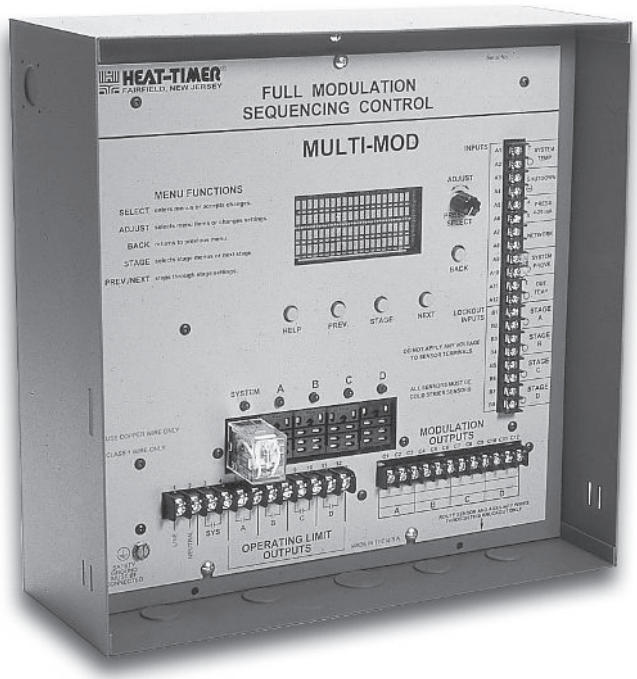
MODULATING SET POINT CONTROL

With • Lead Lag Modulating Boiler Control
• Internet, BACnet, or Modbus Communication options

Multi-MOD Platinum

Description:

- Sequences up to 4 Fully Modulating Stages for Temperature or Pressure Systems. The Multi-MOD Platinum is the perfect control whenever multiple fully modulating stages are required for heating or cooling applications. The Multi-MOD Platinum controls the on/off and the modulation of each stage to maintain precise set point control using PID type control logic.
- Controls 0-5V, 0-10V, 4-20mA, or 135Ω modulating motors. The Multi-MOD Platinum is designed to accurately control the output from 0 to 100% of modulation for each of these different types of motors. One Multi-MOD Platinum can even control two different types of motors.
- Digital Display of all System Settings. The Multi-MOD Platinum's 80 character alphanumeric digital display names each system parameter in plain English and shows its precise value. The easy to follow menu system allows users to quickly make changes to any system setting without having to learn any specialized codes or keyboard commands. Password protection is available to prevent unauthorized users from making adjustments to control settings.
- Automatic Rotation among Stages. Rotating the first stage to be activated on a call for output promotes even wear on each stage. The Multi-MOD Platinum has three modes of rotation: Manual, First ON/First OFF, or automatically every selected time period from every hour to every 7 days.
- Outdoor Reset Capability. The Multi-MOD Platinum can be connected to existing or new Heat-Timer outdoor reset controls (HWR for hot water heat, or MPC for steam heat). The Multi-MOD Platinum also has built in hot water reset with adjustable reset ratios, offsets and outdoor cutoff.
- Connects to Energy Management Systems. All Multi-MOD Platinums can be disabled by an Energy Management System (EMS) or other controller when there is no output requirement. The Multi-MOD Platinum can also accept a 4-20 mA input signal from an EMS to adjust the set point according to outdoor temperature or other factors.
- Monitors Stage Status. The Multi-MOD Platinum is designed to accept Lockout inputs from each stage. If any stage is in Lockout, the Multi-MOD Platinum will automatically skip it when adding more capacity. If a stage goes into Lockout during normal operation, the next stage will be activated immediately to maintain the desired output capacity.



- Optional BACnet or Modbus Communication. With the BACnet or Modbus options, a Multi-MOD Platinum can act as node in a BMS network. A proprietary communication EMS/BMS can use their BACnet IP, MST/TP, or Modbus integration to place the Multi-MOD Platinum on their network.
- Optional Internet Remote Communication Add-On. Imagine being able to not just control your building heat from anywhere, but to be able to see boiler status, and temperature and pressure logs. In addition, you will be able to set and monitor wireless and hard wired sensors, configure and receive alarms and lockout status, configure and view histories, and more. Well, imagine no more. The Multi-MOD Platinum can be ordered with the Internet communication packages that fit your needs. With that you can configure, set alarms and monitor a variety of sensors ranging from wireless, water meter, oil level, temperature, pressure, switch, and stack sensors.
- Additional features include: A purge timer, a low fire adjustment, a firing point setting for the next stage based on the firing rate of the current stage, a lag stage timer, a last stage hold adjustment, and many others.

Ask About the Internet, BACnet, and Modbus Communication Options

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Features:

- All the following stage signal outputs are available: - 0-5 V or 0-10 V - 4-20 mA - 135 Ω
- The following are field selectable
- Rotation type: Manual, first on/first off, or automatic every adjustable time period from every hour to every 41 days
- Input type: Temperature, pressure, 4-20mA, or interface to outdoor reset controls HWR or MPC
- Temperature display: ºFahrenheit or ºCelsius
- Lockout inputs for each stage allow the Multi-MOD Platinum to automatically begin activating the next stage if a stage goes into Lockout
- Capability of connecting to Heat-Timer network sensors or Mini-MIG boxes to monitor temperatures, pressures, oil tank levels, water meters, etc.
- A System output relay is provided and is energized when output is required. It will remain on for an adjustable time delay after the last stage turns off
- System Prove input must be made before stages are activated
- Adjustable PID type logic or throttling range controls stage loading/unloading
- Parallel loading mode–used when boiler recommends higher efficiencies at lower firing points
- Remote enable/disable function
- Remote set back feature
- Adjustable purge, lag stage delay, system run-on delay, and standby timers
- Adjustable ignition and modulation start points
- Lead stage will not turn off until the system temperature or pressure exceeds an adjustable range from the set point value, preventing short cycling of the lead stage
- The Multi-MOD Platinum can be configured to accept a 4-20mA signal to remotely change the set point
- System sensor can be located up to 500' from the control module
- System sensor reading, set point, and stage information are constantly shown on the 80 character display
- Menu system provides digital display and precise adjustment of all settings
- Built-in password protection
- LEDs show status of each output relay
- Plug in field replaceable relays are rated at 6A resistive 1/3HP
- All settings and operating modes are stored permanently in EE-Prom even if power is lost
- Remote communication packages are available either at the time of order or as a field upgrade (Internet, BACnet, or Modbus)
- Hot water reset operation

Benefits:

Easy to order, stock, or field upgrade

- The base Multi-MOD Platinum unit can accommodate temperature, pressure, or 4-20mA inputs, and 0-5V, 0-10V, 4-20mA and 135Ω modulating motors.
- When ordering, you only need to specify the input sensor type and the output modulating motor type.
- If the system changes in the future, both sensors and output modules can be upgraded in the field.

Easy to install

A single 13" x 13" enclosure contains all Multi-MOD Platinum hardware and software.

- Only one sensor is required and it can be installed in any convenient location up to 500' from the Multi-MOD Platinum panel.
- Large, clearly marked 3/8" terminals facilitate wiring with standard screwdrivers.
- The 80 character display and easy to use menu system will guide you through all necessary settings.
- Every setting is displayed, eliminating guesswork about the precise value.

Easy to use

- After initial configuration, the Multi-MOD Platinum needs no further adjustment.
- Glancing at the 80-character display provides you with all the necessary operating information —system sensor value, setting, and output stage status.
- The PID algorithm will adjust for changes in load based on ambient conditions, outdoor conditions, or process demands.
- Lockout and System Prove inputs allow the Multi-MOD Platinum to quickly adjust to output stage or other system problems.
- The remote enable/disable function turns the Multi-MOD Platinum off automatically when no output is needed.

Fuel saving

- The Multi-MOD Platinum is unique among lead-lag systems in that is PID algorithm controls to precisely the desired set point. Unlike other systems, it does not bring all stages up to high modulation and then back them down until the desired set point is obtained. The Multi-MOD Platinum does not waste energy by activating unneeded stages and running them in the inefficient high modulation mode.
- The Multi-MOD Platinum has a built in Setback capability that lowers the set point when less output is required. This can be enabled from an EMS, a remote controller, or a manual switch.

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•The remote enable/disable function allows an external control to shut the Multi-MOD Platinum down when no output is required, instead of relying on personnel to remember. For example, when the outdoor temperature rises above a desired point, a temperature controller output can disable the Multi-MOD Platinum.

•A Multi-MOD Platinum operating in heat mode can realize the fuel saving benefits of outdoor reset. A Multi-MOD Platinum can be controlled by Heat-Timer's outdoor reset control for hot water (HWR), for steam heat (MPC), or for a vacuum steam system (SRC). A Multi-MOD Platinum can also accept remote 4 20 mA set point.

Prolong output stage life

- The automatic lead stage rotation evenly distributes the wear on all available stages.
- The available rotation options allow you to pick the optimum schedule for your output stages.
- The purge time sets the minimum run time for any stage, preventing harmful short cycling.
- Short cycling prevention tools are built into the Multi-MOD Platinum software. As described in the previous section, on a cold start, the Multi-MOD Platinum does not bring all stages up to high modulation and then back them down. Stages are only enabled when they are required.
- The Multi-MOD reduces Short cycling of the lead stage during low load conditions using the Last Stage Hold setting. It allows the system temperature or pressure to vary from the set point before turning the last stage off.
- Stages are never turned off in high modulation, which can be very harmful. The Multi-MOD Platinum backs the modulation down to low before stages are turned off.

Multi-MOD Platinum Specifications

Input Voltage 120VAC
Power Consumption 30VA
Operating Mode . . . . . Heating/Cooling
Lead Stage Rotation
  Manual
  First On/First Off
  Automatically. . . . . Every hour to every 41 days
Output Types 0-5V, 0-10V, 420mA, 135Ω
Stage Modes . . . . . Off, Auto, On, Standby, Manual
Output Contacts . . . . . .5 SPST
Output Rating . . . . . .6A resistive, 1/3HP
Operating Ambient Temperature . . . . . .20 to 120°F
Enclosure. . . . . NEMA -1
Dimensions. . . . . .13" x 13" x 5-1/2"
Weight . . . . . 14 Lbs
Sensor Accuracy
  Temperature . . . . . +1°F (1°C)
  Pressure 1%FS
Temperature display . . . . . Field select °F or °C
Sensor Ranges
  Temperature . . . . . -30 to 250°F (-35 to 120°)
  Pressure . . . . . 0 to 15, 30, 100, 200, or 300psi
Ignition Start Point . . . . . 1 to 50%
Modulation Start Point . . . . . 0% to 100%
Operating Mode . . . . . .Normal or Process
Modulating Mode. . . . . Normal or Parallel
Purge Delay . . . . . .1.0 to 10.0 minutes
Lag Stage Delay . . . . . .0 to 60 minutes
System Run On Delay . . . . . .0 to 30 minutes
Standby Time . . . . . .0 to 60 minutes
Setback
  Temperature. . . . . .0 to 75°F (0 to 42°C)
  Pressure (0-15 or 0-30) . . . . . 0-7.5 psi
  Pressure (0-100) 0-75psi
  Pressure (0-200) 0-150psi
  Pressure (0-300) 0-200psi
Last Stage Hold
  Temperature . . . . . .0 to 30°F (0 to 30°C)
  Pressure (0-15 or 0-30) 0-3psi
  Pressure (0-100, 200, or 300) . . . . . .0-10% of range
Shutdown Input . . . . . .Dry Contact Only
System Prove Input . . . . . .Dry Contact Only
Lockout Inputs . . . . . .Dry Contact Only
4-20mA External Input . . . . . .Pressure or temperature
Reset Ratio. 1-4, 4-1
Reset Offset . . . . . (+40°F) (-40°F)
Remote Communication Options
  Internet (RINET) through www.htcontrols.com
  BACnet IP or MSTP (BAC)
  MODBUS RTU (BUS)

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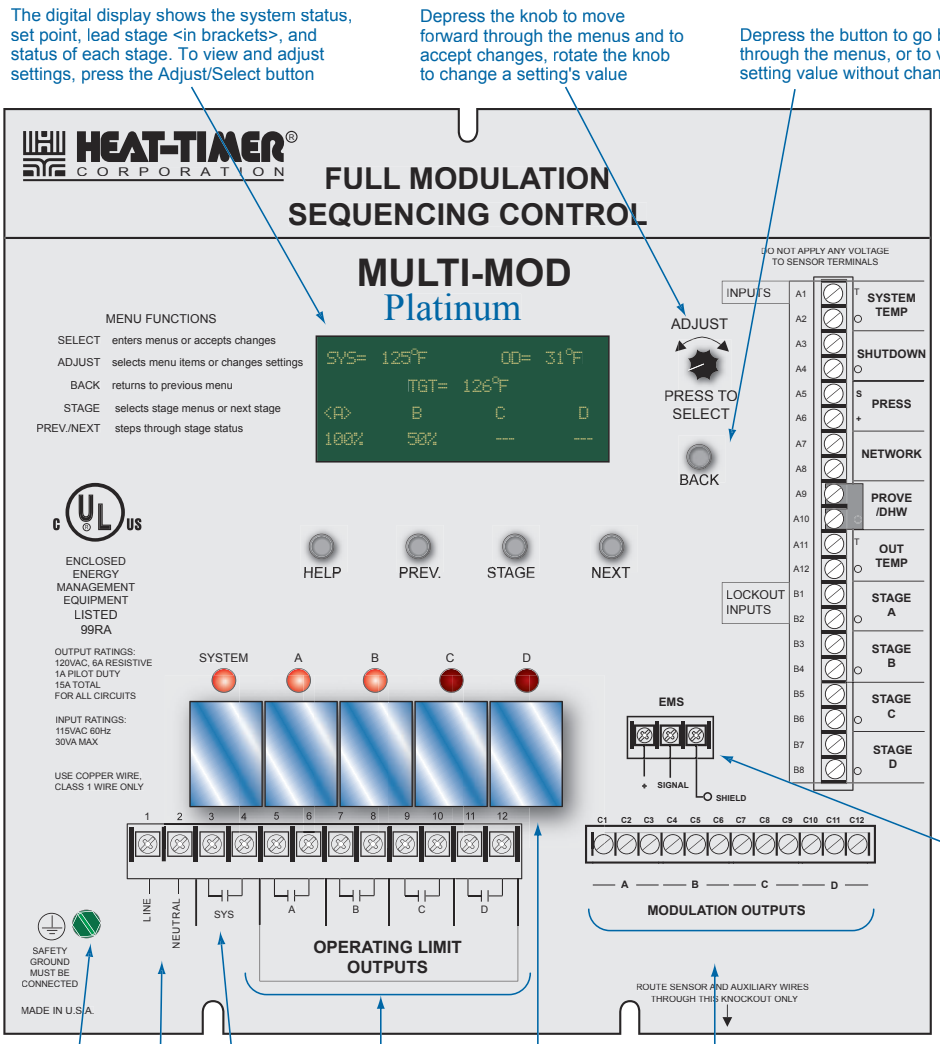
Multi-MOD Platinum Control



* DRY CONTACTS ONLY
** Only available with the Remote Communications package

Item Description	Part #
Multi-MOD Platinum (0-135Ω)	926650-135
Multi-MOD Platinum (Current or Voltage)	926650-C/V
Multi-MOD Platinum - Internet	926650-135-RINet♦
Multi-MOD Platinum - BACnet IP or MSTP	926650-135-BAC♦
Multi-MOD Platinum - Modbus RTU	926650-135-BUS♦
Extension Panel (8 Stages with Lockout) ♦♦	926650-EXT

Item Description	Part #
3-in-1 Temperature Sensor	904220-00
0-30 PSI Transducer	904310-00
0-100 PSI Transducer	904312-00
0-200 PSI Transducer	904311-00
0-300 PSI Transducer	904313-00
Current/Voltage Output Card (2 stages)	900201-C/V
0-135Ω Output Card (2 stages)	900201-135
Plug-in Relay 24VDC	500054-00

♦ All Multi-MODs can have either C/V or 135Ω modulating signal based on the output cards installed. Change the 135 in the Part # to C/V for Current or Voltage modulation option.

♦♦ Extension panels DO NOT come with Output cards or relays. They must be purchased separately.

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