



ENCODERS

SHAFT-TYPE

DataTorque™ SM7

Performance Benefits

Cleveland Motion Controls is widely recognized for providing high performance shaft and motor-mounted DataTorque™ Encoder solutions. The new DataTorque SM7 is no exception.

With high-performance high-resolution digital feedback in an extremely small package, the new DataTorque SM7 provides the type of resolution and performance common with much larger encoder packages. The SM7 has a patent pending new sensing scheme and a much simplified encoder design, resulting in a longer service life with less downtime (from feedback device failure). It delivers high noise immunity.

Design Features

The DataTorque SM7 is miniature in size, only 0.787 inches (20 mm) in diameter, yet provides resolutions up to 2,048 lines. Output variations include single-ended, open collector, internal pull-ups or RS-422A differential line driver.

DataTorque SM7 has low supply current requirements, 5v or 5 to 26 VDC, reducing inventory requirements. It is constructed of a conductive carbon fiber composite that provides the EMI shielding of an all-metal housing.



Providing High-Resolution Digital Performance in a Miniature Package

- Resolutions up to 2,048 lines
- Miniature size, 0.787 inches (20 mm) in diameter
- Single-ended and differential outputs
- High noise immunity
- Conductive carbon fiber housing
- Low supply current requirements
- Supply voltages of 5 v or 5 to 26 VDC
- IP50 sealing

DataTorque™ SM7

Providing High-Resolution Digital Performance in a Miniature Package

ELECTRICAL SPECIFICATIONS

Input Voltage	5 VDC +/- 5% or 5-26 VDC; @ 80mA	
Output Format	Quadrature with A leading B for CW rotation	
Frequency Response	200 kHz	
Symmetry	180 degrees +/- 10%	
Minimum Edge Separation	54 electrical degrees	
Noise Immunity, Tested to:	BS EN5502	DN ENV50204: 1996
	DD ENV50141: 1994	BS EN61000-4-4: 1995
	IEC 801-3: 1993	BS EN61000-4-2: 1995

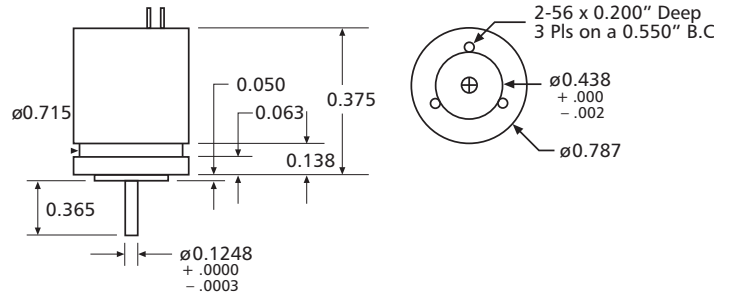
MECHANICAL SPECIFICATIONS

Maximum Shaft Speed	8,000 RPM
Shaft Diameter	0.125 inches (1/8 inches)
Shaft Material	Stainless Steel
Bearings	Radial Ball Bearing, R2 Type
Radial Shaft Load	2 lbs. Max.
Axial Shaft Load	1 lb. Max.
Housing	Carbon Fiber Composite—10k ohms/cm
Mounting	Servo/Face
Moment of Inertia	9.5 x 10 ⁻⁶ oz.-in-sec(2)
Acceleration	1 x 10(5th) Radians per second(2)

ENVIRONMENTAL SPECIFICATIONS

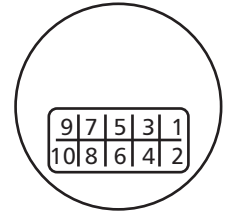
Operating Temperature	-10 to 85 degrees C. 0 to 100 degrees C, optional
Storage Temperature	-40 to +125 degrees C
Humidity	98% Non-condensing
Vibration	20 g's @ 50 to 500 CPS
Shock	50 g's @ 11 ms. duration

PACKAGE DIMENSIONS



TERMINATION

PIN	FUNCTION	PIN	FUNCTION
1	D.C. GROUND	6	B NOT OUT
2	+VDC	7	A OUT
3	Z OUT	8	A NOT OUT
4	Z NOT OUT	9	N/C
5	B OUT	10	CASE GROUND



ORDERING INFORMATION

SM7 - 05/05 - 1000 - 01 - 01 - S1

A B C D E F

A. Encoder Series:

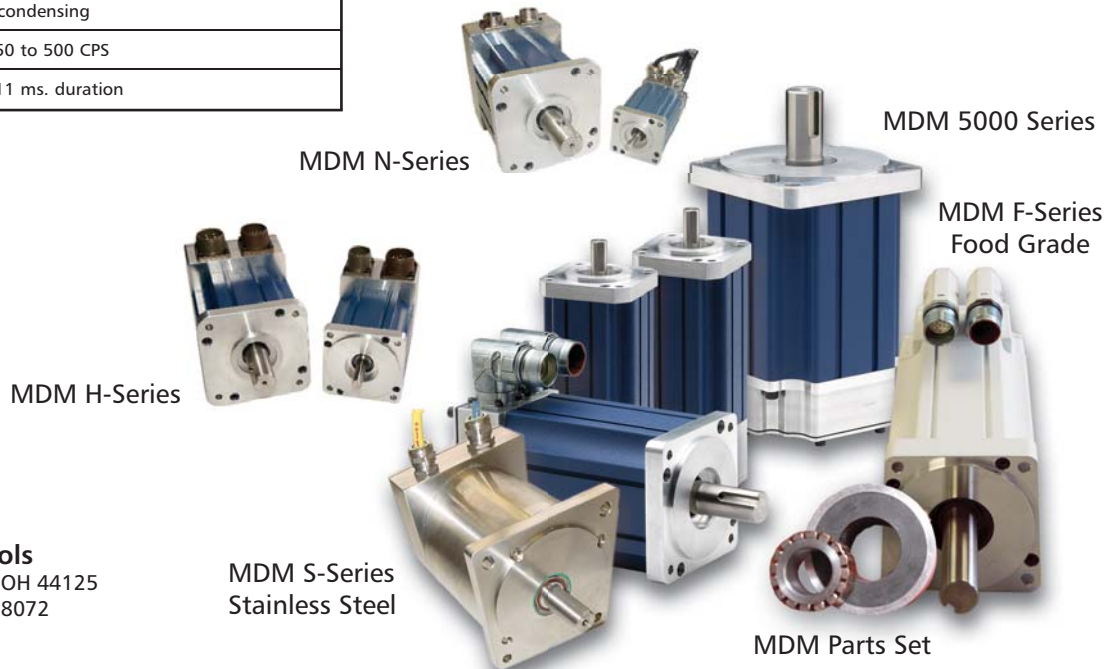
B. Supply Voltage: 05/05= 5 VDC +/-5%
05/26= 5-26 VDC

B. Line Count: 500, 512, 1000, 1024, 2000, 2048

D. Output Option: 01= TTL Output
02= RS422A Line Driver
03= OL7272 5-26 VDC Line Driver

E. Termination: 01= Straight Pins
02= 8 inches Ribbon Cable with Connector

F. Shaft Options: S1= 0.125 inches



Cleveland Motion Controls

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