



EN 60079

Type SCH24EX

- Ex d - Proof Hollow Shaft Encoder - \varnothing 24 mm
- Hollow Bore: \varnothing 2 mm to \varnothing 1/8 in.
- Resolution up to 3600 ppr
- IP 64 (IP 65, 66, 67 options)
- ATEX, IECEX, GOST and North American Class I and Class II certified
- 22 micron Anodization - "Seawater-proof"
- Formerly named 2MCEX-H

Electrical Specifications

Code:	Incremental
Resolution:	1 to 3.600 ppr (pulses per revolution)
Supply Voltage:	5 Vdc min. to 24 Vdc (Max. for NA certification) (35 mA max. - no load)
Output Voltage:	Low: 500 mV max. at 10 mA High: (Vin - 0.6) at -10 mA (Vin - 1.3) at -20 mA
Output Current:	20 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.
Output:	ASIC Push-pull and Differential
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, not to combine max. Value for all 3 parameters

Mechanical Specifications

Material:	Housing: Aluminum / Brass Cap: Aluminum Hollow Shaft: Brass
Weight:	Encoder: Approx. 80 gr (44.1 oz) Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9 x 10 ¹⁰ revolutions at rated load
Hollow Shaft Speed:	12,000 rpm continuous (max.) IP 50 3,000 rpm continuous (max.) IP 67
Starting Torque:	< 0.001 Nm (0.14 oz-in) at 25° C
Mass Moment of Inertia:	0.2 gcm ² (2.8 x 10 ⁻⁶ oz-in-sec ²)
Shaft Loads:	Axial 10 N (2.25 lbs) max. Radial 10 N (2.25 lbs) max.

Environmental Specifications

Operating Temp.:	-40° to +70° 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 5 (approx.) IP 65 / Nema 4 (approx.) option IP 66 / Nema 6 (approx.) option IP 67 / Nema 6 (approx.) option

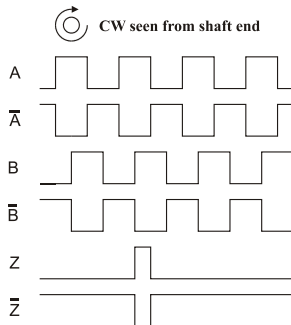
Connection Options

Cable:	8 leads (0.05 mm ² , 30 AWG) twisted pairs; shielded
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Certifications

ATEX:	Certificate No.: TÜV 11 ATEX 091676X II 2 GD Ex db IIC T5 Gb and Ex tb IIIC T100°C Db IP 6x -40C ≤ Tamb ≤ +70C
IECEX:	Certificate No.: IECEX TUN 12.0005X Ex db IIC T5 Gb and Ex tb IIIC T100°C Db IP 6x -40C ≤ Tamb ≤ +70C
North America:	Certificate No. LR 1192-2 24VDC, Max. 100 mA Class I, Div 2 Groups ABCD T5 Class II, Div 1, Groups EFG Ex d IIC Gb T5 Class I, Zone 1 AEx d IIC T5
GOST:	Certificate No.: POCC DN.ГБ05.В03721 No. 0466143 1 EX d IIC T5 X и and Ex tD A21 IP64 T100°C
ISO 9001 : 2008	Certificate Registration No.: 44 100 111616 Report No: 3508 5281

Output waveform



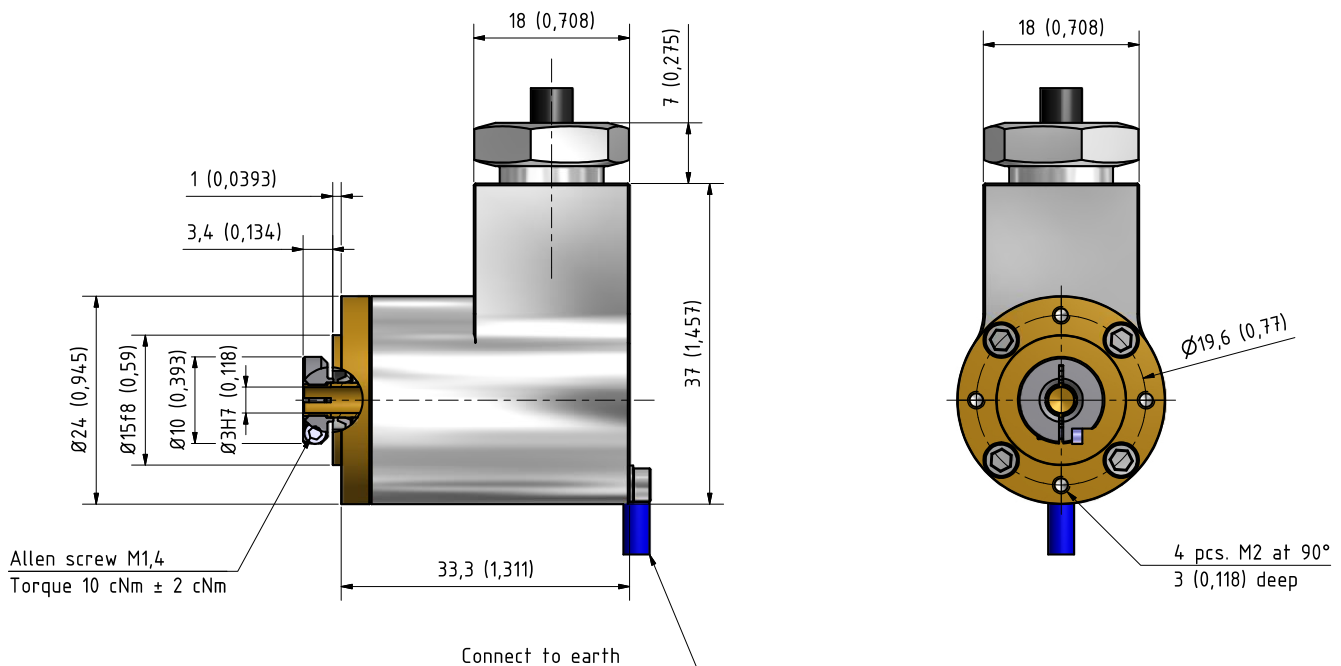
Channel tolerance 180 e° +/- 36 e°
Phase difference tolerance 90 e° +/- 18 e°
Z channel tolerance 90 e° +/- 18 e°

Disk Resolutions (pulses per revolution)

100	125	160	256	300
360	500	635	1000	1024
2000	2500	3600		

Other options on request
 Pulses per revolution,
 min. 1 – max. 5.000

Mechanical Dimensions

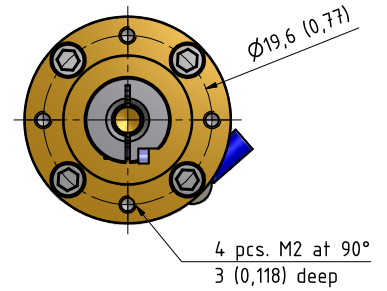
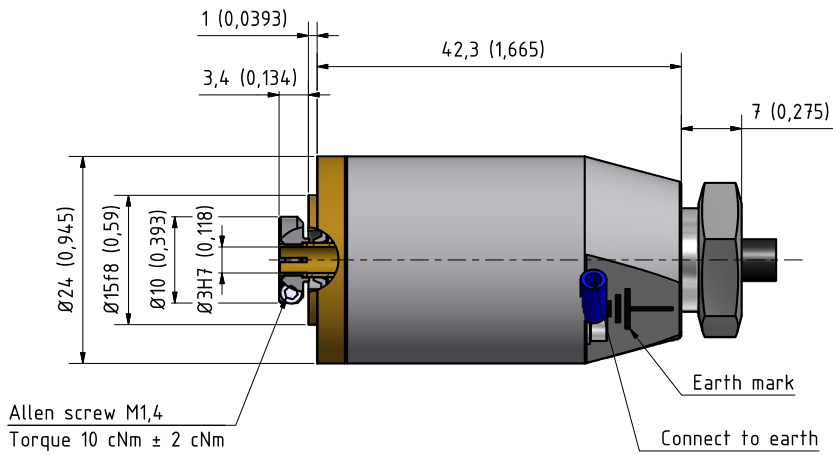


Side Cable Takeout - S

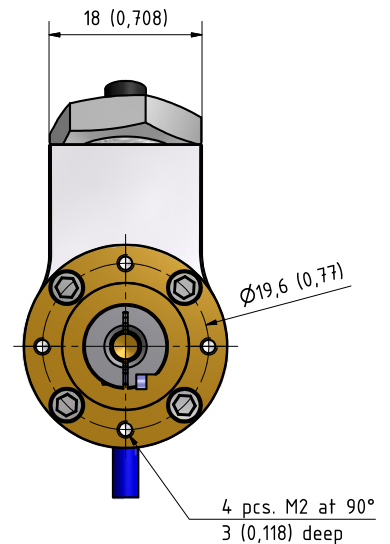
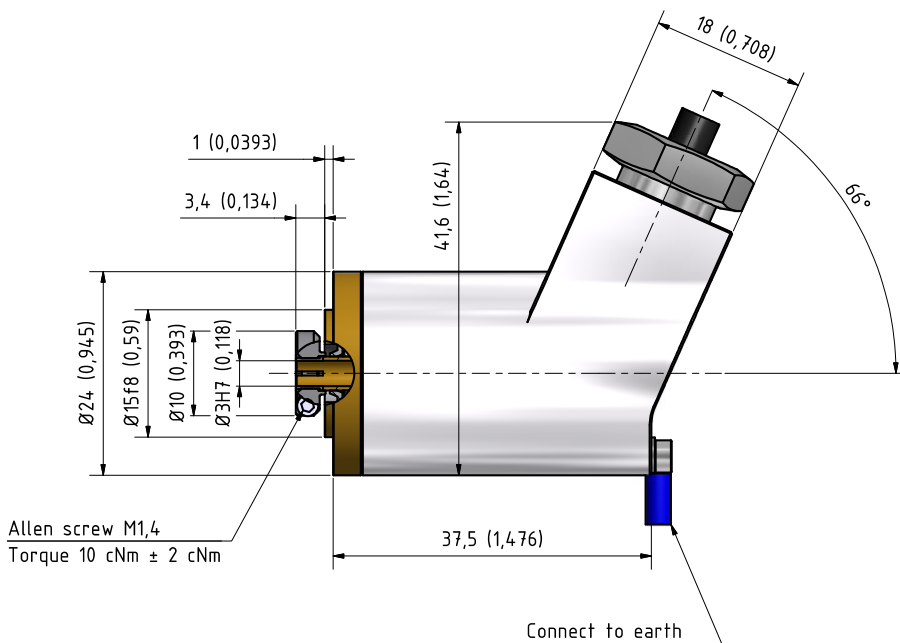
mm (inches)

Tolerances according to ISO 2768 f

Tolerances according to ISO 2768 f



mm (inches)

Back Cable Takeout - B


mm (inches)

Angled Cable Takeout - V

Tolerances according to ISO 2768 f

Output Terminations

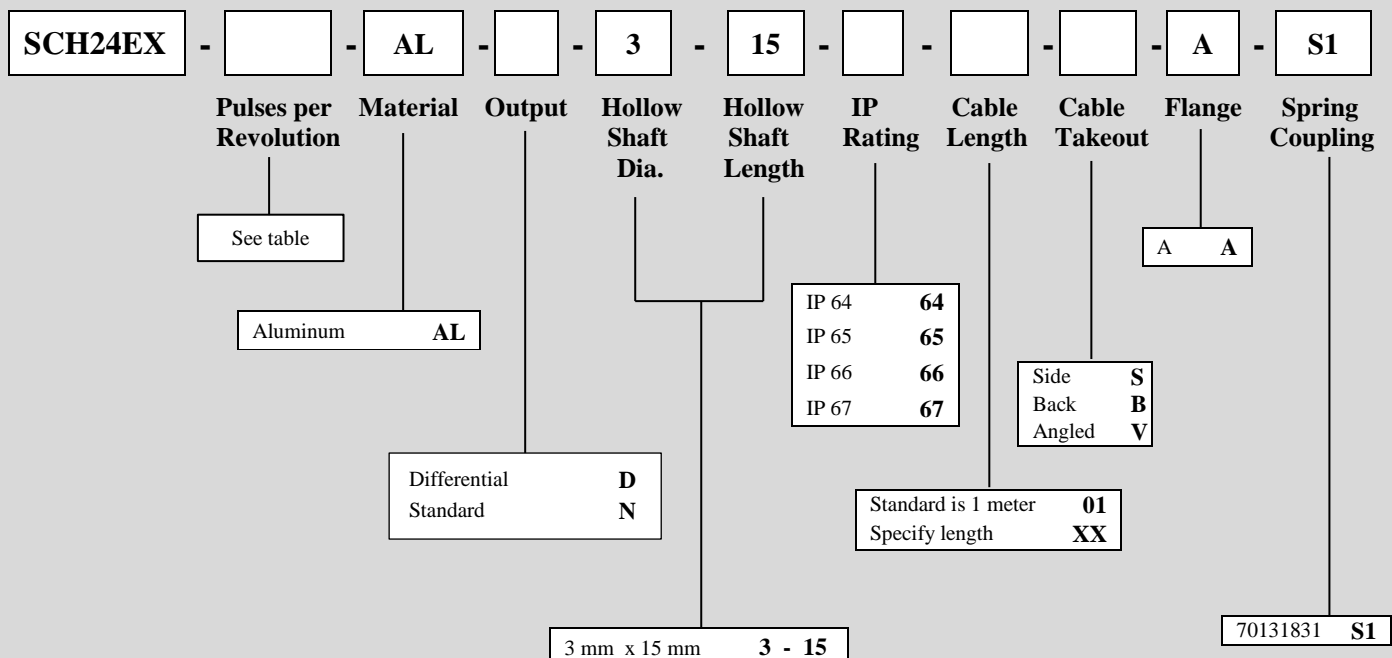
Channel	Standard Cable	
	Standard Output	Differential Output
	Wire Color	Wire Color
A	Pink	Pink
A-	Gray*	Gray
B	Green	Green
B-	Yellow*	Yellow
Z	White	White
Z-	Brown*	Brown
Vsup	Red	Red
GND	Blue	Blue

GND = Circuit Ground

*Gray, Yellow and Brown are not connected

Ordering Code

Example: SCH24EX - 1024 - AL - D - 3 - 15 - 67 - 01 - V - A - S1



Other options on request:
Please contact Scancon A/S

See Accessories for drawings