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Kit Instructions

1334-MOD-N

Isolated Signal Conditioner Card

Description

The 1334-MOD-N Isolated Signal Conditioner Card is designed for use in both the Bulletin 1334 and 1335 AC Drive. The card provides a means of controlling the Drive output frequency (speed) from an external analog signal. Card input signals are electrically isolated from card output signals.

The basic functions provided by the card are:

- 0 to +10V DC Input
- 0 to +250V DC Input
- 0 to 250V AC Input
- 4 to 20mA DC Input

— ONLY ONE OF THE ABOVE INPUTS MAY BE CONNECTED AT ANY ONE TIME —

- Frequency Range Scaling for 0-60, 0-120, or 0-200 Hz Operation
- AUTO/MANUAL Mode Selection
- Independently Adjustable Offset and Gain (MIN & MAX Speed) Adjustments
- +12V DC, 20mA DC Output Source for Exclusive Use With the 3-15 PSI Transducer Options

FREQUENCY RANGE SCALING

Jumper positions **1** through **3** are for scaling the operating frequency range of the Isolated Signal Conditioner Card. The standard factory setting of this jumper is with the jumper covering the pins at position **3** to scale the card for 60 Hz operation. For 120 Hz operation, move the jumper to position **2**. For 200 Hz operation, move the jumper to position **1**. Positions **4** through **8** should not be used.

MODE SELECTION

S2, the (2) position **AUTO/MAN** slide switch located on the card selects whether the Drive will follow the external reference signal applied to the card (**AUTO** operation), or the reference signal from the manual speed pot (**MAN** operation). If required, AUTO/MAN selection may be accomplished remotely by a customer supplied AUTO/MAN switch when the card mounted switch is left in the AUTO position.

OFFSET & GAIN ADJUSTMENTS

When the **AUTO** mode is selected, the normal MIN & MAX Drive speed adjustment pots on the Modulator Logic Board are inoperative. Instead, two pots on the card now set the MIN & MAX speeds. **R19** (the **OFFSET** pot) establishes the MIN speed of the Drive, while **R14** (the **GAIN** pot) establishes the MAX speed of the Drive.

+ 12V DC, 20mA DC OUTPUT SOURCE

In addition to the input signal functions described, the Isolated Signal Conditioner Card also provides a +12V DC source rated at 20mA Max. This signal is for exclusive use with the 3-15 PSI Transducer, Options 1334-MOD-N3 or 1335-MOD-N5.

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Installation

WARNING

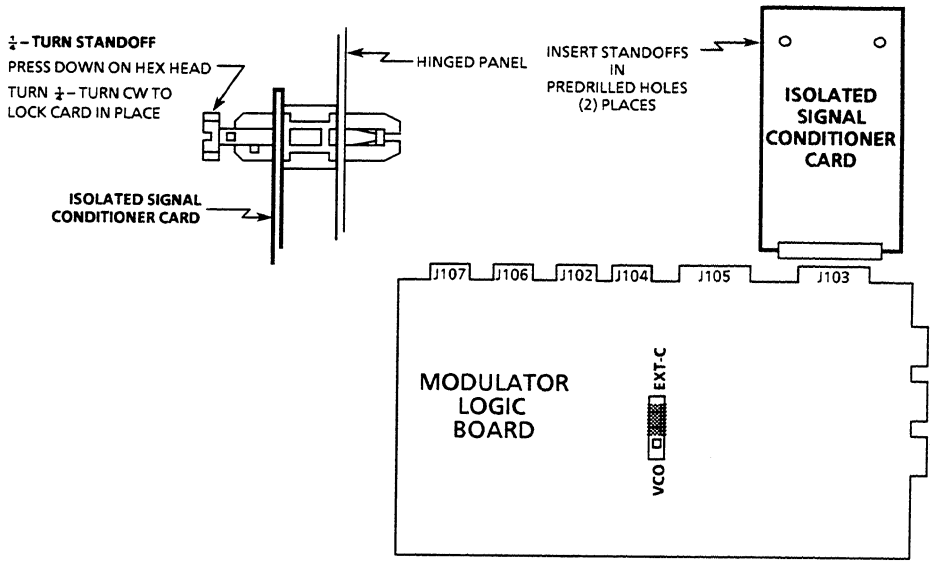
Only personnel familiar with the Drive and its associated machinery should plan or implement the installation, startup, and adjustment of MOD kits. Failure to comply may result in personal injury and/or equipment damage.

To guard against personal injury, always remove & lock out power to the Drive at the main supply disconnect and all other power source disconnects. Ensure that DS1 is not lit when boards or wires are being installed or connected. Refer to the instruction manual for your Drive for LED location.

Each 1334-MOD-N Option Kit Includes:

- (1) Isolated Signal Conditioner Card, P/N 50369
- (2) $\frac{1}{4}$ Inch, $\frac{1}{4}$-Turn Standoffs, P/N 201104

Two predrilled holes have been provided above Modulator Logic Board connector **J103**. Installation requires removing power to the Drive and installing (2) $\frac{1}{4}$ – turn standoffs into the predrilled holes. The card is then plugged onto the edge connector while pressing the top of the card onto the (2) installed standoffs. To secure the card in place, press down on each hex head screw and turn $\frac{1}{4}$-turn CW.



Interconnection Wiring

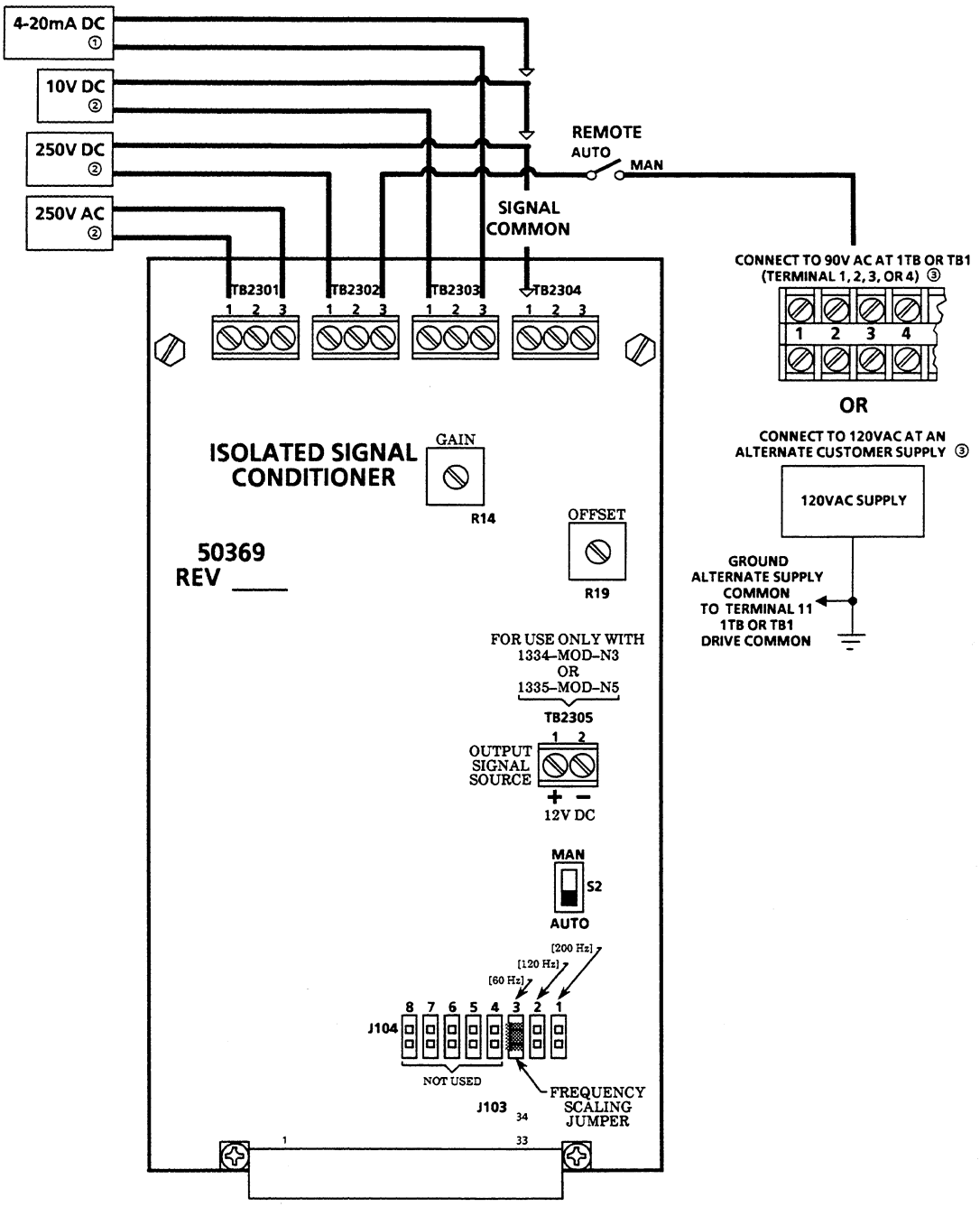
Interconnection wiring to the Isolated Signal Conditioner Card is made to terminal blocks **TB2301**, **TB2302**, **TB2303**, **TB2304** and **TB2305** as shown on the following page.

If a remote AUTO/MAN switch is to be used, either the 90VAC option supply at the Drive (18) terminal control wiring terminal block may be used, or a customer installed 120V AC power supply.

If Option 1335-MOD-N5, the local 3-15 PSI Transducer has been installed, interconnection wiring has already been made between card terminal block **TB2305** and terminal block **1TB** on the transducer.

If Option 1334-MOD-N3, the remote 3-15 PSI Transducer is to be installed, refer to the Option Kit Instructions supplied with the transducer for interconnection wiring.

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— ONLY ONE ANALOG INPUT SIGNAL MAY BE WIRED AT ANY ONE TIME —

① **USE (2) CONDUCTOR UNSHIELDED CABLE**
MAX. LENGTH (200) FEET BASED ON 22 AWG STRANDED COPPER WIRE
- CONNECT (1) LEAD TO THE INDICATED TERM., THE OTHER TO **TB2304**, TERM. **1**, (COMMON)

② **USE (2) CONDUCTOR SHIELDED CABLE**
MAX. LENGTH (50) FEET BASED ON 22 AWG STRANDED COPPER WIRE
- CONNECT (1) LEAD TO THE INDICATED TERM., THE OTHER TO **TB2304**,TERM. **1**, (COMMON)
- CONNECT ONE END OF THE SHIELD TO **1TB** OR **TB1**, TERM. **11**, (DRIVE COMMON) – THE OTHER END MUST BE LEFT FLOATING

③ **USE (2) CONDUCTOR UNSHIELDED CABLE**
MAX. LENGTH (200) FEET BASED ON 22 AWG STRANDED COPPER WIRE

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WARNING

To avoid hazard of electrical shock, remove power when instructed and wait for the bus to completely discharge. Exercise extreme care when performing adjustments with power applied to the Drive.

MIN & MAX SPEED ADJUSTMENT PROCEDURE

1. **Remove input power to the Drive**. Determine the required operating frequency range for the Drive and motor. Verify that the jumper at the right hand side of the Isolated Signal Conditioner Card is in the correct position to correspond to the required frequency range – **1** (200 HZ), **2** (120 HZ), or **3** (60 HZ). Set the **VCO/EXT C** jumper on the Modulator Logic Board in the Drive to **EXT C**.
2. Set either the local (card mounted) or remote (if installed) **AUTO/MAN** selector switch to the **MAN** position. Apply input power and start the Drive. Verify that the Drive manual speed pot has control of motor speed, then stop the Drive.
3. Set the local **AUTO/MAN** selector switch to the **AUTO** position. If a remote AUTO/MANUAL selector switch is used, both the card mounted and remote AUTO/MANUAL switches must be set to **AUTO** in order for the AUTO mode to be selected.
4. Adjust the external input reference signal to the card to the value that corresponds to minimum reference speed and start the Drive .
5. Adjust **OFFSET** pot **R19** on the card to obtain the required minimum motor speed.
6. Slowly adjust the external input reference signal to the card to the value that corresponds to maximum reference speed.
7. Adjust **GAIN** pot **R14** on the card to obtain the required maximum motor speed.
8. Repeat steps **5 – 8** until no further adjustment of the **OFFSET** and **GAIN** pots are required.

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