

ST38 Series Encoders 1-2048 pulses



ST38 hollow shaft encoder

ST38 Series High Performance Encoder

- Single or dual channel with index
- RS422 differential line driver standard
- Low cost and low profile
- Easy to install
- -10°C to 100°C operating temperature
- Several mounting configurations available
- Duplex bearings and flexible coupling

Electrical Specifications

Resolution	200 to 2048 lines
Bandwidth	200 kHz maximum
Incremental Accuracy	0.5 arc minutes
Commutation Accuracy	N/A

Mechanical Specifications

Diameter x Height	1.5 OD x 0.9 inches
Shaft Bore	Up to 3/8 inches
Minimum Shaft Length	0.25 inches standard
Maximum Shaft Length	Thru shaft is standard
Axial Shaft Movement	± 0.030 total
Shaft Speed	10,000 RPM maximum

Environmental Specifications

Operating Temperature	-10°C to +100°C
Storage Temperature	-25°C to +100°C
Relative Humidity	90% non-condensing
Mechanical Shock	100G for 6mS
Vibration	10 - 2000 Hz @ 10G

Reference data sheet #501 for more information.

ST50 Series Encoders 1-5000 pulses



ST50 hollow shaft encoder

ST50 Series High Performance Encoder

- Dual channel with index and gating option
- RS422 differential line driver standard
- Brushless commutation
- 360° commutation alignment
- -40°C to 125°C operating temperature
- Several mounting configurations available
- Duplex bearings and flexible coupling

Electrical Specifications

Resolution	200 to 5000 lines
Bandwidth	500 kHz maximum
Incremental Accuracy	0.5 arc minutes
Commutation Accuracy	± 30 arc minutes

Mechanical Specifications

Diameter x Height	2.0 OD x 0.9 inches
Shaft Bore	Up to 5/8 inches
Minimum Shaft Length	0.35 inches standard
Maximum Shaft Length	Thru shaft is standard
Axial Shaft Movement	± 0.030 total
Shaft Speed	10,000 RPM maximum

Environmental Specifications

Operating Temperature	-40°C to +125°C
Storage Temperature	-55°C to +150°C
Relative Humidity	90% non-condensing
Mechanical Shock	100G for 6mS
Vibration	10 - 2000 Hz @ 10G

Reference data sheet #502 for more information.



FEATURES:

- Resolutions to 2048 lines, dual channel with index
- Differential signal processing for increased reliability
- 200 kHz bandwidth, -10°C to 100°C operating temperature, RS422 output
- 1.5 OD x 0.9 inches high, bores to 3/8 maximum
- Mounting #2-56 on 1.280 bolt circle in 2 places standard, others available
- Duplex bearings and flexible coupling
- Low cost and low profile

Electrical:

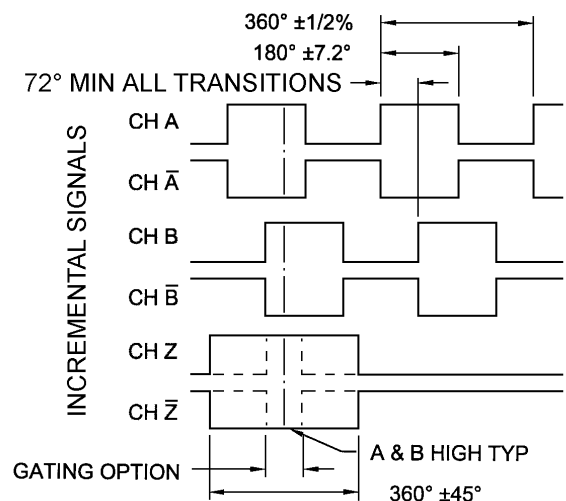
Resolution	200 to 2048 lines/revolution
Bandwidth	200 kHz maximum
Incremental Accuracy	0.5 arc minutes

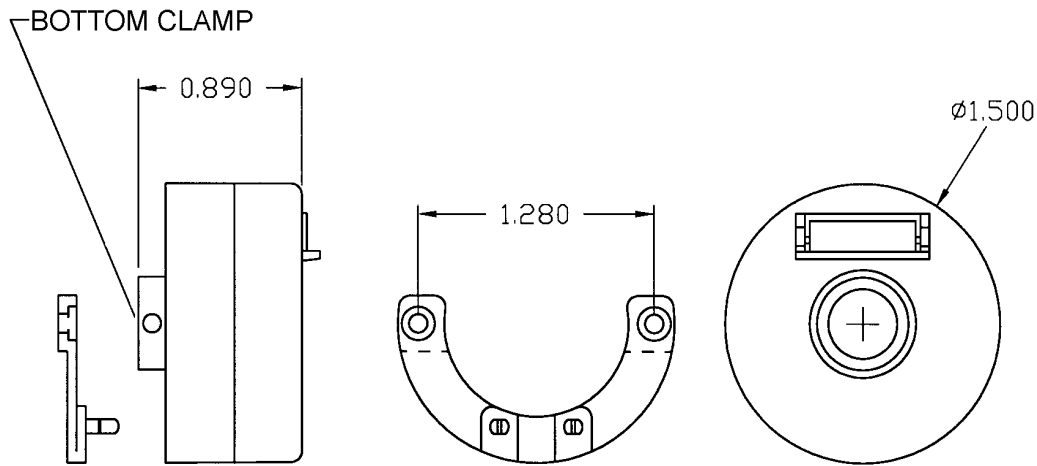
Mechanical:

Size (Diameter x Height)	1.5 OD x 0.9 inches
Optical Radius	0.555 (14mm)
Shaft Bore	Up to 3/8 inches
Minimum Shaft Length	0.25 inches
Maximum Shaft Length	Through shaft is standard
Axial Shaft Movement	±0.030 total
Shaft Speed	10,000 RPM max

Environmental:

Operating Temperature	-10°C to +100°C
Storage Temperature	-25°C to +100°C
Relative Humidity	90% non-condensing
Mechanical Shock	100G for 6mS
Vibration	10 to 2000 Hz @ 10G





The flexible design concept of the ST38 allows for a great variety of encoder applications while maintaining cost and quality. The model numbering system can be used to configure encoder types using the standard options currently available. However, new models may be configured, by consulting the factory, for specific options not listed here. Almost any line count and shaft bore is possible within the limits listed. Virtually any electronic circuit or mounting pattern can be made available.

ST38-XXXX-XX-XXX-X

Line Count

0200 - 200
0256 - 256
0360 - 360
0500 - 500
0512 - 512
1000 - 1000
1024 - 1024
1250 - 1250
2000 - 2000
2048 - 2048

Shaft Bore

006 - .2362 (6mm)
249 - .2498
250 - .2501
312 - .3123
008 - .3150 (8mm)
374 - .3748
375 - .3751

Mounting Pattern

A - #2-56 on 1.280 BC

Clamping

Bottom Clamp

Electronic Output

01 - Incremental only, RS422
02 - Incremental only, RS422 with Index Gating option



FEATURES:

- Resolutions to 5000 lines, dual channel with index, brushless commutation
- Differential signal processing for increased reliability
- 500 kHz bandwidth, -40°C to 125°C operating temperature, RS422 output
- 2.0 OD x 0.9 inches high, bores to 5/8 maximum
- Mounting #4-40 on 1.812 bolt circle in 2 places standard, others available
- Duplex bearings and flexible coupling
- 360° commutation alignment

Electrical:

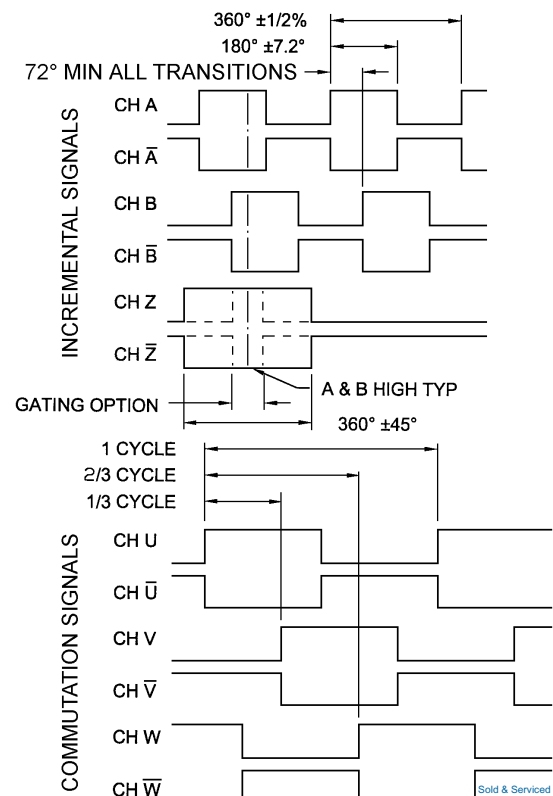
Resolution	200 to 5000 lines/revolution
Bandwidth	500 kHz maximum
Incremental Accuracy	0.5 arc minutes
Commutation Accuracy	±30 arc minutes
Commutation Adjustment	360°

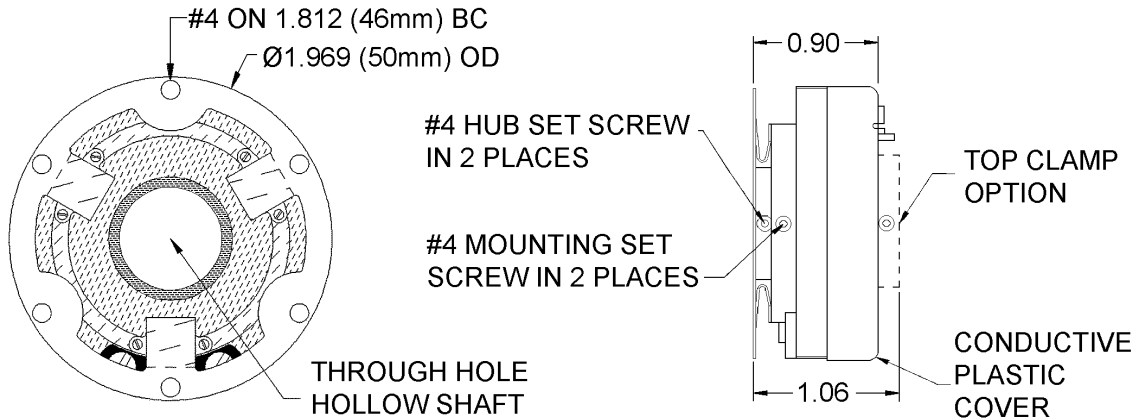
Mechanical:

Size (Diameter x Height)	2.00 OD x 0.9 inches
Optical Radius	0.780 (20mm)
Shaft Bore	Up to 5/8 inches
Minimum Shaft Length	0.35 bottom, 1.0 top clamp
Maximum Shaft Length	Through shaft is standard
Axial Shaft Movement	±0.030 total
Shaft Speed	10,000 RPM maximum

Environmental:

Operating Temperature	-40°C to +125°C
Storage Temperature	-55°C to +150°C
Relative Humidity	90% non-condensing
Mechanical Shock	100G for 6mS
Vibration	10 to 2000 Hz @ 10G





The flexible design concept of the ST50 allows for a great variety of encoder applications while maintaining cost and quality. The model numbering system can be used to configure encoder types using the standard options currently available. However, new models may be configured, by consulting the factory, for specific options not listed here. Any line count and shaft bore is possible within the limits listed. Virtually any electronic circuit or mounting pattern can be made available.

ST50-XXXX/X-XX-XXX-X

Line Count

0200 - 200
0256 - 256
0360 - 360
0500 - 500
0512 - 512
1000 - 1000
1024 - 1024
1250 - 1250
2000 - 2000
2048 - 2048
4096 - 4096
5000 - 5000

Commutation

0 - None
2 - 4 Pole
3 - 6 Pole
4 - 8 Pole
6 - 12 Pole

Shaft Bore

006 - .2362 (6mm)
249 - .2498
250 - .2501
312 - .3123
008 - .3150 (8mm)
374 - .3748
375 - .3751
010 - .3937 (10mm)
012 - .4725 (12mm)
500 - .4998
014 - .5512 (14mm)
625 - .6248

Mounting Pattern

A - #4-40 on 1.812 BC
B - Size 21 Servo
C - Size 15 Servo
D - #4-40 on 1.812 BC
E - Size 21 Servo
F - Size 15 Servo

Clamping

Bot. Clamp
Bot. Clamp
Bot. Clamp
Top Clamp
Top Clamp
Top Clamp

Electronic Output

01 - Incremental & Commutation, both RS422
02 - Incremental only, RS422
03 - Incremental & Commutation, both RS422 with Index Gating option
04 - Incremental only, RS422 with Index Gating option

Accessories



Encoder Accessories

Several different mounting accessories are available for the Servo-Tek encoder line. We offer a coupling accessory for our shaft encoders that will allow attachment to virtually any shaft. An adaptor is also available that will allow attachment to PY mounting kits.

Encoder Cables and Flying Leads

For Servo-Tek's ST38 and ST50 series hollow shaft encoders, we have shielded cables and flying leads available with mating connectors in 8, 14 or 16 pin configurations. See table below for details ("L" is length in inches). Standard shielded cable length is 24 inches for both ST50 and ST38 encoders.

Cables & Flying Leads for ST38 and ST50 Series Encoders			
Pins	Shielded Cable at 80°C	Shielded Cable at 105°C	Flying Leads at 200°C
8	20076-L	20184-L	20073-L
14	20180-L	20183-L	20182-L
16	20181-L	20084-L	20074-L

Other Products

CS-7514F-51C

This low ripple DC tach-generator has a 1/4" stainless steel shaft, 22 AWG shielded cable and an output of 3 volts per thousand RPM. The ripple will not exceed 1.5% RMS on this unit.



SA-740A-2

This small, face mounted DC tach-generator has a 1/8" stainless steel shaft and an output of 7 volts per thousand RPM. It is ideally suited to many instrumentation applications.



ST-7565A-2

This bearingless tach-generator is small in size and has a black delrin housing and end plate. Mounts easily using a #10-32 threaded shaft. Mounting brackets will not be required.



Tachsyn Transducer

The patented Tachsyn brushless tachometer/commutator is a unique transducer that can be used as a brushless DC tachometer and/or as a brushless DC motor commutator.



Request a Servo-Tek RC-700 catalog for more information on our DC Tachometer Generators.