



Type SCH86BXM

- Ex d – Certified Hollow Shaft Encoder - \varnothing 86 mm
- Through Hollow Bore - \varnothing 25 mm
- IP 65 Environmental Protection (IP 66 & IP 67 options)
- Ex - Certificates



Electrical Specifications

Code:	Incremental
Resolution:	1 to 10,000 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: (Vin - 0.6) at -10 mA (Vin - 1.3) at -25 mA
Output Current:	30 mA max. load per output channel **
Frequency Response:	300 kHz max. Output MW 70 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 Output MW gated with channel A
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) iC-DX Differential line driver
Electrical Protection:	Output short circuit protected Reverse polarity protected (ASIC and MP (OL7272) outputs only) Miswiring protected (MW outputs only)
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments)

**= It is recommended user not to combine max. Value for all 3 parameters

Mechanical Specifications

Material:	Housing: Stainless Steel AISI 316 Cap: Stainless Steel AISI 316 Hollow Shaft: Stainless Steel AISI 316
Weight:	Aisi 316: Approx. 3750 gr. Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9 x 10 ¹⁰ revolutions at rated load
Shaft Speed:	3,000 rpm continuous (max.) IP 65 T5 3,000 rpm continuous (max.) IP 67 T4
Starting Torque:	< 0.05 Nm (7.08 oz-in) at 25° C IP 65 < 0.1 Nm (14.16 oz-in) at 25° C IP 67
Mass Moment of Inertia:	600 - 800 g cm ² (8,5 x 10 ⁻³ - 11,3 10 ⁻³ x oz in sec ²)
Shaft Loads:	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 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 65 / Nema 4 (approx.) IP 66 / Nema 6 (approx.) option IP 67 / Nema 6 (approx.) option

Connection Options

Cable:	8 leads (0.14 mm ² , 26 AWG) twisted pairs; shielded; halogen free
Connectors:	9-position terminal block (inside cap) M20 cable gland (cable \varnothing 11 - 14.5 mm) M25 cable gland (cable \varnothing 11 - 14.5 mm)

Certifications

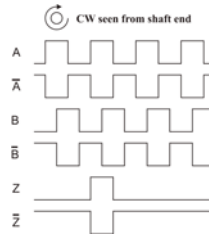
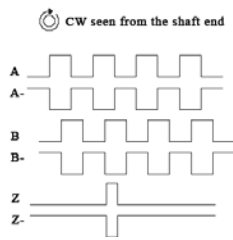
ATEX:	Certificate No.: ITS09ATEX16850X I M2 Ex d I/IIC T5 and II 2 G Ex IIC T5 II 2 D Ex tD A21 IP6X T100° -40C ≤ Tamb ≤ +70C
EAC Ex:	Certificate No. RU No. 0249626 НАИО «ЦБЭ» No. TC RU C-DK.ГБ05.B.00974 1Ex d IIC T5 Gb X Ex tb IIIC T100°C Db X -40°C < T.amb < +70°C
ISO 9001 : 2008	Certificate Registration No.: 44 100 111616 Report No: 3508 5281

Output waveform

Disk Resolutions (pulses per revolution)

Output: N.D.M.MP.MS and L

Output: MW



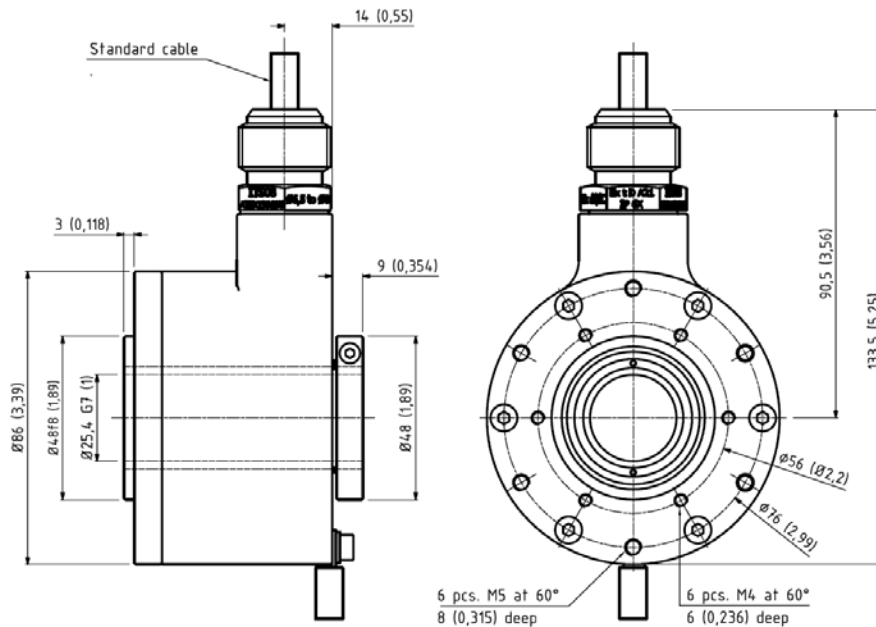
Channel tolerance 180 e° +/- 36 e°
Phase difference tolerance 90 e° +/- 18 e°
Z channel tolerance 90 e° +/- 18 e°

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

25	32	40	100
400	800	1024	2000
2048	2500	3072	3600
4096			

Other options on request
Pulses per revolution,
min. 1 – max. 10.000

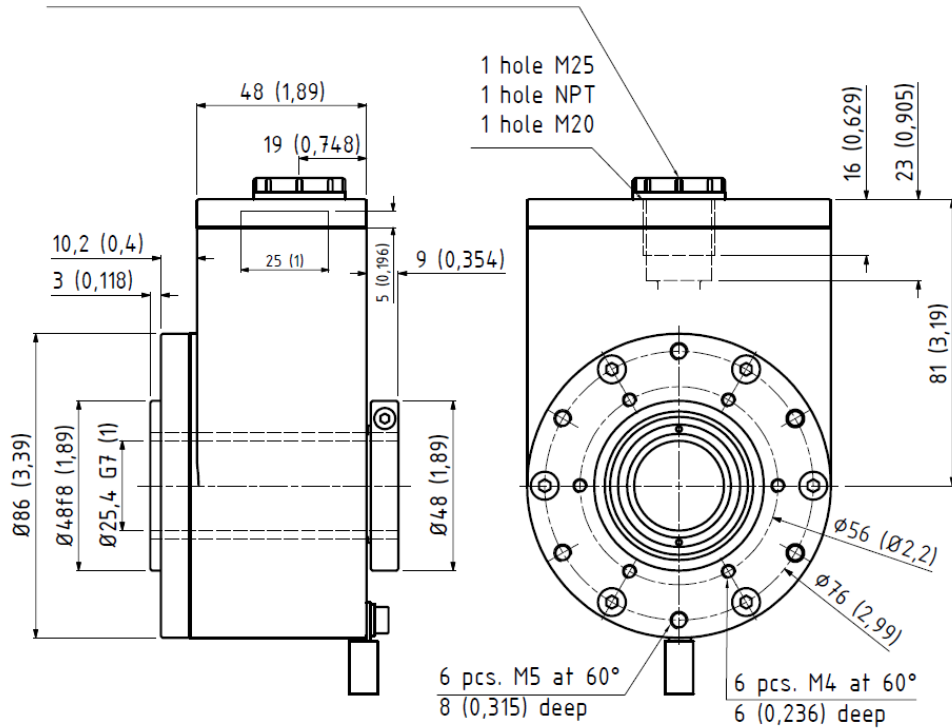
Mechanical Dimensions



Standard Cap Type SH08

mm (inches)

1 pc. plastic Screw Plug for environmental protection only! Must be replaced by Ex d certified cable glands and/or plugs prior to use.



Standard End Cap Type EC08, EC09, EC10, EC11 mm (inches)

Output Terminations

Standard Cap Type SH08

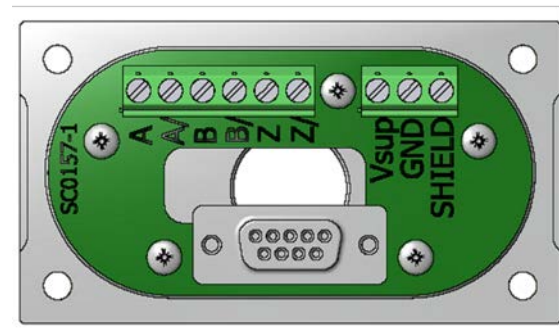
Channel	Standard Cable	
	Standard Output	Differential Output
	Wire Color	Wire Color
A	Pink	Pink
A -	Gray*	Gray
B	Green	Green
B -	Yellow*	Yellow
Z	White	White
Z -	Brown*	Brown
Vsup	Red	Red
GND	Blue	Blue

GND = Circuit Ground

* Gray, Yellow, and Brown are internally connected as Ground

Standard End Cap Type EC08, EC09, EC10 & EC11

Position	Terminal Block	
	Standard Output	Differential Output
	Channel	Channel
1	Vsup	Vsup
2	GND	GND
3	Ch. A	Ch. A
4	*	Ch. A -
5	Ch. B	Ch. B
6	*	Ch. B -
7	Ch. Z	Ch. Z
8	*	Ch. Z -
9	Shield	Shield

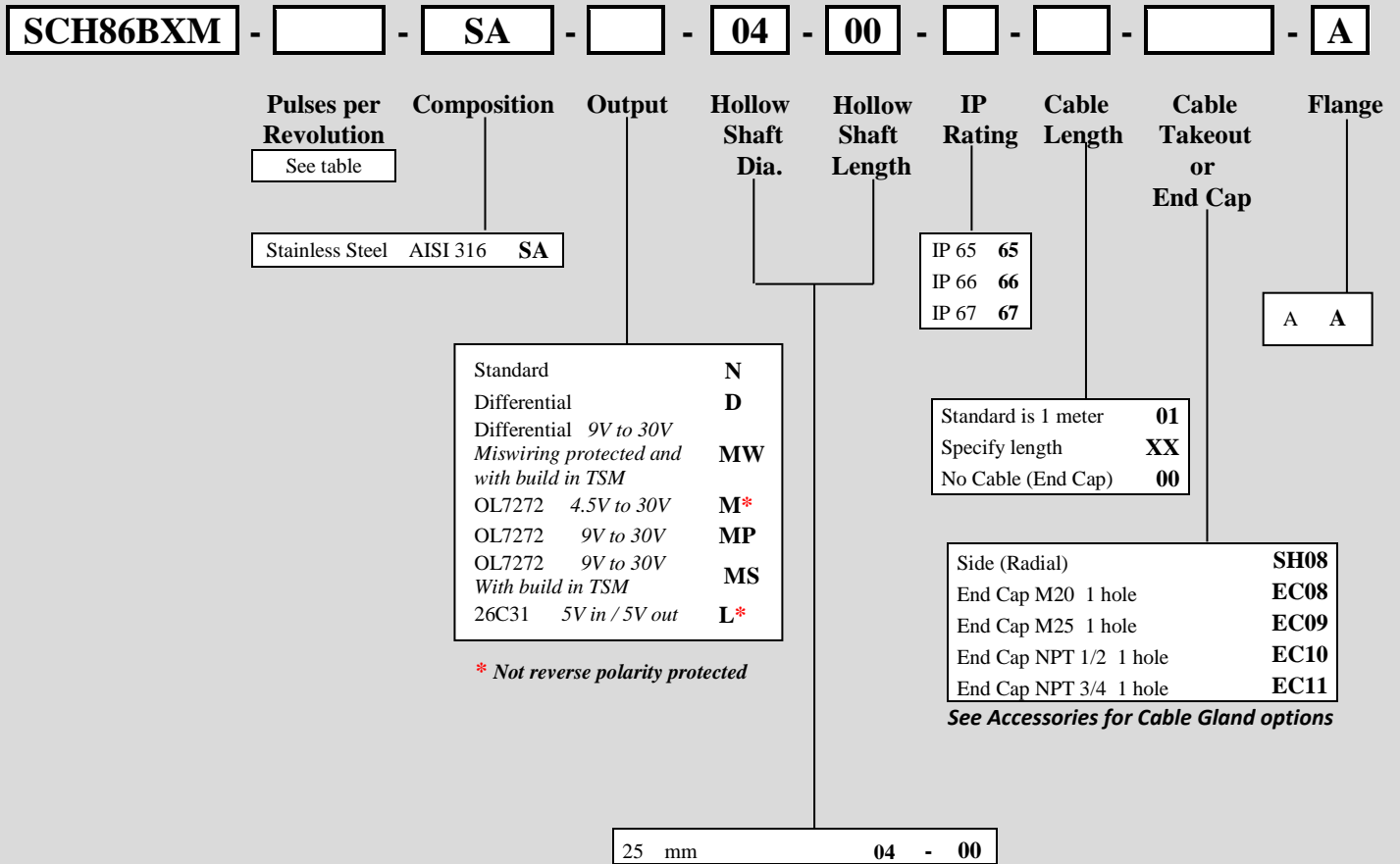


* Do not attach any wires to terminal block

GND = Circuit Ground Shield = Case Ground

Ordering Code

Example: SCH86BXM- 1024 - SA - M -04 - 00 - 67 - 00 - EC01 - A



Other options on request:
 Please contact Scancon A/S