# Heaters blowers

# LC

# 16 / 20 / 28 / 40 / 56


ACCORRONI®
E. G.
Climate Technology

TECHNICAL INFORMATION

Heaters blowers LC

# *Hanging unit heaters with horizontal and vertical projection SERIES “LC” destined for heating*

**GENERAL INFORMATION for proper installation**

It contains all the news related to the description of the devices and their technical characteristics.

**TECHNICAL INFORMATION FOR THE INSTALLER**

It collects all the technical details and recommendations that the installer must comply with to realize the project.

**Important notes for the consultation:**

1 For the purposes of a correct and safe use of the device, the designer, the installer, the user and the service to their respective responsibilities, are required to comply with what is indicated in this manual.
It must be kept for future reference and must accompany the machine for its entire lifespan, including the case of transfer to third parties.

2 WARNING! Following information that, because of their importance, must be scrupulously observed and for which non-compliance can result in damage and / or impair the safety of use. The paragraphs highlighted in bold contain information, warnings or important tips that you should carefully evaluate.

3 The A2B Accorroni E.G. LTD accepts no responsibility for any damage caused by improper use, to a use other than that prescribed and by an incomplete or approximate application of the instructions contained in this manual.

4 The technical data, styling characteristics, components and accessories listed in this manual are not binding. The A2B Accorroni E.G. LTD reserves the right to introduce at any time whatever modifications deemed necessary to the improvement of its product.

5 References to laws, regulations and technical rules mentioned in this manual are for information only and to be considered valid at the date of printing, as indicated on the last page. The entry into force of new provisions or amendments to current laws do not constitute grounds for any obligation of the A2B Accorroni E.G. LTD against third parties.

6 The A2B Accorroni E.G. LTD is responsible for the conformity of his product to laws, directives and construction standards in force at the time of commercialization. The knowledge and observance of the laws and standards regarding plant design, installation, operation and maintenance are the exclusive responsibility for their respective powers, the designer, installer and user.

# *INDEX*

## *1.0 MAIN FEATURES*

This manual collects the installation standards, proper use and maintenance of the HEATERS series LC. You will not find a detailed description of the various components of organs, nor the detailed account of how they work, but all that will serve to familiarize yourself with your equipment and will help to obtain maximum performance and get the maximum service life.

**GENERAL WARNINGS**

**This manual is an integral part of the product; it should not be separated from it, and must be carefully stored for future use or reference. Failure to comply with the recommendations in this manual implies the loss of the warranty conditions. If the appliance is sold or transferred to another owner to ensure that the manual accompanies the appliance.**

**This appliance must be used only for the purpose for which it was built.**

**All applications specifically indicated in this manual are considered improper and therefore dangerous.**

### 1.1 CLASSIFICATION OF APPLIANCES

The horizontal unit heaters LC, with wall, are fed to water and are particularly suitable for the heating of industrial buildings, craft, stores, laboratories, etc.

### 1.2 CERTIFICATION - EC MARKING

The affixing of the CE marking ensures conformity of the appliances with the Machinery Directive 98/37 / EEC, the Low Voltage Directive 73/23 / EEC, the Electromagnetic Compatibility Directive 89/336 / EEC and successive amendments.

These products are then subjected to the CE marking have been tested to the harmonized regulations applicable to them, and they are accompanied by a statement to the Annex.

### 1.3 CONSTRUCTION

LC consists essentially of a group of heat exchange between the circulating fluid inside the heat exchanger (hot or chilled water) and the air flow exerted by a fan unit.

The ambient air is drawn in from / by the fan / s and thrust through the heat exchanger, which transfers in winter or in summer subtracts the heat to the same. The treated air is discharged into the room through the grill to horizontal fins made of extruded aluminum, adjustable manually.

The cover piece is made of painted sheet steel, polyester powder, in the long life guarantee.

In the rear are located, according to the model, one or two convection fans axial type with safety grille. The fan motors are single-phase with external rotor, designed for different operating speeds, using special auto-transformer.

The heat exchanger is made from copper pipes and aluminum fins fixed by mechanical expansion of the tubes.

The connections to the electrical panel, housed in a special sealed housing and can be found on the right side of the unit.

Both types of connection, hydraulic and electric, are also accessible laterally, after removal of the respective shaped panels.

### 1.4 PACKAGE CONTENTS

The unit is shipped in standard recyclable cardboard packaging with internal, which also contains:

- This manual
- The warranty certificate

The manual and the warranty certificate must be delivered to the owner of the device to keep them carefully for future use or reference.

**WARNING! It is important to check that the packaging is intact upon delivery of the material.**

### 1.5 ACCESSORIES PROVIDED UPON REQUEST

On request can be supplied with the following accessories:

- Remote control with room thermostat, summer switches / winter and fan speed;
- Consent thermostat (40 ° C);
- fixing bars;

### 1.6 FIELD OF USE

The devices are designed and manufactured for heating the air in the craft, commercial premises, industrial and must be used solely for this purpose, in relation to their technical and performance specifications.

The quality and the size of the materials used were chosen to ensure a reasonable length of life, and are suitable for operation of the apparatus, both together that in their components, subject to an installation realized in a workmanlike manner and in conditions of mechanical, chemical and thermal corresponding to normal use.

**WARNING! All applications specifically indicated in this manual are considered improper and are not permitted; in particular it is not provided for the use of equipment in industrial processes and / or the installation in a corrosive or explosive atmosphere; It is not allowed their feed with superheated water or steam.**

**It assumes no liability of the producer for**

**damage to persons, animals or things caused by nonobservance of this manual, by modifications or tampering with the product, to errors in installation, adjustment, maintenance and improper use.**
**Failure to comply with the recommendations in this manual also result in forfeiture of the warranty conditions.**

### 1.7 SAFETY REGULATIONS

**WARNING! The installation and maintenance must be performed by skilled personnel and duly authorized.**
The connection to the power supply must be performed in accordance with current national plant regulations.
During installation and maintenance operations, always operate in conditions of maximum safety, please follow the instructions in this manual and the possible warning labels on the product.
Observe the installation and function limits indicated in this manual, do not change in any way the internal electrical wiring and internal pipes, does not alter or disable safety and controlling devices.
Do not leave containers and flammable substances near the appliance.
Before each check, maintenance, or anything else involving access to internal parts, disconnect the main power supply.

## *2.0 GENERAL SAFETY*

### 2.1 QUALIFICATION OF INSTALLER
The installation and maintenance must be performed by skilled personnel and duly authorized.

### 2.2 POWER SUPPLY
The LC unit heater must be properly connected to an efficient earth system.
The connection to the power supply must be performed in accordance with current national plant regulations.

### 2.3 USE
The use of the device should not be allowed to children, untrained people and unassisted disabled persons.
You must observe the following guidelines:
- do not touch the appliance with wet or damp body and / or barefooted;
- do not insert utensils, paper or anything else that might penetrate through the fan screens;
- do not open the access panels to internal parts.

These operations are reserved for the specialized personnel;
- do not to proceed to clean the outer parts of the appliance without first removing the power supply at the main switch;
- do not leave the appliance exposed to the elements;
- do not place objects on the unit;
- do not touch the moving parts in the heater.

LC can be moved with a forklift truck or pallet truck, taking care to balance the weight at the supports.
For safety reasons, given the relatively high weight, not groped to lift the machine by hand.

**WARNING! One person can lift a maximum weight of 30 kg.**

Avoid suspension by slings or ropes, because there are no specific anchorage points. However, respect the instructions on the carton with the appropriate symbols.
Upon delivery, check that during transport there has been no visible damage on the package and / or on the device. In the event of a finding of damage display immediately claim with the shipping.
Do not install damaged equipment in transport. It is' not dispose of parts of the packaging in the environment or leave them within reach of children as they are potentially dangerous.

### 2.4 USE OF THE INSTRUCTIONS
This manual is an integral part of the product and must be delivered to the owner of the device so that it accurately preserve for future use or reference.

**WARNING! When installing or working on the appliance observe all instructions in this manual and so applicable to the product in accordance with national safety standards. Changes of connections of any kind and / or failure to comply with these instructions will immediately invalidate the warranty and the manufacturer responsibility.**

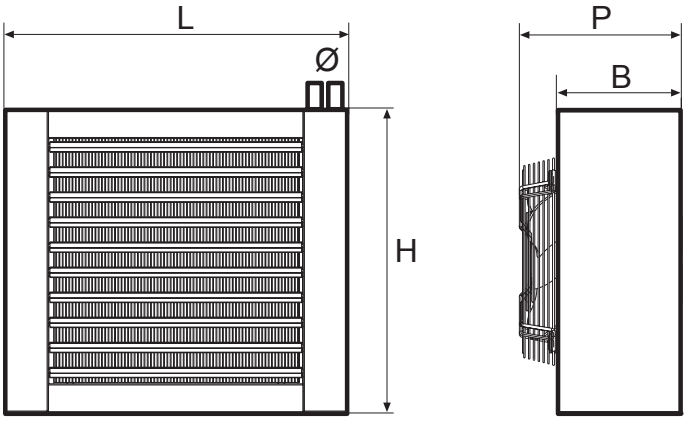
## *3. HANDLING AND TRANSPORTATION*

The unit is shipped with properly attached coated cardboard box.
The device can be operated by personnel properly equipped with adequate equipment to the product's weight, such as a forklift or pallet truck, but distribute the weight on the supports.
Upon delivery, check that during transport there has been no visible damage on the package and / or on the unit. In case of finding of damage immediately expose formal complaint to the shipping company.
Do not install damaged equipment in transport.
Do not dispose parts of the packaging in the

environment or leave them within reach of children as they are potentially dangerous.
The possible storage of the unit, must take place in a suitable place, away from atmospheric agents and from excessive moisture, for the shortest possible time.

## DIMENSIONS

Heater blowers LC




| Model | L | H | P | B | Ø | Weight Kg. |
|---|---|---|---|---|---|---|
| 16 | 555 | 485 | 300 | 230 | G 1” | 30 |
| 20 | 630 | 560 | 300 | 230 | G 1” | 34 |
| 28 | 780 | 710 | 300 | 230 | G 1” | 38 |
| 40 | 630 | 1010 | 300 | 230 | G 1” | 63 |
| 56 | 780 | 1310 | 300 | 230 | G 1” | 75 |

## *4.0 INSTALLATION*

### 4.1 GENERAL INFORMATION - POSITIONING

Before carrying out any installation work, ensure that the following conditions are met:

a) it is possible to arrive in the desired place with the single-phase power supply line 230Volts ~ 50 Hz and that the expected position of plumbing connections matches that of the attacks on the unit.

b) that the location is suitable for proper air circulation in the environment and the air flow is not impeded by any obstacles, otherwise, that the air flow itself does not disturb the people present. In the case in which in the same room are installed several devices, it is convenient to distribute the air according of opposite flow directions;

c) that the installation location allows accessibility to the appliance parts subject in maintenance. The optimal installation height is between 2.4 and 3.5 m and is understood as the vertical distance between the decking and the base station; higher or lower heights than indicated should be carefully evaluated so as to ensure the correct air distribution within the room.

### 4.2 WATER CONNECTIONS

**WARNING! Make sure the bearing capacity of the wall on which it will be fixed the support bracket, depending on the weight of the device and to install the fasteners.**

**WARNING! Verify the characteristics of the water circulation device with the load losses of the batteries of the related equipment**

In case you are used metal pipes, it is recommended to follow the following requirements:
- install air vent valves at the highest points of the pipes;
- to install on-off valves on pressure lines and return water to facilitate the maintenance operations avoiding to download the whole system;
- suitably insulate the pipes to prevent heat loss and condensation.

**WARNING! Before filling the pipes, make sure they do not contain material outsider like sand, debris, rust and anything can damage the unit exchanger or reduce the yield.**

### 4.3 ELECTRICAL CONNECTIONS

**WARMING! Make the electrical connections with power off and only after completing the plumbing connections and have verified the proper maintenance.**

Make sure that the power supply is type 230 V - single phase - 50 Hz. Install in the vicinity of the appliance an all-pole switch with adequate capacity (with a opening of contacts of at least 3 mm) for the main device Possible Shutdown .
It is banned the use of gas and / or water pipes for the fixing of the unit on the ground. A2B Accorroni is not responsible of any damage caused by lack of grounding of the device and failure to comply with the wiring.
INSERT the power cable through the appropriate cable gland, making sure to cut the wires so that the earth yellow / green cable is longest.
This precaution, in case of accidental detachment, enables the earth cable to exit for last from the connections.
The power cable will have to be appropriate for the type of facility and will have a size suitable to seal on the gland (recommended H05 VVF 3x1.5 mm2).
Connect the power cord to the phase terminals(L), neutral (N) and the ground terminal block located in the framework).

## *5. RULES FOR INSTALLATION*

### 5.1 POSITIONING

**The arrangement of the heaters in the environment to be heated has a significant influence on the success of the system .**

### 5.2 HEATERS HORIZONTAL FLOW

For large environments the recommended provisions are those given in Fig . 1 and Fig . 2.

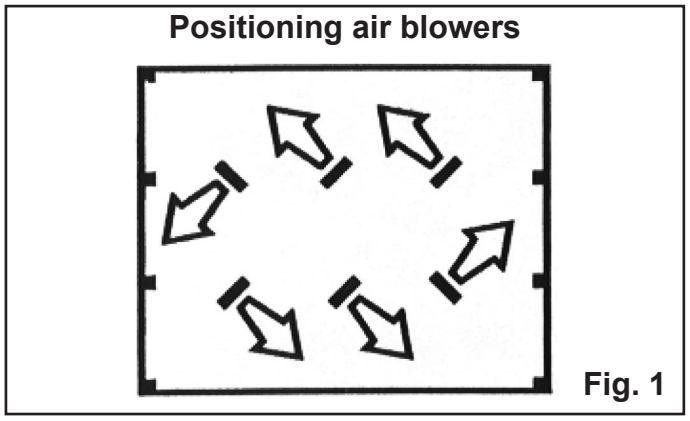


**Fig. 1**

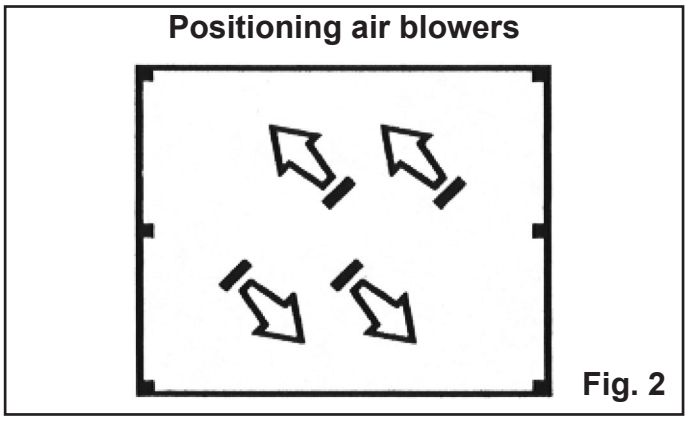


**Fig. 2**

With this provision it is aimed to obtain a circular air flow in the environment and to neutralize the loss of heat at the origin .
For modest size environments are advisable provisions such as those of Fig . 3 and Fig . 4 .

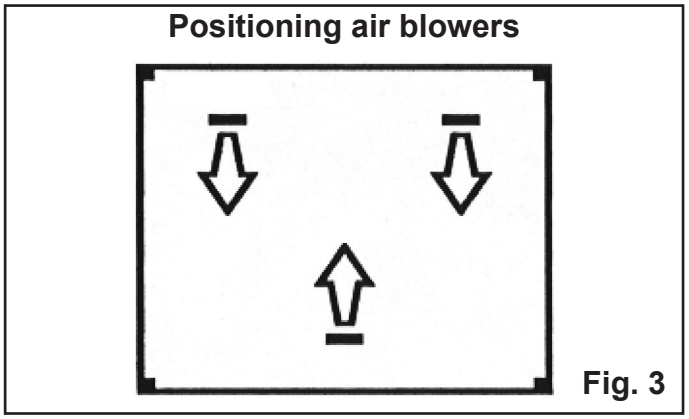


**Fig. 3**

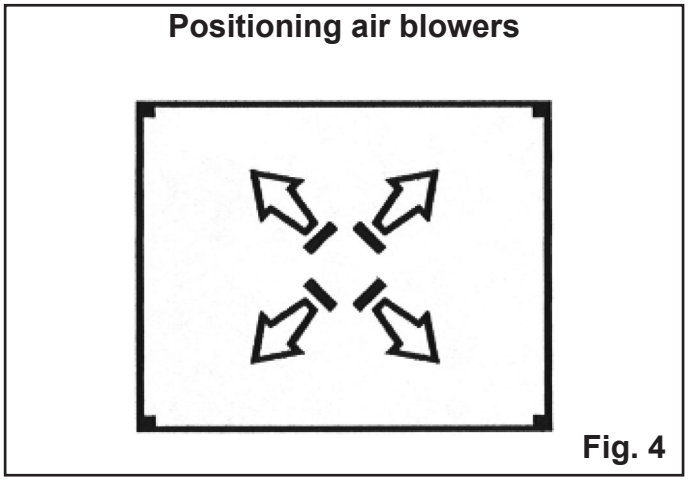


**Fig. 4**

### 5.3 HEATERS VERTICAL FLOW

In the arrangement of the devices you will have to do so that the individual zones of influence are uniformly distributed over the entire surface in plant fig . 5 .

Wanting to increase vertical launch it can be done in so that the interfering influence zones between them thus obtaining a decrease of the braking action
Air jet lands on its activation and a fig . 6 .

The heaters of the LC series can be provided with support brackets , which facilitate the positioning in place Fig . 7 .

The LC unit heaters are suspended vertically projected with the appropriate eye bolts and chains kit fig . 8 .

**Positioning air blowers**

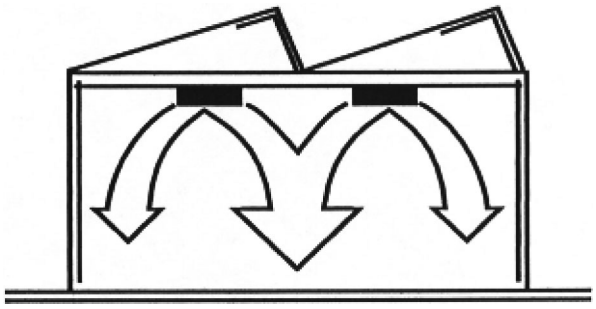


**Fig. 5**

**Positioning air blowers**

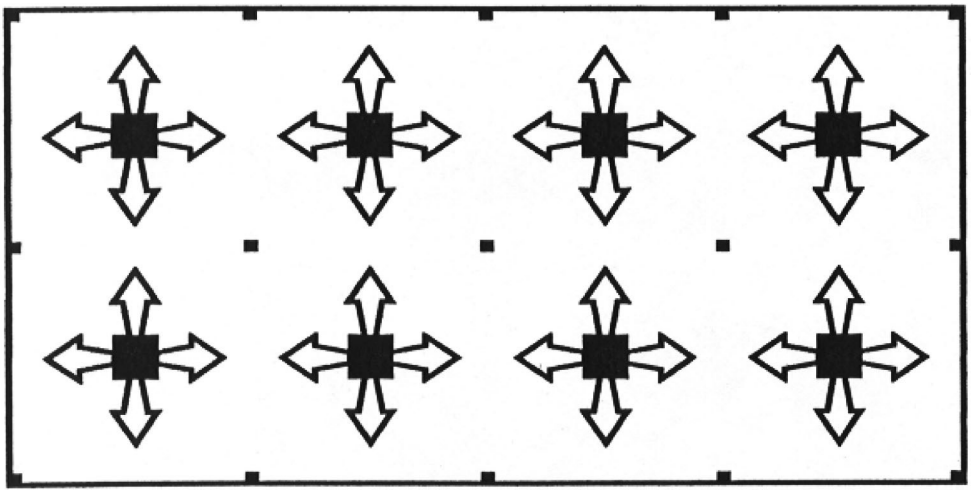


**Fig. 6**

**Type of installation**

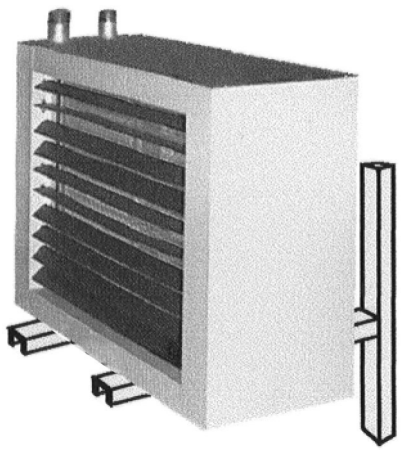


**Fig. 7**

**Type of installation**

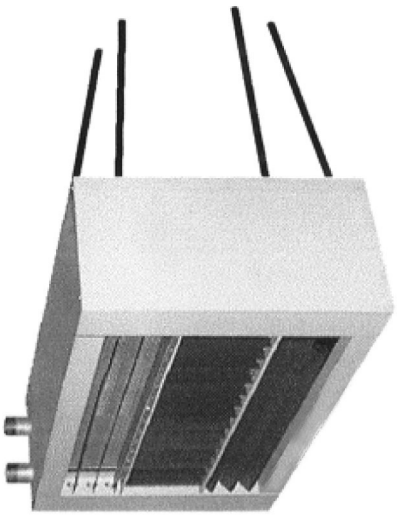


**Fig. 8**

## *6.0 WATER CONNECTION*

The sizing of the water supply must be done according to the instructions of the designer. The heaters are provided with threaded connections listed in the tables of dimensions on page . 6 .

It is advisable not to connect the unit heaters with pipe diameters of less than those of their attacks .

- Provide the outgoing tube an automatic air discharge valve .
- It is recommended to mount attacks on a shut off valve of the same diameter in order to allow the disassembly of the unit heater without draining the system .
- Make the hydraulic connections as shown in fig . 9 .

**Water connections**

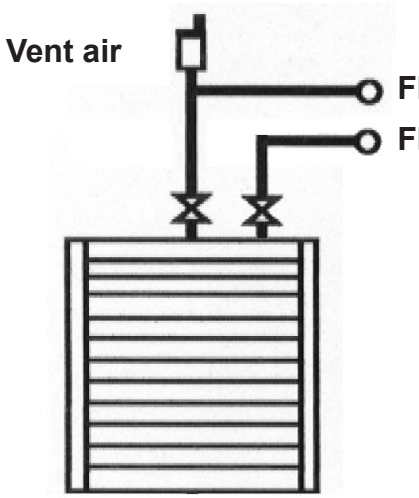



**Fig. 9**

## *7.0 ELECTRICAL CONNECTIONS*

**WARNING! Make the electrical connections with power off and only after completing the plumbing connections and have verified the proper maintenance .**

Make sure that the available electrical power is the type 230 V - single phase - 50 Hz .

Mount close to the appliance an all-pole switch with adequate capacity (with a contact gap of at least 3 mm) for any general standstill.

The use of gas and / or water pipes for the appliance to be earthed is not allowed. The manufacturer is not liable for any damage caused by failure to earth the appliance and failure to comply with the wiring diagrams .

Insert the power cable through the cable clamp , taking care to cut the conductors so that the earth yellow / green cable is longer than the other two. This precaution , in case of accidental detachment, enables the earth cable to exit for last from the connections.

The power cord must be suitable for the type of system implemented and will have a size suitable to seal the cable gland ( we recommend the type H05 VVF 3x1.5 $mm^2$ ) .

Connect the power cord to the phase terminals ( L), neutral ( N ) and the earth terminal block under .

The Fig. 10 , 11 , 12 , and 13 give an indication of the connection unit heaters , according to all the possible configurations achievable :

- Basic wiring diagram fig . 10
- Basic wiring diagram with temperature thermostat fig. 11
- Wiring diagram with room thermostat fig. 12 and 13.

## *8.0 TECHNICAL TABLES*

### Technical data air blowers LC

| Description | U.M. | LC 16 | LC 20 | LC 28 | LC 40 | LC 56 |
|---|---|---|---|---|---|---|
| Thermo power | kW | 16,2 | 21,2 | 28,1 | 42,4 | 56,2 |
| Flow air | $m^3/h$ | 2.080 | 2.150 | 2.250 | 4.300 | 5.100 |
| Fan | Ø | 350 | 350 | 350 | 2 x 350 | 2 x 350 |
| Number of min. turns | n. | 1.100 | 1.100 | 1.300 | 2 x 1.100 | 2 x 1.300 |
| Sound pressure | dB(A) | 48 | 47 | 49 | 50 | 52 |
| Water connections | | 1” | | | | |
| Feeding | | 230V/1/50Hz | | | | |
| Absorption | W | 78 | 75 | 90 | 150 | 180 |
| Net weight | kg | 30 | 34 | 38 | 63 | 75 |

**Table 1 - Heating LC 16**

**Yield heating ΔT 5 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2080 | | | |
| Water in entry | 45°C | 7,95 | 9,85 | 11,82 | 13,86 |
| | 50°C | 9,80 | 11,76 | 13,73 | 15,77 |
| | 55°C | **11,71** | 13,61 | 15,64 | 17,68 |

**Yield heating ΔT 10 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2080 | | | |
| Water in entry | 60°C | 12,44 | 14,42 | 16,45 | 18,55 |
| | 65°C | 14,35 | 16,33 | 18,36 | 20,46 |
| | 70°C | **16,2** | 18,24 | 20,34 | 22,44 |
| | 80°C | 20,01 | 22,06 | 24,15 | 26,32 |

**Yield heating ΔT 15 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2080 | | | |
| Water in entry | 60°C | 11,33 | 13,3 | 15,27 | 17,39 |
| | 65°C | 13,24 | 15,21 | 17,25 | 19,36 |
| | 70°C | **15,15** | 17,19 | 19,23 | 21,34 |
| | 80°C | 18,97 | 21,01 | 23,11 | 25,29 |

**Yield heating ΔT 20 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2080 | | | |
| Water in entry | 60°C | 10,18 | 12,18 | 14,11 | 16,2 |
| | 65°C | 12,12 | 14,09 | 16,13 | 18,21 |
| | 70°C | **14,10** | 16,14 | 18,09 | 20,17 |
| | 80°C | 17,9 | 19,93 | 21,97 | 24,16 |

**Table 1 - Heating LC 20**

**Yield heating ΔT 5 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2150 | | | |
| Water in entry | 45°C | 10,41 | 12,89 | 15,47 | 18,14 |
| | 50°C | 12,83 | 15,39 | 17,97 | 20,64 |
| | 55°C | **15,33** | 17,82 | 20,47 | 23,14 |

**Yield heating ΔT 10 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2150 | | | |
| Water in entry | 60°C | 16,28 | 18,87 | 21,52 | 24,27 |
| | 65°C | 18,78 | 21,37 | 24,02 | 26,77 |
| | 70°C | **21,20** | 23,87 | 26,62 | 29,36 |
| | 80°C | 26,16 | 32,50 | 31,60 | 34,44 |

**Yield heating ΔT 15 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2150 | | | |
| Water in entry | 60°C | 29,65 | 34,80 | 39,96 | 45,50 |
| | 65°C | 34,65 | 39,80 | 45,14 | 50,66 |
| | 70°C | **39,65** | 44,98 | 50,32 | 55,84 |
| | 80°C | 49,64 | 54,98 | 60,47 | 66,17 |

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2150 | | | |
| Water in entry | 60°C | 26,64 | 31,87 | 36,92 | 42,39 |
| | 65°C | 31,72 | 36,87 | 42,21 | 47,65 |
| | 70°C | **36,90** | 42,24 | 47,34 | 52,78 |
| | 80°C | 46,84 | 52,15 | 57,49 | 68,82 |

**Table 1 - Heating LC LC 28**

**Yield heating ΔT 5 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2250 | | | |
| Water in entry | 45°C | 13,79 | 17,09 | 20,50 | 24,04 |
| | 50°C | 17,00 | 20,40 | 23,82 | 27,36 |
| | 55°C | **20,32** | 23,62 | 27,14 | 30,68 |

**Yield heating ΔT 10 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2250 | | | |
| Water in entry | 60°C | 21,58 | 25,01 | 28,53 | 32,17 |
| | 65°C | 24,89 | 28,32 | 31,84 | 35,48 |
| | 70°C | **28,10** | 31,64 | 35,28 | 38,92 |
| | 80°C | 34,68 | 43,08 | 41,89 | 45,65 |

**Yield heating ΔT 15 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2250 | | | |
| Water in entry | 60°C | 29,65 | 34,80 | 39,96 | 45,50 |
| | 65°C | 34,65 | 39,80 | 45,14 | 50,66 |
| | 70°C | **39,65** | 44,98 | 50,32 | 55,84 |
| | 80°C | 49,64 | 54,98 | 60,47 | 66,17 |

**Yield heating ΔT 20 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 2250 | | | |
| Water in entry | 60°C | 26,64 | 31,87 | 36,92 | 42,39 |
| | 65°C | 31,72 | 36,87 | 42,21 | 47,65 |
| | 70°C | **36,90** | 42,24 | 47,34 | 52,78 |
| | 80°C | 46,84 | 52,15 | 57,49 | 68,82 |

**Table 1 - Heating LC 40**

**Yield heating ΔT 5 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 4300 | | | |
| Water in entry | 45°C | 20,81 | 25,78 | 30,94 | 36,28 |
| | 50°C | 25,66 | 30,79 | 35,94 | 41,28 |
| | 55°C | **30,66** | 35,63 | 40,95 | 46,29 |

**Yield heating ΔT 10 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 4300 | | | |
| Water in entry | 60°C | 32,56 | 37,74 | 43,05 | 48,54 |
| | 65°C | 37,56 | 42,74 | 48,05 | 53,54 |
| | 70°C | **42,40** | 47,74 | 53,23 | 58,73 |
| | 80°C | 52,32 | 65,01 | 63,20 | 68,88 |

**Yield heating ΔT 15 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 4300 | | | |
| Water in entry | 60°C | 29,65 | 34,80 | 39,96 | 45,50 |
| | 65°C | 34,65 | 39,80 | 45,14 | 50,66 |
| | 70°C | **39,65** | 44,98 | 50,32 | 55,84 |
| | 80°C | 49,64 | 54,98 | 60,47 | 66,17 |

**Yield heating ΔT 20 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 4300 | | | |
| Water in entry | 60°C | 26,64 | 31,87 | 36,92 | 42,39 |
| | 65°C | 31,72 | 36,87 | 42,21 | 47,65 |
| | 70°C | **36,90** | 42,24 | 47,34 | 52,78 |
| | 80°C | 46,84 | 52,15 | 57,49 | 68,82 |

**Table 1 - Heating LC 56**

**Yield heating ΔT 5 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 5100 | | | |
| Water in entry | 45°C | 27,59 | 34,18 | 41,01 | 48,09 |
| | 50°C | 34,01 | 40,81 | 47,64 | 54,72 |
| | 55°C | **40,64** | 47,23 | 54,27 | 61,35 |

**Yield heating ΔT 10 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 5100 | | | |
| Water in entry | 60°C | 43,15 | 50,02 | 57,06 | 64,34 |
| | 65°C | 49,78 | 56,64 | 63,69 | 70,97 |
| | 70°C | **56,20** | 63,28 | 70,56 | 77,84 |
| | 80°C | 69,35 | 86,16 | 83,77 | 91,30 |

**Yield heating ΔT 15 °C**

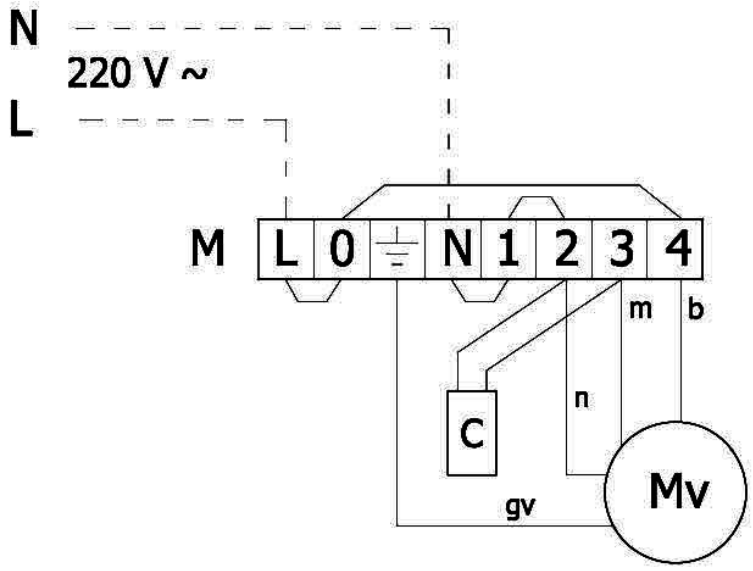
| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 5100 | | | |
| Water in entry | 60°C | 39,30 | 46,13 | 52,96 | 60,31 |
| | 65°C | 45,93 | 52,76 | 59,83 | 67,15 |
| | 70°C | **52,55** | 59,63 | 66,70 | 74,01 |
| | 80°C | 65,80 | 72,88 | 80,15 | 87,71 |

**Yield heating ΔT 20 °C**

| Description | | Heating flow (kW) air temp. variable d.b. (°C) | | | |
|---|---|---|---|---|---|
| Air Temp. entry °C | | 20 | 15 | 10 | 5 |
| Air flow m³/h | | 5100 | | | |
| Water in entry | 60°C | 35,31 | 42,24 | 48,93 | 56,18 |
| | 65°C | 42,04 | 48,87 | 55,94 | 63,16 |
| | 70°C | **48,91** | 55,98 | 62,75 | 69,95 |
| | 80°C | 62,09 | 69,13 | 76,20 | 91,22 |

## *9.0 WIRING*

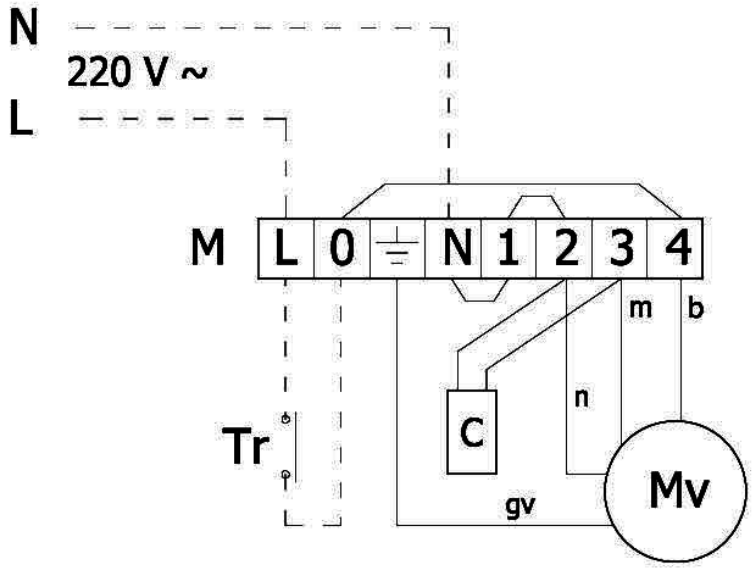
**WIRING LC 16 / 20 / 28 BASE**




**LEGEND**
M = Clamp
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv = Motor fan

**Fig. 10** **Connections to be made**.....

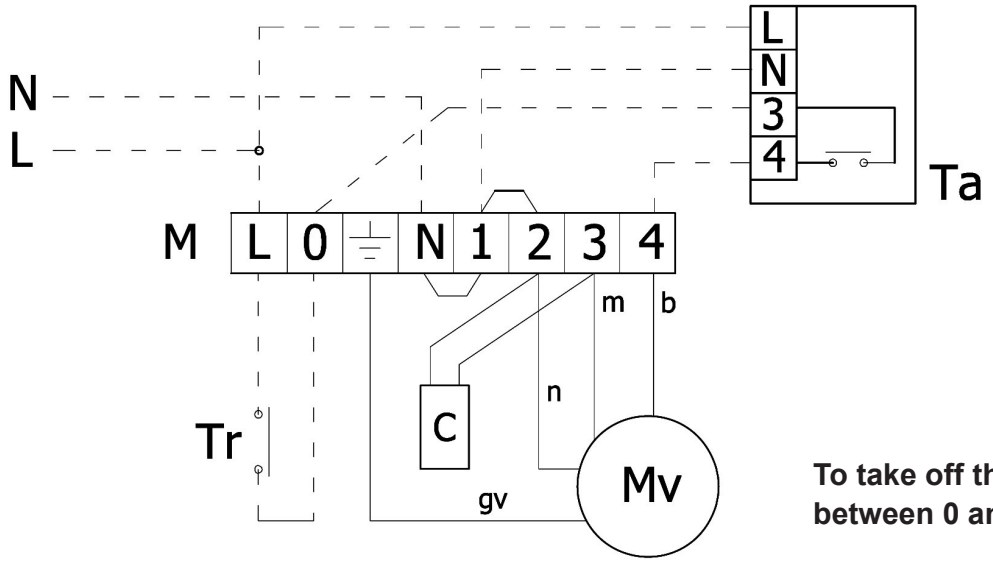
**WIRING LC 16 / 20 / 28 WITH CONSENT THERMOSTAT**




**LEGEND**
M = Clamp
Tr = Consent thermostat
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv = Motor fan

**Fig. 11** **Connections to be made**.....

**WIRING LC 16 / 20 / 28 WITH AMBIANCE THERMOSTAT winter mode**

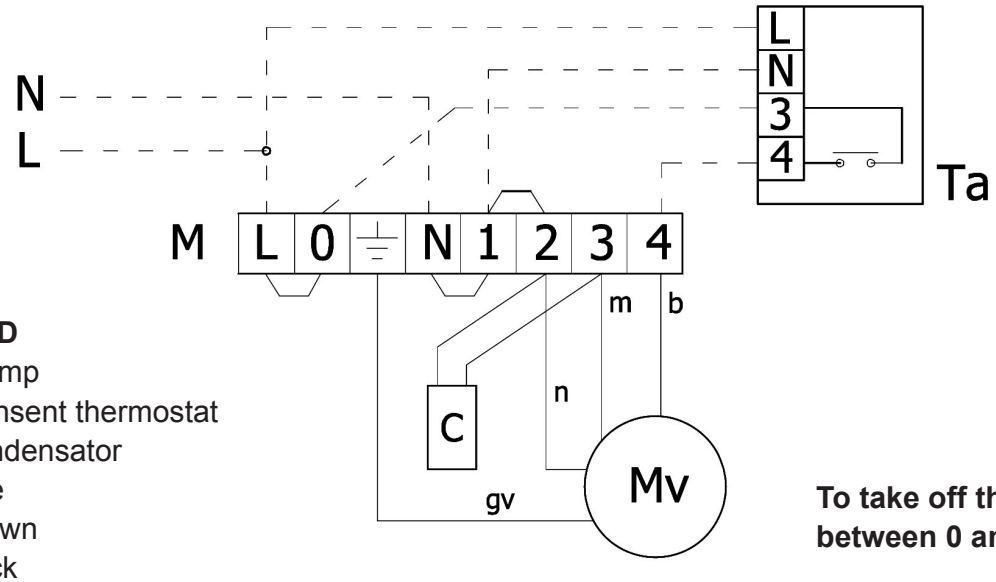



**To take off the bridge between 0 and 4**

**Fig. 12**

**Connections to be made**.....

**WIRING LC 16 / 20 / 28 WITH AMBIANCE THERMOSTAT, SUMMER MODE (VENTILATION ONLY)**

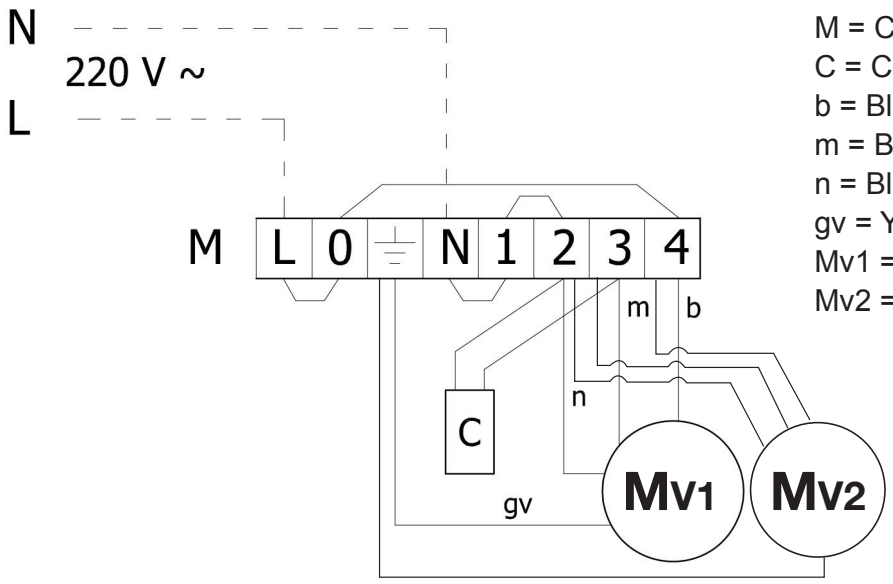



**LEGEND**
M = Clamp
Tr = Consent thermostat
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv = Motor fan

**To take off the bridge between 0 and 4**

**Connections to be made**..... **Fig. 13**

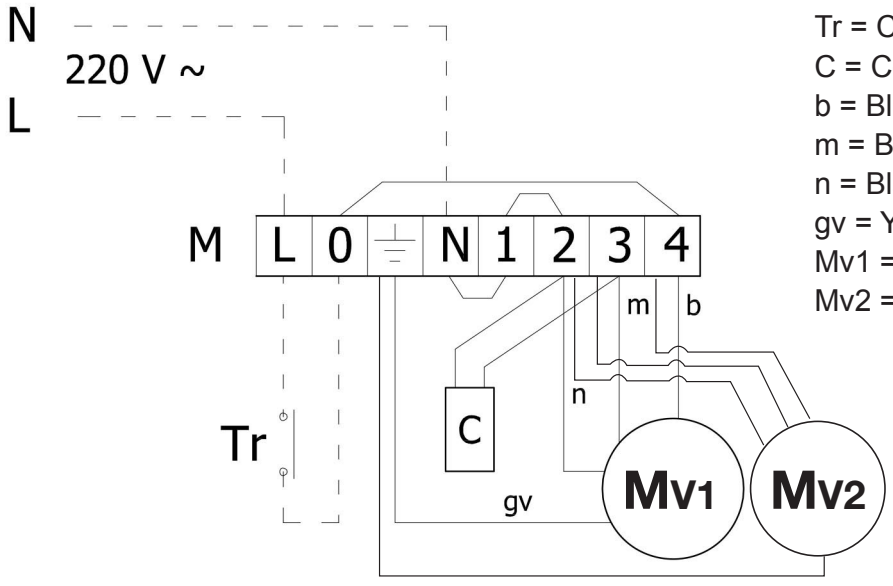
**WIRING LC 40 / 56 BASE**




**LEGEND**
M = Clamp
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv1 = Motor fan 1
Mv2 = Motor fan 2

**Connections to be made**.....

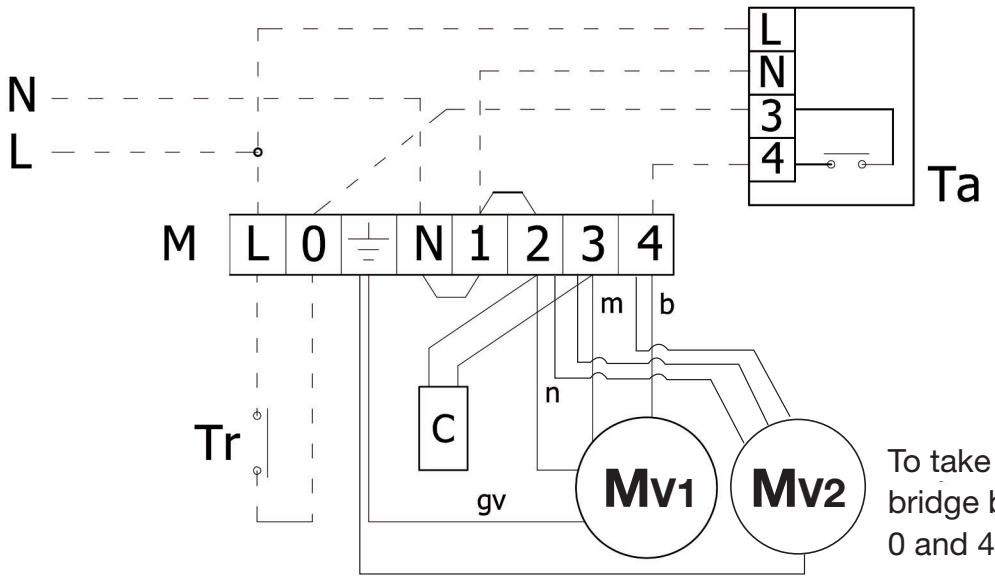
**WIRING LC 40 / 56 WITH CONSENT THERMOSTAT**




**LEGEND**
M = Clamp
Tr = Consent thermostat
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv1 = Motor fan 1
Mv2 = Motor fan 2

**Connections to be made**.....

**WIRING LC 40 / 56 WITH AMBIANCE**
**THERMOSTAT winter mode**

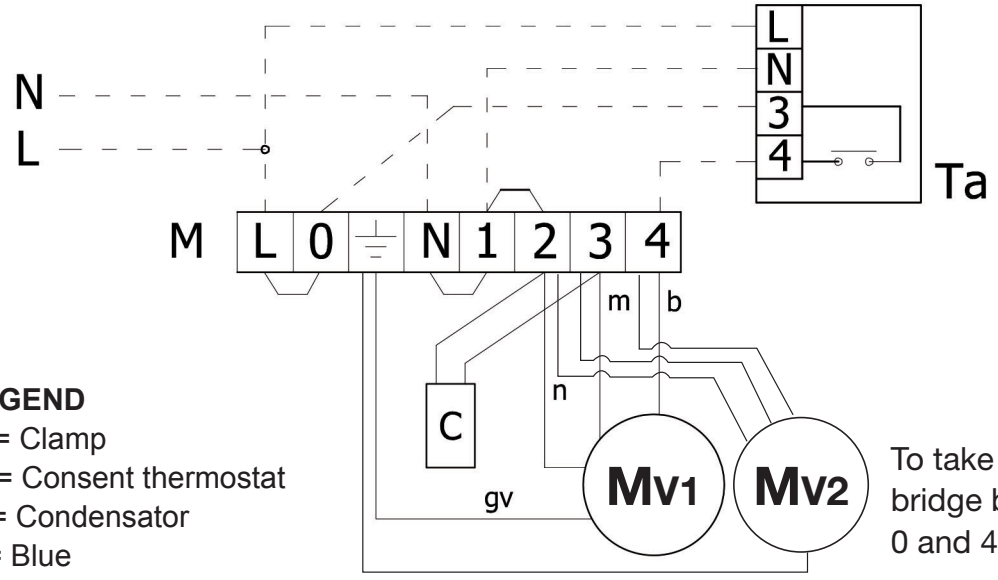



To take off the bridge between 0 and 4

**Connections to be made**.....

**Fig. 12**

**WIRING LC 40 / 56 WITH AMBIANCE**
**THERMOSTAT,**
**SUMMER MODE (VENTILATION ONLY)**




To take off the bridge between 0 and 4

**LEGEND**
M = Clamp
Tr = Consent thermostat
C = Condensator
b = Blue
m = Brown
n = Black
gv = Yellow- green
Mv1 = Motor fan 1
Mv2 = Motor fan 2

**Connections to be made**.....

**Fig. 13**

## *10.0 STARTING*

### 10.1 INSPECTIONS

Before starting operation, make sure that the rules and regulations on the installation of these devices, especially with respect to the correct sizing of the water supply pipes have been complied with.

Before proceeding with the commissioning of the device must ensure that:

- security conditions and all the instructions contained in this manual have been complied with;

- securing the support bracket to the wall is stable and clear zones are free from any obstacle or materials, which hinder the easy accessibility of the apparatus;

- plumbing and electrical connections, with particular attention to the ground, they have been properly executed;

- the devices for loading, unloading and vent the system are in the correct operating conditions and have been adequately controlled;

- was made a thorough bleed air from inside of water pipes and the heat exchanger unit

### 10.2 CHECKS

Dare tensione tramite l'interruttore omnipolare di cui al precedente punto 3.3. Se l'apparecchio è comandato da un termostato ambiente, posizionare il dispositivo di regolazione dello stesso sul valore di temperatura che si desidera raggiungere in ambiente e, se il termostato è completo di commutatore delle tre velocità di ventilazione, controllarne il corretto funzionamento.

### 10.3 INFORMAZIONI ALL'UTENTE

Powering through the pole switch referred to in paragraph 3.3. If the unit is controlled by a room thermostat, set the adjustment device of the same on the temperature value you want to achieve in the environment and, if the thermostat is complete switch of the three-speed fan, check its correct functioning.

## *11.0 FAULTS OF OPERATION*

### 11.1 PRELIMINARY CHECKS

Before performing specific tests, make sure:

**A)** power supply is properly connected and any external regulation bodies such as the room thermostat or timer, are operating properly;

**B)** the shut-off valves, mounted on the water pipes, are in the open position.

### 11.2 POSSIBLE DEFECTS

Here are the possible faults with the list of possible causes. In italics are briefly indicated repair or restore operations, which are the responsibility of skilled technical personnel.

### 11.3 FANS DO NOT WORK

**A)** The control systems and external control of the equipment are dead (thermostats, on / off and the like);

- ***Verify correct operation.***

**B)** The connection of power cables fan is damaged or broken;

- ***Restore the wiring correctly. Verify that the motor is not burned and in case replace it.***

### 11.4 LOSS OF WATER FROM THE BATTERY

**A)** Water connections are not made correctly;

- ***Restore the hydraulic connections ensuring the tightness of suitable materials.***

**B)** The exchanger has corrosion and / or lost estate;

- ***Replace the heat exchanger with a new one, still looking for any external cause of the problem (presence of corrosive atmosphere or aggressive substances in the environment)***

### 11.5 FAN STOPS EVEN IN THE SITUATION OF OPERATING REQUESTA)

The motor thermal protection activated

- ***Verify, through the use of an ammeter, that the absorptions of the motor does not move too much from the rated values, identify the cause of overheating and possibly replace the fan.***

### 11.6 NOISE OR VIBRATIONS DURING OPERATION

**A)** The fan is noisy and / or vibrating

- ***Check the correct rotation of the fan blades and the presence of possible frictions. Remove any dust deposits. Check the tightening of the screws that secure the motor to the grid and the grid itself appliance.***

## *12.0 REPLACEMENT PARTS*

**For the replacement of components is required specific technical skills, so it is recommended to alert the user to always contact an authorized Technical Service Centre.**

**For safety and quality reasons, it is recommended to be used for replacement original spare parts.**

**WARNING! All these operations must be performed with the off device, excluding power supply.**

### 12.1 REPLACING FAN

Disconnect electrical connection of the fan from the terminal board located in the electrical panel of the unit heater. Unscrew the four screws holding the fan grille to the rear panel of the unit heater. Remove the unit and release the fan from the grid by removing the four screws. Clean the grill from deposits of dust and staring at the new fan, taking care to use the original screws, since the thread depth greater than 5 mm could damage the engine.

Reinsert the fan - grid in the seat and fasten with screws interposing full of spacer grommets.

Restore the electrical connection taking care to respect the original connection to the circuit diagram.

**WARNING! To find additional information about components, please contact:**

**A2B Accorroni E.G. LTD - Phone 071-723991**

## *13.0 MAINTENANCE*

### 13.1 MOTORS

The engines are fitted with permanently lubricated bearings. Therefore they do not need special maintenance.

### 13.2 BATTERIES

Once a year, before the season of use, clean the fins of the batteries with compressed air.

### 13.3 FANS

Clean the fans from any dust deposits. No other maintenance is required.

**WARNING! The operations described below must be performed with the off device, excluding power supply.**

### 13.4 ROUTINE MAINTENANCE

It is recommended to perform the beginning of each operating season the following steps:

**A)** Simply clean the outside with a damp cloth;

**B**) Clean with the help of a brush or of a jet of compressed air the dust deposits from the battery fins and from the grid of the fan inlet;**C)** verificare che il foro di scarico condensa sia libero da qualsiasi elemento intasante, che possa impedire il corretto deflusso della condensa;

### 13.5 ANNUAL INSPECTION

In order to minimize the possibility of failures and maintain the perfect efficiency of the heater, it is advisable to perform at least once a year a general check.

# DECLARATION OF CONFORMITY '

**Supplier: A2B Accorroni E.G. Ltd.**
**Address: 60027 Osimo (AN) - Via D'Ancona, 37**
**Tel 071/723991 - Fax 071/7133153**

**Equipment: air heater LC**

With reference to the equipment in question in the wall unit heaters versions in horizontal projection for the heating of buildings by means of liquid water type, A2B Accorroni E.G. Ltd.

**DECLARES**

that the product

- It complies with the safety provisions of electric appliances for household or similar use - General requirements EN 60335-1 (2002) (+ A1 + A1 / Ec + A2 + A11 + A12 + A13);
- It complies with the safety of electrical appliances for household or similar use - Part 2: Particular requirements for heat pumps, air conditioners, dehumidifiers EN 60335-2-40 (2005-06) (+ A1);
- It complies with the methods of measurement of radio disturbance characteristics of electrical equipment, and similar power or thermal, tools and electrical appliances EN 55014-1 (2006);
- Complies with the measurement methods for electromagnetic fields of electrical appliances for household and similar with regard to human exposure EN 62233 (2008-04) (+ A1);
- Complies with the electromagnetic compatibility requirements (EMC) Part 3: Limits - Section 2: Limits for harmonic current emissions (equipment input current <16 A EN 61000-3-2 (2006) (+ A1 + A2) ;
- It complies with the electromagnetic compatibility requirements (EMC) Part 3: Limits - Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <16 A EN 61000-3-3 (1995 ) (+ A1);
- Complies with the immunity requirements for household appliances, tools and similar electrical appliances.

and correspond to the directive on construction products and meet the requirements of the following directive:

- ATEX 94/9 / EC 2006/42 / EC 2006/95 / EC 2004/108 / EC 93/68 / EEC 92/31 EEC

**Osimo, September 2010**
**A2B Accorroni E.G. Ltd.**

CE

**The Legal Representative**
**Altamura Lorenza**

ALTamura Lorenza

A2B Accorroni E.G. s.r.l.
Via d'Ancona, 37 - 60027 Osimo (An) - Tel. 071.723991 r.a. - Fax 071.7133153
web site: www.accorroni.it - e-mail: a2b@accorroni.it