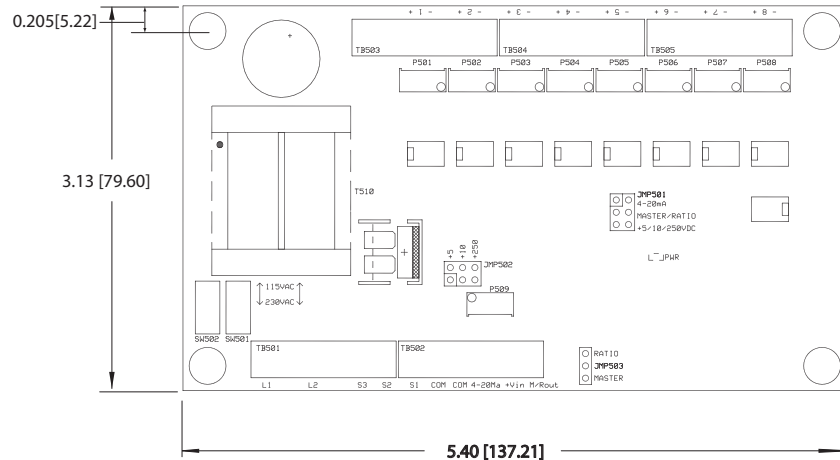
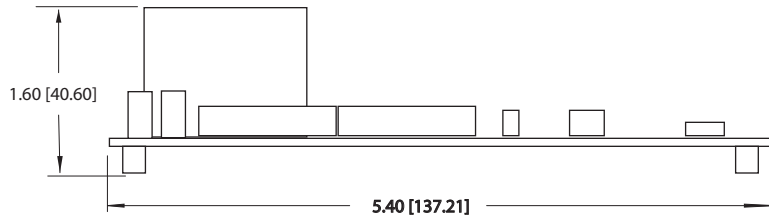


## DIMENSIONS



ALL DIMENSIONS IN INCHES [ MILLIMETERS]

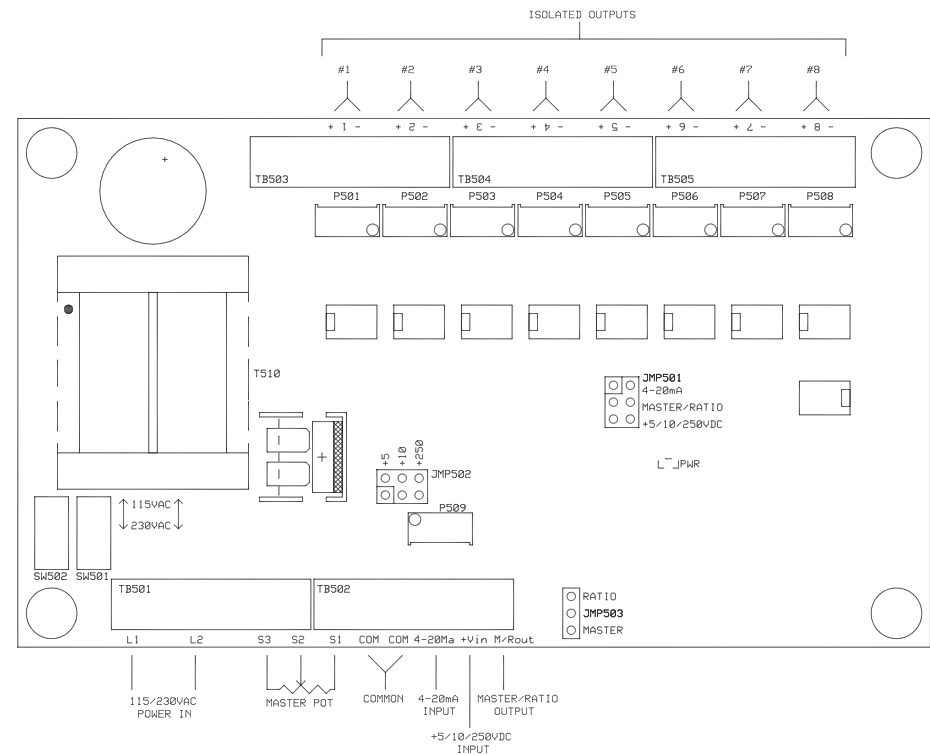


# USIM-8

8 Channel Unipolar Signal Iso Module

## QUICK START GUIDE

### CONNECTIONS



## SPECIFICATIONS

Power Input +/- 10% 50/60 Hz (VAC)	115/230 VAC
Signal Inputs	+5VDC, +10VDC, +250VDC, 4-20mA
Signal Outputs	8 x OVDC to +/-10VDC adjustable
Input to Output Linearity	+/-0.25%

## DESCRIPTION

The USIM-8 is an 8 channel Unipolar Signal Isolation Module. It accepts a standard DC input control signal, and provides 8 channels of isolated control signals. The module may be used as a master control, or be daisy chained with other USIM modules to provide isolated signals in multiples of 8.

## STEP ONE: SET SWITCHES & JUMPERS

**SW501 & SW502** : Set **SW501 & SW502** to match the AC line voltage of 115 or 230 VAC.

**JMP501** : Set **JMP501** to 4-20 mA, MASTER/RATIO, or +5/10/250 VDC. Select 4-20 mA when a 4-20 mA signal is supplied. Select MASTER/RATIO when using a main speed potentiometer to control speed or when using the potentiometer to ratio the control signal. Select +5/10/250 VDC when using an analog signal of either 0-5, 0-10, or 0-250 VDC and no potentiometer is connected to S1, S2, and S3.

**JMP502** : Set **JMP502** to +5V, +10V, or +250V. This is the maximum analog control signal supplied to the board at +Vin. The position of JMP502 does not matter if using 4-20 mA control signal. The position of JMP502 does not matter if using a master speed pot (connected to S1, S2, and S3) to control speed. JMP502 does still matter if using a master ratio pot connected to S1, S2, and S3. If maximum signal is greater than 60 VDC then set to +250V. This jumper sets the input voltage scaling for the +Vin input. It's setting will only affect those functions using the +Vin input as the source signal, (e.g. – ratio mode).

**JMP503** : Set **JMP503** to RATIO or MASTER. Set to RATIO if the remote pot is used as a ratio pot to override/ratio the main control signal. Set to MASTER when the remote pot is used as a main speed control pot for all of the analog outputs. If no remote pot is used then set JMP503 to Master when using a remote Voltage or Current signal to control speed.

## STEP TWO: WIRE INPUT CONTROL SIGNALS

Signal wires fed into this board

**Connect optional (5K/10K) potentiometer to S1, S2, and S3.** S1 is the pot's CCW terminal, S2 is the wiper, and S3 is the CW terminal. A pot should only be connected if this pot is the main speed signal or if this pot is needed to ratio the remote speed signal.

AND/OR

**Connect an analog voltage signal between +Vin and COM.** The positive signal wire goes to +Vin. Do not connect a bipolar signal.

OR

**Connect a 4-20 mA signal to 4-20mA and COM.**

## STEP THREE: WIRE OUTPUT CONTROL SIGNALS

Signal wires out of USIM-8 to control other devices

**Connect output channel(s)** to motor drive(s) or other device(s) that the USIM-8 should control. Start with Channel #1 on TB503. Use only as many outputs as needed. Each output is capable of sourcing 5 mA, more current is available if not all 8 output channels are used. Note on the wiring diagram which pins are positive and which pins are common. Each common on the output is unique and isolated.

## STEP FOUR: WIRE AC POWER WIRE

Confirm SW501 & SW502 are set correctly. Wire 115 VAC or 230 VAC to L1 and L2. Apply power.

## STEP FIVE: CALIBRATION

**CALIBRATION FOR AN ANALOG VOLTAGE SIGNAL ONLY:** One analog control signal will control all the Isolated Outputs. Apply maximum voltage selected with JMP502 to +Vin and COM. Adjust blue multi-turn pot P501 to scale Isolated Output #1. Turn this pot clockwise to increase the output voltage and counter clockwise to decrease the output voltage of Isolated Output #1. Set the Isolated Output #1 voltage to the maximum voltage that the following device should see. Repeat process on P502 for Isolated Output #2, P503 for Isolated Output #3, and so on. There is no need to calibrate an Isolated Output if that output is not used. (alternate – Unused outputs do not need to be calibrated.)

Only if the maximum analog input voltage is between 60-250 VDC and JMP502 is set to +250V can P509 be used for additional voltage scaling.

Note: **P509** will only affect the scaling of the input voltage when the +250VDC JMP502 setting is chosen and +Vin voltage is between +60VDC - +250VDC. Turning P509 clockwise decreases input voltage. Turning P509 counter-clockwise increases input voltage.

OR

**CALIBRATION FOR 4-20 MA INPUT SIGNAL ONLY:** One 4-20 mA signal will control all the Isolated Outputs. Apply 20 mA signal. Adjust P501 to scale Isolated Output #1. Turn this pot clockwise to increase the output voltage and counter clockwise to decrease the output voltage of Isolated Output #1. Set the Isolated Output #1 voltage to the maximum voltage that the following device should see. Repeat process on P502 for Isolated Output #2, P503 for Isolated Output #3, and so on. There is no need to calibrate an Isolated Output if that output is not used. (alternate – Unused outputs do not need to be calibrated.)

OR

**CALIBRATION USING (INCLUDING) A RATIO POT TO SCALE THE CONTROL SIGNAL:** One main control signal will control all the Isolated Outputs but with the ratio pot able to manually scale that voltage.

The isolated outputs are all equally scaled by the ratio pot to a 0-100% fraction of the +Vin input.

Turn (5K/10K) Ratio Pot (connected to S1, S2, and S3) to max. Calibrate using appropriate Analog Voltage Signal calibration method as shown above. Once calibration is complete, the ratio pot will be able to manual scale the control voltage.

OR

**CALIBRATE USING A MASTER SPEED POT:** One main speed pot will control all the Isolated Outputs, no other control signals are used. Turn main (5K/10K) speed pot (connected to S1, S2, and S3) to max. Adjust P501 to scale Isolated Output #1. Turn this pot clockwise to increase the output voltage and counter clockwise to decrease the output voltage of Isolated Output #1. Set the Isolated Output #1 voltage to the maximum voltage that the following device should see. Repeat process on P502 for Isolated Output #2, P503 for Isolated Output #3, and so on. There is no need to calibrate an Isolated Output if that output is not used.