



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.

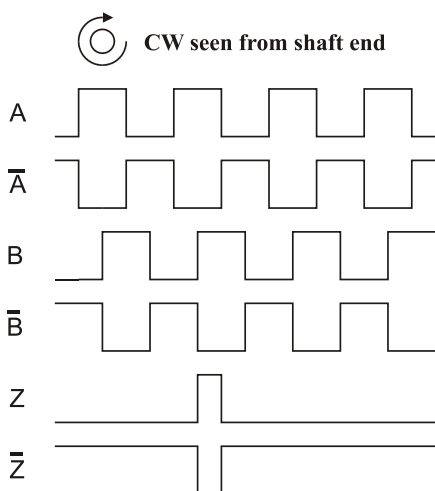
Environmental Specifications

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 $180\text{ e}^\circ \text{ +/- } 36\text{ e}^\circ$
Phase difference tolerance $90\text{ e}^\circ \text{ +/- } 18\text{ e}^\circ$
Z channel tolerance $90\text{ e}^\circ \text{ +/- } 18\text{ e}^\circ$

Disk Resolutions (Pulses per revolution)

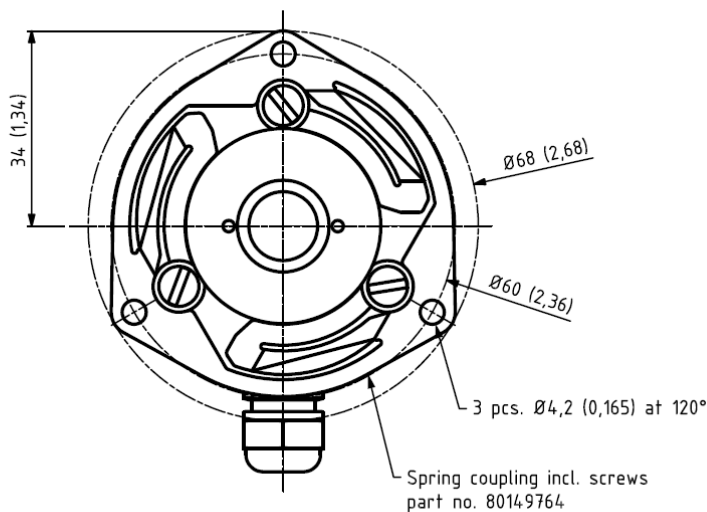
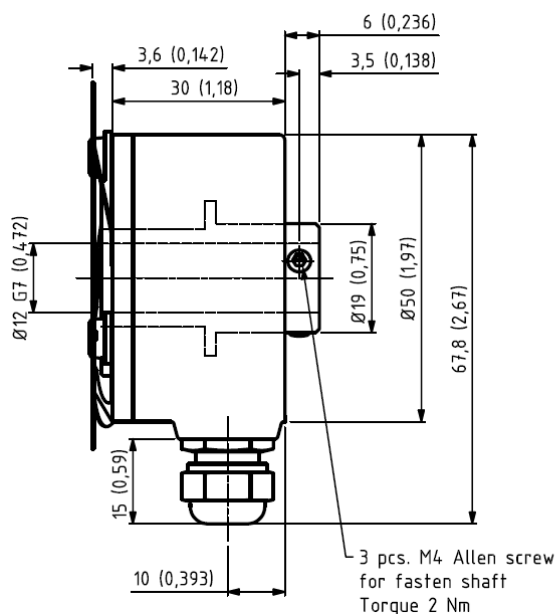
1	30	100	500	2000
2	32	125	512	2048
5	36	150	600	2400
6	40	180	635	2500
8	47	200	720	3000
10	50	250	800	3600
15	60	256	1000	4000
16	64	300	1024	4096
18	75	360	1131	5000
20	80	400	1250	8192
25	90	455	1500	9000*

Other options on request

Pulses per revolution,
min. 1 – max. 9.000

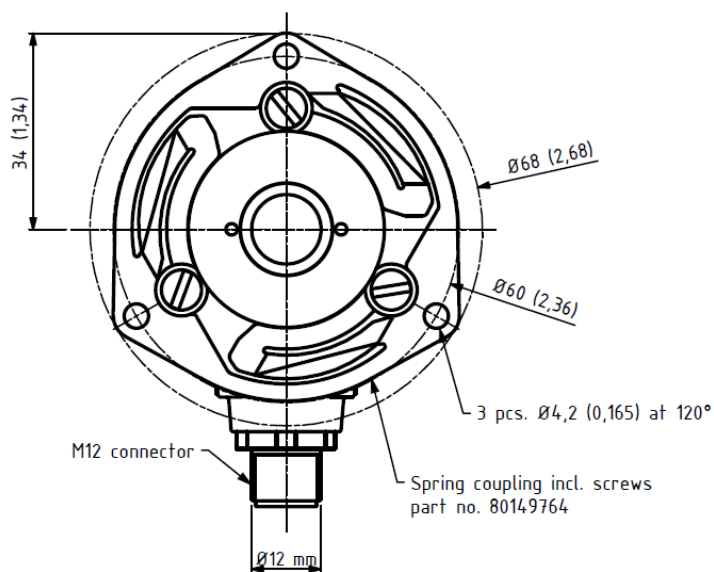
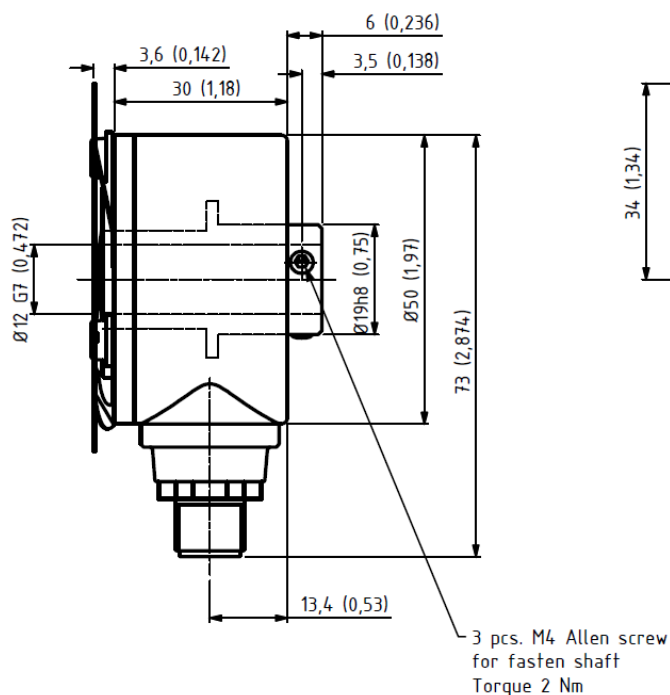
* Operating temperature: -20°C to 50°C

Mechanical Dimensions



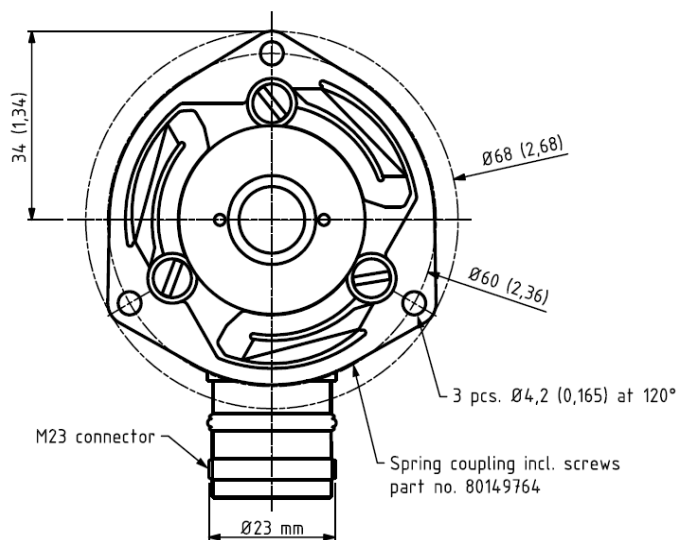
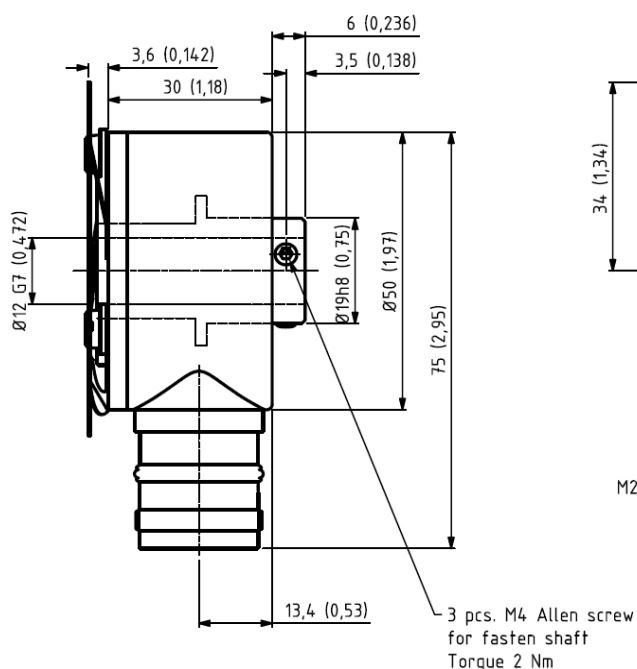
Standard Cable Gland
Side (S)

mm (inches)



M12 Connector

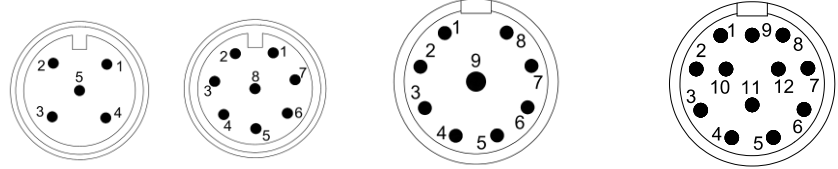
mm (inches)



M23 Connector

mm (inches)

Output Terminations



	Standard Cable		Pin	M12	M12	M23	M23	M23	M23
	Standard Output	Differential Output		5 - pin	8 - pin	9 - pin	9 - pin	12 - pin	12 - pin
Channel	Wire Color	Wire Color	Channel	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

