

Features:

- **Operates two Groups of Condensing and Non-Condensing Boilers** - The main feature of the Mini-MOD-CNC is its ability to manage the operation of both groups of boilers, each with independent configuration, to achieve the highest system efficiency. It simply operates a single group while keeping the other group as a backup. The lead group changes based on a specified system target temperature.
- **Built-in Outdoor Reset** - The outdoor reset combined with the PID sequencing makes the Mini-MOD-CNC the control of choice for a variety of Hydronic applications.
- **Remote Set Point** - Capable of accepting a remote 4-20mA set point when used with the 4-20mA EMS Interface (purchased separately).
- **Minimum and Maximum System Temperature Adjustment** - Another safety feature that adds to boiler and system protection. The Minimum Temperature should be set to manufacturer's suggested minimum boiler temperature. When in Reset Mode, the Maximum Temperature is to protect system components from excessive heat.
- **Multiple Rotation Options** - The Mini-MOD-CNC will rotate boilers using a variety of options. Either based on Time; ranging from 1 hour to 60 days in one hour increments, Last-On rotation; allows for the first boiler to fire to be the first boiler to turn off, or based on manual rotation.
- **Normal and Parallel Modulation** - The Mini-MOD-CNC provides two modes of modulation. Normal modulation will add boilers as more energy is needed. Parallel modulation will bring more boilers on to take advantage of their high efficiency at low modulation capability.
- **Lo/Hi/Lo/Hi and Lo/Lo/Hi/Hi Sequencing** - It offers two modes of sequencing. Lo/Hi/Lo/Hi, which will fire the lag boiler after the lead boiler has reached its full fire capacity. However, Lo/Lo/Hi/Hi provides an opportunity for higher efficiency boilers to bring on the lowest firing stages of all the boilers before turning on the higher ones.
- **External Setback/Scheduling** - External Setback signal acceptance has been provided as an option for applications that are not to follow a predetermined schedule. In addition, an adjustable 24 hour schedule has been provided primarily for building heating.
- **Domestic Hot Water Priority Option** - On a DHW Call the Mini-MOD-CNC will increase system set point. Depending on the Priority setting, the Mini-MOD-CNC will either run the system pump during DHW calls or turn it off for the priority period or until the DHW is satisfied.
- **Featured Adjustments:**
 - **Lag Delay** - Helpful in reducing lag boiler short cycling, it allows the lag boiler an adjustable period of time before starting.
 - **Last Stage Hold** - A temperature add-on to the Set Point that is applied only to the lead boiler to eliminate its short cycling. A helpful when one boiler at low fire is too large in light load conditions.
 - **Soft-Off Delay** - Providing an additional on period of time to boilers before turning off, this feature help stabilize operation output.
 - **Purge Delay** - An adjustment to match boiler pre-purge for better control.
- **Built-in Prove and Shutdown** - The Prove can be used to check the status of other equipment, such as the end switch on a combustion air damper prior to firing the boilers. Furthermore, Shutdown can be activated from any safety control feed back.
- **Security** - The Mini-MOD-CNC has an integral programming switch that can only be accessed when wiring cover has been unlocked and removed.

Item Description	Part #
Mini-MOD-CNC	926743-00
Mini-Extension	926712-00
4-20mA EMS Interface	926741-00

HT# 056172-00 REV B



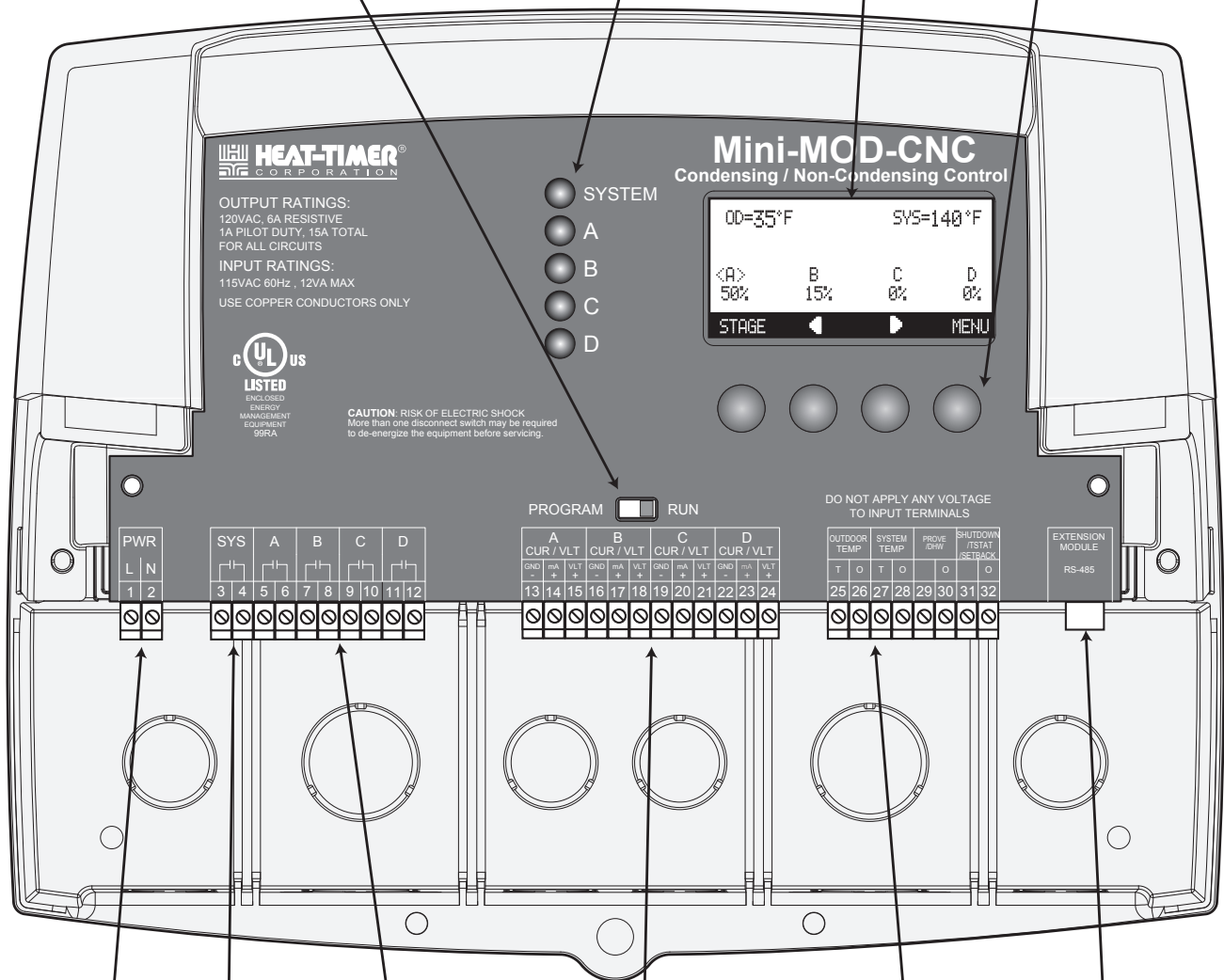
Mini-MOD-CNC PANEL

Program Switch to restrict access to function changes. This switch is covered with Wiring Enclosure.

The digital display shows the system status, set point, lead stage <in brackets>, and status of each stage. To view and adjust settings, press the appropriate buttons.

LED indicates the associated relay status.

Buttons function is presented on Bottom Row of display.



120VAC Power

Four N.O. Modulating Boiler startup or Multi-Stage output relays. Each is wired in series with each boiler's limit circuit.

When connecting Outdoor and System Sensors, no Polarity is observed. Prove terminals must be connected for the Mini-MOD-CNC to operate boilers.

System Output controls pumps or other system components.

Four modulation outputs can be 0-5V, 0-10V, 1-5V, 2-10V, or 4-20ma. Go to Startup Menu to determine the type of output for each stage.

Connect Extension panels to add additional stages using a 6 pin phone line only (cable provided with Mini-Extension).

Mini-MOD-CNC Specifications:

Voltage Input:	120 VAC 60 Hz
Power Consumption:	12 VA Max
Operating Temperature:	20°F/-6°C to 130°F/54°C
Operating Humidity:	20% to 80%
Dimensions:	11"W x 9" H x 3 ¾"
Weight:	2.5 pounds
Switch Between Boiler Groups Mode:	System Target Temperature
Lead Stage Rotation:	Time (1 to 1440 Hours (60 days)), Manual, Last-On
Pump Output:	1 N.O. S.P.S.T
Modulating Boiler Modes:	Auto, Manual, Standby, On, Off
Staging Boiler Modes:	Auto, Standby, On, Off
Standby Time:	1 to 60 minutes
Modulating Output Types:	.4-20mA, 0-5V, 0-10V, 1-5V, 2-10V
Sequencing Output Types:	On/Off, 2-Stage, 3-Stage, or 4-Stage
Output Relay Ratings:	1 Amp inductive, 6Amp resistive at 120 VAC 60 Hz, 15A total for all circuits
Add-On Mini-Extension Panels:	up two Mini-Extension Panels using RS485
Ignition Point %:	.1 to 50%
Modulation Start Point %:	0 to 100%
Modulation Modes:	Normal or Parallel
Sequencing Modes:	Lo/Hi/Lo/Hi or Lo/lo/Hi/Hi
Temperature Display:	Fahrenheit or Celsius
Display:	Graphical Alphanumeric (7 rows x 21 char. each)
LED:	1 System Output relay, 4 Boiler Output relays
Sensor Ranges:	Outdoor temperature sensor - minus 35°F/-37°C to 250°F/121°C Heating system sensor - minus 35°F/-37°C to 250°F/121°C
Outdoor Cutoff Range:	20°F/-6°C to 100°F, ON and OFF
Reset Ratio Range:	(1:4) to (4:1) (Outdoor : System Water)
Offset Adjustment:	minus -40F°/-22C° to plus 40F°/22C°
Minimum Water Temperature:	70°F/21°C to 170°F/77°C
Maximum Water Temperature:	90°F/32°C to 240°F/116°C
Domestic Hot Water:	with Priority or without Priority
Pump Run-On:	.0 to 360 minutes
Purge Delay:	0.0 to 10.0 minutes
Lag Delay:	0 to 60 minutes
Last Stage Hold:	0 to 30°F
Schedules:	1 Day and 1 Night (Setback) settings per day
Night Setback:	.0F°/0C° to 75F°/42C°
Power Backup:	Lithium coin battery, 100 days minimum 5 year replacement (Maintains Clock in power outages)
External Inputs:	Shutdown Input, and Prove Input. (Dry Contacts Only)
Season:	Winter and Summer

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