



Specifications

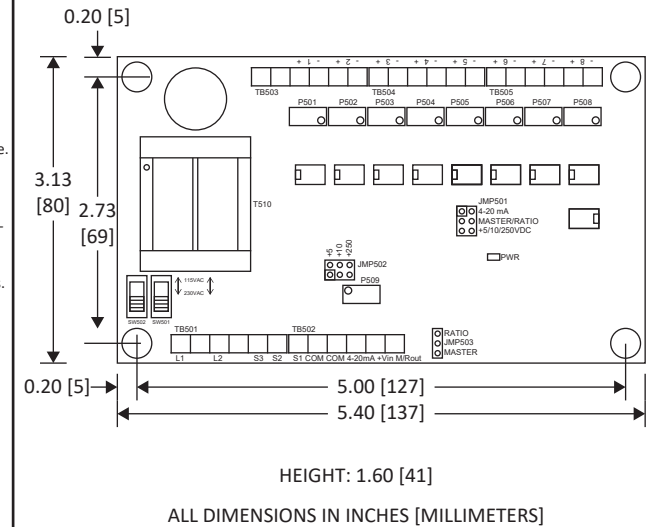
AC Line Voltage.....	115/230 VAC $\pm$ 10%, 50/60 Hz, single phase
Input Impedance Voltage Signal (COM to +Vin).....	>200K ohms
Current Signal (COM to 4-20mA).....	124 ohms
Output Voltage Range.....	0 to 10 VDC
Input to Output Linearity.....	$\pm$ 0.25%
Output Impedance Range.....	2.5K ohms
Ambient Temperature Range.....	0°C - 50°C
Weight.....	0.44 lbs

Safety Warnings

READ ALL SAFETY WARNINGS BEFORE INSTALLING THIS EQUIPMENT

- **DO NOT INSTALL, REMOVE, OR REWIRE THIS EQUIPMENT WITH POWER APPLIED.** Have a qualified electrical technician install, adjust and service this equipment. Follow the National Electrical Code and all other applicable electrical and safety codes, including the provisions of the Occupational Safety and Health Act (OSHA), when installing equipment.
- **Circuit potentials are at 115 or 230 VAC above earth ground.** Avoid direct contact with the printed circuit board or with circuit elements to prevent the risk of serious injury or fatality. Use a non-metallic screwdriver for adjusting the calibration trim pots. Use approved personal protection equipment and insulated tools if working on this drive with power applied.
- Reduce the chance of an electrical fire, shock, or explosion by proper grounding, over-current protection, thermal protection, and enclosure. Follow sound maintenance procedures.
- **ACE strongly recommends the installation of a master power switch in the line voltage input.** The switch contacts should be rated for 250 VAC and at least 1 amp.
- Change voltage switch settings and jumpers only when the drive is disconnected from AC line voltage. Make sure both switches are set to their correct position. If the switches are improperly set to a lower voltage position, it may cause damage to the transformer.
- Under no circumstances should power and logic level wires be bundled together.
- This product does not have internal solid state motor overload protection. It does not contain speed-sensitive overload protection, thermal memory retention, or provisions to receive and act upon signals from remote devices for over temperature protection. If motor protection is needed in the end-use product, it needs to be provided by additional equipment in accordance with NEC standards.

Dimensions



Installation

Mounting

- Card components are sensitive to electrostatic discharge. Avoid direct contact with the circuit components.
- Protect the drive from dirt, moisture, and accidental contact.
- Provide sufficient room for access to the terminal blocks and calibration trim pots.
- Mount the card away from heat sources. Operate the card within the specified ambient operating temperature range.
- Prevent loose connections by avoiding excessive vibration of the drive.
- Mount the card with its board in either a horizontal or vertical plane. Four 0.25" (6 mm) wide holes in the board accept #8 pan head screws.

Wiring

Use 18 - 24 AWG wire for logic wiring.
Use 14 - 16 AWG wire for AC line (L1, L2) wiring.

Shielding Guidelines

As a general rule, it is recommended to shield all conductors. If it is not practical to shield power conductors, it is recommended to shield all logic-level leads. If shielding of logic-level leads is not practical, the user should twist all logic leads with themselves to minimize induced noise.

Fusing

ISO101-8 requires an external line fuse for protection. Use fast acting fuses rated for 250 VAC or higher and 150% of the maximum armature current. Fuse the HOT leg of the AC line when using 115 VAC and both lines when using 230 VAC.

Connections

Line Input

Connect the AC line power leads to terminals L1 and L2, or to a double-throw, single-pole master power switch (recommended). The switch should be rated at a minimum of 250 VAC and 200% of motor current.

Potentiometer

A potentiometer can be used to generate the master signal for the isolated outputs, as well as set a ratio of the analog input signal. Connect the counter-clockwise end of the potentiometer to S1, the wiper to S2, and the clockwise end to S3. If the potentiometer works inversely of desired functionality, (i.e. to increase motor speed, you must turn the potentiometer counterclockwise), power off the drive and swap the S1 and S3 connections. If using an analog signal, and no ratioing is needed, do not connect anything to terminals S1, S2, and S3.

Analog Input Signal

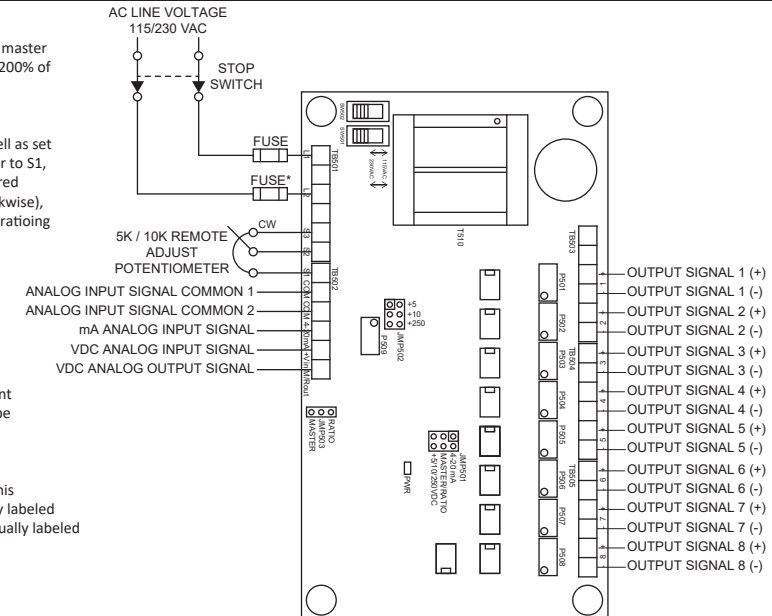
Connect the signal common (-) to terminal COM. If using a 4-20 mA signal, connect the signal reference (+) to terminal 4-20mA. If using a voltage signal, connect the signal reference (+) to terminal +Vin.

Master/Ratio Out (M/Rout)

Terminal M/Rout outputs a 0-10 VDC signal equal to the 0-10 VDC master signal that is sent to the isolated channels (before it is ratio'd individually on each channel). This signal can be sent as the master speed reference to terminal +Vin on another ISO101-8 card.

Isolated Output Signals

Connect terminal -1 to the common of the first drive. For ACE non-regenerative drives, this terminal is usually labeled "COM" or "S1". For regenerative drives, this terminal is usually labeled "COM" or "S0". Connect terminal 1+ to the signal input. For ACE drives, this terminal is usually labeled "S2" or "SIG1". Refer to the drive's user manual for correct analog signal wiring.



Startup

CONTROL METHODS & SELECT SWITCHES

SW501 & SW502 - AC Line

If using a 115 VAC line, set switches SW501 and SW502 to 115.
If using a 230 VAC line, set switches SW501 and SW502 to 230.

JMP501 - Input Source

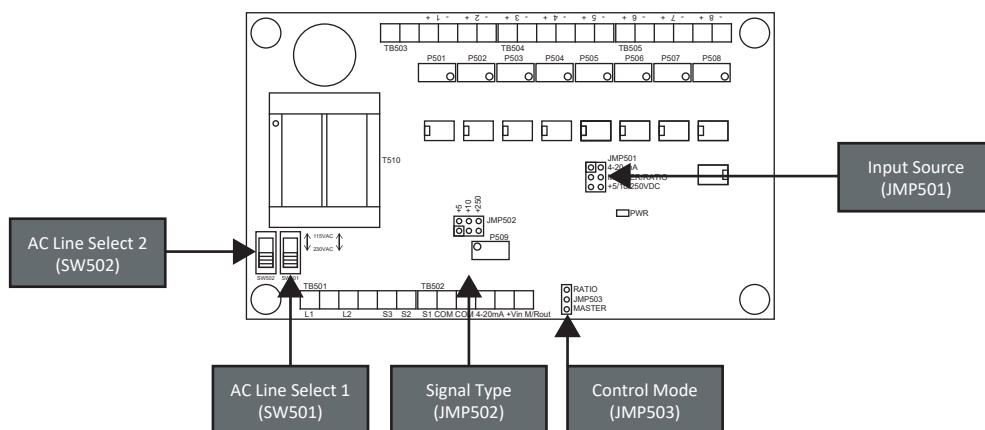
If using a speed potentiometer as either a Master or Ratio potentiometer, set jumper JMP501 to MASTER/RATIO.
If using an analog VDC signal with no ratio potentiometer, set jumper JMP501 to +5/10/250VDC.
If using an analog 4-20 mA signal with no ratio potentiometer, set jumper JMP501 to 4-20 mA.

JMP502 - Signal Type

If using an analog 4-20 mA signal or a potentiometer as a master signal, it doesn't matter where JMP502 is set.
If using an analog VDC signal of 0 - 5 VDC with or without a ratio potentiometer, set jumper JMP502 to +5.
If using an analog VDC signal of 0 - 10 VDC with or without a ratio potentiometer, set jumper JMP502 to +10.
If using an analog VDC signal where the maximum signal is between 60 and 250 VDC with or without a ratio potentiometer, set jumper JMP502 to +250.

JMP501 - Control Mode

If using a potentiometer to set the analog signal, set jumper JMP503 to RATIO. Otherwise, if using only a VDC or mA signal, or if using just a potentiometer, set JMP503 to MASTER.



Calibration

Calibrating Trim Pot P509: Trim pot P509 is used to scale an analog voltage range that is greater than 0 - 60 VDC into a usable 0 - 10 VDC range. If not using an analog signal range greater than 0 - 60 VDC, trim pot P509 does not need to be calibrated as it will have no effect.

1. With power disconnected from the card, set the unit to follow a speed pot in a Master Mode (JMP501 to MASTER/RATIO, JMP503 to MASTER).
2. Place a jumper between terminals S2 and S3.
3. Measure the voltage between terminals - and + on "- 1 +".
4. Adjust trim pot P501 until the voltage reads 10 VDC.
5. Disconnect power and set the unit to follow the analog VDC signal;
 - If no ratio potentiometer is to be used, set JMP501 to +5/10/250VDC, JMP502 to +250, and JMP503 to MASTER.
 - If using a potentiometer to ratio the signal, set JMP501 to MASTER/RATIO, JMP502 to +250, and JMP503 to RATIO. Then connect the potentiometer to terminals S1, S2, and S3 as shown on page 1.
6. Apply the maximum VDC analog signal.
7. Measure the voltage between terminals - and + on "- 1 +".
8. Adjust trim pot P509 until the voltage begins to drop. Then turn trim pot P509 slightly CW until the reading just becomes 10 VDC again.
9. Now that P509 is calibrated, follow the normal calibration procedure listed below.

Calibrating Trim Pots P501 - P508: Trim pots P501 - P508 set individual maximum outputs for each of their respective channels. Not all devices that may be connected to the ISO101-8 accept a 0 - 10 VDC range, so these trim pots can be used to scale the output to a different range.

1. If using a ratio potentiometer, set it to 100% (full CW).
2. Apply the maximum signal.
 - If using a master speed potentiometer, set the potentiometer to 100% (full CW).
 - If using a mA signal, apply 20 mA.
 - If using a VDC signal, set it to the maximum voltage, such as 5, 10, or 250 VDC.
3. Measure the voltage between terminals - and + on "- 1 +".
4. Adjust trim pot P501 until the voltage reads the desired maximum output voltage to Device 1.
5. Repeat for each output and each corresponding trim pot (ie trim pot P502 for output terminals "- 2" and "2 +"). Only outputs that are being used need to be calibrated.

LEDs

Power (POWER): Red LED lights whenever AC line voltage is applied to the drive.

