

RadMaster®

CC475 Programming Manual

Console

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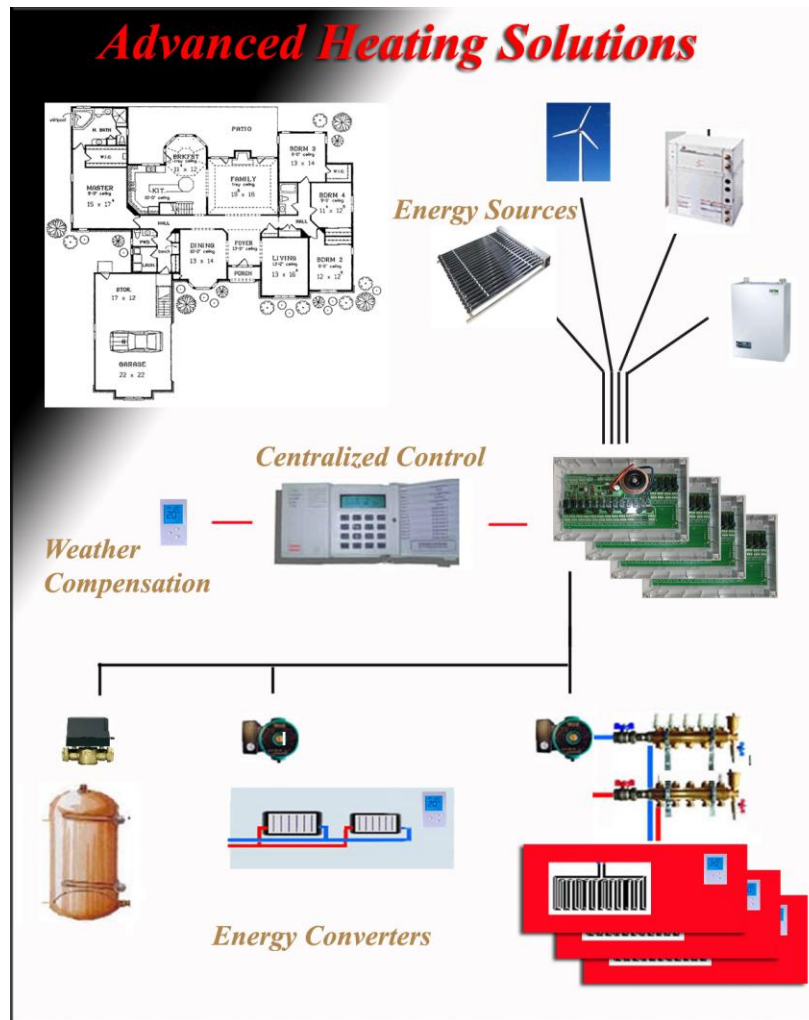
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Introduction

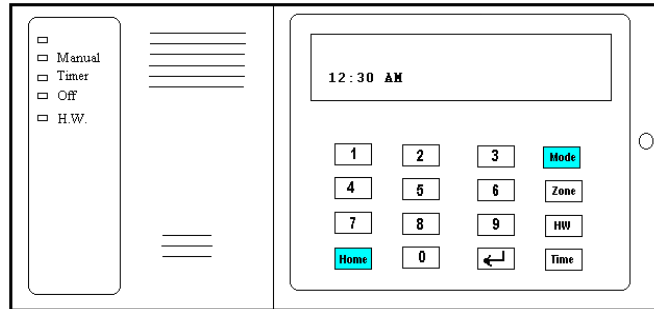
The RadMaster® System is a domestic & commercial energy management system that manages multiple energy sources, such as boilers, geothermal pumps, and solar panels, through to multiple energy exchangers, such as underfloor heating, radiators and domestic hot water in a single package.



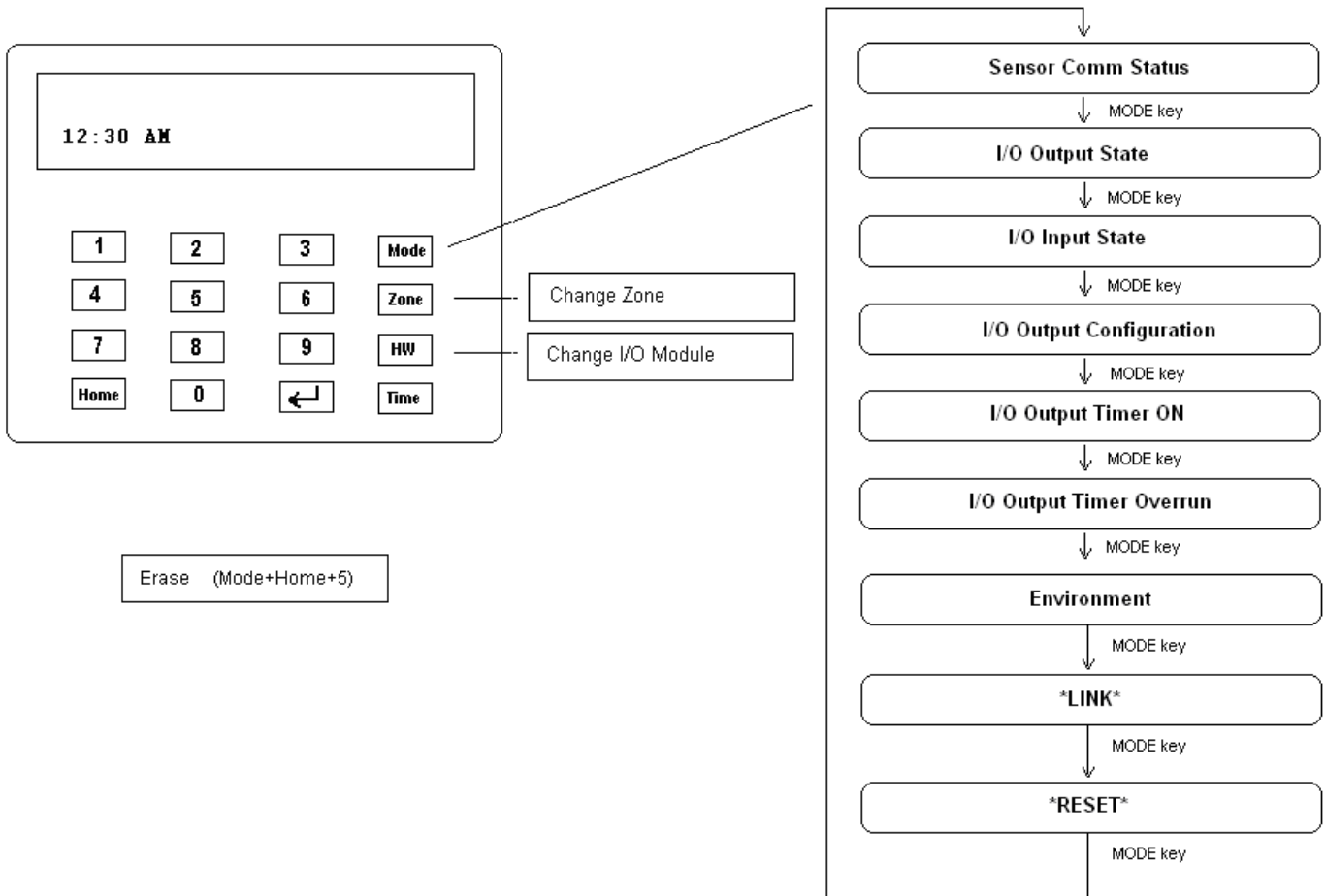
This document details programming and diagnostic features of the RadMaster® central console. The console is the central point of control. It communicates to all other components over local network and manages all system processing.

Setup/Diagnostic

The Programming Setup/Diagnostic Mode is entered by simultaneously pressing Home and Mode keys.

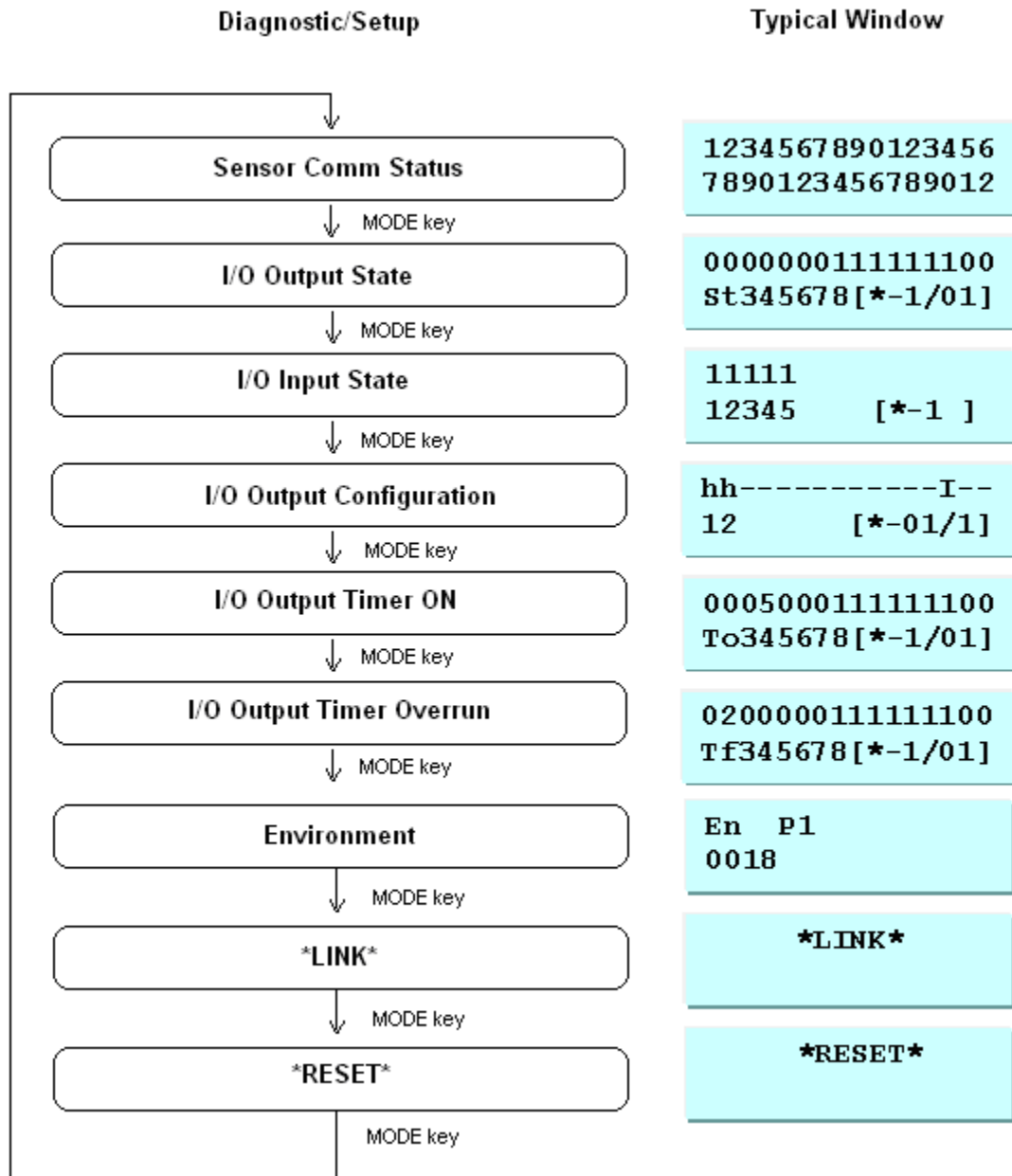


The MODE key changes the setup/diagnostic context (e.g. moving from Sensor Communication States to I/O module output statuses).

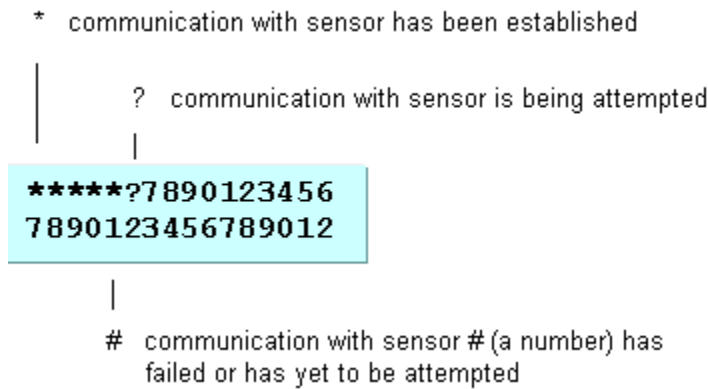


The HW key increments the module when viewing module related data (e.g. I/O Output State or I/O Input State etc).

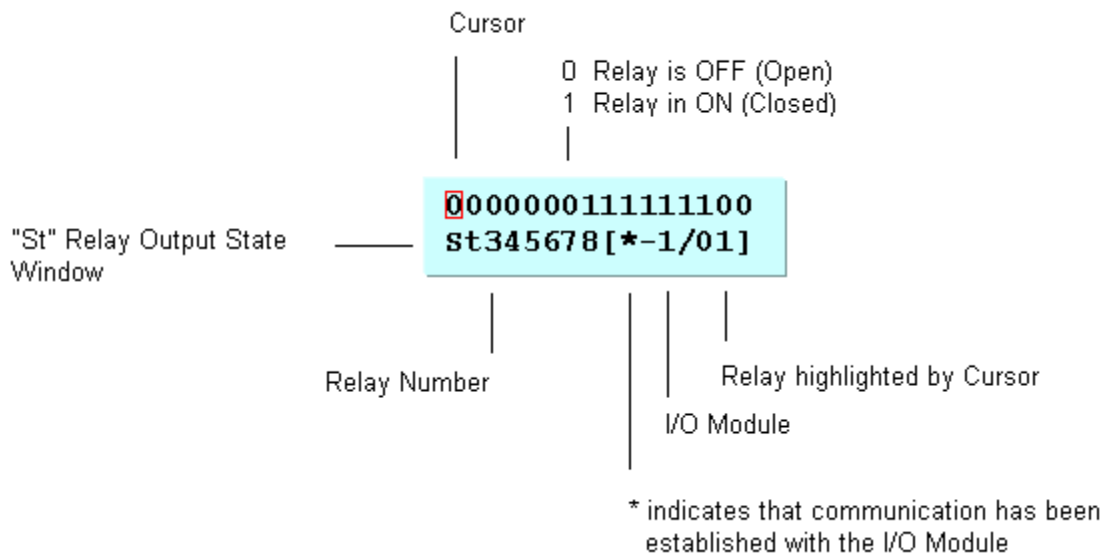
The following diagram shows the display window associated with each setup/diagnostic context.



Sensor Communications Status

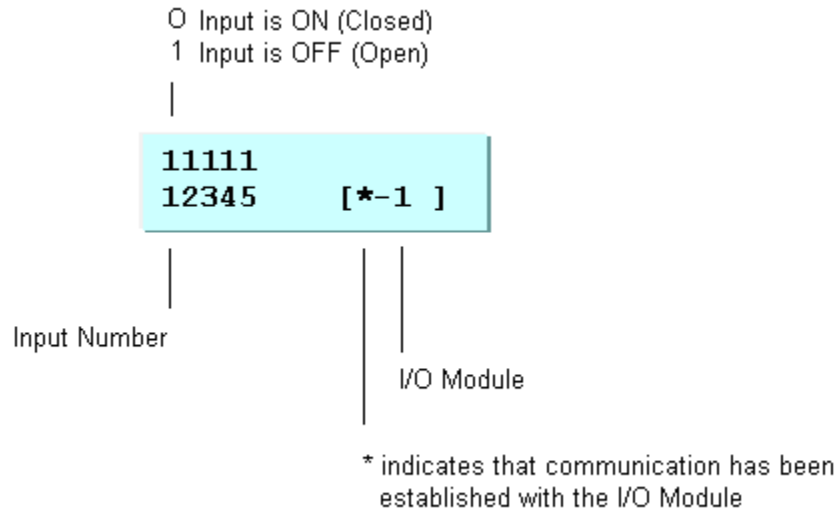


I/O Output State



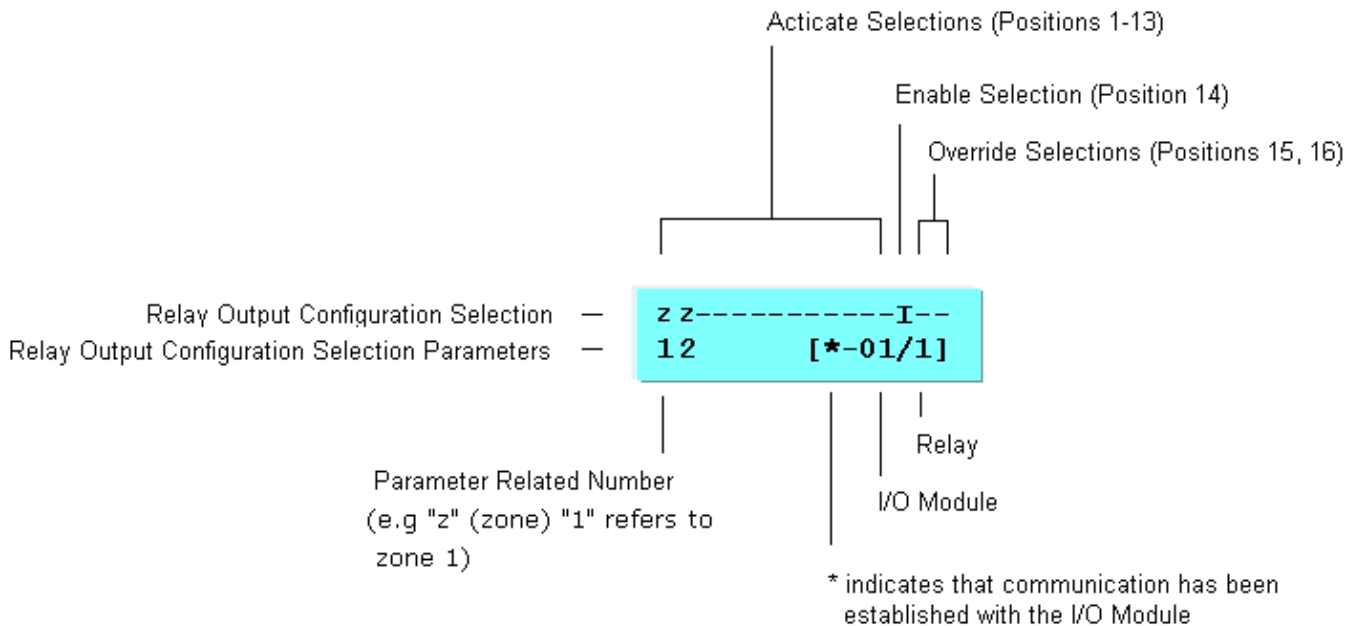
Press **HW** to change I/O Module. Press **4** and **6** to move the cursor. Press **↵** to activate or deactivate a relay.

I/O Input State



Press HW to change I/O Module

I/O Output Relay Configuration



Press **HW** to change I/O Module. Press **4** and **6** to change the I/O Module Relay. Press **7** and **9** to change I/O Module Relay Configuration position. Use **1**, **2** and **3** to setup a relay output configuration (see table below).

When displaying a configuration parameter that requires an I/O Module number (e.g. an I/O Module Input), the number will be displayed momentarily in the place of the configuration selection (e.g. "I").



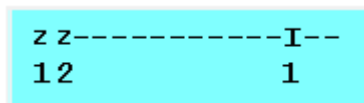
Two digit values (e.g. zone 12) are displayed by momentarily displaying the second digit.



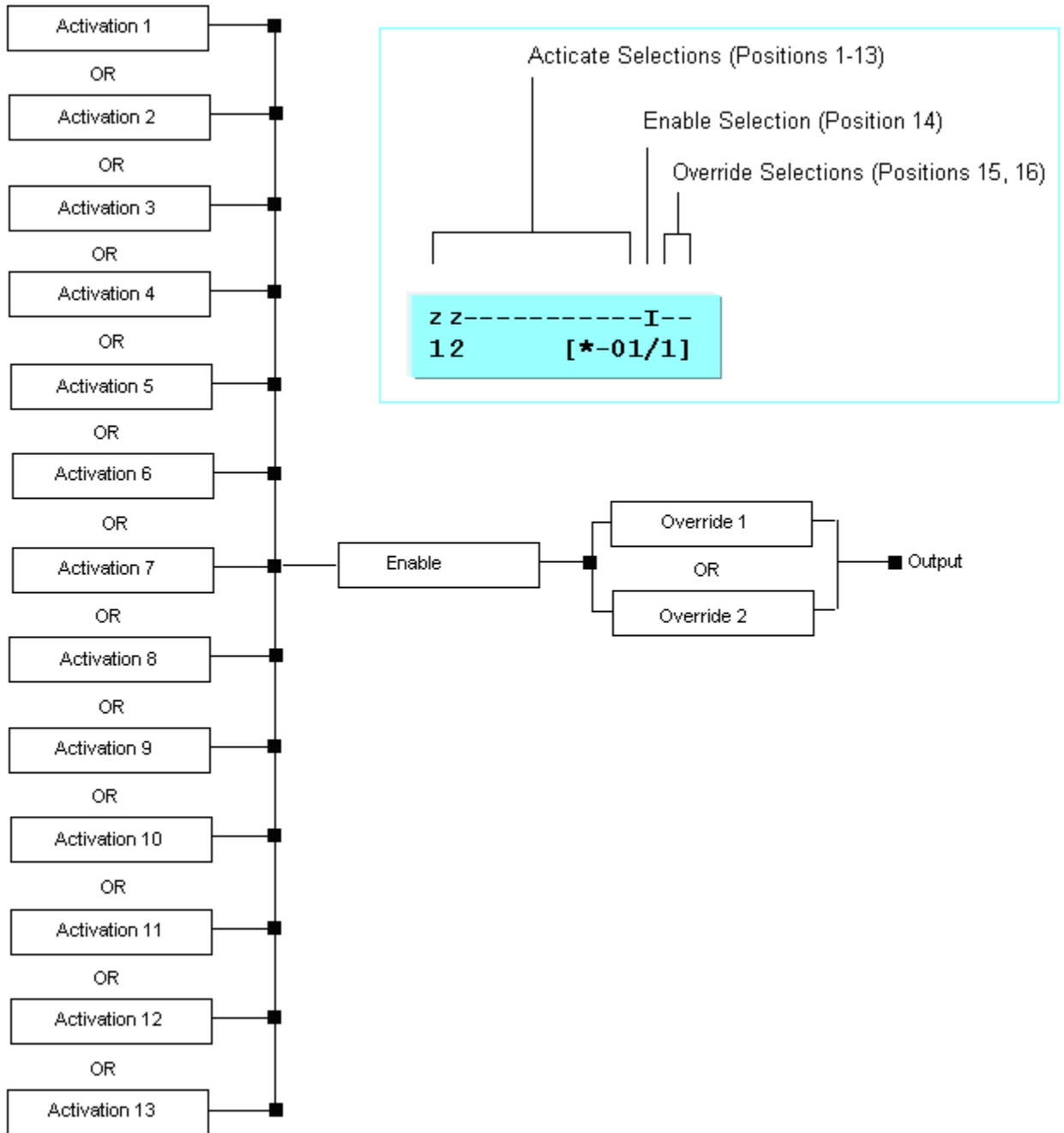
I/O Output Relay Configuration Activation

A relay is closed if any of the **13 activations** selections are set (For example, if activation 1 is programmed as Zone 1. Activation 1 is set when zone 1 calls for heat). The Enable selection acts as an **enable override**, Activations can only control its associated relay when enabled. The Enable is ignored if not programmed. **Overrides** disable activation control of the relay.

In the following example, relay output 1 on I/O module 1 will be closed when wither zone 1 or zone 2 calls for heat and Input 1 on I/O module 1 is OPEN.






The programming algorithm may be represented as follows:



I/O Output Relay Configuration Selections

The following table identifies the Configuration Selections and associated parameters.

Selection	Description	Parameters
Press  to Change h	Zone is calling for heat.	Press  to Change Zone Number (1-32)
c	Zone Air Cooling Zone temperature is greater than the Set-Point (SP) plus the A/C Deadband	Press  to Change
	Zone Air Cooling Fan 1 Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the CI Fan 1 Offset	
	Zone Air Cooling Fan 2 Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the CI Fan 2 Offset	
	Zone Air Cooling Fan 3 Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the CI Fan 3 Offset	
&	Zone Heating & Cooling <u>ANY</u> zone calling for heat when <u>NO</u> zone is calling for cooling OR, <u>ANY</u> zone is calling for cooling. (Note: Cooling has priority)	
D	Zone DHW	Zone Number (1-32)
A	Zone Ch1 temperature is less than the base Set-Point. The frost protection, minimum temperature, and zone scheduling are ignored.	Zone Number (1-32)

- B Zone Ch1 temperature is less than the base Set-Point Zone Number (1-32)
The frost protection, minimum temperature, and zone scheduling are ignored.
- n Input n on I/O Module is Open. Input (1-5) I/O (1-8)

CC473 I/O Module



Active when OPEN

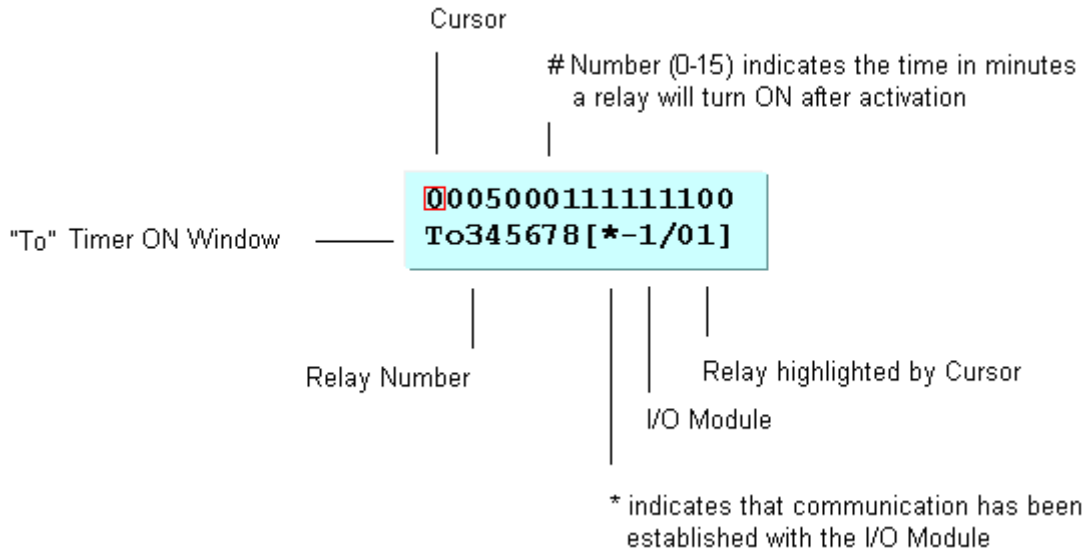
CC471 I/O Module – 5 inputs



Active when OPEN

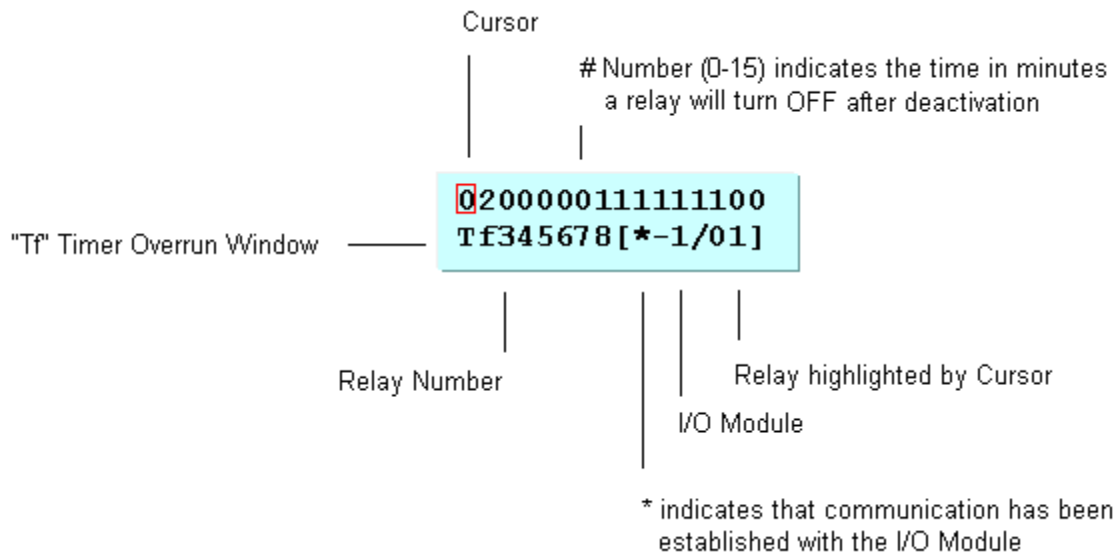
- R Relay on I/O Module is Closed. Relay (1-16) I/O (1-8)
A I/O module MUST be used if a module relay uses Timer ON or Timer OFF
- H The Hot Water Boost (console HW key) is Active.
- i Low Immersion is scheduled to be ON. Zone Number (1-32)
- I High Immersion is scheduled to be ON. Zone Number (1-32)
- C Heating & Cooling
ANY zone is calling for cooling.
- b Boiler Calling – Boiler Cycling
Active when Boiler calls for Heat
- P Pump Calling – Boiler Cycling

I/O Output Timer ON



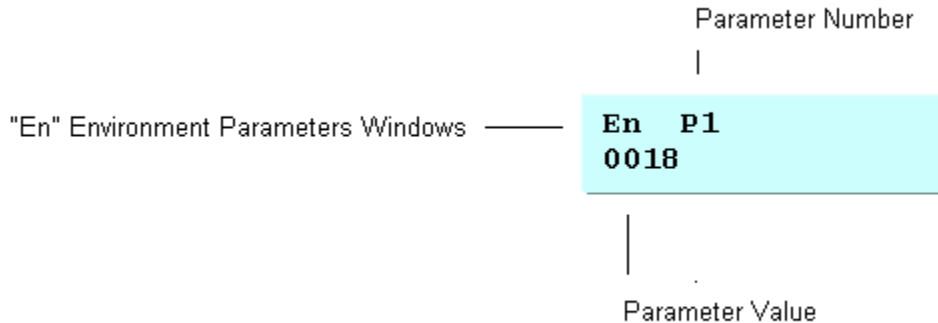
Press **HW** to change I/O Module. Press **4** ← and **6** → to move the cursor. Press **2** ↑ and **8** ↓ to change the value.


I/O Output Timer OFF (Overrun)



Press **HW** to change I/O Module. Press **4** ← and **6** → to move the cursor. Press **2** ↑ and **8** ↓ to change the value.

Environment Parameters

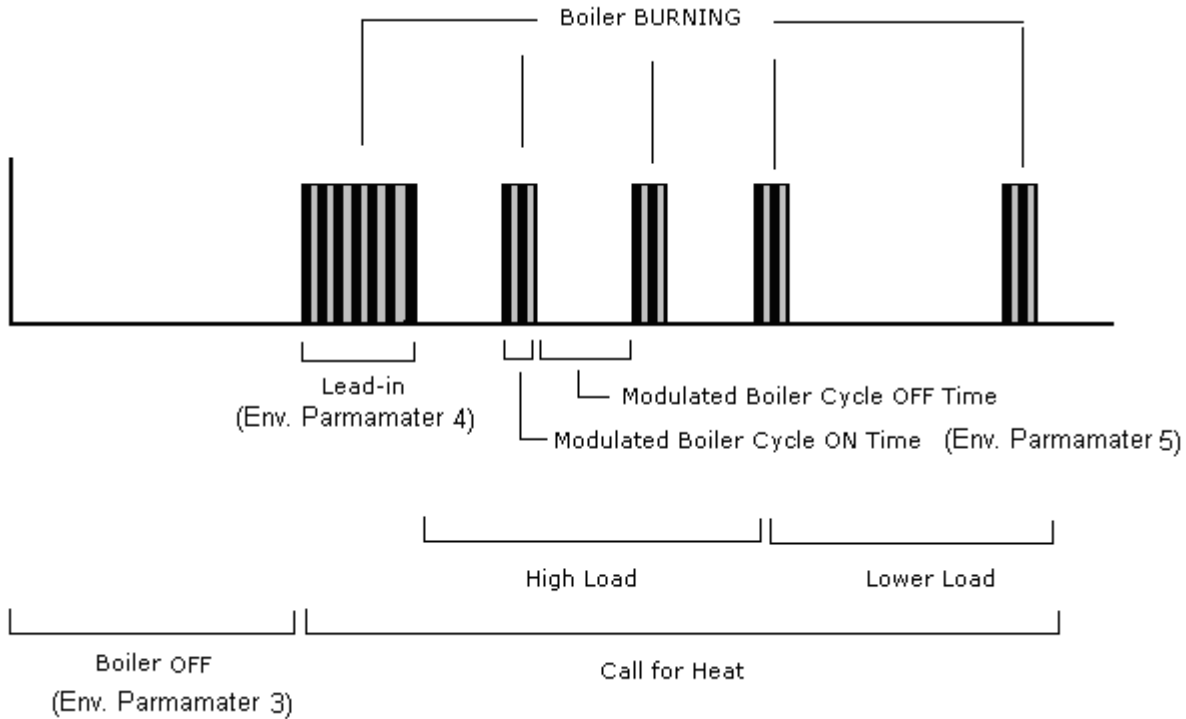


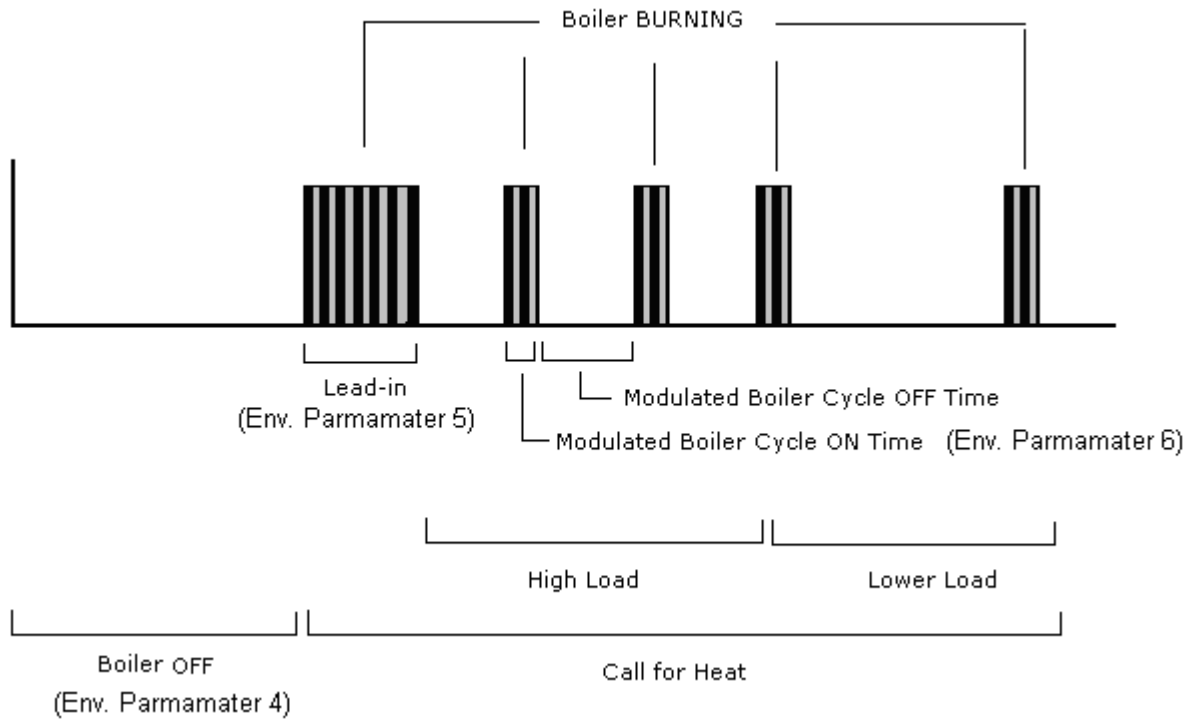
Press  to change the system parameter number. Use Numerical keys to enter the parameter value.

#	Parameter	Max												
	Maximum space heating.													
1	Calculated set-point (e.g. set-point+boost) is limited to the maximum space heating setting).	35												
	Parameter is unused if set to 0. Module 1 Input 5 - ALL OFF "holiday mode"													
2	<table border="1"> <thead> <tr> <th>Val</th> <th>Input</th> <th>Heating and DHW</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>x</td> <td>Heating and DHW are unaffected.</td> </tr> <tr> <td>1</td> <td>0 (closed)</td> <td>Heating and DHW are unaffected.</td> </tr> <tr> <td>1</td> <td>1 (open)</td> <td>Force system ALL OFF mode (Heating and DHW are forced OFF).</td> </tr> </tbody> </table>	Val	Input	Heating and DHW	0	x	Heating and DHW are unaffected.	1	0 (closed)	Heating and DHW are unaffected.	1	1 (open)	Force system ALL OFF mode (Heating and DHW are forced OFF).	1
Val	Input	Heating and DHW												
0	x	Heating and DHW are unaffected.												
1	0 (closed)	Heating and DHW are unaffected.												
1	1 (open)	Force system ALL OFF mode (Heating and DHW are forced OFF).												
	Boiler Modulation													
3	0: Disable Boiler Modulation 1: Enable Boiler Modulation													
4	Max Boiler OFF time in hours If 0 then a Max Boiler OFF is set to 4 hours	4												
5	Max Boiler Lead in time in minutes If 0 then Max Boiler Lead in is set to 20 minutes	40												
6	Max Boiler Cycle ON time in minutes If 0 then Max Boiler ON time is set to 6 minutes	20												
7	Max Boiler Cycle OFF Tweak Factor (TW) If 0 then Boiler Cycle OFF Factor is set to 100	200												

Boiler Lead-in & Modulation

Boiler modulation applies to oil or gas fired boilers which do not have a built in load adjusting capability. Boiler lead in refers to the un-modulated boiler ON period (parameter 6) after the boiler has been OFF for an extended duration (parameter 4). Modulation refer to the control of the boiler cycle time. Control of the cycle time is determined by the load as illustrated in the following diagram:






The OFF time is a function of the system loading and may be adjusted by a tweaking factor, environmental parameter 7.

The Boiler and Pump have a 3 minute fixed activation time delay that overrides boiler modulation. In other words, the delay is reset the three minute when all zones are off. The boiler and pump will activate 3 minutes after any zone is turned ON.

LINK

LINK

Press  to enable system download the system.

“*LINK*” places the system in the communications enable mode. The PC hosted RadMaster Manager may communicate with the console (e.g. download setup information such as zone labels) when in the communications enable mode.

RESET

RESET

Press  to Reset the system

Reset involves a system reset and reset the user password. Zone cannot be manipulated until the user password is installed. The user password is 7929.

System ERASE

Simultaneously pressing the HOME and MODE and “5” keys will force a complete system erase.

Caution: **ALL PROGRAMMING DATA WILL BE ERASED.**