



Type SCA50-SR

- Shaft Encoder - \varnothing 50 mm
- Shaft: \varnothing 6 mm to \varnothing 10 mm
- Stainless Steel - AISI 303
- Resolution up to 12.500 ppr
- IP 67 Environmental Protection & IP69K
- Formerly named 2RSR

Electrical Specifications

Code:	Incremental
Resolution:	1 to 12.500 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: ($V_{in} - 0,6$) at -10 mA ($V_{in} - 1,3$) 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 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: Stainless Steel - AISI 303 Cap: Stainless Steel - AISI 303 Shaft: Stainless Steel - AISI 303
Weight:	Encoder: ~ 235 gr (8,29 oz) Cable: 60 gr / meter (2,12 oz / meter)
Bearing Life:	> $1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	6.000 rpm (max.)
Starting Torque:	< 0,01 Nm (1,42 oz-in) at 25° C
Mass Moment of Inertia:	2,0 gcm ² (2,83 x 10 ⁻⁵ oz-in-sec ²)
Shaft Loads:	Axial: 50 N (11,25 lbs) max. Radial: 50 N (11,25 lbs) max.

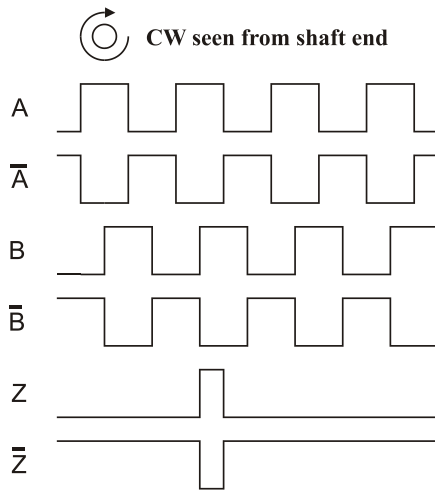
Environmental Specifications

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 67 / Nema 6 (approx.) & IP69K NEMA PW12 (approx.)

Connection Options

Cable:	9-pin M23 - Standard 12-pin M23 - Differential 8 leads (0,14 mm ² , 26 AWG) twisted pairs; shielded
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Output waveform



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

Disk Resolutions (Pulses per revolution)

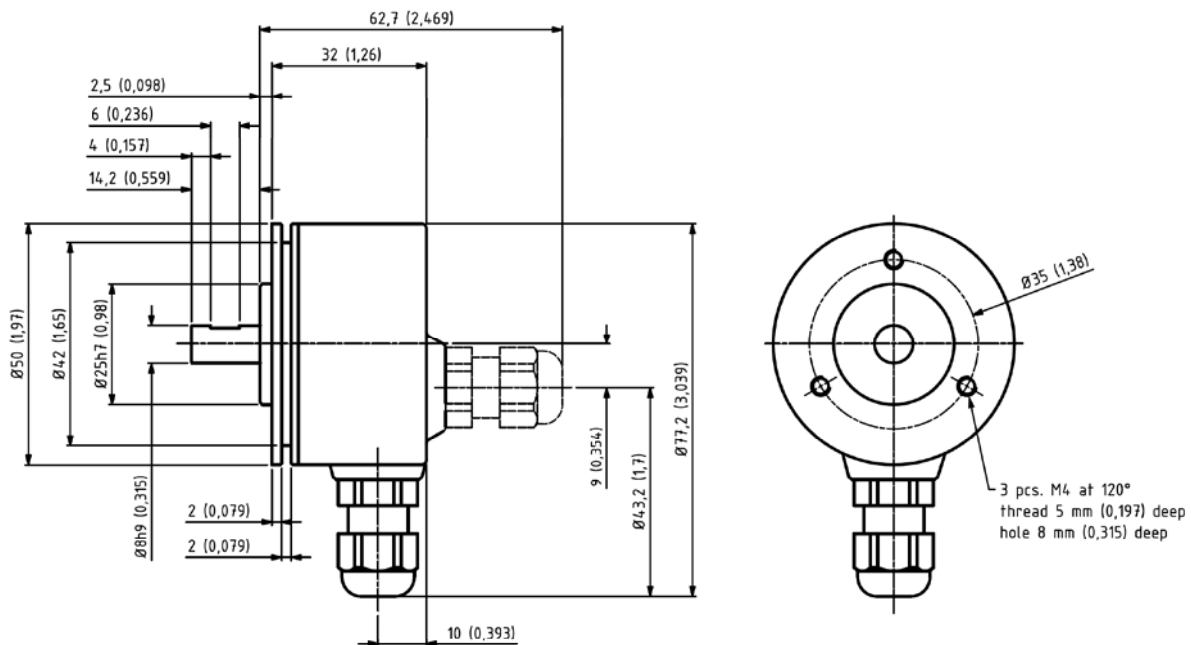
1	32	125	720	3072
2	36	150	800	3600
5	40	180	1000	4000
6	45	200	1024	4096
7	47	250	1131	5000
8	50	256	1200	8192
10	60	300	1250	9000*
12	64	360	1270	10000*
15	70	400	1500	12500*
16	75	455	2000	
18	80	500	2048	
20	90	512	2400	
25	100	600	2500	
30	120	635	3000	

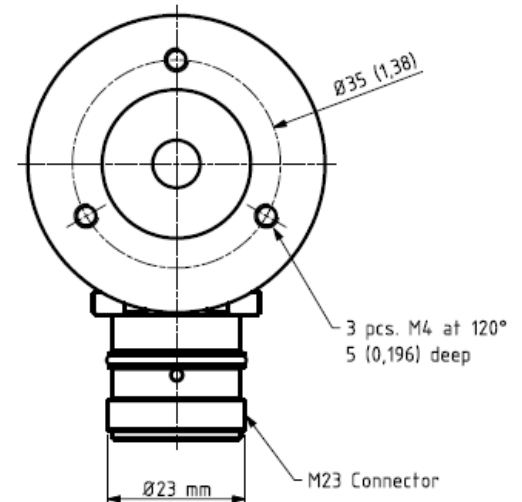
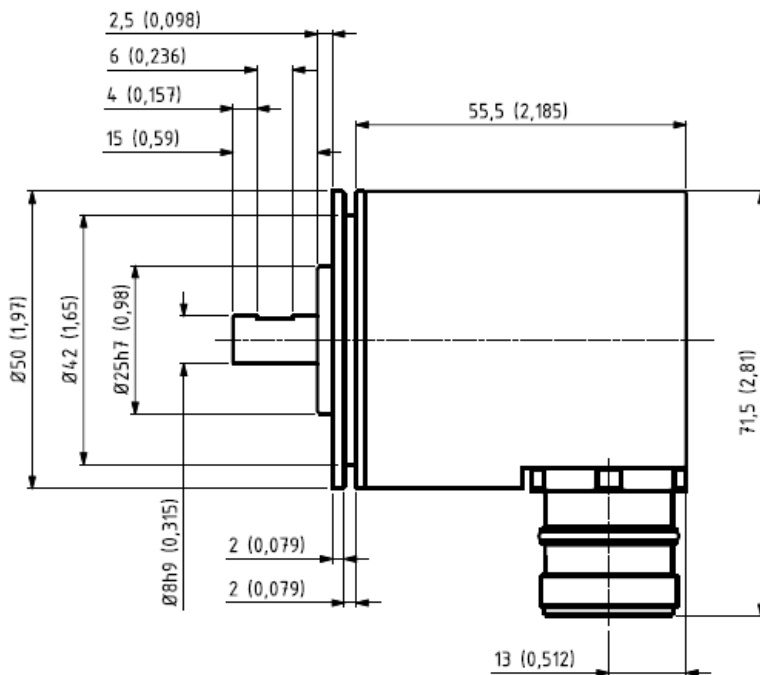
Other options on request

Pulses per revolution,
 min. 1 – max. 12.500

* Operating temperature: $-20^{\circ} C$ to $50^{\circ} C$

Mechanical Dimensions





M23 Connector

mm (inches)

Output Termination

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

* Internally connected as GND

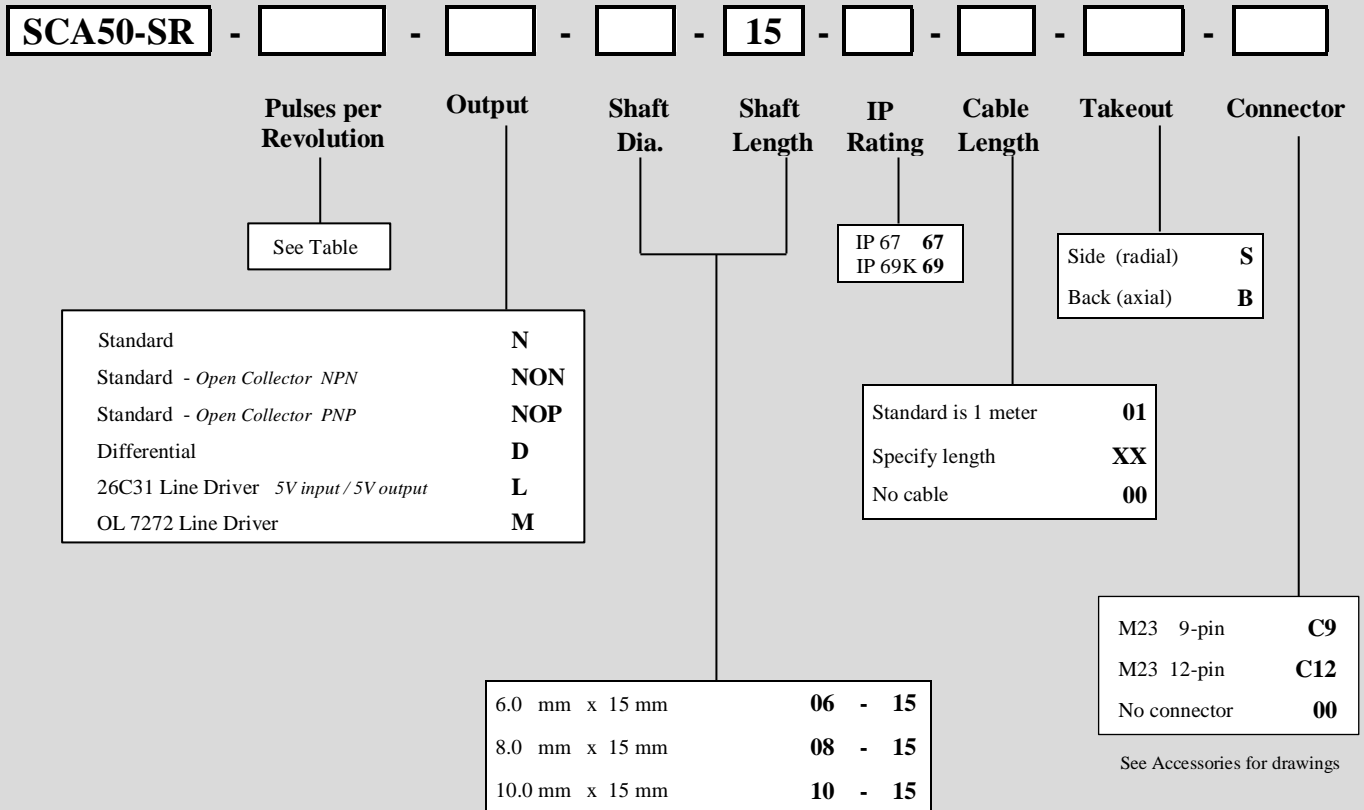
GND = Circuit Ground



Pin	M23 9 - pin	M23 9 - pin	M23 12 - pin	M23 12 - pin
	Standard Output	Differential Output	Standard Output	Differential Output
	Channel	Channel	Channel	Channel
1	A	A	GND	B -
2	B	B	NC	NC
3	Z	Z	Z	Z
4	GND	A -	GND	Z -
5	GND	B -	A	A
6	GND	Z -	GND	A -
7	Vsup	Vsup	NC	NC
8	GND	GND	B	B
9	Shield	Shield	Shield	Shield
10			GND	GND
11			NC	NC
12			Vsup	Vsup

Ordering Code

Example: SCA50-SR – 1024 – D – 06 – 15 – 67 – 01 – S – 00



Other options on request:
Please contact Scancon A/S