Installation & Users' Manual
Infresco Multi-Zone Control System up to 36kW with IR Control (optional)

RoHS Compliant
Directive
2002/95/EC

X20057 Stand 20111214

INTRODUCTION

The Infresco Multi-Zone is a microprocessor based power controller which has been designed to offer variable control for 2 separate 2kW loads from a 1-phase supply. The units have been manufactured to offer easy installation and functionality. The system consists of three elements: A HMI unit 1(Human Machine Interface) which is wired via a low voltage 4-core cable to the main power unit 2, this then allows the operator to vary the output from off and 30% to 100% via a 10 step output. All the HMI functions are also available via the infra-red remote control handset 3.

Additionally, you can switch off all the channels or individual channels as required via the HMI. The main power unit which has been built into a smart robust IP65 rated enclosure can be mounted remotely from the HMI unit. The main power unit can also link up to an additional 2 power units allowing you to control 6 individual 2kW outputs or 8 other power units allowing you to control 9 power units (the 2 outputs within each power unit will increase at the same level in this configuration) up to 36kW in total (2kW x 2 outputs x 9 Power units) Note: see installation for output options.

- HMI BUTTONS

CHANNEL	+	Increment channel selection (1 to 6)
CHANNEL	-	Decrement channel Selection (1 to 6)
CHANNEL OFF		Switch off Current Channel
ALL ON/OFF		Switch ON or OFF all channels (Toggle)
POWER +		Increment Current Channel Power Level (0,1,2,3,4,5,6,7,8,9,F)
POWER -		Decrement Current Channel Power Level (F,9,8,7,6,5,4,3,2,1,0)

- REMOTE HANDSET BUTTONS

CHANNEL	Buttons 1 to 9 for Channel Selection
CHANNEL+	Increment channel selection (1 to 9)
CHANNEL-	Decrement channel Selection (1 to 9)
CHANNEL OFF	Switch off Current Channel
ALL ON/OFF	Switch ON or OFF all channels (Toggle)
POWER +	Increase output level from 0 to F
POWER -	Decrease output level from F to 0

- POWER UNIT CONNECTIONS

SUPPLY INPUT	1 Phase Supply (230V AC +/-10%) (L1,N,E)
LOAD OUTPUTS	Heater Terminations LOAD 1: (T1,N,Earth), LOAD 2: (T2,N,Earth)
SW1	4 Way DIL Switch for Channel Configuration Options
HMI Communication	RS485 communication Terminals A & B
HMI Low Voltage Power	Terminals +24V DC & COM
SUPPLY GREEN LED	Power unit supply present
STATUS RED LED	Serial Data Received Acknowledgement

APPLICATIONS

Any application where high inrush current is an issue or control is required. Typical use is for Infrared Heating lamps and Garden lighting

FEATURES

Soft Start	Up to 30% extended life of Lamp
Variable Control	Ability to find comfort level
Remote Control	Ease of use
HMI	Vary output and switch channels on and off
IP Rated	HMI and UAL-ER are IP65 rated, suitable for outdoor installation
Additional Channels	Multiple units can be added and function from 1 off HMI and Remote Handset

CONFIGURATION OPTIONS

Option 1
12kW

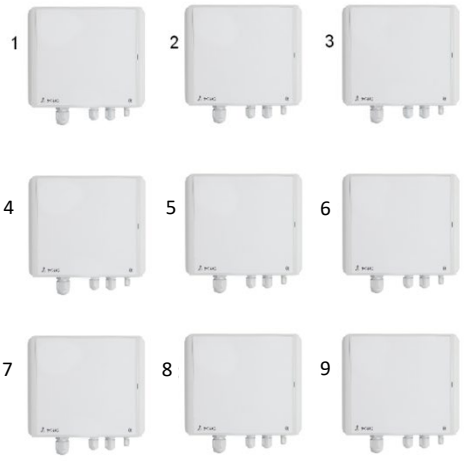
Option 2

36kW

1 2

3 4

5 6



Option 1 will allow you to control up to 12 kW using the interface and remote control. 6 individual 2kW channels from 0 to F.

Option 2 will allow you to control up to 36kW using the interface and remote control. 9 control boxes 4kW each controlling all output together 0 to F.

The Infresco Multi-Zone has been designed and tested to allow each controller to be mapped to either 2 channels (2 power level settings per 2 outputs) or 1 channel (1 power level setting per 2 outputs).
Please note that no mapped channels should appear with the same channels numbers.
Here are some examples using 3 Infresco Power Controllers on a 1 phase supply.

SYSTEM PARTS

- **HMI**
  The HMI allows the user to control up to 9 individual Infresco Multi-Zone units either via the push buttons on the HMI or via the Remote Handset and depending on selected configuration control the outputs by varying the settings from 0 to F(=100%). All together you can preset 6 individual outputs with a maximum rating of 12kW or 9 outputs with 36kW dependant on configuration. The HMI can switch off all the outputs together or on an individual basis. When the units are switched back on, they resume the setting previously set.

- **The remote Handset**
  The remote handset works in the same way as the HMI units allowing you to remotely control up to 9 outputs. The handset can switch off all the outputs together or on an individual basis. When the units are switched back on, they resume the setting previously set.

- **The power unit**
  The Infresco Multi-Zone is designed to accept a 230V single phase supply. The unit has a 2 stage supply filter to meet EMC legislation and comes in an IP65-rated enclosure complete with glands.
  A 4 core low voltage cable is required to wire the Power unit to the HMI allow it to be mounted neatly away from the main installation.

The Interface units is designed to be used with the Remote Handset, however you can also control all the heaters directly from this unit.

Channel Indicator
This indicates which channel your are controlling. The maximum amount of channels available are 9.
Power Indicator
This Indicates the power output

CH OFF
This allows you to switch off an individual channel

ALL ON/OFF
This allows you to switch the output off to all the channels

HANDSET

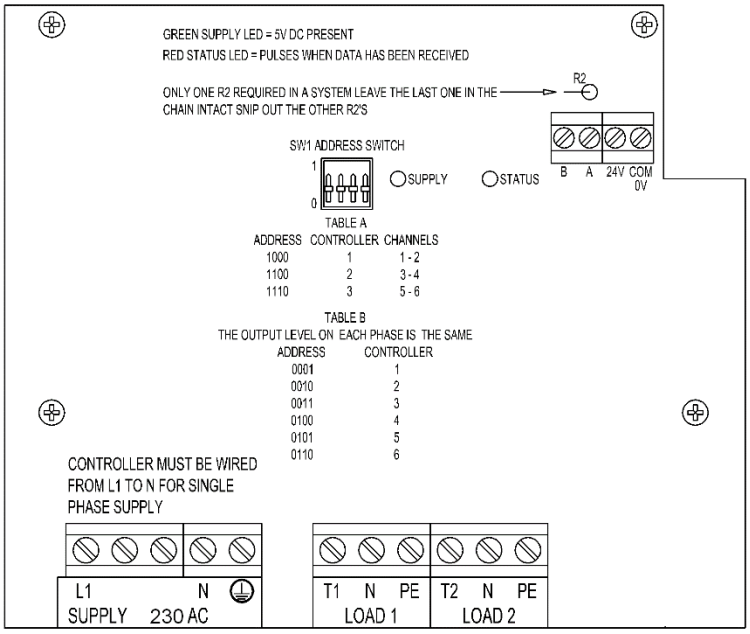
The Remote Handset is designed to be used in coniuction with the Interface Units which has indicators to show you which channel you are on and what the output setting is.
You can select which channel you wish to control by selecting buttons 1 to 9.

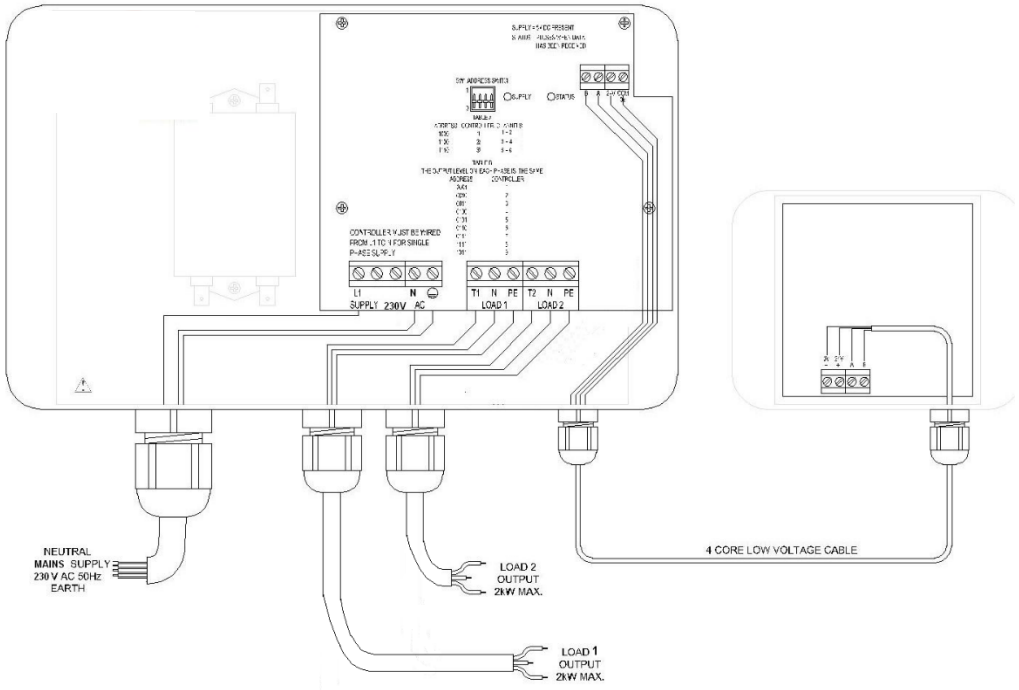
CH-/CH+ allow you to scroll through the channels

Power + and - These Buttons allow you to change output of each channel from 0 to F . The Interface indicates which channel you are on and also the output level.

CHANNEL OFF - Allows you to switch off one individual channel (Maximum Channels 9)
ALL OFF - Allows you to switch off ALL channels

INSTALLATION CIRCUIT





SET UP

CAUTION! Ensure the main supply is disconnected before proceeding.

Connect the 1 phase supply 230VAC with Neutral and Earth to the terminals marked ‘L1, N and Earth’.

Connect the 2 x 2KW Lamp Loads to the terminals marked ‘LOAD1 and LOAD2’.

Configure the oscilloscope to measure AC mains voltage and connect one of the scope’s channels across a lamp load.

Connect the HMI unit to the main controller using four core twisted cable to the terminals marked A, B, 24V and COM on both units.

Set DIP SW1 to 1000, this sets the controller to operate on channels 1 and 2 using either the handset or HMI unit, see Table A and B on the control pcb.

Test

CAUTION! Beware of hazardous voltages while testing!

Switch on the main supply to the INFRESCO MULTI-ZONE and verify the green ‘POWER’ LED is lit and the HMI digits are lit. When the main power controller is sending data back to the HMI unit the red ‘STATUS’ LED will pulse.
Using the HMI push buttons step through the channels and power levels indicated by the UP and DOWN arrows on the fascia.
Leave all three channels powered up to three different output levels, press the ALL ON/OFF button once this will turn all three channels off, press the button again this will reinstate the outputs to the power levels previously selected.
Pressing the CH OFF button turns the indicated channel off, to turn it on again use the POWER up button.
Switch off the mains power to the controller and wait a few seconds then re-apply the mains power, all the controller outputs will be in the off state, when the ALL ON/OFF button is pressed the previously selected channels and output levels will be re-instated.
These tests can also be done using the handset, with the handset the channels can be selected individually by pressing the buttons numbered 1 and 2.
With the DIP switch code set to 1000 the HMI unit will scroll around channels 1 and 2, with the code set to 1100 the HMI unit will display and scroll around channels 3 and 4. With the code set to 1110 channels 5 and 6 will be activated in the same manner.
Next set the controller to two tracking where both outputs are controlled as one channel this mode is selected by setting the DIP switch code to 0001.

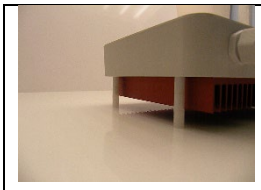
With DIP switch code set to 0001 channel 1 will be selected and displayed on the HMI unit. Adjusting the POWER up and down buttons will result in both outputs having the same output levels through 0 to F.
Check that the HMI unit does not respond to any other channel selection.

After testing return the DIP SW1 code to 1000.

Switch off the main supply and disconnect the INFRESCO MULTI-ZONE - the test is now complete.

SPECIFICATIONS

Mains Voltage	230VAC +/- 10% 50 Hz
Max load at 20°C ambient	4 kW (Total)
Number of Channels	2 x 2kW Max
Power Consumption	50mA
IP Rating Power Unit	IP65
IP Rating HMI	IP65
Gland Diameter	Max Cable Entry 2.5mm²
Operating Temperature	-20°C to 30°C
Max Unit Operating Temperature	65°C
Dimensions Power Unit	W=280mm D=200mm H=80mm 'D' inclusive of Glands
Dimensions HMI Unit	W=118mm D=110mm H=50mm
Dimensions Remote Handset	W=45mm D=22mm H=160mm
HMI Cable	4 core (Low Voltage)
Remote Hand Batteries	2 x AA (1.5V)



WARNING

It is important that the Infresco Multi-Zone is not mounted directly to any flammable material, i.e. wood.

It is recommended that the heat sink be spaced off the mounting wall using pillars to aid in heat dissipation.

It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.E. wiring regulations (BS7671) by suitably qualified/trained personnel.

These regulations contain important requirements regarding safety of electrical equipment (for International Standards refer to I.E.C/ directive IEC950).

SAFETY FIRST

Please read these instructions before installing and operating this product. (See warning for additional information).

CE

UNITED AUTOMATION LTD

United Automation Limited
B M F House
Southport Business Park
Wight Moss Way
Southport
PR8 4HQ

Tel.: +44(0)1704 516501
enquiries@united-automation.com
www.united-automation.com

nqa. ISO 9001 Registered UKAS QUALITY MANAGEMENT 015