



Type SCH50B

- Hollow Shaft Encoder - $\varnothing$ 50 mm
- Through Hollow Bore: $\varnothing$ 6 mm to $\varnothing$ 8 mm
- Resolution up to 12.500 ppr
- IP 65 Environmental Protection
- *Formerly named 2RH*

Electrical Specifications

Code:	Incremental
Resolution:	1 to 12.500 ppr (pulses per revolution)
Supply Voltage:	4,5 Vdc min. to 30 Vdc max. ^{**} (35 mA max. - no load)
Output Voltage:	Low: 500 mV max. at 10 mA High: ($V_{in} - 0,6$) at -10 mA ($V_{in} - 1,3$) at -25 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 (A-, B-, Z-) outputs
Phase Sense:	A leads B clockwise (CW) from the mounting end of the encoder
Index:	Gated with Channels A and B high
Accuracy:	+/- 0,8 arc-min.
Outputs:	ASIC Push pull and Differential OL7272 Push-pull and Differential Line Driver 26C31 Differential Line Driver 5V output (with 5V input)
Electrical Protection:	Reverse polarity and output short circuit protected
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) Electromagnetic compatibility (EMC) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

Mechanical Specifications

Material:	Housing: Aluminum Cap: Aluminum Hollow Shaft: Brass
Weight:	Encoder: ~ 120 gr (4,23 oz) Cable: 60 gr / meter (2,12 oz / meter)
Bearing Life:	> $1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	12.000 rpm (max.)
Starting Torque:	< 0,01 Nm (1,42 oz-in) at 25° C
Mass Moment of Inertia:	4,0 gcm ² ($5,66 \times 10^{-5}$ oz-in-sec ²)
Hollow Shaft Loads:	Axial: 20 N (4,5 lbs) max. Radial: 20 N (4,5 lbs) max.

Environmental Specifications

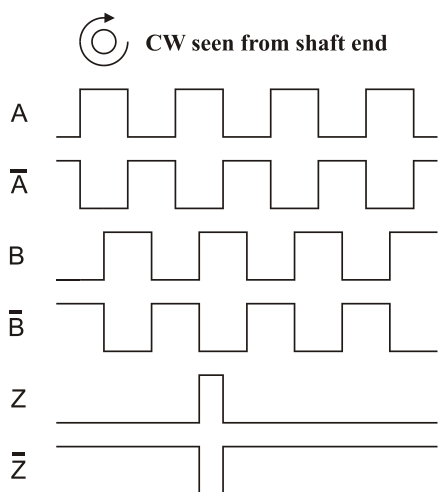
Operating Temp.:	-40° to +85° C
Storage Temp.:	-40° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
IP Rating:	IP 65 / Nema 5 (approx.)

Connection Options

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

^{**}= It is recommended user not to combine max. Value for all 3 parameters

Output waveform



Channel tolerance $180^\circ \pm 36^\circ$
 Phase difference tolerance $90^\circ \pm 18^\circ$
 Z channel tolerance $90^\circ \pm 18^\circ$

Disk Resolutions (Pulses per revolution)

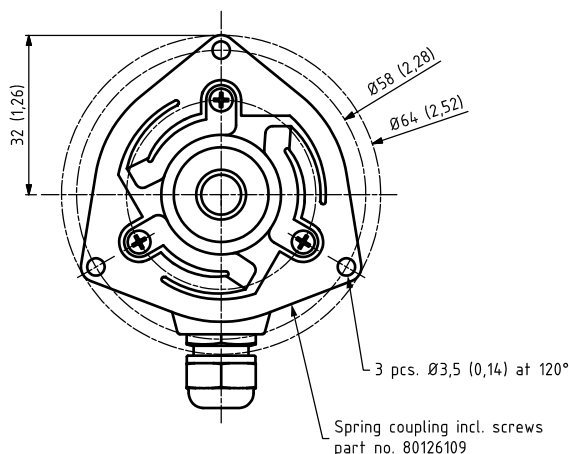
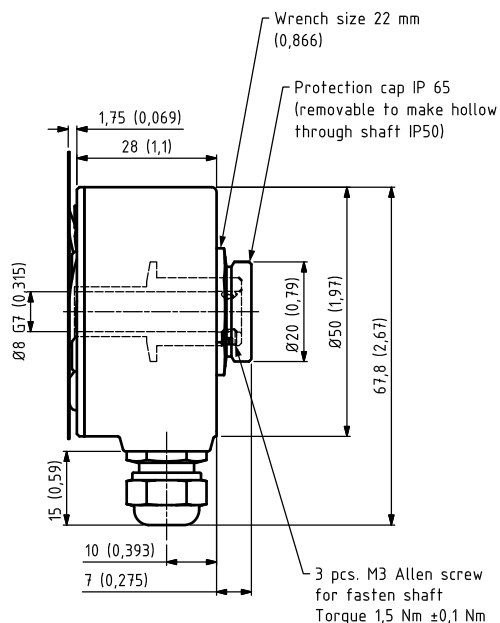
1	32	125	720	3072
2	36	150	800	3600
5	40	180	1000	4000
6	45	200	1024	4096
7	47	250	1131	5000
8	50	256	1200	8192
10	60	300	1250	9000*
12	64	360	1270	10000*
15	70	400	1500	12500*
16	75	455	2000	
18	80	500	2048	
20	90	512	2400	
25	100	600	2500	
30	120	635	3000	

Other options on request

Pulses per revolution,
 min. 1 – max. 12.500

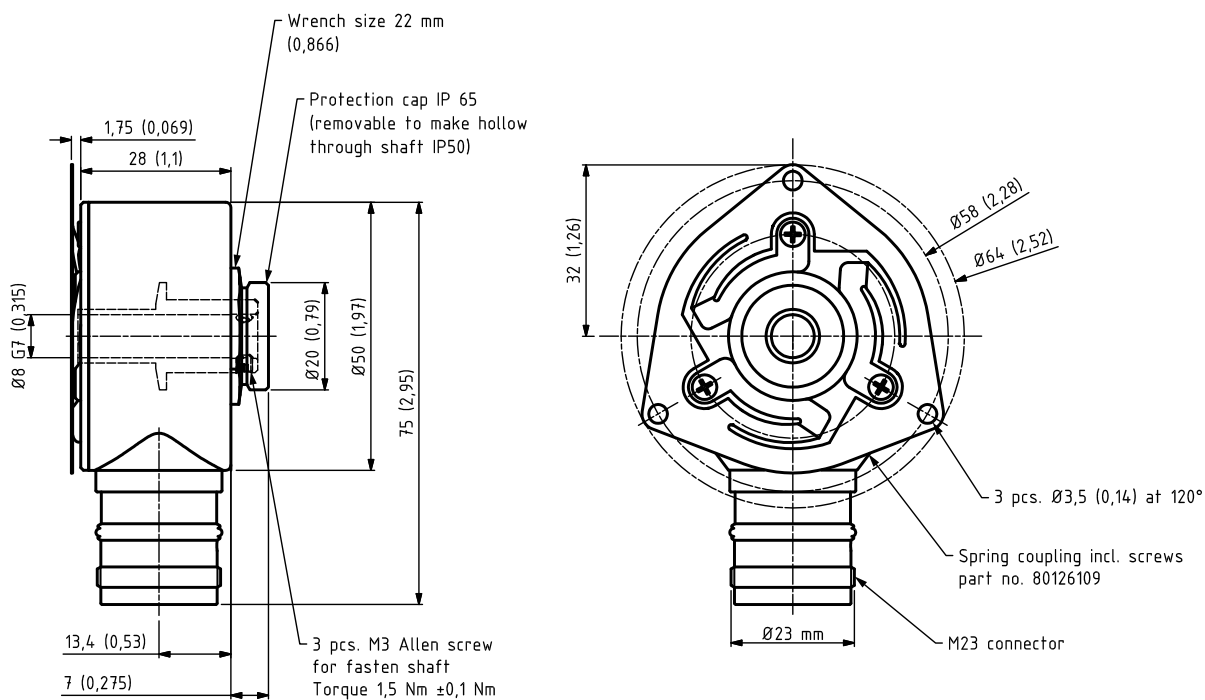
* Operating temperature: -20°C to 50°C

Mechanical Dimensions



Standard Cable Gland
 Side (S)

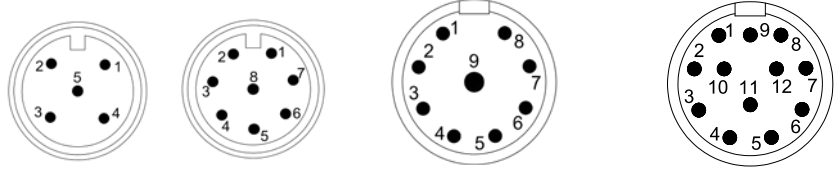
mm (inches)



M23 Connector

mm (inches)

Output Terminations



Standard Cable			M12 5 - pin	M12 8 - pin	M23 9 - pin	M23 9 - pin	M23 12 - pin	M23 12 - pin
			Standard Output	Differential Output	Standard Output	Differential Output	Standard Output	Differential Output
Channel	Wire Color		Pin	Channel	Channel	Channel	Channel	Channel
A	Pink	Pink	1	Vsup	A	A	A	GND
A -	Gray*	Gray	2	B	Vsup	B	B	NC
B	Green	Green	3	GND	A -	Z	Z	Z
B -	Yellow*	Yellow	4	A	B	GND	A -	GND
Z	White	White	5	Z	B -	GND	B -	A
Z -	Brown*	Brown	6		Z	GND	Z -	GND
Vsup	Red	Red	7		GND	Vsup	Vsup	NC
GND	Blue	Blue	8		Z -	GND	GND	B
			9			Shield	Shield	Shield
			10				GND	GND
			11				NC	NC
			12				Vsup	Vsup

GND = Circuit Ground

** Internally connected as GND*

GND = Circuit Ground

Shield = Case Ground

Example: SCH50B – 1024 – D – 08 – 34 – 65 – 01 – S – 00 – S1

See Accessories for drawings

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