

Datasheet

Characteristics

- Mini Encoder with shaft
- Encoder: Ø38 mm
- Shaft: Ø4 mm – Ø1/4 inch
- Resolution up to 7.500 ppr
- IP65 / IP50 (for IDC option)



Mechanical data

Weight: Encoder	~40 gr
Cable	50 gr / Meter
Material: Housing	Aluminium
Shaft	Stainless Steel
Cap	Electroplated Steel
Bearing Life	>1,9 x 10 ¹⁰ revolutions at rated load
Shaft Loads	axial: max. 20 N radial: max. 20 N
Shaft Speed	max. 12.000 rpm
Starting Torque	< 0,005 Nm at 25°C
Mass Moment of Inertia	0,8 gcm ²
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	IP65 / IP50 (for IDC option)

Electrical data

Code	Incremental	
Resolutions (pulses per revolutions) *operating temperature: -20°C to +50°C	min. 1, 4, 10, 11, 12, 15, 20, 25, 30, 36, 50, 60, 64, 75, 90, 100, 125, 128, 150, 180, 200, 250, 256, 300, 360, 400, 500, 512, 600, 1.000, 1.024, 1.250, 1.800, 2.000, 2.048, 2.500, 3.000, 3.600, 5.000, 7.500* (other options on request)	
Supply Voltage	4,5 VDC to 30 VDC (35mA max. – no load)	
Output Voltage	High	V _{in} - 0,6 at - 10 mA V _{in} - 1,3 at - 25 mA
	Low	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 OL7272 26C31	Push-Pull and differential Push-Pull And differential Line Driver 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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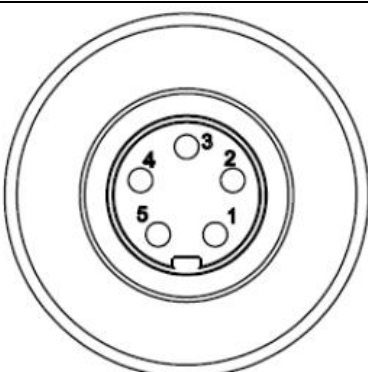
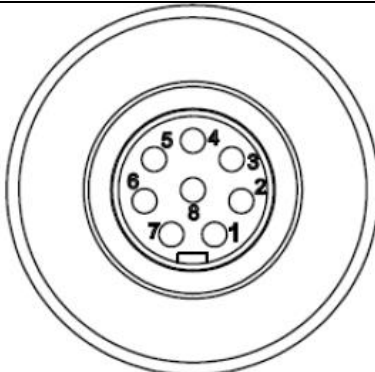
Connection Options

Cable	8 leads (0,05 mm ² , 30 AWG) - Differential 5 leads (0,14mm ² , 26 AWG – Standard twisted pairs, shielded
Flat Cable	10 leads flat cable with IDC connector

Output Terminations

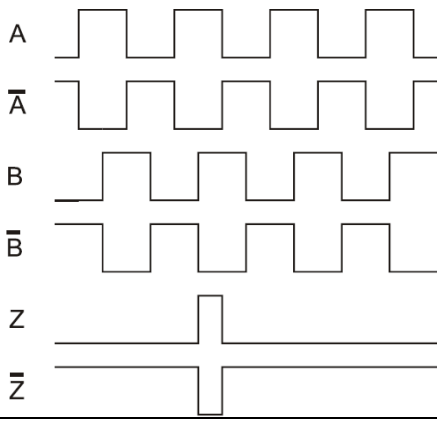
Standard Cable			Flat Cable with IDC connector	
	Differential Output	Standard Output		Differential Output*
Channel	Wire color		Position	Channel
A	Pink	Green	1	NC
$\bar{A}$	Gray	NC	2	V _{sup}
B	Green	Yellow	3	GND
$\bar{B}$	Yellow	NC	4	NC
Z	White	Gray	5	A
$\bar{Z}$	Brown	NC	6	$\bar{A}$
V _{sup}	Red	Brown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

*Hewlett Packard (HP) compatible

		
Position	M9 (5-pin) Standard Output Channel	M9 (8-pin) Differential Output Channel
1	VDD	VDD
2	GND	GND
3	A	A
4	B	$\bar{A}$
5	Z	B
6		$\bar{B}$
7		Z
8		$\bar{Z}$

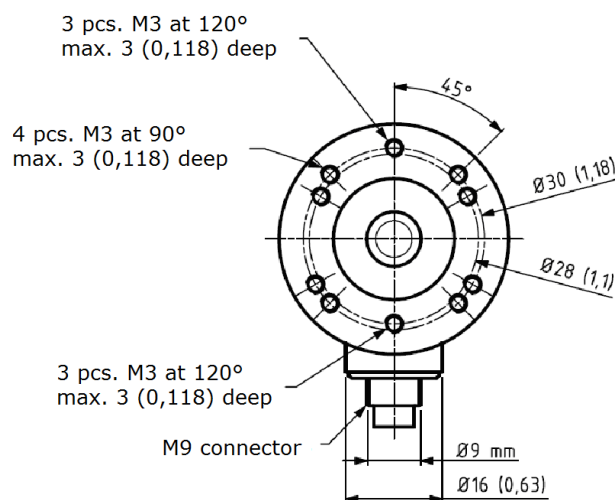
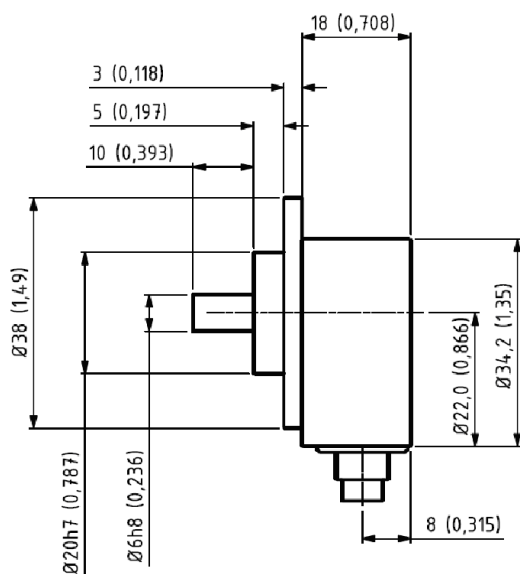
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Output waveform

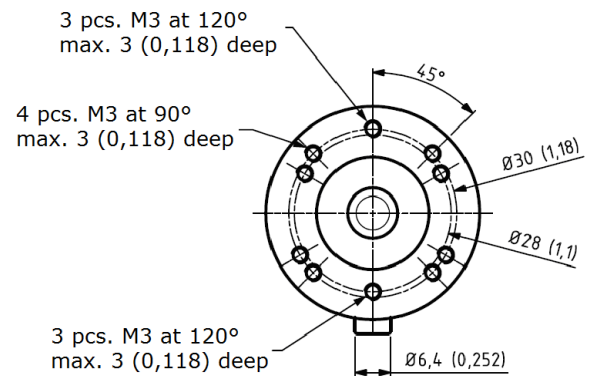
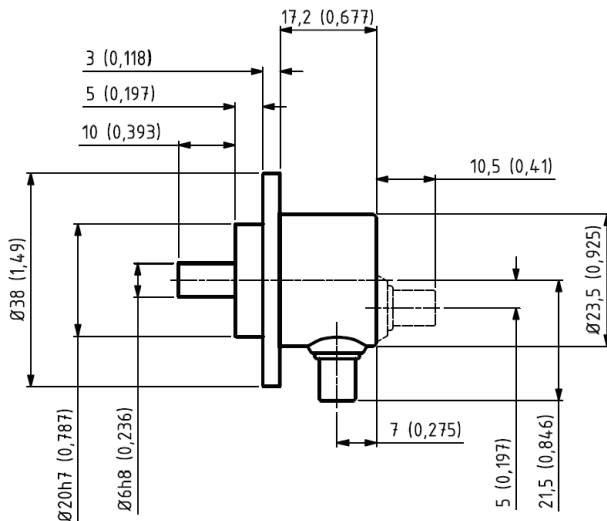
	Channel tolerance Phase difference tolerance Z Channel tolerance	$180^\circ \pm 36^\circ$ $90^\circ \pm 18^\circ$ $90^\circ \pm 18^\circ$
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Mechanical Dimensions (ISO 2768f)

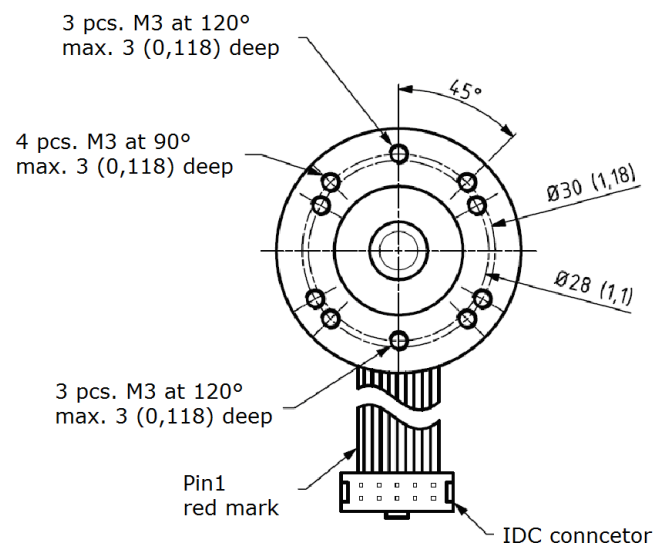
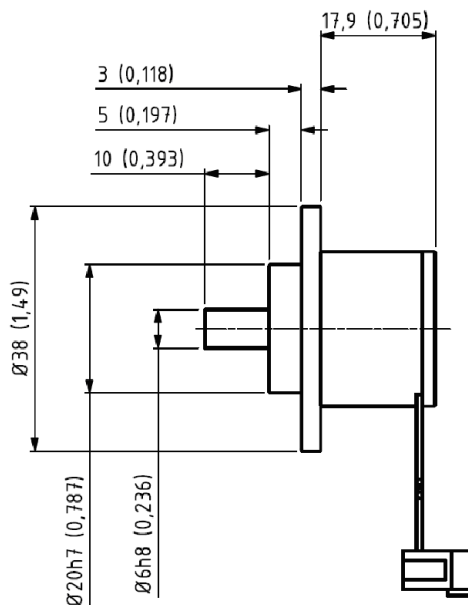
M9 Connector mm (inches)



Standard Cable Gland mm (inches)



Flat Ribbon Cable with IDC connector mm (inches)



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Ordering example

Type SCA38 - 100 - D - 05-10 - 64 - 01 - B - 00

Pulse per Revolution

See table

Output

D = Differential
N = Standard
NON = open collector NPN
NOP = open collector NOP
L = 26C31 Line Driver only 5V
M = OL 7272 Line Driver
T = Standard – with built-in
TSM***

Shaft Dia. / Shaft Length

05-10 = 4 x 8mm
06-10 = 06 x 10mm
¼-10 = 1/4inch x 10mm

IP

50 = IP50
64 = IP64

Cable Length

Standard Cable

01 = 1 m
xx = specify length
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
B = axial

Connector

Standard Cable

P5 = M9 5-pin
P8 = M9 8-pin
00 = no connector
Flat cable*
IDC = IDC-connector

*only with IP50

***Designed specifically for Wind Power applications/ TSM = Transient Suppression Module