

Datasheet

Characteristics

- Micro Encoder with shaft
- Shaft Encoder: Ø0,787 inch (20mm)
- Shaft: Ø 1/8 inch
- Resolution up to 5.000 ppr
- IP50



Mechanical data

Dimension	Ø20 mm
Weight: Encoder	~15 gr
Cable	50 gr/ meter
Material: Housing	Aluminium / Brass
Cap	Aluminium
Shaft	Stainless Steel / Brass
Bearing Life	>1,9 x 10 ¹⁰ revolutions at rated load
Hollow Shaft Loads	axial: Max. 10N radial: Max. 10N
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	IP50

Electrical data

Code	Incremental	
Disk 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)	
<small>*operating temperature: -20°C to +50°C</small>		
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 (Ā, B̄, Z̄) 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 differential or Inverted	
Electrical Protection	Reverse polarity and output short circuit protected	
Noise Protection	EN 61000-6-2 (2005)	
	EN 61000-6-3 (2007)	

Datasheet

Connection Options

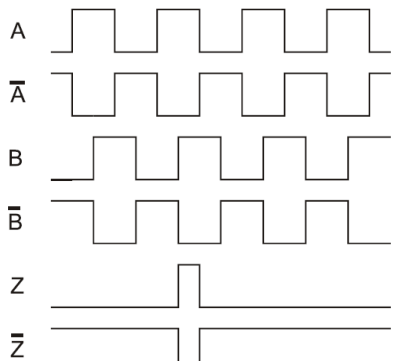
Cable	8 leads (0,05 mm ² , 30 AWG) twisted pairs, shielded
Flat Cable	10 lead flat cable with IDC connector

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

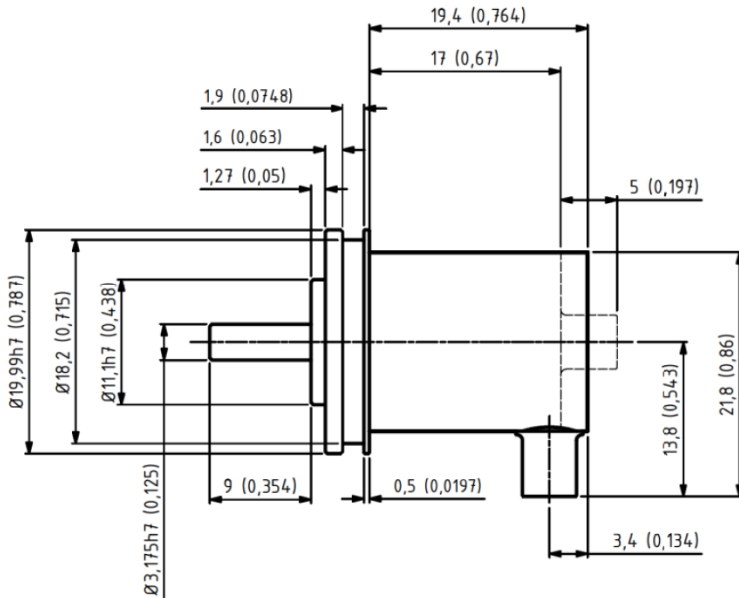
Output waveform

	<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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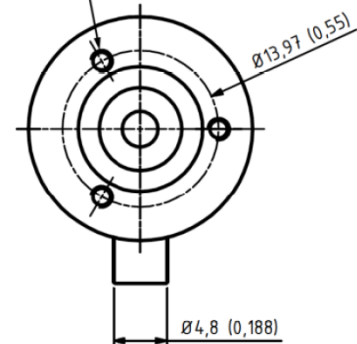
Datasheet

Mechanical Dimensions (ISO 2768f)

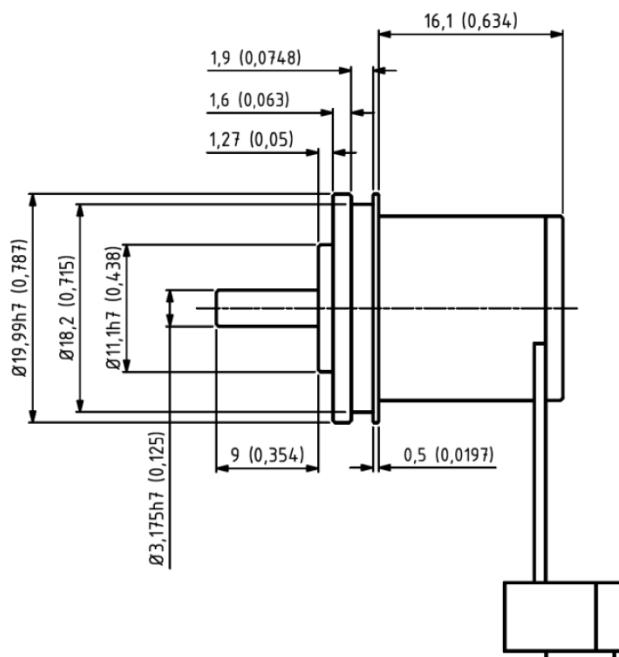
Standard Cable Gland mm (inches)



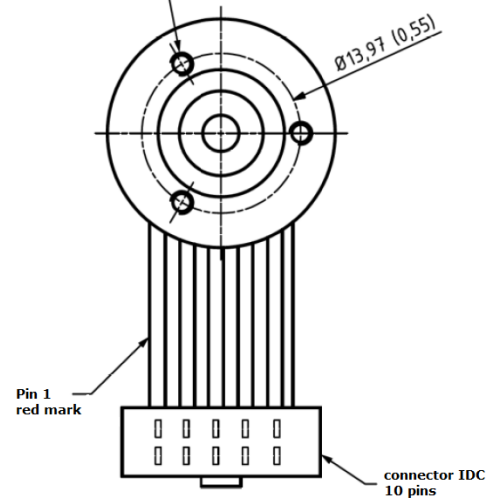
3 pcs. 2-56UNC at 120°
3,5 mm deep (0,138)



Flat Ribbon Cable with IDC connector mm (inches)



3 pcs. 2-56UNC at 120°
3,5 mm deep (0,138)



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Ordering example

Type SCA787 - 100 - D - 1/8-09 - 50 - 01 - B - 00

Pulse per Revolution

see table

Output

D = differential

I = inverted

Hollow Shaft Dia./ Length

1/8-09 = 1/8 inch x 9 mm

IP

50 = IP 50

Cable Length

Standard Cable

01 = 1 m

xx = specify length

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