ITT

Cleveland Motion Controls

ENCODERS

SHAFT-TYPE

DataTorque™ DT25

Performance Benefits

Cleveland Motion Controls is widely recognized for providing high performance shaft and motor-mounted DataTorque™ Encoder solutions. The CE compliant DataTorque DT25 is no exception.

By combining rugged performance capabilities and proven reliability, even under the most demanding industrial environments, the DataTorque DT25 is the ideal encoder for N/C machine tools, robotics, and industrial servo drives. The DT25 can be installed and forgotten.

All DataTorque Encoders can be custom configured to meet specific, high volume OEM requirements. We can accommodate many specialized combinations of electrical and mechanical interfaces. Please consult our experienced team of application engineers for details on custom OEM products.

Design Features

The DataTorque DT25 Encoder is ruggedly designed. It is protected from contamination with a totally sealed enclosure design, including an environmentally sealed MS connector.

DT25 components are ruggedly mounted, allowing heavy shock and vibration tolerance. A vast array of options are available, meeting a wide variety of customer requirements.

The DataTorque DT25 is an optical incremental encoder with resolution of up to 21,600 CPR (cycles per revolution) with X4 interpolation. It is accurate to ±6 arc seconds (pulse to adjacent pulse) and ±3 arc minutes (pulse to any other pulse).

Heavy-Duty IP65 Sealed, Industrial Encoder

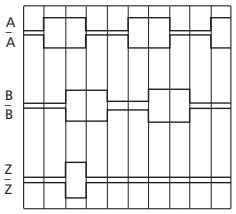
- Specially designed for the most demanding of industrial environments
- Sealed to IP65 Standards
- Environmentally sealed MS connector
- Heavy shock and vibration tolerance
- Various options to meet variety of needs
- Up to 21,600 CPR with X4 interpolation
- Numerous built-in design features and performance benefits enable the DT25 to meet or exceed any other competitive encoder on the market today.
- CE compliant

CE

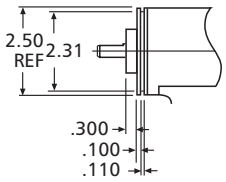
DataTorque™ DT25

CW VIEWING SHAFT

OUTPUT SIGNALS



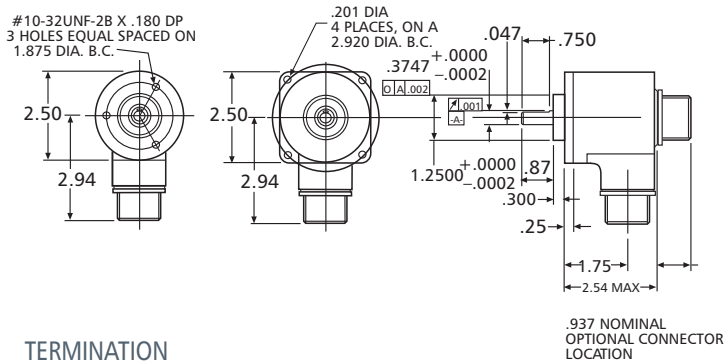
SERVO MOUNT



PACKAGE DIMENSIONS

FACE MOUNT OPTION

FLANGE MOUNT



ELECTRICAL SPECIFICATIONS

Encoder Type	Optical Incremental
Resolution	1-5400 CPR (cycles per revolution)
Power Input	+ 5 VDC ±10% 120 ma (max.) +12 VDC ±10% 120 ma (max.) +15 VDC ±10% 120 ma (max.)
Phase Relationship	A leads B by 90 degrees ±18 degrees electrical CW rotation
Symmetry	180 degrees ±9 degrees
Illumination Source	Single Infrared Emitting Diode (IRLED) Gallium Aluminum Arsenide (GaA1As)
Frequency Response	200 kHz or 3,000 RPM, whichever occurs first
Drive Capability	CMOS & TTL compatible
Output Mode	TTL–Power MOSFET 5 volt differential line driver–SN75183 12 & 15 volt differential line driver– MM88C30
Accuracy	Pulse to Adjacent Pulse: ±6 arc seconds Pulse to Any Other Pulse: ±3 arc minutes

TERMINATION

Pin Function: Standard 02 and 03*

Pin	Function
A	DC Ground
B	+VDC
C	Z out or N/C
D	A out
E	B out
F	Case Ground
G	$\overline{A}$ out
H	$\overline{B}$ out
I	$\overline{Z}$ out or N/C
J	N/C

Pin Function: Standard 00 and 001*

Pin	Function
A	A out
B	B out
C	Zero out
D	+VDC
E	N/C
F	Ground
G	Case Ground

MECHANICAL SPECIFICATIONS

Construction	Anodized Aluminum; IP65 Sealed
Shaft Speed	3,000 RPM maximum recommended
Shaft Acceleration/Decel	100,000 radians/seconds^2
Rotation	Bi-directional
End Play	.001 inches (0.025 mm)
Radial Play	.001 inches (0.025 mm)
Shaft Run Out (maximum)	.001 TIR (with reference to 1.2500 pilot at 1 inch from mounting face)
Bearing Thrust (maximum)	40 lbs. (156 N)
Radial Force (maximum)	35 lbs. (156 N)
Moment of Inertia	.4 x 10^{-3} oz.-in-sec^2
Weight (including connector)	10 oz. (270 grams)
Connector Models 00 and 01	MS3102E-165-1P
Connector Models 02 and 03	MS3102E-18-1P
Bearings	Sealed Instrument Quality
Bearing Lubrication	Andok "C" Lube
Starting Torque (maximum)	1.25 oz.-in. (8.8 X 10^{-3} newton centimeters)
Bearings Life	2 x 10^9 revolutions

ENVIRONMENTAL SPECIFICATIONS

Operating Ambient	-18 to +71 degrees C
Storage Ambient	-54 to +80 degrees C
Vibration	50 Hz - 10 G - 1 Hr
Shock	30 G 11 ms

ORDERING INFORMATION

DT25 - 500 - 5 0 / 5 - F - A - 00 - XXX

A B C D E F G H I

A. Encoder Series:

B. Resolution: (Up to 5400 CPR, many standards, please inquire)

C. Output Configuration: 2 = A Channel Output
3 = A and Z Output
4 = A and B Channel Output
5 = A, B and Z Output

D. Type of Output: 0 = Squarewaves

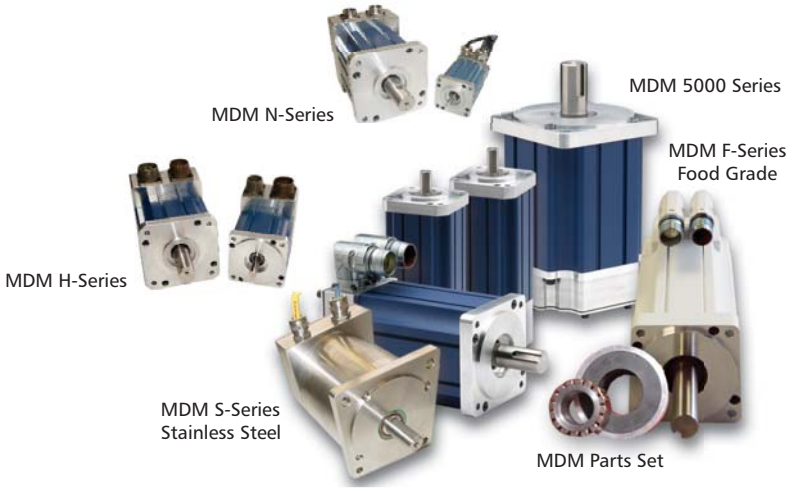
E. Power Input (specify): 5, 12, or 15 VDC

F. Mounting: F = Flange, S = Servo, M = Face

G. Connector Position: A = Axial, R = Radial

H. Output Options: 00 = Standard, 01 = Inverted zero ref.,
02 = Complimentary outputs, 03 = Differential line driver,
05 = Open collector, 06 = X2 interpolation, 07 = Linear amplified sinewave output, 08 = X4 interpolation

I. Special Deviation: Blank = Standard
Number assigned for non-standard spec.; Contact factory



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