

# Datasheet

## Characteristics

- Mini Encoder with hollow shaft
- Encoder: Ø32 mm
- Hollow Bore: Ø6 mm – Ø3/8 inch
- Resolution up to 5.000 ppr
- IP64 / IP50 (IDC connector)



## Mechanical data

Dimension	Ø32 mm
Weight: Encoder	~50 gr
Cable	50 gr / Meter
Material: Housing	Aluminum
Shaft	Brass
Cap	Nickel-plated Steel / Aluminum (with flat cable)
Bearing Life	>1,9 x 10 <sup>10</sup> revolutions at rated load
Shaft Loads	axial: max. 20 N radial: max. 20 N
max. Shaft Speed	6.000 rpm
Starting Torque	< 0,005 Nm at 25°C
Mass Moment of Inertia	1,0 gcm <sup>2</sup>
Operating Temp.	-40°C to +85°C
Storage Temp.	-40°C to +85°C
Shock	100 G / 11 ms
Vibration	10- 2.000 Hz / 10 G
Bump	10 G / 16 ms (1.000 x 3 axis)
Humidity	98% RH without condensation
Enclosure Rating	IP64 / IP50 (IDC connector)

## Electrical data

Code	Incremental	
Resolutions (pulses per revolutions)	min. 1, 32, 64, 96, 100, 200, 250, 256, 360, 500, 1.000, 1.024, 1.500, 2.000, 3.600, 4.096, 5.000 (other options on request)	
Supply Voltage	4,5 VDC to 30 VDC (35mA max. – no load)	
Output Voltage	High	V <sub>in</sub> - 0,6 at - 10 mA
	Low	V <sub>in</sub> - 1,3 at - 25 mA 500 mV max. at 10 mA
Load	25 mA max. load per output channel	
Frequency Response	200 kHz max.	
Output Format	Two channel (A, B) quadrature with Index (Z) and optional complementary (A, B, Z) outputs	
Phase Sense	A leads B clockwise from the mounting end of the encoder	
Index	Gated with Channels A and B high	
Accuracy	± 0,8 arc-min.	
Outputs	ASIC	Push-Pull and differential
	OL7272	Push-Pull And differential Line Driver
	26C31	differential Line Driver 5V output (with 5V input)
Electrical Protection	Reverse polarity and output short circuit protected	
Noise Protection	EN 61000-6-2 (2005)	
	EN 61000-6-3 (2007)	

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## Connection Options

Cable	8 leads (0,05 mm <sup>2</sup> , 30 AWG); Differential 5 leads (0,14mm <sup>2</sup> , 26 AWG; Standard: twisted pairs, shielded
Flat Cable	10 leads flat cable with IDC connector
Anschluss	5-pin M12; Standard 8-pin M12; Differential

## Output Terminations

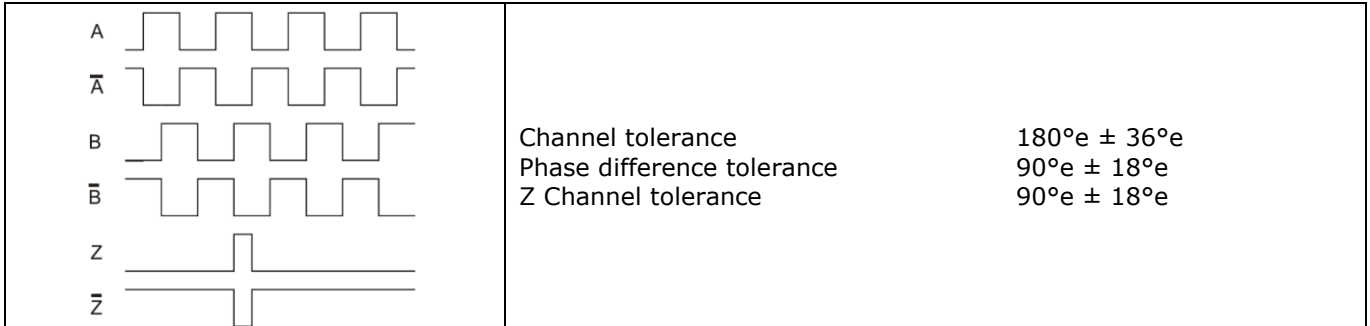
Standard Cable			Flat Cable with IDC connector	
Channel	Differential Output	Standard Output	Position	Differential Output*
Channel	Wire color		Position	Channel
A	Pink	Green	1	NC
$\bar{A}$	Gray	NC	2	V <sub>sup</sub>
B	Green	Yellow	3	GND
$\bar{B}$	Yellow	NC	4	NC
Z	White	Gray	5	A
$\bar{Z}$	Brown	NC	6	$\bar{A}$
V <sub>sup</sub>	Red	Brown	7	B
GND	Blue	White	8	$\bar{B}$
GND = Circuit Ground			9	Z
			10	$\bar{Z}$

\*Hewlett Packard (HP) compatible

					
<b>5-pin M12</b>		<b>8-pin M12</b>		<b>5-pin M12</b>	<b>8-pin M12</b>
Standard Output		Differential Output		Mating Connector with Cable	Mating Connector with Cable
<b>Pin</b>	<b>Channel</b>	<b>Channel</b>	<b>Channel</b>	<b>Wire color</b>	<b>Wire color</b>
1	V <sub>sup</sub>	A	V <sub>sup</sub>	brown	red
2	B	V <sub>sup</sub>	GND	white	blue
3	GND	$\bar{A}$	A	green	pink
4	A	B	B	yellow	green
5	Z	$\bar{B}$	Z	gray	white
6		Z	$\bar{A}$		gray
7		GND	B		yellow
8		GND = Circuit Ground	$\bar{Z}$		brown
		$\bar{Z}$	$\bar{Z}$		

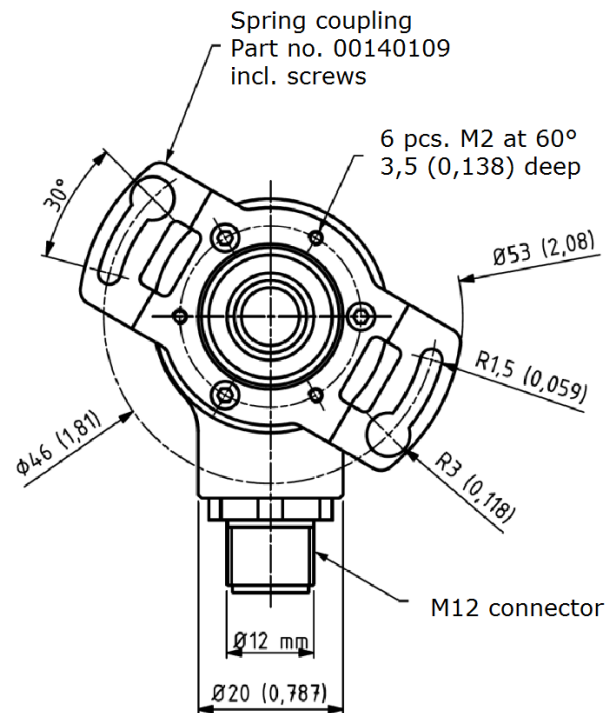
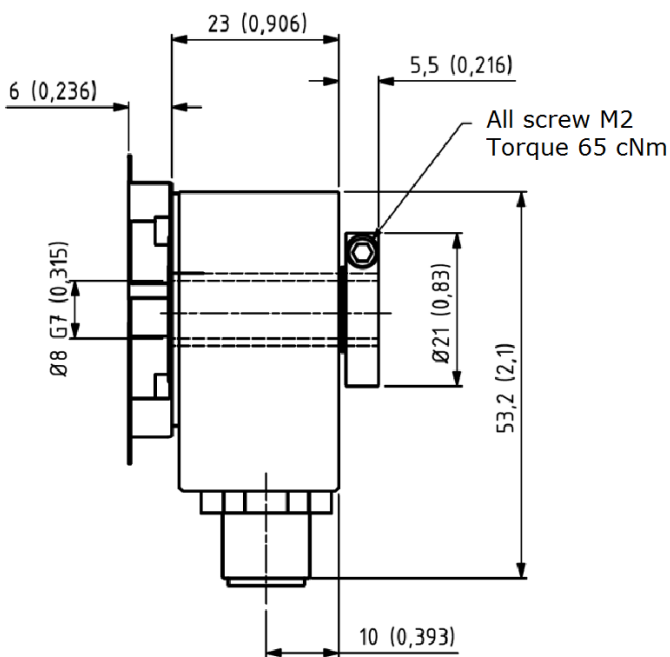
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## Output waveform

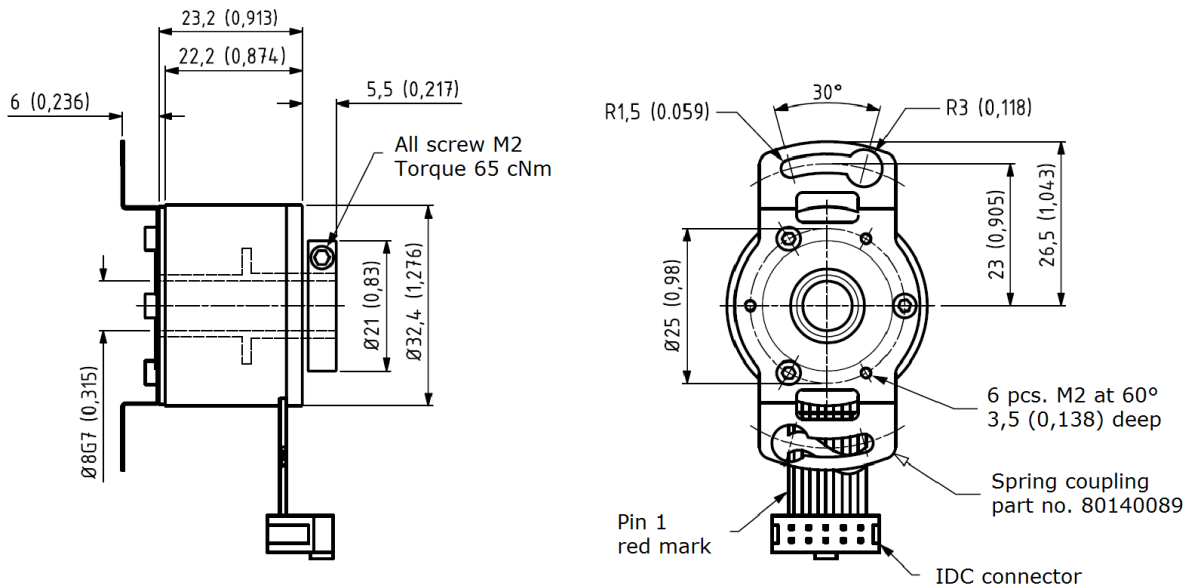


## Mechanical Dimensions (ISO 2768f)

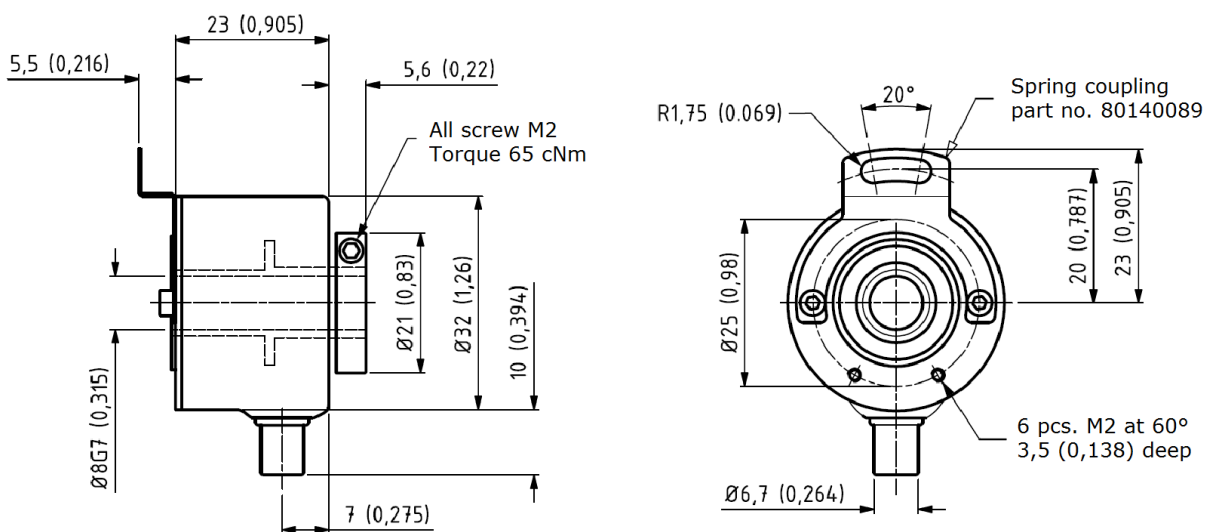
### M12 Connector mm (inches)



## Flat Ribbon Cable with IDC connector mm (inches)



## Standard Cable Gland mm (inches)



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## Ordering example

**Type** SCH32B - 100 - D - 06-28 - 64 - 01 - s - 00 - S1

### Pulse per Revolution

See table

### Output

**D** = Differential  
**N** = Standard  
**L** = 26C31 Line Driver only 5V  
**M** = OL 7272 Line Driver

### Shaft Dia. / Shaft Length

**06-28** = 6mm x 28,7mm  
**08-28** = 8mm x 28,7mm  
**¼-28** = 1/4inch x 28,7mm  
**¾-28** = 3/4inch x 28,7mm

### IP

**50** = IP50  
**64** = IP64

### Cable Length

#### Standard Cable

**01** = 1 m  
xx = specify length  
**00** = no cable

#### Flat cable with IDC connector

**0,5** = 0,5 m  
**01** = 1 m  
**02** = 2 m

### Cable Takeout

**S** = Standard Cable-radial  
**SF** = Flat cable with IDC connector  
**s** = Anschluss

### Connector

#### Standard cable

**C5** = M12/ 5-pin  
**C8** = M12/ 8-pin  
**00** = no Connector

#### Flat Cable

**IDC** = IDC connector

### Spring coupling

**S1** = 1 hole p/n (80140078)  
**S2** = 1 hole p/n (80140089)  
**S3** = 2 holes p/n (80140189)  
**S4** = 2 holes p/n (80131398)