

Characteristics

- Micro Rotary Encoder with blind hollow shaft
- Encoder: Ø16mm
- Hollow Bore: Ø1,5mm - Ø1/8 inch
- Resolution up to 5.000ppr
- IP50



Mechanical data

Dimension	Ø16 mm
Weight: Encoder	~15 gr
Cable	50 gr/ meter
Material: Housing	Aluminium/ Brass
Cap	Aluminium
Shaft	Brass
Bearing Life	>1,9 x 10 ¹⁰ revolutions at rated load
Shaft Loads	axial. Max. 10 N radial. Max. 10 N
Shaft Speed	Max. 12.000 rpm
Starting Torque	< 0,005 Nm at 25°C
Mass Moment of Inertia	0,25 gcm ²
Operating Temp.	-20°C to +70°C
Storage Temp.	-20°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	IP 50

Electrical data

Code	Incremental	
Resolutions (pulses per revolution)	min. 1, 100, 125, 160, 256, 300, 360, 500, 1.000, 1.024, 2.000, 2.500, 3.600, Max. 5.000* (other options on request)	
*operating temperature: -20°C to +50°C		
Supply Voltage	4.5 VDC to 30 VDC (35 mA 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	20 mA max. load per output channel	
Frequency Response	Max. 200 kHz	
Output Format	Two channel (A, B) quadrature with Index (Z) and optional complementary (\bar{A} , \bar{B} , \bar{Z}) outputs	
Phase Sense	A leads B clockwise from the mounting end of the encoder	
Index	Gated with Channels A and B high	
Accuracy	± 0,26 arc-min.	
Outputs	ASIC differential or inverted	
Electrical Protection	Reverse polarity and output short circuit protected	
Noise Protection	EN 61000-6-2 (2005)	
	EN 61000-6-3 (2007)	

Connection Options

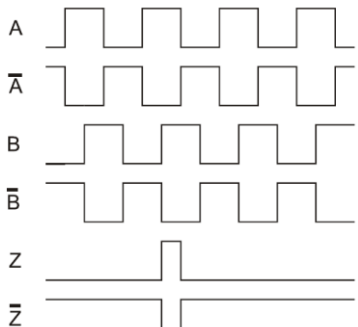
Cable	8 leads (0,05 mm ² , 30 AWG) twisted pairs, shielded
Flat Cable	10 lead flat cable with IDC connector

Output Terminations

Standard Cabel			Flat Cable with IDC Connector		
Channel	Differential Output Wire Color	Position	Differential Output*	Inverted Output Channel	
A	pink	1	NC	\bar{A}	
\bar{A}	grey	2	V	NC	
B	green	3	GND	NC	
\bar{B}	yellow	4	NC	NC	
Z	white	5	A	NC	
\bar{Z}	brown	6	\bar{A}	GND	
V _{sup}	red	7	B	NC	
GND	blue	8	\bar{B}	\bar{B}	
GND = Circuit Ground		9	Z	V _{sup}	
		10	\bar{Z}	Z	

*Hewlett Packard (HP) compatible

Output waveform

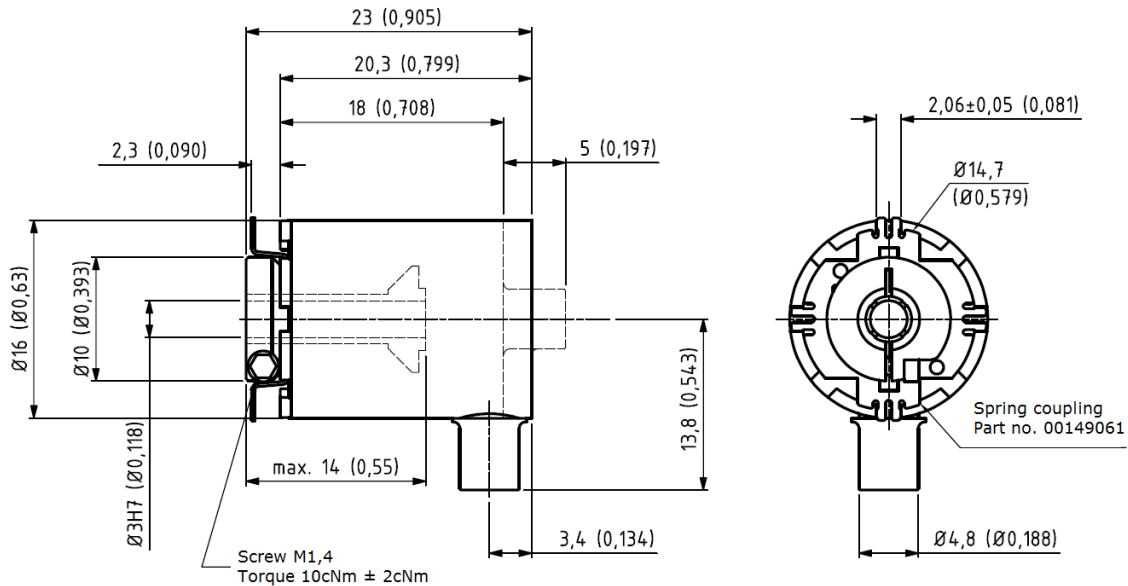
	<p>Channel tolerance Phase difference tolerance Z channel tolerance</p>	<p>180°e ± 36°e 90°e ± 18°e 90°e ± 18°e</p>
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Cable Tolerances

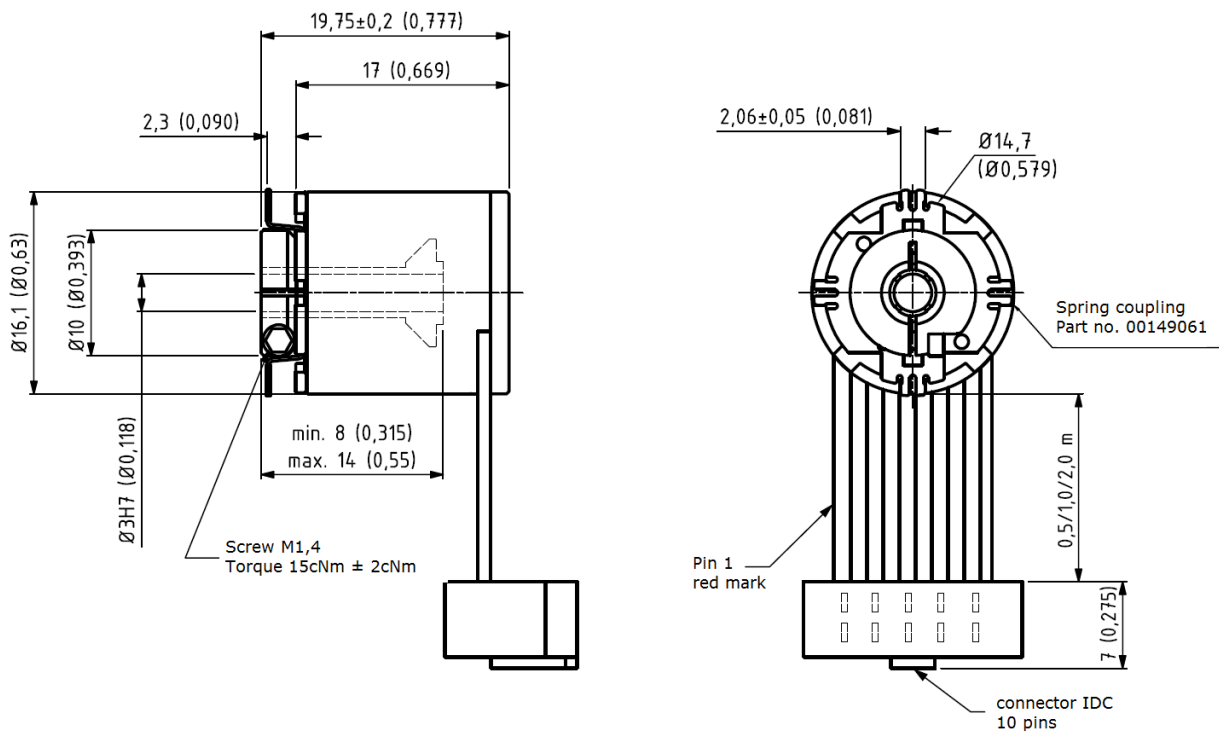
	Cable Length	Tolerances
Flat Cable	0,5 = 0,5 m	± 10 mm
	01 = 1 m	± 15 mm
	02 = 2 m	± 20 mm
Round Cable	01 = 1 m	min. XX -15 mm
	XX= specified length	
	XX ≤ 500 mm with connector	min. XX -10 mm
	500 ≤ XX ≤ 1.000 mm with connector	min. XX -15 mm
	xx > 1.000 mm with connector	min. XX -20 mm

Mechanical Dimensions
(ISO 2768f)

Standard Cable Gland mm (inches)

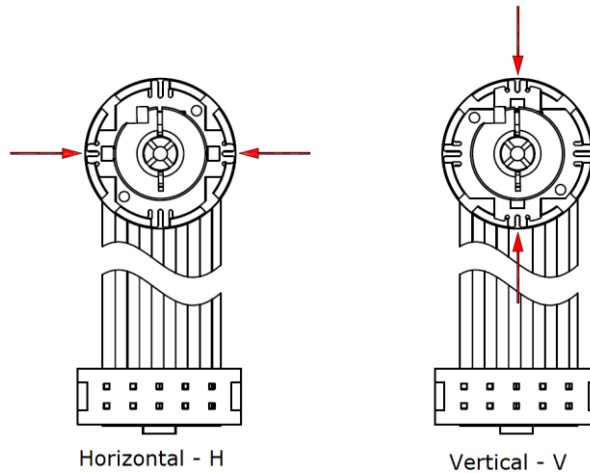


Flat Ribbon Cable with IDC connector mm (inches)



Datenblatt

Spring Coupling Orientation



Ordering example

Type SCH16F - 100 - D - 1,5-14 - 50 - 01 - B - 00 - S1

Pulse per Revolution
see table

Output
D = differential
I = inverted

Hollow Shaft Dia./ Length
1,5-14 = 1,5mm x 14mm
02-14 = 2mm x 14mm
03-14 = 3mm x 14mm
1/8-14 = 1/8 inch x 14 mm

IP
50 = IP 50

Cable Length
Standard Cable
01 = 1 m
xx = specify length
00 = no Cable
Flat Cable with IDC
0,5 = 0,5 m
01 = 1 m
02 = 2 m

Takeout
S = radial
B = axial
SF = Flat Cable

Anschluss
IDC = Flat Cable
00 = no connector

Spring Coupling
S1 = 80149061 0,25mm V
S3 = 80149061 0,25mm H
S7 = 80142773 0,25mm V
S8 = 801427730 0,25mm H
00 = no spring coupling