Type SCH50IB

- **Hollow Shaft Encoder - ø 50 mm**
- **Through Hollow Bore: ø 3/8 in to ø 16 mm**
- **Resolution up to 9.000 ppr**
- **IP 65 (IP 66, 67 option)**
- ***Formerly named 2RHIB***

Electrical Specifications

Code:	Incremental
Resolution:	1 to 9000 ppr (pulses per revolution)
Supply Voltage:	4,5 Vdc min. to 30 Vdc max. ** (45 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. values for all 3 parameter

Mechanical Specifications

Material:	Housing: Aluminum Cap: Aluminum Hollow Shaft: Brass
Weight:	Encoder: ~ 190 gr (6,7 oz) Cable: 60 gr / meter (2,12 oz / meter)
Bearing Life:	> 1,9 x 10^{10} revolutions at rated load
Shaft Speed:	4.500 rpm (max. sustained) IP 65 3.000 rpm (max. sustained) IP 66 / IP 67
Starting Torque:	< 0,02 Nm (2,83 oz-in) at 25° C
Mass Moment of Inertia:	6,0 gcm² (8,5 x 10^{-5} oz-in-sec²)
Hollow Shaft Loads:	Axial: 50 N (11,24 lbs) max. Radial: 50 N (11,24 lbs) max.

Environmental Specifications

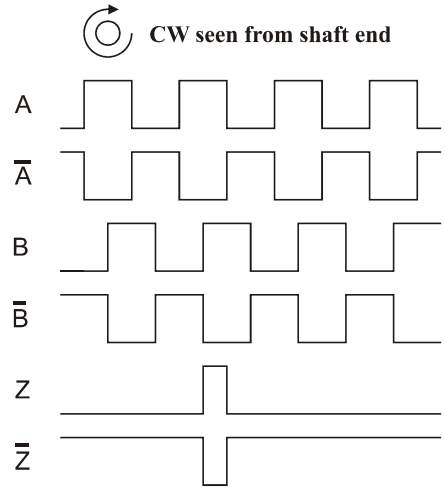
Operating Temp.:	-40° to +85° C
Storage Temp.:	-40° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
IP Rating:	IP 65 / Nema 5 (approx.) IP 66 / Nema 6 (approx.) option IP 67 / Nema 6 (approx.) option

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 SCH50IB

Output waveform



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

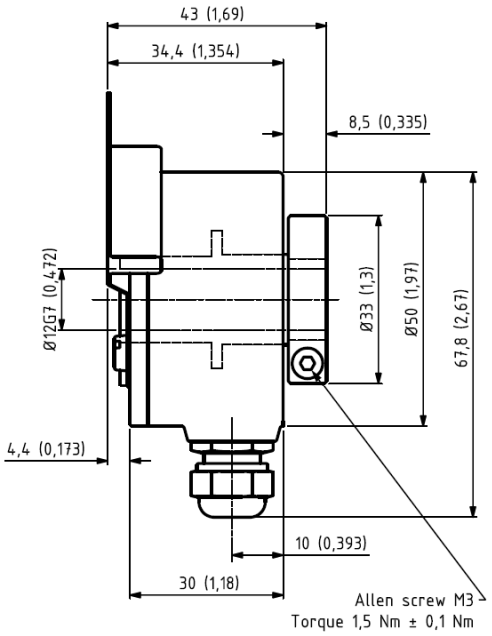
Disk Resolutions (Pulses per revolution)

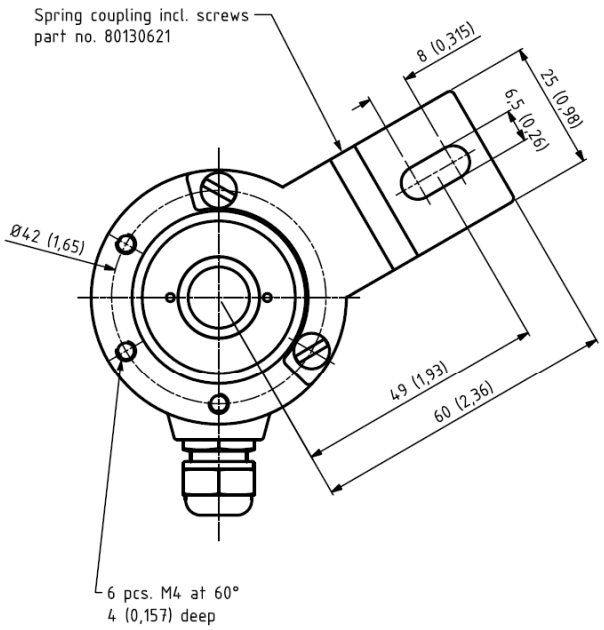
1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	
16	75	455	1500	
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

Other options on request
Pulses per revolution,
min. 1 – max. 9.000

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

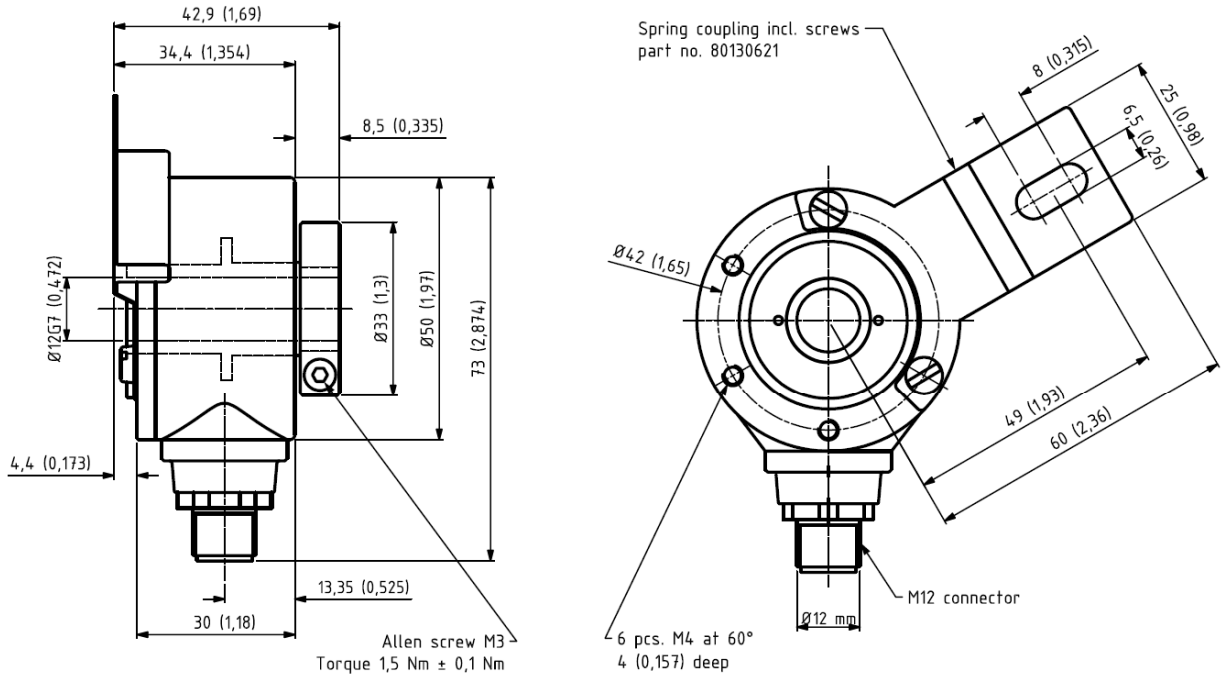
Mechanical Dimensions



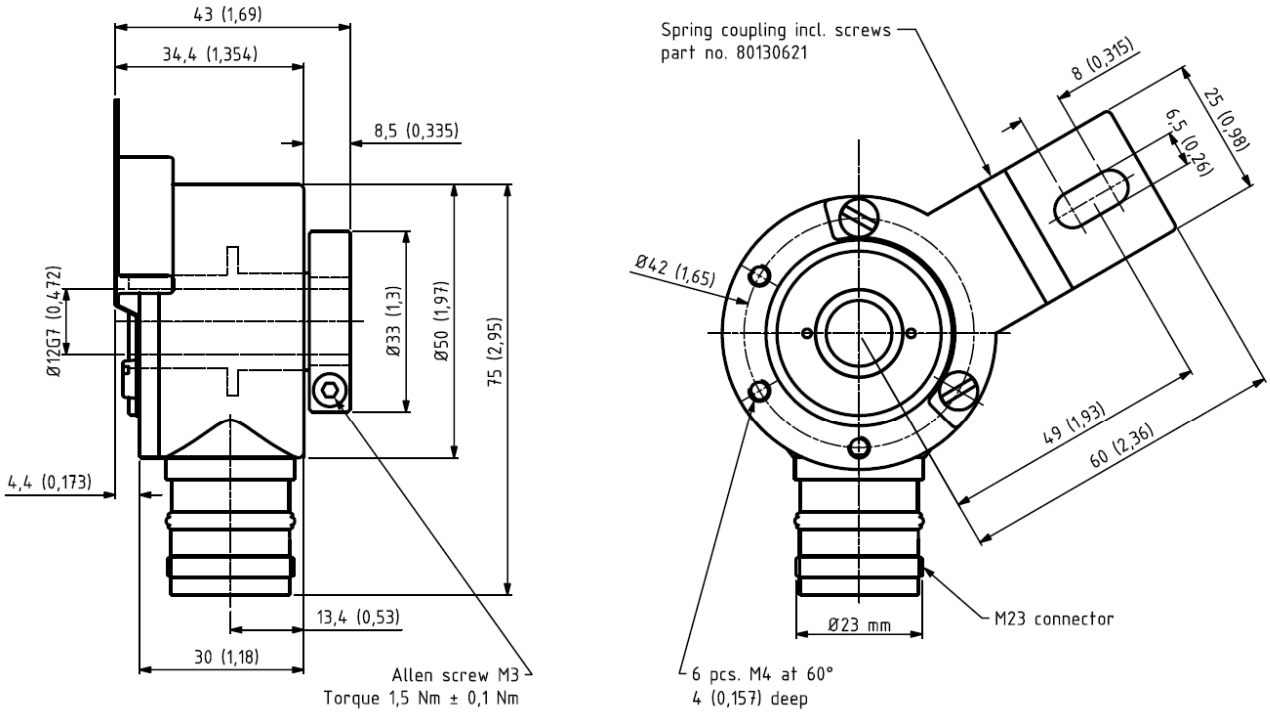


Standard Cable Gland
Side (S)

mm (inches)

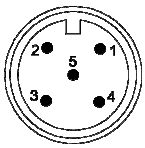


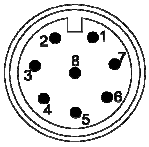
M12 Connector mm (inches)

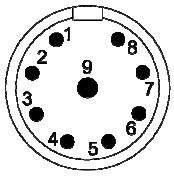


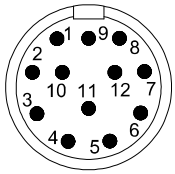
M23 Connector mm (inches)

Output Terminations









	Standard Cable	
	Standard Output	Differential Output
Channel	Wire Color	
A	Pink	Pink
A -	*Gray**	Gray
B	Green	Green
B -	*Yellow**	Yellow
Z	White	White
Z -	*Brown**	Brown
Vsup	Red	Red
GND	Blue	Blue

GND = Circuit Ground

** Internally connected as GND*

	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
Pin	Channel	Channel	Channel	Channel	Channel	Channel
1	Vsup	A	A	A	GND	B -
2	B	Vsup	B	B	*NC*	*NC*
3	GND	A -	Z	Z	Z	Z
4	A	B	GND	A -	GND	Z -
5	Z	B -	GND	B -	A	A
6		Z	GND	Z -	GND	A -
7		GND	Vsup	Vsup	*NC*	*NC*
8		Z -	GND	GND	B	B
9			Shield	Shield	Shield	Shield
10					GND	GND
11					*NC*	*NC*
12					Vsup	Vsup

GND = Circuit Ground

Shield = Case Ground

Ordering Code

Example: SCH50IB – 1024 – D – 12 – 00 – 65 – 01 – S – 00 – S1

SCH50IB	-		-		-		-	00	-		-		-	S	-		-	
		Pulses per Revolution		**Output**		**Hollow Shaft Dia.**		**Hollow Shaft Length**		**IP Rating**		**Cable Length**		**Cable Takeout**		**Connector**		**Spring Coupling**

See table

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**

IP 65	**65**
IP 66*	**66**
IP 67*	**67**

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

Cable	
Side *radial*	**S**
Connector	
Side *radial*	**S**

10 mm x 00 mm	**10**	-	**00**
12 mm x 00 mm	**12**	-	**00**
14 mm x 00 mm	**14**	-	**00**
15 mm x 00 mm	**15**	-	**00**
16 mm x 00 mm	**16**	-	**00**
3/8 in x 00 mm **	**3/8**	-	**00**
1/2 in x 00 mm **	**1/2**	-	**00**
5/8 in x 00 mm **	**5/8**	-	**00**

***** May incur longer delivery time***

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

1 hole *p/n 80147042*	**S1**
1 hole *p/n 80131035*	**S2**
1 hole *p/n 80130621*	**S3**
2 holes *p/n 80149823*	**S4**
3 holes *p/n 80149764*	**S5**
4 holes *p/n 80131333*	**S6**
2 holes *p/n 80149662*	**S7**
No spring coupling	**00**

See Accessories for drawings

Other options on request:
Please contact Scancon A/S

**** Encoder total length is 47.8 mm for IP 66 and IP 67 options***