Economy, optical | 3700 / 3720 (Shaft / Hollow shaft) | Push-Pull / RS422

The incremental economy encoders type 3700 / 3720 with optical sensor technology are a particularly compact and economical solution.

The carbon-fibre reinforced plastic housing of these incremental encoders is, nevertheless, extremely robust and resistant.

Magnetic field proof | Reverse polarity protection | Short-circuit proof | High IP value | Optical sensor

Reliable

- Tube Tech® cable outlet with extremely high strain relief
- Ideal for outdoor use thanks to high IP protection

Versatile

- Through hollow shaft up to 8 mm
- Compact size of only 37 mm
- Up to 1024 pulses per revolution

Order code Shaft version

8.3700 . X X X X . XXXX
Type — a b c d — e

If for each parameter of an encoder the **underlined preferred option** is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.

10 by 10

a *Flange*
1 = without fixing attachment
A = flange adapter, mounted

b *Shaft (ø x L), with flat*
1 = ø 4 x 12,5 mm
2 = ø 5 x 12,5 mm
3 = ø 6 x 12,5 mm
4 = ø 6,35 (1/4") x 12,5 mm
6 = ø 8 x 12,5 mm

c *Output circuit / Power supply*
1 = RS422 / 5 V DC ±5 %
3 = Push-Pull (with inverted signal) / 5 ... 30 V DC
4 = Push-Pull (with inverted signal) / 10 ... 30 V DC

d *Type of connection* [2)]
1 = axial cable (1 m PVC cable)
2 = radial cable (1 m PVC cable)
3 = axial cable (2 m PVC cable)
4 = radial cable (2 m PVC cable)
5 = axial cable (3 m PVC cable)
6 = radial cable (3 m PVC cable)
7 = axial cable (5 m PVC cable)
8 = radial cable (5 m PVC cable)

e *Pulse rate*
10, 16, 20, 25, 36, 40, 50, 60, 80, 100, 120, 125, 180, 200, 250, 300, **360**, 400, **500**, **512**, **1000**, **1024**
(e.g. 360 pulses => 0360)
Other pulse rates on request

Stock types

8.3700.1332.0050	8.3700.1332.1000
8.3700.1332.0360	8.3700.1332.1024
8.3700.1332.0500	

Order code Hollow shaft

8.3720 . X X X X . XXXX
Type — a b c d — e

If for each parameter of an encoder the **underlined preferred option** is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.

10 by 10

a *Flange / through hollow shaft*
1 = with short torque stop
2 = with long torque stop
5 = with stator coupling double-winged

b *Hollow shaft*
1 = ø 4 mm
2 = ø 5 mm
3 = ø 6 mm
4 = ø 6,35 mm (1/4")
6 = ø 8 mm

c *Output circuit / Power supply*
1 = RS422 / 5 V DC ±5 %
3 = Push-Pull (with inverted signal) / 5 ... 30 V DC
4 = Push-Pull (with inverted signal) / 10 ... 30 V DC

d *Type of connection* [2)]
1 = radial cable (1 m PVC cable)
2 = radial cable (2 m PVC cable)
6 = radial cable (3 m PVC cable)
8 = radial cable (5 m PVC cable)

e *Pulse rate*
10, 16, 20, 25, 36, 40, 50, 60, 80, 100, 120, 125, 180, 200, 250, 300, **360**, 400, **500**, **512**, **1000**, **1024**
(e.g. 360 pulses => 0360)
Other pulse rates on request

Stock types

8.3720.5631.0360	8.3720.5611.1024
8.3720.5631.1000	
8.3720.5631.1024	

Mounting accessory for shaft encoders

Coupling	Bellows coupling ø 19 mm for shaft 6 mm	**8.0000.1201.0606**

Further accessories can be found in the Accessories section or in the Accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the Connection Technology section or in the Connection Technology area of our website at: www.kuebler.com/connection_technology.

1) "Tube Tech®" cable outlet guarantees 10 x higher strain relief than traditional cabling methods plus higher IP-Protection.
Other cable lengths are available on request.

Economy, optical | 3700 / 3720 (Shaft / Hollow shaft) | Push-Pull / RS422

Mechanical characteristics

Speed		max. 6 000 min^{-1}
Rotor moment of inertia	shaft version	approx. 0.4 x 10^{-6} kgm^2
	hollow shaft version	1.4 x 10^{-6} kgm^2
Starting torque		
	shaft version	< 0.007 Nm
	hollow shaft version	< 0.01 Nm
Shaft load capacity	radial	20 N
	axial	10 N
Weight		approx. 0.1 kg
Protection to EN 60529	bearings, shaft	IP65
	cable outlet	IP67
EX approval for hazardous areas		optional Zone 2 and 22
Working temperature range		-20°C ... +70°C [1]
Materials	shaft / hollow shaft	stainless steel
	housing, flange	PPA, 40% CF (carbon fibre)
	cable	PVC
Shock resistance acc. to EN 60068-2-27		1000 m/s^2, 6 ms
Vibration resistance acc. to EN 60068-2-6		100 m/s^2, 10 ... 2000 Hz

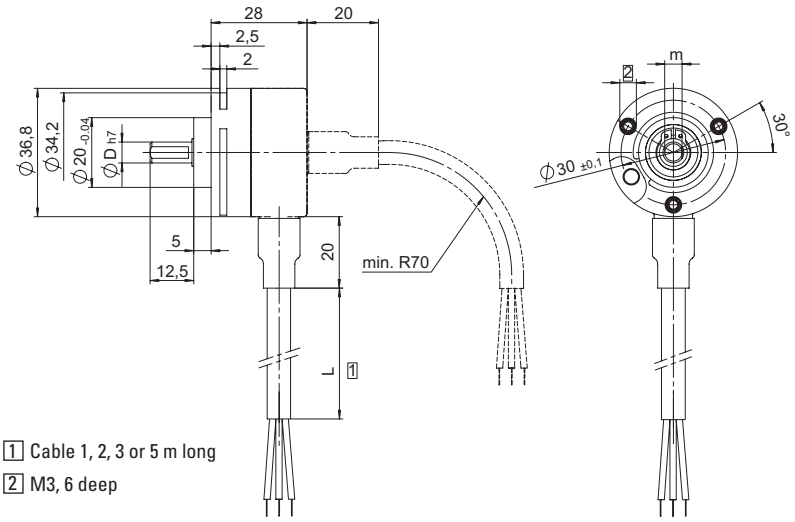
Electrical characteristics

Output circuit		**RS422** (TTL compatible)	**Push-Pull** (7272) [4]	**Push-Pull** (7272) [4]
Supply voltage		5 V (±5%)	5 ... 30 V DC	10 ... 30 V DC
Power consumption with inverted signal (no load)		typ. 40 mA / max. 90 mA	typ. 50 mA/ max. 100 mA	typ. 50 mA/ max. 100 mA
Permissible load / channel		max. ±20 mA	max. ±20 mA	max. ±20 mA
Pulse frequency		max. 250 kHz	max. 250 kHz	max. 250 kHz
Signal level	high	min. 2.5 V	min. U_B - 2.0 V	min. U_B - 2.0 V
	low	max. 0.5 V	max. 0.5 V	max. 0.5 V
Rising edge time t_r		max. 200 ns	max. 1 µs	max. 1 µs
Falling edge time t_f		max. 200 ns	max. 1 µs	max. 1 µs
Short circuit proof outputs [2]		yes [3]	yes	yes
Reverse connection of the supply voltage		no	no	yes
UL-certified		File 224618		
CE compliant acc. to		EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3		
RoHS compliant acc. to		EU guideline 2002/95/EG		

Terminal assignment

Signal	0V	+UB	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$
Cable colour	WH	BN	GN	YE	GY	PK	BU	RD

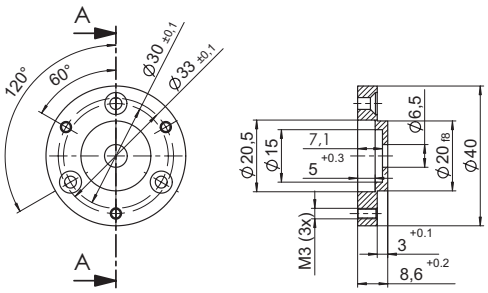
Dimensions shaft version



1 Cable 1, 2, 3 or 5 m long

2 M3, 6 deep

Adapting flange Type A



D	4	5	6	7	1/4"	8
m	3.7	4.6	5.5	6.5	5.8	7.5

Mounting advice

The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time! We recommend the use of suitable couplings (see Accessories section).

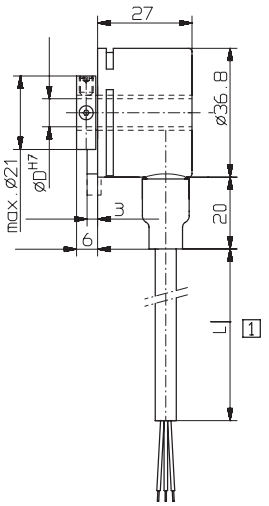
1) For versions with push-pull output and supply voltage >15 V DC: max. 55°C
2) If supply voltage correctly applied.
3) Only one channel allowed to be shorted-out:
If U_B = 5 V short circuit to channel, 0 V, or +U_B is permitted.
If U_B = 5 ... 30 V short circuit to channel or 0 V is permitted.
4) Max. recommended cable length 30 m

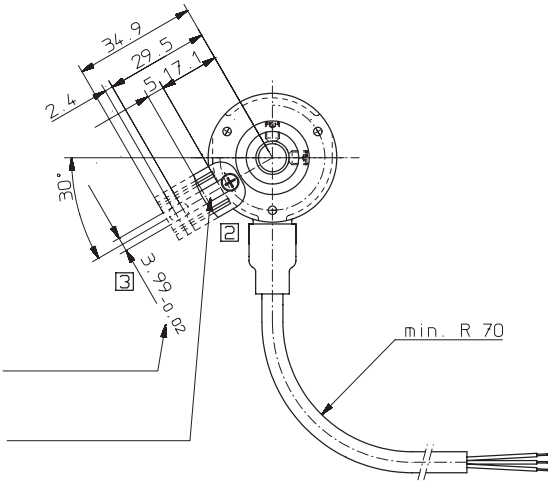
Economy, optical | **3700 / 3720 (Shaft / Hollow shaft)** | **Push-Pull / RS422**

Dimensions hollow shaft version

Flange with torque stop short

Long torque stop version is shown dashed



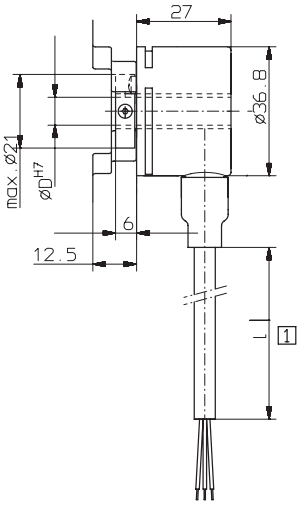


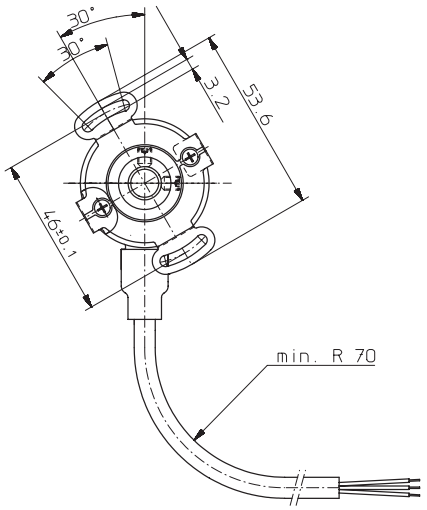
1 Cable length 1, 2, 3 or 5 m

2 Slot for torque stop, 3 mm deep

3 Torque stop slot,
Recommendation: Cylindrical pin DIN7, ø 4 mm

Flange with stator coupling, double-winged





1 Cable length 1, 2, 3 or 5 mm