P/N 62110094 - 885HC
cascade sequencer
(Apply for heaters up to serial number 14999999)

WARNING!!! If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

Installation and service must only be performed by qualified installer, service agency or the gas supplier.
SAFETY INSTRUCTION

**WARNING!!!**

Installer: Read the appliance Installation Manual, including this manual, before installing. Perform steps in the order given.
User: This manual is for use only by a qualified heating installer.
Failure to comply with these provisions can cause a fire or explosion causing property damage, personal injury, or death.

**WARNING!!!**

Qualified installer: qualified installer is an individual with specific, technical training in space heating systems, domestic hot water systems, fuel gas systems and electrical systems. This individual must have the legally required qualifications. Failure to comply with these provisions can cause a fire or explosion causing property damage, personal injury, or death.

**WARNING!!!**

Installation and Alterations: Only a Qualified installer must carry out the installation and calibration of the heater. Never modify the heater or its flue gas carrying components in any way. This heater must be properly vented. Failure to follow these instructions could result in personal injury or death!

**WARNING!!!**

Prior to any maintenance, disconnect the appliance’s electrical power supply and shut off the inlet gas valve. Any replaced part or packaging should never be left within the reach of children. Failure to follow these instructions could result in severe personal injury or death!

1 - Installation

The installation must be done through the follow 8 steps.

1.1 - Step 1 of 8 - Piping installation

For the correct working of the 885HC cascade sequencer, appliances shall be installed like on Figure 1-1 where, the manager heater must be always the closest to the low loss header because on the manager heater there will be connected the cascade general sensor. A maximum of 8 heaters can be connected in cascade.

At the time of the installation all heaters are equal. After the installation the heater nearest the low loss header need some hardware adjustment to become the Managing heater #1 and the other heaters need a software changement to become dependent heaters. To do so, exactly follow next sections.

**NOTICE!** Figure 1-1 is only one example of a conceptual piping configuration. A lot of other configurations can be done. Ask to your representant/Agent of directly to the heater manufacturer for any other configurations/schemes.

Content of the kit

This kit is composed by:
- a cascade sequencer P/N 62110094;
- These instructions.

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![Figure 1-1 Conceptual cascade configuration](image-url)
### 1.2 - Step 2 of 8 - Electrical installation

The electrical installation must be done as per figure 1-2.

Installer have to install all wires represented by dashed lines.

As "Cascade general sensor" you can use the 62110071 sensor present inside the accessories box, included on each heater. "Cascade general sensor" must be electrically wired to terminals 24 and 25 of the Managing heater #1 and the probe placed into the low loss header of the cascade (see Figure 1-1).

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**Figure 1-2 Electrical installation**
1.3 - Step 3 of 8 - Electrical wiring adaptation inside Managing heater #1

Managing heater #1, need the below inside electrical wiring adaptation. To do so operate as follow:

1. - Operating on the Managing heater #1 only, gain access to the junction box (see Figure 1-4);

2. - With the help of a screwdriver, open the 885IF board cover (see Figure 1-5)
3. - Disconnect the plug with two wires from the 885IF board (See Figure 1-6)

4. - Open the wires conduit cover (See Figure 1-7)

5. Take the two wires with the plug precedently disconnected from the 885IF board
6. - Cut the plug from the two wires and strips the plastic for 1/4" (7mm)

Figure 1-9 Cut two wires near plug and strips the plastic for 1/4" (7mm)

7. - Connect the pink wire together the two black wires present on terminal N°16

Figure 1-10 Connect pink wire together black wires on terminal N°16

8. - Connect the yellow wire together the two red wires present on terminal N°17

Figure 1-11 Connect yello wire together red wires on terminal N°17
1.4 - Step 4 of 8 - Check and eventually adjust the S4 switch of the 885IF board placed inside all heaters.

1.- operate on the top of each heater you want to install in cascade, where is located the 885IF board (see Figure 1-12)
2.- if not already the case, move S4 switch from OFF position to ON position (see Figure 1-12)

1.5 - Step 5 of 8 - Adjust the logic address on each heater

1.- operate on Managing heater #1. Using two electrical wires long 2ft (0.5m) each, connect the 885HC command to terminals 16 and 17 of the Managing heater #1.
2.- turn the power on to the Managing heater #1.
3.- Using the 885HC command set the Address to 1 (see Section 2.1).
4. - Wait until 885HC command start to show the Address #1 (see Figure 2-1, item 1);
5.- turn the power off to the Managing heater #1;
6.- disconnect the two wires from terminals 16 and 17 of the Managing heater #1
7.- connect the two wires of the 885HC command to terminals 16 and 17 of the Dependent heater #2.
8.- turn the power on to the Dependent heater #2.
9.- Using the 885HC command set the Address to 2 (see Section 2.1);
10.- Wait until 885HC command start to show the Address #2 (see Figure 2-1, item 1);
11.- turn the power off to the Dependent heater #2;
12.- disconnect the two wires from terminals 16 and 17 of the Dependent heater #2;
13.- operate on the next dependent heaters in the same sequence from point 7 to 12 of this section, considering that the Address reference will increase of one unit each heater.
14.- after set the Address on all dependent heaters back on the Managing heater #1 and install the 885HC command to terminals 16 and 17.

1.6 - Step 6 of 8 - Adjust the 885HC command for boilers or for water heaters

885HC command is factory supplied with all parameters ready for boiler application but not for water heaters applications. When your system is in place, you have to review all parameters of the Sub Menu to be in line with the list of Section 2.1. Select the column Boiler settings if you are operating on a boiler application; select the column Water Heater settings if you are operating on a water heater application.
1.7 - Step 7 of 8 - Adjust parameter 2003 on all Dependent heaters

Parameter 2003 is factory set to 0 (zero). However, someone could change that parameter. Then it is suggested to review the 2003 parameter of all Dependent heaters and set it to a value of 0 (zero). To do so follow the heater installation manual, section “Installer’s menu”.

1.8 - Step 8 of 8 - Review of all parameters

Figure 1-14, show a cascade with 3 heaters model 1000 (with four control boards (885MN board) each one. At the end of the installation, all parameters (Address; Switch S4; 2003; 3001 and 3050) shall have the values as shown on figure 1-14. If one of these parameters do not have the value as per Figure 1-14, the cascade or one heater will show Err 116 (communication error) and will stop.

Figure 1-13 Cascade general settings for Addresses, parameters 3001, 3050, 2003 and switches S4 on heaters model 199.
Figure 1-14 Cascade general settings for Addresses, parameters 3001, 3050, 2003 and switches S4 on heaters model 399 and 500.
Figure 1-13 Cascade general settings for Addresses, parameters 3001, 3050, 2003 and switches S4 on heaters model 750.
Figure 1-13 Cascade general settings for Addresses, parameters 3001, 3050, 2003 and switches S4 on heaters model 1000.
2 - Use of the 885HC sequencer

NOTICE! Before any activity wait 40 seconds for communication between sequencer and heaters.

The 885HC cascade sequencer has a basic screen that you can see in the picture below. Each button of the display has a different function.

Figure 2-1 885HC cascade sequencer.

Legenda:

1 = Logic address
2 = Cascade setpoint
3 = Cascade temperature
4 = Informations box
5 = OK button to confirm a changement to a parameter
6 = Up button to scroll parameters or to increase a value
7 = Menu button to back on normal menu
8 = Down button to scroll parameters or to decrease a value
9 = Home button to enter the menu
10 = Cascade status button
11 = Outdoor temperature (displayed if an outdoor sensor is connected. See heater’s installation manual)
2.1 - Sub Menu

From the status screen the “Sub menu” can be entered by pressing and hold the “Home” button for 8 seconds. When the Sub menu is displayed you can select a parameter by scrolling the list with the “Up” and “Down” button. When the parameter is selected, press the “Ok” button. The parameter value will start to blinking. Now you can change the parameter value by using the “Up” and “Down” button. When the desired value is reached you can save it by pressing the “Ok” button.
To leave the Sub Menu, press the “Menu” button.

**NOTICE!** After any changement, wait 40 seconds before live the sub menu or turn the power off.

Parameters displayed in this Sub Menu are:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>M.U.</th>
<th>Range</th>
<th>Factory settings</th>
<th>Boiler settings</th>
<th>Water Heater settings</th>
<th>Customized value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler address</td>
<td>/</td>
<td>0..16</td>
<td>0</td>
<td>0 - Stand Alone heater</td>
<td>1 - for Managing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 - for Managing</td>
<td>2 - for first dependent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 - for second dependent</td>
<td>4 - ...etc</td>
<td></td>
</tr>
<tr>
<td>Cascade setpoint</td>
<td>°F</td>
<td>68..194</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>DHW ON..OFF</td>
<td>/</td>
<td>ON..OFF</td>
<td>OFF</td>
<td>ON only if you want to drive an indirect water heater</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Start delay time</td>
<td>sec</td>
<td>0..1200</td>
<td>180</td>
<td>180</td>
<td>180</td>
<td>15</td>
</tr>
<tr>
<td>Stop delay time</td>
<td>sec</td>
<td>0..1200</td>
<td>180</td>
<td>180</td>
<td>180</td>
<td>15</td>
</tr>
<tr>
<td>Start boiler diff</td>
<td>°F</td>
<td>14..36</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Stop boiler diff</td>
<td>°F</td>
<td>14..59</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Stop all boiler diff</td>
<td>°F</td>
<td>14..59</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Max offset up</td>
<td>°F</td>
<td>14..50</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Max offset down</td>
<td>°F</td>
<td>14..50</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Rotation interval</td>
<td>Days</td>
<td>1..10</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>P Value</td>
<td>/</td>
<td>0..255</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>I Value</td>
<td>/</td>
<td>0..255</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>D Value</td>
<td>/</td>
<td>0..255</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Slew rate</td>
<td>/</td>
<td>1..255</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>System correction</td>
<td>°F</td>
<td>14..32</td>
<td>22.1</td>
<td>22.1</td>
<td>22.1</td>
<td>22.1</td>
</tr>
<tr>
<td>Mod delay factor</td>
<td>min</td>
<td>0..60</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>
CAUTION!!!
To contact technical support
see last page of the installation manual