AC AUTOTECH CONTROLS

Rotary Position Transducer
SAC-RL100-M19
Instruction & Operation Manual

Specifications

MECHANICAL & ENVIRONMENTAL

Housing	Size 40 (4.0" dia.)
Max. Starting Torque @ 25 °C (oz. in.)	8 (576.1)
Moment of Inertia (gm/cm²)	45
Max. Slew Speed (RPM)	5000
Shaft Size	5/8"
Max. Shaft Loading Axial	50
Bearing Life at Max. Mfr. Spec.	2×10^9
Approx. Weight (lbs)	6
Shock	200g for 11ms
Vibration	20g to 2000Hz
Enclosure	NEMA 13
Operating Temperature	-67°F to 248°F FF
Storage Temperature	-85°F to 302°F

ELECTRICAL

Frequency: 2250 Hz

Input voltage: 1.88 V

Input current: 6 mA

Input power: 6.5 mW

Rotor impedence with stator

Open circuit Z_{ro}: 180+j256 ohms

DC resistancc (Rotor): 18.3 ohms

Output voltagc (Stator): 2.63 V 5%

Transformatioil ratio: 1.400

Mounting

Autotech resolvers are designed to operate reliably under extremely hostile environments, such as: continuous mechanical shock, vibration, extreme temperature and humidity changes, oil mist, coolant and solvents. Standard precautions to prevent damage to bearings of any rotational device should be followed to prolong their life.

1. It is recommended that the Autotech encoder mounting bracket (MMB-EN359-010) be used, wherever possible, for size 40 resolvers.

The servo-mount resolvers may be mounted either with traditional servo-clamps or through the four threaded mounting holes on the face of the resolver.

The flange-mount resolvers are mounted using four mounting holes in the square flange.

2. If the resolver is to be axially shaft driven, be sure that the shaft is aligned. Misaligned shafts can destroy resolver bearings.

3. If a pulley, coupling, or sprocket is mounted to the resolver shaft, DO NOT hammer or press on the shaft. DO NOT force fit anything on to or off of the resolver shaft.

4. If the resolver is belt-driven or chain-driven DO NOT OVERTIGHTEN the drive belt or chain. Too much side loading (radial) can destroy the resolver bearings.

5. To maintain NEMA13 rating of the resolver the following precautions must be taken:
a.) Sealing compound must be used when fitting the conduit pipe; b.) The bearing seal must be checked once every six months and replaced if necessary. Lubricating the bearing seal periodically prolongs life.
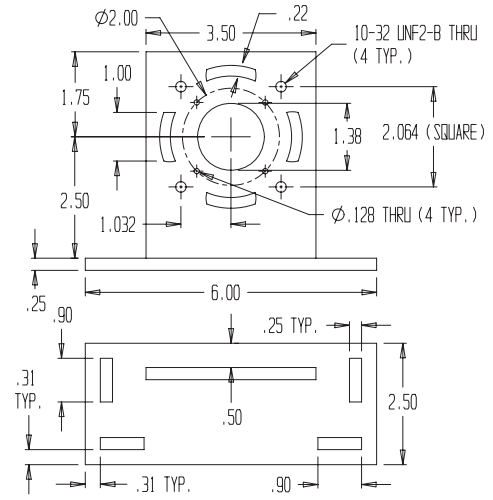
6. Zero Reference may be located by aligning the shaft as shown in the first figure on the next page.
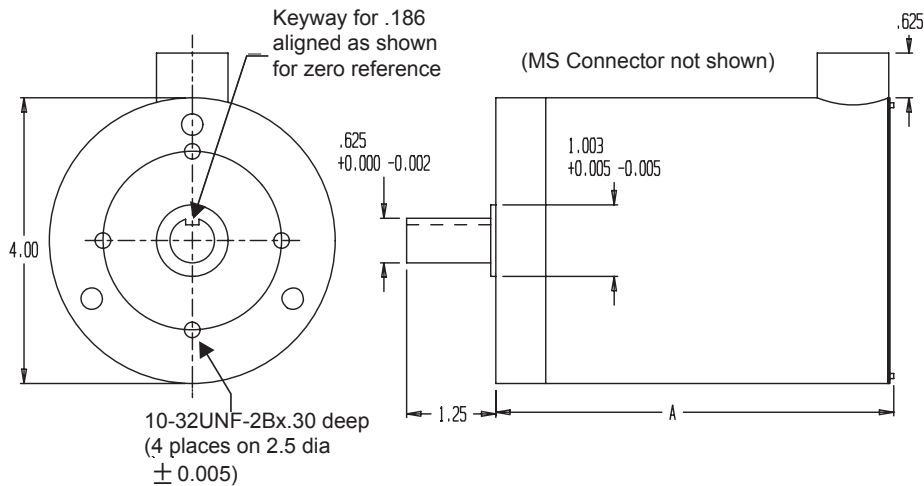
Zero Reference
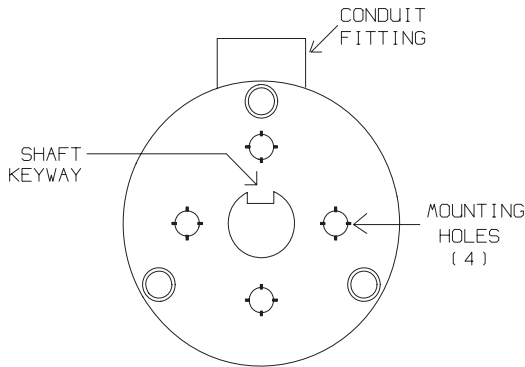
Size 40 resolvers are at approximately zero when the shaft key way is aligned with mounting hole and conduit fitting.
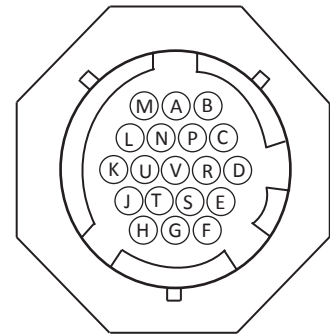
Mounting Bracket

Outline Dimensions

Wiring

| CBL-10T220-XXXX Wire Color	Signal/ Function	M19 MS Connector Pin #
Black/ Green	Rotor R1	F
Green	Rotor R2	E
Black/ Yellow	S1 Stator	D
Yellow	S3 Stator	C
Black/Blue	S2 Stator	B
Blue	S4 Stator	A
Shield	Case Ground	G

19 Pin MS Connector

Notes:

1. Black/ Green indicates a black wire with green stripes.

2. An overall foil shied cable with twisted pairs (such as Autotech's Cable CBL-10T22-xxxx) must be used for wiring the unit. The pairs must be formed as follows: S1 and S3, S2 and S4, R1 and R2.

3. MS Connector: MS3112E-14-19P; Mating Connector: MS311F-14-19S

Resolver Windings
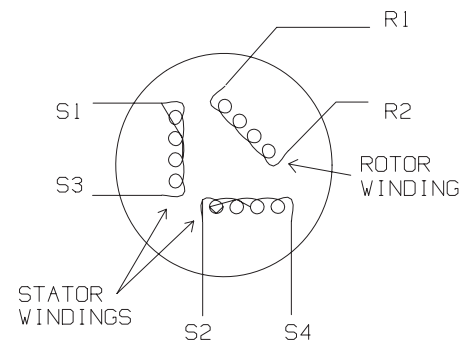
Grounding and Shielding

1. Resolver wiring must be done using twisted pairs in cable with an overall foil shield. The twisted paris must be wired as per wiring instructions. See "How to Order" section for suitable cable offered by Autotech.

2. It is recommended that the shielded resolver cable be routed in its own conduit or cable tray.

3. All shielded resolver cable must be kept at a minimum distance of 2 inches from all high voltage or inductive wiring.

4. All shielded resolver cable must be kept at a minimum distance of 12 inches from all motor wiring controlled by AC or DC drives.

5. All ground planes (chassis grounds) in the total system must be held to the same RF potential, by good metallic connections to building frames, conduit or wiring trays.

6. The shield drain wires may be terminated in one of two ways.

a) Connect to chassis ground at each end and not connected to signal reference at any pont in the system.
b) Connect to signal reference at the decoder only. The shield drain should remain unconnected at the resolver end and the shield should not touch earth ground at any point in its run.

NOTE: Resolver with MS connectors have shield drain wire pre-terminted for method a).

Method a) is recommended for all Autotech products. In certain circumstances, in unusual EMI conditons, method b) may be necessary after consulting factory.

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