

1. Introduction

The A25 Encoder is a 2.5" incremental optical encoder, designed for precision motion feedback and control. Our ET7272 available models are short circuit proof with automatic thermal shutdown.

Additionally our Smart Encoder includes reverse voltage protection of the inputs. Our Smart Encoders are available with the most common connectors found on the market making it a universal drop-in replacement for hundreds of brands of encoders for a fraction of the price.

2. Specifications

ELECTRICAL

INPUT

Voltage: 10-30 VDC (for 30V/V models)
Voltage: 5 VDC (for 5V/V models)
Current: 100 mA @ 24VDC (without any load)
High Voltage: Min. 2.4VDC TTL Compatible Low
Voltage: Max. 0.4VDC TTL Compatible

PROTECTION

Reverse Voltage Protected Inputs
Short Circuit Protected Outputs

POWER-ON SETTling TIME

Upon power-up the outputs are tri-stated for up to 100mSec.

OUTPUT FORMAT

Incremental: 100 to 1024 Pulses Per Revolution

OUTPUT DRIVERS

Line Driver Device: ET7272
Voltage: 30V/V = 18-30VDC ($V_{in} = V_{out}$)
30V/5= 5VDC
5V/5V= 4.5-5Vin
Max. Output Current: 40mA
High Voltage: Vcc-0.5V @ 20mA source current
Low Voltage: 0.5V @ 20mA sink current

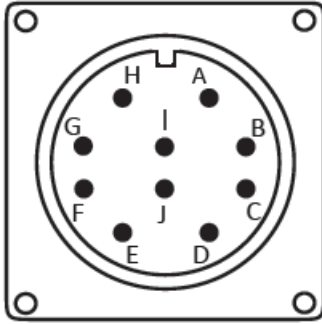
ENVIRONMENTAL

Housing	Size 25 (2.5" dia.) MS Connector
Depth	3.12"
Shaft Size	3/8"
Max. Shaft Speed (RPM)	5000
Max. Starting Torque @ 25 °C (oz. in.)	5
Max. Shaft Loading Axial and Radial:	80 lb.
Bearing Life at Max. Mfr. Spec.	1 x 10 ⁹
Freq. Response	100 kHz
Shock	100g for 11mSec
Vibration	20g to 2000Hz
Enclosure	NEMA 4/IP 65
Operating Temperature	-20°C to 85° C
Storage Temperature	-40°C to 85°C

Smart-Encoder™: Optical Incremental

3. Wiring

10- Pin M18 MS Connector Pin Out



10- Pin M12 MS Connector Pin Out

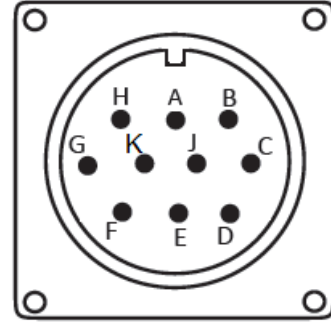


Table 1: 10DL (10 Pin Differential)

Connector Pin	Function	Cable Color Code
A	Signal A	Red
B	Signal B	Yellow
C	Signal Z	Green
D	Power Source (+V)	White
E	Not Connected	-
F	Com (-V)	White/Black
G	Case Ground	-
H	Signal \overline{A}	Red/Black
I	Signal \overline{B}	Yellow/Black
J	Signal \overline{Z}	Green/Black

Table 2: 10DM (10 Pin Differential)

Connector Pin	Function	Cable Color Code
A	Signal A	Red
B	Signal B	Yellow
C	Signal Z	Green
D	Power Source (+V)	White
E	Not Connected	-
F	Com (-V)	White/Black
G	Case Ground	-
H	Signal \overline{A}	Red/Black
K	Signal \overline{B}	Yellow/Black
J	Signal \overline{Z}	Green/Black

5- Pin M12 Connector Pin Out

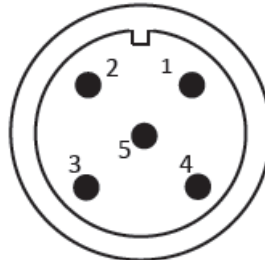


Table 3: 05SL (5 Pin Single Ended)

Pin	Function	Wire Color
1	Power Source (+V)	White
2	Signal B	Yellow
3	Com (-V)	White/Black
4	Signal A	Red
5	Signal Z	Green

8- Pin M12 Connector Pin Out

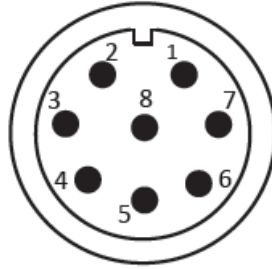


Table 4: 08DL (8 Pin Differential)		
Pin	Function	Wire Color
1	Signal A	Red
2	Power Source (+V)	White
3	Signal \bar{A}	Red/Black
4	Signal B	Yellow
5	Signal \bar{B}	Yellow/Black
6	Signal Z	Green
7	Com (-V)	White/Black
8	Signal \bar{Z}	Green/Black

7- Pin M16 Connector Pin Out

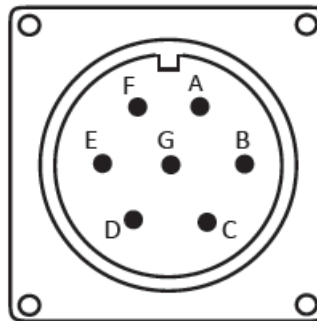


Table 5: 07DL (7 Pin Differential)		
Pin	Function	Wire Color
A	Signal A	Red
B	Signal B	Yellow
C	Signal \bar{A}	Red/Black
D	Power Source (+V)	White
E	Signal \bar{B}	Yellow/Black
F	Com (-V)	White/Black
G	Case Ground	-

4. Mounting

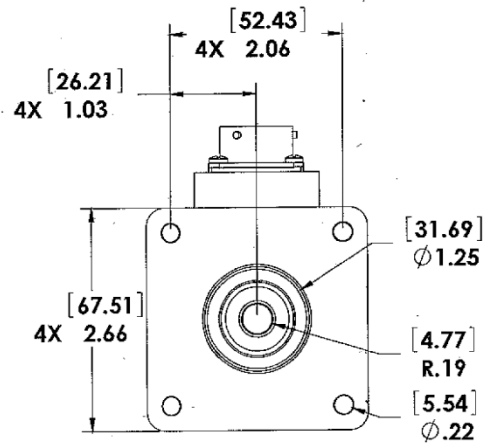
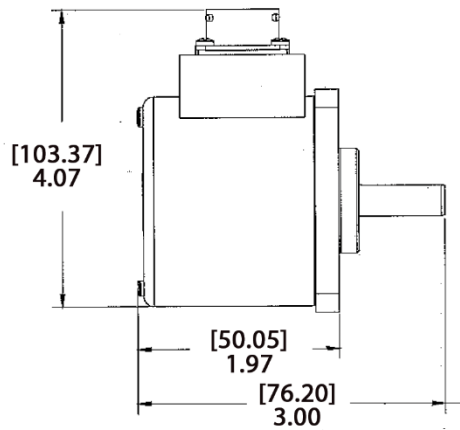
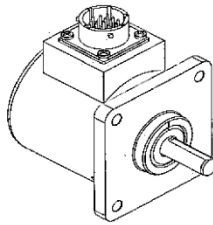
Types of Mounting

Our A25 Encoder can be mounted up to three ways: servo-mount, flange mount or face mount. Typically, servo mounting can be achieved with traditional servo-clamps or through the four 6-32 mounting holes on the face of the resolver. The square Flange plate can be mounted using the 4 mounting Holes.

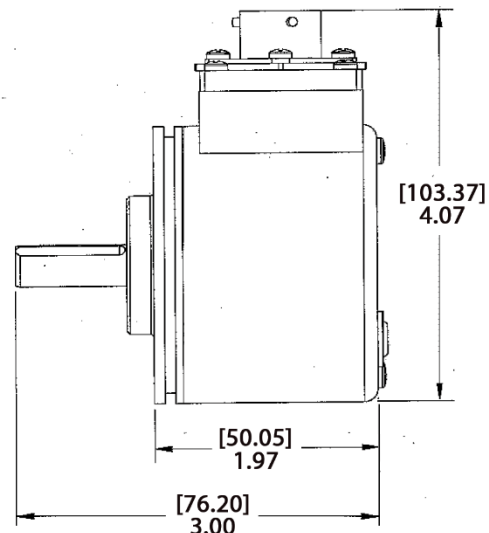
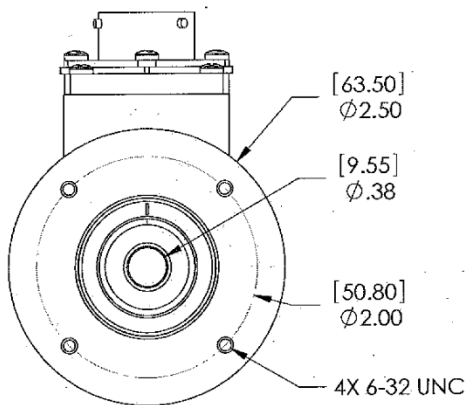
Zero Reference ($\pm 5^\circ$): The position at which the flat on the shaft lines up with the screw in the case and the two mounting holes on the A25 Encoder's face plate.

Mounting Dimensions

Optical Incremental (Flange)



Optical Incremental (Servo)



5. How to Order

A25 – I – X – XXXX – XXXX – XXXX – AL

1
2
3
4

1. Mounting

- S Servo or Face Mount
- F Flange or Face Mount

2. PPR

- 0100 0250 0360 0500
- 0720 1000 1024 2500

For PPR not listed above – Call
Factory for Availability

3. Input Power / Output Driver [ET7272]

- 30V/V 10-30Vin, $V_{in}=V_{out}$
- 30V/5 18-30Vin, $V_{out}=5V$ (TTL Compatible)
- 5V/5V 4.75-5.25 Vin and Vout
- 30V/OC 10-30Vin, Open Collector (ET7273)

4. Output Connector Type

- 05SL 5pin Single line Incremental
- 07SL 7pin Single line Incremental
- 07DL 7pin Differential line Incremental
- 08SL 8pin Single line Incremental
- 08DL 8pin Differential line Incremental
- 10DL 10pin Differential M18 Incremental
- 10DM 10pin Differential M12 Incremental

Cables

CBD-10DL-MXXX	Communication cable with a 10-pin connector attached, M18
CBD-10DM-MXXX	Communication cable with a 10-pin connector attached, M12
CBD-05SL-MXXX	Communication cable with a 5-pin connector attached (Single-line)
CBD-07SL-MXXX	Communication cable with a 7-pin connector attached (Single-line)
CBD-07DL-MXXX	Communication cable with a 7-pin connector attached (Differential)
CBD-08SL-MXXX	Communication cable with an 8-pin connector attached (Single-line)
CBD-08DL-MXXX	Communication cable with an 8-pin connector attached (Differential)

Accessories:

- 3/8" to 3/8" (9.53mm to 9.53mm)
- CPL-003/8-3/8
- MMB-EN359-010 Universal mounting bracket

NOTE:

The shielded interconnecting cable should be routed in its own conduit and kept separate from other high voltages/high inductance wiring. The shield drain wire should be connected to earth ground at both ends of cable.

In addition, use the appropriate mating connector (5 pin, 7 pin, 8 pin, or 10 pin) depending on model selected.

CAUTION:

- Upon power-up the outputs are tri-stated for up to 100mSec.
- Check the cable wiring before applying power.

