



Type SCH24

- Hollow Shaft Encoder - \varnothing 24 mm
- Hollow Bore: \varnothing 2 mm to \varnothing 4 mm
- Resolution up to 7500 ppr
- IP 64 (IP 50 for IDC connector option)

Electrical Specifications

Code:	Incremental
Resolution:	1 to 7500 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:	25 mA max. load per output channel **
Frequency Response:	200 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 parameters

Mechanical Specifications

Material:	Housing: Brass Cap: Electroplated Steel Aluminum (flat cable option) Hollow Shaft: Brass
Weight:	Encoder: ~ 35 gr (1,23 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	> $1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	12.000 rpm (max.)
Starting Torque:	< 0,005 Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	1,0 gcm ² ($1,42 \times 10^{-5}$ oz-in-sec ²)
Shaft Loads:	Axial: 20 N (4,5 lbs) max. Radial: 20 N (4,5 lbs) max.

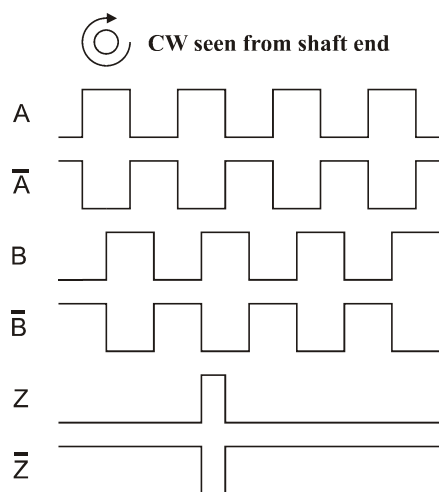
Environmental Specifications

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
Enclosure Rating:	IP 64 / Nema 4 (approx.) IP 50 / Nema 5 (approx.) - flat cable

Connection Options

Cable:	8 leads (0,05 mm ² , 30 AWG) - Differential 5 leads (0,14 mm ² , 26 AWG) - Standard twisted pairs; shielded
Flat Cable:	10 lead flat cable with IDC connector

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)

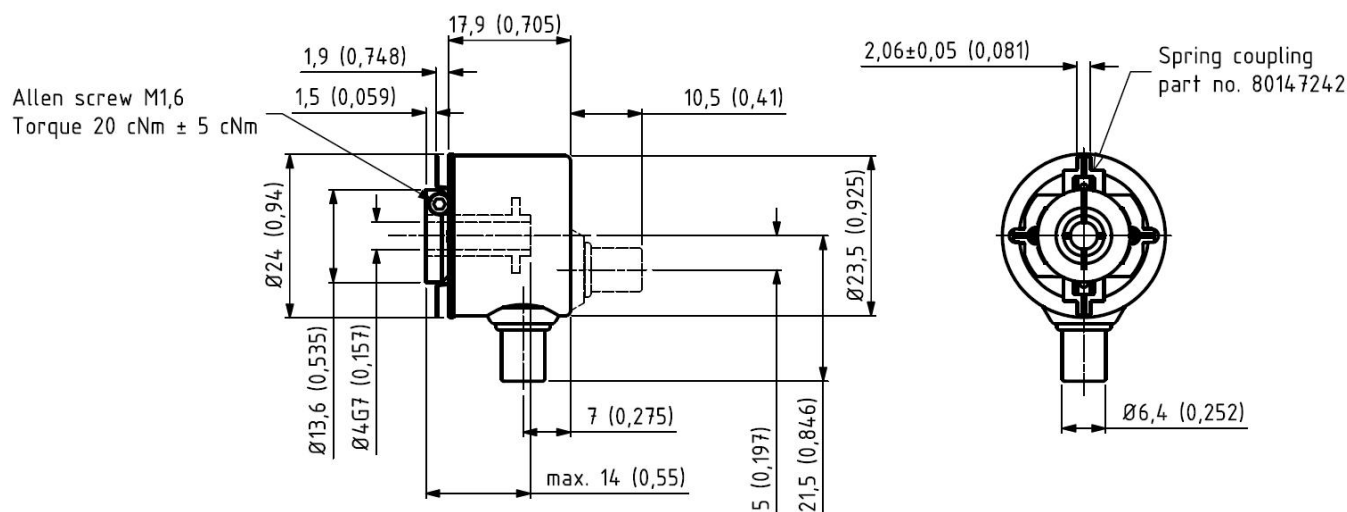
1	36	150	512	2500
4	50	180	600	3000
10	60	200	1000	3600
11	64	250	1024	5000
12	75	256	1250	7500*
15	90	300	1800	
20	100	360	2000	
25	125	400	2500	
30	128	500	2048	

Other options on request

Pulses per revolution,
 min. 1 – max. 7.500

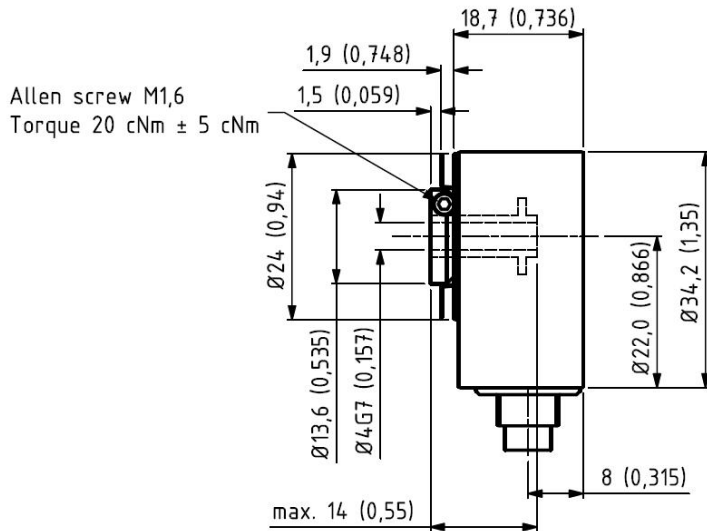
* Operating temperature: -20°C to 50°C

Mechanical Dimensions

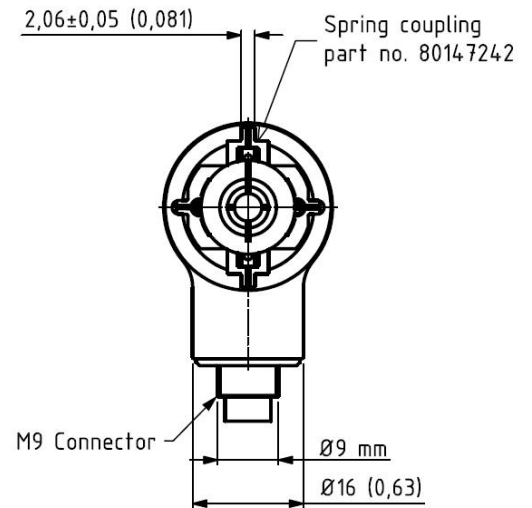


Standard Cable Gland
 Side (S) or Back (B)

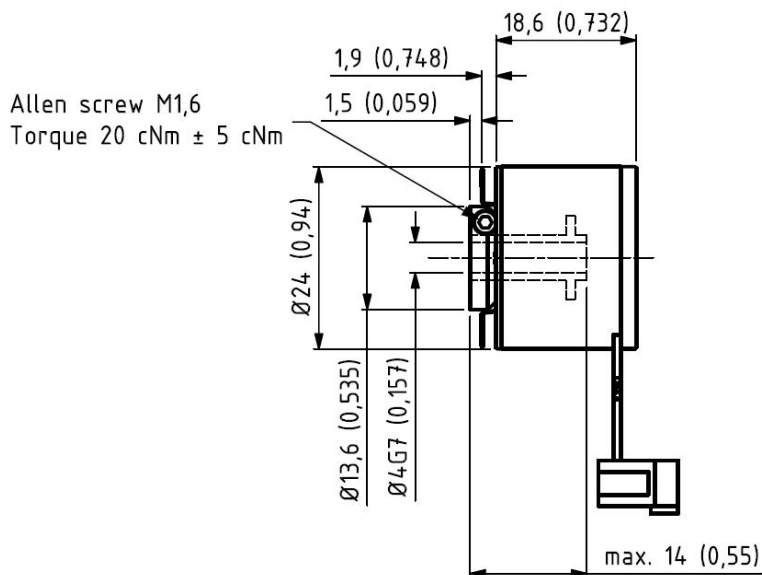
mm (inches)



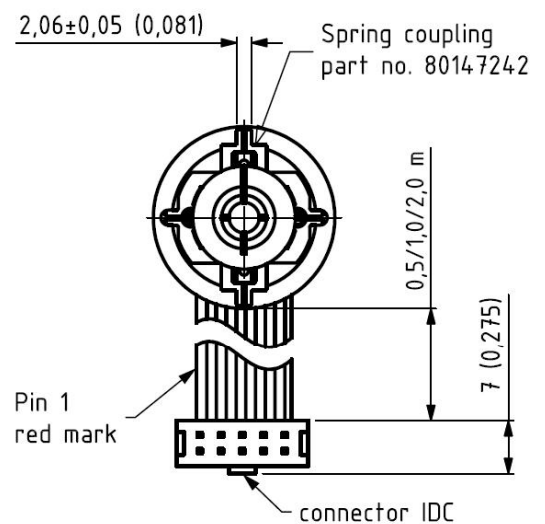
M9 connector



mm (inches)



Flat Ribbon Cable with IDC connector



mm (inches)

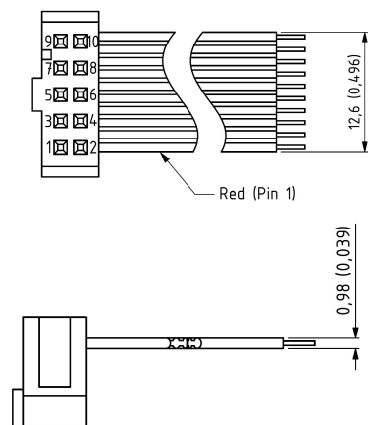
Output Terminations

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

GND = Circuit Ground

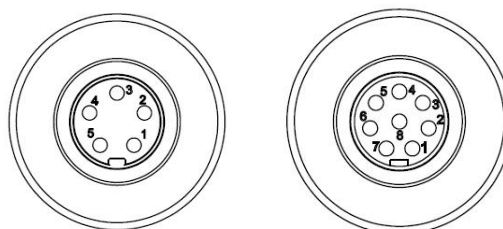
Position	Flat Cable w/ IDC Connector	
	Differential Output *	
Position	Channel	
1	NC	
2	Vsup	
3	GND	
4	NC	
5	A	
6	A -	
7	B	
8	B -	
9	Z -	
10	Z	

* Hewlett Packard (HP) compatible



mm (inches)

- IP 50 rating
- CE mark not available
- 0,5 m, 1 m, or 2 m cable length only



Position	M9 5 - pin	M9 8 - pin
	Standard Output	Differential Output
Position	Channel	Channel
1	VDD	VDD
2	GND	GND
3	A	A
4	B	A -
5	Z	B
6		B -
7		Z
8		Z -

Ordering Code

Example: SCH24 – 1024 – D – 02 – 14 – 64 – 01 – S – 00 – S1

SCH24	-		-		-	14	-		-		-		-		-		-																																
		Pulses per Revolution		Output		Hollow Shaft Dia.		Hollow Shaft Length		IP Rating		Cable Length		Cable Takeout		Connector		Spring Coupling																															
		See table								IP 50 50* IP 64 64																																							
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* = Only Flat Cable

*= Only IP 50

See Accessories for drawings

Other options on request:
Please contact Scancon A/S

** Designed specifically for Wind Power applications. See **SCA24 COC** under *Industries – Wind Power – SCA24* for additional conformity standards