Main Frame Installation & Operation Manual
HIGH POWER 30 AMP
1, 3 & 6 Zones

MFHP-1-130, MFHP-3-150
MFHP-6-1100

OPERATING INSTRUCTIONS

Please read these instructions thoroughly before using this system

IMPORTANT: Make sure the main frame circuit breaker is "OFF" before inserting or removing control modules.

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ELECTRICAL LOCKOUT:

THE ELECTRICAL POWER SOURCE MUST BE LOCKED OUT WHENEVER ANYONE IS WORKING ON THE EQUIPMENT.

Each maintenance person should have a personal padlock, with only one key. When working on any equipment this person should use the padlock to lock out the electrical controls. It is most important that the only available key for the lock be in the pocket of the person who is working on the temperature control equipment. If other persons work on the same equipment, each should use their own different lock at a separate lockout station for the controls of the equipment. Accidental startup of the equipment may have tragic results.

In no case should the removal of or work be performed on the temperature control modules or main frames without following proper electrical lockout procedures.

LIFTING APPARATUS:

Temperature control equipment, like any other type of equipment, requires normal periodic maintenance or relocation if the user is to get the most for the investment in the equipment. One of the most flagrant of safety violations is the use of inadequate and unsafe lifting equipment. The temperature control equipment or parts thereof should be assembled, disassembled and moved with lifting facilities that have the capability of gently and slowly lifting and lowering the equipment or various parts.

WHEN USING A CRANE OR FORK LIFT, OPERATE WITHIN ITS RATED CAPACITY, THE SAFE RATED CAPACITY INCLUDES WEIGHT OF HOOKS, BLOCKS, AND ANY OTHER HANDLING DEVICES, SUCH AS CABLES, SLINGS, SPREADER BARS, ETC. CONSIDER THE WEIGHT OF ALL THESE AS PART OF THE LOAD TO BE LIFTED.

WARNING:
When inserting or removing control modules from the main frame, power must be turned off on both the module and main frame. If the module is inserted or removed while under a load, severe damage will result to both the control module and the main frame. Before replacing the module, the main frame must be inspected for damage by a qualified technician. Damage caused to control module and main frame as a result of improper insertion or removal, will not be covered under warranty.

PLANT SAFETY:
The safety procedures mentioned here do not eliminate all safety hazards found in the area of operation. However, they do highlight some procedures that have been found through long experience to improve safety conditions around temperature control systems. International Temperature Control Inc. welcomes inquiries about other suggested safety procedures for use around their equipment.

OUT OF SERVICE:
When the system is out of service, both the control module and main frame must be turned off.

Main Frame Installation & Operation Manual
HIGH POWER 30 AMP
1, 3 & 6 Zones

International Temperature Control, Inc. standard high power temperature control systems are uniquely engineered to accurately manage the mold temperature for 1, 3 and 6 zone applications without the need for special temperature control modules. In ITC's High Power 30 amp system, the exact same temperature control modules are uses as in our 15 amp systems.

FEATURES:

- The MFHP, 30 amp, High Power Main Frames have been engineered to use our standard temperature control modules, which are used in our 15 amp systems. Thereby, eliminating the need for special high amperage modules. The utilization of one style of temperature control module for both 15 and 30 amp systems, allow us to achieve the following benefits:
    1. Eliminate the need for special double wide, high cost temperature control modules.
    2. Reduce total system cost.
    3. Reduce the possibility of system damage resulting from inserting a module in the wrong main frame slot.
    4. Reduces inventory cost by eliminating the need to have expensive 30 amp modules on hand.
- Amperage readout display. Checking a heater amperage draw is as simple as turning the selector switch (located just below the display window) to the appropriate zone, then depressing the amp button located just to the right of the zone selector switch. When the amp button is depressed, the actual amperage draw and PID sequencing will be indicated.
- The 1, 3 & 6 zone, 30 amp main frames are completely self-contained units. Installation is simply a matter of providing the necessary 240vac, 3-phase, power to the main frame and plugging the mold power and thermocouple cables into the main frame & mold.
- Phase indicators (L1, L2 & L3 on 3 and 6 zone main frames) & (L1 & L2 for single zone main frames) will light up, indicating which legs have power.
- Each main frame is protected by an appropriately sized circuit breaker.
- Each heater zone is protected by a pair of 30 amp fuses. On 3 & 6 zone main frames, the fuses are located directly above the appropriate zone. On 1 zone systems, the fuses are located to the right of the circuit breaker.
- Configured to fit on our regular stands.
- Can be tied together with our standard 15 amp main frames to provide a unitized 15/30 amp temperature control system.
- Main frame mold power connector is "female" and the thermocouple connector is "male" to inhibit the possibility of inserting the thermocouple cable into the power connector or visa versa.
- Anti-Arching Feature is designed into the main frames to help prevent damage to both the main frame and control module in the event the module is inadvertently removed while under load. This feature will only function with newer ITC temperature control modules and main frames which have been equipped with Anti-Arching circuitry.

  Reference Temperature Control Module Operation & Maintenance Manual for additional information.
- Designed to operate at full load capacity (sequential startup not required)

WARNING:

In most applications, only one heater element can be used per temperature control module. In 30 amp applications, current draw can fluctuate dramatically if multiple heater elements are wired together. If heaters are wired in parallel, care must be taken to insure that the total wattage of the heaters do not exceed the modules rating. If multiple heaters are wired in series, the effective wattage of the circuit drops dramatically. The use of more than one heater in a circuit should only be contemplated if a qualified electrical engineer designs the circuit.

It is highly recommended that a qualified electrician perform the input power wiring for this control system.

INPUT POWER DESCRIPTION:

3 & 6 Zone Main Frames:
Unless otherwise specified, main frames are shipped from the factory wired to accept 208/240vac, 50/60 Hz, 3-Phase, power source. This is a 4-whire arrangement using 3 power wires plus a ground wire. If you are unsure of the voltage available, do not connect input power to this system without clarification as you may cause severe damage to the unit.

1 Zone Main Frame:
Unless otherwise specified, main frames are shipped from the factory wired to accept 208/240vac, 50/60 Hz, Single-Phase, power source, 3 wire (2 AC power leads plus one ground lead).

If there are any questions regarding line voltage or available, do not connect this system without clarification as you may cause severe damage.

Units that will operate from 480vac power source will require a step down transformer to convert 480vac to 240vac before it enters the main frame. If the step down transformer is ordered from International Temperature Control, Inc., it will be pre-wired to the main frame.

SITE LOCATION:

- Location of the main frame is important for proper operation and dependable service.
- Ventilation - The main frame must be located so air can move freely in and out of the housing and must not be exposed to excessive heat (maximum operating ambient air temperature 100° F).
- The main frame must be located to minimize dust, dirt, moisture, vibration caustic vapors and excess heat, as they all have a detrimental affect on the equipment.
- The unit must be positioned so the front and rear are readily accessible for setup, adjustment and service.
- Unit must be placed close enough to the mold so all cables can be conveniently run and connections made without undo strain on cables or connectors.
- Place main frame so it will not be damaged by normal plant activities.

POWER CONNECTION:

- All electrical connections, and servicing must be only be preformed by qualified electrical technicians
- All electrical connections and servicing must be done in accordance with safe electrical practices.
- All Power cables must be properly sized in accordance with electrical codes.
- It is imperative that you consult your local electrical code prior to electrical installation.
- Follow proper lock out & tag out procedures before any work is done on the unit.

NOTE: It is recommended that a fused disconnect box be installed. This will provide a convenient means to implement lock out and tag out Procedures and completely disconnect all input power to the main frame.

ELECTRICAL INSTALLATION: (Reference enclosed drawing)

WARNING: Never attempt to perform any wiring or service to this unit with the input power cable connected to a power source. Disconnect the input power cable from the power source before attempting any service on this unit.

- Remove the back cover panel from the main frame.
- Strip back approximately 3 inches of the input cables outer jacket.
- Strip back approximately ¼ inch of insulation from each individual lead.
- Insert input power cable through the cable grip located on the side of the main frame. Check to make sure there is no tension on the individual leads. Tighten screw on the cable grip
- Wire the input power cable into the input power terminal block located inside the main frame.

- When connecting the power cable, be sure to attach a proper ground lead opposite the green ground wire on the input power terminal block. Make sure that the ground lead is attached to a good earth ground and test housing to ground.
- Make sure that the input power leads are securely attached to the proper input terminal block and that there are no loose wire strands sticking out of the terminals.
- An input power cord grip is normally supplied with each unit. It is very important that the grip is checked for tightness in the main frame and that the input power cable is secured in the grip so that it cannot be accidentally pulled out.
- After the input power cable had been properly installed in the main frame, securely replace the back cover panel on to the main frame with a screw at each location.
- Connect the input power cable to a 240vac service disconnect box (3-Phase for 3 & 6 zone systems and 1-Phase for 1-zone systems) and attach leads to the fused side of the switch. Check to make sure disconnect box is off before opening the box. The ground lead must be attached to a good earth ground and checked.
- Install appropriate size fuses in the main disconnect service box.

WARNING: All three power leads are electrically hot to ground. Wiring errors at either end of the cable can make the metal enclosure electrically hot and extremely hazardous. Make sure ground is properly and securely attached. Test connection to earth ground.

Exposed electrical leads can cause shock or electrocution. Do not connect, apply power or operate when any cover is open, removed or electrical connection is exposed.

POWERING UP:

- Turn "ON" external power fused disconnect switch to provide power to main frame.
- Turn "ON" main frame by pushing up on the circuit breaker handle on the front of the main frame. Phase indicators (L1, L2 & L3 on 3 & 6 zone systems) (L1 & L2 on single zone systems) will light up, indicating which leg has power. If any of the phase indicator lights do not come on, turn off the power to the main frame and contact a qualified electrical technician.
- Whenever a 3-Zone or 6-Zone main frame is powered up, make sure the cooling fan is operating. You should be able to feel a substantial amount of air being expelled from the fan louvers on the right side of the cabinet. On Single Zone main frames, cooling is accomplished by natural convection, as air moves from the bottom to the top of the main frame. The bottom of all main frames must be free from obstructions to allow air to freely enter. If air flow to the unit is impeded, it could cause premature failure to the main frame or control module.
- Turn "ON" the individual temperature control modules by depressing the power button on the bottom of the module face plate.

  NOTE: Prior to operating system thoroughly read and understand the operating manual for the module being used.

WARNING:

When inserting or removing control modules from the main frame, power must be turned OFF on both the module and main frame. If modules are inserted or removed while under a load, severe damage can result to both the control module and main frame. Damage caused to control module and main frame as a result of improper insertion or removal, will not be covered by warranty. Before replacing the module, the main frame must be inspected for damage by a qualified technician.

NOTE: It is recommended that a fused disconnect box be installed. This will provide a convenient means to implement lock out & tag out procedures and completely disconnect all input power to the main frame.

TO SHUT SYSTEM DOWN:

1. Turn "OFF" each individual module
2. Turn "OFF" main frame by pushing down on the circuit breaker handle on the front of the main frame.
3. Turn "OFF" the external power disconnect box.

MAIN FRAME TO MOLD CABLE CONNECTIONS:

POWER CONNECTORS: Multi-pin (female) power connectors are built into main frame to interface with the mold cables. Main frame power connectors (female) are unique to high power systems as they are designed to handle 30 amp power loads.

THERMOCOUPLE CONNECTORS: Multi-pin main frame thermocouple connectors (male) are the same as found in our standard 15 amp systems.

POWER CABLES: Individual high power output cables connect the main frame to connectors on or near the mold, (Connector on main frame end {male} & connector on mold end {female}).

THERMOCOUPLE CABLES: Individual mold thermocouple cables are the same as used in out standard 15 amp systems, (Connector on main frame end {female} & connector on mold end {female}).

- Caution must be taken so that power and thermocouple cables are installed in the proper connectors.
- Standard ITC main frame connectors and mold cables are engineered to reduce the possibility of inadvertent installation of the power cable into the main frame thermocouple connector or the thermocouple cable into the main frame power connector. Still caution must be taken to ensure proper installation.
- Reference enclosed drawing for standard power and thermocouple wiring arrangement.
- Temperature control module in main frame zone #1 location will control heater in mold cavity #1, etc.
- Connect power and thermocouple cables to main frame and mold. Firmly set retaining latches to prevent the cables from pulling out of the connectors. Reference enclosed drawing for description of installation.

INSERTING AND REMOVING MODULES:

1. Inserting or removing modules while module and main frame is on could expose the operator to dangerous electrical power. It could also destroy the module and damage the main frame
2. Turn "OFF" the module and main frame. Lock out & tag out power to the main frame prior to removing or installing temperature control modules.
3. To insert a module, first line up the top and bottom of the card with the card guides located on the top and bottom of the slot.
4. Push module gently, but firmly into main frame card guides until it is fully seated in the edge connector located at the back of the main frame.
5. To remove a module from main frame, grasp the handle and gently, but firmly pull straight out.

CAUTION:

Install Main Frame Blank Plates (MFBP) over any empty slots. ***NEVER*** operate the system with an uncovered slot, since it will expose you to dangerous electrical power which can cause sever electrical shock.

WARNING:

When inserting or removing control modules from the main frame, power must be turned OFF on both the module and main frame. If modules are inserted or removed while under a load, severe damage can result to both the control module and main frame. Damage caused to control module and main frame as a result of improper insertion or removal, will not be covered by warranty. Before replacing the module, the main frame must be inspected for damage by a qualified technician

ANTI-ARCING FEATURE

This temperature control system is equipped with our innovative **Anti-arcing** feature that will help prevent damage to the control module and main frame in the event the module is inadvertently removed under load. This feature should not be considered a substitute for proper handling procedures, but rather a supplemental protection mechanism.

If an ITC control module is inserted into a main frame not equipped for **Anti-arcing**, the instrument will not provide power to the heater and a **"tOh"** error code will be displayed. If this condition occurs, the **Anti-arcing** jumper can be moved from the #2 & #3 enabled position to the #1 & #2 disabled position. By repositioning the jumper in the **Anti-arcing** disabled position, the module will function in main frames not equipped with the **Anti-arcing** feature. **Disabling the anti-arcing feature can void your two-year warranty in the event the module is removed from main frame under load, as a resulting in damage to printed circuit board traces.**

NOTE: This feature will only work with ITC's updated TC-2000 main frames, and should not be considered a substitute for proper handling procedures. Disabling the anti-arcing feature could void your two-year warranty if damage occurs.

NOTE: The **Anti-arcing** feature will not prevent damage if the jumper is not in the enabled position.

NOTE: The **Anti-arcing** feature of this module will not prevent damage if the module is used in a main frame not properly equipped for **Anti-arcing**.

ITC main frames manufactured prior to March 2000 were not equipped with the **Anti-Arcing** feature.
They can be upgraded with **Anti-Arcing** by installing Contact (MF-ECC) in position #3 of Card Edge Connector (MF-EC). Please consult the factory. *(Refer to the enclosed Anti-arcing sheet for more information.)*

OPTIONS:

EXTERNAL ALARM OPTION:

The External Alarm Option gives the user the ability to have an Audible or Visual alarm located away from the main frame to better alert the operator.

NOTE: To function, the Optional External Alarm Feature must also be present on the UATC-20C Modules.

The alarm will activate if any of the properly optioned UATC-20C modules in the main frame go to an error condition (regardless of the audible ALARM setting in the Options Menu) activating alarm contacts within the main frame.

The Optional External Alarm Contacts are rated for:

- 10 Amps at 125 VAC, or
- 5 Amps at 250 VAC, or
- 5 Amps at 30 VDC

Connector:

- The contacts are located on pins #1 & #2 of the 5 pin connector (1Z-FC) mounted on the main frame. Use cable end connector (1Z-FE) to plug into connector (1Z-FC) on the main frame.

STANDARD ACCESSORIEY ITEMS:

For Single Zone Systems: MFHP-1-130

Combination Cable	PTCHP1-10 / 20	1 Zone, Combination Power & T/C, 10 / 20 ft. lg.
Mold Combination Connector	MPTCHP-1	1 Zone, Combination Power & Thermocouple

For 3-Zone Systems: MFHP-3-170

Power Cable	PWCHP3-10 / 20	3 Zone, High Power Cable, 10 / 20 ft. lg.
Mold Power Connector	MPCHP-3	3 Zone, High Power Connector (Male)
Main Frame Power Connector	FCKHP-3PR	3 Zone, High Power Connector (Female)
Main Frame Power Cable End Kit	FEKHP-3PR	3 Zone, High Power Connector (Male)
Mold Power Cable End Kit	MEKHP-3PR	3 Zone, High Power Connector (Female)
Thermocouple Cable	THC5-10 / 20	5 Zone, Standard Thermocouple Cable 10 / 20 ft. lg.
Mold Thermocouple Connector	MTC-5	5-Zone, Thermocouple Connector (Male)
Main Frame T/C Connector	FCK-TC	5 Zone, Thermocouple Connector (Male)
Main Frame T/C Cable End Kit	FEK-5TC	5 Zone, Thermocouple Connector (Female)
Mold T/C Cable End Kit	MEK-5TC	5 Zone, Thermocouple Connector (Female)
Mold Wiring Junction Box	MJBHP-3	3 Zone High Power Mold Junction Box

For 6-Zone Systems: MFHP-6-1100

Power Cable	PWCHP6-10 / 20	6 Zone, High Power Cable, 10 / 20 ft. lg.
Mold Power Connector	MPCHP-6	6 Zone, High Power Connector (Male)
Main Frame Power Connector	FCKHP-6PR	6 Zone, High Power Connector (Female)
Main Frame Power Cable End Kit	FEKHP-6PR	6 Zone, High Power Connector (Male)
Mold Power Cable End Kit	MEKHP-6PR	6 Zone, High Power Connector (Female)
Thermocouple Cable	THC8-10 / 20	8 Zone, Standard Thermocouple Cable 10 / 20 ft. lg.
Mold Thermocouple Connector	MTC-8	8-Zone, Thermocouple Connector (Male)
Main Frame T/C Connector	FCK-TC	8 Zone, Thermocouple Connector (Male)
Main Frame T/C Cable End Kit	FEK-8TC	8 Zone, Thermocouple Connector (Female)
Mold T/C Cable End Kit	MEK-8TC	8 Zone, Thermocouple Connector (Female)
Mold Wiring Junction Box	MJBHP-6	6 Zone High Power Mold Junction Box

SPECIFICATIONS:

Voltage:
- 1-Zone …….. 208 to 240vac, single phase
- 3-Zone …… .208 to 240vac, three phase
- 6-Zone …….. 208 to 240vac, three phase

Frequency …….. 50/60 Hz
Maximum Amperage per Zone …….. 35 Amps
Amperage Display ……. LED display, 3-digit, 7-segment

System Over Current Protection
- 1-Zone …….. 30 amp 2-pole circuit breaker, with phase indicator
- 3-Zone ……...70 amp 3-pole circuit breaker, with phase indicator
- 6-Zone……100 amp 3-pole circuit breaker, with phase indicator
- Zone Over Current Protection ……. Each Zone has two externally mounted 30 amp fuses

Physical Configuration

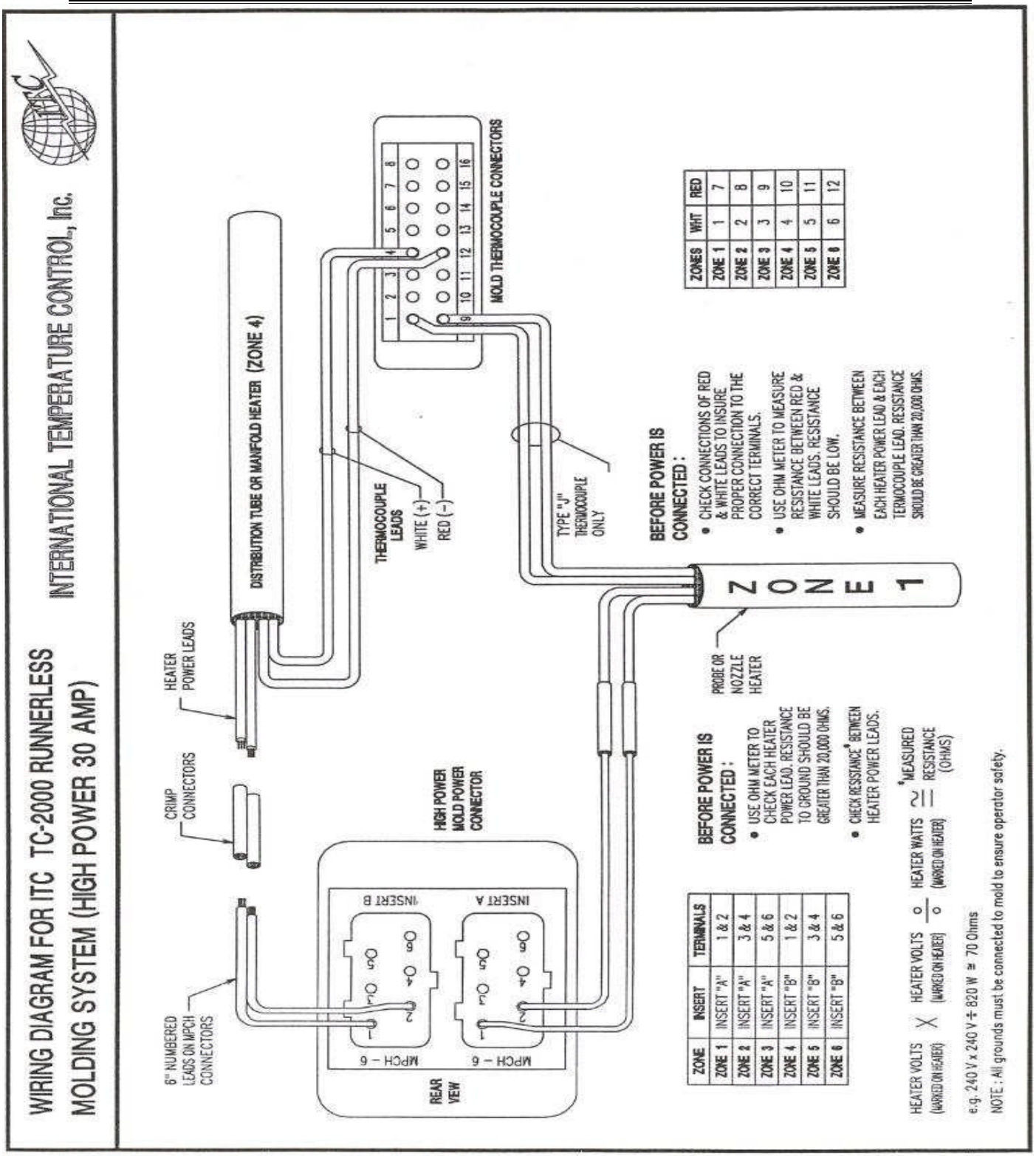
1-Zone …… 10-3/4" High (with handle) 7-1/4" wide, 10" Deep
- Weight …….. 10 pounds Approx.
- Construction ……..Welded Steel for durability, steel handle for portability, large connectors for reliability & rubber feet
- Color ……. Chicory Powder Coat (Dark Tan)

3-Zone …… 9" High, 14-1/4" Wide, 15-1/4" Deep
- Weight …….. 23 pounds Approx.
- Construction ……. Welded Aluminum for durability, large connectors for reliability, rubber feet, sized to fit on normal stand.
- Color ……. Chicory Powder Coat (Dark Tan)

6-Zone …… 12-3/4" High, 20-1/4" Wide, 15-1/4" Deep
- Weight …….. 35 pounds Approx.
- Construction ……. Welded Aluminum for durability, large connectors for reliability, rubber feet, sized to fit on normal stand.
- Color ……. Chicory Powder Coat (Dark Tan)

Compatibility ……. Compatible with any standard ITC temperature control module, modules plug in for easy interchangeability.

Special Features ……..……Anti-Arching capability with proper ITC module



ZONES	WHT	RED
ZONE 1	1	7
ZONE 2	2	8
ZONE 3	3	9
ZONE 4	4	10
ZONE 5	5	11
ZONE 6	6	12

ZONE	INSERT	TERMINALS
ZONE 1	INSERT "A"	1 & 2
ZONE 2	INSERT "A"	3 & 4
ZONE 3	INSERT "A"	5 & 6
ZONE 4	INSERT "B"	1 & 2
ZONE 5	INSERT "B"	3 & 4
ZONE 6	INSERT "B"	5 & 6

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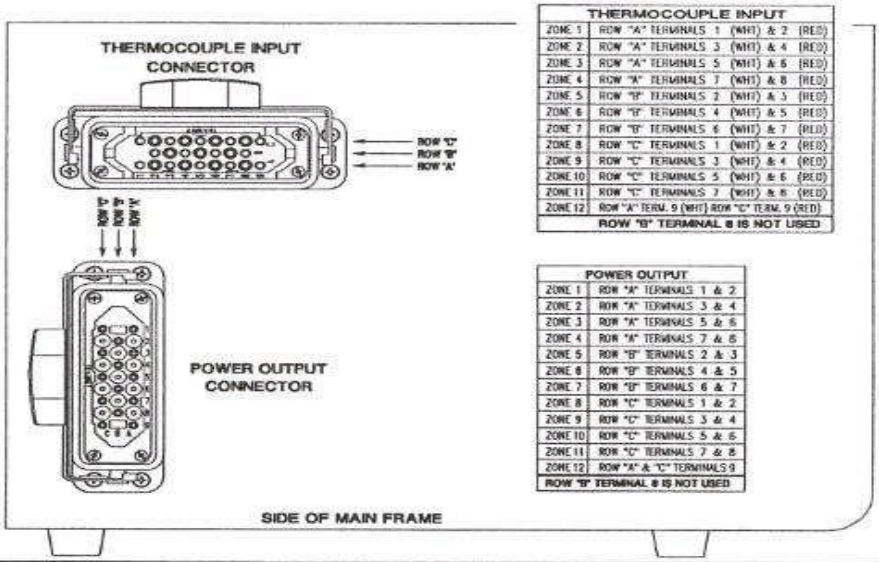
STANDARD MAIN FRAME CONNECTOR WIRING

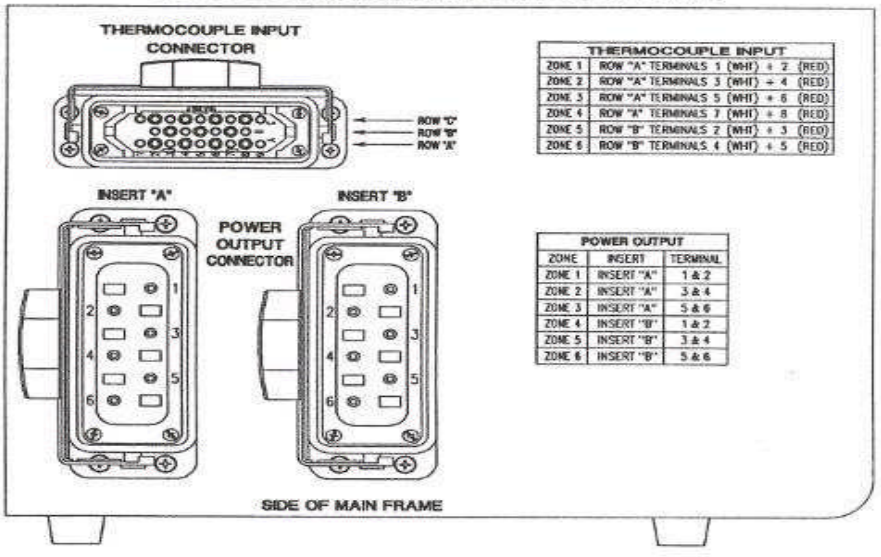


THERMOCOUPLE INPUT		
ZONE 1	ROW "A" TERMINALS 1 (WHT) & 2	(RED)
ZONE 2	ROW "A" TERMINALS 3 (WHT) & 4	(RED)
ZONE 3	ROW "A" TERMINALS 5 (WHT) & 6	(RED)
ZONE 4	ROW "A" TERMINALS 7 (WHT) & 8	(RED)
ZONE 5	ROW "B" TERMINALS 2 (WHT) & 3	(RED)
ZONE 6	ROW "B" TERMINALS 4 (WHT) & 5	(RED)
ZONE 7	ROW "B" TERMINALS 6 (WHT) & 7	(RED)
ZONE 8	ROW "C" TERMINALS 1 (WHT) & 2	(RED)
ZONE 9	ROW "C" TERMINALS 3 (WHT) & 4	(RED)
ZONE 10	ROW "C" TERMINALS 5 (WHT) & 6	(RED)
ZONE 11	ROW "C" TERMINALS 7 (WHT) & 8	(RED)
ZONE 12	ROW "A" TERM. 9 (WHT) ROW "C" TERM. 9 (RED)	
ROW "B" TERMINAL 8 IS NOT USED		

POWER OUTPUT	
ZONE 1	ROW "A" TERMINALS 1 & 2
ZONE 2	ROW "A" TERMINALS 3 & 4
ZONE 3	ROW "A" TERMINALS 5 & 6
ZONE 4	ROW "A" TERMINALS 7 & 8
ZONE 5	ROW "B" TERMINALS 2 & 3
ZONE 6	ROW "B" TERMINALS 4 & 5
ZONE 7	ROW "B" TERMINALS 6 & 7
ZONE 8	ROW "C" TERMINALS 1 & 2
ZONE 9	ROW "C" TERMINALS 3 & 4
ZONE 10	ROW "C" TERMINALS 5 & 6
ZONE 11	ROW "C" TERMINALS 7 & 8
ZONE 12	ROW "A" & "C" TERMINALS 9
ROW "B" TERMINAL 8 IS NOT USED	

NOTE : 1. Mating cable connectors are wired the same as frame connectors shown.
2. Wires in frame are marked by zone number for reference when rewiring of frame connectors is necessary (see owners manual).
3. All grounds must be connected to ensure operator safety.

HIGH POWER MAIN FRAME CONNECTOR WIRING



THERMOCOUPLE INPUT		
ZONE 1	ROW "A" TERMINALS 1 (WHT) + 2	(RED)
ZONE 2	ROW "A" TERMINALS 3 (WHT) + 4	(RED)
ZONE 3	ROW "A" TERMINALS 5 (WHT) + 6	(RED)
ZONE 4	ROW "A" TERMINALS 7 (WHT) + 8	(RED)
ZONE 5	ROW "B" TERMINALS 2 (WHT) + 3	(RED)
ZONE 6	ROW "B" TERMINALS 4 (WHT) + 5	(RED)

POWER OUTPUT		
ZONE	INSERT	TERMINAL
ZONE 1	INSERT "A"	1 & 2
ZONE 2	INSERT "A"	3 & 4
ZONE 3	INSERT "A"	5 & 6
ZONE 4	INSERT "B"	1 & 2
ZONE 5	INSERT "B"	3 & 4
ZONE 6	INSERT "B"	5 & 6

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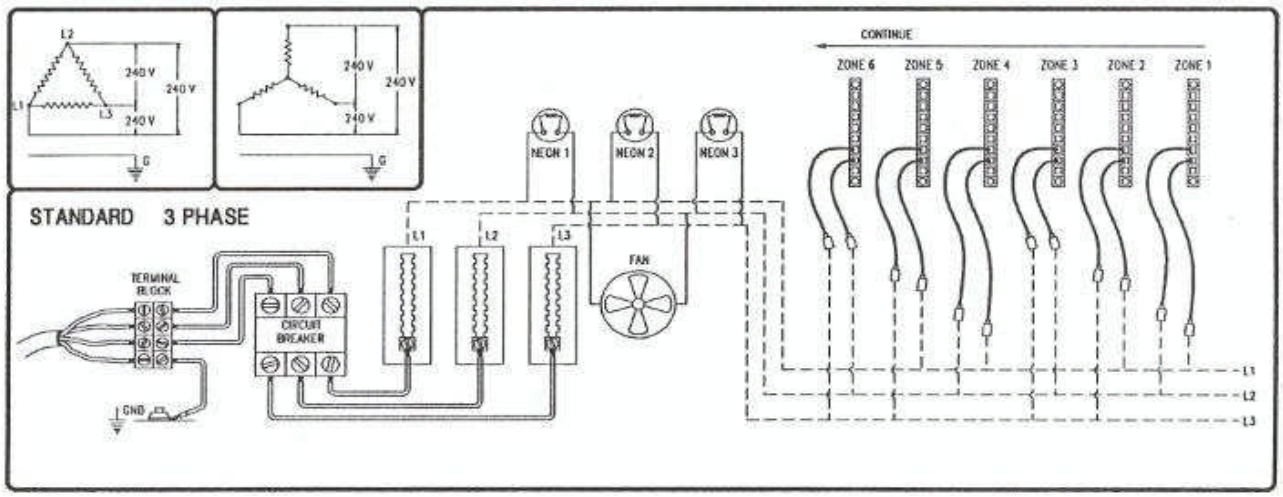
STANDARD
208 – 240 VAC, 3 Phase, 4 – Wire
Delta or "Y" Power Distribution System



As shown above, each module is powered from one of the three phases. Module (1), for example, is powered from phase 1, which is supplied by L1 and L2. Module (2) is powered by phase 2, which is supplied by L1 and L3. Module (3) is powered by phase 3, which is supplied by L2 and L3. **NOTE**: At this point, the sequence repeats itself. For example, Module (4) is connected the same as Module (1) to L1 and L2; Module (5) is connected the same as Module (2) to L1 and L3; Module (6) is connected the same as Module (3) to L2 and L3. Module (7) will be connected to the same phase as Module (1) and (4), etc. This method of connection assures the greatest likelihood of line balance.

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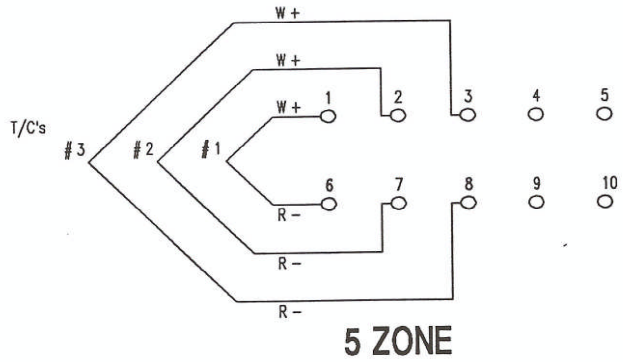
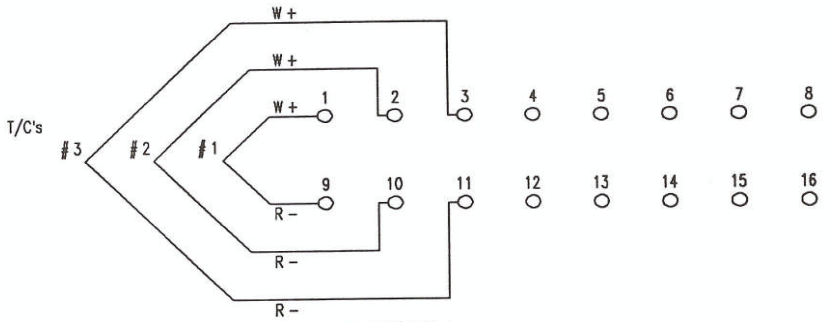
MOLD THERMOCOUPLE CONNECTOR



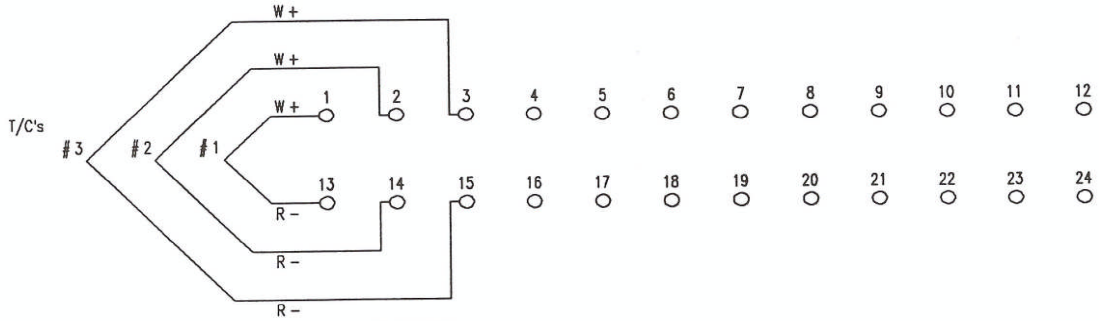
MOLD THERMOCOUPLE CONNECTOR

5 ZONE



MOLD THERMOCOUPLE CONNECTOR

8 ZONE



MOLD THERMOCOUPLE CONNECTOR

12 ZONE

2415 E. Huron P. O. Box 805
Au Gres, MI 48703
Ph: (989) 876-8075 Fax: (989) 876-6640

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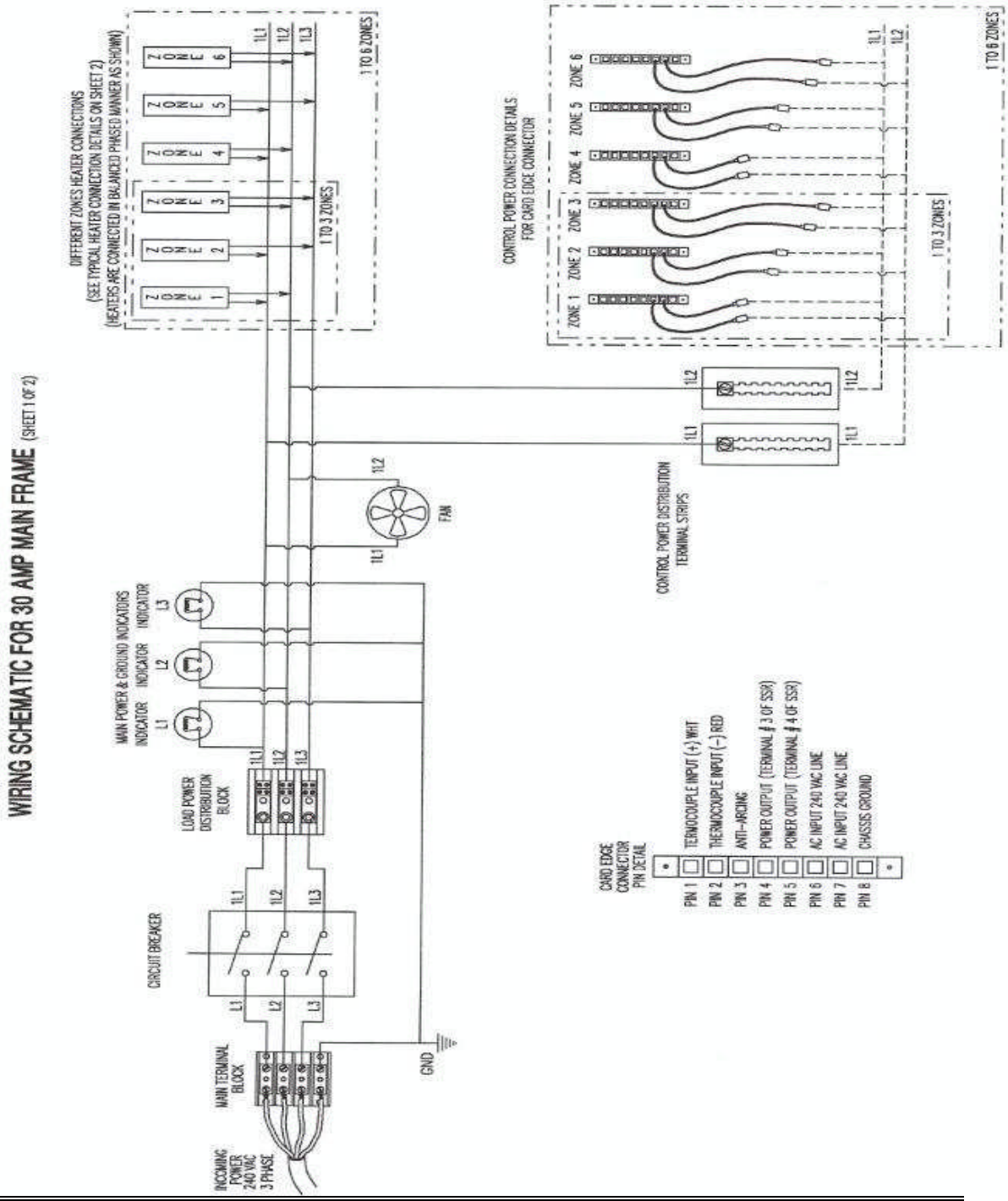

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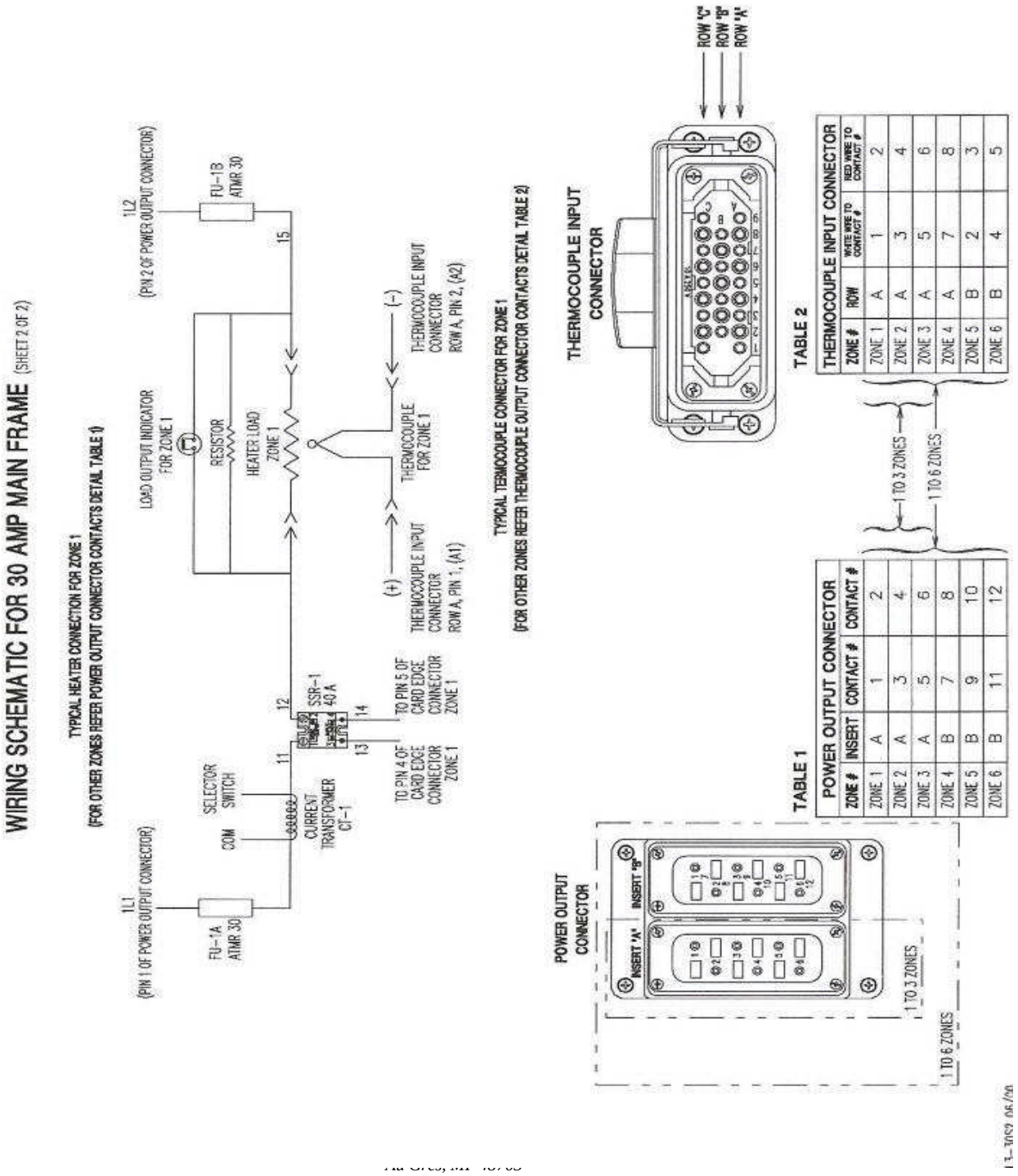

INTERNATIONAL TEMPERATURE CONTROL, Inc.

MAIN FRAME CONTROL MODULE CONNECTOR

AMP - CR