



Type SCA16

- Shaft Encoder - $\varnothing$ 16 mm
- Shaft: $\varnothing$ 1,5 mm to $\varnothing$ 4 mm
- Resolution up to 5000 ppr
- IP 50 (IP 65 option)
- Formerly named 2MCA

Electrical Specifications

Code:	Incremental
Resolution:	Up to 5.000 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:	20 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 Differential or Inverted
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 / Brass Cap: Aluminum Shaft: Brass
Weight:	Encoder: ~ 15 gr (0,53 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	$> 1,9 \times 10^{10}$ revolutions at rated load
Bearing Pre-Load:	1 to 3.600 ppr 2 (N) 4.000 to 5.000 ppr 7 (N)
Shaft Speed:	12.000 rpm (max.)
Starting Torque:	$< 0,005$ Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	0,25 gcm ² ($3,54 \times 10^{-6}$ oz-in-sec ²)
Hollow Shaft Loads:	Axial: 10 N (2,25 lbs) max. Radial: 10 N (2,25 lbs) max.

Environmental Specifications

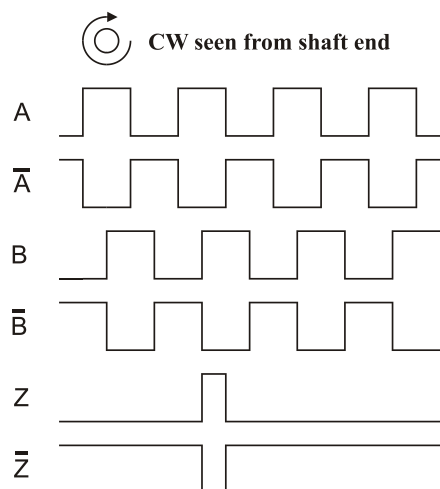
Operating Temp.:	-20° to +70° C
Storage Temp.:	-20° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
Enclosure Rating:	IP 50 / Nema 5 (approx.) IP 65 / Nema 4 (approx.)

Connection Options

Cable:	8 leads (0,05 mm ² , 30 AWG) twisted pairs; shielded
Flat Cable:	10 lead flat cable with IDC connector

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

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 (pluses per revolution)

25	100	125	160	256
300	360	500	1000	1024
2000	2500	3600	5000*	

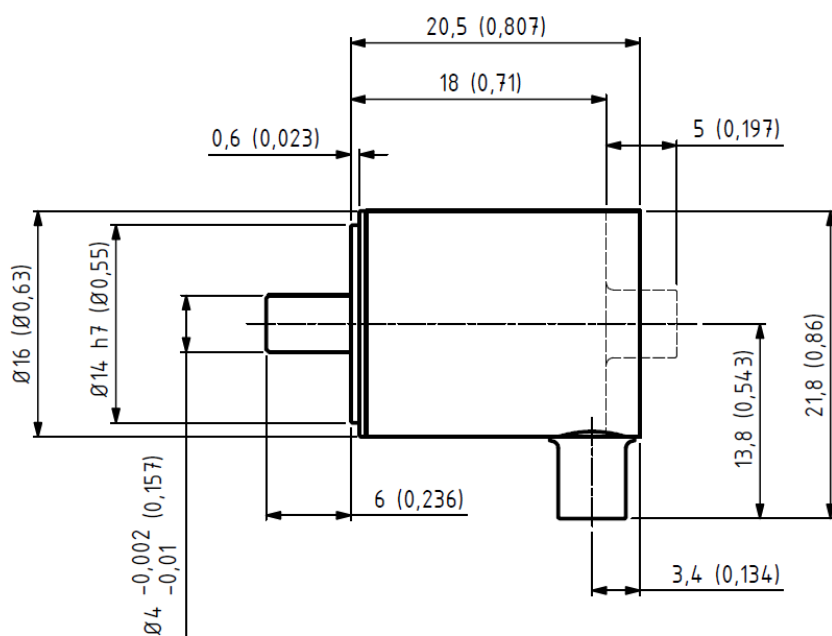
Other options on request

Pulses per revolution,
 min. 1 – max. 5.000

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

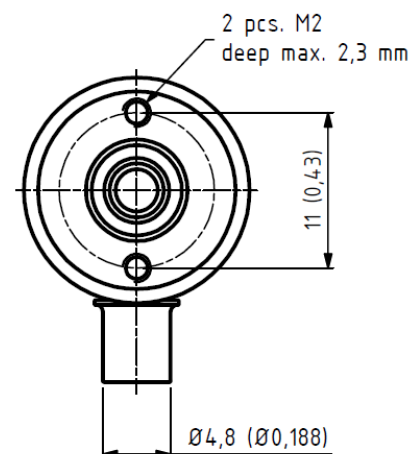
Puls tabel for SCA16, SCA18, SCA787, SCH16F, SCH16G, SCH24EX, SC

Mechanical Dimensions



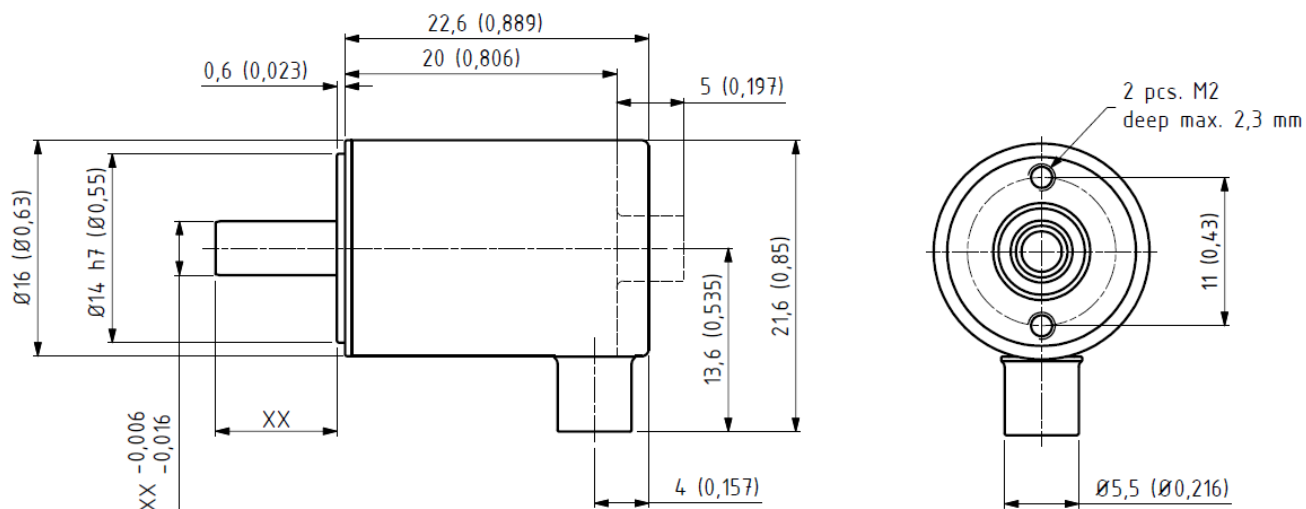
NOTE: MAX length of screw used: 2,3 mm. long
 Other wise warranty is void

NOTE: MAX length of screw into the mounting
 hole: 2,3 mm. Other wise warranty is void



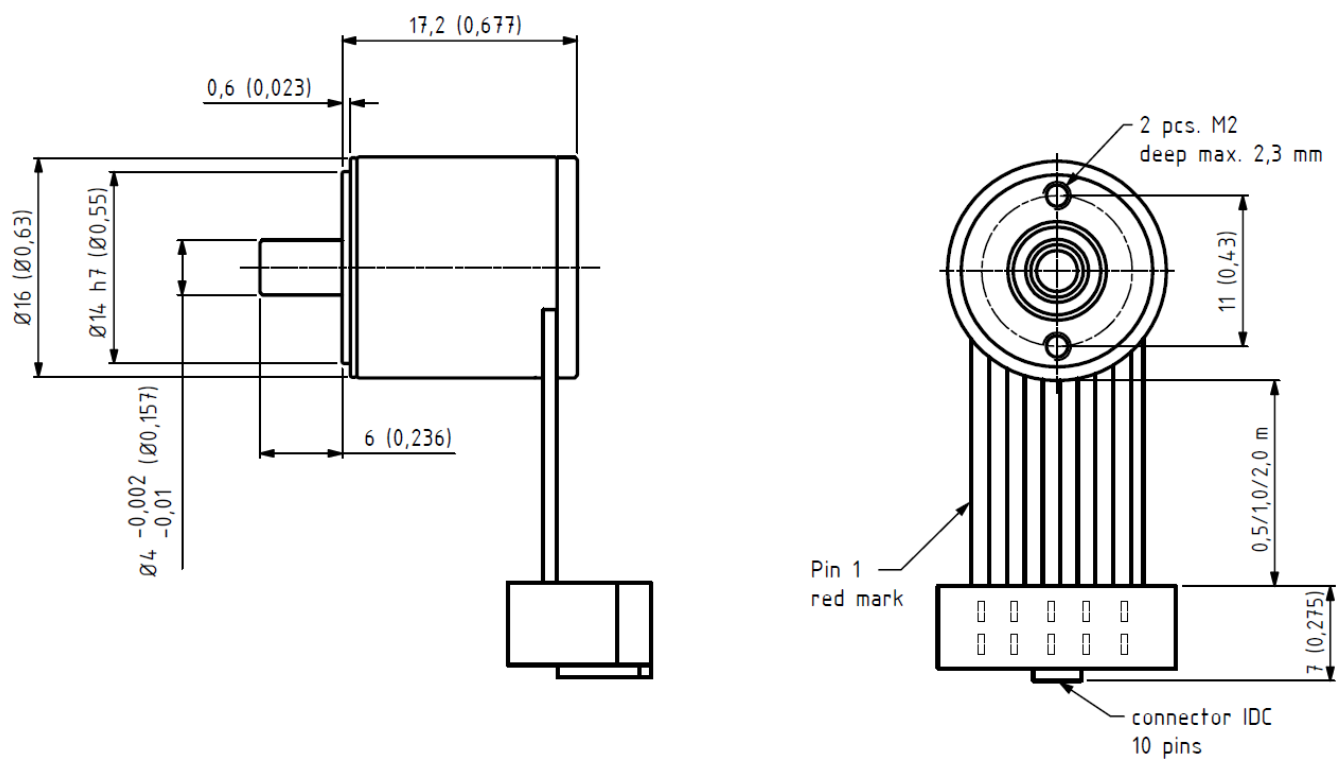
Standard Cable Gland
 Side (S) or Back (B)

mm (inches)



Standard Cable Gland - IP65
Side (S) or Back (B)

mm(inches)



Flat Ribbon Cable with IDC connector

mm (inches)

Output Terminations

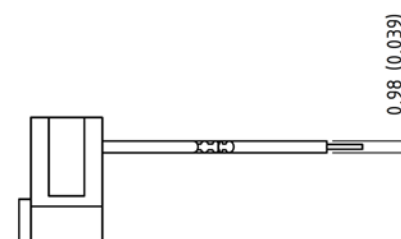
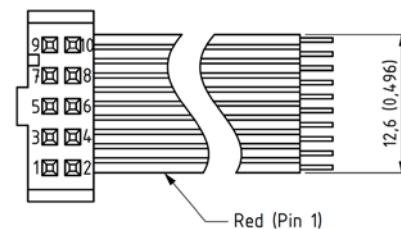
Standard Cable	
	Differential Output
Channel	Wire Color
A	Pink
A -	Gray
B	Green
B -	Yellow
Z	White
Z -	Brown
Vsup	Red
GND	Blue

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

GND = Circuit Ground

* Hewlett Packard (HP) compatible

** ID # required for ordering

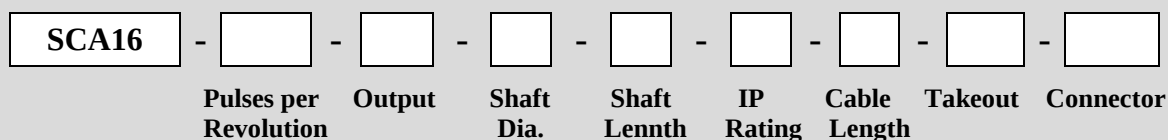


mm (inches)

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

Ordering Code

Example: SCA16 – 1024 – D – 03 – 09 – 65 – 01 – B – 00



See table

Differential	D
Inverted (Flat cable option only)	I

IP 50	50
IP 65*	65

*Encoder total length is 22, 6mm for IP65

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

Side (radial)	S
Back (axial)	B
Flat cable w/ IDC connector*	SF

*= Only IP 50

1,5 mm x 6 mm	1,5	-	06
2,0 mm x 6 mm	02	-	06
3,0 mm x 6 mm	03	-	06
3,0 mm x 9 mm	03	-	09
3,0 mm x 19 mm	03	-	19
4,0 mm x 6 mm	04	-	06
4,0 mm x 9 mm	04	-	09
4,0 mm x 18 mm	04	-	18

IDC on flat cable	IDC
No connector	00

Other options on request:
 Please contact Scancon A/S

See Accessories for drawings