



## Type REXM-A-SA

- EX-Proof Stainless Steel Shaft Encoder for Mining Applications-  $\varnothing$  68 mm
- Shaft -  $\varnothing$  10 mm to  $\varnothing$  5/8 inch
- Resolution up to 10,000 ppr
- IP 66 (IP 67 option)
- ATEX certified EX-Proof  
IECEx certified EX-Proof  
EAC Ex certified EX-Proof

### Electrical Specifications

<b>Code:</b>	Incremental
<b>Resolution:</b>	Up 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: ( $V_{in} - 0.6$ ) 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 Differential Line Driver ( <i>M and MP options</i> ) 26C31 Differential Line Driver 5V output (with 5V input)
<b>Electrical Protection:</b>	Output short circuit protected Reverse polarity protected ( <i>ASIC outputs only</i> )
<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 parameters

### Mechanical Specifications

<b>Material:</b>	Housing: Aisi 316 Cap: Aisi 316 Shaft: Aisi 316
<b>Weight:</b>	Encoder: Approx. 1325 gr (47.44 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 continuous (max.) IP 66
<b>Starting Torque:</b>	< 0.1 Nm (14.16 oz-in) at 25° C IP 67
<b>Mass Moment of Inertia:</b>	30 gcm <sup>2</sup> ( $4.25 \times 10^{-4}$ oz-in-sec <sup>2</sup> )
<b>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 66 / Nema 6 (approx.) IP 67 / Nema 6 (approx.) option

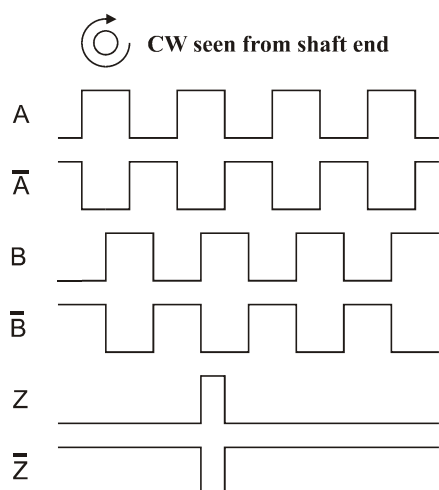
### Connection Options

<b>Cable:</b>	8 leads (0.14 mm <sup>2</sup> , 26 AWG) twisted pairs; shielded; halogen free
<b>Cable Glands:</b>	9-position terminal block (inside cap) M20 cable gland (fits cable $\varnothing$ 11 - 14.5 mm)

## Certifications

<b>ATEX:</b>	Certificate No.: <b>ITS09ATEX16846X</b> I M2 Ex d I Mb II 2 G Ex d IIC T5 Gb II 2 D Ex tb IIIC T100°C Db -40° to +70°C
<b>IECEX:</b>	Certificate No.: <b>IECEX ITS 10.0014X</b> Ex d I Mb Ex d IIC T5 Gb Ex tb IIIC T100°C Db -40°C to +70°C
<b>EACEx:</b>	Certificate No.: <b>RU No. 0249626 НАННО «ЦСВЭ» No. TC RU C-DK.ГБ05.В.00974</b> PB Ex db I Mb X IEx d 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°**

## Disk Resolutions (pulses per revolution)

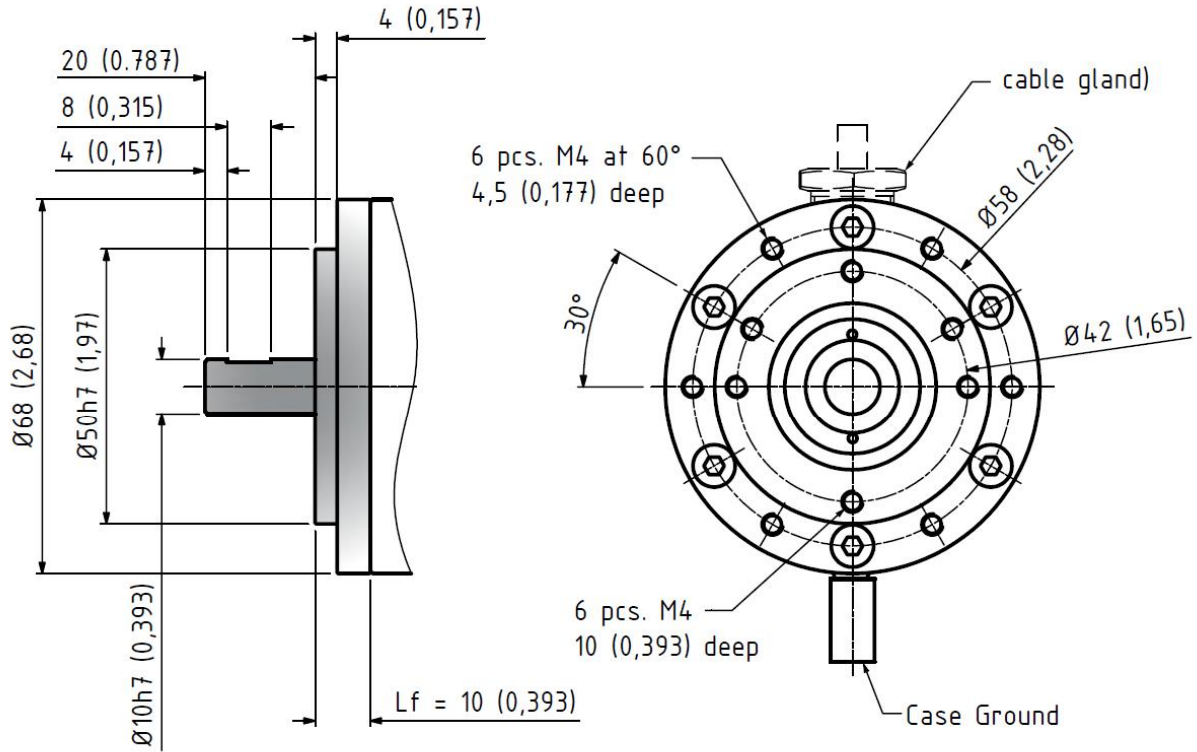
1	32	125	720	3000
2	36	150	800	3072
5	40	180	1000	3600
6	45	200	1000	4000
7	47	250	1024	4096
8	50	256	1131	5000
10	60	300	1200	8192
12	64	360	1250	9000*
15	70	400	1270	10000*
16	75	455	1500	
18	80	500	2000	
20	90	512	2048	
25	100	600	2400	
30	120	635	2500	

### Other options on request

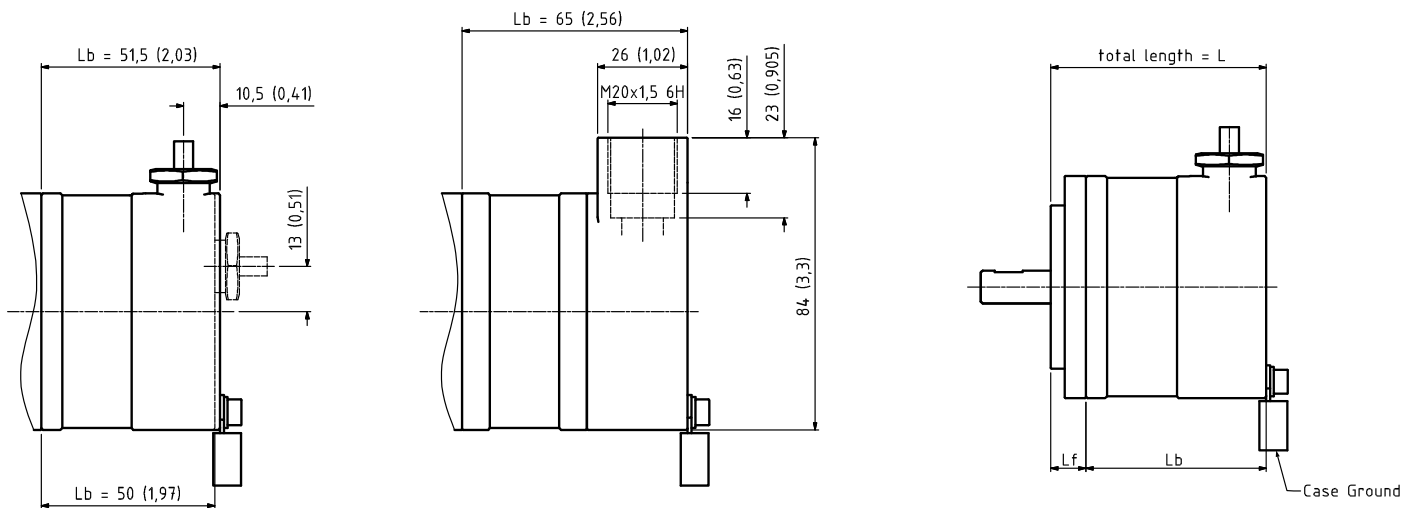
Pulses per revolution,  
min. 1 – max. 10.000

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

## Mechanical Dimensions



### Flange A option



Standard Cable Gland  
Side (SS) or Back (BS)

Removable End Cap (EC01)

### Encoder Length

Total length of encoder  $L = L_b + L_f$

Flange Type	Body		
	Standard Side - (SS)	Standard Back - (BS)	End Cap (EC01)
A	61,5 (2,42)	60,0 (2,36)	75,0 (2,95)

Measurements: mm (inches)

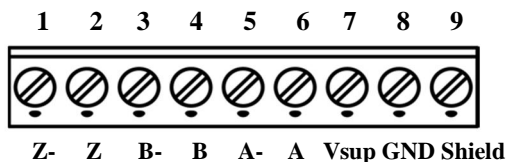
## Output Terminations

### Removable End Cap



#### Terminal Block

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



\* Do not attach any wires to terminal block

GND = Circuit Ground    Shield = Case Ground

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

