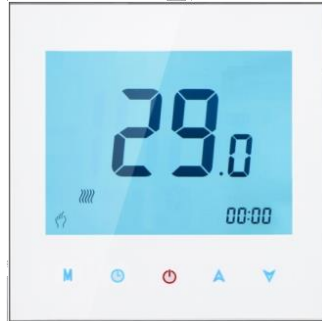


# Manual for Local Room Controller Thermostat

ORC-HC2-16A-RS485



86 x 86 x 15mm

## Contents

Introduction.....	1
Versions .....	2
Home Screen .....	2
Adjusting LRC.....	3
Desired Room temperature.....	3
Lock Mode (optional) .....	3
Enter Lock mode.....	3
Exit Lock Mode .....	3
Installer Mode .....	3
Installer Options .....	3
Enter Installer Menu.....	3
Cabling .....	4
Additional notes .....	4

## Introduction

The ORC-HC2-16A-RS485 Local Room Controller (LRC) is available in multiple versions.

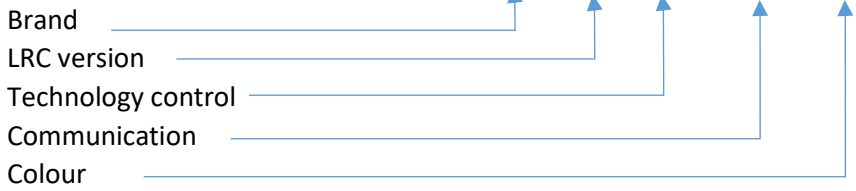
Designed to work with Modbus addressed controllers or Gateways. The ORC-HC2-16A can work stand alone. The LRC is designed to allow the User to see what state the climate controller is in. For example Local Ambient temperature, desired temperature “set point” and Heat mode.

Installation of the LRC uses a standard UK single electrical box 45mm deep supplied separately.

Versions

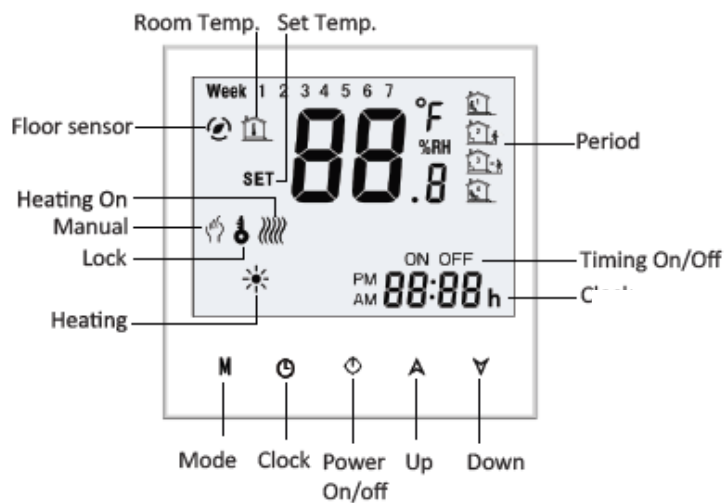
Part code →

ORC – HC2 – 16A – RS485 – WH



	ORC-HC2-16A-RS485-WH	ORC-HC2-16A-WIFI-WH	ORC-HC2-16A-SA-WH	
<b>Screen</b>	LCD	LCD	LCD	
<b>Power</b>	240V AC (up to 16A)	240V AC (up to 16A)	240V AC (up to 16A)	
<b>Data</b>	RS485/Modbus	WiFi (2.4GHz)	None	
<b>LRC Ver</b>	HC2	HC2	HC2	
<b>Bus filter</b>	12v p-p	12v p-p	12v p-p	
<b>Sensors</b>	Internal / External	Internal / External	Internal / External	
<b>External Sensor</b>	10K NTC	10K NTC	10K NTC	
<b>UFH Control</b>	YES	YES	YES	
<b>Local Control</b>	NO	NO	NO	
<b>Cabling</b>	240V AC Electrical Cables and Belden 9842 communication	240V AC Electrical Cables and Belden 9842 communication	240V AC Electrical Cables and Belden 9842 communication	
<b>Colour</b>	White / Silver Frame	White / Silver Frame	White / Silver Frame	
<b>FCU control</b>	NO	NO	NO	
<b>Baud Rate</b>	9600,19200,38400	9600,19200,38400	9600,19200,38400	

Home Screen



## Adjusting LRC

### Desired Room temperature

When you select **▲ ▼** on the Home screen will now show the desired SET point. Adjust using **▲ ▼** until the correct temperature is displayed (SET point).

After 3 seconds the Home display will show the Ambient room temperature.

Depending on configuration of the controls equipment the system will start to operate the controls. The change may take up to 3 minutes before operation starts.

## Lock Mode (optional)

### Enter Lock mode

Press and hold **🕒 ▲** for 3 Seconds to lock the screen.

The icon **🔒** will display on the Home Screen

### Exit Lock Mode

Press and hold **🕒 ▲** for 3 Seconds to lock the screen.

## Installer Mode

### Installer Options

	Function	Setting / Option	Default
1	Offset / calibration	Internal Sensor	-2
2	Dead Zone Temperature	1 – 5 degrees	01
3	Lock	00 = All the buttons are locked except power 01 = All the buttons are locked	01
4	Sensor Type	IN (internal), OU (external) AL (Internal and limit)	AL
5	Min set Temp	5 – 15°C	05
6	Max set Temp	5 – 35°C	35
7	Display Mode	00 = Set and Room Temperature 01 = only Set Temperature	00
8	High Temp protection	25 – 70°C	45
9	Address	Modbus address (HEX)	01
A	Version	Firmware Version	40 2

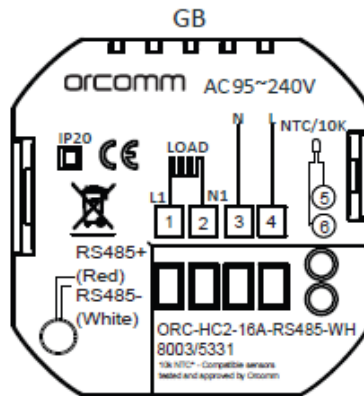
### Enter Installer Menu

To Enter installer menu

1. Turn off the LRC (Home screen blank)
2. Press and hold **M** and then **🕒** until display changes (3 seconds)
3. Now choose option to change by using **M** to toggle through options (note 3 sec time out)
4. Change the Default value using **▲ ▼**
5. Then move to next option using **M**
6. Setting will auto save when timed out

Best practice when finished setting up the LRC, turn all power OFF and ON again to allow controls to reset.

## Cabling



### Additional notes

#### Communication Bus RS485

Long cable runs on Modbus will require termination resistor.

BIAS Resistors can be used at the beginning of the bus to help control higher than normal voltages.

Example 120 ohm across A & B, 1K across A and 12VDC, 1K across B and GND – NOTE turn off before installing resistors.

#### External limit sensor - showing fluctuating values in short period of time

If the UFH external 10K NTC sensor fluctuates in a short period of time (example between 18 and 22) then the sensor is receiving electrical interference. You must follow the recommendations of the Electrical UFH manufacture on sensor location. Example 100mm away from electrical cable.

To help assist in the fluctuation readings, add a radial capacitor across the sensor connection on rear of Room Thermostat Controller.

Typically used is 100uF 16V [85°C]



Note: Terminal 5 is negative and 6 is positive when installing the capacitor