Type SCH50B

- **Hollow Shaft Encoder - ø 50 mm**
- **Through Hollow Bore: ø 6 mm to ø 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)

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

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 x 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 gcm² (5,66 x 10^{-5} oz-in-sec²)
Hollow Shaft Loads:	Axial: 20 N (4,5 lbs) max. Radial: 20 N (4,5 lbs) max.

Environmental Specifications

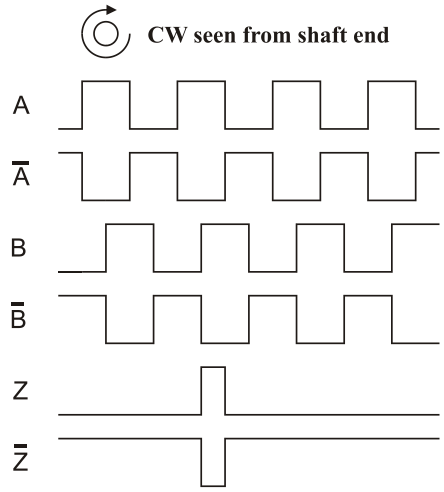
Operating Temp.:	-40° to +85° C
Storage Temp.:	-40° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
IP Rating:	IP 65 / Nema 5 (approx.)

Connection Options

Cable:	8 leads (0,14 mm², 26 AWG) twisted pairs; shielded
Connector:	5-pin M12 8-pin M12 9-pin M23 12-pin M23

Type SCH50B

Output waveform



Channel tolerance	**180 e°**	**+/- 36 e°**
Phase difference tolerance	**90 e°**	**+/- 18 e°**
Z channel tolerance	**90 e°**	**+/- 18 e°**

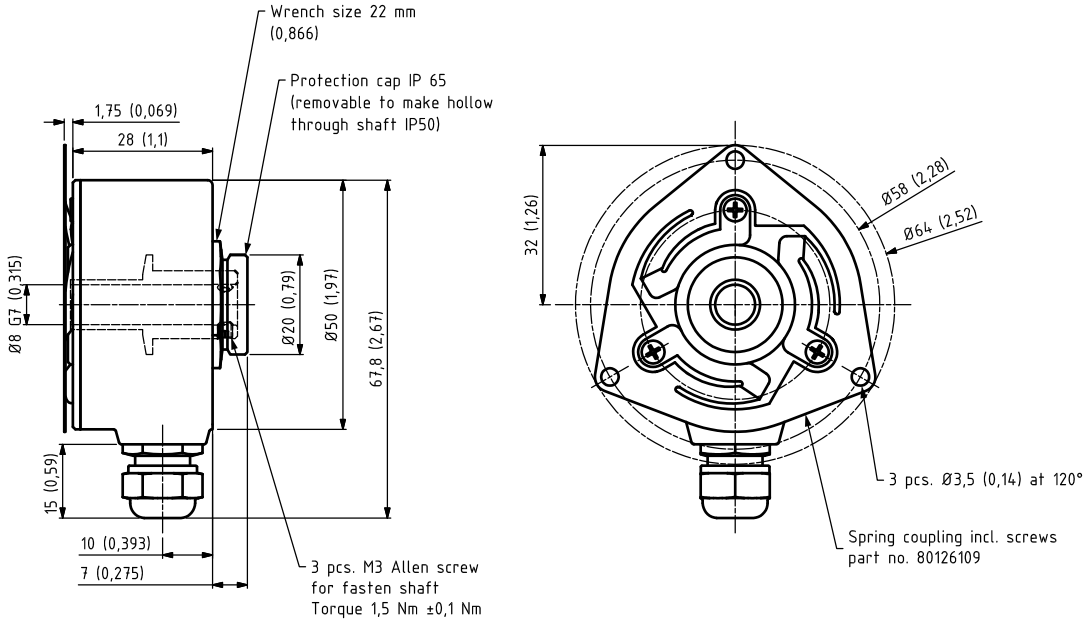
Disk Resolutions (Pulses per revolution)

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

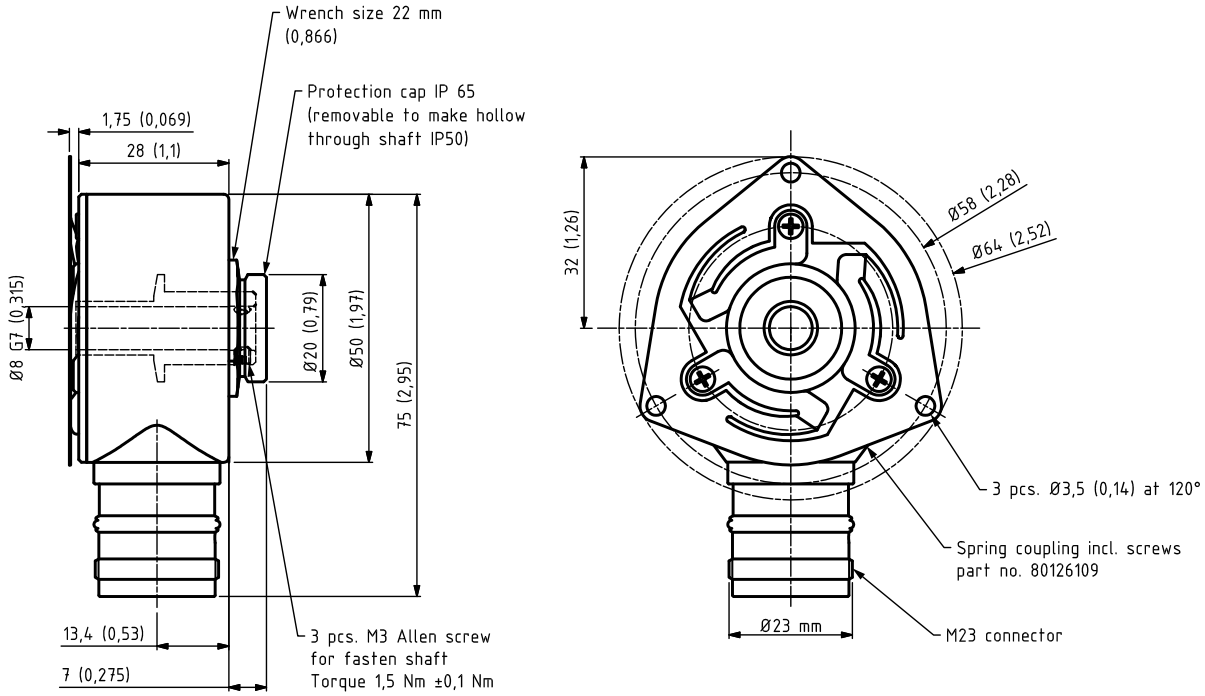
* ***Operating temperature: -20° C to 50° C***

Mechanical Dimensions



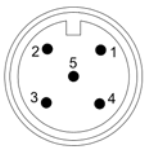
Standard Cable Gland
Side (S)

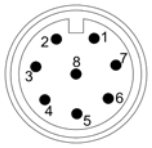
mm (inches)

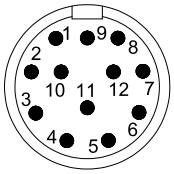


M23 Connector mm (inches)

Output Terminations







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

Ordering Code

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

SCH50B	-		-		-		-		-		-		-		-	

Pulses per Revolution

See table

Output

Standard	**N**
Standard – *Open Collector NPN*	**NON**
Standard – *Open Collector PNP*	**NOP**
Differential	**D**
26C31 Line Driver 5V / 5V only	**L**
OL 7272 Line Driver	**M**

Hollow Shaft Dia. / Hollow Shaft Length

6 mm x 34 mm	**06**	**-**	**34**
8 mm x 34 mm	**08**	**-**	**34**

IP Rating

IP 65	**65**

Cable Length

Standard is 1 meter	**01**
Specify length	**XX**
No Cable	**00**

Takeout

Cable	
Side (radial)	**S**
Connector	
Side (radial)	**S**

Connector

M12 5-pin	**P5**
M12 8-pin	**P8**
M23 9-pin	**C9**
M23 12-pin	**C12**
No Connector	**00**

Spring Coupling

1 hole	*p/n 80146636*	**S1**
1 hole	*p/n 80141075*	**S2**
3 holes	*p/n 80126109*	**S3**
1 hole	*p/n 80140305*	**S4**
No spring coupling		**00**

See Accessories for drawings

Other options on request:
Please contact Scancon A/S