Scancon SCA115

CE

Introduction

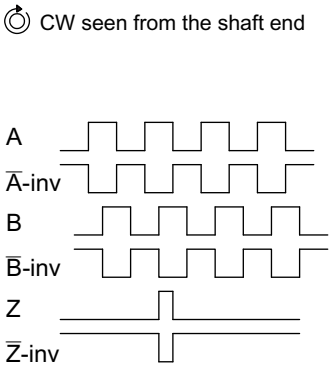
This encoder is designed for use in harsh environments with specific application to the wind power and energy industry.

MECHANICAL SPECIFICATIONS	
Weight	~900g without cable
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 x10^{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 rpms x 60 min/hr x 24 hrs/day x 365 days/yr x 20 yrs = 1.89 x 10^{10} revolutions
Metal disk Glass disk Plastic disk	1-600 PPR = Metal disk 635-12500 PPR = Glass disk also available 1000,1024,1200 PPR in unbreakable plastic
Starting Torque	< 0.1 Nm (< 0.074 ft-lb) at 25° C
Mass Moment of Inertia	8 gcm^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 by a built-in Transition Suppressing Module (TSM).
Shaft Loads	axial maximum = 250 N (56 lb_f) radial maximum = 250 N (56 lb_f)
Max speed	IP 64 to 65 = 6000 RPM IP 66 to 67 = 3000 RPM

ELECTRICAL SPECIFICATIONS

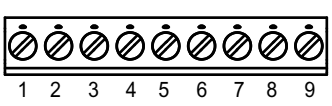
Output Waveform	incremental (A, A-, B, B-, Z, Z-); waveform displacement is 90°e +/- 18°e; Z pulse is gated with A and B channels
Output Signals	Differential (RS-422A compatible @ 5V)
EMC	complies with the following standards: EN 50081-1 , EN 50082-2
Current No Load	Max. 45 mA
Maximum Load per Output	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

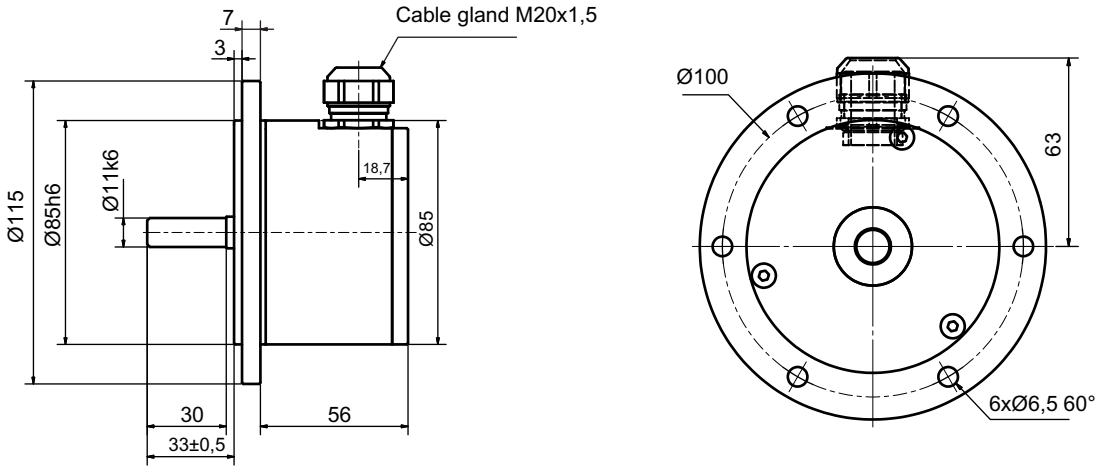
PCB



Differential PIN NR:

1	+	VDD
2	⊥	O_volt
3	K1	Channel A
4	K2	Channel B
5	⏚	Case Ground
6	K0	Channel Z
7	$\overline{K1}$	Channel A not
8	$\overline{K2}$	Channel B not
9	$\overline{K0}$	Channel Z not

MECHANICAL DIMENSIONS



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

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 32 125 512 635 2500 1000 2 36 150 600 720 3000 1024 5 40 180 800 3600 1200 6 50 200 1000 4000 8 60 250 1024 4096 10 64 256 1131 5000 15 75 300 1200 9000 16 80 360 1250 10000 20 90 400 1500 12500 25 100 455 2000 30 120 500 2048							
Disk type:	Metal disk.....		MD					
	Glass disk		GD					
	Plastic disk...		P D					
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				11×30			
IP-rating:	IP 66					66		
	IP 67					67		
Connection:	PCB						PCB	
Cable Gland take out:	Side M20x1,5 Cable dia. Ø11-14,5 Short thread							S