



## 2RHF



### Introduction

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

### MECHANICAL SPECIFICATIONS

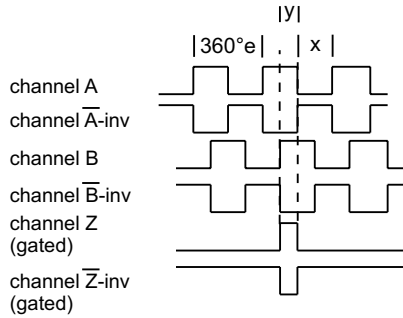
Weight	About 120g
Material	Housing - Aluminum Shaft - Brass Bearings - Lifetime lubricated ball bearings
H.Shaft Loads	axial maximum = 20 N radial maximum = 20 N
Max. rev.	12,000 rev./min.
IP-rating	Standard IP 65
Start Torque	< 0,01 Nm at 25° C
Mass Moment of Inertia	4 gcm <sup>2</sup>
Shock	maximum 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	Normal (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

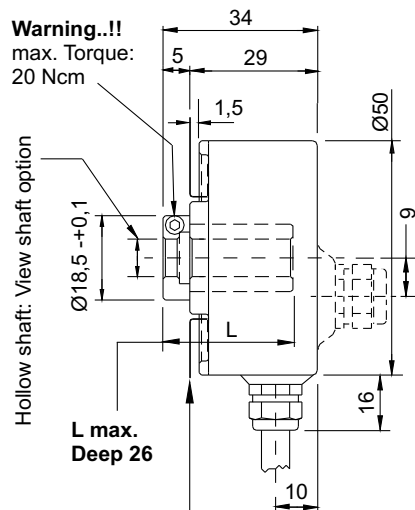
## CONNECTIONS

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

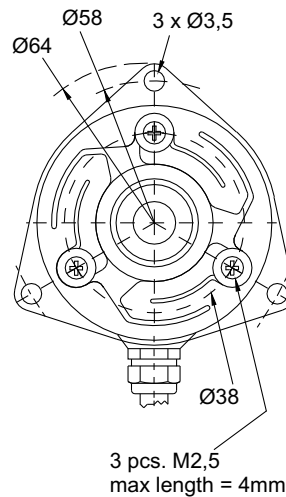
\*Blue, grey, yellow and brown are internal connected

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



Torsionally stiff spring coupling  
Option: 3-Point coupling  
or Y-coupling  
Max. movement axial  $\pm 0,25$   
Max. movement radial  $\pm 0,05$



(Tolerance mm - + 0,2)

## ORDERING CODES

### Ordering Codes System Incremental Shaft Encoder — 2RHF

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

Pulses pr. rev:	No. of pulses	XXXXX						
	1 25 80 300 800 3000							
	2 30 90 360 1000 3600							
	5 32 100 400 1024 4000							
	6 36 125 455 1131 4096							
	8 40 150 500 1250 5000							
	10 50 180 512 1500 9000							
	15 60 200 600 2000 10000							
	16 64 250 635 2048 12500							
	20 75 256 720 2500							
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					
H.-Shaft dimensions: (Max deep 26mm)	Ø6 mm (tolerance G7) Ø8 mm (tolerance G7) ¼" (6,35mm)			06 08 ¼				
IP-rating:	IP 65				65			
Cable Length:	Standard 1 meter No. of meters					01 XX		
Cable take out: (or connector)	Back (Axial) Side (Radial)							B S
Connector:	Coninvers Connector or MIL-connector View Section 14 page 3 to 5							
More accessories Anti rotation spring and adaptors:								View Section 12 page 1 to 8

## 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