



2R

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

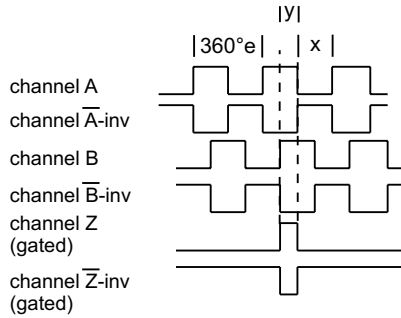
Weight	About 130g + cable 60g/meter
Material	Housing - Aluminum Shaft - Stainless Steel Bearings - Lifetime lubricated ball bearings
Shaft Loads	axial maximum = 20 N radial maximum = 20 N
Max. rev.	12,000 rev./min.
IP-rating	Standard IP 65 , Option IP 67
Start Torque	< 0,01 Nm at 25° C
Mass Moment of 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

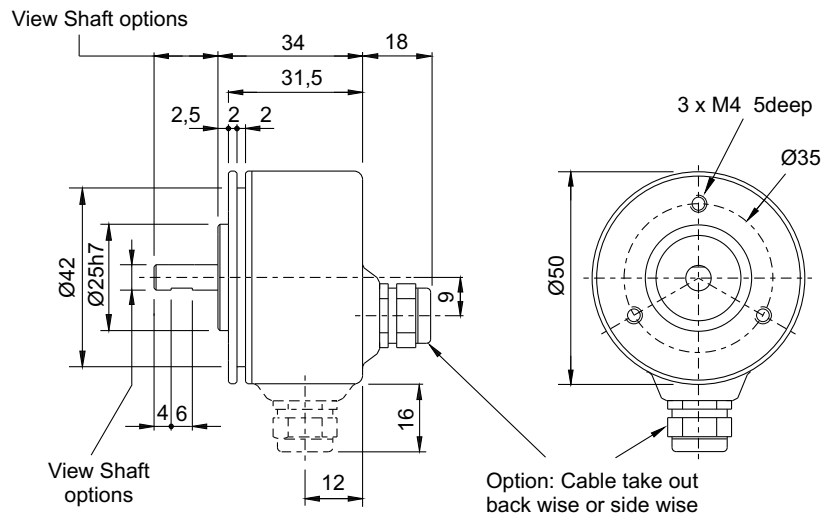
## CONNECTIONS

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



Option: Anti rotation spring coupling; view section 10, page 6

ORDERING CODES

Ordering Codes System  
Incremental Shaft Encoder — 2R

Ordering Codes: 2R      XXXX    —    XX    —    XXXXX    —    XX    —    XX    —    X

Pulses pr. rev:	No. of pulses	XXXX						
	1 20 64 200 512 1250 4000							
	2 25 75 250 600 1500 4096							
	5 30 80 256 635 2000 5000							
	6 32 90 300 720 2048 8192							
	8 36 100 360 800 2400 9000							
	10 40 125 400 1000 2500 10000							
	15 50 150 455 1024 3000 12500							
	16 60 180 500 1131 3600							
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 × 15 mm			06 × 15				
	Ø6 mm × 30 mm			06 × 30				
	1/4"(Ø6,35mm) × 15 mm			1/4 × 15				
	Ø8mm × 15 mm (option; Flat on Shaft)			08 × 15				
	3/8"(Ø9,525) × 15 mm			3/8 × 15				
	Ø10mm × 15 mm			10 × 15				
	Ø10mm × 27 mm			10 × 27				
	Ø10 × 40 mm			10 × 40				
	Ø12 × 15 mm			12 × 15				
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)							B
	Side (Radial)							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