Incremental Encoder
SCH50L
Datasheet

Characteristics

- Hollow Shaft Encoder: Ø 50 mm
- Through Hollow Shaft: Ø 8 - 16 mm
- Stainless Steel - AISI 303
- Up to 9.000 ppr
- IP67

Electrical data

Output	Incremental	
Resolution (pulses per revolution) operating temperature: -20°C to 50°C	min. 1, 2, 5, 6, 8, 10, 15, 16, 20, 25, 30, 32, 36, 40, 47, 50, 60, 64, 75, 80, 90, 100, 125, 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, 4.096, 5.000, 6000, 8.192, 9.000, 10.000, 12.500*(other options on request)	
Supply Voltage	4,5 VDC to 30 VDC (45mA max. - no load)	
Outputs Voltage	High Low	V_{in} - 0,6 at - 10 mA 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 ($\overline{A}$, $\overline{B}$, $\overline{Z}$) outputs	
Phase Sense	A leads B clockwise from the mounting end of the encoder	
Index	Gated with Channels A and B high	
Accuracy	± 0,8 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

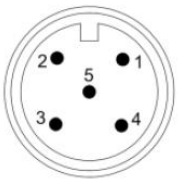
Material: Housing Hollow Shaft Cap	Aluminum Stainless Steel Aluminum
Weight: Encoder Cable	~120 gr 60 gr / Meter
Bearing Life	>1,9 x 10^{10} revolutions at rated load
Shaft Loads: axial radial	max. 20 N max. 20 N
max. Shaft Speed	4.500 rpm
Starting Torque	< 0,01 Nm at 25°C
Mass Moment of Inertia	2,5 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	IP67

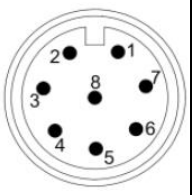
Connection Option

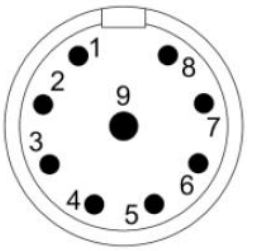
Cable	8 leads(0,14 mm^2, 26 AWG); Differential, twisted pairs, shielded
Connector	5-pin M12 8-pin M12 9-pin M23 12-pin M23

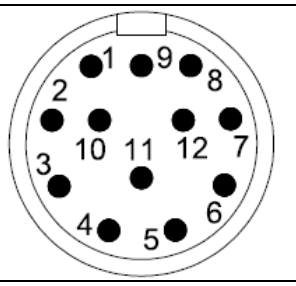
Output Terminations

Standard Cable		
Channel	**Standard Output**	**Differential Output**
	Wire color	
A	pink	pink
$\overline{A}$	gray*	gray
B	green	green
$\overline{B}$	yellow*	yellow
Z	white	white
$\overline{Z}$	brown*	brown
V_{sup}	red	red
GND	blue	blue









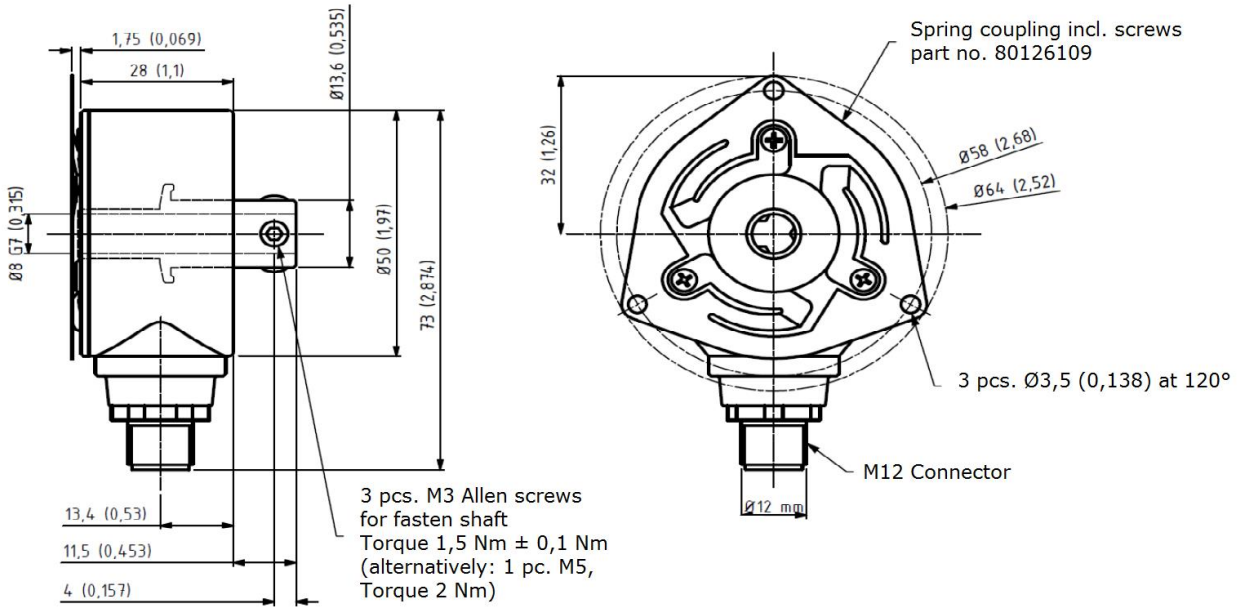
	M12 5-pin	**M12 8-pin**	**M23 9-pin**		**M23 12-pin**	
	Standard Output	Differential Output	Standard Output	Differential Output	Standard Output	Differential Output
Pin	**Channel**					
1	V_{suo}	A	A	A	GND	$\overline{B}$
2	B	V_{sup}	B	B	NC	NC
3	GND	$\overline{A}$	Z	Z	Z	Z
4	A	B	GND	$\overline{A}$	GND	$\overline{Z}$
5	Z	$\overline{B}$	GND	$\overline{B}$	A	A
6		Z	GND	$\overline{Z}$	GND	$\overline{A}$
7		GND	V_{sup}	V_{sup}	NC	NC
8		$\overline{Z}$	GND	GND	B	B
9			Shield	Shield	Shield	Shield
10					GND	GND
11					NC	NC
12					V_{sup}	V_{sup}

GND = Circuit Ground

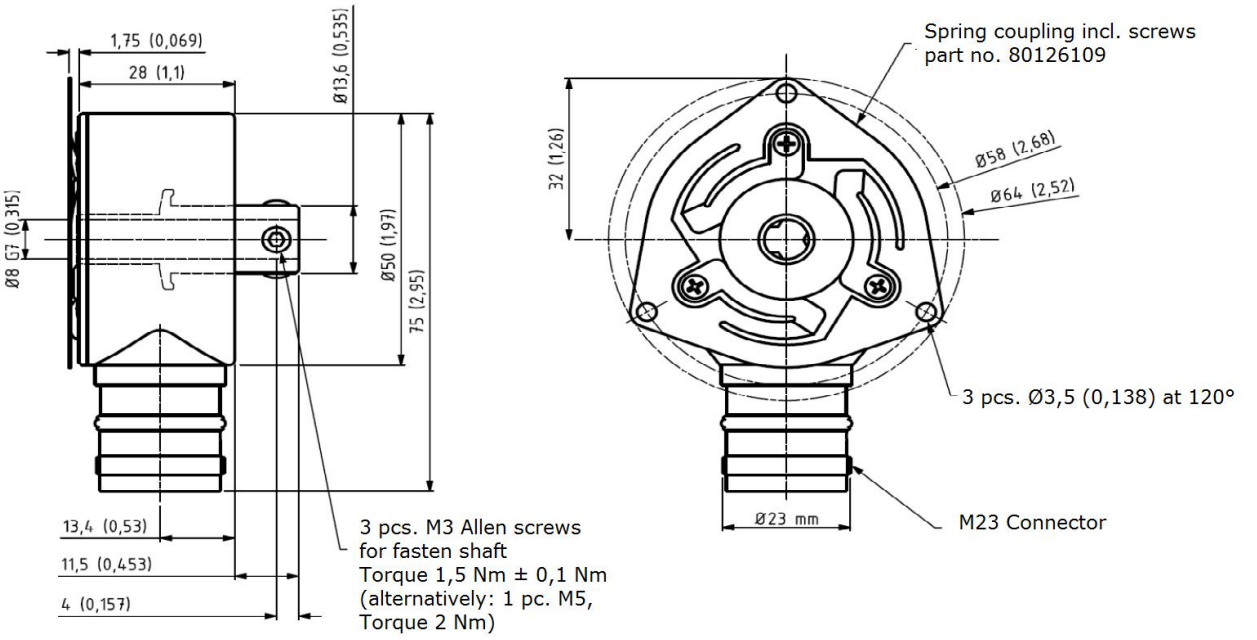
*internally connected as GND

Dimension

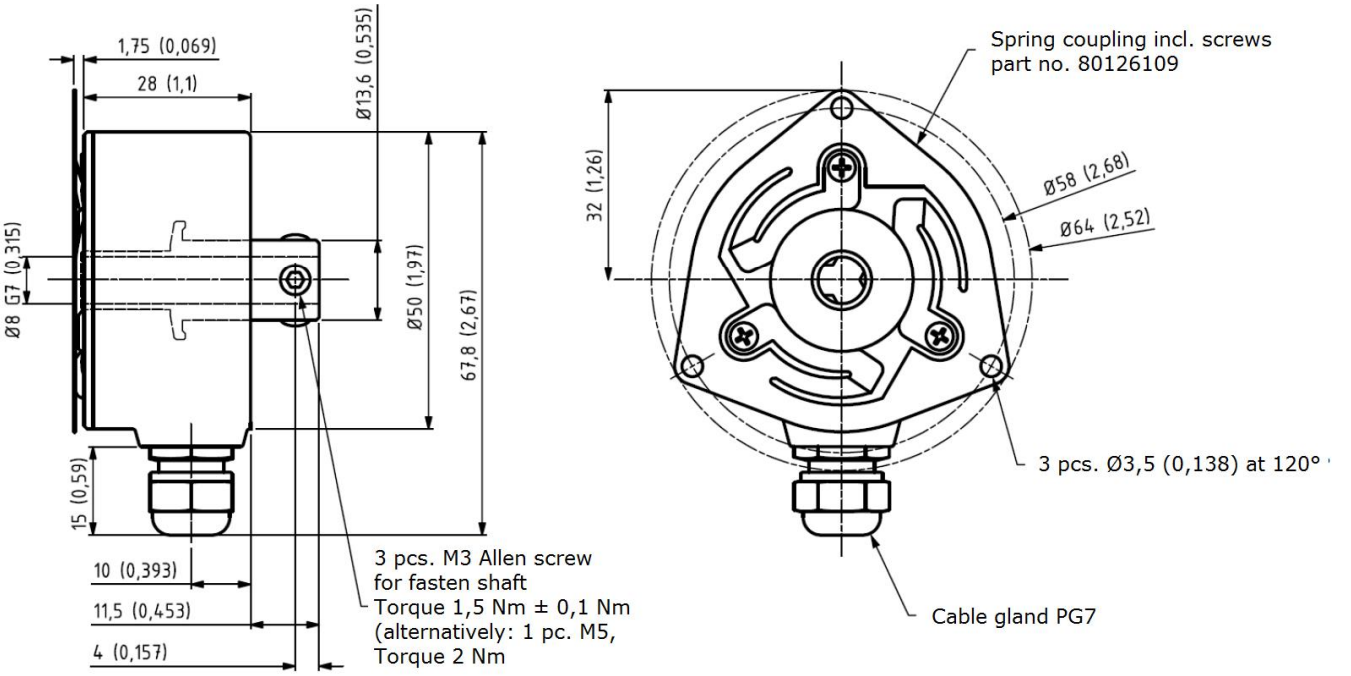
M12 Connector mm (inches)



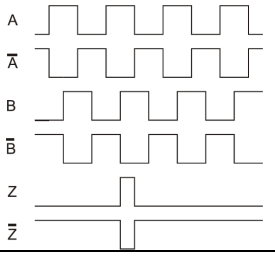
M23-Anschluss mm (inches)



Standard Cable Gland mm (inches)



Output waveform

	Channel Tolerance Phase difference Tolerance Z Channel Tolerance	180°e ± 36°e 90°e ± 18°e 90°e ± 18°e

Ordering example

Type	SCH50L	- 100	- D	- 06-34	- 65	- 01	- S	- 00	- S1

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

Shaft Dia. - Shaft Length
06-34 = 6 x 20mm
08-34 = 8 x 34mm

IP
65 = IP65

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

Takeout
Cable
S = radial
Connector
S = radial

Connector
00 = no Connector
C9 = M23/ 9-pin*
C12 = M23/ 12-pin*

Spring Coupling
S1 = 1 hole p/n 80146636
S2 = 1 hole p/n 80141075
S3 = 3 holes p/n 80126109

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