



Type SCA28

- Shaft Encoder - \varnothing 28 mm
- Shaft: \varnothing 4 mm to \varnothing 1/4 inch
- Resolution up to 7500 ppr
- IP 50 (IP 65 option)

Electrical Specifications

Code:	Incremental
Resolution:	1 to 7500 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. value for all 3 parameters.

Mechanical Specifications

Material:	Housing: Aluminum Cap: Electroplated Steel Shaft: Stainless Steel
Weight:	Encoder: ~ 40 gr (1,41 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	> $1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	9.000 rpm (max.)
Starting Torque:	< 0,005 Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	0,8 gcm ² ($1,13 \times 10^{-5}$ oz-in-sec ²)
Shaft Loads:	Axial: 20 N (4,5 lbs) max. Radial: 20 N (4,5 lbs) max.

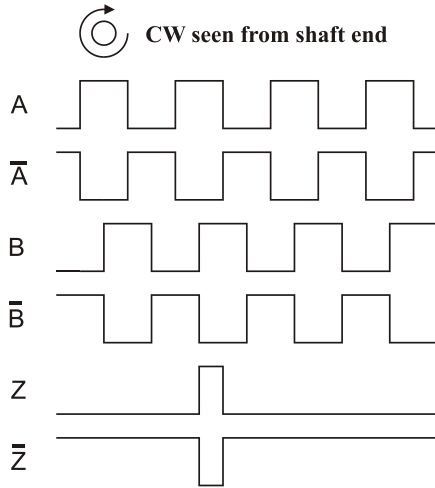
Environmental Specifications

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 50 / Nema 5 (approx.) IP 65 / Nema 4 (approx.) - option

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

Output waveform



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

Disk Resolutions (pulses per revolution)

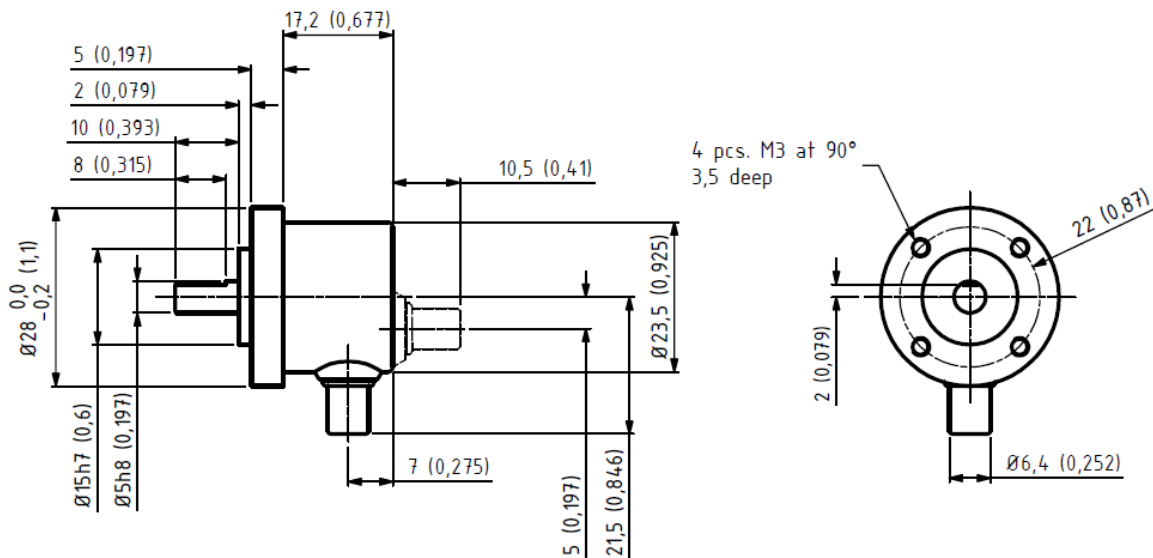
1	36	150	512	2500
4	50	180	600	3000
10	60	200	1000	3600
11	64	250	1024	5000
12	75	256	1250	7500*
15	90	300	1800	
20	100	360	2000	
25	125	400	2500	
30	128	500	2048	

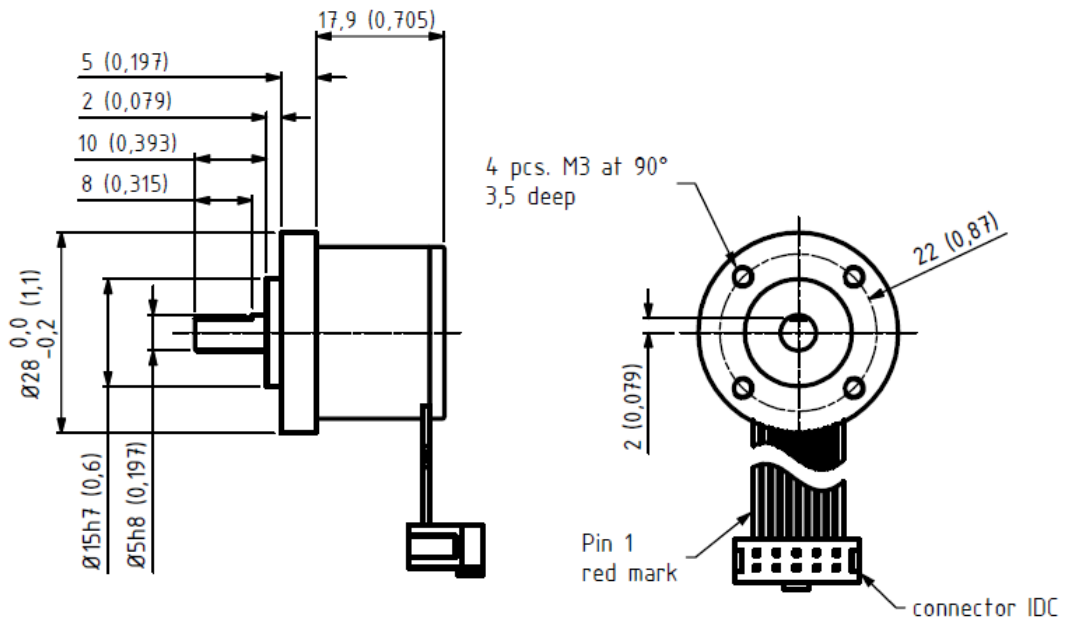
Other options on request

Pulses per revolution,
 min. 1 – max. 7.500

* Operating temperature: -20°C to 50°C

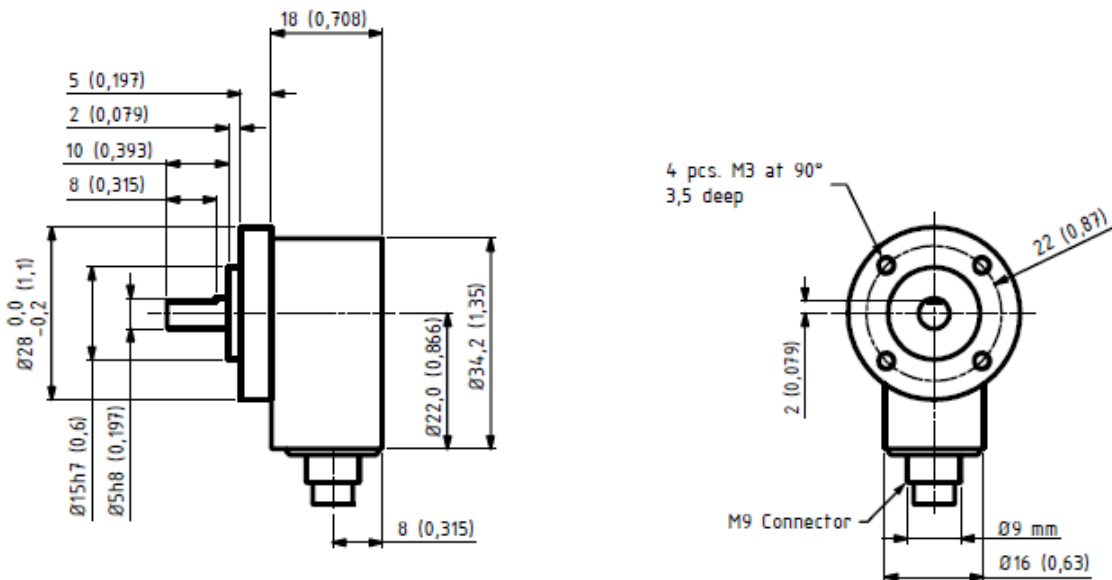
Mechanical Dimensions





Flat Ribbon Cable with IDC connector

mm (inches)



M9 Connector

mm (inches)

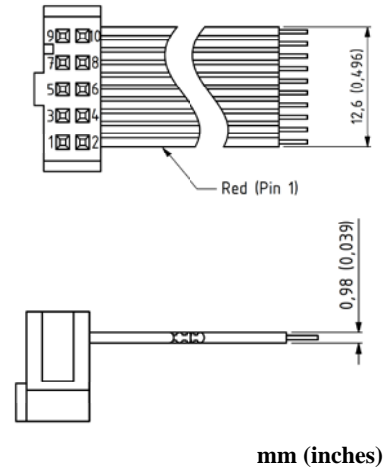
Output Terminations

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

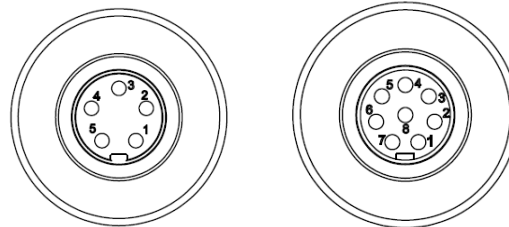
GND = Circuit Ground

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



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



Position	M9 5 - pin	M9 8 - pin
	Standard Output	Differential Output
Position	Channel	Channel
1	VDD	VDD
2	GND	GND
3	A	A
4	B	A -
5	Z	B
6		B -
7		Z
8		Z -

Ordering Code

Example: SCA28 – 1024 – D – 05 – 10 – 50 – 01 – B – 00

Type

SCA28			05	10				
Pulses per Revolution	Output	Shaft Dia.	Shaft Length	IP Rating	Cable Length	Cable Takeout	Connector	
See table				IP 50 50 IP 65 65				
Standard Differential 26C31 Line Driver 5V only OL 7272 Line Driver Standard - with built-in TSM **	N D L M T			Standard Cable Standard is 1 meter 01 Specify length XX Flat Cable w/ IDC 0,5 meter 0,5 1,0 meter 01 2,0 meters 02 * = Only IP 50			No connector 00 M9 5-pin P5 M9 8-pin P8 IDC* IDC * = Only Flat Cable	
				4.0 mm x 10 mm 04 - 10 5.0 mm x 10 mm with flat 05 - 10 6.0 mm x 10 mm 06 - 10 1/4 inch x 10 mm 1/4 - 10			Side (radial) S Back (axial) B Flat cable w/ IDC connector SF	

Other options on request:
Please contact Scancon A/S

** Designed specifically for Wind Power applications. See **SCA24 COC** under *Industries – Wind Power – SCA24* for additional conformity standards testing.

TSM = Transient Suppression Module
Available only as Standard output

See Accessories for drawings