



## Type 2RHDS

- Shaft Encoder
- Shaft -  $\varnothing$  12 mm and  $\varnothing$  15 mm
- Resolution up to 9.000 ppr
- IP 65 (IP67 & 68 option)

### Electrical Specifications

<b>Code:</b>	Incremental
<b>Resolution:</b>	1 to 9000 ppr (pulses per revolution)
<b>Supply Voltage:</b>	4,5 Vdc min. to 30 Vdc max. ** (35 mA max. - no load)
<b>Output Voltage:</b>	Low: 500 mV max. at 10 mA High: ( $V_{in} - 0,6$ ) at -10 mA ( $V_{in} - 1,3$ ) at -25 mA
<b>Output Current:</b>	30 mA max. load per output channel **
<b>Frequency Response:</b>	300 kHz max. **
<b>Output Format:</b>	Two channel (A, B) quadrature with Index (Z) and optional complementary (A-, B-, Z-) outputs
<b>Phase Sense:</b>	A leads B clockwise (CW) from the mounting end of the encoder
<b>Index:</b>	Gated with Channels A and B high
<b>Accuracy:</b>	+/- 0,8 arc-min.
<b>Outputs:</b>	ASIC Push pull and Differential OL7272 Push-pull and Differential Line Driver 26C31 Differential Line Driver 5V output (with 5V input)
<b>Electrical Protection:</b>	Reverse polarity and output short circuit protected
<b>Noise Immunity:</b>	Tested to EN61000-6-2 : 2005 (industrial environments) Electromagnetic compatibility (EMC) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

\*\* = It is recommended user not to combine max. values for all 3 parameter

### Mechanical Specifications

<b>Material:</b>	Housing: Aluminum Cap: Aluminum Hollow Shaft: Aisi 303
<b>Weight:</b>	Encoder: ~ 990 gr (34,92 oz) Cable: 50 gr / meter (1,76 oz / meter)
<b>Bearing Life:</b>	> $1,9 \times 10^{10}$ revolutions at rated load
<b>Shaft Speed:</b>	3 000 rpm (max.)
<b>Starting Torque:</b>	< 0,1 Nm (14,2 oz-in) at 25° C
<b>Mass Moment of Inertia:</b>	45 gcm <sup>2</sup> ( $6,4 \times 10^{-4}$ oz-in-sec <sup>2</sup> )
<b>Shaft Loads:</b>	Axial: 250 N (56 lbs) max. Radial: 500 N (112 lbs) max.

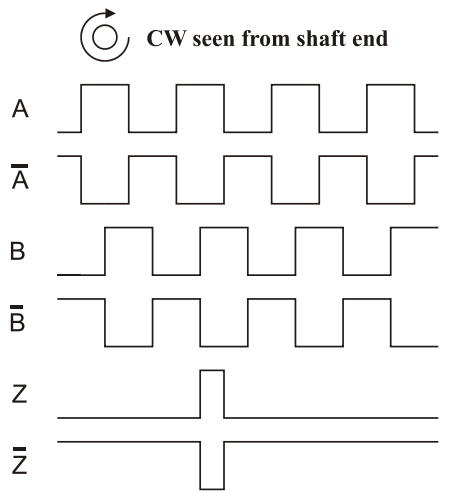
### Environmental Specifications

<b>Operating Temp.:</b>	-40° to +85° C
<b>Storage Temp.:</b>	-40° to +85° C
<b>Shock:</b>	100 G / 11 ms
<b>Vibration:</b>	10-2000 Hz / 10 G
<b>Bump:</b>	10 G / 16 ms (1000 x 3 axis)
<b>Humidity:</b>	98 % RH without condensation
<b>IP Rating:</b>	IP 65 / Nema 4 (approx.) IP 67 / Nema 6 (approx.) option

### Connection Options

<b>Cable:</b>	8 leads (0,14 mm <sup>2</sup> , 26 AWG) - Standard twisted pairs; shielded
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## Output waveform



Channel tolerance  $180 e^\circ \pm 36 e^\circ$   
 Phase difference tolerance  $90 e^\circ \pm 18 e^\circ$   
 Z channel tolerance  $90 e^\circ \pm 18 e^\circ$

## Disk Resolutions (pluses per revolution)

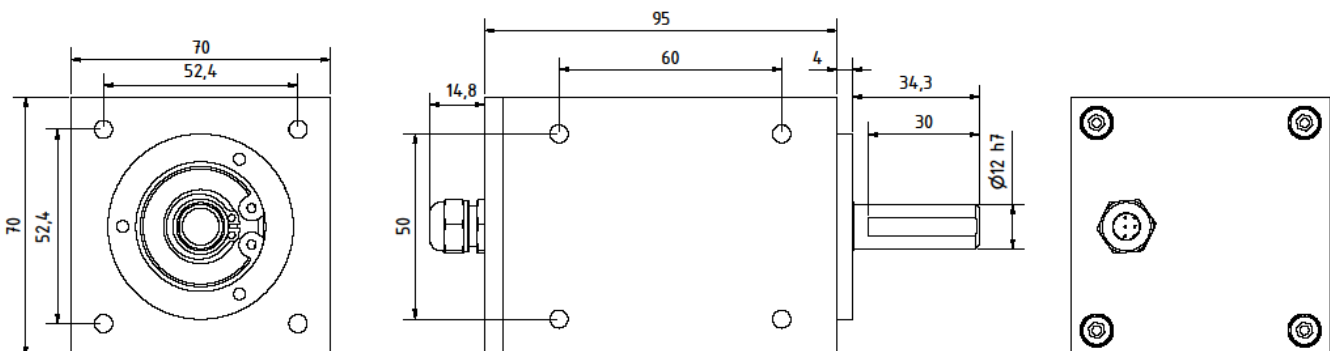
1	30	100	512	2048
2	32	120	600	2400
5	36	125	635	2500
6	40	150	720	3000
7	45	180	800	3072
8	47	200	1000	3600
10	50	250	1000	4000
12	60	256	1024	4096
15	64	300	1131	5000
16	70	360	1200	8192
18	75	400	1270	9000*
20	80	455	1500	
25	90	500	2000	

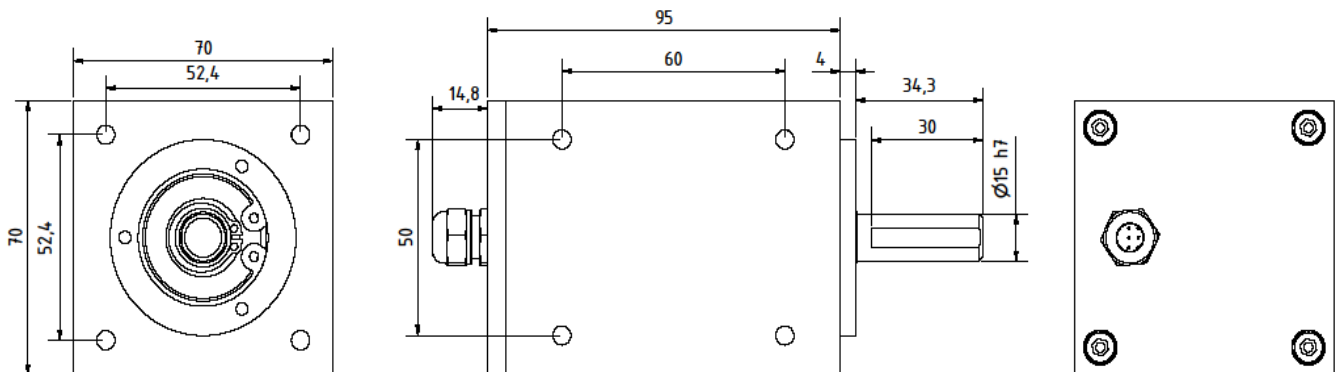
### Other options on request

Pulses per revolution,  
 min. 1 – max. 9.000

\* Operating temperature:  $-20^\circ C$  to  $50^\circ C$

## Mechanical Dimensions





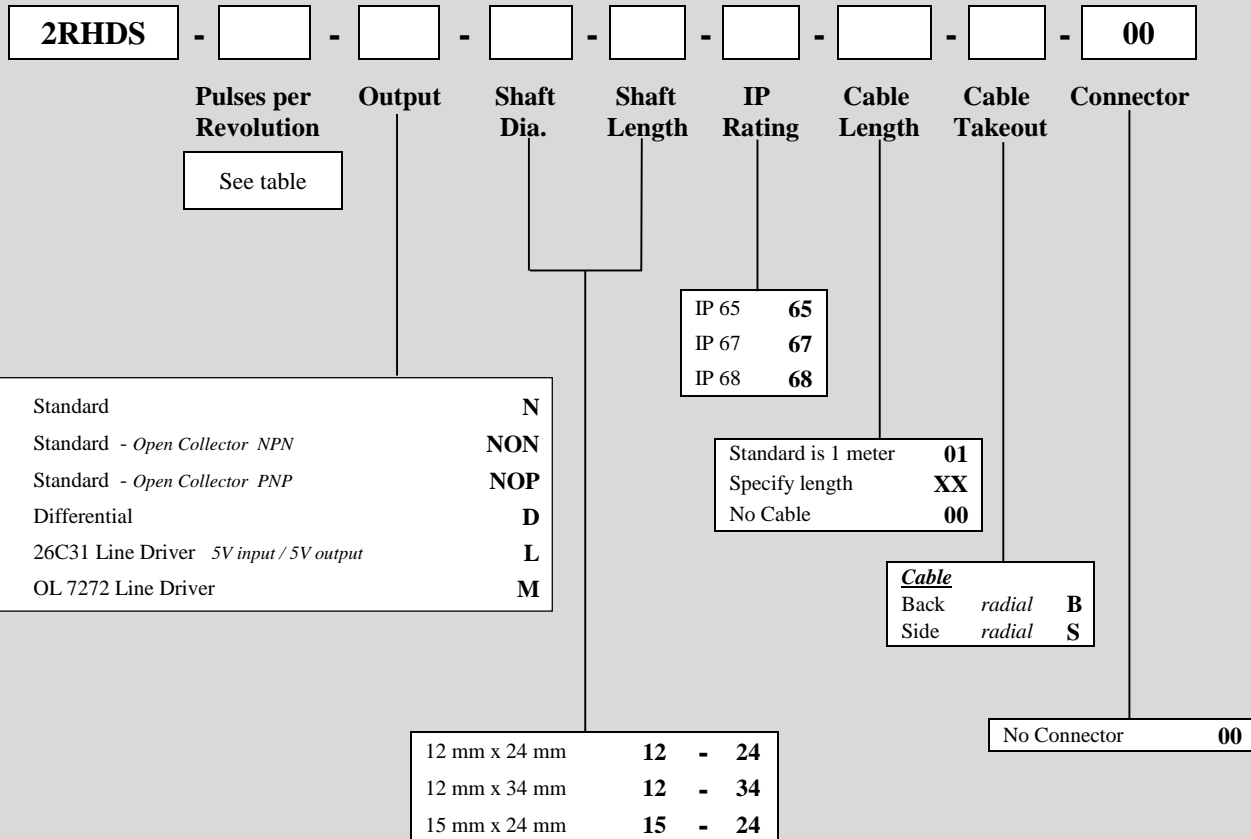
## Output Terminations

	Standard Cable	
	Standard Output	Differential Output
Channel	Wire Color	
A	Pink	Pink
A -	Gray*	Gray
B	Green	Green
B -	Yellow*	Yellow
Z	White	White
Z -	Brown*	Brown
Vsup	Red	Red
GND	Blue	Blue

GND = Circuit Ground

## Ordering Code

Example: 2RHDS – 1024 – D – 15 – 24 – 65 – 01 – B – 00



**Other options on request:**  
 Please contact Scancon A/S