

Slim Tach SL56

NorthStar™ brand

Bearingless Encoder

Key Features

- **Bearingless Design Mounts to 56 and 140 C-Face Motors**
- **Thin 3/4" Profile Saves Space and Can be "Sandwiched" Between Motor & Reducer**
- **Magneto-Resistive Technology Resists Dust, Dirt, Oil, Water and Other Contaminants**
- **Anodized Aluminum Housing with Field-Serviceable Connector**
- **Single or Dual Isolated Outputs Available**
- **New Model Available with Larger Air Gap and Diagnostic LED. See ST56**



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental, Magnetic
Pulses per Revolution: 64-1024 PPR
Phasing Sense: A leads B for Counter-Clockwise rotation (CCW) viewing encoder-mounted end
Quadrature Phasing: 90° ± 22°
Symmetry: 180° ± 54°
Index: 270°, ungated (optional gated to falling B edge)
Number of Output Modules: Single or Dual

ELECTRICAL

Input Voltage Requirement: 5-15 or 5-26 Volts DC
Current Requirement:
 With Electrical Option L or H: 45 mA typical per sensor module plus line driver load
 With Electrical Option V or 5: 65 mA typical per sensor module plus line driver load
Output Signals:
 IC-WE Differential Line Driver: 150mA, sink or source
 4428 Differential Line Driver: 150mA, sink or source

ELECTRICAL (CONT.)

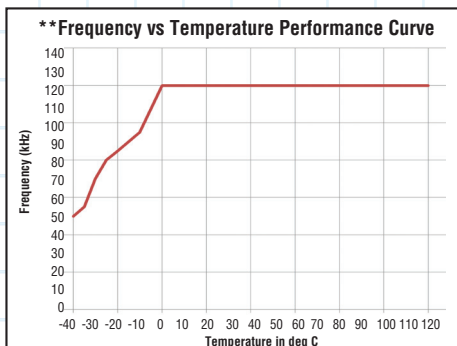
Frequency Response: 0 - 120kHz Data & Index. Please refer to our performance curve diagram for frequency and temperature details**
Noise Immunity: Tested to EN61326-1
Electrical Immunity: Reverse polarity and short circuit protected
Connector: 10 pin industrial duty latching, sealed NEMA 4 & 12, IP65; MS connector or pig-tail

MECHANICAL

Bore Size: 5/8" to 3.75"
Mounting Configuration: 4.5" 56C-Face or 140 C-Face Mount for NEMA MG1 Standards
Max. Shaft Speed: 5,000 RPM
Shaft Length Required: 0.7" min
Allowable Shaft End-Play: ± 0.045"
Allowable Shaft Runout: 0.002" TIR
Acceleration Rate: 12,000 rpm/sec max
Housing Material: Cast Aluminum
Weight: 7 lbs

ENVIRONMENTAL

Operating Temperature Range:
Standard: -40°C to +90°C
Extended: -40°C to +100°C
Storage Temperature Range: -40°C to +120°C
Shock (Sensor Module): 30 G's Min
Vibration: 18 G's @ 5-2000 Hz spectrum
Humidity: Up to 98% (non-condensing)



ELECTRICAL CONNECTIONS

Signal	Connector Pin	Pigtail Cable	MS 3102E18-IT#	Conduit Box
Common	1	Black	F	1
B	2	Green	B	5
A	3	Blue	A	3
Z *	4	Violet	C	7
No Connection	5	—	E	—
Vcc (5-15 VDC)	6	Red	D	2
B	7	Yellow	I	6
A	8	Gray	H	4
Z *	9	Orange	J	8
Shield	10	Braid	G	—

* Index (Z) optional. See Ordering Information

Ordering Information

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: PPR	Code 3: Index	Code 4: Wheel Bore	Code 5: Termination	Code 6: Electrical	Code 7: Cover/Adapter
<input type="checkbox"/> 5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ordering Information						
S5 Motor Mount Ring, for 4 1/2" C-Face Motors (56C) Single Output D5 Motor Mount Ring, for 4 1/2" C-Face Motors (56C) Dual Output	0064 0128 0256 0512 1024	L No Index Available when Code 2 is 0512, 1024 or 2048 G Gated Index (Z, Z̄) Z Differential Index (Z, Z̄)	J04 5/8" J05 7/8" J06 1.00" J07 1-1/8" K09 1-3/8" K10 1-1/2" K11 1-5/8" K12 1-3/4" K13 1-7/8" K14 2.00" K15 2-1/8" K16 2-1/4" K17 2-3/8" K18 2-1/2" K19 2-7/8" For additional bore sizes up to 3.75" maximum, please consult factory.	B Conduit Box C Latching Industrial Connector with 1/2" NPT E 3" Extended Height Latching Industrial Connector with 1/2" NPT F Latching Industrial Connector without Mating Connector H 3" Extended Height Latching Industrial Connector without Mating Connector M 10 Pin MS Connector P 18" Pigtail Cable Q Latching Industrial Connector on 18" Pigtail Cable R Latching Industrial Connector on 18" Pigtail Cable without Mating Connector	L 5-15V in, 5-15V Line Driver (4428) out H Same as L with extended temp. to 100°C V 5-26V in, 5-26V Line Driver (IC-WE) out 5 5-15V in, 5V Line Driver (4428) out Differential, bidirectional signals (A, Ā, B, B̄)	C Standard Cover E Extra heavy duty steel cover F Flat Thru-hole cover S Double 56 C-Face Sandwich Adapter T Flat No Hole Cover

Note: See ACCESSORIES Section For Connectors, Spare Parts and Pulse Wheels

DIMENSIONS inch [mm]

