



2REX-A-SR with cable or removable end cap

- Shaft Encoder - Ø 68 mm to Ø 115 mm
- Shaft: Ø 10 mm, Ø 11 mm, Ø 5/8 inch
- Resolutions up to 10.000 ppr
- Delivered with cable or removable end cap option for on-site installation
- ATEX, IECEx, UKEX, EAC Ex certified

Electrical Specifications

Code:	Incremental
Resolution:	Up to 10,000 ppr (pulses per revolution)
Supply Voltage:	5 Vdc min. to 30 Vdc max. ** (45 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 Differential Line Driver (M and MP options) 26C31 Differential Line Driver 5V output (with 5V input)
Electrical Protection:	Output short circuit protected Reverse polarity protected
Noise Immunity:	EN61000-6-2: 2005 (industrial environments) Electromagnetic compatibility (EMC) 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 parameters

Mechanical Specifications

Material:	Housing: Stainless Steel AISI 303 (SR) Cap: Stainless Steel AISI 303 (SR) Shaft: Stainless Steel AISI 303 (SR)
Weight:	Encoder: Approx. 1325 gr (47.44 oz) Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9 x 10 ¹⁰ revolutions at rated load
Shaft Speed:	3000 rpm continuous (max.) IP 67
Starting Torque:	< 0.1 Nm (14.16 oz-in) at 25° C IP 67
Mass Moment of Inertia:	30 gcm ² (4.25 x 10 ⁻⁴ oz-in-sec ²)
Shaft Loads:	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 lbs) max.

Environmental Specifications

Operating Temp.:	-40° to +70° 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
Enclosure Rating:	IP 64 / Nema 4 (approx.) option IP 65 / Nema 4 (approx.) option IP 66 / Nema 6 (approx.) IP 67 / Nema 6 (approx.) option

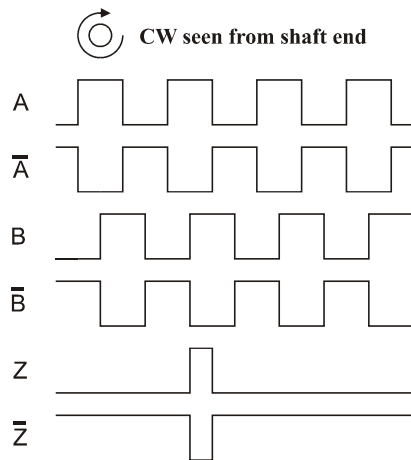
Connection Options

Cable:	MUD resistant (NEK 606) & halogen free, shielded, OD Ø6.6 +/- 0.2 mm 4x2x0.14 mm ² , 26 AWG, 4 twisted pairs; See Table 2
Terminal Blocks: (Removable End Cap)	See Table 3

Certifications

ATEX:	Certificate No.: ITS 09 ATEX 16847X II 2 G Ex db IIC T5 Gb, II 2 D Ex tb IIIC T100°C Db -40°C<Tamb<+70°C
IECEX:	Certificate No.: IECEX ITS 10.0015X Ex db IIC T5 Gb, Ex tb IIIC T100°C Db -40°C < Tamb < +70°C
UKEX	Certificate No.: ITS21UKEX0407X II 2 G Ex db IIC T5 Gb, II 2 D Ex tb IIIC T100°C Db -40°C<Tamb<+70°C
EAC Ex:	НАННО «ЦСВЭ» No. EAЭС RU C-DK.AA87.B.00266/19 1Ex db IIC T5 Gb X, Ex tb IIIC T100°C Db X, -40°C<T.amb<+70°C

Output waveform



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

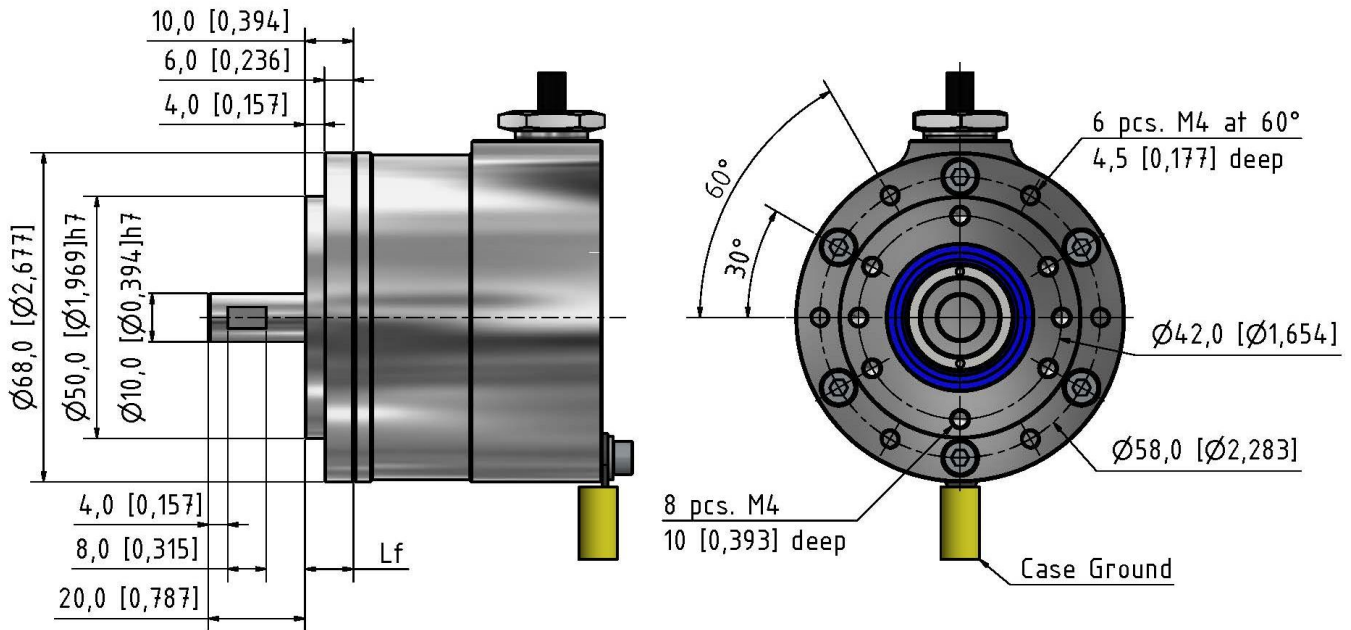
Table 1. Disk Resolutions (pulses per revolution)

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	10000*
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. 10.000

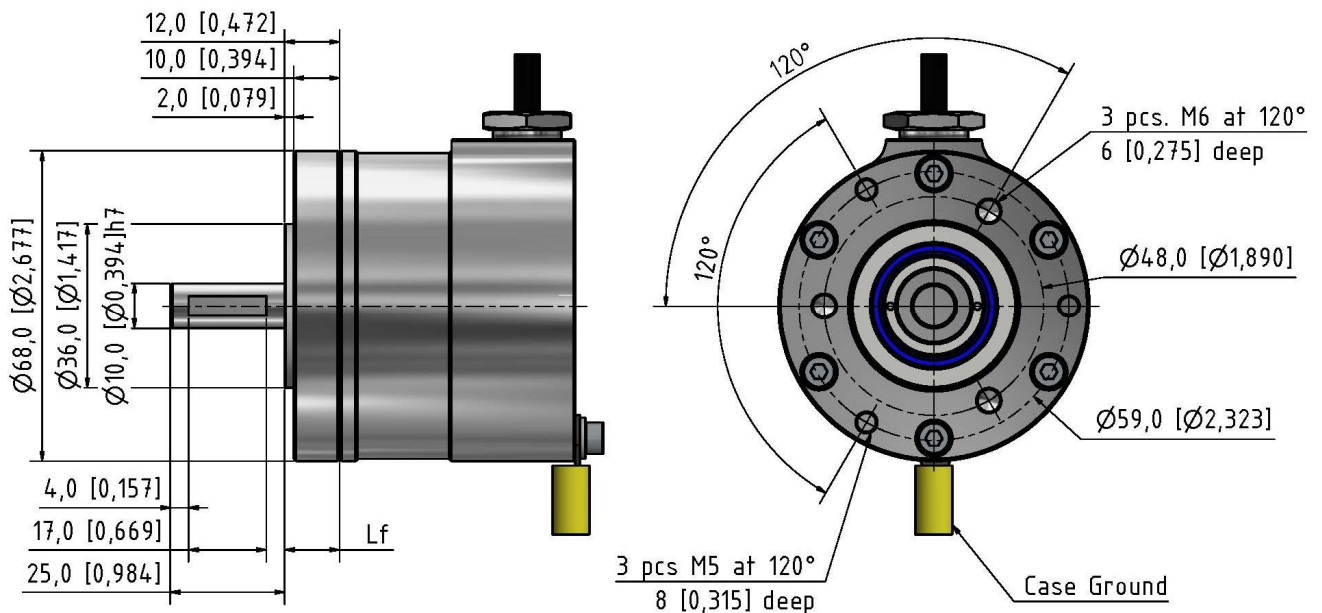
* Operating temperature: -20° C to 50° C

Face Mounts



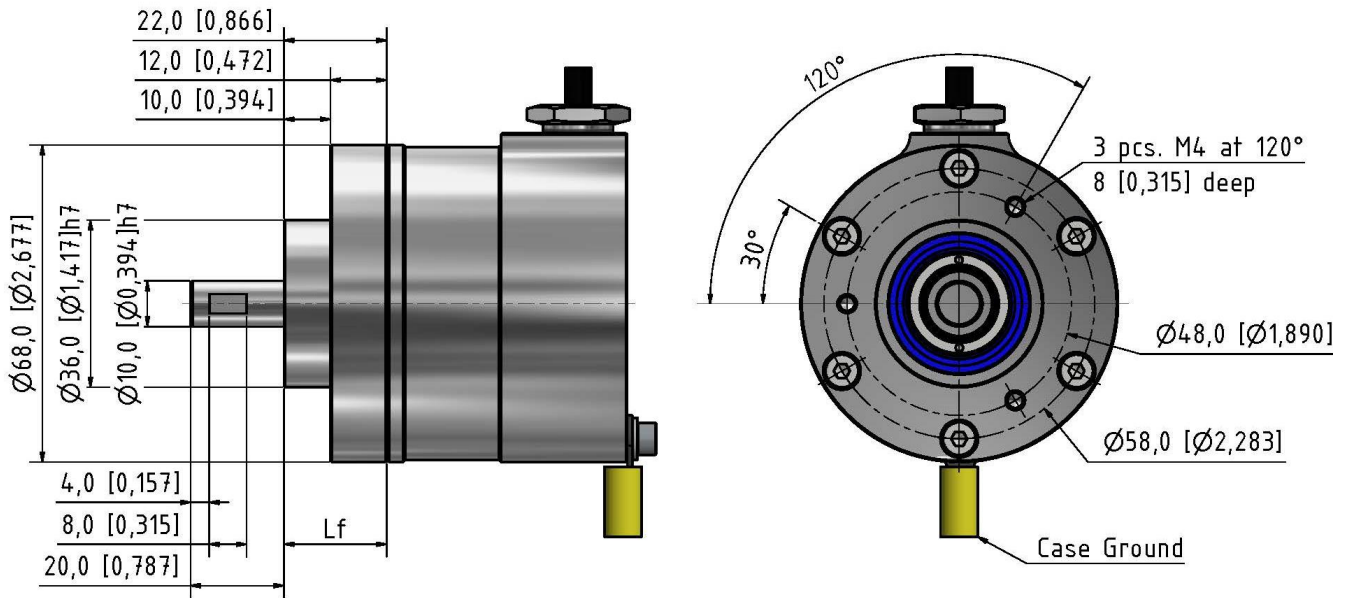
Face Mount A

mm (inches)



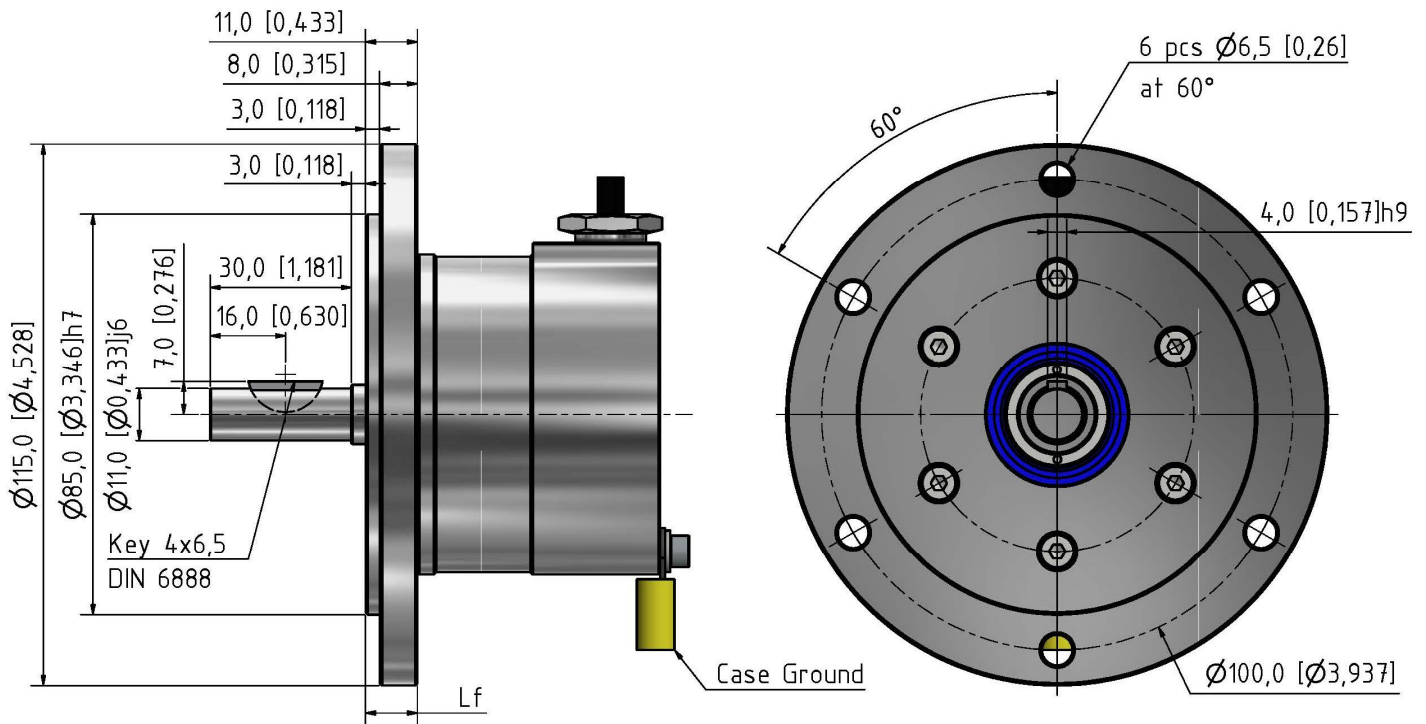
Face Mount B

mm (inches)



Face Mount K

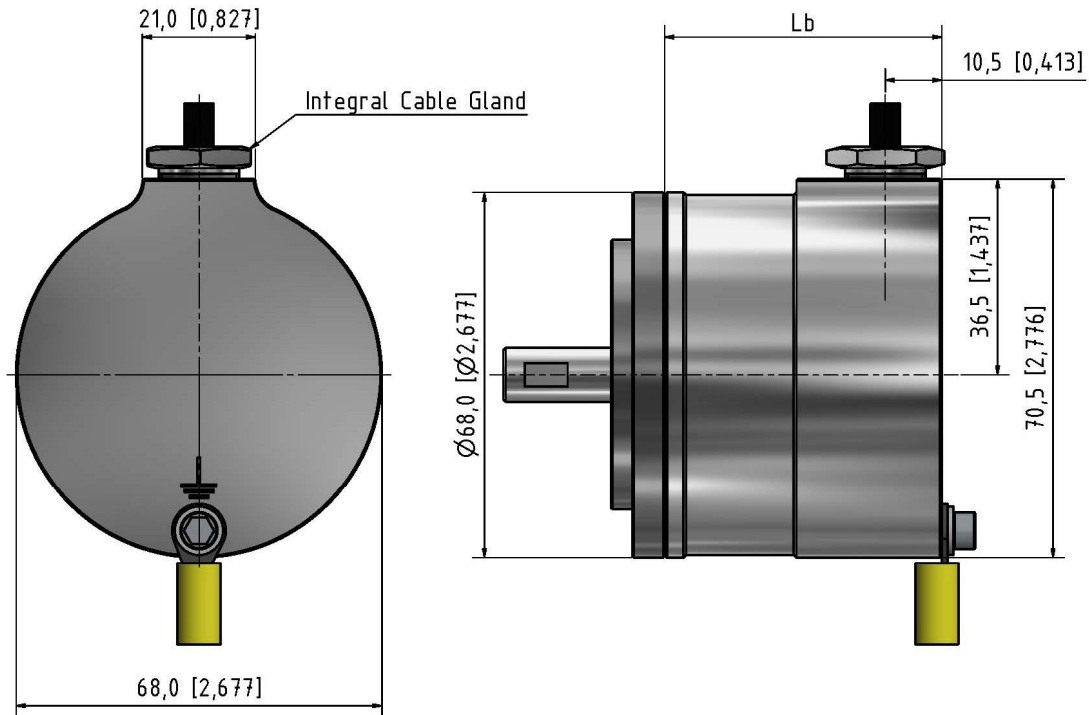
mm (inches)



Face Mount U

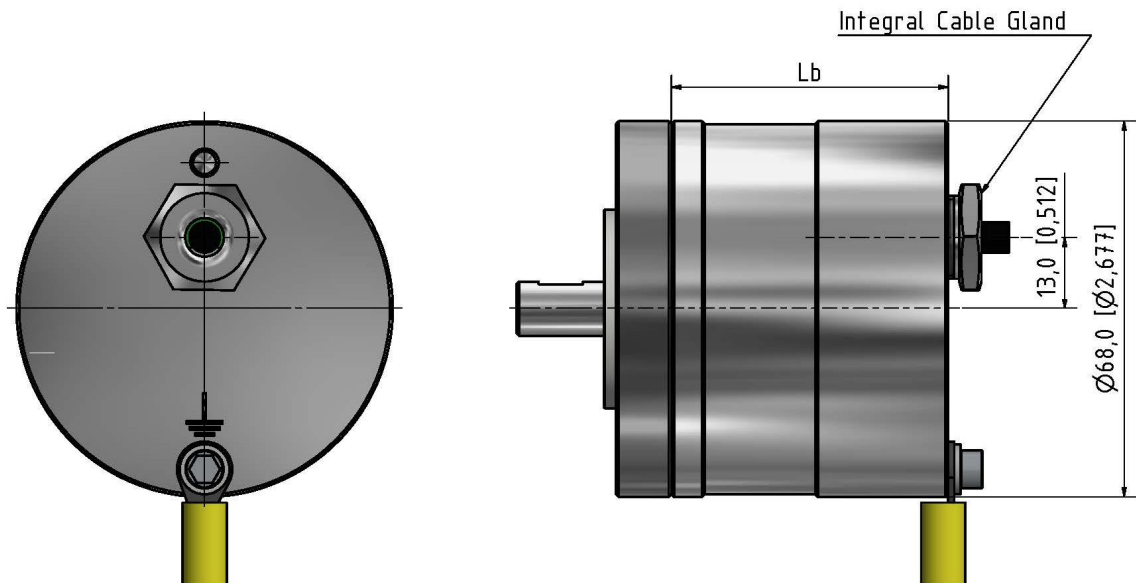
mm (inches)

Caps with cable and Removable End Cap



Side Standard Cable Gland Cap (SS)

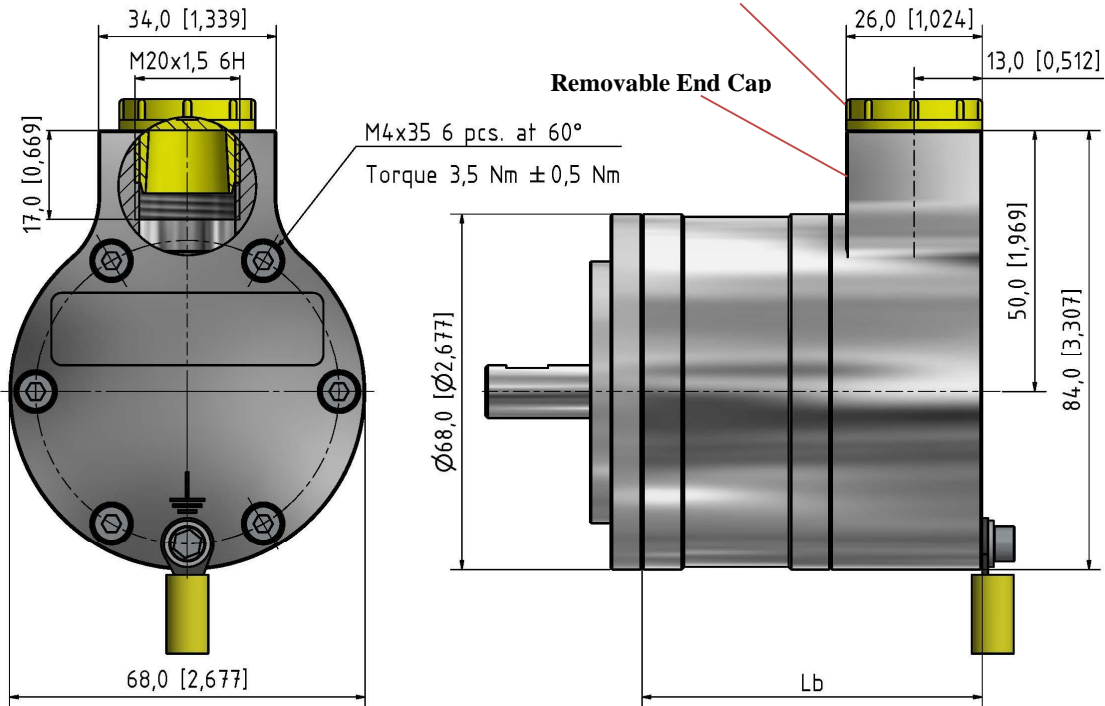
mm (inches)



Back Standard Cable Gland Cap (BS)

mm (inches)

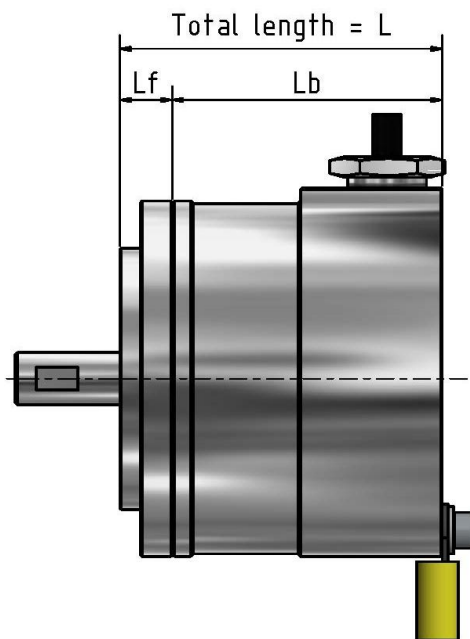
Plastic screw plug is for cable outlet protection during shipping and storage.
 Plug must be replaced by a suitably certified cable gland prior to use.



Removable End Cap Side Standard (EC01)

mm [inches]

Encoder Length



$$\text{Total Encoder Length } L = L_b + L_f$$

Cap	Face mount A	Face mount B	Face mount K	Face mount U
SS	61,5 mm (2,42 in)	63,7 mm (2,51 in)	73,5 mm (2,89 in)	62,5 mm (2,46 in)
BS	60,0 mm (2,36 in)	62,2 mm (2,45 in)	72,0 mm (2,83 in)	61,5 mm (2,40 in)
EC01	75,0 mm (2,95 in)	77,2 mm (3,04 in)	87 mm (3,43 in)	76,0 mm (2,99 in)

Cap + Face Mount = Total Encoder Length

Table 2. Output Terminations

Channel	Standard Cable	
	Standard Output	Differential Output
Channel	Wire Color	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

* Gray, Yellow, and Brown are internally connected to Circuit Ground

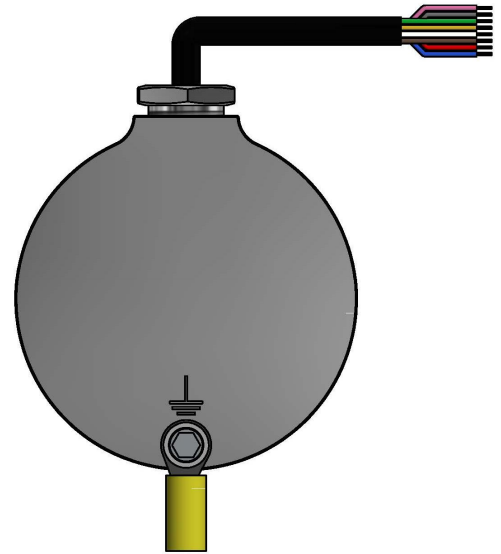
GND = Circuit Ground

Shield connected to Case Ground

Cable: **MUD resistant (NEK 606) & halogen free, shielded**

4x2x0.14 mm², 26 AWG, 4 twisted pairs, OD Ø6.6 +/- 0.2 mm;

Yellow cable shoe: AWG 12-10


Table 3. Terminal Block Outputs (Removable End Cap)

Position	Standard Output	Differential Output
	Channel	Channel
1	NC	Z -
2	Z	Z
3	NC	B -
4	B	B
5	NC	A -
6	A	A
7	Vsup	Vsup
8	GND	GND
9	NC	NC

GND = Circuit Ground

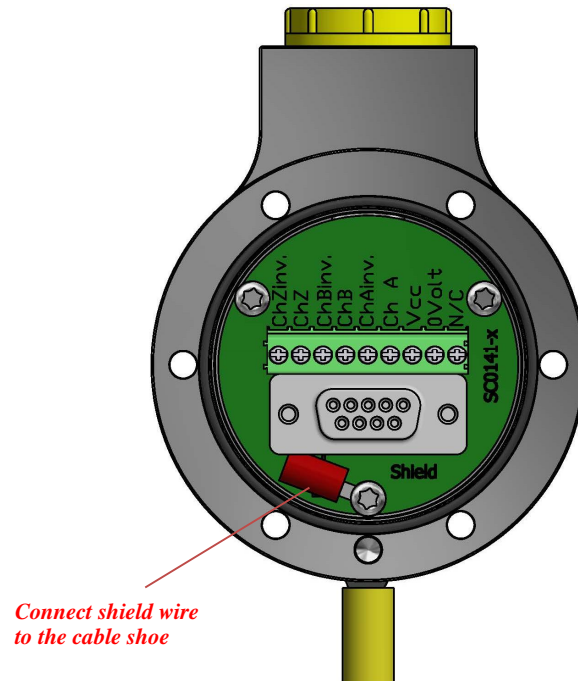
Shield = Case Ground

Connect shield wire to the cable shoe

Wire conductor size: AWG 26 to 16
0.14 mm² to 1.5 mm²

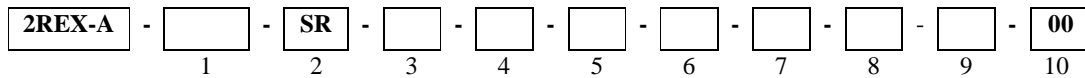
Red cable shoe: AWG 22-16

Yellow cable shoe: AWG 12-10



Ordering Code

Example: 2REX-A – 1024 – SR – D – 10 – 20 – 67 – 01 – SS – A – 00



1. Pulse per revolutions

See Table 1.

2. Material

Stainless Steel* **SR**

**AISI 303*

3. Output

Standard..... **N**
 Standard – open Collector NPN..... **NON**
 Standard – open Collector PNP..... **NOP**
 Differential..... **D**
 26C31 Line Driver 5V only..... **L**
 OL 7272 Line Driver..... **M**

4 & 5 Shaft dimensions

	<u>4.</u>	<u>5.</u>
10 mm x 20 mm (Flange A, K)	10	20
10 mm x 27 mm (Flange A)	10	27
10 mm x 30 mm (Flange A)	10	30
11 mm x 27 mm (Flange A)	11	27
10 mm x 16 mm (Flange B)	10	16
10 mm x 25 mm (Flange B)	10	25
11 mm x 30 mm (Flange U)	11	30

6. IP Rating

IP 64.....	64
IP 65.....	65
IP 66.....	66
IP 67.....	67

7. Cable Length

Standard cable is 1m..... **01**
 Specify length..... **XX**
 No cable..... **00**

8. Cable Takeout

Side (*Standard*)..... **SS**
 Back (*Standard*)..... **BS**
 Side Removable End Cap..... **EC01**

9. Flange

Flange A **A**
 Flange B **B**
 Flange K **K**
 Flange U **U**

10. Accessory

No accessory..... **00**