

Scancon SCA115



Introduction

This encoder is designed for use in harsh environments with specific application to the wind power and energy industry.

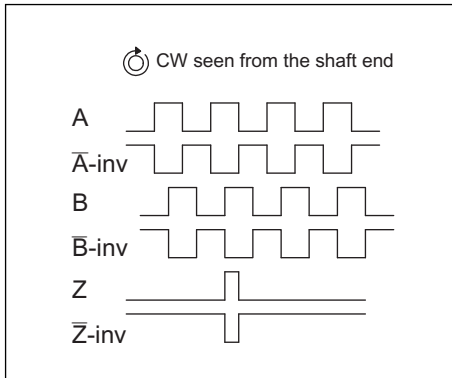
MECHANICAL SPECIFICATIONS

Material	the encoder housing and cap are made of marine grade aluminum which is anodized to 22 microns for ocean environment corrosion protection. The encoder shaft is made of stainless steel.
Ball Bearings	the SCA115 is constructed with steel preloaded ball bearings. Both ball bearings are made with a two-sided seal (IP 65) to protect against dust and jets of water. Lifetime of the ball bearings is $> 2 \times 10^{10}$ revolutions. Assuming an operating time of 20 years and a 4-pole generator operating at 60 Hz, the ball bearings would have lifetime of: $1800 \text{ rpms} \times 60 \text{ min/hr} \times 24 \text{ hrs/day} \times 365 \text{ days/yr} \times 20 \text{ yrs} = 1.89 \times 10^{10}$ revolutions
Metal disk Plastic disk or Glass disk	1~600 PPR = Metal disk 635~1024 PPR = Plastic disk 635~12500 PPR = Glass disk
Starting Torque	$< 0.1 \text{ Nm}$ ($< 0.074 \text{ ft-lb}$) at 25° C
Mass Moment of Inertia	8 g/cm^2
Shock	maximum 100G / 11 ms
Vibration	(10 – 2000 Hz) / 10G
Environmental Protection	IP 67 inside the encoder cap are two Viton O-rings which act as a static seal along the contact between the cap and the housing. The SCA115 is also equipped with a rotary seal.
Current Transmission Along the Shaft	the customer-provided shaft coupling contains a non-conductive plastic insert. This coupling is located between the motor shaft and the encoder shaft thereby preventing current transmission into the encoder.
Transient Surge Protection	the encoder is protected against electrical disturbances coming back through the encoder cable.
Shaft Loads	axial maximum = 250 N (56 lb.) radial maximum = 250 N (56 lb.)

ELECTRICAL SPECIFICATIONS

Output Waveform	incremental (A, A-, B, B-, Z, Z-); waveform displacement is 90°e +/- 18°e; Z pulse is gated with A and B channels
Output Signals	Differential (RS-422A compatible @ 5V)
EMC	complies with the following standards: EN 50081-1 , EN 50082-2
Current No Load	45 mA
Maximum Load per Output	30 mA (short circuit protected)
Supply Voltage	minimum 4.5 V to maximum 30 V
V _{out} low	maximum 500 mV @ I = 10 mA
V _{out} high	minimum (Vin -0.6) @ I = -10 mA minimum (Vin -1.3) @ I = -24 mA
Operating Temperature	- 40°C to +85° C
Storage Temperature	- 40°C to +85° C

OUTPUT WAVEFORM



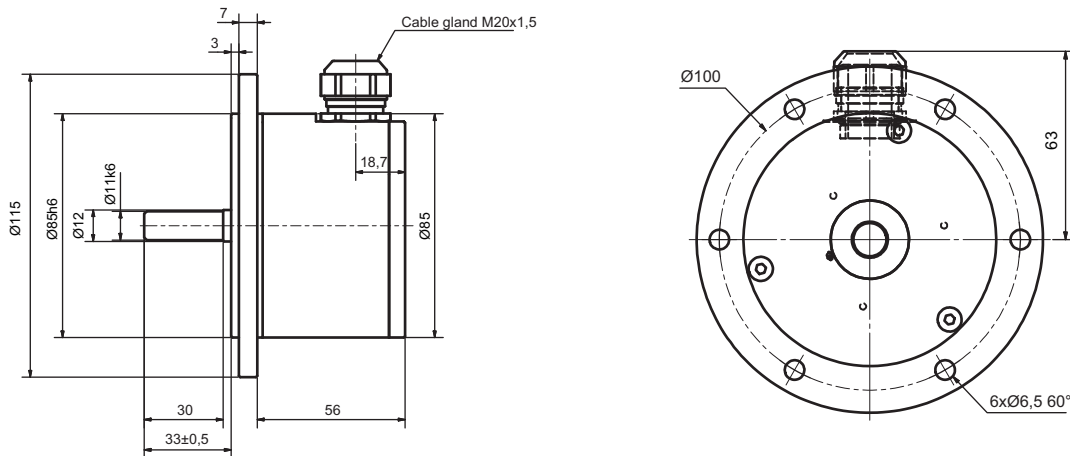
CONNECTIONS

PCB

Differential PIN NR:

- 1 + VDD
- 2 ⊥ O_volt
- 3 K1 Channel A
- 4 K2 Channel B
- 5 ⊥ Case Ground
- 6 K0 Channel Z
- 7 K̄1 Channel A not
- 8 K̄2 Channel B not
- 9 K̄0 Channel Z not

MECHANICAL DIMENSIONS



ORDERING CODES

Ordering Codes System Incremental Shaft Encoder — SCA115

Ordering Codes: SCA115 XXXXX — XX — X — XX — XX — XXX — X

Pulses pr. rev:	No. of pulses					XXXXX						
	1	32	150	600	2048							
	2	36	180	635	2500							
	5	40	200	720	3000							
	6	50	250	800	3600							
	8	60	256	1000	4000							
	10	64	300	1024	4096							
	15	75	360	1131	5000							
	16	80	400	1250	9000							
	20	90	455	1500	10000							
	25	100	500	2000	12500							
	30	125	512									
	Disk type:	Metal disk (1~600 PPR)					MD					
Plastic disk (635~1024 PPR)					PD							
Glass disk (635~12500 PPR)					GD							
Output signal:	Normal, Standard, A, B, Z (3 channels)					N						
	Differential: A, B, Z and A-inv, B-inv, Z-inv (6 channels)					D						
	Line driver OL 7272 for extra long cable, up to 100 meters (Differential)					M						
	Line driver chip 26C31 (V out low <0,4 V) (RS-422A compatible @ 5V) Only 5 Volt (Differential)					L						
Shaft dimensions:	Ø11 mm x 30 mm							11x30				
IP-rating:	IP66								66			
	IP67								67			
Connection:	PCB									PCB		
Cable Gland take out:	Side M20x1,5 Cable dia. Ø11-14,5 Short thread										S	

Warranty

Scancon A/S warrants against manufacturing defects for a period of 24 months from the date of manufacture.

Product dimensions, weights and all product illustrations are approximate and may be modified without prior notice.

This warranty does not cover problems or consequences due to common usage (wear and tear) for which the product was designed. Nor does it cover product failures caused by improper installation or use, overloading, incorrect maintenance, or operation outside the product's specifications.

Detailed warranty information can be found in Scancon's Terms & Conditions