

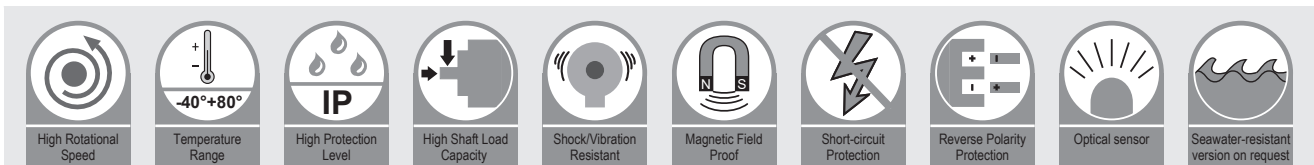
# Incremental Encoders

Hollow shaft

11-80HN



- Large hollow shaft
- Max bore size 25 mm
- Various accessories for mounting
- Protection IP 65



## Highlight :

- 80 mm outer diameter, max bore size 25 mm
- Wide temperature range, -40°C ~ +80°C optional
- High shock and vibration resistance
- Protection acc. to EN 60 529, up to IP 65
- Connection via cable, M12 or M23 connector
- Number of resolution up to 3840 ppr
- With Push-pull, RS422 or SinCos output

Mechanical characteristics	
Max. Speed	6000 rpm
Starting torque	≤ 6 Ncm (at 20 °C)
Moment of inertia	≤ 40 gcm <sup>2</sup>
Shaft load capacity	Radial 200 N; Axial 100 N
Weight	Approx. 0.6 kg
Protection acc. to EN 60 529	IP 65
Working temperature range	-20°C ... 80°C; -40°C ... 80°C optional*
Materials	Shaft: Stainless Steel; Flange, Housing: Aluminium
Shock resistance acc. to EN 60068-2-29	1000 m/s <sup>2</sup> (6 ms)
Vibration resistance acc. to EN 60068-2-6	50 m/s <sup>2</sup> (10-2000 Hz)

\* Please contact us if need low temperature encoder.

SinCos Interface Electrical characteristics	
Output circuit	SinCos (1Vpp)
Power supply	5 VDC
Power consumption with inverted signal	Max. 100 mA
Frequency	≤100 kHz
Permissible load / channel	Min. 120 Ohm
Short circuit protection	yes
Reverse polarity protection	no
UL approval	yes
CE compliant acc. to	EN 61326-1:2006; EN 61000-6-2:2006 ; EN 61000-6-3:2007

Electrical characteristics			
Output circuit	RS422	Push-pull	Push-pull(7272)
Power supply	5 VDC or 10 ... 30 VDC	10 ... 30 VDC	5 ... 30 VDC
Power consumption (no load)	Max. 70 mA	Max. 70 mA	Max. 70 mA
Permissible load / channel	Max.40 mA	Max.40 mA	Max.40 mA
Pulse frequency	Max. 200 kHz	Max. 200 kHz	Max. 200 kHz
Signal level High	Min. 2.5 V	Min. U - 2.5V	Min. U - 10%U
Signal level Low	Max. 0.5 V	Max. 2.5 V	Max. 2.5 V
Rising edge time tr	Max. 200 ns	Max. 1 μs	Max. 1 μs
Falling edge time tf	Max. 200 ns	Max. 1 μs	Max. 1 μs
Short circuit protection	yes	yes	yes
Reverse polarity protection	no; 10 ... 30 VDC yes	yes	yes
UL approval	yes	yes	yes
CE compliant acc. to	EN 61326-1:2006; EN 61000-6-2:2006 ; EN 61000-6-3:2007		

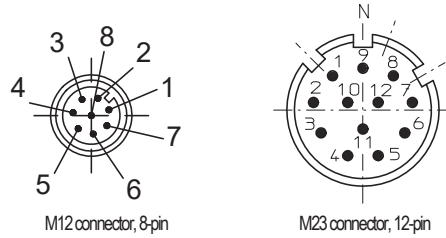
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## Terminal assignment

Signal	Ub	GND	A	$\bar{A}$	B	$\bar{B}$	Z	$\bar{Z}$	Shield
Cable (Colour)	BN	WH	GN	RD	YW	BK	GY	VT	Shield
M12 connector, 8-pin	2	1	3	6	4	7	5	8	
M23connector, 12-pin	12	10	5	6	8	1	3	4	

Top view of mating side, male contact base



Incremental encoder

Order Code Hollow Shaft	11-80HN-X X X X-X X X X Type <span style="font-size: small;">f a b c d e</span>				
<p><b>a</b> Flange</p> <p>1 = without mounting accessory 3 = With short single arm spring A = With long single arm spring 5 = Arm mounting</p> <p><b>b</b> Hollow Shaft</p> <p>5 = <math>\varnothing</math> 10 mm 6 = <math>\varnothing</math> 12 mm 8 = <math>\varnothing</math> 15 mm 9 = <math>\varnothing</math> 16 mm A = <math>\varnothing</math> 20 mm B = <math>\varnothing</math> 25 mm</p>	<p><b>c</b> Output circuit / Power supply</p> <p>1 = RS422 (with inverted signal) / 5 VDC 2 = RS422 (with inverted signal) / 10 ... 30 V DC 3 = Push-pull (without inverted signal) / 10 ... 30VDC 4 = Push-pull (7272 with inverted signal) / 5 ...30VDC (Only for equal or less than 2500ppr) 5 = Push-pull (with inverted signal) / 10 ... 30VDC 6 = SinCos, 1Vpp (with inverted signal) / 5VDC</p> <p><b>d</b> Type of connection</p> <p>2 = Radial cable, 2m 5 = M23 connector, 12-pin, radial (without mating connector) 7 = M12 connector, 8-pin, radial (without mating connector)</p>	<p><b>e</b> Pulse rate</p> <p>512,1000,1024,2048,2500,3600,3840</p> <p>1 Vpp Sin/Cos: 1024</p> <p>Other pulse rates on request</p> <p><b>f</b> Type</p> <p>N = industrial grade L = -40°C...80°C</p>			

## Accessories

Connection technology:  
Connector, self-assembly

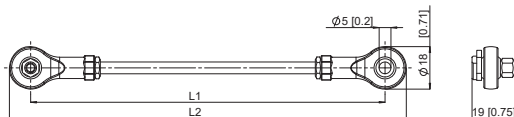
M12 self-assembly E1-1208-0101  
M23 self-assembly E1-3212-0100

Mounting accessory for shaft version:  
Stator coupling



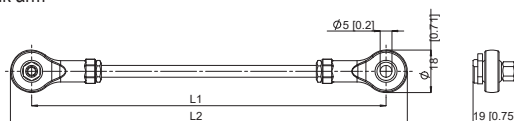
Further accessories and exact order code please refer to the accessories section.

Metal arm



L1= 70 mm, L2= 88 mm (Other lengths on request) T2-0000-5000-0070

Insulated crank arm



L1= 70 mm, L2= 88 mm (Other lengths on request) T2-0000-5001-0070

HL-M001-02-17-EN

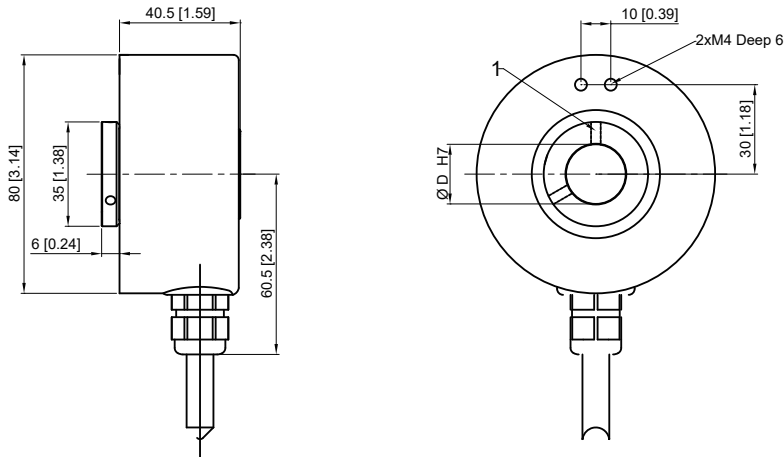
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Hollow shaft

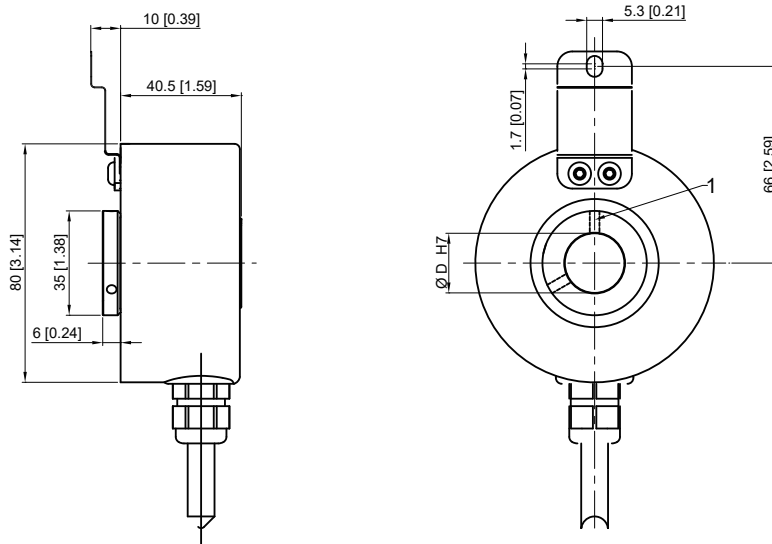
11-80HN

## Dimensions

type of flange1 , type of connection 2



type of flange3 , type of connection 2



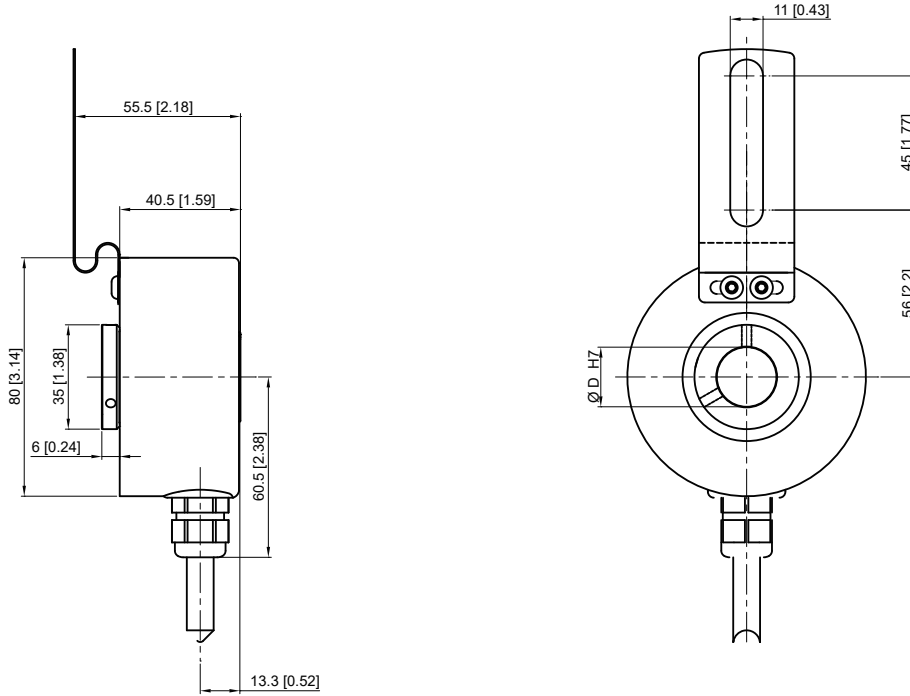
1 - 2 x M4 Pushing thread

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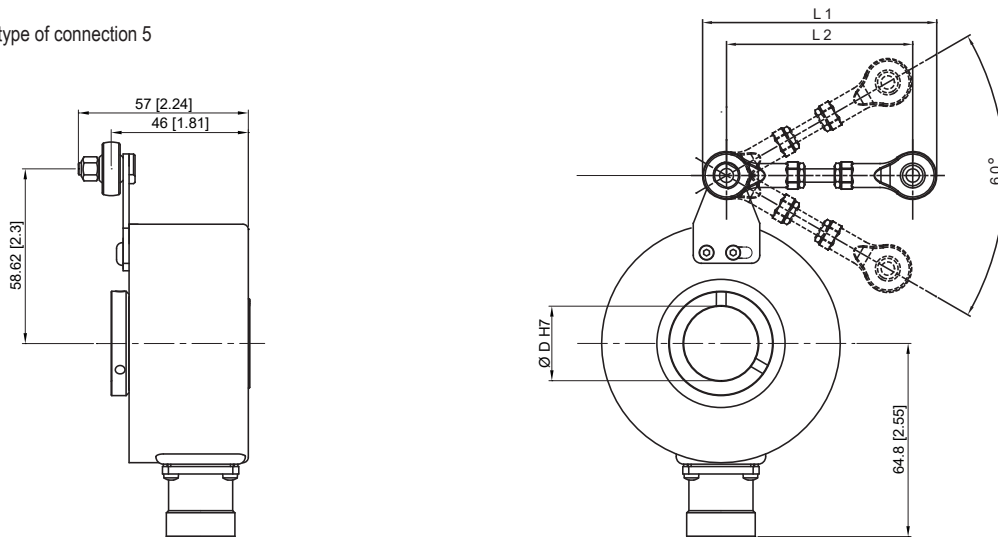
Hollow shaft

11-80HN

type of flangeA , type of connection 2



type of flange5 , type of connection 5



Other mounting types and accessories on your request,  
please send us an email: [sales@heinlanz.com](mailto:sales@heinlanz.com)