

Flameproof Explosion-proof absolute encoder

EXDJ78B-Modbus-RTU Series
EXDJ78B-Modbus-RTU+Incremental signal+Two limit switch



EXDJ78B Series

Explosion-proof absolute encoder

Equipment Type Class II (gas), Class III (dust)

Explosion-proof form: flame-proof type

NEPSI: Ex db IIC T5/T6 Gb, Ex tb IIIC T95°C/T80°C Db

ATEX: Ex II 2GD Ex db IIC T5/T6 Gb, Ex tb IIIC T95°C/T80°C Db

IECEx: Ex db IIC T5/T6 Gb, Ex tb IIIC T95 °C/T80°C Db

Applicable danger Zone 1 (gas) / 21 (dust)

Induction principle: Magnetic

Function Principle: multiple turn

Multi-turn technology: mechanical gear sets without batteries

Housing size $\Phi 78\text{mm}$

Blind hollow shaft $\Phi 12$ 、 $\Phi 14$ 、 $\Phi 16$ 、 $\Phi 25.4\text{mm}$

Number of steps 65536 /16Bit

Turns 16384 /14Bit

Interface: Modbus-RTU

Modbus-RTU+Incremental signal+Two limit switch

Supply voltage 10-30VDC

Protection IP66

Mechanical characteristics

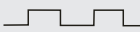
Shaft diameter (mm)	Blind hollow shaft $\Phi 12$ 、 $\Phi 14$ 、 $\Phi 16$ 、 $\Phi 25.4\text{mm}$
Protection	IP66
Speed	3000rpm
Maximum shaft load	Max. 60N Axial; max. 80N Radial
Shock resistance	100g, 6ms
Vibration resistance	10g, 10...2000Hz
Materials	316L stainless steel
Spindle materials	Aluminum alloy anodizing/316L stainless steel
The shell material	Aluminum alloy anodizing/316L stainless steel
Working temperature	-40°C...+80°C
Storage temperature	-40°C...+80°C
Weight	≈1600g (Aluminium alloy shell) ; ≈3900g (316L stainless steel)
Exit position	Radial direction; Axial direction

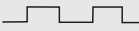
Electrical characteristics

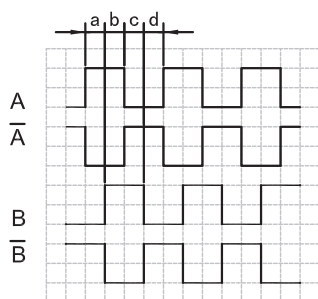
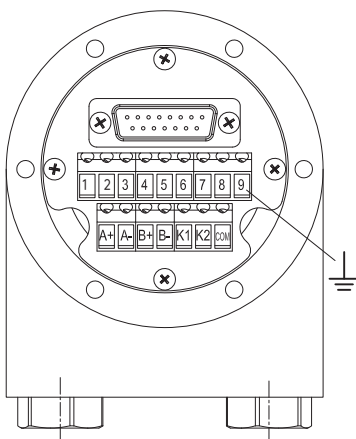
Interface	Modbus-RTU、Modbus-RTU+Incremental signal+Two limit switch
No-load current	< 100mA
Operating voltage	10...30VDC
Baud rate	9600 19200 38400 57600 115200 bps
Address Range	0-99
Data Response	2ms
Code	Hexadecima
limit switch	Two limit switch output, Command Settings (optional)
Immunity to Interference	EN61000-6-2
Emitted Interference	EN61000-6-4
Interface Circuit Protection	Surge protection, Reverse polarity protection, ESD protection

Terminal assignment

Modbus-RTU+Incremental signal+Two limit switch output

Signal		GND	+Ub	485A	485B	P-SET	Set-Allow	485A	485B
Color		WH	BN	GN	YE	/	PUR	/	/
Terminal		1	2	3	4	5	6	7	8

Signal		A+	A-	B+	B-	Limit1	Limit2	GND2
Color		GU	PK	RD/BU	GY/PK	RD	BK	BU
Terminal		A+	A-	B+	B-	K1	K2	COM



⤵ Shaft turning clockwise,
top-view of shaft.
a, b, c, d = $T/4 \pm T/10$

Ordering information

EXDJ **X** 78 **B** **16** **B** **12** **13** **XX** **S6** **4** **T** **N** **LF** **10-30** **R** **2**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

① Shell material

None: Aluminium alloy
Z: 316L stainless steel

② Shaft type

B: Blind hollow shaft

③ Shaft diameter

12: Φ 12mm

14: Φ 14mm

16: Φ 16mm

25.4: Φ 25.4mm

④ Resolution MT

00: Single-turn

12: 4096

14: 16384

⑤ Resolution ST

12: 4096

13: 8192

14: 16384

16: 65536

⑥ Incremental signal

None: no incremental signal

P1: 1024PPR, A+A- B+B-, Push-pull difference (HTL)

P3: 2048PPR, A+A- B+B-, Push-pull difference (HTL)

⑦ Baud rate

4: 19200

5: 9600

⑧ Parity Bit

None: Even Parity

N: No Parity

⑨ Limit switch output (Optional)

None: no Limit switch output

LC: 2 limit values electrical Settings

LF: 2 limit value command Settings

⑩ Supply voltage

10-30: 10-30VDC

⑪ Exit position

R: Radial direction

C: Axial direction

⑫ Connection type

Figure: Cable length(m)

D¹: 2 Cable Connectors

K: Cable connector 1 pc, Cable Gland Plug 1 pc

N: terminal box, 2 reserved M16×1.5mm threaded holes for cable connectors

Note: Printed in bold=standard items

Notes: 1、Corner mark¹: The reserved cable connector is designed for cables with 3–8 mm outer diameter. When 8–11 mm OD cable is needed, N-type connector is optional, supplied with accessory 8816B.

2、Lease contact us for further electrical parameter Settings and requirements.

Ordering example: EXDJ78B16B1213S64T10-30R2, Counting direction of the factory is set to clockwise increasing.

Explanation: EXDJ78B Series, Blind hollow shaft 16mm, Binary code, Multiturn resolution 4096, Singleturn resolution 8192, no Limit switch output, Modbus-RTU, Baud rate 19200, Even check, 10-30V, 10-30VDC, Radial direction 2m.

Recommended model: EXDJ78B16B1212S64TN10-30R1

Accessories (Sold separately) Note: For other options, please refer to the Accessory Selection Table.



Flameproof cable gland
Model: 8816B
**Suitable for 8-11 mm OD cable; N-type connector optional, model 8816B.*



Mounting bracket
Model: 8146A
**Suitable for use with EXDJ78B12/14*



Mounting bracket
Model: 8146B
**Suitable for use with EXDJ78B16/25.4*



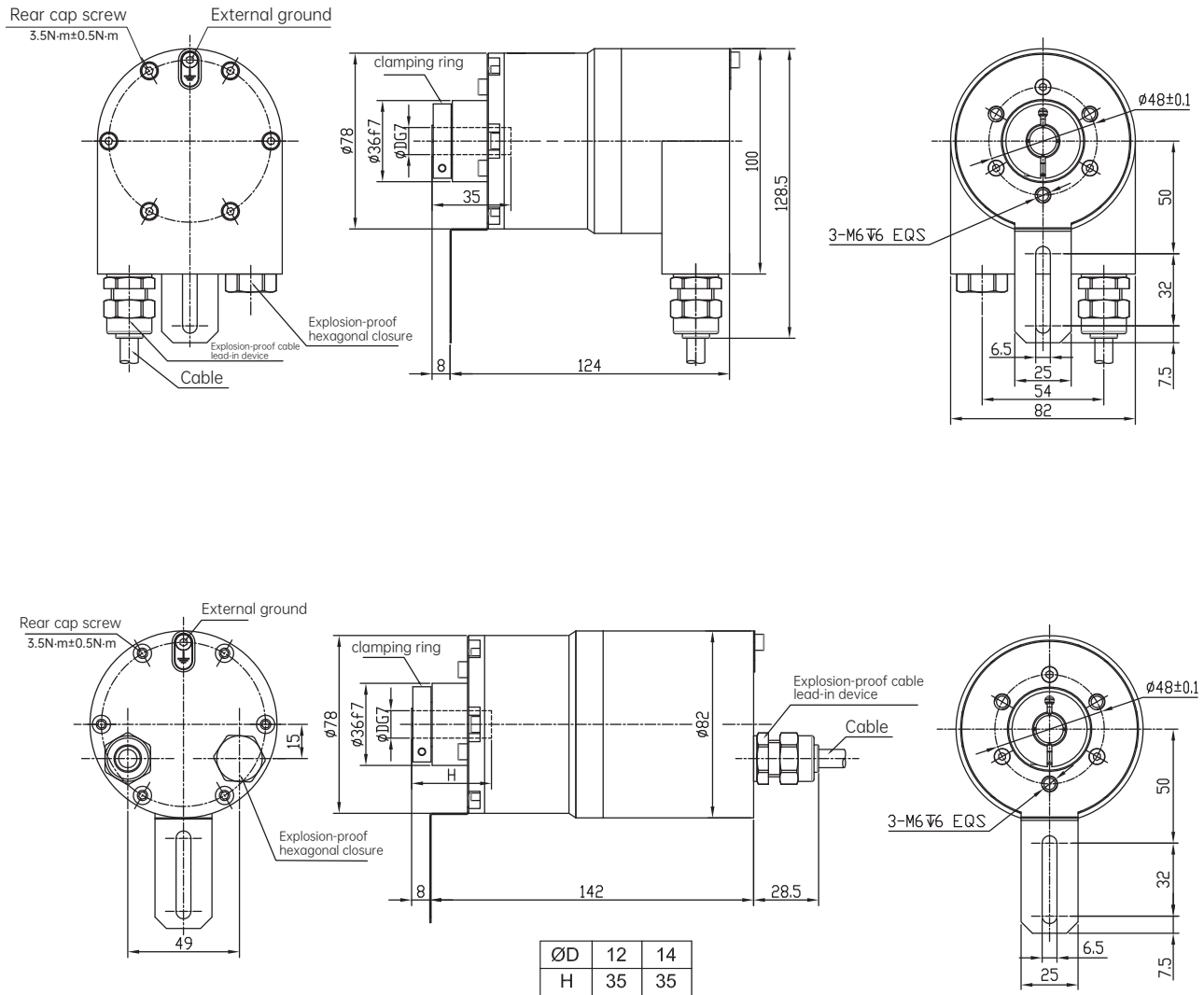
Signal cable
Model: 20.001
Bare wire ends, X m cable, Green, 4-core Ethernet cable, Ø6.5mm



Power cable
Model: 18.015
Bare wire termination, × m RVVP cable, 4×2×0.2 mm² twisted pair shielded cable, Ø6.8mm

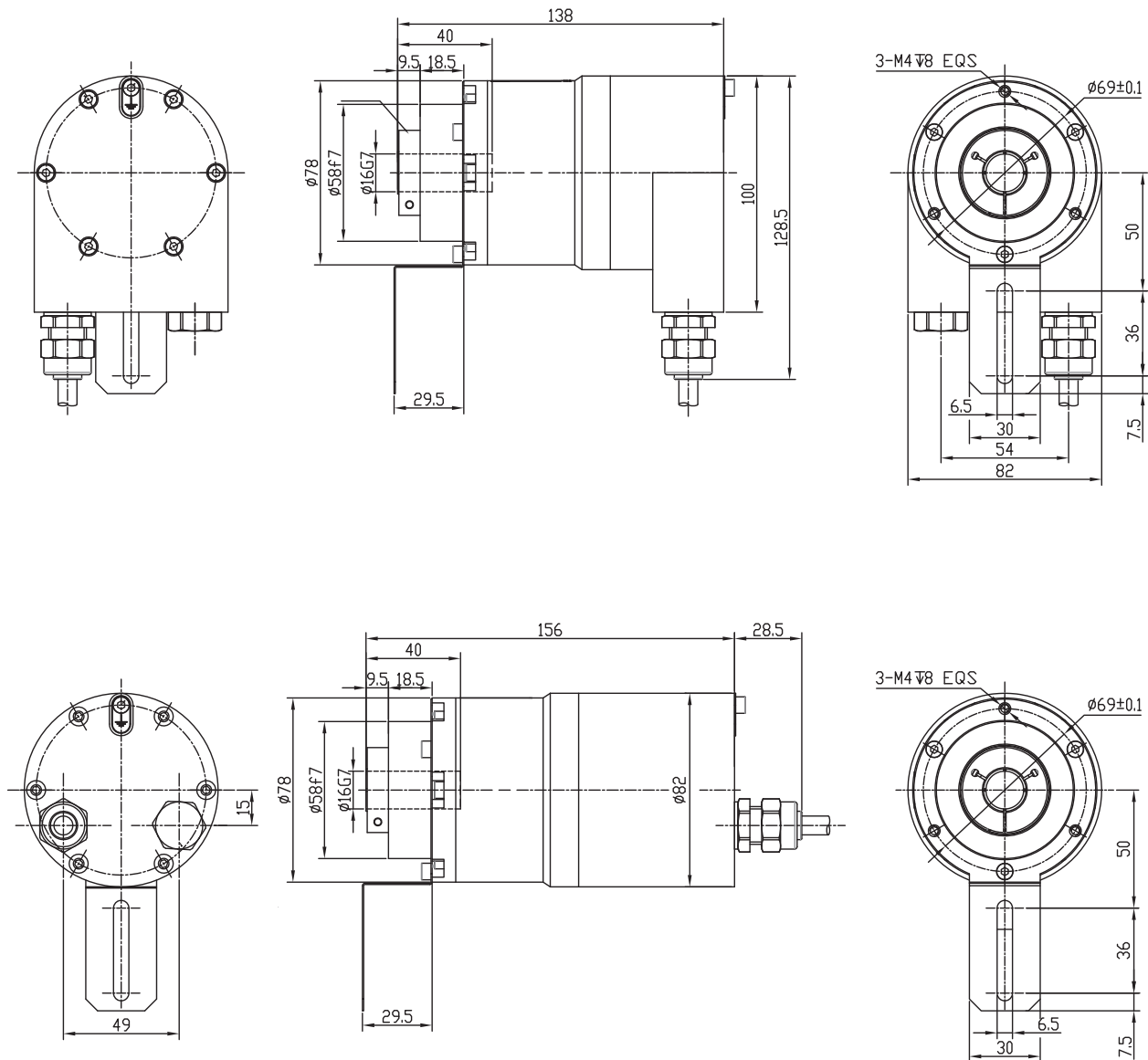
Dimensions

EXDJ(Z)78B12/14



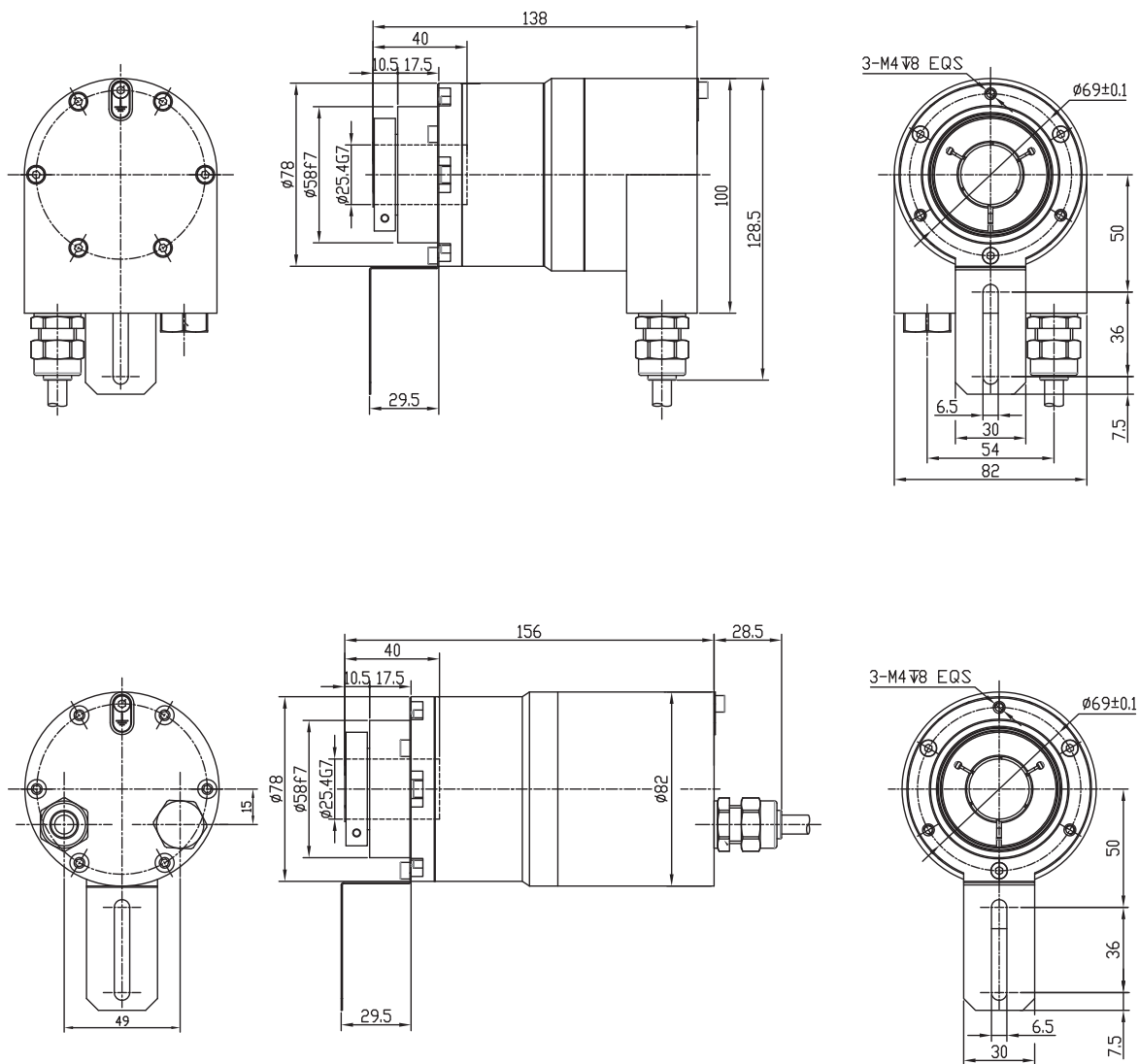
Dimensions

EXDJ(Z)78B16



Dimensions

EXDJ(Z)78B25.4



Dimensions

EXDJ78B (client)

