



## 2REX-H-SA with cable or removable end cap

- Hollow Shaft Encoder - Ø 68 mm
- Hollow bore - Ø10 mm to Ø15 mm
- Resolution 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

<b>Code:</b>	Incremental
<b>Resolution:</b>	1 to 10,000 ppr (pulses per revolution)
<b>Supply Voltage:</b>	4.5 Vdc min. to 30 Vdc max. ** (45 mA max. - no load)
<b>Output Voltage:</b>	Low: 500 mV max. at 10 mA High: (V <sub>in</sub> - 0.6) at -10 mA (V <sub>in</sub> - 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>	Output short circuit protected Reverse polarity protected
<b>Noise Immunity:</b>	EN 61000-6-2: 2005 (industrial environments) Electromagnetic compatibility (EMC) EN 61000-6-3: 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

### Mechanical Specifications

<b>Material:</b>	Housing: Stainless steel AISI 316 (SA) Cap: Stainless steel AISI 316 (SA) Hollow Shaft: Stainless steel AISI 316 (SA)
<b>Weight:</b>	Encoder: Approx. 1325 gr (47.44 oz) Cable: 50 gr / meter (1.76 oz / meter)
<b>Bearing Life:</b>	> 1.9 x 10 <sup>10</sup> revolutions at rated load
<b>Shaft Speed:</b>	3000 rpm continuous (max.) IP 67 T4
<b>Starting Torque:</b>	< 0.1 Nm (14.16 oz-in) at 25° C IP 67
<b>Mass Moment of Inertia:</b>	50 gcm <sup>2</sup> (7.08 x 10 <sup>-4</sup> oz-in-sec <sup>2</sup> )
<b>Hollow Shaft Loads:</b>	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 lbs) max.

### Environmental Specifications

<b>Operating Temp.:</b>	-40° to +70° 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>Enclosure Rating:</b>	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

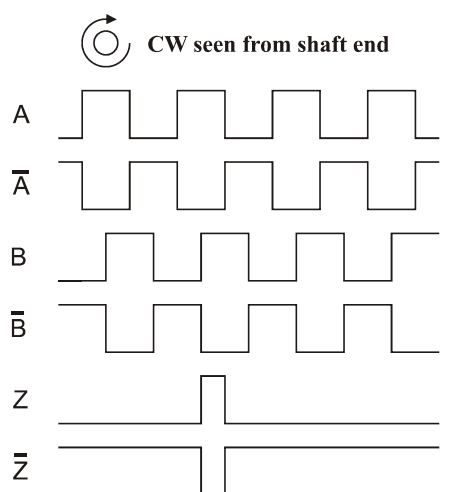
<b>Cable:</b>	<b>MUD resistant (NEK 606) &amp; halogen free, shielded, OD Ø6.6 +/- 0.2 mm</b> 4x2x0.14 mm <sup>2</sup> , 26 AWG, 4 twisted pairs; See Table 2
<b>Terminal Block: (Removable End Cap)</b>	See Table 3

\*\*= It is recommended user not to combine max. Value for all 3 parameters

## Certifications

<b>ATEX:</b>	Certificate No.: ITS09ATEX16847X II 2 G Ex db IIC T5 Gb, II 2 D Ex tb IIIC T100°C Db -40°C < Tamb < +70°C
<b>IECEX:</b>	Certificate No.: IECEX ITS 10.0015X Ex db IIC T5 Gb, Ex tb IIIC T100°C Db -40°C < Tamb < +70°C
<b>UKEX</b>	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
<b>EAC Ex:</b>	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 (pluses per revolution)

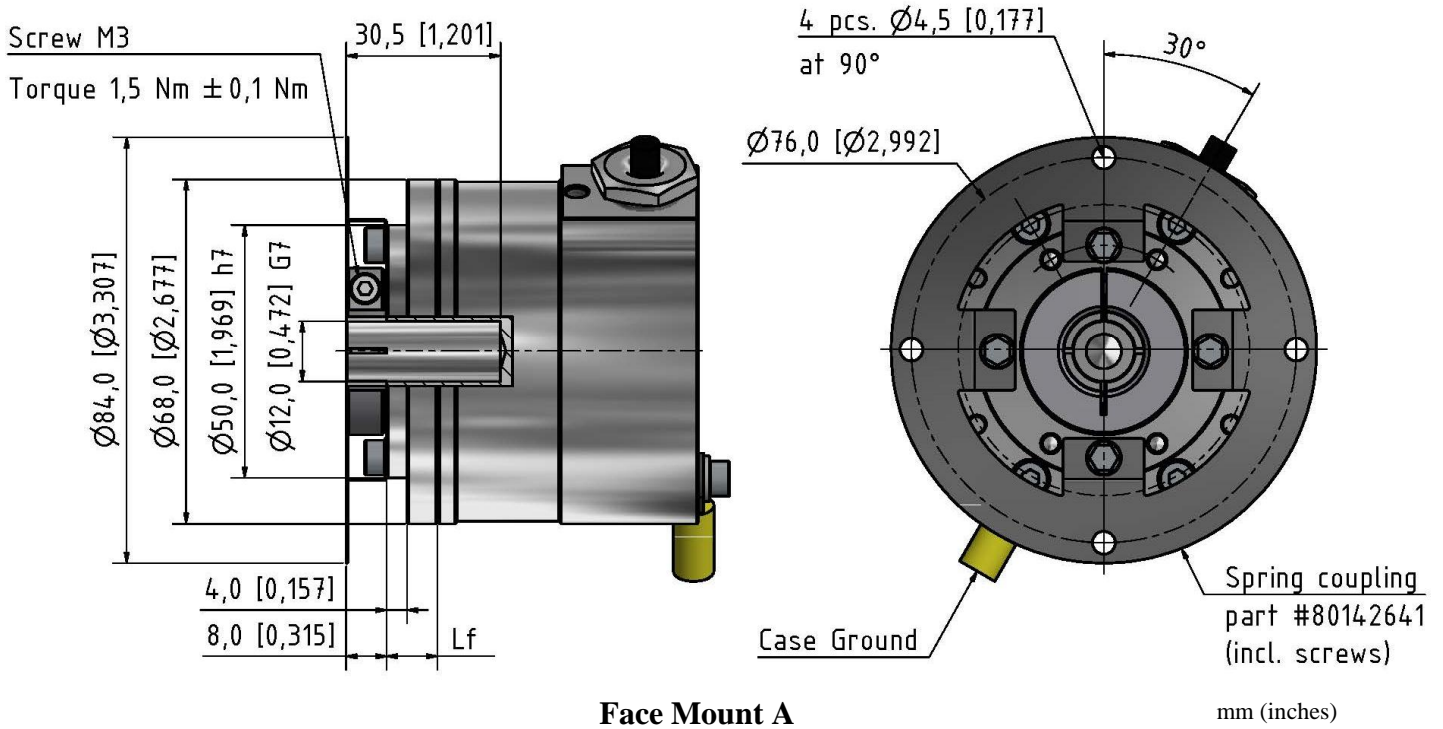
1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	10000*
16	75	455	1500	
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

### Other Options on request

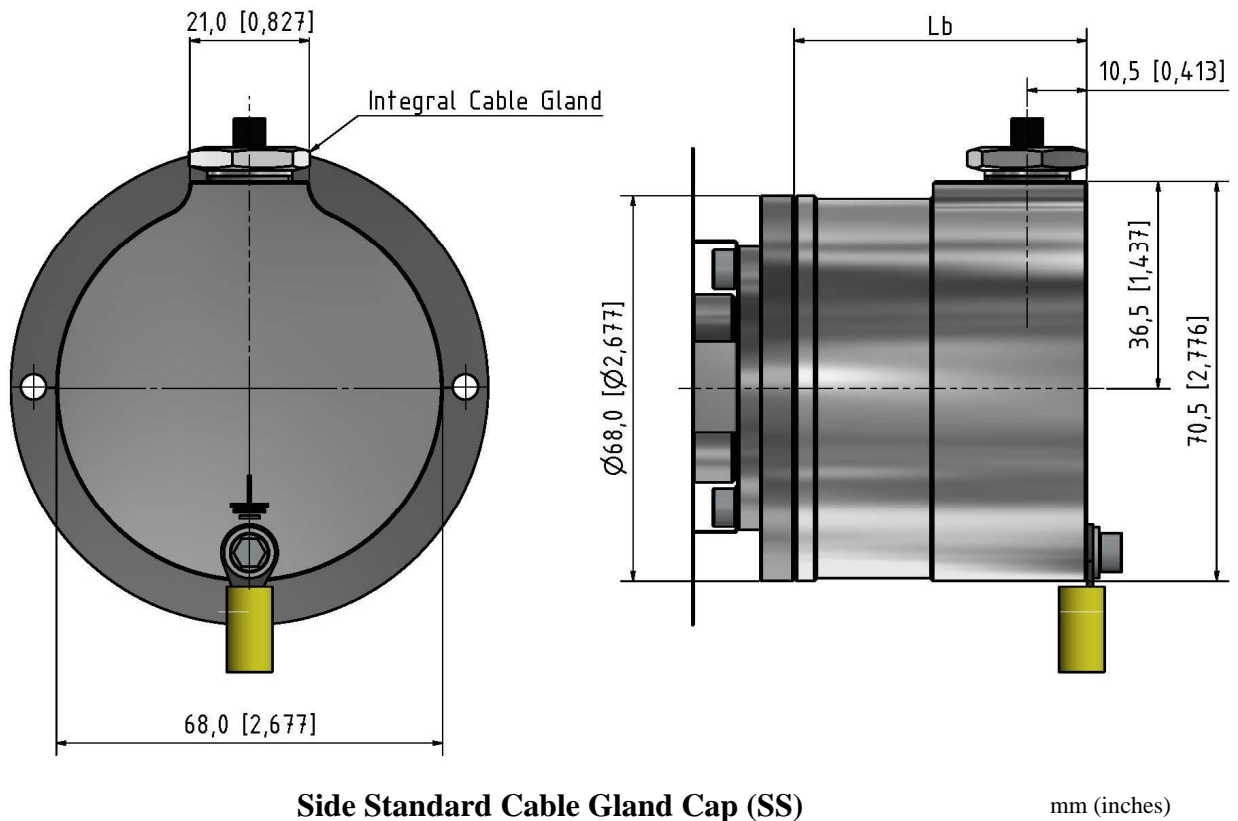
Pulses per revolution,  
Min. 1 – Max. 10.000

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

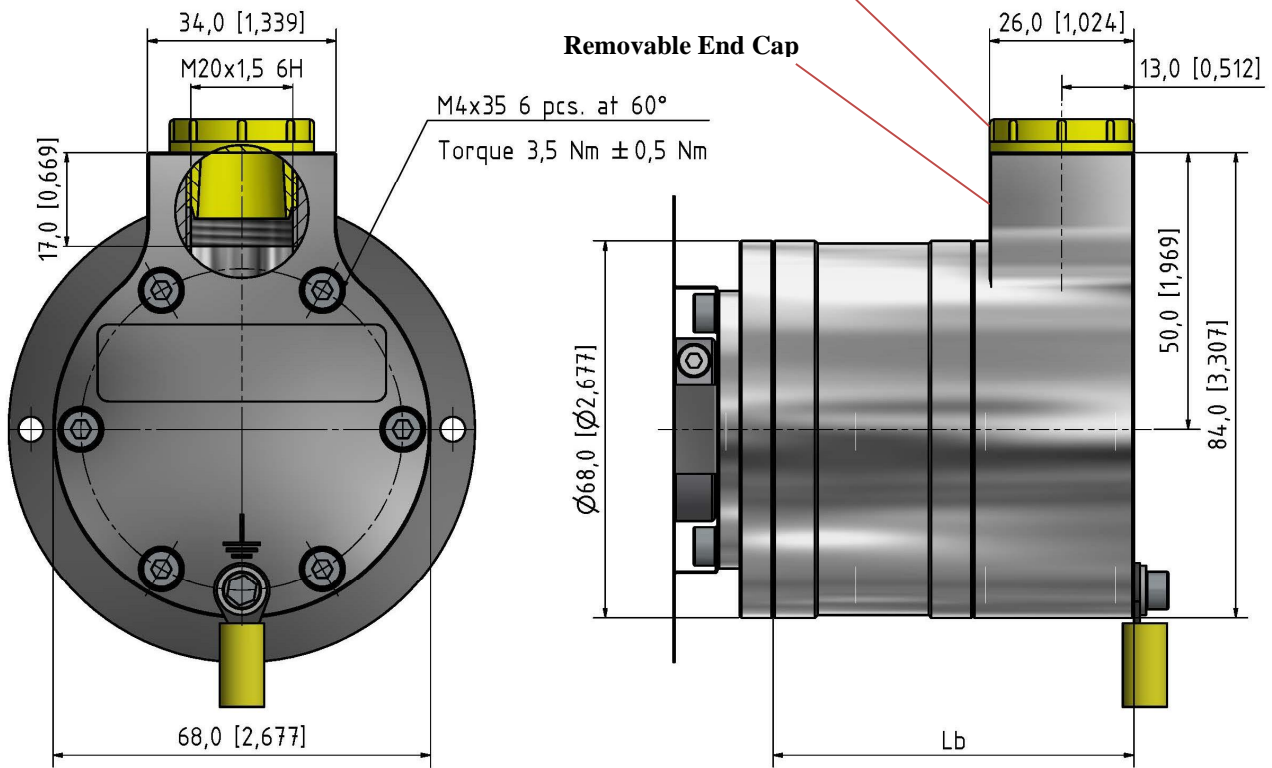
## Face Mount



## Caps with Cable and Removable End Cap



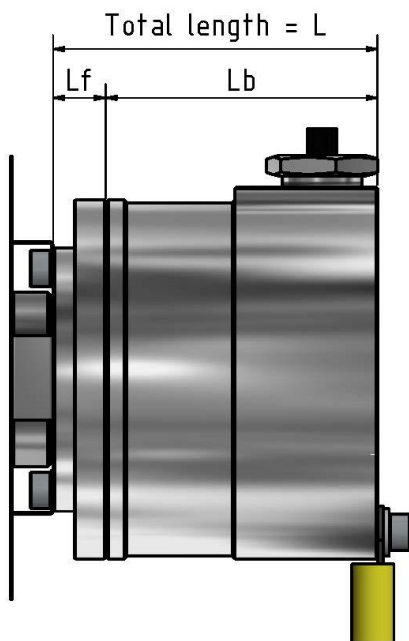
Plastic screw plug is for cable outlet protection during shipping and storage.  
 Plug must be replaced by a suitably certified cable gland prior to use.



**Removable End Cap Side Standard (EC01)**

mm (inches)

## Encoder Length



**Total Encoder Length  $L = L_b + L_f$**

Cap	Face mount A
SS	61,5 mm (2,42 in)
EC01	75,0 mm (2,95 in)

Cap + Face Mount = Total Encoder Length

**Table 2. Cable Output**

Channel	Standard Cable	
	Standard Output	Differential Output
	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

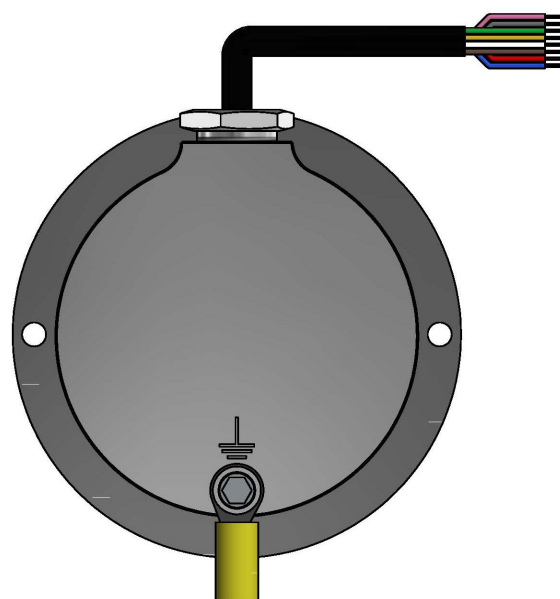
*GND = Circuit Ground*

*Shield connected to Case Ground*

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

4x2x0.14 mm<sup>2</sup>, 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*

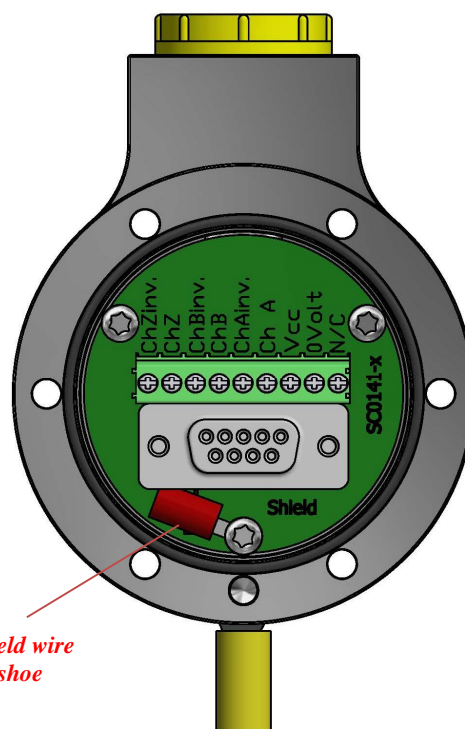
*Shield = Case Ground*

**Connect shield wire to the cable shoe**

Wire conductor size: AWG 26 to 16  
0.14 mm<sup>2</sup> to 1.5 mm<sup>2</sup>

Red cable shoe: AWG 22-16

Yellow cable shoe: AWG 12-10



**Connect shield wire to the cable shoe**

## Ordering Code

**Example: 2REX - H - 1024 - SA - D - 12 - 30 - 67 - 01 - SS - A - 05**

2REX-H - 1 - SA - 3 - 4 - 30 - 6 - 7 - 8 - A - 10

### 1. Pulse per revolution

See Table 1.

### 2. Material

Stainless Steel\*.....SA

\* *AISI 316*

### 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 Hollow shaft dimensions

10 mm x 30.5 mm

12 mm x 30.5 mm

14 mm x 30.5 mm

15 mm x 30.5 mm

### 4.

10

x

30

12

x

30

14

x

30

15

x

30

### 5.

### 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 (End Cap) ..... 00

### 8. Cable Takeout

Side (*Standard*) ..... SS

Side Removable End Cap..... EC01

### 9. Flange

Flange A ..... A

### 10. Spring Coupling

No spring coupling..... 00

80142641..... 05