



**2RS**

**CE**

**Introduction**

Standard shaft encoder  
Std. IP-65 ( option IP-67 )  
Thermal shut down at 155°C  
Strong compact electronics  
Based on 2 precision ball bearings,  
for harsh industrial environments

**MECHANICAL SPECIFICATIONS**

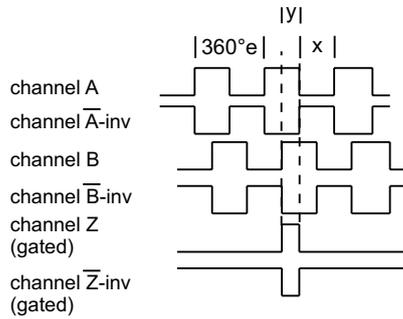
Weight	About 130g + cable 60g/meter
Material	Housing - Aluminum Shaft - Stainless Steel Bearings - Lifetime lubricated ball bearings
Shaft Loads	axial maximum = 20 N radial maximum = 20 N
Max. rev.	12,000 rev./min.
IP-rating	Standard IP 65 , Option IP 67
Start Torque	< 0,01 Nm at 25° C
Mass Moment of Inertia	2 gcm <sup>2</sup>
Shock	maximum 100G / 11 ms
Bump	10G - 16 ms (1000 × 3 axis)
Vibration	(10-2000Hz)/ 10G

**ELECTRICAL SPECIFICATIONS**

Output Waveform	Incremental (A, B, Z and inverted )
Output Signals	Standard, Inverted, Differential (RS-422A compatible @ 5V)
Current No Load	Max.45 mA
Max. load pr. output	30 mA - (Short circuit protected)*
Supply-Voltage(Vin)	Min 4,5V to Max. 30V* , Reverse polarity protection
V <sub>out</sub> low	maximum 500 mV @ I = 10 mA
V <sub>out</sub> high	minimum (Vin -0.6) @ I = -10 mA minimum (Vin -1.3) @ I = -25 mA
Operating Temp.	- 40°C to +85°C
Storage Temp.	- 40°C to +85°C

## OUTPUT WAVEFORM

Rotation: Clockwise (cw) from shaftside



$X = 180^\circ e \pm 36^\circ e$  and  $Y = 90^\circ e \pm 18^\circ e$   
Z puls: Gated with A and B (standard)

**Options:** TTL or HTL compatible. Open Collector NPN or PNP  
Gated Z-puls or none-gated Z-puls.  
View more Output options in section 15 - page 1 to 2

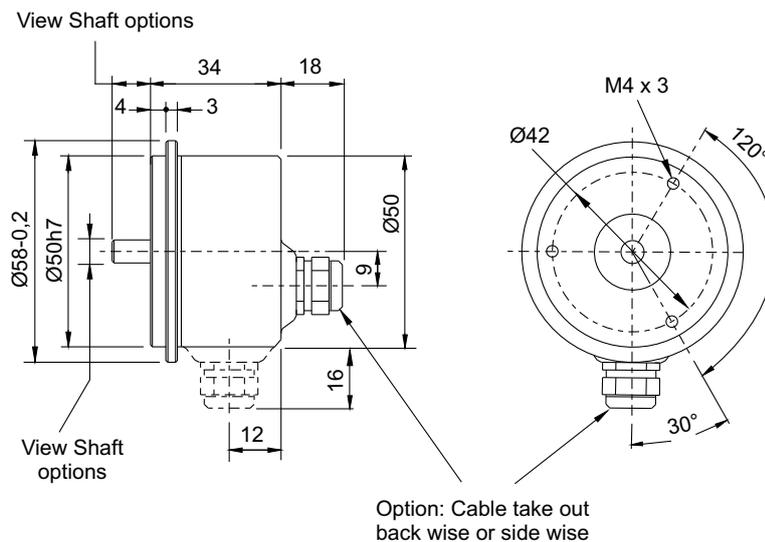
## CONNECTIONS

Color code	Standard
Pink	Ch. A
Grey*	Ch. A Gnd
Green	Ch. B
Yellow*	Ch. B Gnd
White	Ch. Z
Brown*	Ch. Z Gnd
Red	Vcc
Blue*	Gnd

\*Blue, grey, yellow and brown are internal connected

Color code	Differential
Pink	Ch. A
Grey	Ch. A inv
Green	Ch. B
Yellow	Ch. B inv
White	Ch. Z
Brown	Ch. Z inv
Red	Vcc
Blue	Gnd

## MECHANICAL DIMENSIONS



ORDERING CODES

Ordering Codes System  
Incremental Shaft Encoder — 2RS

Ordering Codes: 2RS    XXXXX    —    XX    —    XXXXX    —    XX    —    XX    —    X

Pulses pr. rev:	No. of pulses	XXXXX					
	1 25 80 300 800 2500 12500						
	2 30 90 360 1000 3000						
	5 32 100 400 1024 3600						
	6 36 125 455 1131 4000						
	8 40 150 500 1250 4096						
	10 50 180 512 1500 5000						
	15 60 200 600 2000 9000						
	16 64 250 635 2048 8192						
	20 75 256 720 2400 10000						
Output signal:	Normal (TP-Standard) 3 channel = A, B, Z		N				
	TP-Differential, 6 channel A, B, Z and A-inv, B-inv, Z-inv		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				
	Line Driver RS-422, Chip 26C31 Volt out 5 volt Volt in 5 to 30 (Differential)		5L				
Shaft dimensions:	Ø6 mm × 10 mm			06 × 10			
	Ø8 mm × 10 mm			08 × 10			
	Ø10 mm × 10 mm			10 × 10			
	Ø10 mm × 25 mm			10 × 25			
IP-rating:	IP 65				65		
	IP 67				67		
Cable Length:	Standard 1 meter					01	
	No. of meters					XX	
Cable take out: (or connector)	Back (Axial) Side (Radial)						B S
Connector:	Coninvers Connector or MIL-connector View Section 14 page 3 to 6						
More accessories							
Measuring wheel and couplings:	View Section 14 page 1 to 2						
Anti rotation spring and adaptors:	View Section 10 page 1 to 6						

## WARRANTY

Scancon A/S warrants against manufacturing defects for a period of 12 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