

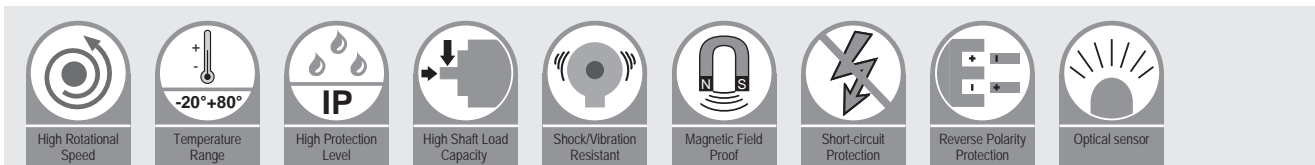
Incremental Encoders

Miniature

11-24SN / 24HN



- Outer diameter 24 mm , ideal for use in tight space
- Optical sensor technology offer a resolution of up to 1024 ppr
- High protection IP64



Highlight :

- Compact outer diameter
- RS422 or HTL output signal
- Can be supplied with radial or axial cable outlet
- Protection acc. to DIN 40050, up to IP 64
- Solid or hollow shaft version

Mechanical characteristics

Max. Speed	6000 rpm
Starting torque	≤ 0.1 Ncm (at 20 °C)
Moment of inertia	Shaft: ≤ 2 gcm ² ; hollow Shaft : ≤ 1 gcm ²
Shaft load capacity	Shaft: Radial 20 N; Axial 10 N hollow Shaft: Radial 10 N; Axial 10 N
Weight	approx. 0.06 kg
Protection acc. to DIN 40050	IP 64
Working temperature range	-20 °C ... 80 °C
Materials	Shaft/hollow Shaft: Stainless Steel/Brass; Housing/Flange: Aluminium
Shock resistance acc. to EN 60068-2-29	1000 m/s ² (6ms)
Vibration resistance acc. to EN 60068-2-6	100 m/s ² (10 Hz ... 2000 Hz)

Electrical characteristics

Output circuit	RS422	HTL
Power supply	5 V DC ± 5%	10...30 VDC
Power consumption (no load)	Max. 150 mA	Max. 150 mA
Permissible load/channel	Max. 20 mA	Max. 30 mA
Pulse frequency	Max. 300 kHz	Max. 200 kHz
Signal level	High Min. 2.5 V	Max. Ub - 3 V
	Low Max. 0.5 V	Max. 2.5 V
Rising edge time tr	Max. 200 ns	Max. 1 µs
Falling edge time tf	Max. 200 ns	Max. 1 µs
Short circuit protection	yes	yes
Reverse polarity protection	no	yes
CE compliant acc. to	EN 61000-6-2, EN 55011 Class B	

Terminal assignment

Signal	Ub	GND	A	\bar{A}	B	\bar{B}	Z	\bar{Z}	Shield
Cable (Colour) *	BN	WH	GN	YW	GY	PK	BU	RD	Shield
Cable (Colour) **	BN	WH	GN	-	YW	-	GY	-	Shield

* for Output circuit / Power supply type 1 and type 5

** for Output circuit / Power supply type 3

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Miniature 11-24SN / 24HN

Order Code Shaft Version	11-24SN-X X X X - X X X X					
	Type	a	b	c	d	e
a Flange 1 = \varnothing 24mm Flange	c Output circuit / Power supply 1 = RS422 (with inverted signal) / 5 VDC 3 = Push-pull (without inverted signal) / 10 ... 30VDC 5 = Push-pull (with inverted signal) / 10 ... 30VDC			e Pulse rate 4,9,10,15 ... 100,125,128 ... 200, 250 ... 300,360,400,500 ... 600,720 ... 1000,1024	Other pulse rates on request	
b Shaft ($\varnothing \times L$) 1 = \varnothing 4 x 10 mm 2 = \varnothing 6 x 10 mm	d Type of connection 1 = Axial cable, 2m 2 = Radial cable, 2m					

Order Code Hollow Shaft	11-24HN-X X X X - X X X X					
	Type	a	b	c	d	e
a Flange 1 = \varnothing 24mm, with Torque stop slot	c Output circuit / Power supply 1 = RS422 (with inverted signal) / 5 VDC 3 = Push-pull (without inverted signal) / 10 ... 30VDC 5 = Push-pull (with inverted signal) / 10 ... 30VDC			e Pulse rate 4,9,10,15 ... 100,125,128 ... 200, 250 ... 300,360,400,500 ... 600,720 ... 1000,1024	Other pulse rates on request	
b Blind hollow shaft(max.depth 14mm) 1 = \varnothing 4 mm 3 = \varnothing 6 mm	d Type of connection 1 = Axial cable, 2m 2 = Radial cable, 2m					

Accessories

Mounting accessory for shaft version:

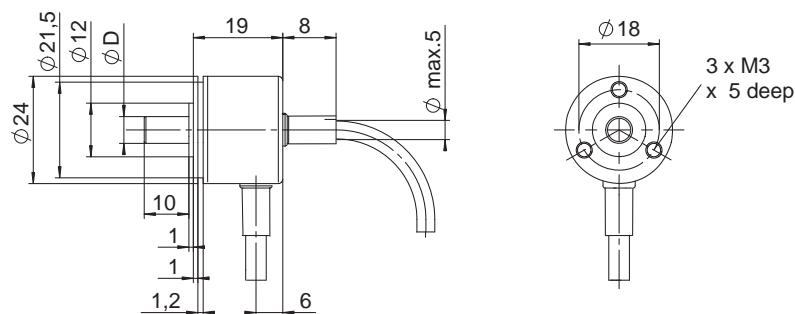
Coupling

Bellows coupling \varnothing 15mm , for shaft \varnothing 6 mm

T1-1000-2215-0606

Dimensions

Shaft encoder
 \varnothing 24 mm Flange



Hollow Shaft encoder
 \varnothing 24 mm Flange With Torque stop slot

