- Micro Encoder with Shaft
- Shaft Encoder: Ø16mm
- Shaft: Ø 1,5 mm - Ø 4 mm
- Resolution up to 5.000 ppr
- IP50 / IP65 (option)

Mechanical data

Dimension Weight:	Encoder Cable	Ø16 mm ~15 g 50 g/ meter
Material:	Housing Shaft Cap	Aluminium/ Brass Aluminium Brass
Resolutions (pulses per revolution) *operating temperature: -20°C to +50°C		min. 1; 25; 100; 125; 160; 256; 300; 360; 500; 1.000; 1.024; 2.000; 2.500; 3.600; max. 5.000* (other options on request)
Accuracy		± 0,8 arc-min.
Shaft Speed		max. 12.000 rpm (revolutions per min)
Bearing Life		>1,9 x 10^{10} revolutions at rated load
Hollow Shaft Loads		axial: max. 10 N radial: max. 10 N
Bearing Pre-Load		1 to 3.600 ppr 4.000 to 5.000 ppr
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 / IP65

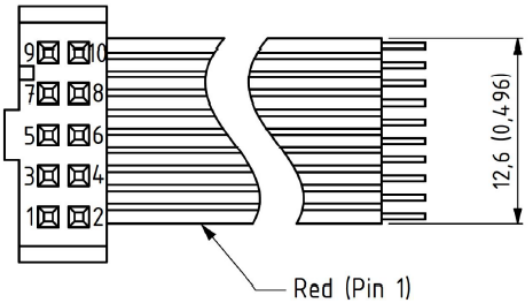
Electrical data

Code		Incremental
Supply Voltage		4.5 VDC to 30 VDC (35 mA max. no load)
Output Voltage	High Low	V_{in} - 0,6 at - 10 mA V_{in} - 1,3 at - 25 mA 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 ($\overline{A}$, $\overline{B}$, $\overline{Z}$) outputs
Phase Sense		A leads B clockwise from the mounting end of the encoder
Index		Gated with Channels A and B high
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)

Cable

Standard Cable	8 leads (0,05 mm^2, 30 AWG); twisted pairs, shielded
Flat Cable	10 lead flat cable
Connector	IDC connector
Cable Length	0,5; 1,0; 2,0 meter
IP-Rating	only with IP 50

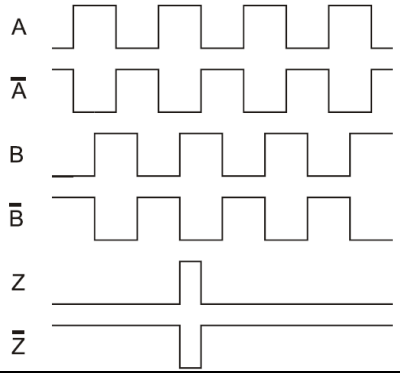
Output Terminations



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

*Hewlett Packard (HP) compatible

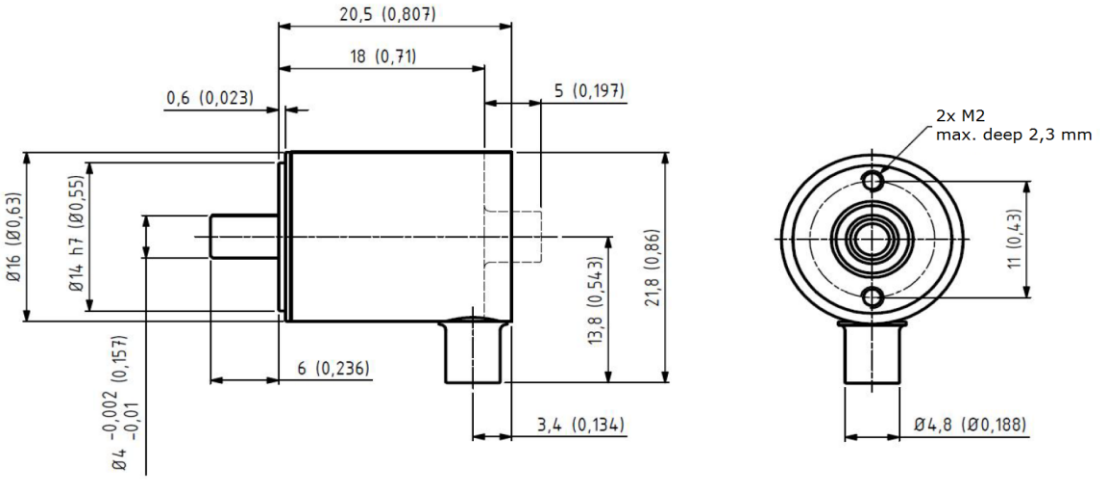
Output waveform



Channel tolerance	180°e ± 36°e
Phase difference tolerance	90°e ± 18°e
Z channel tolerance	90°e ± 18°e

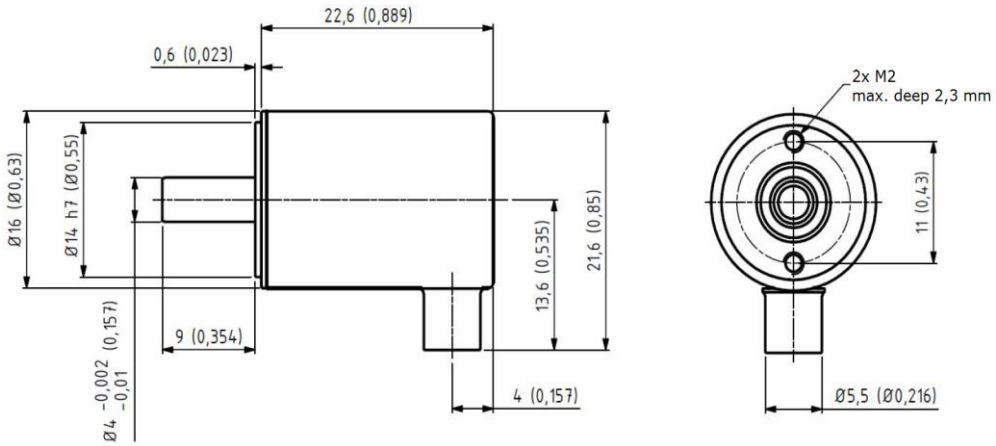
Dimensions
(ISO 2768f)

Standard Cable Gland - Cable Output radial (S); axial (B)



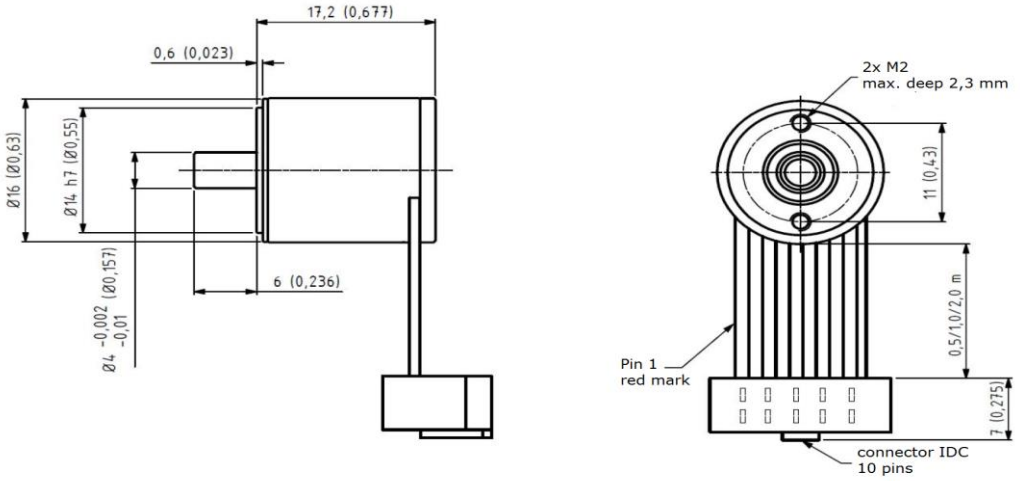
mm (inch)

Standard Cable Gland - IP65; radial (S)



mm (inch)

Flat Ribbon Cable



mm (inch)

Ordering example

Type	SCA16	-	100	-	D	-	03-09	-	65	-	01	-	B	-	00

Resolution
see table

Output
D = differential
I = inverted*

Hollow Shaft Dia./ Length
1,5-06 = 1,5 x 6 mm
02-06 = 2 x 6 mm
03-06 = 3 x 6 mm
03-09 = 3 x 9 mm
03-19 = 3 x 19 mm
04-06 = 4 x 6 mm
04-09 = 4 x 9 mm
04-18 = 4x 18 mm

IP-Rating
50 = IP 50
65 = IP 65

Cable Length
Standard Cable
01 = 1 m
xx = specify length

Flat Ribbon Cable
0,5 = 0,5 m
01 = 1 m
02 = 2 m

Takeout
S = radial
B = axial
SF = Flat Ribbon Cable

Anschluss
IDC = Flat Ribbon Cable
00 = no connector

*only with Flat Ribbon Cable