

Type SCH32F

- Hollow Shaft Encoder - \varnothing 32 mm
- Hollow Bore: \varnothing 6 mm to \varnothing 3/8 inch
- Resolution up to 5000 ppr
- IP 65 (IP 50 for IDC connector option)

Electrical Specifications

Code:	Incremental
Resolution:	1 to 5000 ppr (pulses per revolution)
Supply Voltage:	4,5 Vdc min. to 30 Vdc max. (35 mA max. - no load) **
Output Voltage:	Low: 500 mV max. at 10 mA High: ($V_{in} - 0,6$) at -10 mA ($V_{in} - 1,3$) at -25 mA
Output Current:	25 mA max. load per output channel **
Frequency Response:	200 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)

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

Mechanical Specifications

Material:	Housing: Aluminum Cap: Nickel-plated Steel Aluminum (flat cable option) Hollow Shaft: Brass
Weight:	Encoder: ~ 50 gr (1,76 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	> $1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	6.000 rpm (max.)
Starting Torque:	< 0,005 Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	1,0 gcm ² ($1,42 \times 10^{-5}$ oz-in-sec ²)
Shaft Loads:	Axial: 20 N (4,5 lbs) max. Radial: 20 N (4,5 lbs) max.

Environmental Specifications

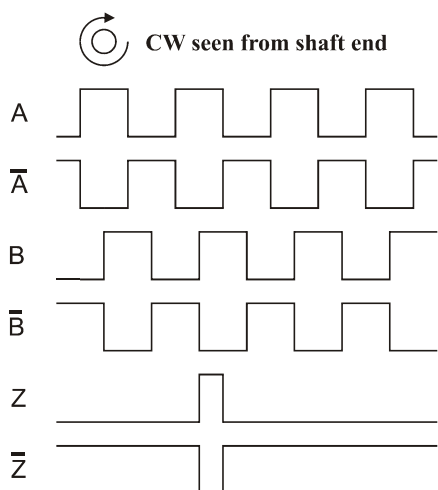
Operating Temp.:	-40° to +85° C
Storage Temp.:	-40° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
Enclosure Rating:	IP 65 / Nema 4 (approx.) IP 50 / Nema 5 (approx.) - flat cable

Connection Options

Cable:	8 leads (0,05 mm ² , 30 AWG) - Differential 5 leads (0,14 mm ² , 26 AWG) - Standard twisted pairs; shielded
Flat Cable:	10 lead flat cable with IDC connector
Connector:	5-pin M12 - Standard 8-pin M12 - Differential

Output waveform

Disk Resolutions (pulses per revolution)



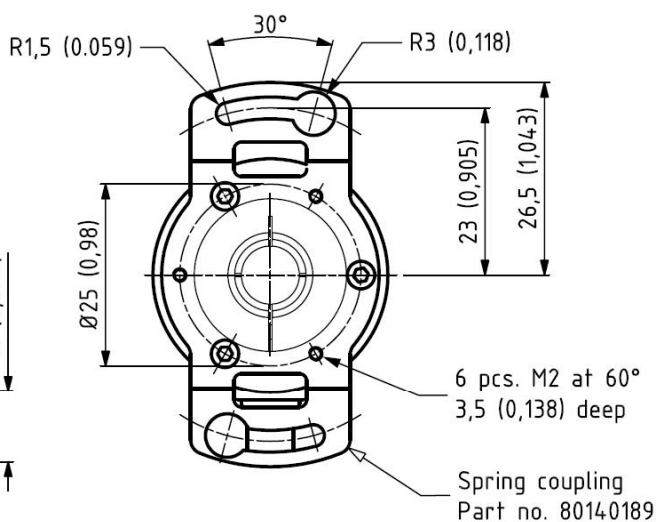
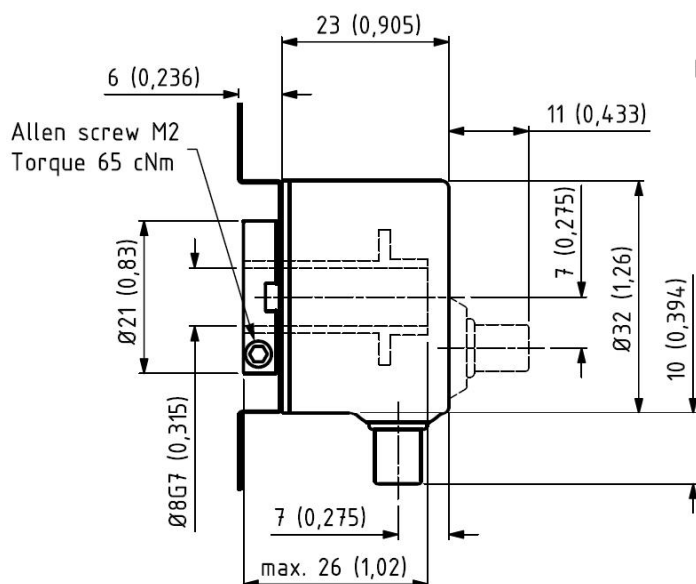
32	200	500	2000	5000
64	250	1000	2500	
96	256	1024	3600	
100	360	1500	4096	

Other options on request

Pulses per revolution,
min. 1 – max. 5.000

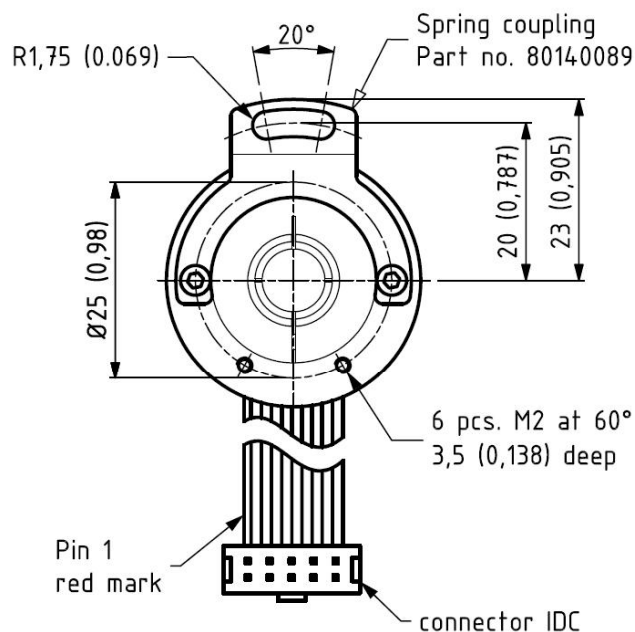
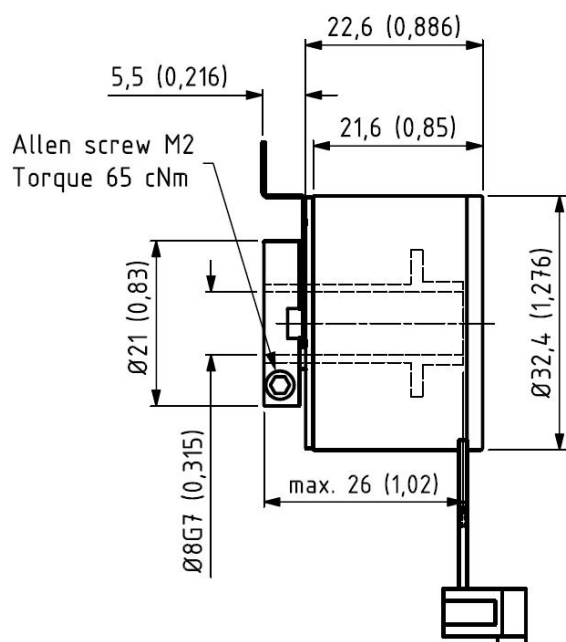
Channel tolerance $180\text{ e}^\circ \pm 36\text{ e}^\circ$
Phase difference tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$
Z channel tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$

Mechanical Dimensions



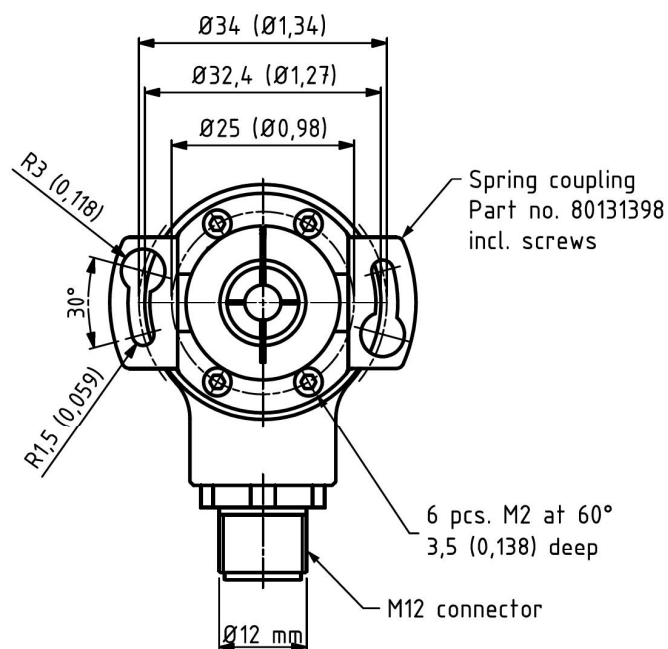
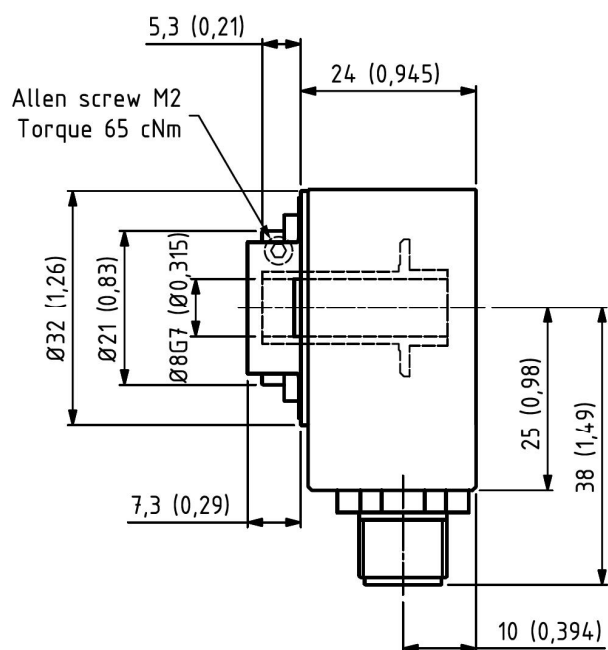
Standard Cable Gland
Side (S) or Back (B)

mm (inches)



Flat Ribbon Cable with IDC connector

mm (inches)



M12 Connector

mm (inches)

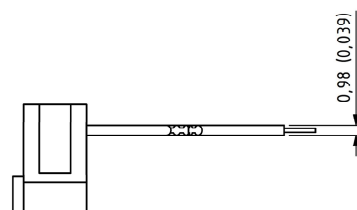
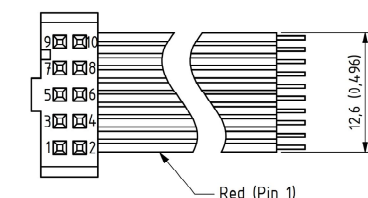
Output Terminations

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

GND = Circuit Ground

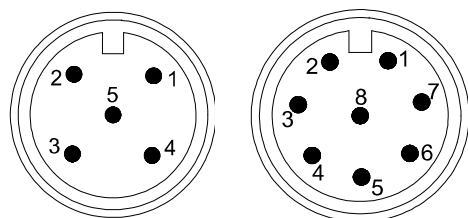
Position	Flat Cable w/ IDC Connector	
	Differential Output *	
Position	Channel	
1	NC	
2	Vsup	
3	GND	
4	NC	
5	A	
6	A -	
7	B	
8	B -	
9	Z -	
10	Z	

* Hewlett Packard (HP) compatible



mm (inches)

- IP 50 rating
- CE mark not available
- 0,5 m, 1 m, or 2 m cable length only



Pin	5-pin M12	8-pin M12
	Standard Output	Differential Output
Pin	Channel	Channel
1	Vsup	A
2	B	Vsup
3	GND	A -
4	A	B
5	Z	B -
6		Z
7		GND
8		Z -

GND = Circuit Ground

Channel	5-pin M12	8-pin M12
	Mating Connector w/ Cable	Mating Connector w/ Cable
Channel	Wire Color	Wire Color
Vsup	Brown	Red
GND	White	Blue
A	Green	Pink
B	Yellow	Green
Z	Gray	White
A -		Gray
B -		Yellow
Z -		Brown

See Accessories for Mating Connector ordering information

