SYSTEMS ELECTRONICS GROUP

M240: RESOLVER ISOLATION MODULE

- **Used to increase noise immunity of resolvers by providing electrical isolation between the resolver and the programmable limit switch (PLS) it interfaces with**

- **Transformers isolate the reference signal (R1, R2) and both stator signals (S1,S3 and S2,S4) of resolver format signals**

- **Provides 1500 VRMS isolation between PLS and resolver**

- **Dip switch selectable transformation ratio of 1:1 or 1:2 on reference signal and ratio of 1:1 and 2:1 on stator signals allows increased flexibility in matching different resolvers to different PLSs and increases noise immunity**

- **Removable Field Wiring Connector**

- **Standard 3" x 3" x 1" DIN Rail Mountable Module**

General Description

The M240 is a resolver isolation module used to increase the noise immunity of resolvers connected to Programmable Limit Switches (PLS). Using transformer isolation, the M240 provides up to 1500VRMS isolation between the PLS and resolver. This eliminates any ground loops between the resolver and PLS and increases the common mode noise rejection to the PLS.

In addition, dip switch selectable transformation ratios of 1:1 or 1:2 on the reference signal and ratios of 1:1 and 2:1 on the stator signals increase the

flexibility in matching different resolvers to different PLSs. The switches can be set to approximate both the reference and stator signals for different PLSs and rseolvers.

Using the selectable transformation ratios, the noise immunity of the resolver/PLS can also be increased. This is accomplished by selecting a 1:2 ratio on the reference signal transmitted to the resolver, then selecting a 2:1 ratio on the stator signals returned from the resolver. The reference signal is amplified by two and then transmitted to the

General Description (cont'd)

resolver. The returning stator signals (which are twice the normal amplitude) are then received and attenuated by half. Any induced differential noise on the reference or stator signals will be attenuated by half before it is feed into the PLS.

The dip switches are located on the PC board inside the M240 module. To set the switches, carefully pry the two halves of the M240 apart. Refer to figure 1 for the function of each switch. Set the switches to the desired ratios and re-assemble the two halves of the M240. Note that the respective switch is closed when in the "On" or "Closed" position and is open when in the "Off" or "Open" position.

Refer to figure 1 for a typical wiring diagram of the M240 connected to a PLS and resolver.

Figure 1
Typical User Wiring

M240: RESOLVER ISOLATION
MODULE

Specifications

Module Size:
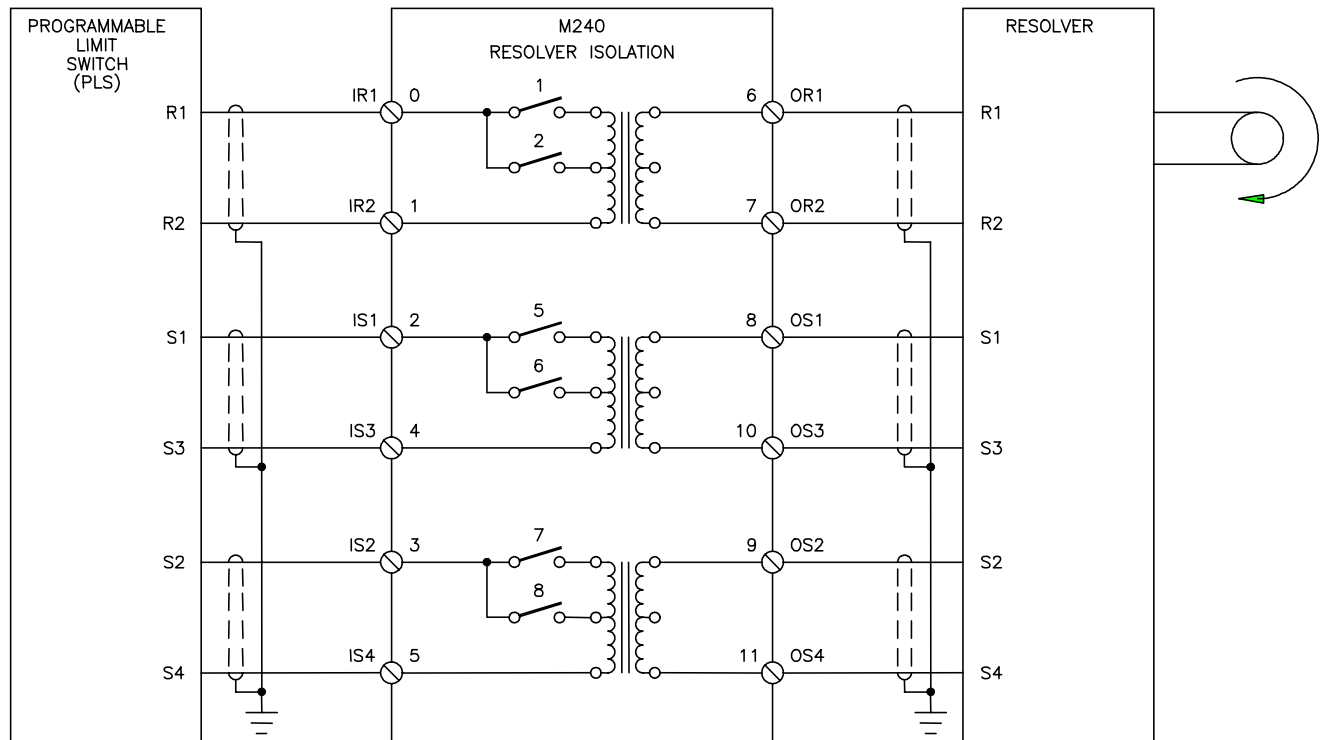   Length: 3.25"
    Height: 3.75"
    Width: 1.00"

Transformer Characteristics:

Impedance:	600 ohms
Current (max):	0.5 milliamps
Insertion Loss:	1.6dB
Diaelectric Isolation:	1500 VRMS

Temperature Ranges:

Storage:	0 to 70 degrees C
Operating:	0 to 60 degrees C

Relative Humidity: 5 to 95% non-condensing