



Type SCH50I

- Hollow Shaft Encoder - \varnothing 50 mm
- Hollow Bore: \varnothing 10 mm to \varnothing 14 mm
- Resolution up to 9.000 ppr.
- Standard IP 65
- Formerly named 2RHI

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: ~ 150 gr (6,7 oz) Cable: 60 gr / meter (2,12 oz / meter)
Bearing Life:	$> 1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	4.500 rpm (max. sustained) IP 65
Starting Torque:	$< 0,02$ Nm (2,83 oz-in) at 25° C
Mass Moment of Inertia:	6,0 gcm ² ($8,5 \times 10^{-5}$ oz-in-sec ²)
Hollow Shaft Loads:	Axial: 50 N (11,24 lbs) max. Radial: 50 N (11,24 lbs) max.

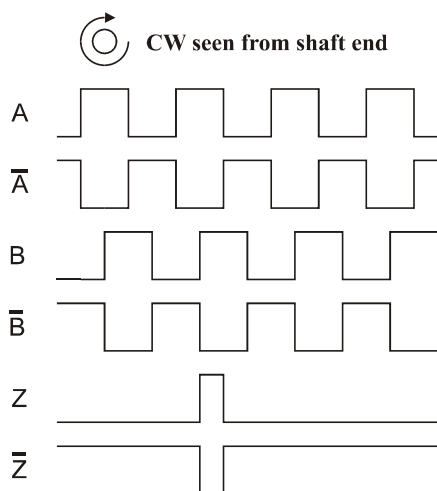
Environmental Specifications

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.)

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

Output waveform



Channel tolerance $180\text{ e}^\circ \pm 36\text{ e}^\circ$
Phase difference tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$
Z channel tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$

Disk Resolutions (Pulses per revolution)

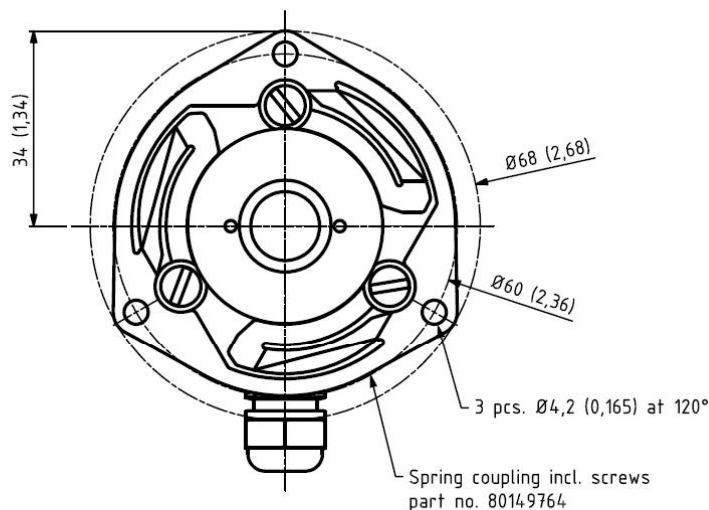
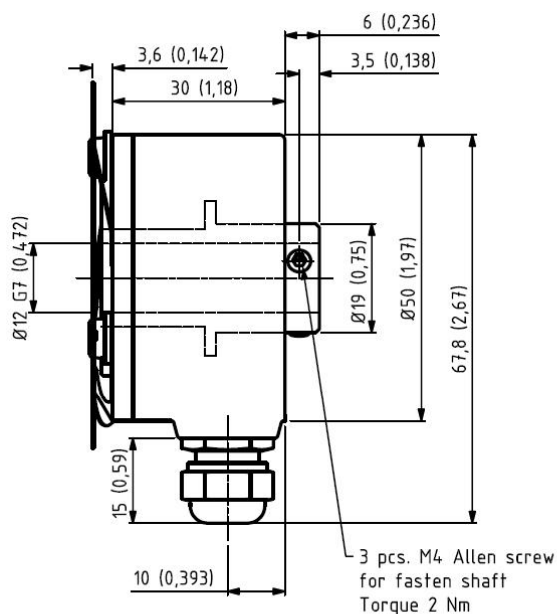
1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	
16	75	455	1500	
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

Other options on request

Pulses per revolution,
min. 1 – max. 9.000

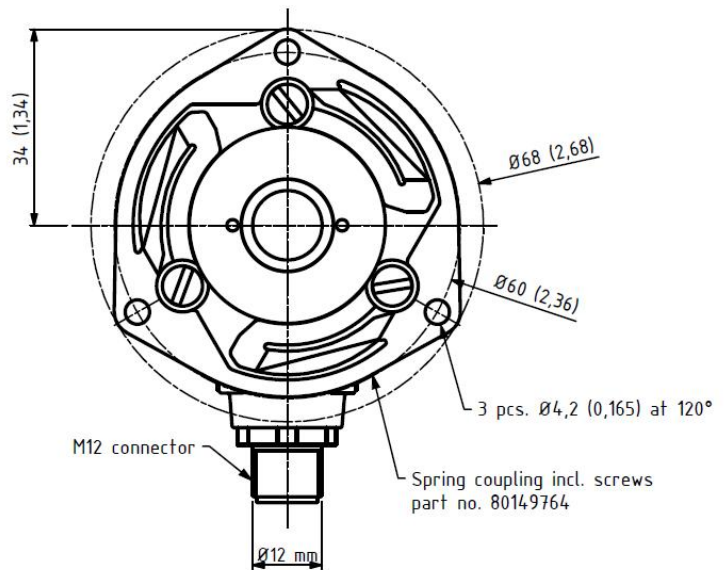
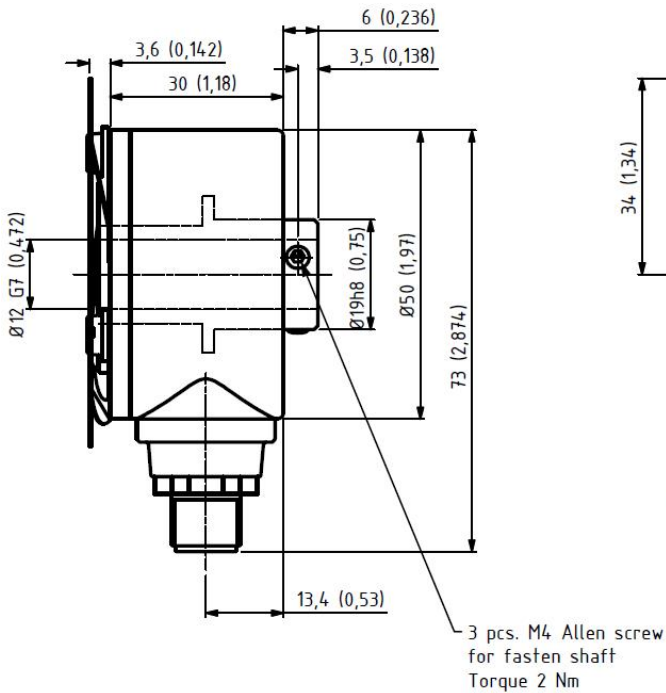
* Operating temperature: -20°C to 50°C

Mechanical Dimensions



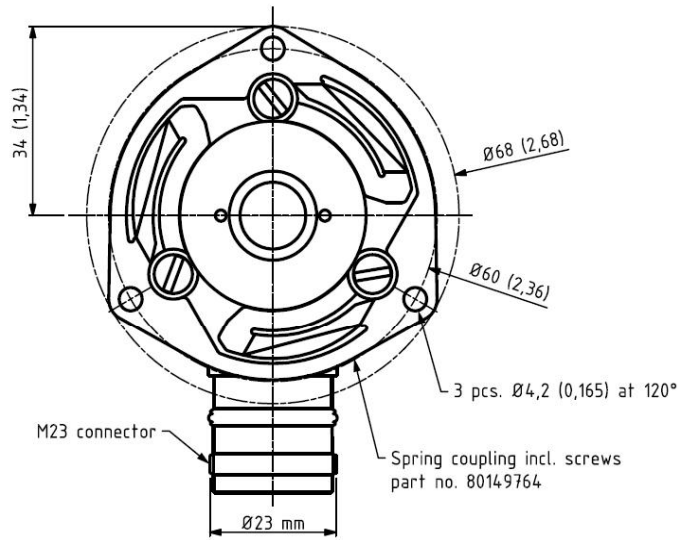
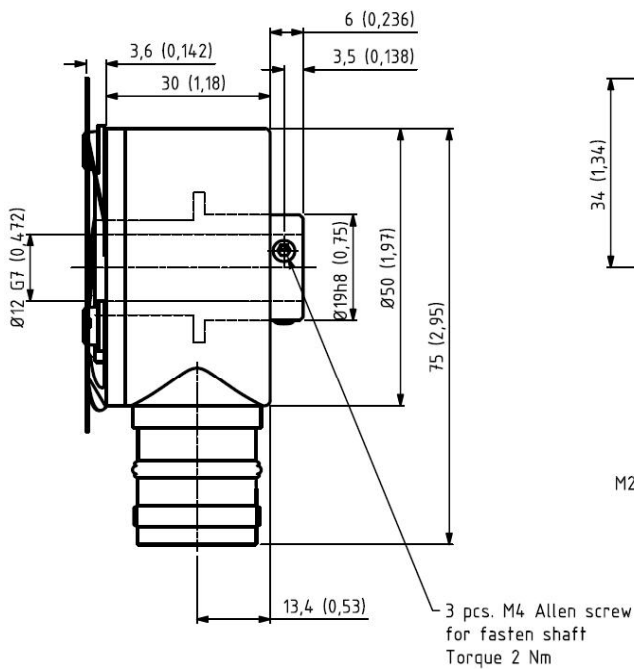
Standard Cable Gland
Side (S)

mm (inches)



M12 Connector

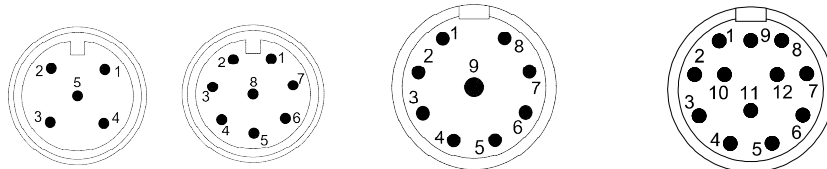
mm (inches)



M23 Connector

mm (inches)

Output Terminations



Channel	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*

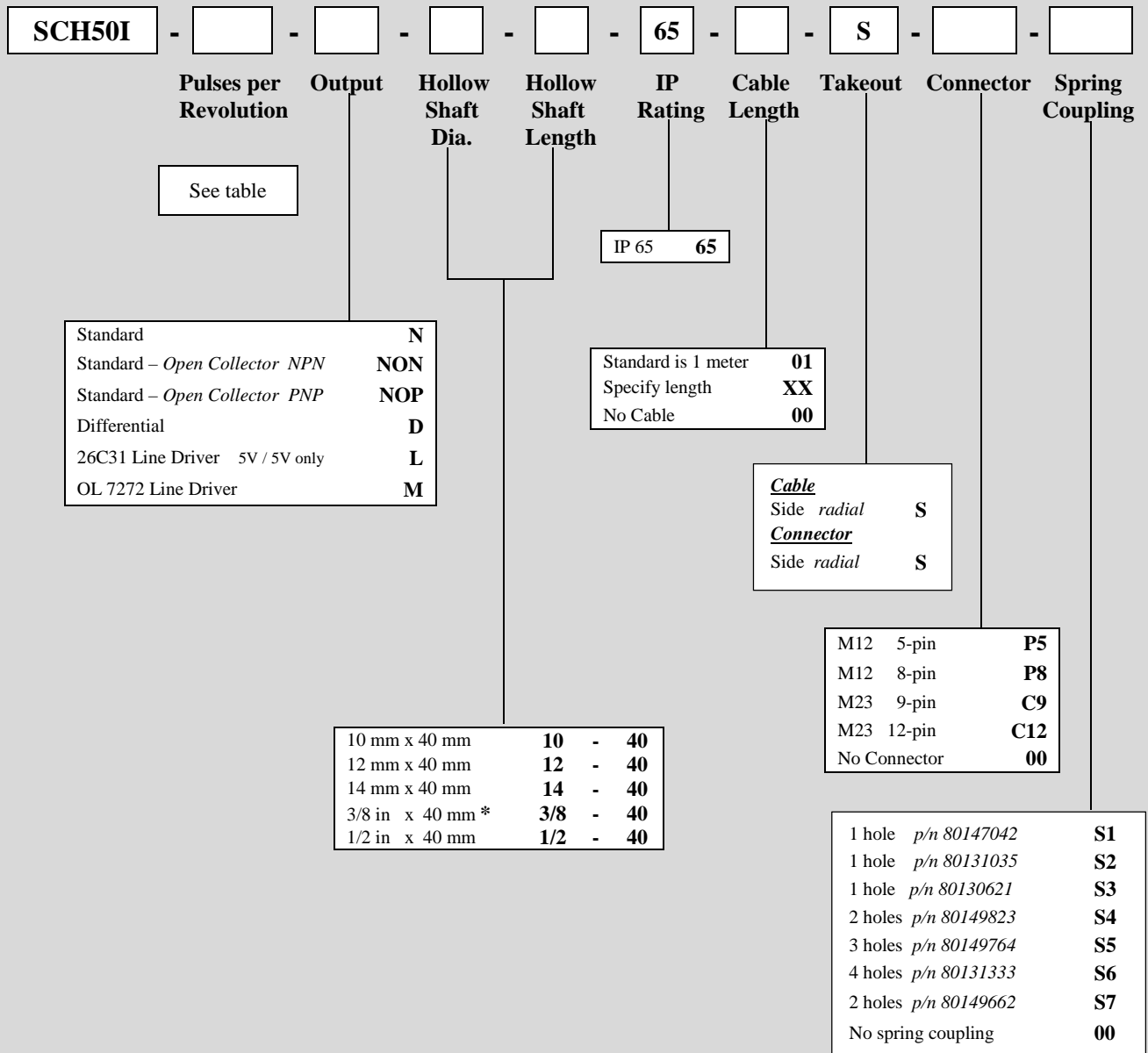
Pin	M12 5 - pin	M12 8 - pin	M23 9 - pin	M23 9 - pin	M23 12 - pin	M23 12 - pin
	Standard Output	Differential Output	Standard Output	Differential Output	Standard Output	Differential Output
Pin	Channel	Channel	Channel	Channel	Channel	Channel
1	Vsup	A	A	A	GND	B -
2	B	Vsup	B	B	NC	NC
3	GND	A -	Z	Z	Z	Z
4	A	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: SCH50I – 1024 – D – 12 – 40 – 65 – 01 – S – 00 – S1



Other options on request:
Please contact Scancon A/S

* May incur longer delivery time

See Accessories for drawings