

Datasheet

Characteristics

- Mini Encoder with shaft
- Encoder: Ø41 mm
- Shaft: Ø6 mm – Ø1/4 inch
- Resolution up to 7.500 ppr
- IP64 / IP50 (IDC connector)



Mechanical data

Dimension	Ø41 mm
Weight: Encoder	~50 gr
Cable	50 gr / Meter
Material: Housing	Aluminium
Shaft	Stainless Steel
Cap	Electroplated Steel / Aluminium (with flat cable)
Bearing Life	>1,9 x 10 ¹⁰ revolutions at rated load
Shaft Loads	axial: max. 20 N radial: max. 20 N
max. Shaft Speed	12.000 rpm
Starting Torque	< 0,005 Nm at 25°C
Mass Moment of Inertia	1,0 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	IP64 / IP50 (IDC connector)

Electrical data

Code	Incremental
Resolutions (pulses per revolutions)	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, 2.000, 2.048, 2.500, 3.000, 3.600, 5.000, 7.500* (other options on request)
*operating temperature: -20°C to +50°C	
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 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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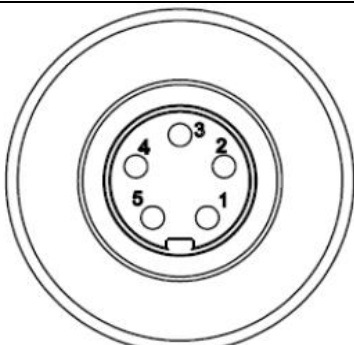
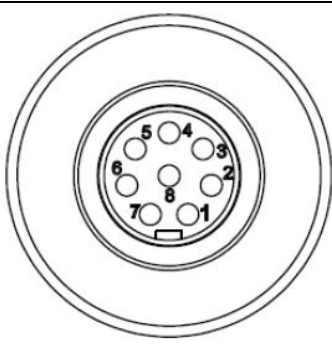
Connection Options

Cable	8 leads (0,05 mm 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

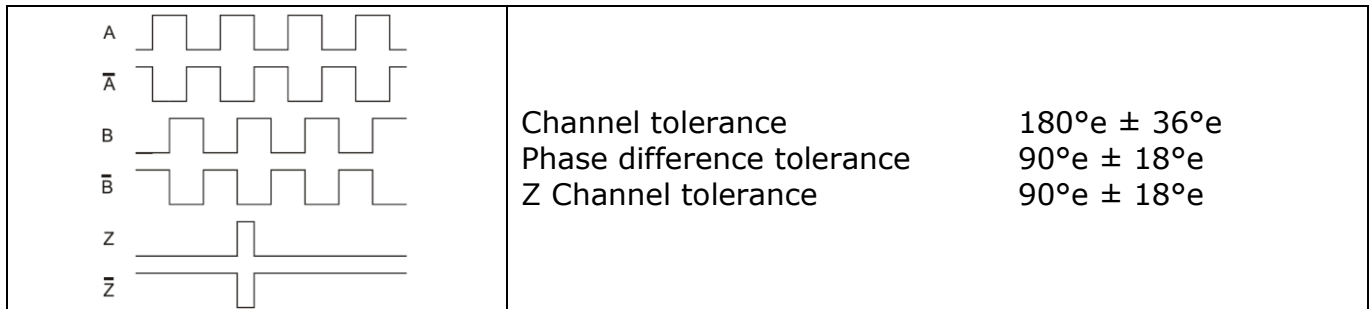
Standard Cable			Flat Cable with IDC connector	
	Differential Output	Standard Output		Differential Output*
Channel	Wire color		Position	Channel
A	Pink	Green	1	NC
$\bar{A}$	Gray	NC	2	V _{sup}
B	Green	Yellow	3	GND
$\bar{B}$	Yellow	NC	4	NC
Z	White	Gray	5	A
$\bar{Z}$	Brown	NC	6	$\bar{A}$
V _{sup}	Red	Brown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

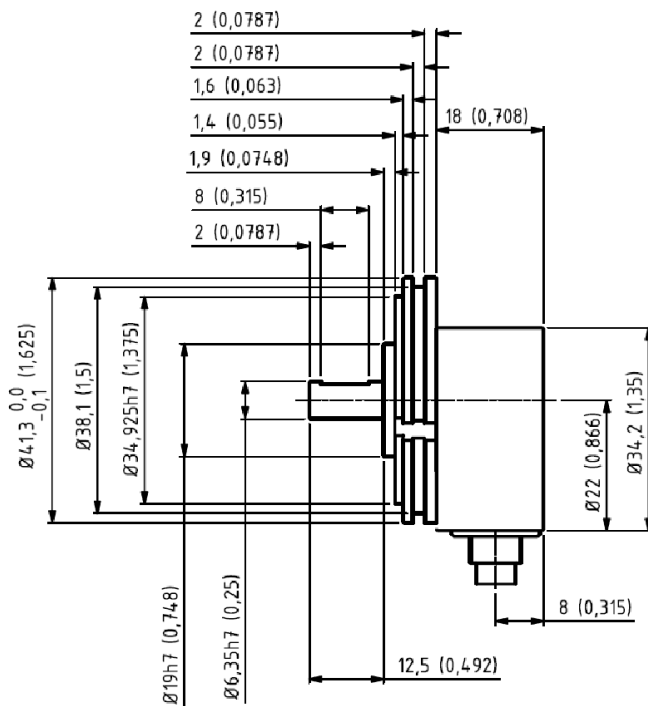
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Output waveform

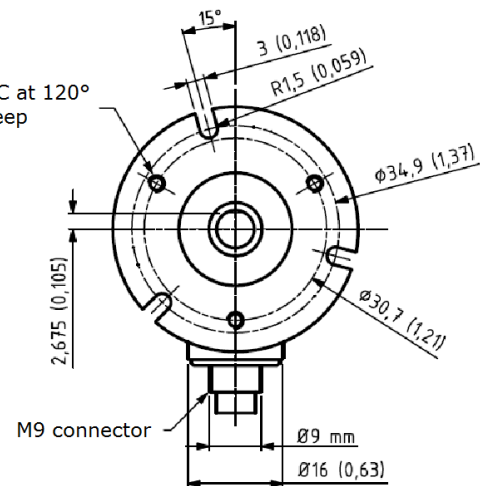


Mechanical Dimensions (ISO 2768f)

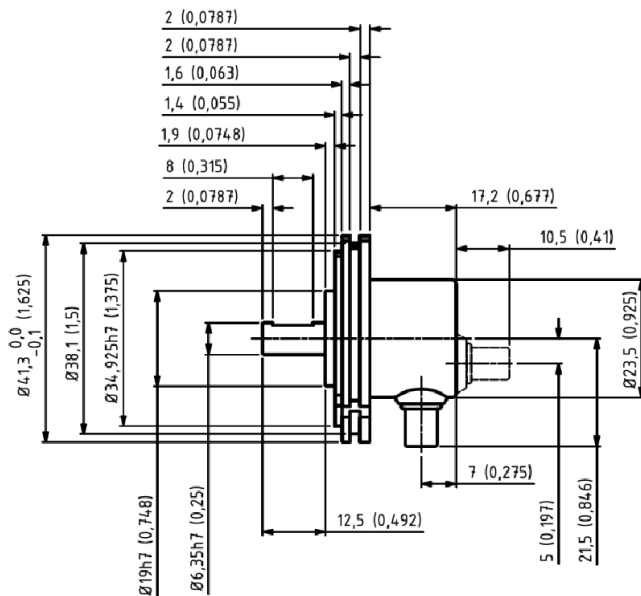
M9 Connector mm (inches)



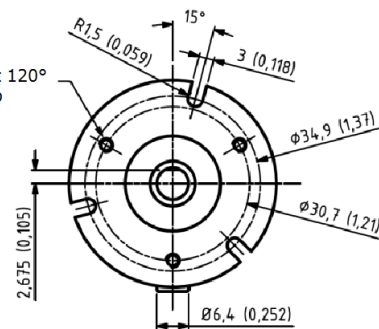
3 pcs. # 4-40 UNC at 120°
max. 7 (0,275) deep



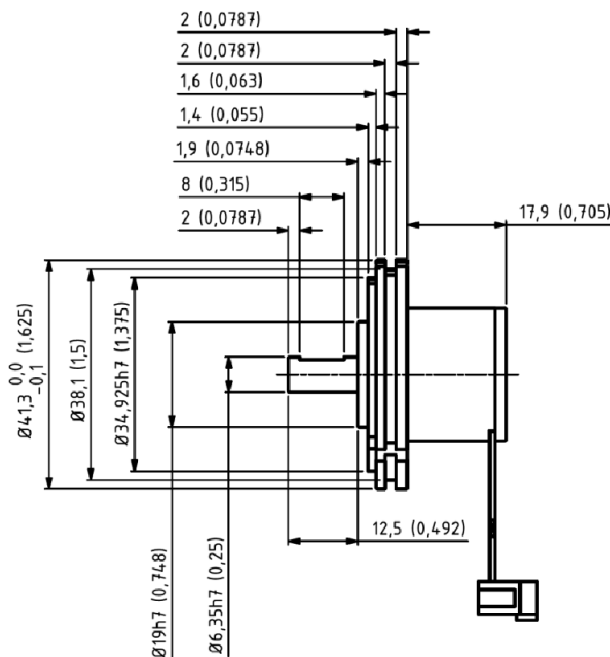
Standard Cable Gland mm (inches)



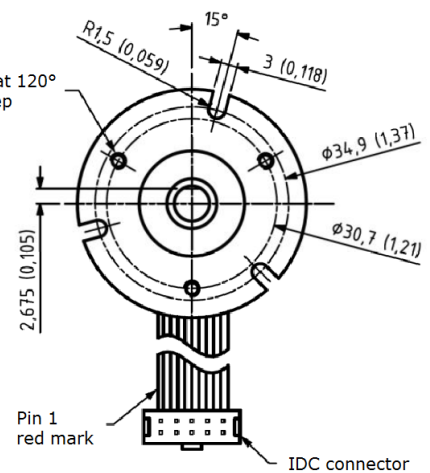
3 pcs. #4-40 UNC at 120°
max. 7 (0,275) deep



Flat Ribbon Cable with IDC connector mm (inches)



3 pcs. #4-40 UNC at 120°
max. 7 (0,275) deep



Pin 1
red mark

IDC connector

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Ordering example

Type SCA41 - 100 - D - 06-10 - 64 - 01 - B - 00

Pulse per Revolution

See table

Output

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

Shaft Dia. / Shaft Length

06-10 = 06 x 10mm
06-12 = 6 x 12,5mm
06-14 = 6x 14mm
1/4-12 = 1/4inch x 12,5mm

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