



Type SCH68F

- Hollow Shaft Encoder - Ø68 mm (2.68")
- Hollow bore ø 20 mm to 1"
- Resolution up to 4096 ppr
- IP 65 (IP 66 & 67 option)
- Shaft Loads to 100 N (22.5 lbs)

Electrical Specifications

Code:	Incremental
Resolution:	1 to 4096 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 shaft 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:	Output short circuit protected Reverse polarity protected (ASIC and MP (OL7272) outputs only)
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 user not to combine max. values for all 3 parameter

Mechanical Specifications

Material:	Housing: Aluminum Cap: Aluminum Hollow Shaft: Brass alloy (CuZn39Pb3)
Weight:	Encoder: Approx. 400 gr (14.11 oz) Cable: 60 gr / meter (2.1 oz / meter)
Bearing Life:	> 1.9 x 10 ¹⁰ revolutions at rated load
Shaft Speed:	3,000 rpm max. IP 65 1,500 rpm max. IP 67 (option)
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)
Shaft Loads:	Axial 100 N (22.50 lbs) max. Radial 100 N (22.50 lbs) max.

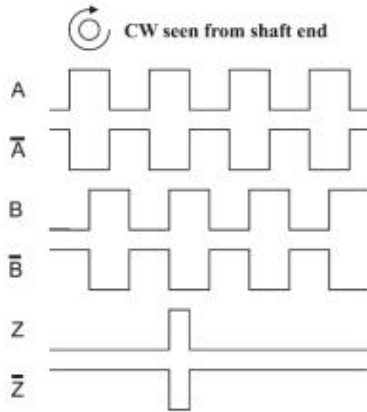
Environmental Specifications

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 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
Connectors:	7-pin Mil radial 10-pin Mil radial

Output waveform



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)

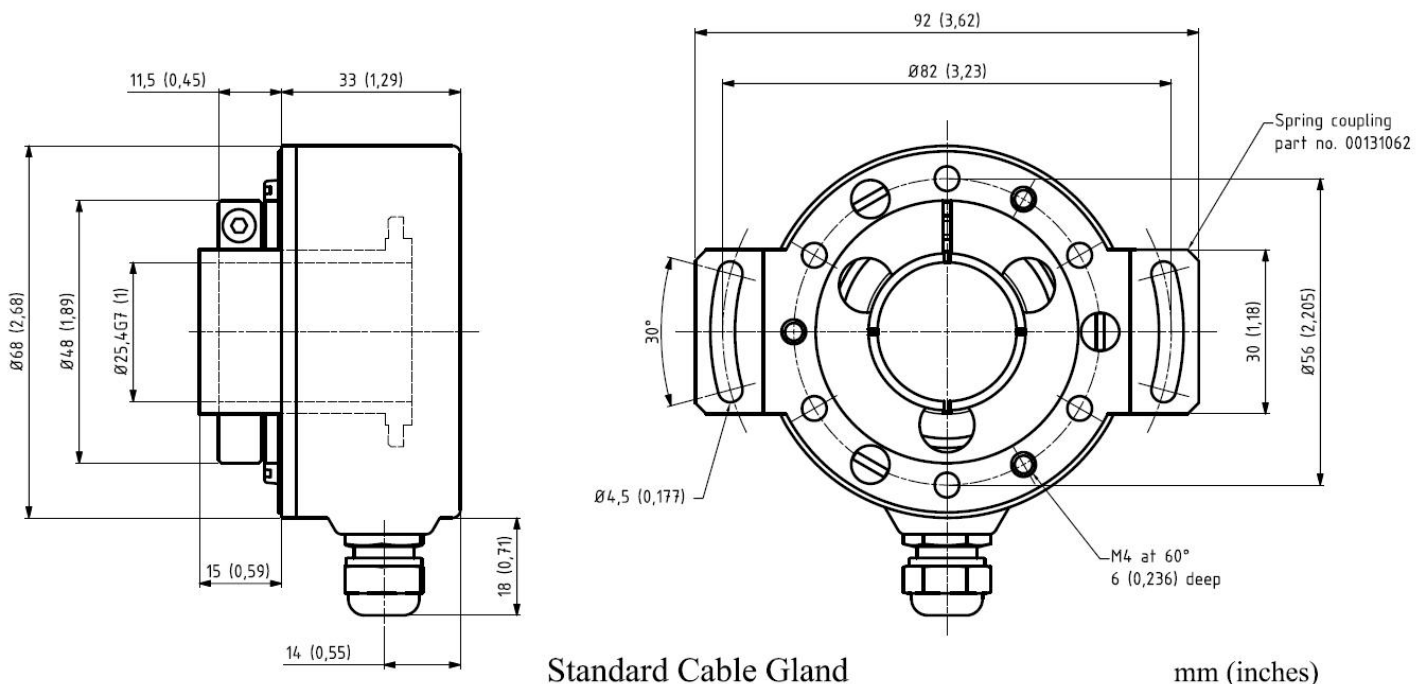
25	32	40	100
400	800	1024	2000
2048	2500	3072	3600
4096			

Other options on request

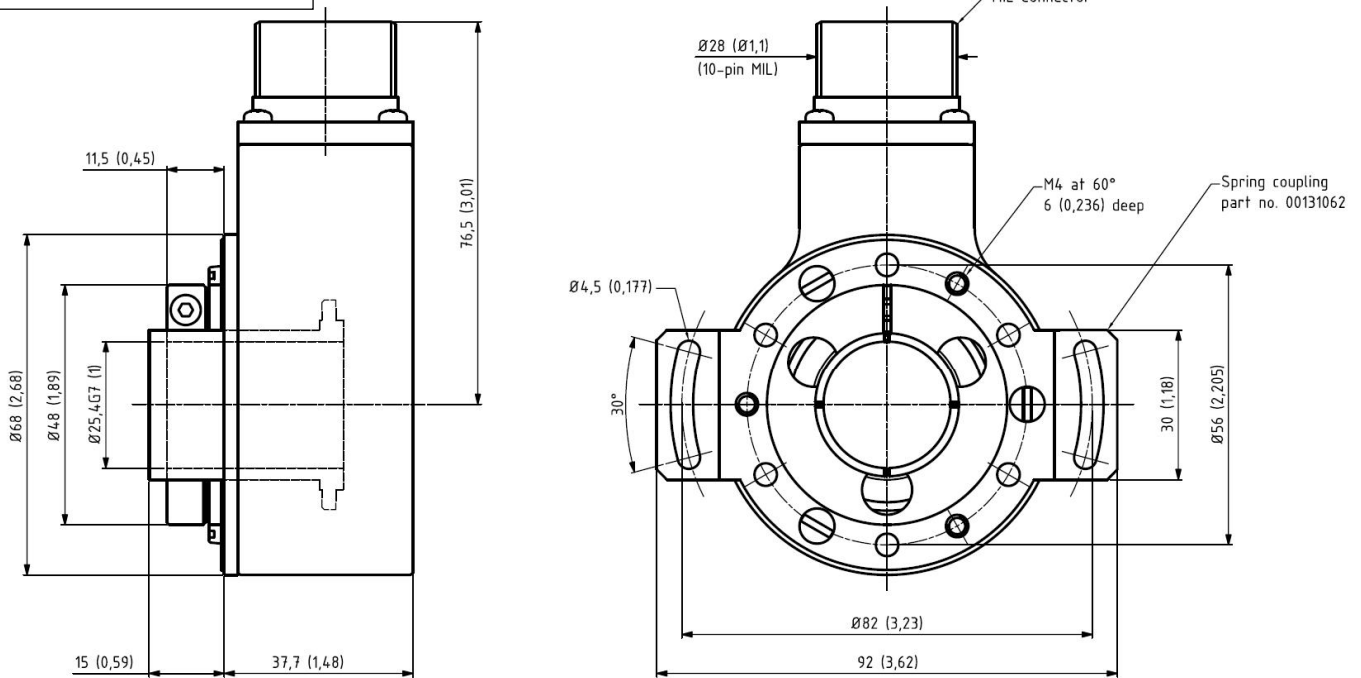
Pulses per revolution,
 min. 1 – max. 4096

Mechanical Dimensions

Tolerances according to ISO 2768 f



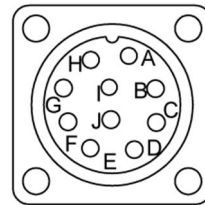
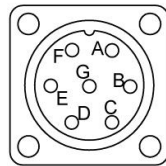
Tolerances according to ISO 2768 f



Mil Connector

mm (inches)

Output terminations



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

* ID number required

Channel	Standard Cable	
	Standard Output	Differential Output
	Wire Color	Wire Color
A	Pink	Pink
A -	<i>Gray*</i>	Gray
B	Green	Green
B -	<i>Yellow*</i>	Yellow
Z	White	White
Z -	<i>Brown*</i>	Brown
Vcc	Red	Red
Ground	Blue	Blue

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

