



NB!

**Long
delivery
time**



Type SCA115

- Shaft Encoder – \varnothing 115 mm
- Shaft – \varnothing 11 mm
- Resolution up to 12,500 ppr
- IP 66 (IP 65 & IP 67 options)
- “Seawater-proof” 22 micron Anodization
- Built-in Transient Suppression Module

Electrical Specifications

Code:	Incremental
Resolution:	1 to 12,500 ppr (pulses per revolution)
Supply Voltage:	5V or 9- 30V **
Current Consumption:	45 mA max. (no load)
Supply Voltage and Output Specifications for various Output Standards:	TTL: $V_{sup} = 5V \pm 10\%$ $V_{high} \geq 4.3V @ I_{out} = -16 mA$ $V_{low} \leq 0.5V @ I_{out} = 16 mA$
	RS422: $V_{sup} = 5V \pm 10\%$ Min. diff. load (Z_o): 100 Ω $V_{diff} \geq 2.5V @ Z_o = 100 \Omega$ $V_{high} \geq 2.8V @ Z_o = 100 \Omega$ $V_{low} \leq 0.9V @ Z_o = 100 \Omega$
	HTL: $V_{sup} \geq 9V - 30V$ $V_{high} \geq V_{sup} - 1.8V @ I_{out} = -20mA$ $V_{low} \leq 0.8V @ I_{out} = 20 mA$
Output Current:	30 mA max. load per output channel **
Frequency Response:	300 kHz max.; 100 kHz with TSM **
Output Format:	Two channel (A, B) quadrature with Index (Z) and complementary (A-, B-, Z-) outputs
Phase Sense:	A leads B clockwise (CW) from the shaft end of the encoder
Index:	Gated with Channels A and B high
Accuracy:	+/- 0.8 arc-min.
Output:	OL7272 Line Driver HTL, TTL and RS422 compatible
Electrical Protection:	Output short circuit, reverse polarity (MS output only) and transient surge protected through built-in protection module (see TSM details on website)
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

Mechanical Specifications

Material:	Housing: Aluminum Cap: Aluminum Shaft: Stainless Steel (AISI 303)
Weight:	Encoder: Approx. 925 gr (32.65 oz)
Bearing Life:	> 1.9×10^{10} revolutions at rated load
Shaft Speed:	3,000 rpm max. IP 66 (IP 67 option) 4,500 rpm max. (IP 65 option)
Starting Torque:	< 0.1 Nm (14.16 oz-in) at 25° C
Mass Moment of Inertia:	10 gcm ² (3.68×10^{-4} oz-in-sec ²)
Shaft Loads:	Axial 100 N (22.5 lbs) max. Radial 100 N (22.5 lbs) max.

Environmental Specifications

Operating Temperature:	-40° to +85° C
Storage Temperature:	-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 66 / Nema 6 (approx.) IP 67 / Nema 6 (approx.) option IP 65 / Nema 4 (approx.) option 22 micron anodization
Transient Surge	Built-in protection module

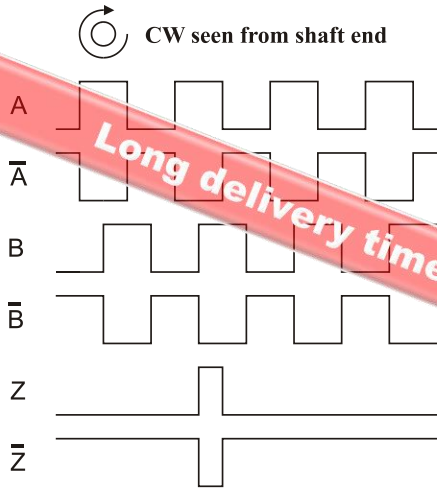
Connection Options

Cable:	8 leads (0.75 mm ² , 20 AWG) twisted pairs; shielded
Connectors:	9-lead terminal block (inside cap) M20 cable gland (cable \varnothing 8 – 14 mm)

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

Output waveform

Disk Resolutions (Pulses per revolution)



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

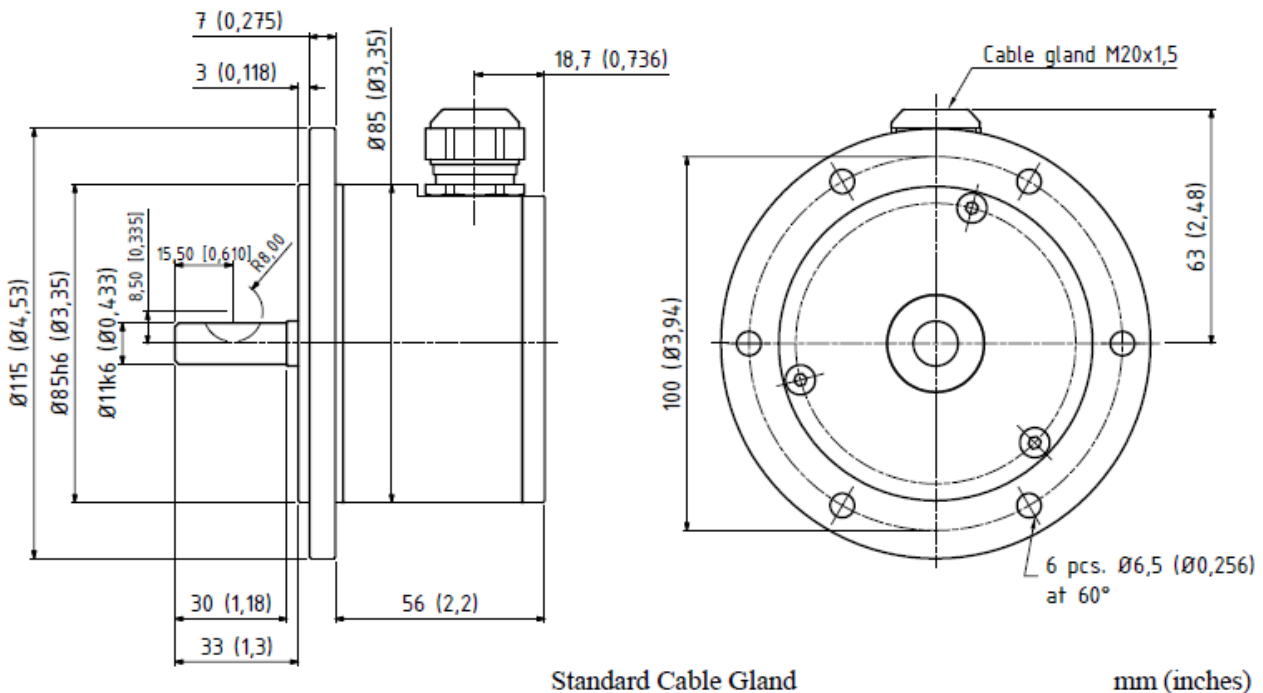
1	32	125	720	3072
2	36	150	800	3600
5	40	180	1000	4000
6	45	200	1024	4096
7	47	250	1131	5000
8	50	256	1200	8192
10	60	300	1250	9000*
12	64	360	1270	10000*
15	70	400	1500	12500*
16	75	455	2000	
18	80	500	2048	
20	90	512	2400	
25	100	600	2500	
30	120	635	3000	

Other options on request

Pulses per revolution,
 min. 1 – max. 12.500

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

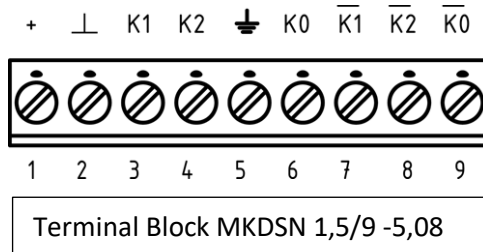
Mechanical Dimensions



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Output Terminations

Position	Terminal Block		Cable	
	Standard Output	Differential Output	Differential Output	
	Channel	Channel	Wire Color	
1	Vsup	Vsup	Vsup	Red
2	GND	GND	GND	Blue
3	Ch. A	Ch. A	Ch. A	Pink
4	Ch. B	Ch. B	Ch. B	Green
5	Shield	Shield		
6	Ch. Z	Ch. Z	Ch. Z	White
7	*	Ch. A -	Ch. A-	Gray
8	*	Ch. B -	Ch. B-	Yellow
9	*	Ch. Z -	Ch. Z-	Brown



* Do not attach any wires to terminal block

GND = Circuit Ground Shield = Case Ground

Ordering Code

Example: SCA115 – 4096 – MS – 11 – 30 – 66 – 00 – CG1

Type

SCA115	-		-		-		-		-		-			
		Pulses per Revolution		Output		Shaft Dia.	-	Shaft Length		IP Rating		Cable Length		Cable Takeout or Cable Gland
		See table				11 mm x 30 mm		11 - 30		IP 65 65 IP 66 66 IP 67 67				Cable Side (radial) takeout S Cable Gland (no cable) Fits Ø 8 – 11 mm cable CG1 Fits Ø11 – 14 mm cable CG2
		HTL 9V – 30V TTL and RS-422 5V only*		MS MT								Standard (1 meter is standard) 01 Specify length XX No cable (Cable Gland option) 00		

* Not Reverse Polarity Protected

Other options on request:
Please contact Scancon A/S