Type 2RK

- **Shaft Encoder - ø 58 mm**
- **Shaft: ø 1/4" to ø 10 mm**
- **Resolution up to 12.500 ppr**
- **Standard IP 65 (*IP 67 options*)**

Electrical Specifications

Code:	Incremental
Resolution:	1 to 12.500 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 Shaft: Stainless steel AISI 303
Weight:	Encoder: ~ 190 gr (6,7 oz) Cable: 60 gr / meter (2,12 oz / meter)
Bearing Life:	> 1,9 x 10^{10} revolutions at rated load
Shaft Speed:	4.500 rpm (max. sustained) IP 65 3.000 rpm (max. sustained) IP 66 / IP 67
Starting Torque:	< 0,02 Nm (2,83 oz-in) at 25° C
Mass Moment of Inertia:	6,0 gcm² (8,5 x 10^{-5} oz-in-sec²)
Hollow Shaft Loads:	Axial: 50 N (11,24 lbs) max. Radial: 50 N (11,24 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 5 (approx.) IP 67 / Nema 6 (approx.) option

Connection Options

Cable:	8 leads (0,14 mm², 26 AWG) twisted pairs; shielded
Connector:	5-pin M12 8-pin M12 9-pin M23 12-pin M23

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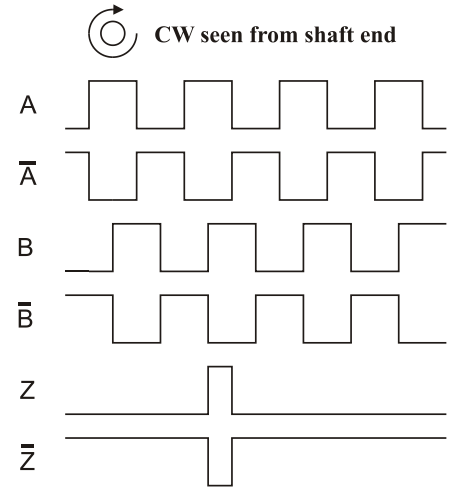
WISDOM

Type 2RK

Output waveform



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

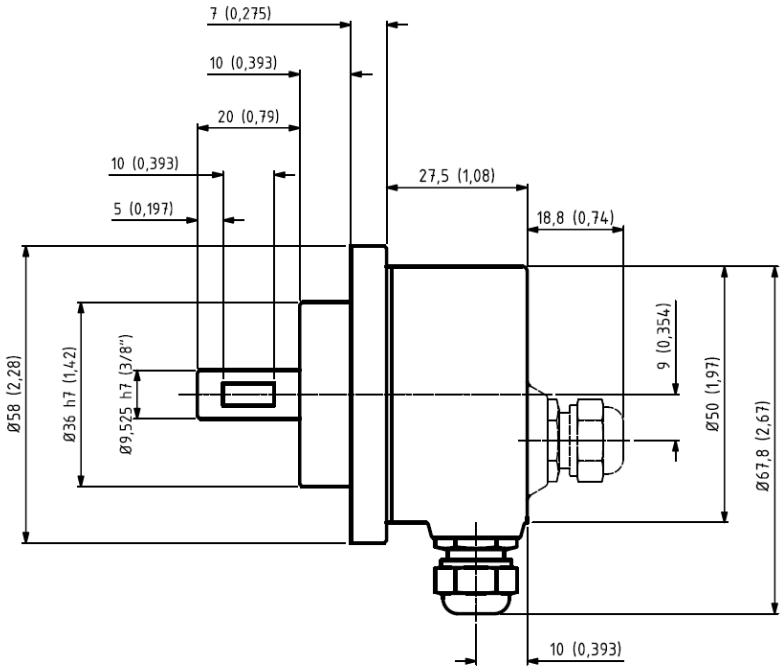
Disk Resolutions (pulses per revolution)

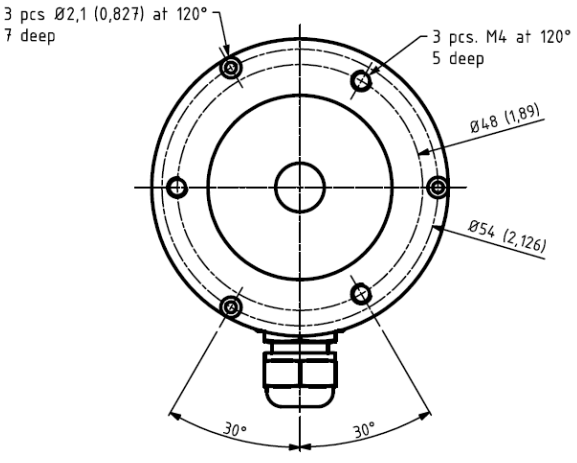
1	25	75	256	720	2400	10000
2	30	80	300	800	2500	12500*
5	32	90	360	1000	3000	
6	36	100	400	1024	3600	
8	40	125	455	1131	4000	
10	47	150	500	1250	4096	
15	50	180	512	1500	5000	
16	60	200	600	2000	8192	
20	64	250	635	2048	9000	

Other options on request
Pulses per revolution,
min. 1 – max. 12.500

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

Mechanical Dimensions





Standard Cable Gland
Side (S) or Back (B)

mm (inches)

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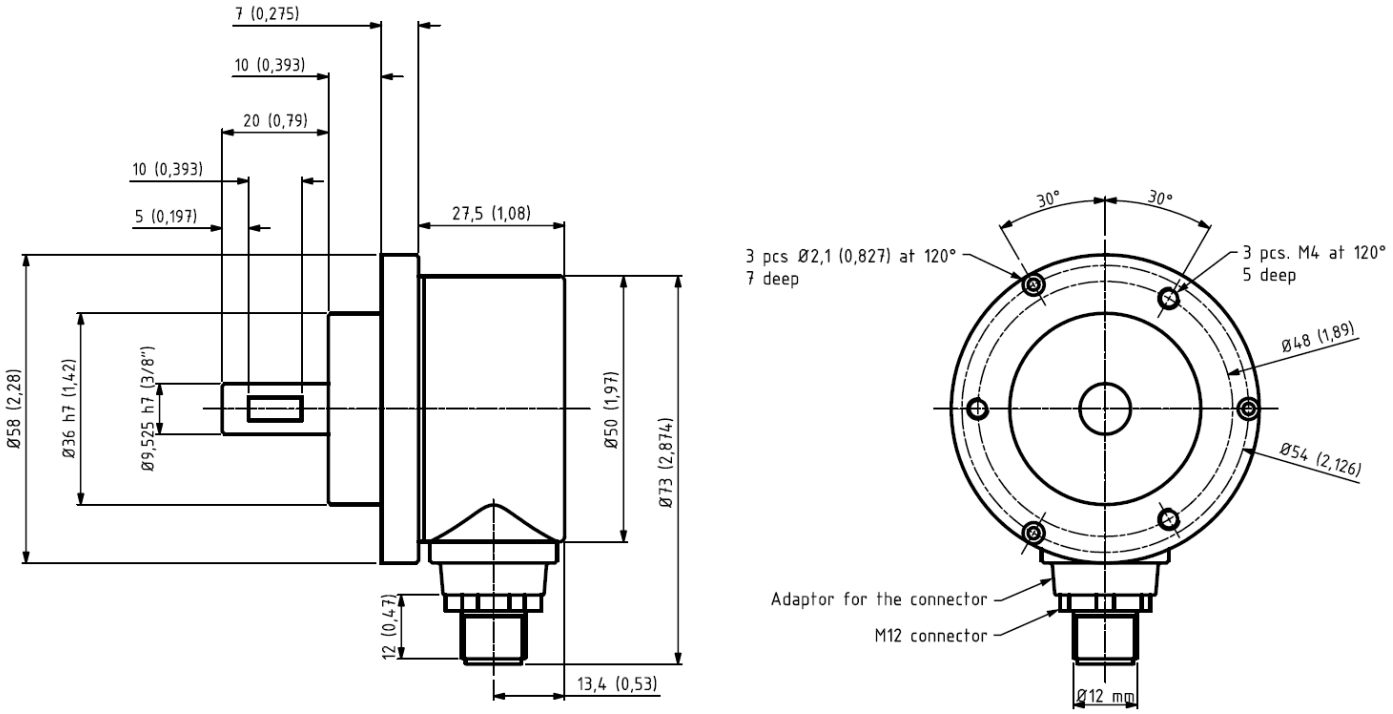
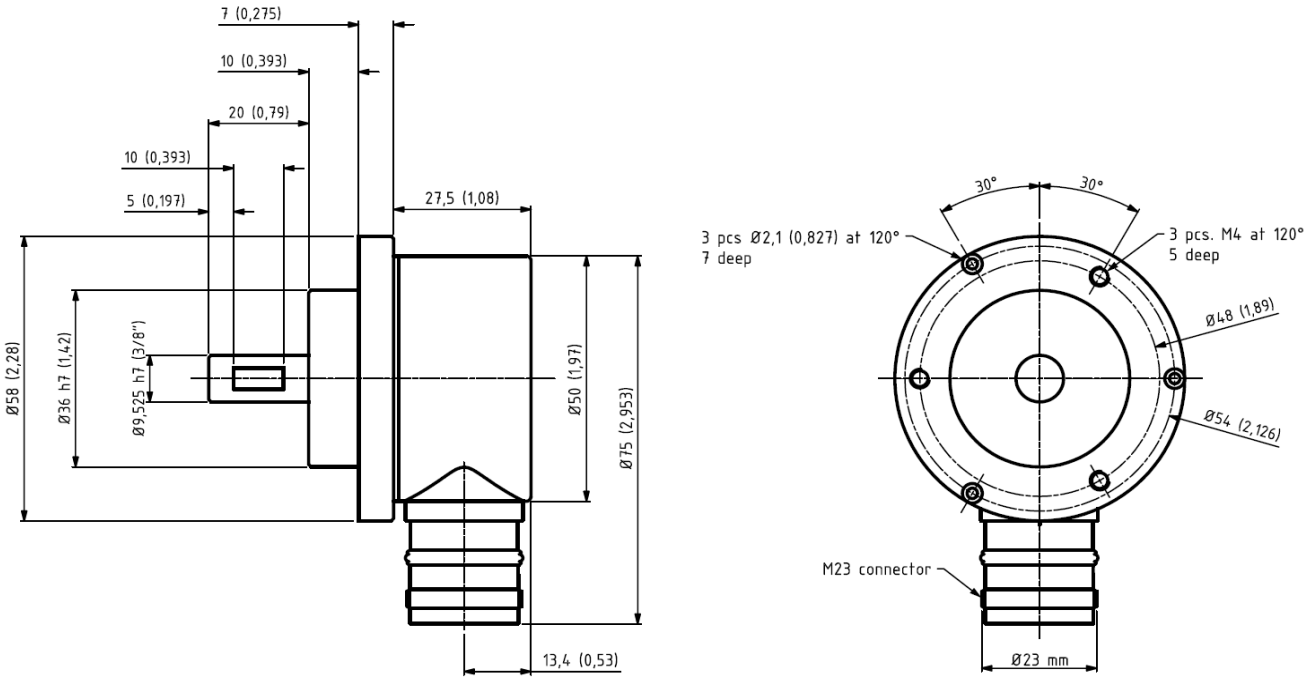


M12 Connector mm (inches)



M23 Connector mm (inches)

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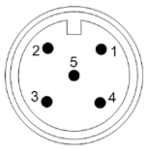
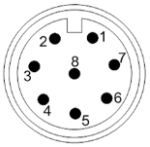
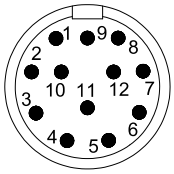
Output Terminations







	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

** Internally connected as GND*

	M12 5 - pin	M12 8 - pin	M23 9 - pin	M23 9 - pin	M23 12 - pin	M23 12 - pin
	Standard Output	Differential Output	Standard Output	Differential Output	Standard Output	Differential Output
Pin	Channel	Channel	Channel	Channel	Channel	Channel
1	Vsup	A	A	A	GND	B -
2	B	Vsup	B	B	*NC*	*NC*
3	GND	A -	Z	Z	Z	Z
4	A	B	GND	A -	GND	Z -
5	Z	B -	GND	B -	A	A
6		Z	GND	Z -	GND	A -
7		GND	Vsup	Vsup	*NC*	*NC*
8		Z -	GND	GND	B	B
9			Shield	Shield	Shield	Shield
10					GND	GND
11					*NC*	*NC*
12					Vsup	Vsup

GND = Circuit Ground

Shield = Case Ground

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Ordering Code

Example: 2RK– 1024 – D – 8 – 20 – 65 – 01 – S – 00

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

See table

Standard	**N**
Standard – *Open Collector NPN*	**NON**
Standard – *Open Collector PNP*	**NOP**
Differential	**D**
26C31 Line Driver 5V / 5V only	**L**
OL 7272 Line Driver	**M**
26C31 Line Driver * *9 to 30V in / 5V out*	**5L**

*Only side takeout

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

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

Cable	
Side *radial*	**S**
Back *Axial*	**B**
Connector	
Side *radial*	**S**
Back *Axial*	**B**

1/4”	mm x 20 mm	**1/4**	**-**	**20**
8	mm x 20 mm	**8**	**-**	**20**
3/8”	mm x 20 mm	**3/8**	**-**	**20**
10	mm x 20 mm	**10**	**-**	**20**

M12	5-pin	**P5**
M12	8-pin	**P8**
M23	9-pin	**C9**
M23	12-pin	**C12**
No Connector		**00**

Other options on request:
Please contact Scancon A/S

See Accessories for drawings

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