



## Type SCA58

- Shaft Encoder -  $\varnothing$  58 mm
- Shaft:  $\varnothing$  6 mm to  $\varnothing$  10 mm
- Resolution up to 12.500 ppr
- Standard IP 65 (IP 67 option)
- Formerly named 2RS

### Electrical Specifications

<b>Code:</b>	Incremental
<b>Resolution:</b>	1 to 12.500 ppr (pulses per revolution)
<b>Supply Voltage:</b>	4,5 Vdc min. to 30 Vdc max. (45 mA max. - no load) **
<b>Output Voltage:</b>	Low: 500 mV max. at 10 mA High: ( $V_{in} - 0,6$ ) at -10 mA ( $V_{in} - 1,3$ ) at -25 mA
<b>Output Current:</b>	30 mA max. load per output channel **
<b>Frequency Response:</b>	300 kHz max. **
<b>Output Format:</b>	Two channel (A, B) quadrature with Index (Z) and optional complementary (A-, B-, Z-) outputs
<b>Phase Sense:</b>	A leads B clockwise (CW) from the mounting end of the encoder
<b>Index:</b>	Gated with Channels A and B high
<b>Accuracy:</b>	+/- 0,8 arc-min.
<b>Outputs:</b>	ASIC Push pull and Differential OL7272 Push-pull and Differential Line Driver 26C31 Differential Line Driver 5V output (with 5V input)
<b>Electrical Protection:</b>	Reverse polarity and output short circuit protected
<b>Noise Immunity:</b>	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

<b>Material:</b>	Housing: Aluminum Cap: Electroplated Aluminum Shaft: Stainless Steel
<b>Weight:</b>	Encoder: ~ 140 gr (4,94 oz) Cable: 60 gr / meter (2,12 oz / meter)
<b>Bearing Life:</b>	> $1,9 \times 10^{10}$ revolutions at rated load
<b>Shaft Speed:</b>	12.000 rpm (max.)
<b>Starting Torque:</b>	< 0,01 Nm (1,42 oz-in) at 25° C
<b>Mass Moment of Inertia:</b>	2,0 gcm <sup>2</sup> ( $2,83 \times 10^{-5}$ oz-in-sec <sup>2</sup> )
<b>Shaft Loads:</b>	Axial: 20 N (4.5 lbs) max. Radial: 20 N (4.5 lbs) max.

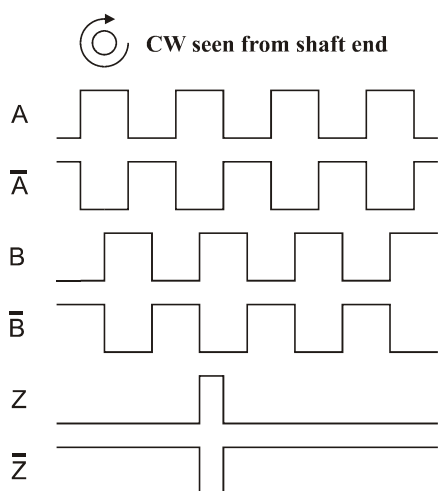
### Environmental Specifications

<b>Operating Temp.:</b>	-40° to +85° C
<b>Storage Temp.:</b>	-40° to +85° C
<b>Shock:</b>	100 G / 11 ms
<b>Vibration:</b>	10-2000 Hz / 10 G
<b>Bump:</b>	10 G / 16 ms (1000 x 3 axis)
<b>Humidity:</b>	98 % RH without condensation
<b>Enclosure Rating:</b>	IP 65 / Nema 4 (approx.) IP 67 / Nema 6 (approx.) option

### Connection Options

<b>Cable:</b>	8 leads (0,14 mm <sup>2</sup> , 26 AWG) - Differential 5 leads (0,14 mm <sup>2</sup> , 26 AWG) - Standard twisted pairs; shielded
<b>Connector:</b>	5-pin M12 - Standard 8-pin M12 - Differential 9-pin M23 - Standard/Differential 12-pin M23 - Standard/Differential

## Output waveform



**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**             $90\text{ e}^\circ \pm 18\text{ e}^\circ$

## Disk Resolutions (Pulses per revolution)

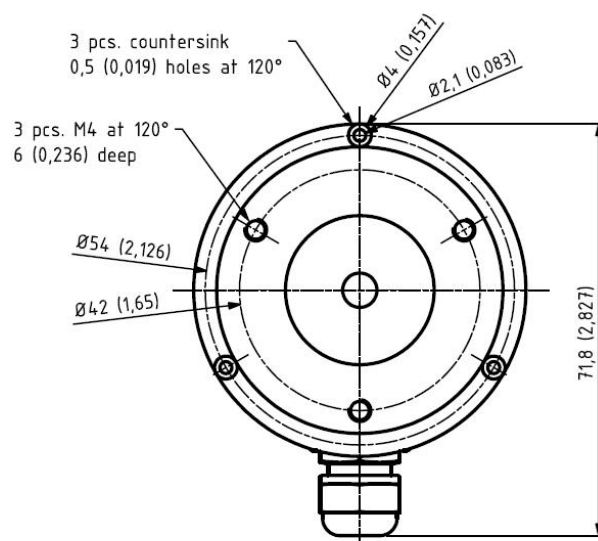
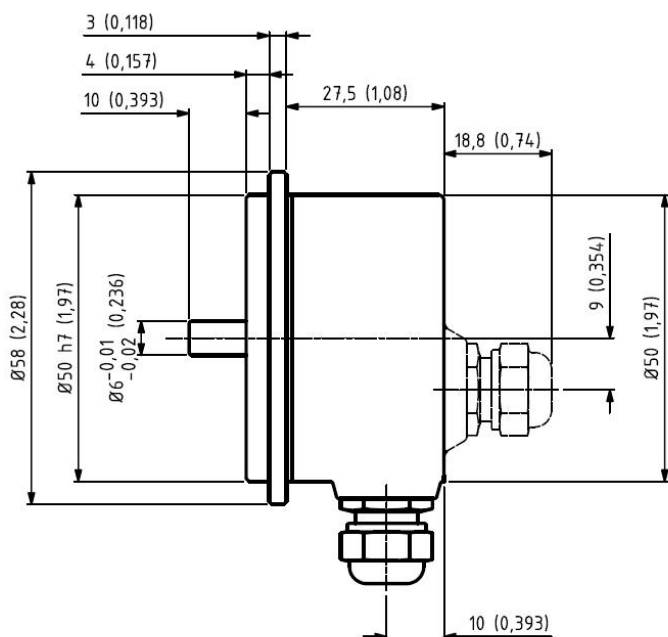
1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	10000*
16	75	455	1500	12500*
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

### Other options on request

Pulses per revolution,  
 min. 1 – max. 12.500

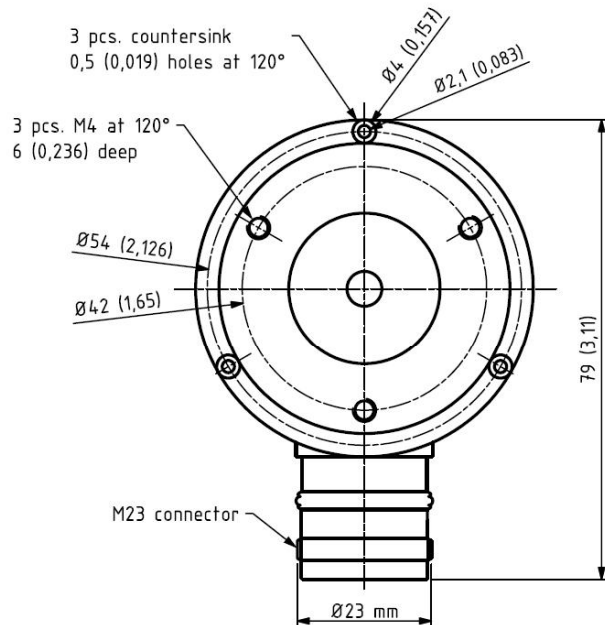
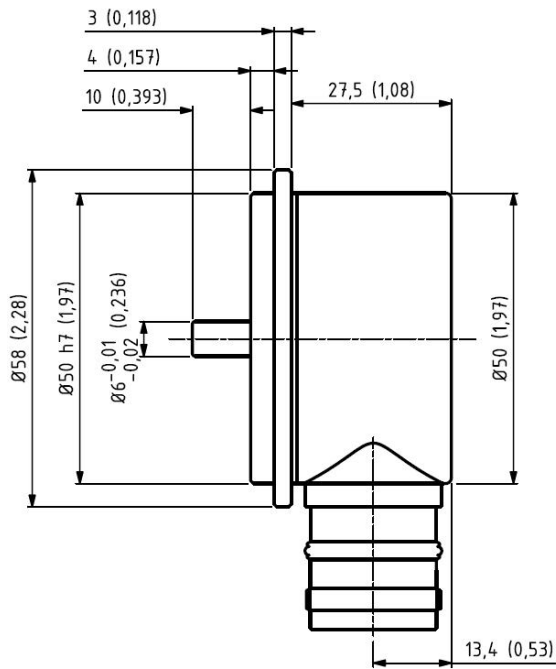
\* Operating temperature:  $-20^\circ\text{C}$  to  $50^\circ\text{C}$

## Mechanical Dimensions



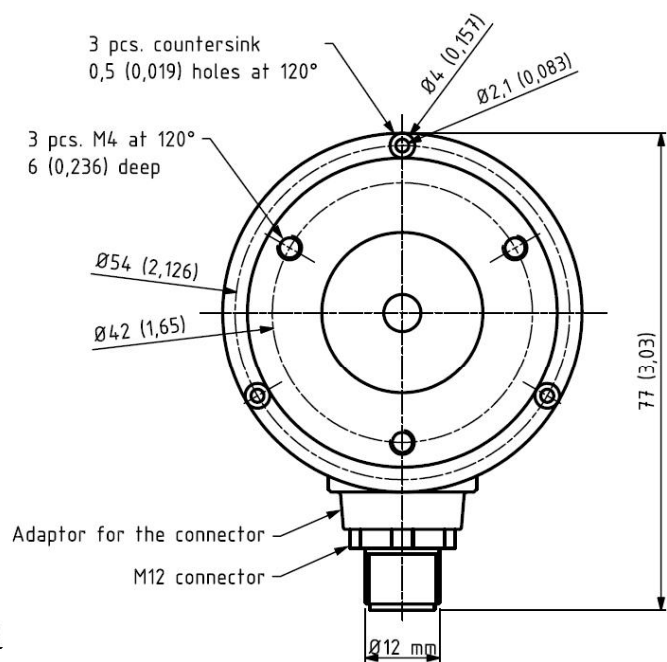
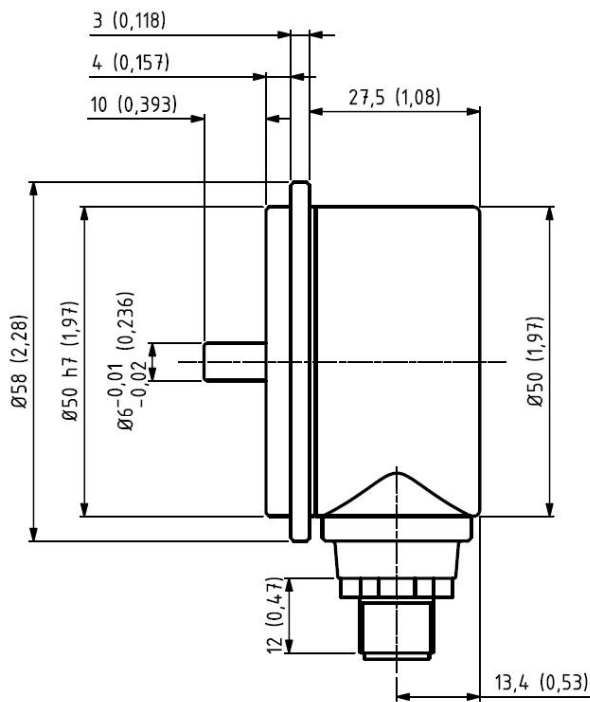
Standard Cable Gland  
 Side (S) or Back (B)

mm (inches)



M23 Connector

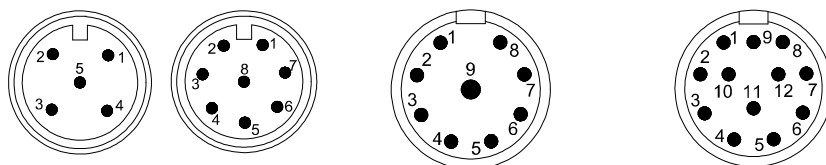
mm (inches)



M12 Connector

mm (inches)

## Output Terminations



Channel	Standard Cable	
	Standard Output	Differential Output
	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

GND = Circuit Ground

\* Internally connected as GND

Pin	M12 5 - pin	M12 8 - pin	M23 9 - pin	M23 9 - pin	M23 12 - pin	M23 12 - pin
	Standard Output	Differential Output	Standard Output	Differential 1 Output	Standard Output	Differential Output
	Channel	Channel	Channel	Channel	Channel	Channel
1	Vsup	A	A	A	GND	B -
2	B	Vsup	B	B	NC	NC
3	GND	A -	Z	Z	Z	Z
4	A	B	GND	A -	GND	Z -
5	Z	B -	GND	B -	A	A
6		Z	GND	Z -	GND	A -
7		GND	Vsup	Vsup	NC	NC
8		Z -	GND	GND	B	B
9			Shield	Shield	Shield	Shield
10					GND	GND
11					NC	NC
12					Vsup	Vsup

GND = Circuit Ground

Shield = Case Ground

## Ordering Code

Example: SCA58 – 1024 – D – 06 – 10 – 65 – 01 – S – 00

### Type

<b>SCA58</b>	-		-		-		-		-		-		-		
		<b>Pulses per Revolution</b>		<b>Output</b>		<b>Shaft Dia.</b>		<b>Shaft Length</b>		<b>IP Rating</b>		<b>Cable Length</b>		<b>Takeout</b>	
		See Table								IP 65 <b>65</b> IP 67 <b>67</b>				Side (radial) <b>S</b> Back (axial) <b>B</b> Tangential <b>T</b>	
				Standard <b>N</b> Standard - Open Collector NPN <b>NON</b> Standard - Open Collector PNP <b>NOP</b> Differential <b>D</b> 26C31 Line Driver 5V input / 5V output <b>L</b> 26C31 Line Driver 9 to 30V input / 5V output <b>5L</b> OL 7272 Line Driver <b>M</b>								Standard is 1 meter <b>01</b> Specify length <b>XX</b> No cable (connector option) <b>00</b>			
						6 mm x 10 mm <b>06 - 10</b> 8 mm x 10 mm <b>08 - 10</b> 10 mm x 10 mm <b>10 - 10</b> 10 mm x 25 mm <b>10 - 25</b>								M12 5-pin <b>P5</b> M12 8-pin <b>P8</b> M23 9-pin <b>C9</b> M23 12-pin <b>C12</b> No connector <b>00</b>	

See Accessories for drawings

**Other options on request:**  
Please contact Scancon A/S