



ATEX

EN 60079

CE

Type SCH86BEX

- Through Hollow Shaft encoder - \varnothing 86 mm
- Hollow bore - \varnothing 16 mm to 1"
- IP 65 (IP 66 & IP 67 options)
- "Seawater-proof" 22 micron Anodization
- Stainless Steel (AISI 303 or 316) options
- ATEX certified EX II 2 G Ex d IIC T5
ATEX certified EX II 2 D Ex tD A21 IP6X

Electrical Specifications

Code:	Incremental
Resolution:	1 to 15,000 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 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)

Mechanical Specifications

Material:	Housing: Aluminum Cap: Aluminum Hollow Shaft: Brass
Weight:	Encoder: Approx. 1250 gr (44.1 oz) Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9×10^{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:	50 gcm ² (7.08×10^{-4} oz-in-sec ²)

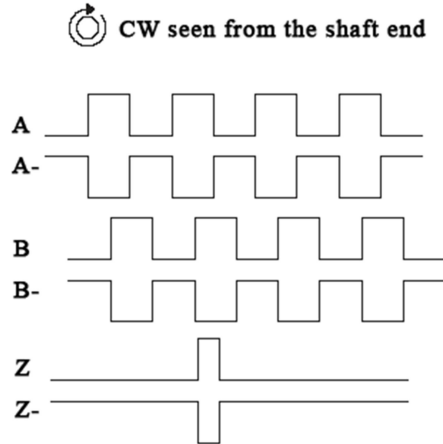
Environmental Specifications

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
Certification	ATEX EX II 2 G Ex d IIC T5 ATEX EX II 2 D Ex tD A21 IP6X North America Class I Div. 1 (See website for Certifications)

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)

Output waveform



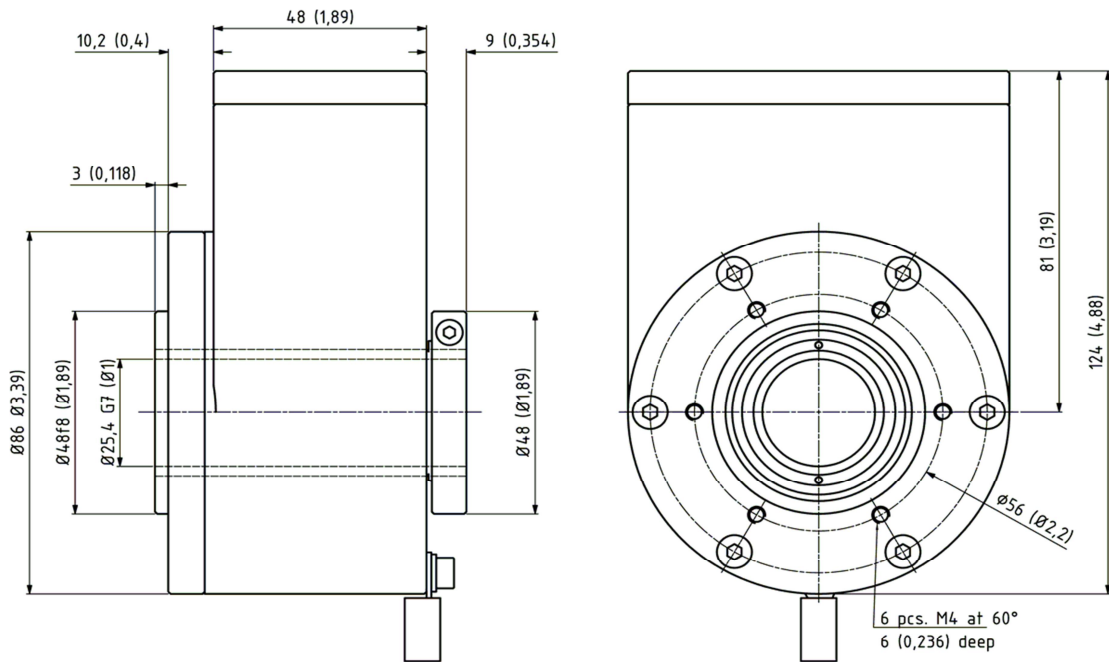
Channel tolerance **180 e° +/- 36 e°**
 Phase difference tolerance **90 e° +/- 18 e°**
 Z channel tolerance **90 e° +/- 18 e°**

Disk Resolutions (pulses per revolution)

1	32	125	600	2500
2	36	150	635	3000
5	40	180	720	3072
6	50	200	800	3600
8	60	250	1000	4000
10	64	300	1024	4096
15	75	360	1131	5000
16	80	400	1250	9000
20	90	455	1500	10000
25	100	500	2000	12500
30	120	512	2048	

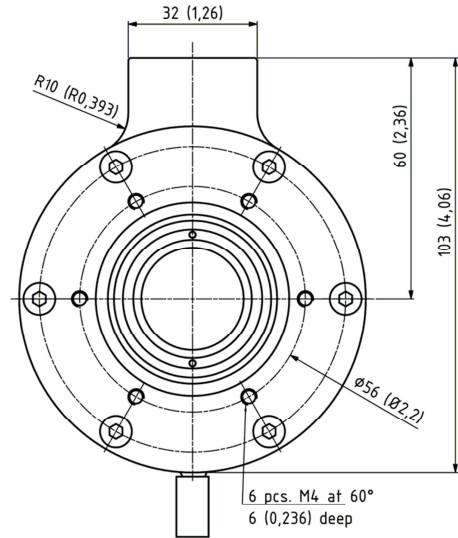
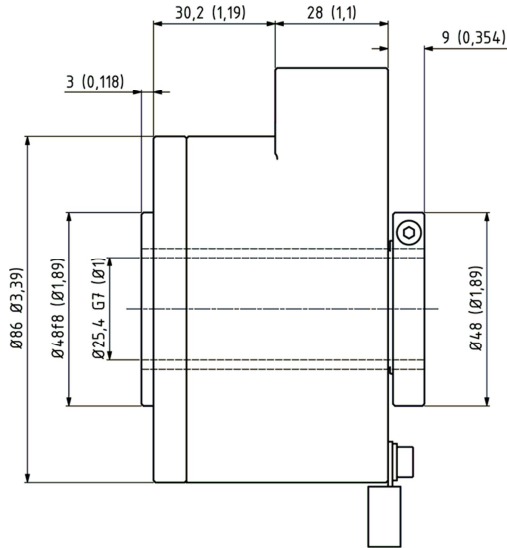
Bold – currently available; all others are under construction

Mechanical Dimensions



Standard End Cap

mm (inches)



Standard Cable Gland (SH08)

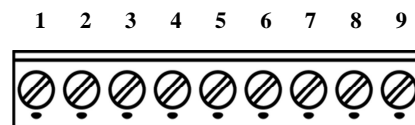
mm (inches)

Output Terminations

Position	Terminal Block	
	Standard Output Channel	Differential Output 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



Vsup GND A A- B B- Z Z- Shield

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

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

GND = Circuit Ground

Ordering Code

Example: SCH86BEX- 1024 - AL - M -1/1 - 00 - 67 - 00 - EC01 - A

Type

SCH86BEX	-		-		-		-		-	00	-		-		-		-	A
		Pulses per Revolution See table		Composition		Output		Hollow Shaft Dia.		Hollow Shaft Length		IP Rating		Cable Length		Cable Takeout or End Cap		Flange
				Aluminum AL Stainless Steel AISI 303 SR Stainless Steel AISI 316 SA		Standard N Differential D 26C31 Line Driver 5V L OL 7272 Line Driver M		16 mm 016 - 00 20 mm 020 - 00 25 mm 025 - 00 1" (25.4 mm) 1/1 - 00				IP 65 65 IP 66 66 IP 67 67		Standard is 1 meter 01 Specify length XX No Cable (End Cap) 00		Side (Radial) SH08 End Cap M20 1 hole EC01 End Cap M20 2holes EC02 End Cap M25 1 hole EC03		A A