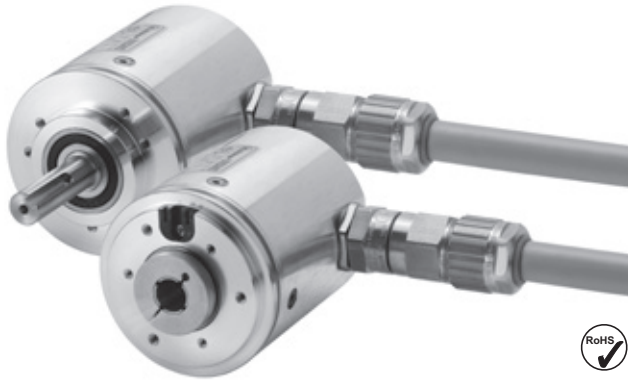
ATEX, optical | 7030 (Shaft / Hollow shaft) | Push-Pull / RS422



The incremental encoders type 7030 with optical sensor technology offer Ex protection in a compact 70 mm housing.

These encoders in shaft or hollow shaft version with their flameproof enclosure are optimally suited for use in hazardous areas.

Ex approval | High rotational speed | High protection level | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Optical sensor

Safe

- "Flameproof-enclosure" version: approved for zone 1, 2 and 21, 22
- Zone 1, 2 and 21, 22: Ex II 2G Ex d IIC T6 and Ex II 2D Ex tD A21 IP6X T85°C

Compact

- Can be used even when space is tight
- Installation depth only 94 mm, diameter 70 mm (hollow shaft version)

Order code Shaft / Hollow shaft version

8.7030	.	XX	X	2	.	XXXX
Type		a	b	c		d

a *Flange and hollow shaft or shaft*
14 = synchro flange with through hollow shaft ø 12 mm
25 = clamping flange with shaft ø 12 mm
26 = clamping flange with shaft ø 12 mm and mounted flange adapter
27 = stator coupling with through hollow shaft 12 mm

b *Output circuit / Power supply*
1 = RS422 (with inverted signal) / 5 V
2 = Push-Pull (without inverted signal) / 10 ... 30 V
3 = Push-Pull (with inverted signal) / 10 ... 30 V
4 = RS422 (with inverted signal) / 10 ... 30 V

c *Type of connection*
2 = radial cable (2 m PVC cable) other cable lengths on request

d *Pulse rate*
25, 50, 60, 100, 125, 200, 250, 256, 300, 360, 500, 512, 600, 720, 800, 1000, 1024, 1200, 1250, 1500, 2000, 2048, 2500, 3000, 3600, 4000, 4096, 5000
(e.g. 250 pulses => 0250)
Other pulse rates on request

Mechanical characteristics

Speed		max. 6000 min^{-1}
Rotor moment of inertia		approx. 15 x 10^{-6} kgm^2
Starting torque		< 0.05 Nm
Load capacity of shaft	radial	80 N
	axial	40 N
Weight		approx. 1.2 kg
Protection acc. to EN 60 529		IP65
EX approval for hazardous areas		ATEX, Explosion proof zone 1, 2 and 21, 22
	Category (gas)	Ex II 2G Ex d IIC T6
	Category (dust)	Ex II 2D Ex tD A21 IP6X T85°C
Working temperature range		-20°C ... +60°C
Materials	shaft	stainless steel
Shock resistance acc. EN 60068-2-27		1000 m/s^2, 6 ms
Vibration resistance acc. EN 60068-2-6		100 m/s^2, 35...2000 Hz

Electrical characteristics

Output circuit		**RS422**	**Push-Pull**
Power supply		5 V ±5% / 10 ... 30 V DC	10 ... 30 V DC
Power consumption (no load)			
without inverted signal		–	typ. 55 mA/max. 125 mA
with inverted signal		typ. 40 mA/max. 90 mA	typ. 80 mA/max. 150 mA
Permissible load / channel		max. ±20 mA	max. ±30 mA
Pulse frequency		max. 300 kHz	max. 300 kHz
Signal level	high	min. 2.5 V	min U_B - 2.5 V
	low	max. 0.5 V	max. 2.0 V
Rising edge time t_r		max. 200 ns	max. 1 s
Falling edge time t_f		max. 200 ns	max. 1 s
Short circuit proof outputs[1]		yes [2]	yes
Reverse polarity protection of the power supply		no	yes
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	

1) If supply voltage correctly applied.
2) 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.

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Terminal assignment

Output circuit	Type of connection	Cable											
1, 2, 3, 4	2	Signal:	0 V	+V	0 Vsens [2]	+Vsens [2]	A	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	⏚
		Cable colour:	WH	BN	GY PK	RD BU	GN	YE	GY	PK	BU	RD	PH [1]

1) PH = Shield is attached to connector housing
2) The sensor cables are connected to the supply voltage internally. If long feeder cables are involved they can be used to adjust or control the voltage at the encoder.

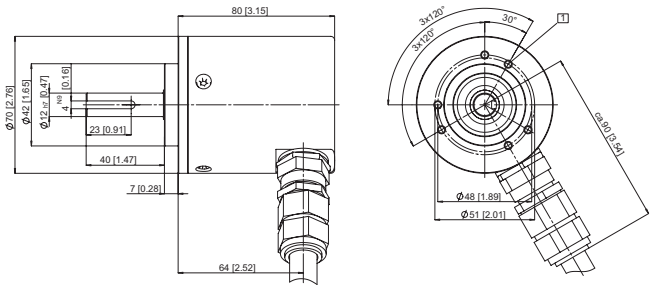
If the circuits are not being used, then they should be individually isolated and not connected.

Using RS422 outputs and long cable distances, a wave impedance has to be applied at each cable end.

Isolate unused outputs before initial start-up.

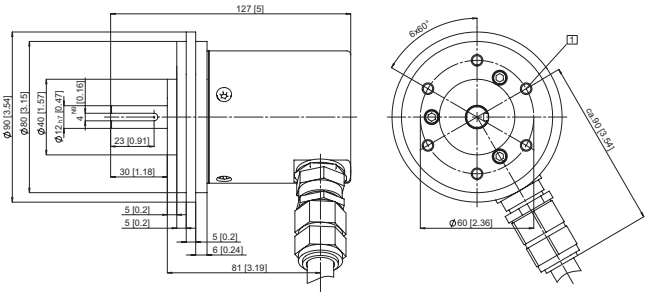
Dimensions shaft version

Clamping flange with shaft ø 12 mm



1 6 x M6, 12 [0.47] deep

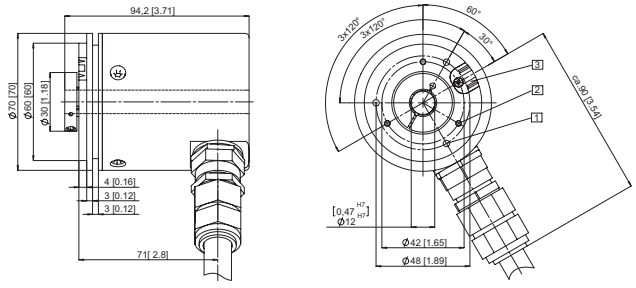
Clamping flange with shaft ø 12 mm
and mounted flange adapter



1 6 x M6, 12 [0.47] deep

Dimensions hollow shaft version

Synchro flange

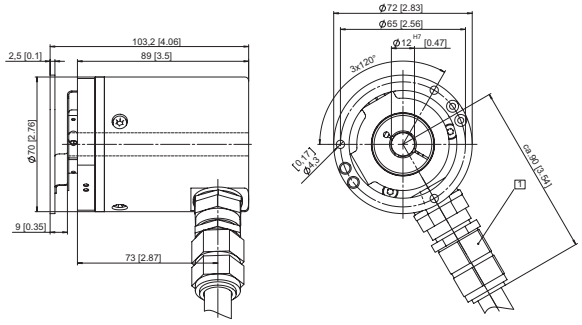


1 3 x M4, 6 [0.24] deep

2 3 x M3, 5 [0.20] deep

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

Stator coupling



1 Angular position of the cable outlet is not defined