

Characteristics

- Standard Encoder with shaft
- Shaft Encoder: Ø 50 mm
- Shaft: Ø 6mm to 12mm
- Up to 12.500 ppr
- IP65 / IP67 (optional)



Electrical data

Output	Incremental	
Disk Resolution <small>*operating temperature -20°C to +50°C</small>	min. 1, 2, 5, 6, 8, 10, 15, 16, 20, 25, 30, 32, 36, 40, 50, 60, 64, 75, 80, 90, 100, 125, 128, 150, 180, 200, 250, 300, 360, 400, 455, 500, 512, 600, 635, 720, 800, 1.000, 1.024, 1.131, 1.250, 1.500, 2.000, 2.048, 2.400, 2.500, 3.000, 3.600, 4.000, 4.096, 5.000, 8.192, 9.000, 10.000, 12.500*(other options on request)	
Supply Voltage	4,5 VDC to 30 VDC (35mA max. - no load)	
Outputs Voltage	High	$V_{in} - 0,6$ at - 10 mA
	Low	$V_{in} - 1,3$ at - 25 mA 500 mV max. at 10 mA
Output current	30 mA max. load per output channel	
Frequency Response	300 kHz max.	
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 themounting end of the encoder	
Index	Gated with Channels A and B high	
Accuracy	$\pm 0,26$ arc-min.	
Outputs	ASIC Push pull und differential OL7272 Push-pull und differential Line Driver 26C31 Differential Line Driver 5V Output (5 V Input)	
Electrical Protection	Reverse polarity and output short circuit protected	
Noise Immunity	EN 61000-6-2 (2005) EN 61000-6-3 (2007)	

Mechanical data

Material: Housing Shaft Cap	Aluminum Stainless Steel Electroplated Aluminum
Weight: Encoder Cable	~190 gr 60 gr / Meter
Bearing Life	$>1,9 \times 10^{10}$ revolutions at rated load
Shaft Loads: axial radial	max. 20 N max. 20 N
max. Shaft Speed	12.000 rpm
Starting Torque	$< 0,01$ Nm at 25°C
Mass Moment of Inertia	2,0 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
IP Rating	IP65 / IP67 (optional)

Datasheet

Connection Option

Cable	8 leads(0,14 mm ² , 26 AWG); Differential 5 leads(0,14 mm ² , 26 AWG); Standard ,twisted pairs, shielded
Connection	5-pin M12 - Standard 8-pin M12 - Differential 9-pin M23 - Standard 12-pin M23 - Differential

Output Terminations

Channel	Standard Cable	
	Standard Output	Differential Output
	Wire color	
A	pink	pink
\bar{A}	gray*	gray
B	green	green
\bar{B}	yellow*	yellow
Z	white	white
\bar{Z}	brown*	brown
V _{SUP}	red	red
GND	blue	blue

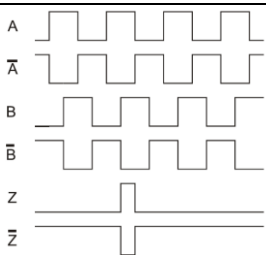
Pin	Standard Cable					
	M12 5-pin Standard Output	M12 8-pin Differential Output	M23 9-pin Standard Output		M23 12-pin Standard Output	
Channel	Channel					
1	V _{SUP}	A	A	A	GND	\bar{B}
2	B	V _{SUP}	B	B	NC	NC
3	GND	\bar{A}	Z	Z	Z	Z
4	A	B	GND	\bar{A}	GND	\bar{Z}
5	Z	\bar{B}	GND	\bar{B}	A	A
6		Z	GND	\bar{Z}	GND	\bar{A}
7		GND	V _{SUP}	V _{SUP}	NC	NC
8		\bar{Z}	GND	GND	B	B
9			Shield	Shield	Shield	Shield
10					GND	GND
11					NC	NC
12					V _{SUP}	V _{SUP}

GND = Circuit Ground

*internally connected as GND

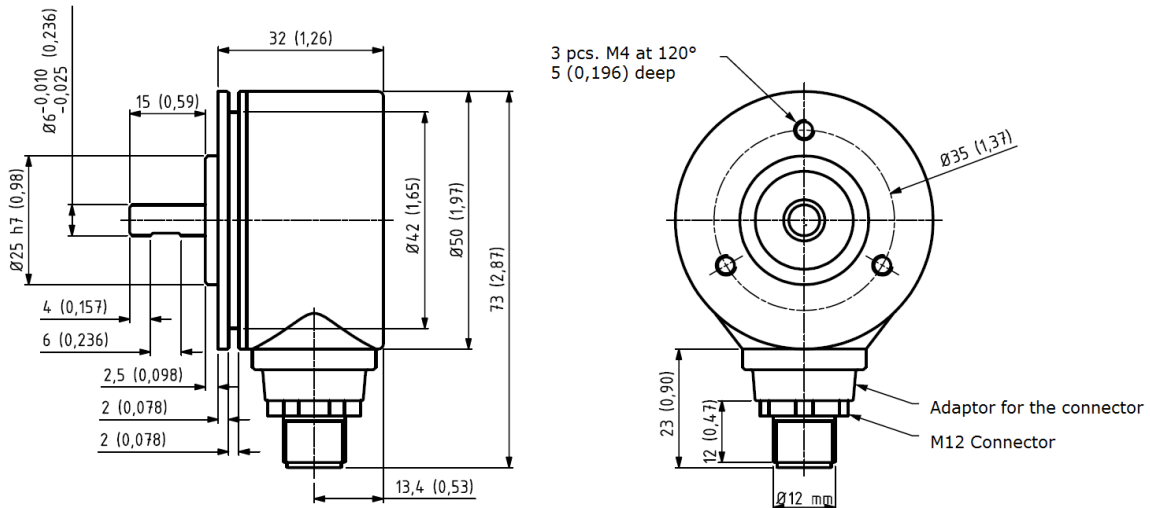
Datasheet

Output waveform

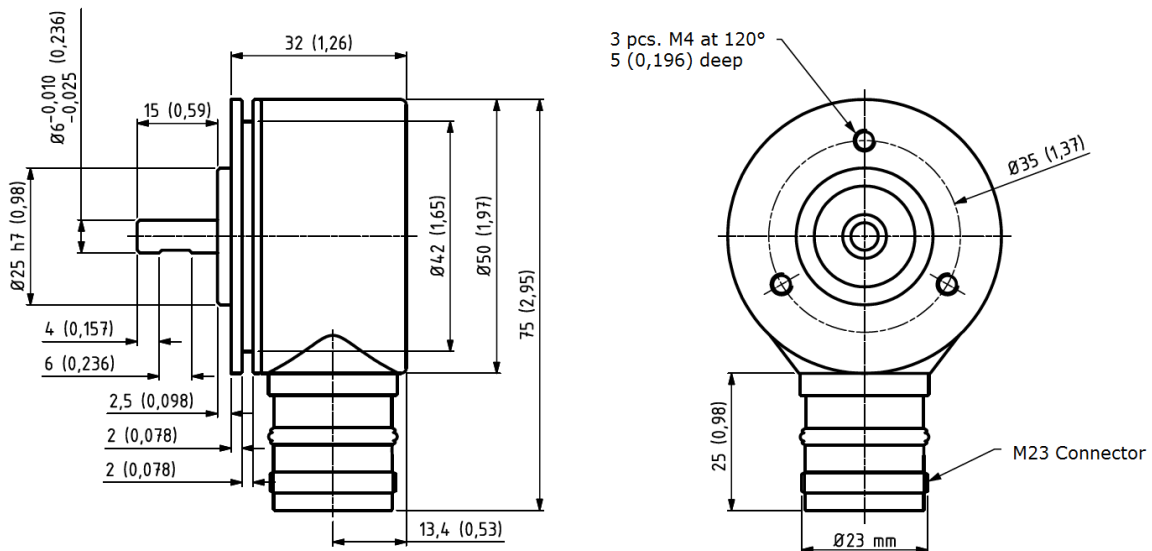
	<p>Channel Tolerance Phase difference Tolerance Z Channel Tolerance</p>	<p>180°e ± 36°e 90°e ± 18°e 90°e ± 18°e</p>
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Dimension (ISO 2768f)

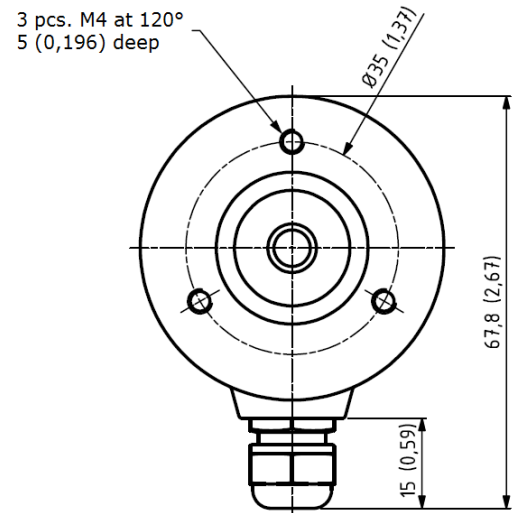
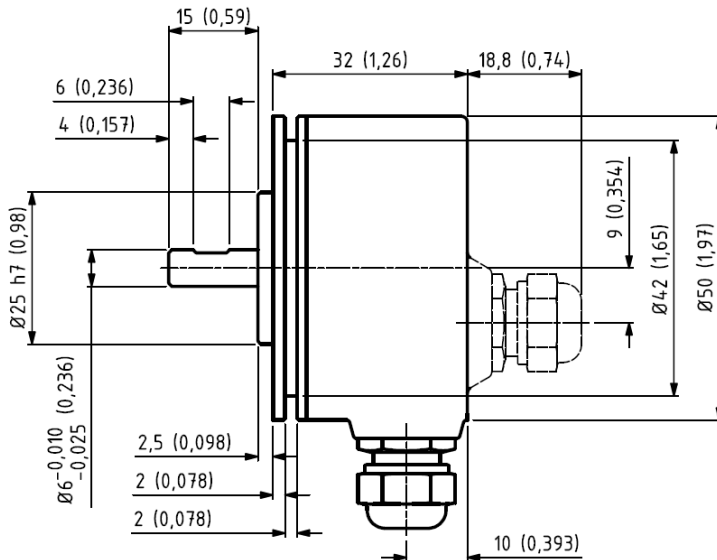
M12 Connector mm (inches)



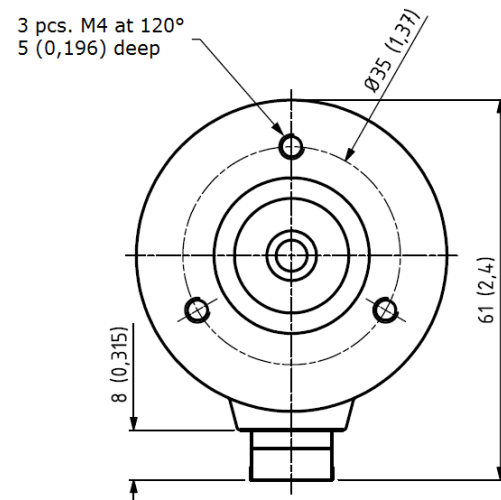
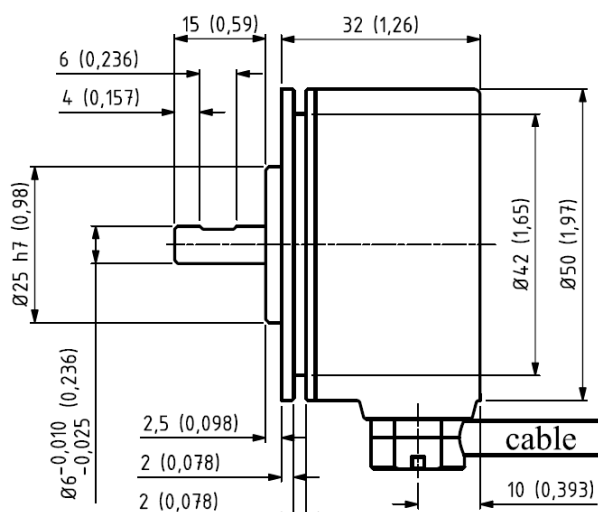
M23 Connector mm (inches)



Standard Cable Gland mm (inches)



Tangential Cable Gland mm (inches)



Datasheet

Ordering example

Type SCA50 - 100 - D - 06-15 - 65 - 01 - S - P5

Pulse per Revolution

see table

Output

D = Differential
N = Standard
L = 26C31 Line Driver 5V/5V only
M = OL2727 Line Driver
NON = open collector NPN
NOP = open collector PNP
5L = 26C31 Line Driver 9 to 30V in/ 5V out

Shaft Dia. - Shaft Length

06-15 = 6 x 15mm
06-30 = 6 x 30mm
08-15 = 8 x 15mm
10-15 = 10 x 15mm
10-27 = 10 x 27mm
10-40 = 10 x 40mm
12-15 = 12 x 15mm
¼-15 = 1/4inch x 15mm
3/8-15 = 3/8inch x 15

IP

65 = IP65
67 = IP67

Cable Length

01 = 1 m
XX = specify length
00 = no cable

Cable Takeout

S = radial
B = axial
T = tangential

Connector

P5 = M12/ 5-pin
P8 = M12/ 8-pin
C9 = M23/ 9-pin
C12 = M23/ 12-pin
00 = no Connector

*not available with 5L output only