



Type SCA24

- Shaft Encoder - $\varnothing$ 24 mm
- Shaft: $\varnothing$ 2 mm to $\varnothing$ 1/4 inch
- Resolution up to 7500 ppr
- Enclosure IP Rating 64 (IP 50 for IDC connector 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. values for all 3 parameter

Mechanical Specifications

Material:	Housing: Brass Cap: Electroplated Steel Aluminum (flat cable option) Shaft: Stainless Steel
Weight:	Encoder: ~ 35 gr (1,23 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	$> 1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	12.000 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.

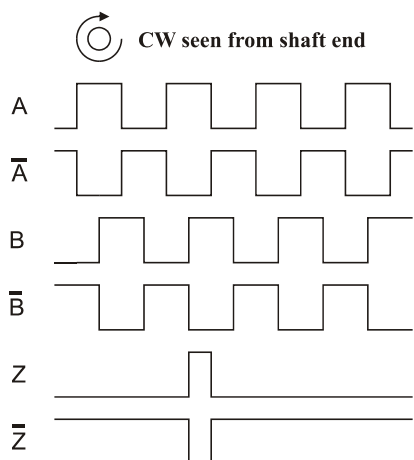
Environmental Specifications

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 64 / 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

Output waveform



Channel tolerance	180 e° +/- 36 e°
Phase difference tolerance	90 e° +/- 18 e°
Z channel tolerance	90 e° +/- 18 e°

Disk Resolutions (Pulses per revolution)

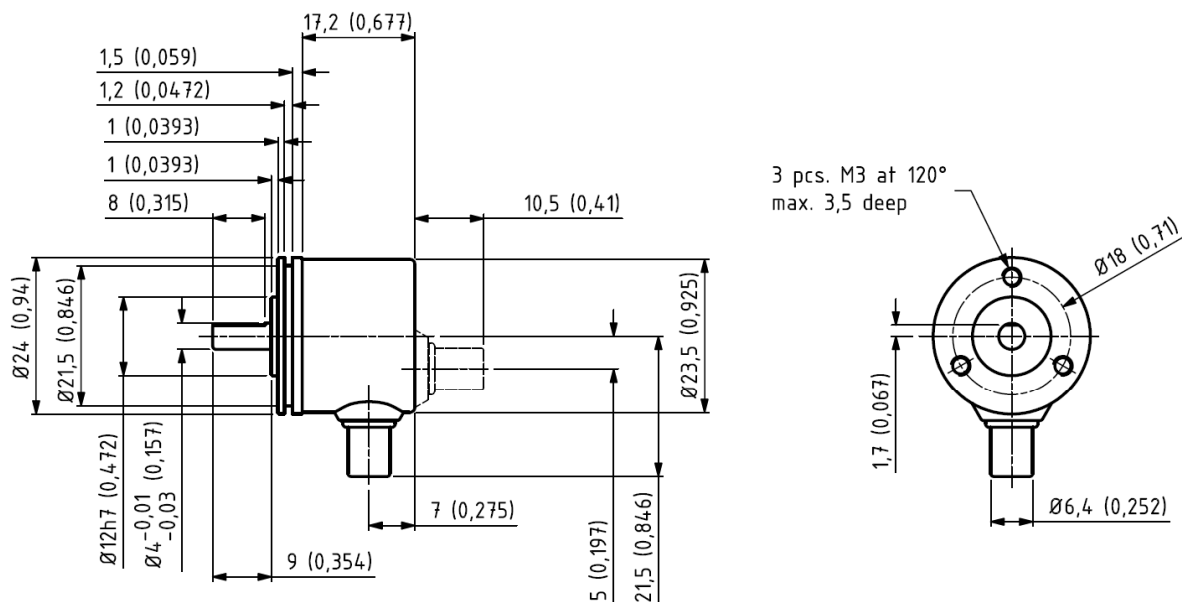
1	30	128	500	2500
4	36	150	512	3000
10	50	180	600	3600
11	60	200	1000	5000
12	64	250	1024	7500*
15	75	256	1250	
18	90	300	1800	
20	100	360	2000	
25	125	400	2048	

Other options on request

Pulses per revolution,
min. 1 – max. 7.500

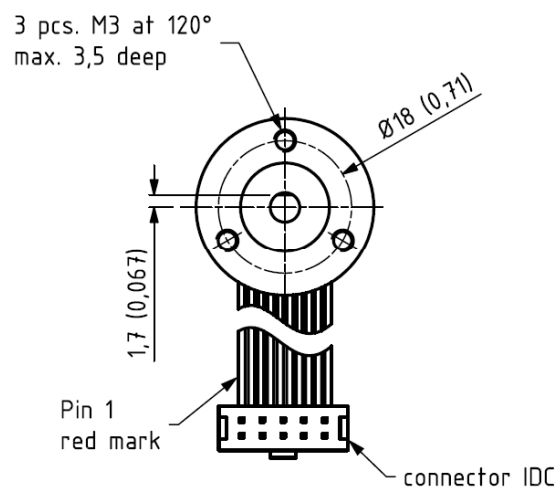
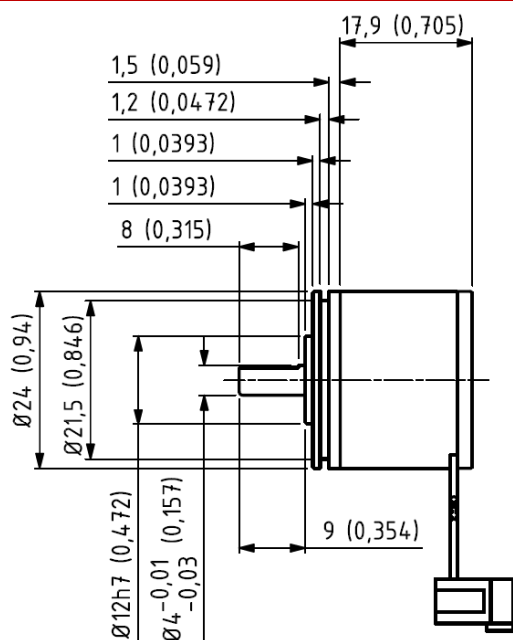
*** Operating temperature: -20° C to 50° C**

Mechanical Dimensions



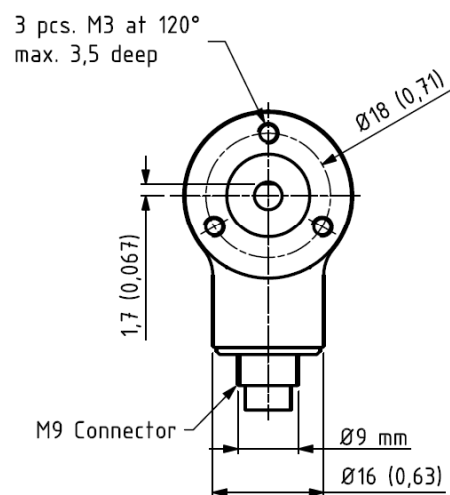
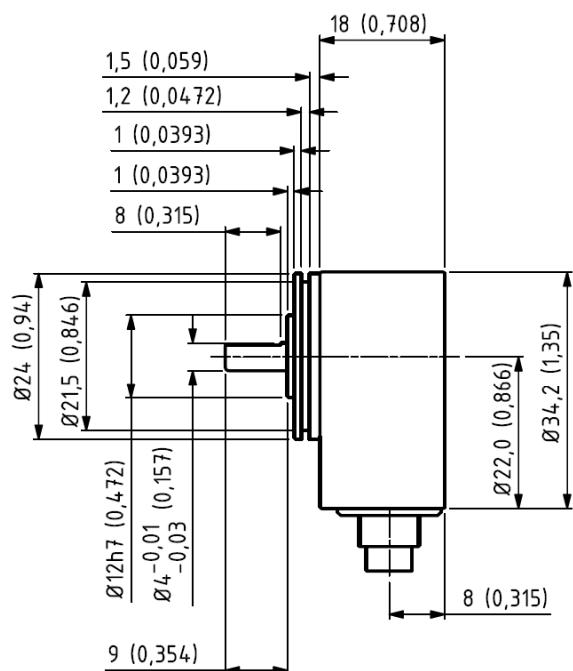
Standard Cable Gland Side (S) or Back (B)

mm (inches)



Flat Ribbon Cable with IDC connector

mm (inches)



M9 Connector

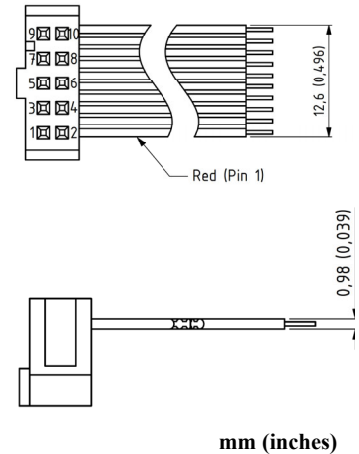
mm (inches)

Output Terminations

	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

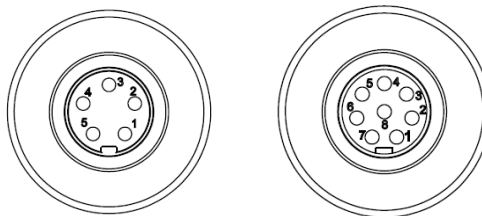
GND = Circuit Ground

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



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

* Hewlett Packard (HP) compatible



	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: SCA24 – 1024 – D – 1/4 – 10F – 64 – 01 – S – 00

Type

SCA24 - [] - [] - [] - [] - [] - [] - [] - []

Pulses per
Revolution

See Table

Output

Standard	N
Standard – Open Collector NPN	NON
Standard – Open Collector PNP	NOP
Differential	D
26C31 Line Driver 5V / 5V only	L
OL 7272 Line Driver	M
Standard - with built-in TSM ***	T

Shaft
Dia.

Shaft
Length

IP

IP 50 50**
IP 64 64

** = Only
flat cable

Cable
Length

Cable
Takeout

Connector

Standard Cable

Standard is 1 meter	01
Specify length	XX
No cable	00
Flat Cable w/ IDC	
0,5 meter	0,5
1,0 meter	01
2,0 meters	02

Standard Cable

M9 5-pin	M9/5
M9 8-pin	M9/8
No Connector	00

Flat Cable (connector required)

IDC on flat cable	IDC
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2.0 mm x 13mm	02	-	13
4.0 mm x 5 mm	04	-	05
4.0 mm x 9 mm *	04	-	09
4.0 mm x 15 mm *	04	-	15
4.0 mm x 20 mm *	04	-	20
4.0 mm x 25 mm *	04	-	25
4.0 mm x 35 mm *	04	-	35
5.0 mm x 10 mm w/flat only	05	-	10F
6.0 mm x 10 mm	06	-	10
6.0 mm x 14 mm *	06	-	14
1/8 inch x 3/8 inch	1/8	-	3/8
1/4 inch x 10 mm w/flat only	1/4	-	10F
1/4 inch x 20 mm w/flat only	1/4	-	20F

* = Available with flat (8mm length)

To order with flat, add "F" to the shaft length.

Example: 1/4 - 10 F

Side (radial) Standard cable	S
Back (axial)	B
Side Flat	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