



ATEX
EN 60079



Type SCH86BEX

- 86 mm (3.38") Servo mount
- Through Hollow Shaft – rear clamp
- Hollow bore \varnothing 16 mm to 1"
- Shaft Loads to 100 N (22.5 lbs)
- Resolution up to 15,000 ppr
- IP 65 (IP 66 & 67 options)
- "Seawater-proof" 22 micron Anodization
- 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 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:	50 gcm ² (7.08 x 10 ⁻⁴ oz-in-sec ²)

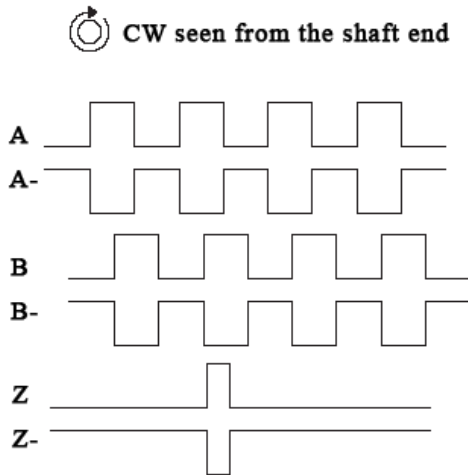
Environmental Specifications

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 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



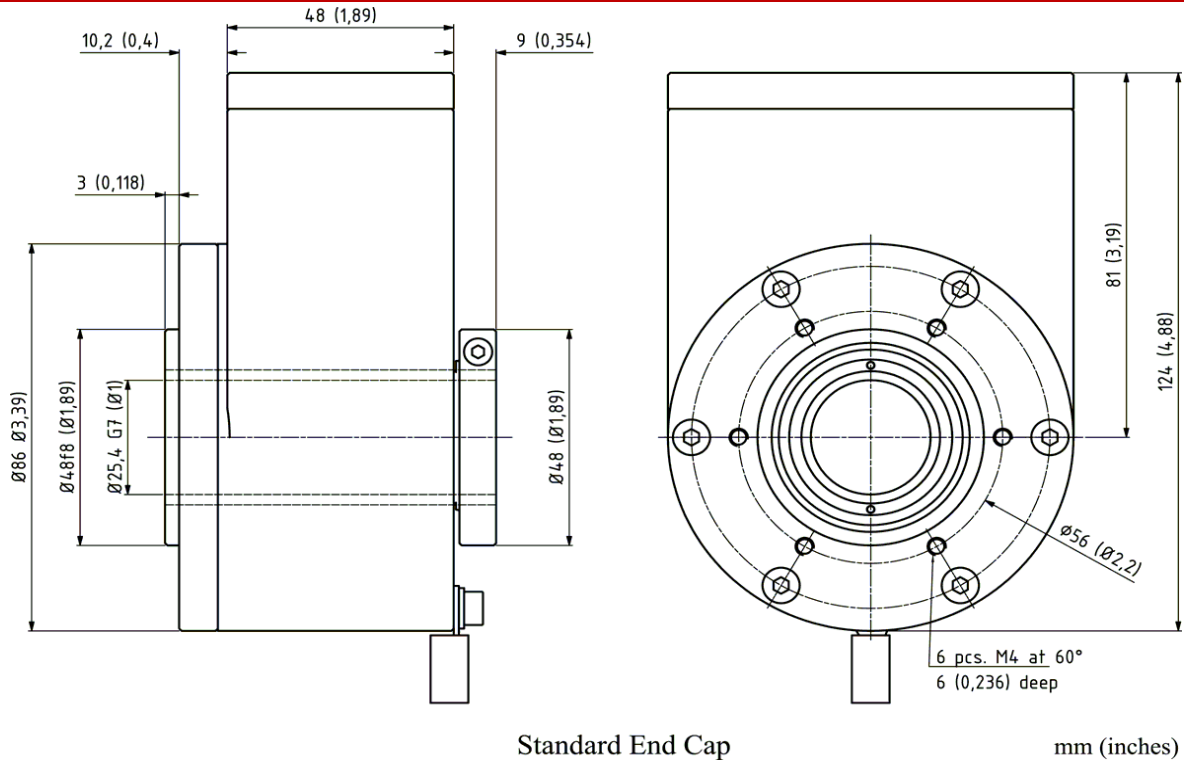
Channel tolerance $180 e^\circ \pm 36 e^\circ$
 Phase difference tolerance $90 e^\circ \pm 18 e^\circ$
 Z channel tolerance $90 e^\circ \pm 18 e^\circ$

Disk Resolutions (pulses per revolution)

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

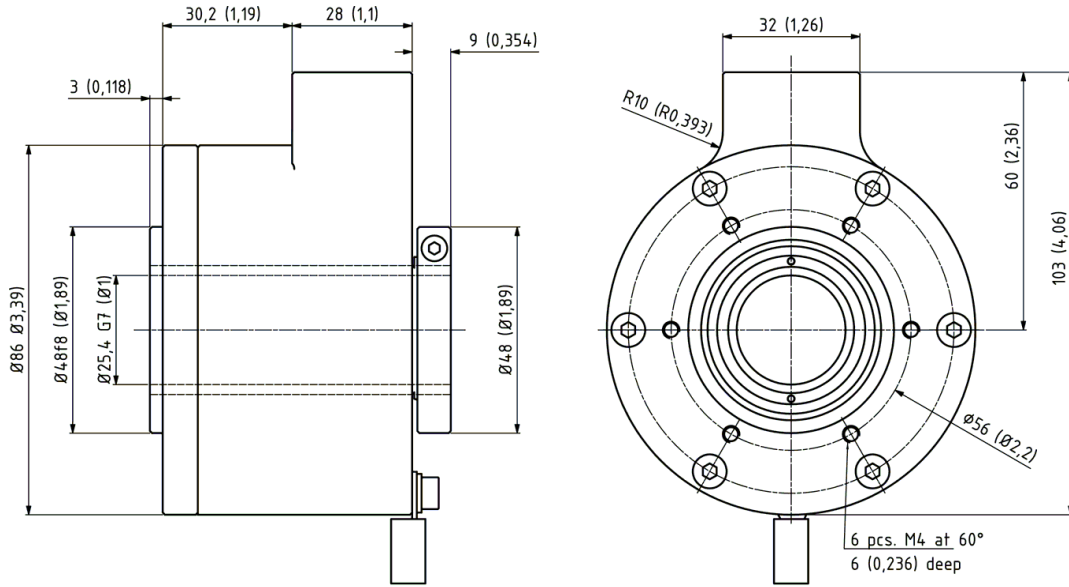
Bold – currently available; all others are under construction

Mechanical Dimensions



Standard End Cap

mm (inches)



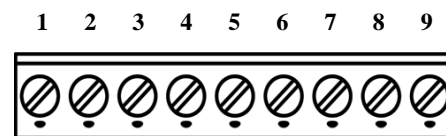
Standard Cable Gland (SH08)

mm (inches)

Output Terminations

Terminal Block

Position	Standard Output	Differential Output
	Channel	Channel
1	VDD	VDD
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	Case Ground	Case Ground



VDD GND A A- B B- Z Z- Case

* Do not attach any wires to terminal block

Standard Cable

Channel	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
Vcc	Red	Red
Ground	Blue	Blue

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

Ordering Code

Example: SCH86BEX - 1024 - AL - D - 1/1 - 67 - 00 - EC03

Type

SCH86BEX - - - - - - - -

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