



ATEX
EN 60079



Type 2QEX

- 2.5" or 2.65" Square mount
- Shaft Loads to 100 N (22.5 lbs)
- Resolution up to 12,500 ppr
- IP 67 Environmental Protection
- "Seawater-Proof" 22 micron Anodization
- ATEX certified EX II 3 G Ex nA IIC T5
- ATEX certified EX II 3 D Ex tD A22 IP64

Electrical Specifications

Code:	Incremental
Resolution:	1 to 12,500 ppr (pulses per revolution)
Supply Voltage:	4.5 Vdc min. to 30 Vdc max. (at 45 mA max. - no load)
Output Voltage:	Low: 500 mV max. at 10 mA High: (V _{sup} - 0.6) at -10 mA (V _{sup} - 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 counterclockwise (CCW) from the shaft end of the encoder
Index:	Gated with Channel B low
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 Shaft: Stainless Steel (AISI 303; A2)
Weight:	Encoder: Approx. 350 gr (12.35 oz)
Bearing Life:	> 1.9 x 10 ¹⁰ revolutions at rated load
Shaft Speed:	6,000 rpm max.
Starting Torque:	< 0.01 Nm (1.4 oz-in) at 25° C
Mass Moment of Inertia:	4 gcm ² (5.66 x 10 ⁻⁵ oz-in-sec ²)
Shaft Loads:	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 lbs) max.

Environmental Specifications

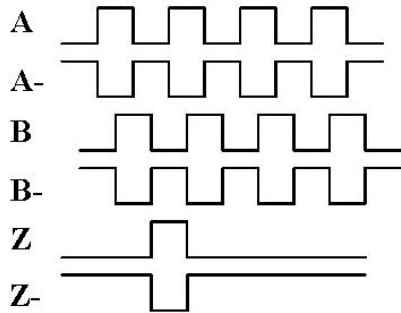
Operating Temperature:	-40° to +85° C
Storage Temperature:	-40° to +85° C
Shock:	100 G @ 11 ms
Vibration:	10-2000 Hz @ 10 G
Bump:	10 G @ 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
Enclosure Rating:	IP 67 / Nema 6 (approx.) 22 micron anodization ATEX EX II 3 G Ex nA IIC T5 N. America - Class I, Div. 2 Groups A, B, C, D ATEX EX II 3 D Ex tD A22 IP64 N. America - Class II, Div. 1 Groups E, F, G
Certifications	

Connection Options

Cable:	8 leads (0.14 mm ⁻² , 26 AWG) twisted pairs; shielded
Connectors:	6-pin Mil radial (optional cap) 7-pin Mil radial (optional cap) 10-pin Mil radial (optional cap)

Output waveform

CCW Seen from shaft end

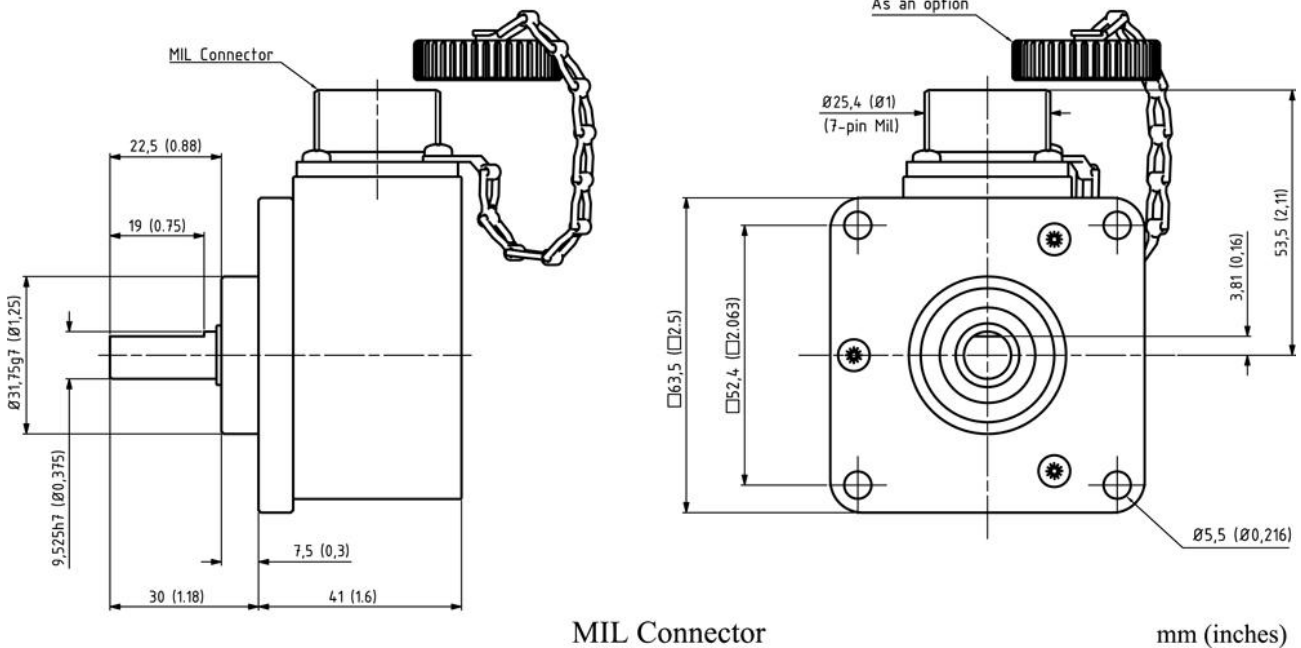


Channel tolerance $180^\circ \pm 36^\circ$
 Phase difference tolerance $90^\circ \pm 18^\circ$
 Z channel tolerance $180^\circ \pm 36^\circ$

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	

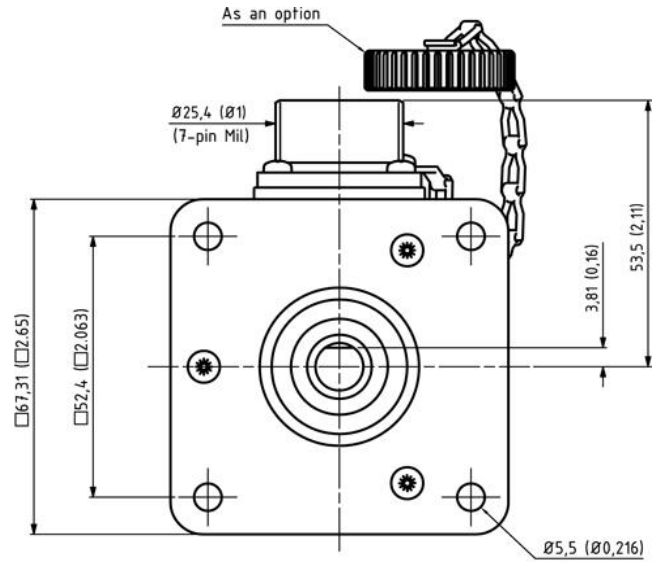
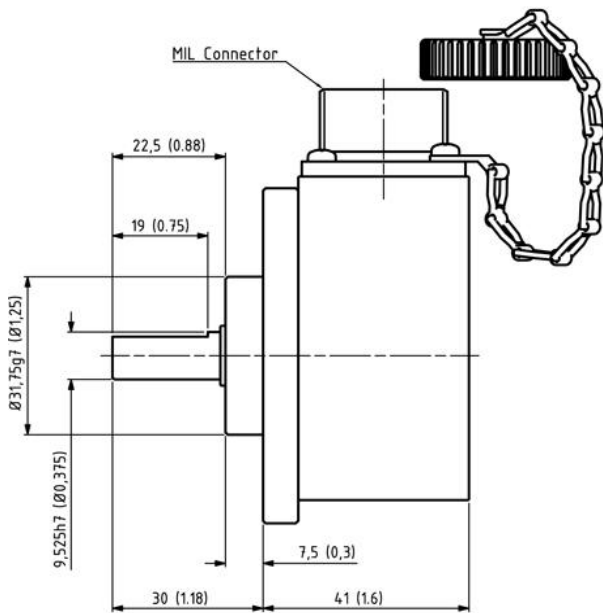
Mechanical Dimensions



MIL Connector

mm (inches)

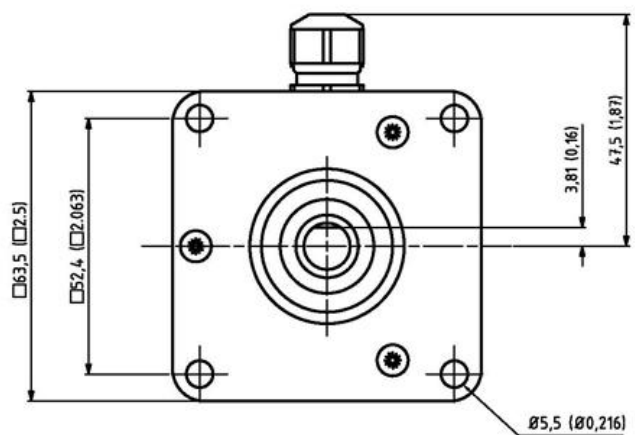
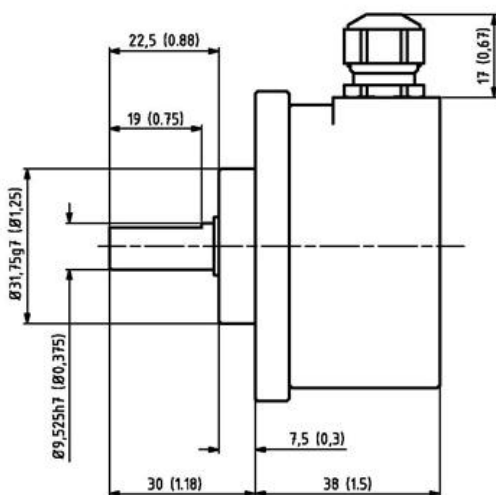
Flange A option



MIL Connector

mm (inches)

Flange B option

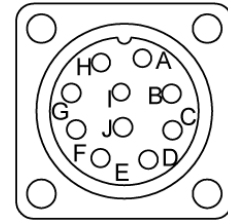
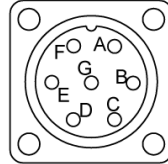
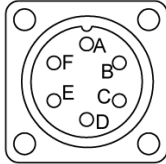


Standard Cable Gland

mm (inches)

Flange A option

Output Terminations



Pin	6-pin Mil		7-pin Mil		10-pin Mil	
	Standard Output	Standard Output	Optional Standard Output *	Optional Differential Output *	Differential Output	Optional Differential Output *
Pin	Channel	Channel	Channel	Channel	Channel	Channel
A	0 volt	Ch. A	Ch. A	Ch. A	Ch. A	Ch. A
B	Vcc	Ch. B	Ch. B	Ch. B	Ch. B	Ch. B
C	Ch. Z	Ch. Z	NC	Ch. A -	Ch. Z	Ch. A -
D	Ch. B	Vcc	Vcc	Vcc	Vcc	Vcc
E	Ch. A	NC	NC	Ch. B -	NC	Ch. B -
F	NC	0 volt	0 volt	0 volt	0 volt	0 volt
G		NC	NC	Shield	NC	Shield
H					Ch. A -	NC
I					Ch. B -	NC
J					Ch. Z -	NC

* ID number required

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: 2QEX - A - 120 - AL - N - 3/8 x 22 - 67 - C7 - B

Type

