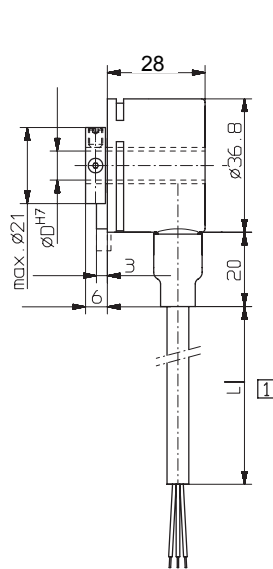
Signal:	0 V	+U <sub>B</sub>	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	Shield
Colour:	WH	BN	GN	YE	GY	PK	BU	RD	

Using RS 422 outputs and long cable distances, a wave impedance has to be applied at each cable end.

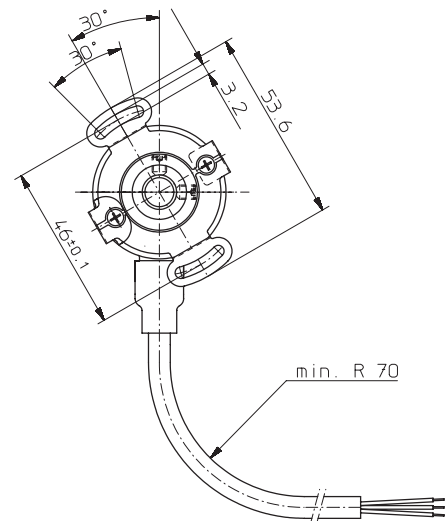
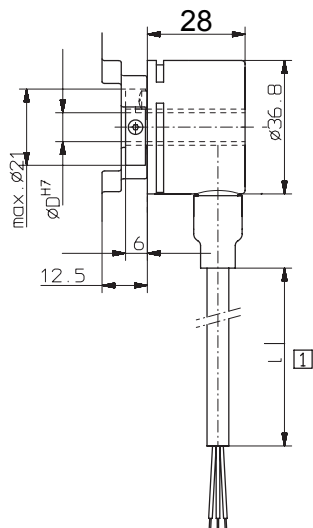
**Insulate unused outputs before initial startup.**

#### Dimension

Short torque stop version;  
Long torque stop version is dashed



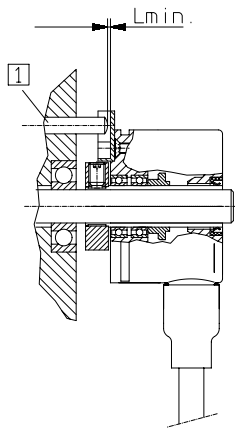
#### Stator coupling version



- 1 cable length 1, 2, 3 or 5 m
- 2 Slot for support torque, 3 mm deep
- 3 Recommended pin for long torque stop  
Cyl. pin acc. to DIN 7  $\varnothing$  4 mm

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#### Mounting advice:

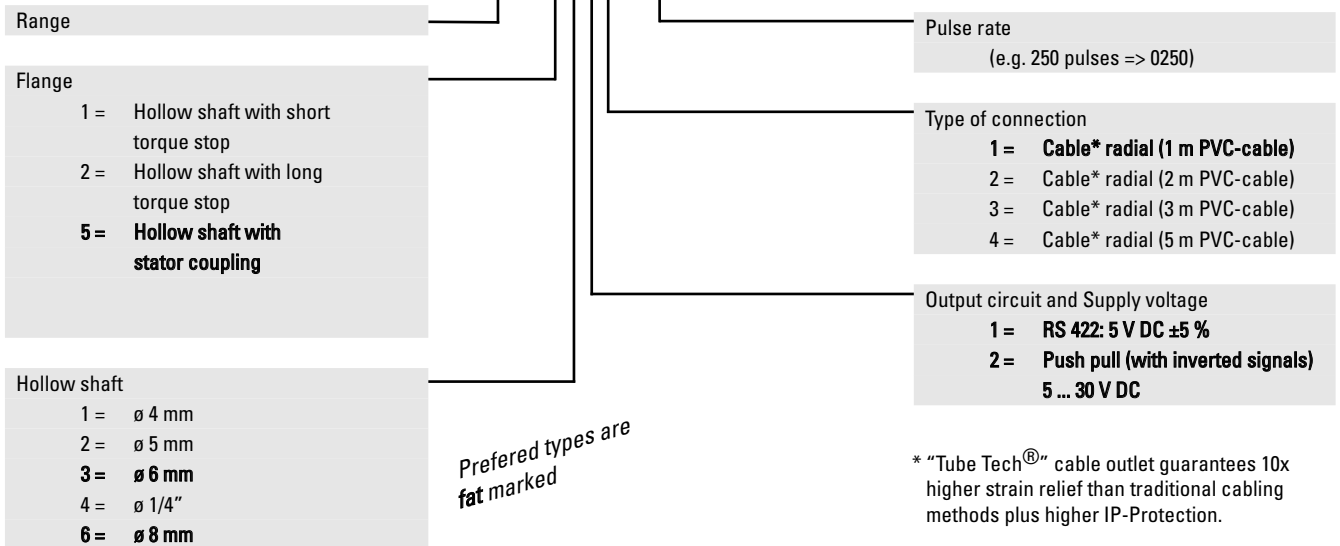


1 Cyl.-pin to DIN 7 ø 4 mm

- 1) Do not connect the encoder and drive rigidly to one another at the shaft and flange!
- 2) To mount a hollow shaft encoder, we recommend the use of a pin and with torque stop slot or a stator coupling.
- 3) When mounting the encoder ensure that Lmin. is greater than the axial play of the drive.  
When using the long torque stop, a greater axial play is possible.

#### Order code:

**8.3720.XXXX.XXXX**



\* "Tube Tech®" cable outlet guarantees 10x higher strain relief than traditional cabling methods plus higher IP-Protection.

Other cable lengths available on request.

Stock types
8.3720.5621.0050
8.3720.5621.0360
8.3720.5621.0500
8.3720.5621.1000
8.3720.5621.1024
8.3720.5611.0512
8.3720.5611.1024

Accessories:  
Cyl. pin acc. to DIN 7 ø 4 mm  
Art-no.: 8.0010.4700.0000

