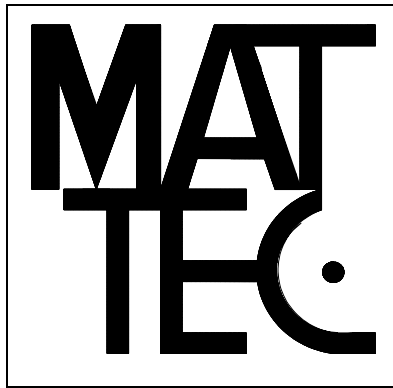


ProHelp Systems



MIU 10X/98 WIRING / INSTALLATION INSTRUCTIONS

MIU-10X / 5XS SETUP AND CONFIGURATION

MIU-10X Configuration and Diagnostics Screen

Upon boot-up the MIU-10X first runs a self-diagnosis routine to determine if the keypad, LCD screen, and communications ports are operational. If there are errors during the initialization process, the user is queried if a re-initialization attempt should be performed. If no initialization errors occurred, or if a re-initialization is not requested, the user is next presented the option of viewing a Diagnosis and Configuration mode. To enter the Diagnostic and Configuration mode screen you must press a key when the message **PRESS ANY KEY FOR DIAGNOSTICS** is being displayed on the LCD's screen. If the prompt to enter the Diagnostics and Configuration screen is missed, it will be necessary to re-power the MIU (Note MIU must be left off for 5-10 seconds) to enter this mode again as the MIU will enter an **AWAITING HOST** mode.

The Diagnostic and Configuration screens allow the user to test the keypad and display, test the UARTs, monitor Host communications, and Gageport baud rates. The system parameters, once set, are stored in battery backed memory and it will not be required to re-enter these unless either the battery is removed or if the MIU's operating characteristics are to be changed.

For MIU setup press 7 when main diagnostics menu is displayed.
Printer should be left at the default of 0.
Gage/Printer also should be left at the default of 0.

Jumper Configuration

Jumpers JP1 - JP16

Jumpers JP1 through JP15 are provided to allow for single connection of ground references for the digital input signals. Shunt jumper JP1 to connect the ground of Digital Input #1 to the ground of Digital Input #2, shunt jumper JP2 to connect Digital Input #2's ground to Digital Input # 3, and etc. This sequence continues through Jumper JP15 which connects Digital Input # 15's ground to Digital Input # 16's.

Jumper JP18 (Default is OFF)

Jumper JP18 (not typically used) connects the ground of Digital Input # 16 to the MIU-10X's digital ground plane itself.

If all the digital input signals have a common ground, an installer can use jumpers JP1 through JP16 and JP18 to provide a single ground to all the MIU's digital inputs with a single wire.

Jumper JX13 (Default is NC) – DO NOT INSTALL SHUNT For External PC Speaker only.

Jumper JX2 (Default is Off) - Connects Earth Ground to Internal Ground

Jumper JX12A (Default is 2-3) – Floppy/Keyboard Enable (Factory Use Only)

Jumper JX12B (Default is 1-2) – FDRQ/DRQ0 (Factory Use Only)

Jumper JX12C (Default is 1-2) – FDACK/DACK0 (Factory Use Only)

Jumper JP17 (Default is Off) - Provided for end of line termination for MIU communications. **Warning!!** Only install in last MIU on each channel.

Jumper JX7 (Default is Off) – Provided to configure COM3 for 485 2 wire

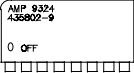
Jumper JX8 (Default is Off) – Provided to configure COM3 for 485 2 wire

Jumper JX14A (Default is Off) – High speed Analog for IRQ7

Jumper JX14P (Default is Off) – Parallel Printer for IRQ7

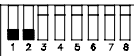

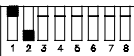

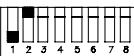

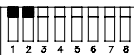



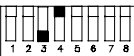
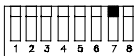
MIU 10X/5XS SWITCH SETTINGS

OPTION SWITCHES 1 THRU 8
 SWITCH 3 (SW 3)




0 OFF

TIMED CONTACTS

	OFF	MOLD CYC PRESSURE: INJECT ONLY, 2 TIME CONTACTS.		OFF	19200 BAUD
	OFF	MOLD CYC PRESSURE: INJECT,HOLD,BACK, 4 TIME CONTACTS.		OFF	1200 BAUD
	OFF	MOLD CYC PRESSURE: INJECT AND HOLD, 3 TIME CONTACTS.		OFF	2400 BAUD
	OFF	MOLD CYC PRESSURE: TIME CONTACTS, TURNED OFF.		OFF	4800 BAUD
	OFF	HOST BAUD RATE 4800 BAUD		OFF	9600 BAUD
	OFF	9600 BAUD		OFF	PRINTING
	ON			ON	UP = PARALLEL (SHOWN) DOWN = SERIAL

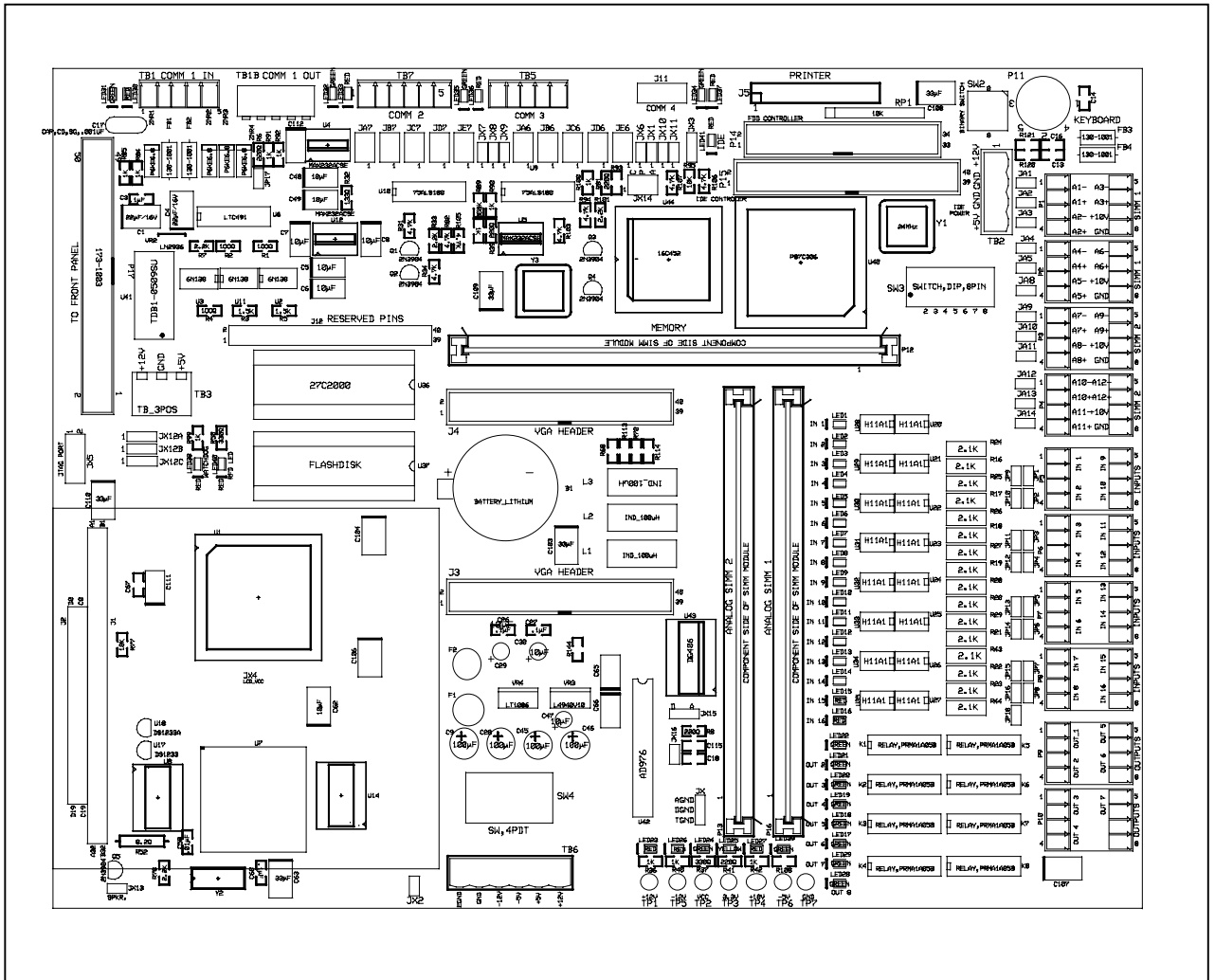
GAGE PORT BAUD RATE

ADDRESS SWITCH 2 (SW 2)



0 = 1st PHYSICAL MIU ON CHANNEL
 F = LAST PHYSICAL MIU ON CHANNEL

MIU-10X/5XS - MOTHER BOARD



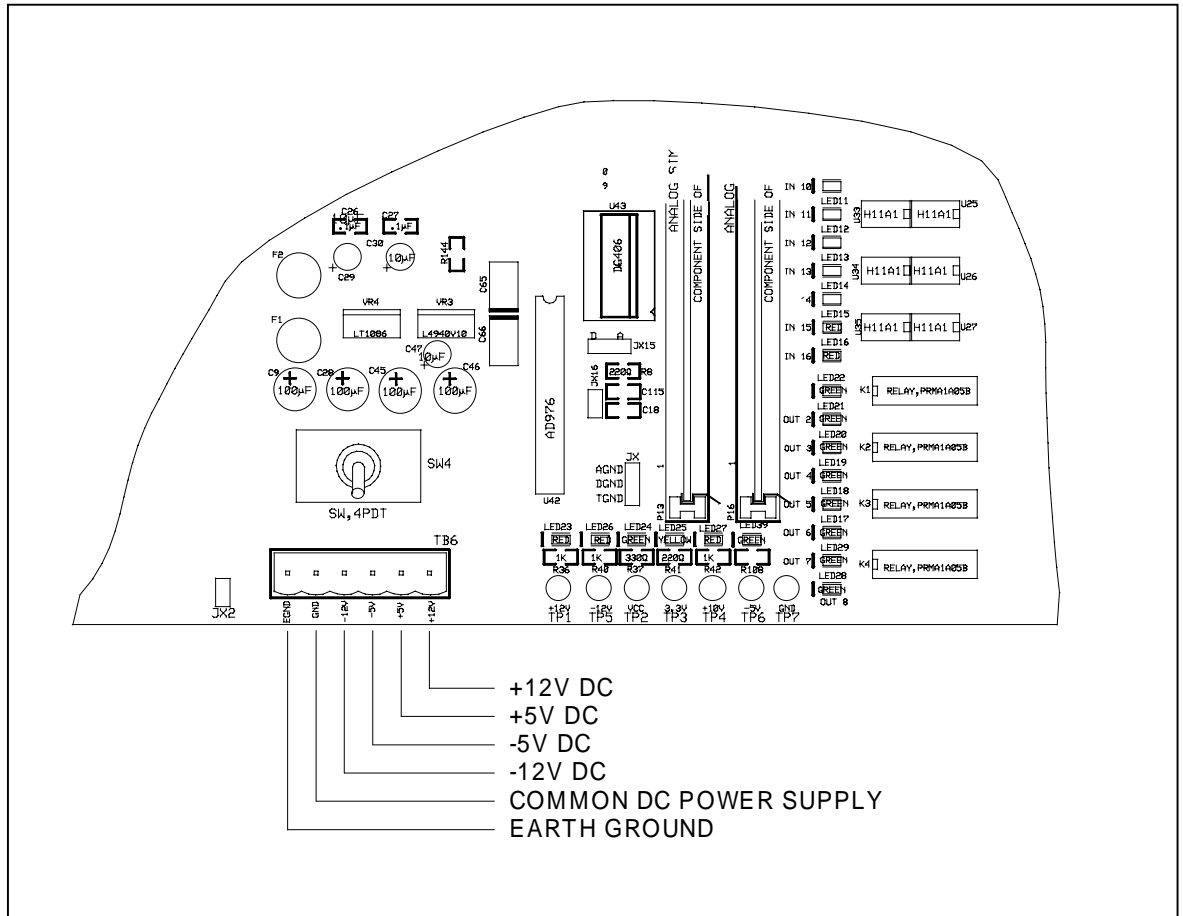
**** DO NOT CONNECT AC !!!**

** Use supplied +5, -5, +12 -12 DC Power Supply **

** Components are static sensitive **

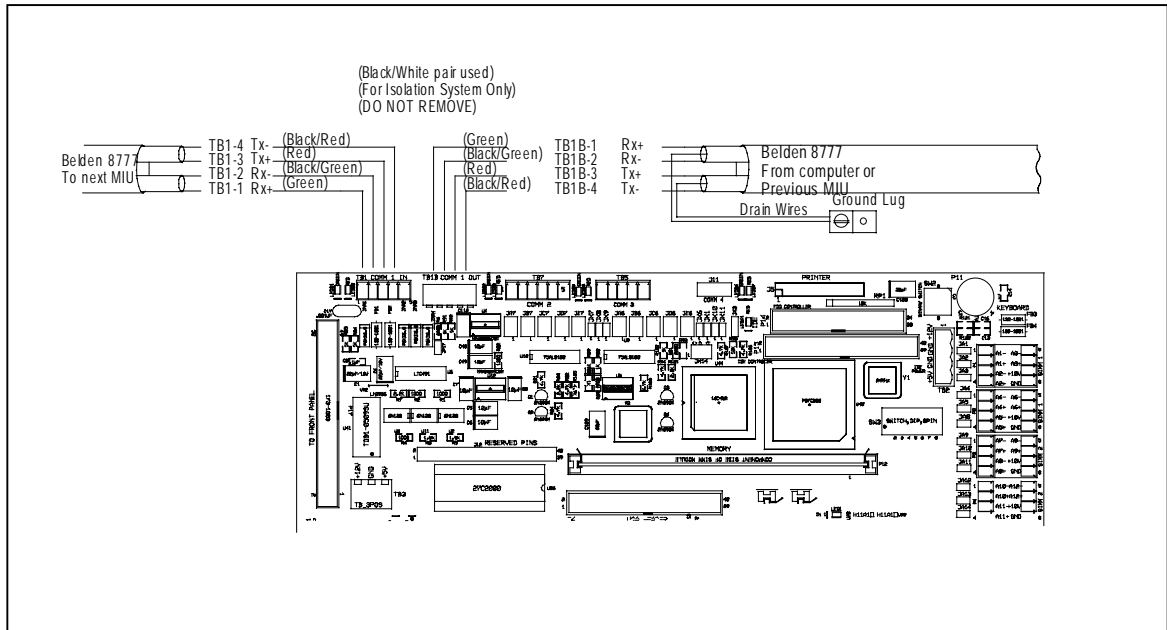
** Do NOT remove battery **

MIU-10X/5XS - POWER HOOKUP



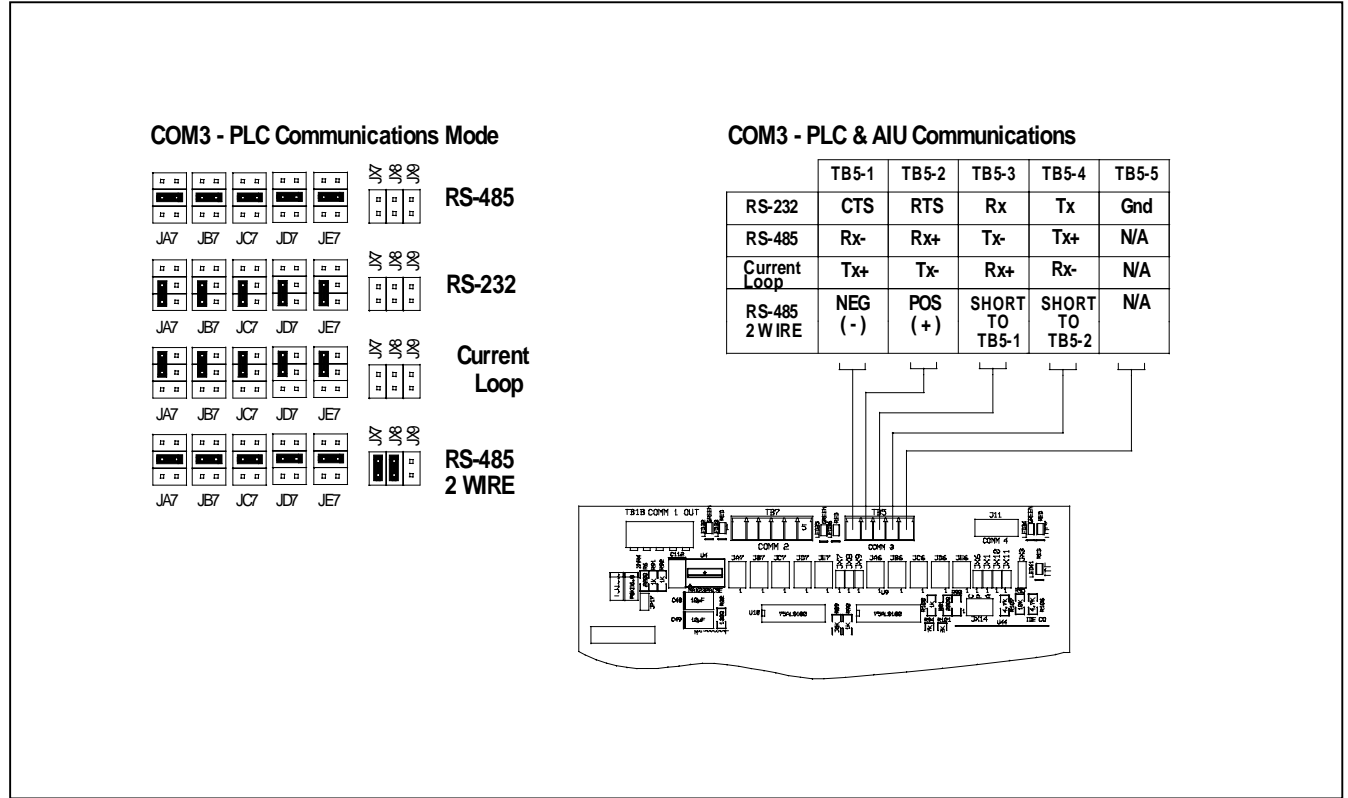
ONLY USE SUPPLIED +/-5 AND +/-12 VOLT POWER SUPPLY.

MIU-10X/5XS - MIU HOST COMMUNICATIONS



- * LOOSEN TERMINAL STRIPS ALL THE WAY (CCW).
- * STRIP BACK GRAY VINYL JACKETS TO 2.5 INCHES MAXIMUM.
- * STRIP BACK FOIL SHIELDS TO 2.0 INCHES MAXIMUM.
- * TAPE EXPOSED SHIELDS ENDS INDIVIDUALLY.
- * KEEP INDIVIDUAL PAIRS TWISTED TOGETHER.
- * TWIST SHIELD DRAIN WIRE TOGETHER ON THE "FROM" CABLE.
- * CUT OFF SHIELD DRAIN WIRES ON "TO" CABLE.
- * STRIP INDIVIDUAL WIRES BACK BETWEEN 3/16 AND 1/4 INCH.
- * INSERT APPROPRIATE CABLE WIRES INTO INDICATED TERMINALS.
- * RE-TIGHTEN SCREWS, INSURING INSULATION OF WIRE IS NOT PINCHED IN THE CONNECTION.
- * GENTLY PULL ON WIRES TO INSURE GOOD ELECTRICAL CONNECTION.
- * LOOSEN CLAMP SCREW ON GROUND LUG.
- * PLACE TWISTED SHIELD DRAIN WIRES THROUGH LUG AND SECURE SCREW.

MIU-10X/5XS - PLC/AIU COMMUNICATIONS



- * ENSURE THAT THE EPROM INSTALLED AT U2 COINCIDES WITH THE CONTROLLER TO BE CONNECTED TO.
- * FURTHER DETAILS ON PLC CONNECTIONS CAN BE FOUND IN THE PLC MANUAL P/N 710-0078.
- * JUMPERS SUCH AS J9 OR J5 ARE NO LONGER NEEDED ON THE 10X/5XS.

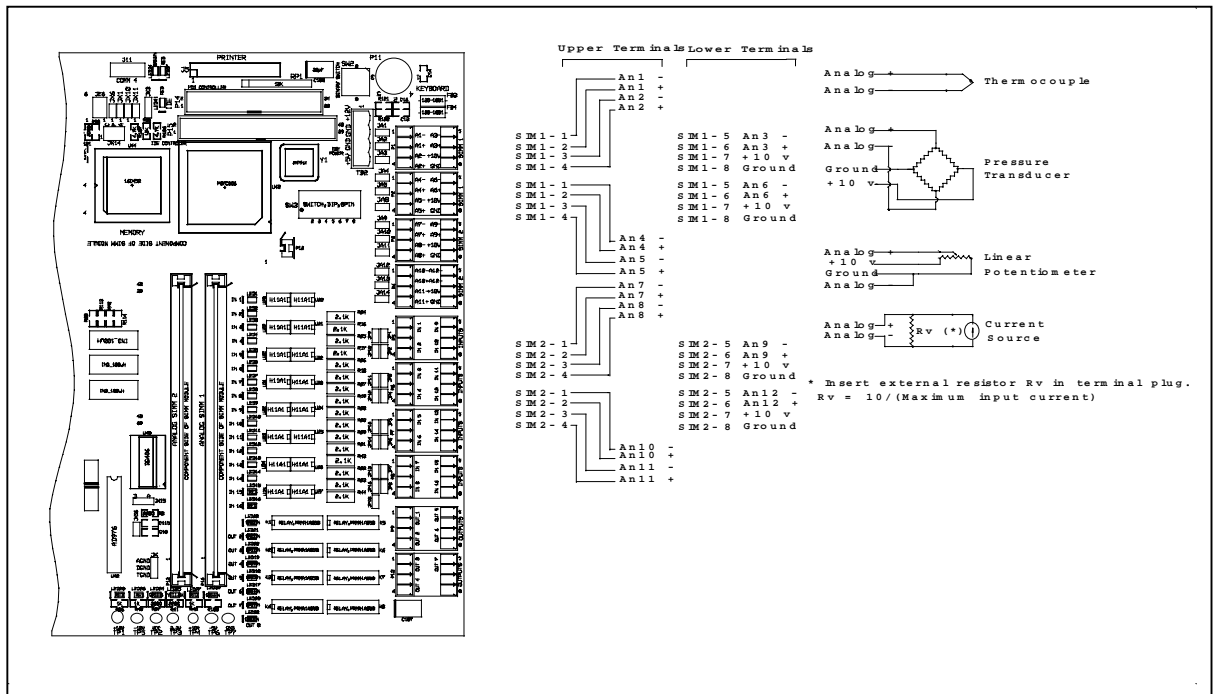
COMMUNICATIONS FOR REMOTE AIUs (EXTENDED PROCESSES)

- * SET JA-7 - JE7 FOR RS-485 ON THE HOST MIU.
- * CONNECT THE PLC PORT, ON HOST MIU, TO THE HOST COMMUNICATIONS PORT, ON THE REMOTE AIU.
- * ON SUBSEQUENT REMOTE AIUs CONNECT HOST PORT TO HOST PORT
- * USE THE FOLLOWING TABLE FOR WIRING:

HOST MIU TB5	REMOTE AIU TB1
R+	T+
R-	T-
T+	R+
T-	R-

REMOTE AIU1 TB1	REMOTE AIU2 TB1
T+	T+
T-	T-
R+	R+
R-	R-

MIU-10X - ANALOG CONNECTIONS



STANDARD CONFIGURATION IS An 1-4 AND 7-10 J TYPE THERMOCOUPLE, An 5-6 AND 11-12 PRESSURE TRANSDUCER.

- THERMOCOUPLES ARE STANDARD "J" TYPE, "K" TYPE CAN BE USED BY CHANGING GAIN RESISTORS AND SOFTWARE SETUP.
- LINEAR POTS CAN BE USED BY PULLING OUT THE GAIN RESISTOR ON THAT CHANNEL (NO GAIN).
- PRESSURE TRANSDUCER IS BASED ON 3 mV/V GAIN. DIFFERENT TRANSDUCERS CAN BE USED BY CHANGING GAIN RESISTOR ON THE SIMM FOR THE APPROPRIATE CHANNEL.
- +10V EXCITATION VOLTAGE RATED @ 1A MAX FOR ALL DEVICES USING EXCITATION VOLTAGE.

REFER TO BELOW CHART FOR INFORMATION ON GAIN RESISTORS. EACH SIMM HAS 6 ANALOG CHANNELS. GAIN RESISTOR ARE LOCATED ON THE SIMM ITSELF (SEE FIGURE 1 ON SIMM SETUP AND CALIBRATION)

CHANNEL 1 = R18	CHANNEL 4 = R13
CHANNEL 2 = R15	CHANNEL 5 = R22
CHANNEL 3 = R14	CHANNEL 6 = R23

Common Values

J Type TC (std.)	182 Ω	
K Type TC		182 Ω
3.0 mV/V (std.)	150 Ω	
2.0 mV/V		100 Ω

MIU 10X ANALOG SIMM SETUP AND CALIBRATION

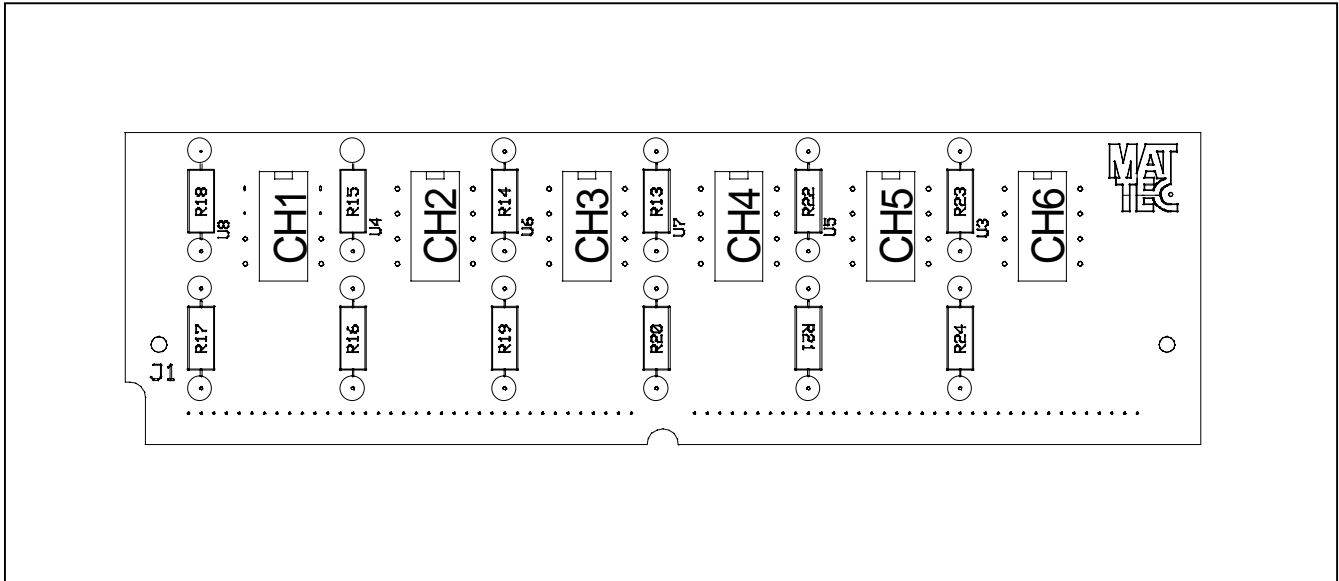


Figure 1

1. J and K type thermocouples both use 182 ohm 1% precision resistor. Prior to calibration allow at least one hour for internal temperature of MIU to stabilize. From the factory each SIM is set up for (4) Thermocouples and (2) Linear devices. The linear is set up for a 3mV/V device.
2. Each channel must have gain and offset set in System Manager MIU (F4, F8, F2) as follows.

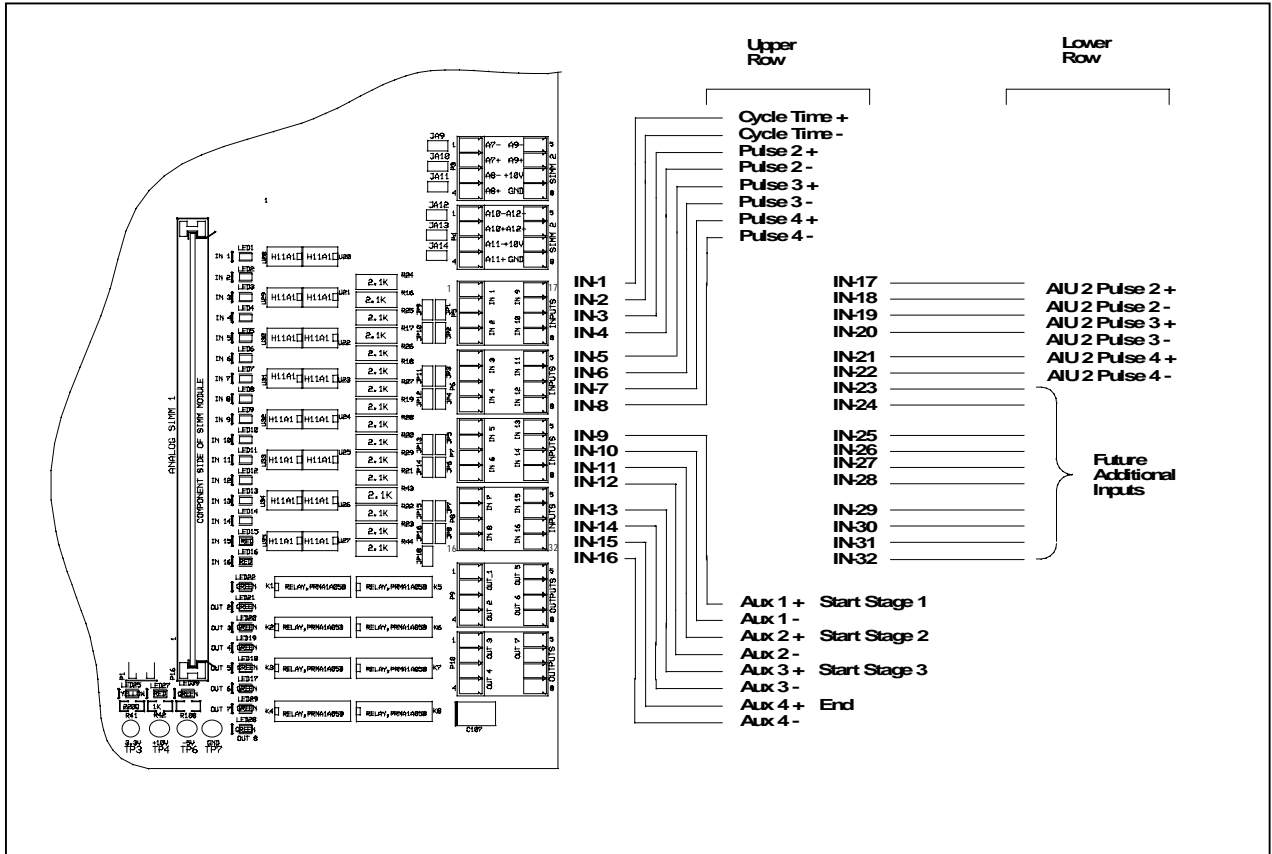
	Gain	Offset
J or K type	1.00	0

3. Gains must be set as stated prior to calibration. Calibrate by changing offset to match any differences between simulator or press and MIU. Offset is changed in System Manager MIU (F4, F8, F2).

Gain resistors and current loop load resistors are located on the SIM. See table below for the designator for each.

	Gain Resistor		Current Loop Load Resistor
CH1	R18	CH1	R17
CH2	R15	CH2	R16
CH3	R14	CH3	R19
CH4	R13	CH4	R20
CH5	R22	CH5	R21
CH6	R23	CH6	R24

MIU 10X/5XS INPUT CONTACT WIRING

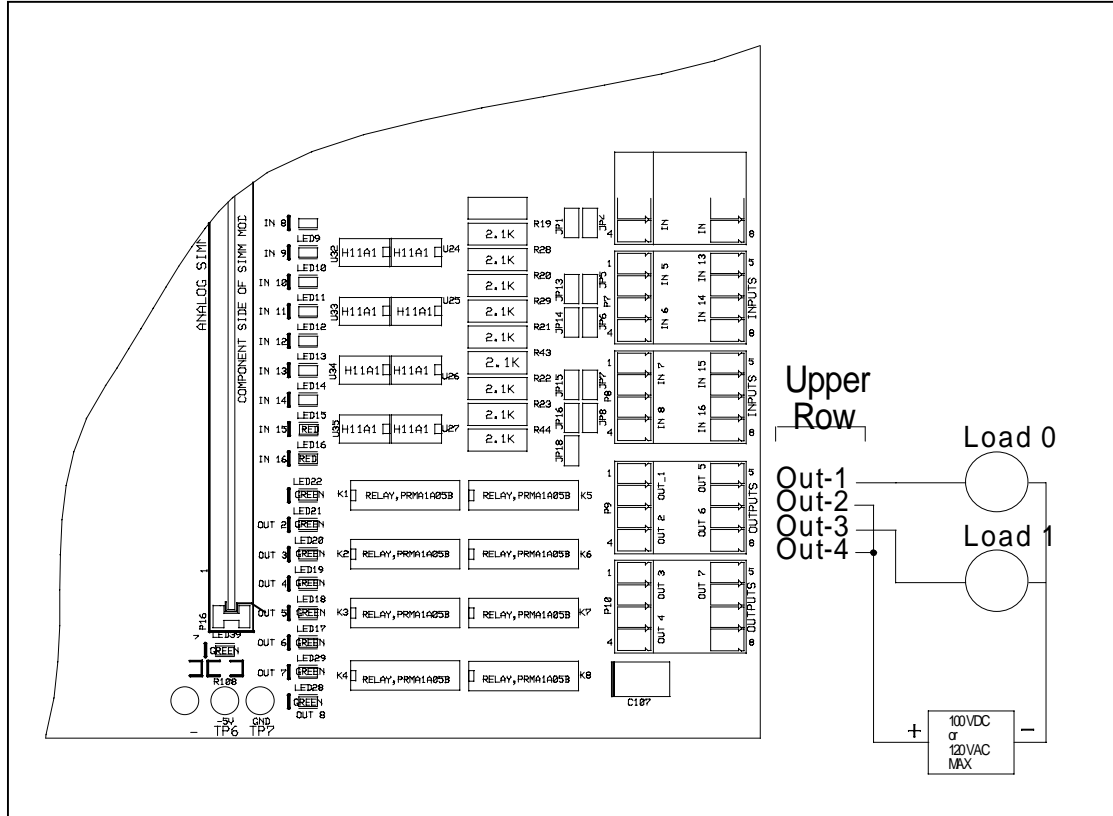


- * DIGITAL INPUTS MUST BE 12V TO 50V DC
- * CONTACT WIRE SHOULD BE #18 GA.
- * ON CONTACTS WITH THE SAME GROUND REFERENCE A SINGLE GROUND WIRE WILL SUFFICE BY THE USE OF JUMPERS JP1-16 AND JP18. (SEE 10X SETUP AND CONFIGURATION FOR MORE INFO.)

Note:

START OF STAGE WILL READ ANALOG CHANNEL 6 ONLY.

MIU 10X/5XS OUTPUT CONTACT WIRING



- * OUTPUT CONTACTS RATED AT 500 MA MAX.
 SHOULD A GREATER RATING BE REQUIRED A SECONDARY CONTACT
 MUST BE INSTALLED AND THE 10X USED TO SWITCH THAT
 CONTACT.
- * **SECONDARY CONTACT IS REQUIRED FOR ALL LOADS OVER 450
 MA.**

MIU-10X/5XS/0XS/AIU-X/IU-X/MIU-9
EXTERNAL POWER SUPPLY INSTALLATION

1. Mount power supply in the power panel per local codes and regulations.
2. Use supplied mounting brackets. Brackets may be attached to either the back or the side depending on mounting requirements. **Only use supplied mounting screws (Maximum mounting screw penetration .38").**
3. Locate the label above the terminal strip for connection reference.
4. Wire 85 - 264 Volts AC to:

85-264 VAC	Power Supply Connection
Earth Ground	- ACG
Line	- ACL
Neutral	- ACN

5. Wire MIU supply voltage as follows:

MIU Power Terminal	Power Supply Connection
TB6-1 - EARTH	
TB6-2 - COMMON	COM
TB6-3 - -12	-12V
TB6-4 - -5	-5V
TB6-5 - +5	+5V
TB6-6 - +12	+12V

