

Type 2RHDS

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

Electrical Specifications

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

Material:	Housing: Aluminum Cap: Aluminum Hollow Shaft: Aisi 303
Weight:	Encoder: ~ 990 gr (34,92 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	> 1,9 x 10^{10} revolutions at rated load
Shaft Speed:	3 000 rpm (max.)
Starting Torque:	< 0,1 Nm (14,2 oz-in) at 25° C
Mass Moment of Inertia:	45 gcm² (6,4 x 10^{-4} oz-in-sec²)
Shaft Loads:	Axial: 250 N (56 lbs) max. Radial: 500 N (112 lbs) max.

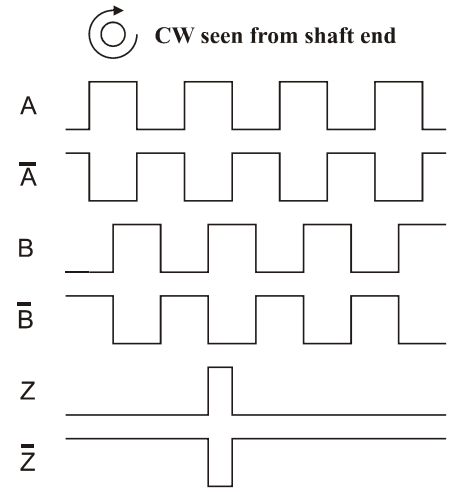
Environmental Specifications

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

Connection Options

Cable:	8 leads (0,14 mm², 26 AWG) - Standard twisted pairs; shielded

Output waveform



Channel tolerance	**180 e°**	**+/-**	**36 e°**
Phase difference tolerance	**90 e°**	**+/-**	**18 e°**
Z channel tolerance	**90 e°**	**+/-**	**18 e°**

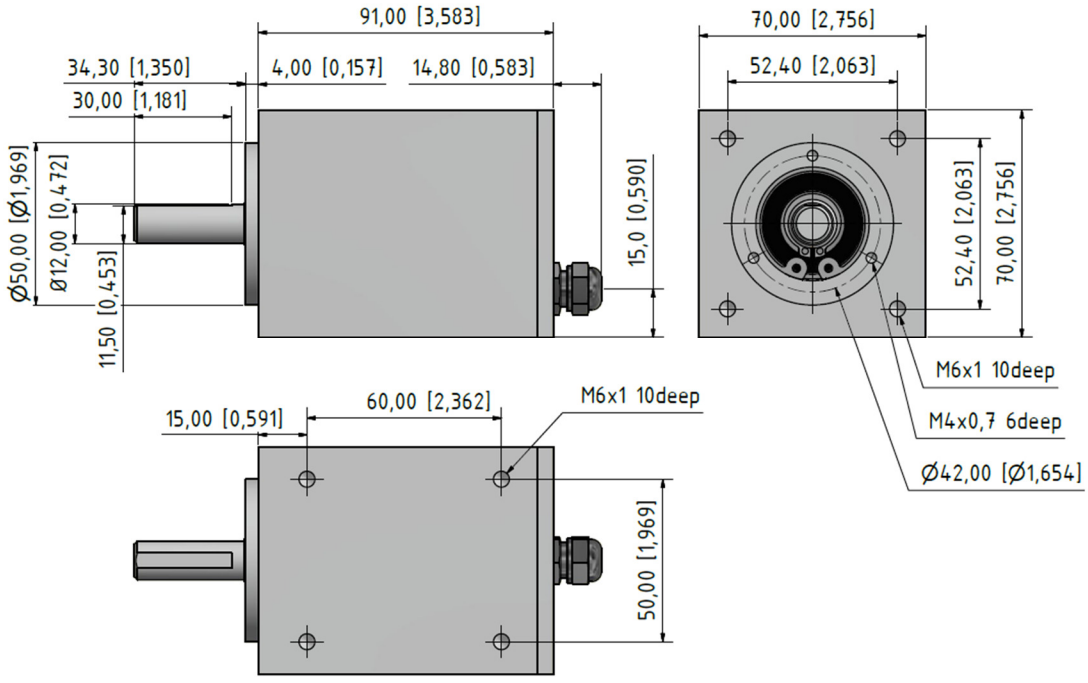
Disk Resolutions (pluses per revolution)

1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	
16	75	455	1500	
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

Other options on request
Pulses per revolution,
min. 1 – max. 9.000

* ***Operating temperature: -20° C to 50° C***

Mechanical Dimensions



Global tolerance ±0,2 [0,008] mm [inches]

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

2RHDS	-		-		-		-		-		-		-	00
		Pulses per Revolution		**Output**		**Shaft Dia.**		**Shaft Length**		**IP Rating**		**Cable Length**		**Cable Takeout**		**Connector**

Pulses per Revolution

See table

Output

Standard	**N**
Standard - *Open Collector NPN*	**NON**
Standard - *Open Collector PNP*	**NOP**
Differential	**D**
26C31 Line Driver *5V input / 5V output*	**5L**
OL 7272 Line Driver	**M**

Shaft Dia. / Shaft Length

12 mm x 24 mm	**12**	**-**	**24**
12 mm x 34 mm	**12**	**-**	**34**
15 mm x 24 mm	**15**	**-**	**24**

IP Rating

IP 65	**65**
IP 67	**67**
IP 68	**68**

Cable Length

Standard is 1 meter	**01**
Specify length	**XX**
No Cable	**00**

Cable Takeout

Cable		
Back	*radial*	**B**
Side	*radial*	**S**

Connector

No Connector	**00**

Other options on request:
Please contact Scancon A/S