



ATEX

EN 60079



Type REXM-A-SR

- EX-Proof Stainless Steel Shaft Encoder for Mining Applications - \varnothing 68 mm to \varnothing 115 mm
- Shaft - \varnothing 10 mm to \varnothing 11 mm
- Resolution up to 10,000 ppr
- IP 66 (IP 67 option)
- AISI 303 or AISI 316 Stainless Steel
- ATEX certified EX-Proof IEC certified EX-Proof

Electrical Specifications

Code:	Incremental
Resolution:	1 to 10,000 ppr (pulses per revolution)
Supply Voltage:	4.5 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 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)

Mechanical Specifications

Material:	Housing: 303 Stainless Steel (316 option) Cap: 303 Stainless Steel (316 option) Shaft: 303 Stainless Steel (316 option)
Weight:	Encoder: Approx. 1325 gr (47.44 oz) Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9×10^{10} revolutions at rated load
Shaft Speed:	3,000 rpm continuous (max.) IP 66
Starting Torque:	< 0.1 Nm (14.16 oz-in) at 25° C IP 67
Mass Moment of Inertia:	30 gcm ² (4.25×10^{-4} oz-in-sec ²)
Shaft Loads:	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 lbs) max.

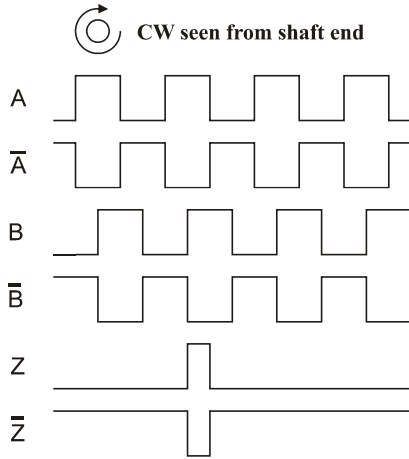
Environmental Specifications

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 66 / Nema 6 (approx.) IP 67 / Nema 6 (approx.) option
Certification	ATEX EX I M2 Ex d I Mb EX II 2 G Ex d IIC T4 Gb EX II 2 D Ex tb IIIB T135°C Db IP6* IEC IECEx ITS 10.0009X (See website for Certifications)

Connection Options

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

Output waveform



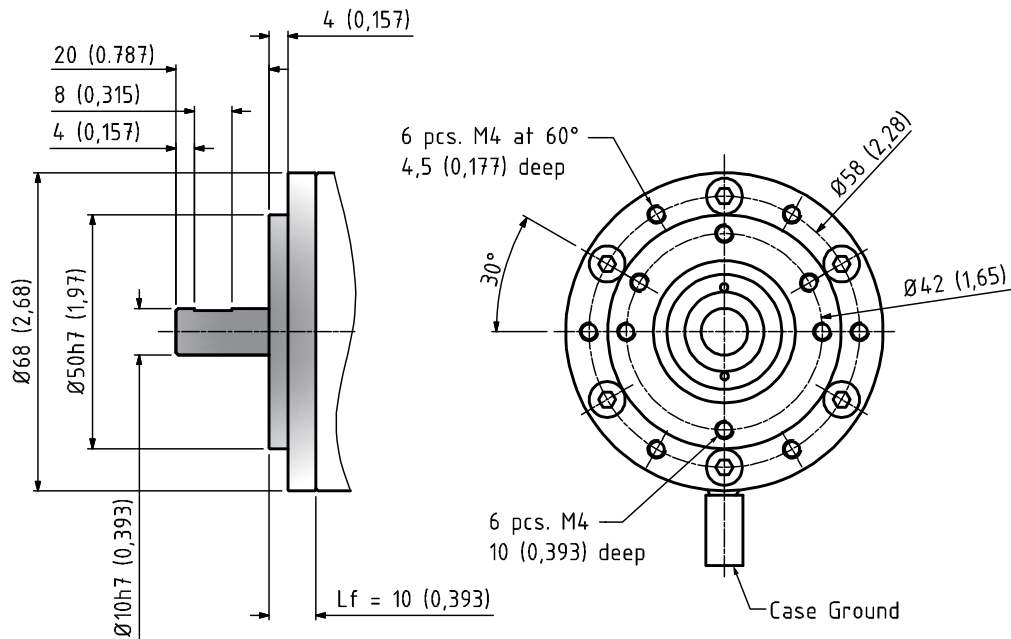
Channel tolerance $180\text{ e}^\circ \pm 36\text{ e}^\circ$
 Phase difference tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$
 Z channel tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$

Disk Resolutions (pulses per revolution)

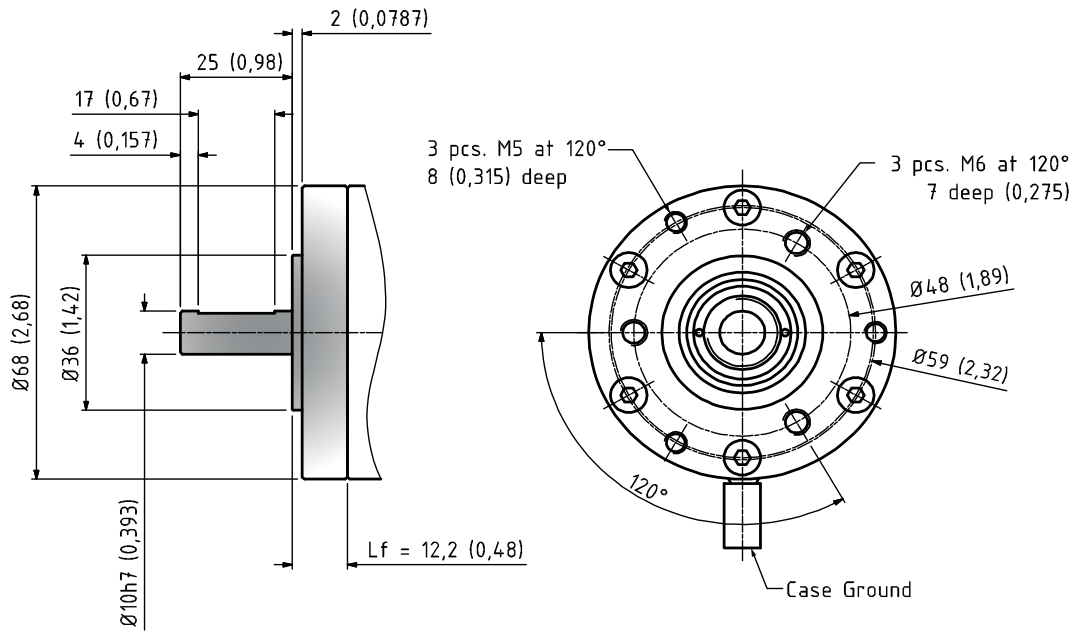
1	32	125	600	2500
2	36	150	635	3000
5	40	180	720	3600
6	50	200	800	4000
8	60	250	1000	4096
10	64	300	1024	5000
15	75	360	1131	9000
16	80	400	1250	10000
20	90	455	1500	
25	100	500	2000	
30	120	512	2048	

Z channel not available for resolutions above 5000 ppr

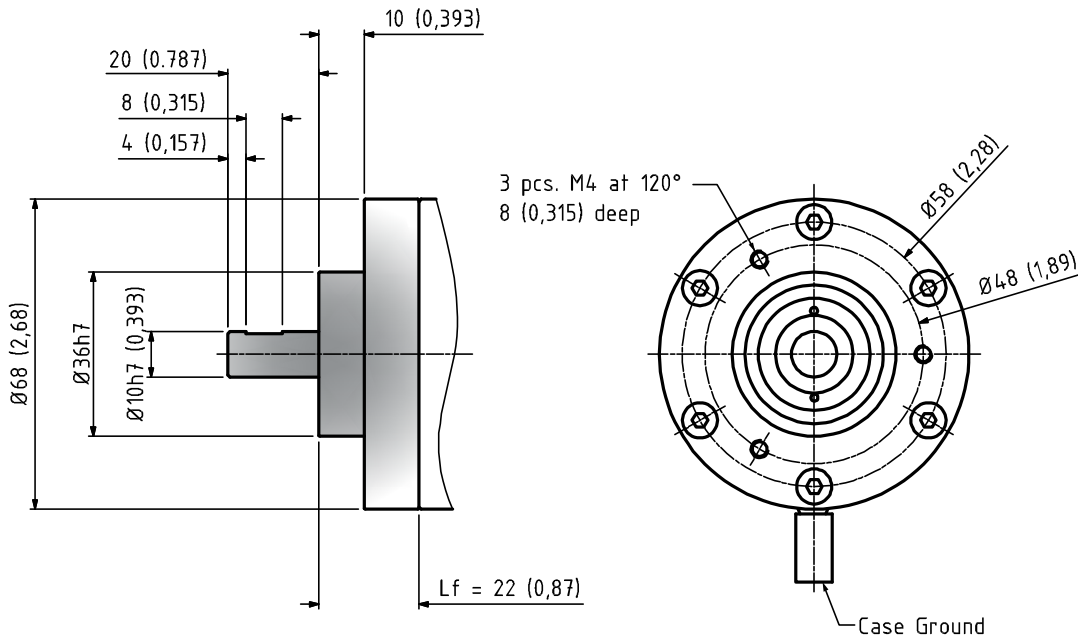
Mechanical Dimensions



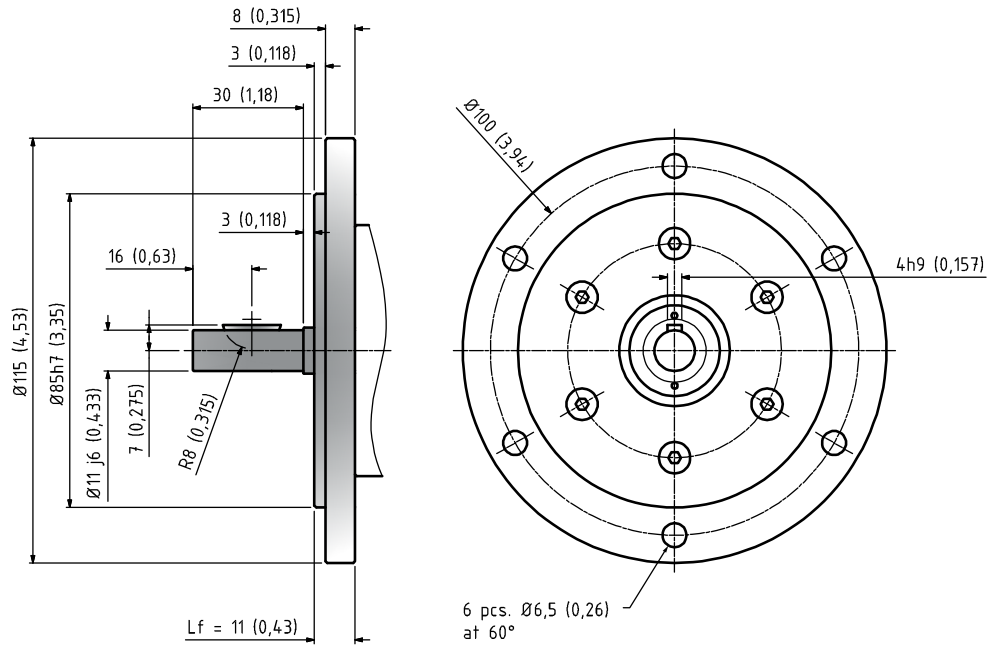
Flange A option



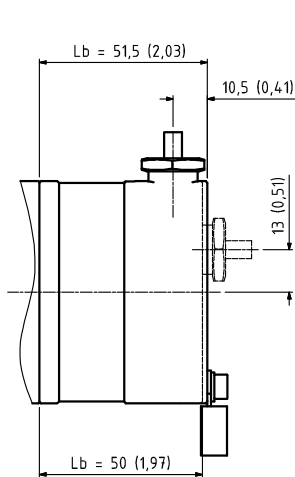
Flange B option



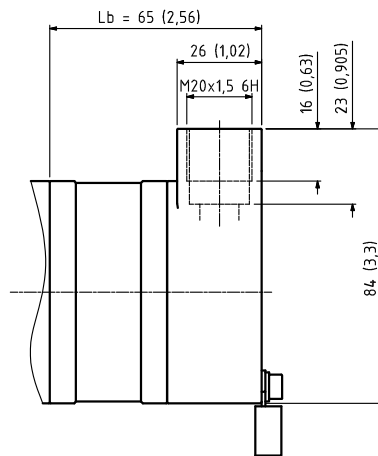
Flange K option



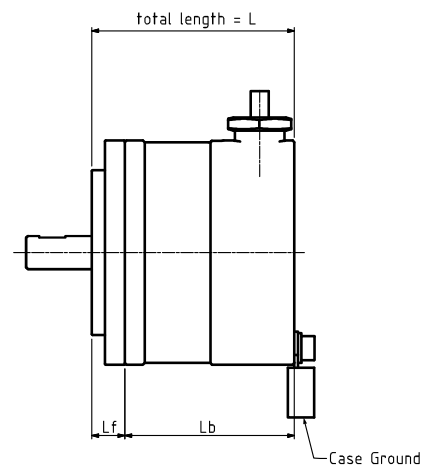
Flange U option



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



Removable End Cap (EC01)



Encoder Length

Total length of encoder $L = L_b + L_f$

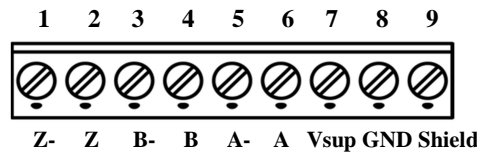
Flange Type	Body		
	Standard Side - (SS)	Standard Back - (BS)	End Cap (EC01)
A	61,5 (2,42)	60,0 (2,36)	75,0 (2,95)
B	63,7 (2,51)	62,2 (2,45)	77,2 (3,04)
K	73,5 (2,89)	72,0 (2,83)	87,0 (3,43)
U	62,5 (2,46)	61,0 (2,40)	76,0 (2,99)

measurements: mm (inches)

Output Terminations

Removable End Cap

Position	Terminal Block	
	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

Standard Cable

Channel	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

Ordering Code

Example: REXM - A - 1024 - SR - D - 010 - 020 - 67 - 01 - SS - A

Type

REXM - A	-		-		-		-		-		-		-		-	
		Pulses per Revolution See table	Composition	Output	Shaft Dia.	Shaft Length	IP Rating	Cable Length	Cable Takeout or End Cap	Flange						
		Stainless Steel	AISI 303	SR			IP 66	66								
		Stainless Steel	AISI 316	SA			IP 67	67								
				Standard					Standard is 1 meter	01						
				Differential					Specify length	XX						
				26C31 Line Driver 5V only					No Cable (End Cap)	00						
				OL 7272 Line Driver												
				10 mm x 20 mm (Flanges A, K)	010	-	020									
				10 mm x 27 mm (Flange A)	010	-	027									
				10 mm x 16 mm (Flange B)	010	-	016									
				10 mm x 25 mm (Flange B)	010	-	025									
				11 mm x 30 mm (Flange U)	011	-	030									
									Side (Standard)		SS					
									Back (Standard)		BS					
									End Cap (M20 x 1.5 cable gland)		EC01					