

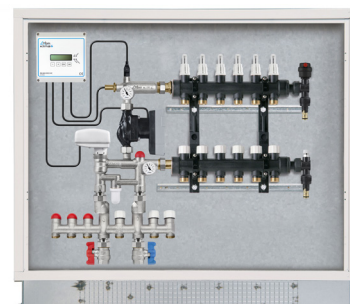
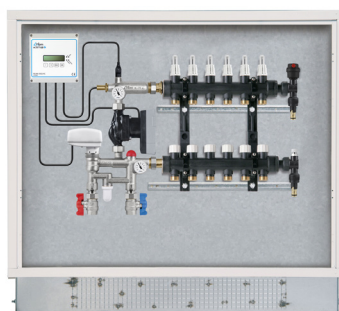
Rev. 05/2023

## **KILMA BASIC 2**

Distribution module for radiant heating/cooling systems

# KILMA BASIC 2

Distribution module for radiant heating/cooling systems



## PRODUCTION RANGE

	Code KILMA BASIC 2(*)	Code KILMA BASIC 2 H.T. (*)	Size	No. of branches L.T. manifold
Modulating adjustment	3691.02.60	3691.02.70	1"	2x2
	3691.03.60	3691.03.70	1"	3x3
	3691.04.60	3691.04.70	1"	4x4
	3691.05.60	3691.05.70	1"	5x5
	3691.06.60	3691.06.70	1"	6x6
	3691.07.60	3691.07.70	1"	7x7
	3691.08.60	3691.08.70	1"	8x8
	3691.09.60	3691.09.70	1"	9x9
	3691.10.60	3691.10.70	1"	10x10
	3691.11.60	3691.11.70	1"	11x11
	3691.12.60	3691.12.70	1"	12x12
	3691.13.60	3691.13.70	1"	13x13
	3691.14.60	3691.14.70	1"	14x14

(\*) For all control units in the table, a **FLUSH WALL** version is available by adding **FP** to the end of each single code (e.g. code: **3691.xx.60FP**)

## DESCRIPTION

**Kilma Basic 2** is a distribution module pre-assembled in flush wall mounted kit suitable for hydronic heating and cooling circuits.

The distribution module is already equipped with **Kilma-Evo 2 HC** regulation integrated in the box.

### PURPOSE

**Kilma Basic 2** is a **complete** single-zone system **that allows:**

- The correction of the flat's radiant circuit water supply temperature;
- The pumping and distribution of the flat's radiant system;
- Room temperature control (\*);
- The control of relative humidity and dew temperature (\*\*) through the activation of special dehumidifiers;

The **Kilma Basic 2** radiant climatisation system also allows coupling to any other hot and cold production system, may it be autonomous or centralised.

The H.T. version is also equipped with three connections for the supply of thermostatically-controlled high-temperature terminals.

### COMPOSITION

The **Kilma Basic 2** module comes pre-assembled and pre-wired, in a dedicated kit for recessed installation. For details of the components that make up the module, refer to the "Module composition" section of this data sheet (p. 8).

### USE

The **Kilma Basic 2** module is the answer to the typical plant engineering requirements of radiant heating and cooling systems serving small and medium-sized residential flats.

Limitations: As a single-zone system, this solution can be applied under the following conditions:

- The rooms to be treated with radiant air conditioning must be interconnected by (non-sealed) doors and arranged on a single floor.
- The total surface area of the rooms to be treated should, if possible, not exceed 100 m<sup>2</sup>.
- In rooms subject to summer air conditioning (not directly controlled by temperature and humidity probes) frequent and prolonged crowding must be avoided, and the infiltration of humid outside air must also be contained. For this reason it is necessary that these rooms have no openings to the outside (chimneys, hoods, etc.).

If the rooms being treated do not comply, even partially, with these requirements, it will be necessary to use a multi-zone radiant air-conditioning system (e.g. **Kilma Easy 2** - which can be implemented using **Kilma Set 2** controllers).

(\*) only in combination with thermostats, programmable thermostats, programmable thermal humidistats or RBM room probes (e.g. Umiclima, TA, THB).

(\*\*) only in conjunction with RBM programmable thermostats or room probes (e.g. Umiclima, THB).

## CONSTRUCTION FEATURES

<b>Components</b>	Nickel-plated brass / Polymer
<b>L.T. manifold branch connections</b>	G 3/4" Euroconus
<b>H.T. manifold branch connections</b> (only for Kilma Basic 2 H.T. version)	G 3/4" Euroconus
<b>Connections on system side</b> (Kilma Basic 2 version)	Female G 3/4" - centre distance 111 mm
<b>Connections on system side</b> (Kilma Basic 2 H.T. version)	Female G 3/4" - centre distance 90 mm

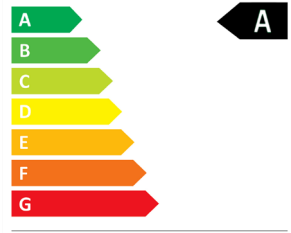
## TECHNICAL FEATURES

<b>Allowed fluid</b>	Water, Water + glycol 30%
<b>Primary fluid temp.</b>	+7° C - 95 °C
<b>Ambient temp. (*)</b>	5°- 50°C   Manifold 5°- 80°C   Controller -40°- 50°C
<b>Max. operating pressure</b>	Hydraulic unit and manifold 8 bar (800kPa) - Circulator 6 bar (600kPa)
<b>Supply voltage</b>	230V 50Hz
<b>Max. absorbed power</b>	102 W
<b>Modulating mixing valve</b>	24V AC power supply - 0-10V signal

(\*) with fluid temperature not above 95°C

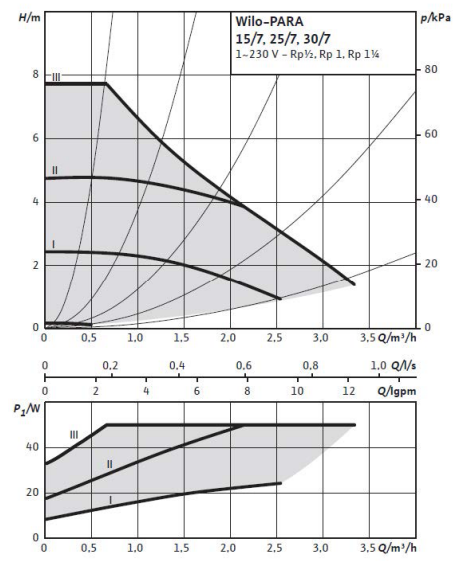
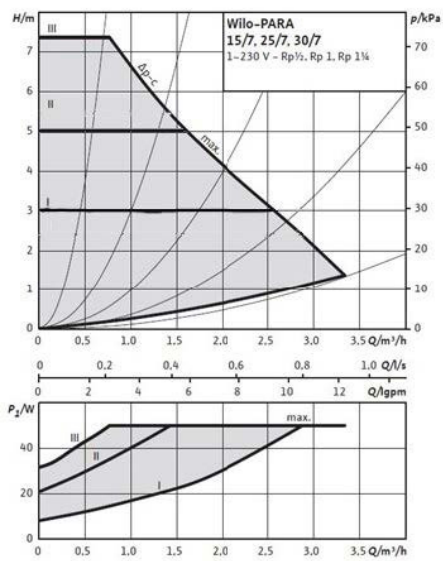
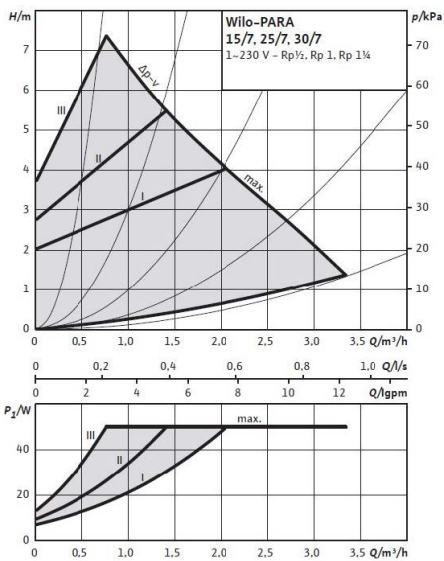
# CIRCULATOR PERFORMANCE

## CIRCULATOR WILO PARA 15/7 SC (CODE 1614.06.02)

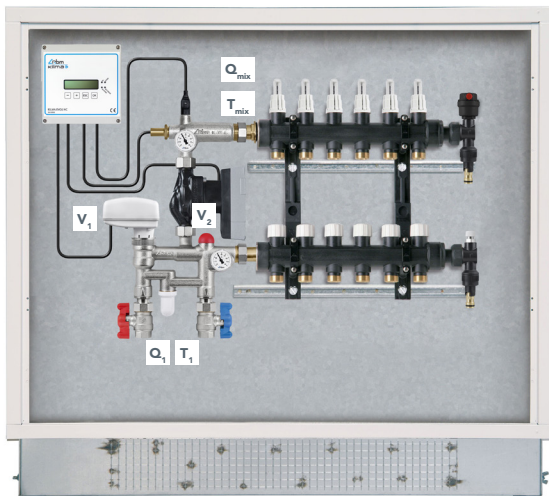


Description	Value						
Power supply	230 V 50/60 Hz						
Engine Characteristics	<table border="1"> <thead> <tr> <th>I [A]</th> <th>P1max [W]</th> <th>Speed [Rpm]</th> </tr> </thead> <tbody> <tr> <td>0.07 – 0.43</td> <td>8.2 - 50</td> <td>2500 - 4700</td> </tr> </tbody> </table>	I [A]	P1max [W]	Speed [Rpm]	0.07 – 0.43	8.2 - 50	2500 - 4700
I [A]	P1max [W]	Speed [Rpm]					
0.07 – 0.43	8.2 - 50	2500 - 4700					
Efficiency degree	EEl < 0.20						
Insulation class	Class F						
Protection rating	IPX4D						
Nominal pump pressure	PN6						

### FLUID DYNAMICS FEATURES



**PERFORMANCE MEASURED WITH VALVE V<sub>1</sub>  
IN MAXIMUM SPILLOVER CONDITION  
IN TOTAL OPENING**



- Q<sub>mix</sub>** Total flow rate of utility circuits
- T<sub>mix</sub>** Delivery fluid temperature to utility circuits
- Q<sub>1</sub>** Maximum spillover flow rate from the primary supply circuit
- T<sub>1 min</sub>** Minimum temperature of supply primary circuit delivery fluid in heating mode
- T<sub>1 max</sub>** Maximum temperature of supply primary circuit delivery fluid in cooling mode

**Δp utility=1.0 m.w.c. (circuit + manifold)**

Speed circulator	Lockshield valve V2 [Opening revs]	Q <sub>mix</sub> [l/h]	Q <sub>1</sub> [l/h]	Heating T <sub>1 min</sub> (T <sub>max</sub> =35°C-ΔT=8 °C)	Heating T <sub>1 min</sub> (T <sub>max</sub> =40°C-ΔT=8 °C)	Heating T <sub>1 min</sub> (T <sub>max</sub> =45°C-ΔT=8 °C)	Cooling T <sub>1 max</sub> (T <sub>max</sub> =17°C-ΔT=3 °C)	Cooling T <sub>1 max</sub> (T <sub>max</sub> =16°C-ΔT=3 °C)	Cooling T <sub>1 max</sub> (T <sub>max</sub> =15°C-ΔT=3 °C)
<b>1</b>	1	<b>627</b>	477	37.5	42.5	47.5	16.1	15.1	14.1
	2	<b>712</b>	467	39.2	44.2	49.2	15.4	14.4	13.4
	4	<b>860</b>	437	42.7	47.7	52.7	14.1	13.1	12.1
	6	<b>1155</b>	359	52.7	57.7	62.7	10.3	9.3	8.3
	7 ¾	<b>1295</b>	317	59.7	64.7	69.7	7.7	6.7	5.7
<b>2</b>	1	<b>1113</b>	879	37.1	42.1	47.1	16.2	15.2	14.2
	2	<b>1247</b>	859	38.6	43.6	48.6	15.6	14.6	13.6
	4	<b>1490</b>	787	42.1	47.1	52.1	14.3	13.3	12.3
	6	<b>1882</b>	653	50.1	55.1	60.1	11.4	10.4	9.4
	7 ¾	<b>2041</b>	576	55.3	60.3	65.3	9.4	8.4	7.4
<b>3</b>	1	<b>1310</b>	1030	37.2	42.2	47.2	16.2	15.2	14.2
	2	<b>1425</b>	974	38.7	43.7	48.7	15.6	14.6	13.6
	4	<b>1637</b>	890	41.7	46.7	51.7	14.5	13.5	12.5
	6	<b>1926</b>	685	49.5	54.5	59.5	11.6	10.6	9.6
	7 ¾	<b>2078</b>	601	54.7	59.7	64.7	9.6	8.6	7.6

**Δp utility=2.0 m.w.c. (circuit + manifold)**

Speed circulator	Lockshield valve V2 [Opening revs]	$Q_{mix}$ [l/h]	$Q_1$ [l/h]	Heating $T_1$ min ( $T_{min}=35^{\circ}\text{C}-\Delta T=8^{\circ}\text{C}$ )	Heating $T_1$ min ( $T_{min}=40^{\circ}\text{C}-\Delta T=8^{\circ}\text{C}$ )	Heating $T_1$ min ( $T_{min}=45^{\circ}\text{C}-\Delta T=8^{\circ}\text{C}$ )	Cooling $T_1$ max ( $T_{min}=17^{\circ}\text{C}-\Delta T=3^{\circ}\text{C}$ )	Cooling $T_1$ max ( $T_{min}=16^{\circ}\text{C}-\Delta T=3^{\circ}\text{C}$ )	Cooling $T_1$ max ( $T_{min}=15^{\circ}\text{C}-\Delta T=3^{\circ}\text{C}$ )
<b>1</b>	1	<b>232</b>	165	38.2	43.2	48.2	15.8	14.8	13.8
	2	<b>288</b>	163	41.1	46.1	51.1	14.7	13.7	12.7
	4	<b>373</b>	140	48.3	53.3	58.3	12.0	11.0	10.0
<b>2</b>	1	<b>925</b>	735	37.1	42.1	47.1	16.2	15.2	14.2
	2	<b>1032</b>	710	38.6	43.6	48.6	15.6	14.6	13.6
	4	<b>1243</b>	667	41.9	46.9	51.9	14.4	13.4	12.4
	6	<b>1655</b>	563	50.5	55.5	60.5	11.2	10.2	9.2
	7 ¾	<b>1857</b>	508	56.2	61.2	66.2	9.0	8.0	7.0
<b>3</b>	1	<b>1196</b>	943	37.1	42.1	47.1	16.2	15.2	14.2
	2	<b>1297</b>	897	38.6	43.6	48.6	15.7	14.7	13.7
	4	<b>1488</b>	802	41.8	46.8	51.8	14.4	13.4	12.4
	6	<b>1811</b>	623	50.3	55.3	60.3	11.3	10.3	9.3
	7 ¾	<b>1960</b>	548	55.6	60.6	65.6	9.3	8.3	7.3





**Δp utility=3.0 m.w.c. (circuit + manifold)**

Speed circulator	Lockshield valve V2 [Opening revs]	Q <sub>mix</sub> [l/h]	Q <sub>1</sub> [l/h]	Heating T <sub>1</sub> min (T <sub>max</sub> =35 °C-ΔT=8 °C)	Heating T <sub>1</sub> min (T <sub>max</sub> =40 °C-ΔT=8 °C)	Heating T <sub>1</sub> min (T <sub>max</sub> =45 °C-ΔT=8 °C)	Cooling T <sub>1</sub> max (T <sub>min</sub> =17 °C-ΔT=3 °C)	Cooling T <sub>1</sub> max (T <sub>min</sub> =16 °C-ΔT=3 °C)	Cooling T <sub>1</sub> max (T <sub>min</sub> =15 °C-ΔT=3 °C)
<b>2</b>	1	<b>720</b>	549	37.5	42.5	47.5	16.1	15.1	14.1
	2	<b>808</b>	539	39.0	44.0	49.0	15.5	14.5	13.5
	4	<b>977</b>	505	42.5	47.5	52.5	14.2	13.2	12.2
	6	<b>1296</b>	423	51.5	56.5	61.5	10.8	9.8	8.8
	7 ¾	<b>1466</b>	383	57.6	62.6	67.6	8.5	7.5	6.5
<b>3</b>	1	<b>1085</b>	860	37.1	42.1	47.1	16.2	15.2	14.2
	2	<b>1170</b>	806	38.6	43.6	48.6	15.6	14.6	13.6
	4	<b>1329</b>	709	42.0	47.0	52.0	14.4	13.4	12.4
	6	<b>1604</b>	543	50.6	55.6	60.6	11.1	10.1	9.1
	7 ¾	<b>1716</b>	469	56.3	61.3	66.3	9.0	8.0	7.0

\* The data given depend on the test conditions and are only intended to provide the technician with a quick reference for matching the component to the size of the heating system. This suggestion can be used, for example, at the estimate stage in the absence of specific

data, or when drawing up estimative metric calculations. The values shown are not binding and do not represent the performance limits of the components.

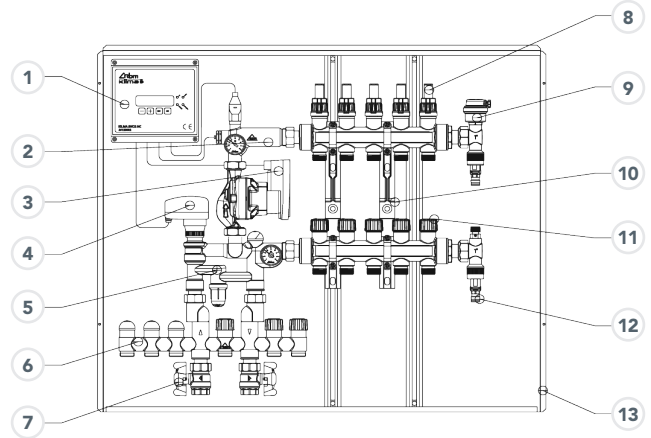
**MAIN ACCESSORIES**

Product	Code	Description
	<b>3502.00.12</b>	ETP probe for external temperature only
	<b>910.06.00</b>	By-pass group with swivel elbow fittings for system filling
	<b>306.00.02 (2 wires)</b>	Thermo-electrically controlled actuator for thermostatically-controlled valve. 230 Vac power supply
	<b>306.00.42 (4 wires)</b>	Thermo-electrically controlled actuator for thermostatically-controlled valves. 24 Vac power supply
	<b>306.00.12 (2 wires)</b>	Thermo-electrically controlled actuator for thermostatically-controlled valves. 24 Vac power supply
	<b>306.00.52 (4 wires)</b>	Thermo-electrically controlled actuator for thermostatically-controlled valves. 24 Vac power supply
	<b>3705.00.02</b>	Specific insulation casing for mixing valve, circulator and well
	<b>3705.00.12</b>	Specific insulation casing for A.T. manifold.

## MODULE COMPOSITION

The **Kilma Basic 2** kit distribution module comes complete with the following pre-assembled and electrically pre-wired components:

- 1 Kilma EVO 2 HC electronic controller
- 2 Delivery probe with thermowell
- 3 Circulation pump with variable capacity
- 4 Modulating actuator
- 5 Mixing unit with by-pass
- 6 High-temperature manifold (Kilma Basic2 H.T. version)
- 7 Shut-off ball valves
- 8 Flow meter with lockshield valve function and flow rate indicator, for delivery
- 9 Air and water automatic discharge terminal unit
- 10 Polymer manifold kit (2 to 14-way) including brackets
- 11 Thermostatically controlled return valves
- 12 Air and water manual discharge terminal unit
- 13 Metal housing box, inspectionable, also available with flush-wall lid



## MODULAR DISTRIBUTION CONTROL UNIT COUPLING HT + LT / HOUSING BOXES

### COMPOSITION WITH RELIEF VALVES

#### Number of LT manifolds

2      3      4      5      6      7      8      9      10      11      12      13      14



Box L = 800  
code **9241.005**

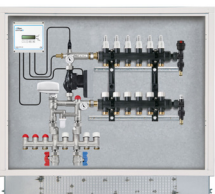
Box L = 1000  
code **9242.005**

Box L=1200  
code **9243.005**

### COMPOSITION WITH BY-PASS UNIT

#### Number of LT manifolds

2      3      4      5      6      7      8      9      10      11      12      13      14



Box L = 800  
code **9241.005**

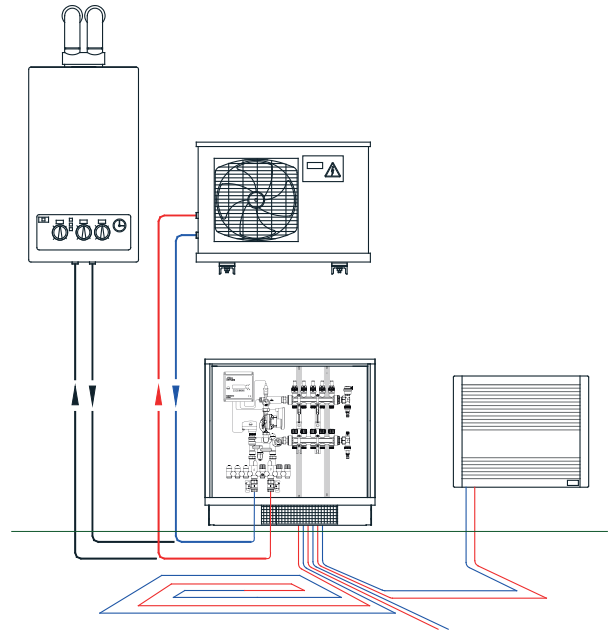
Box L = 1000  
code **9242.005**

Box L=1200  
code **9243.005**

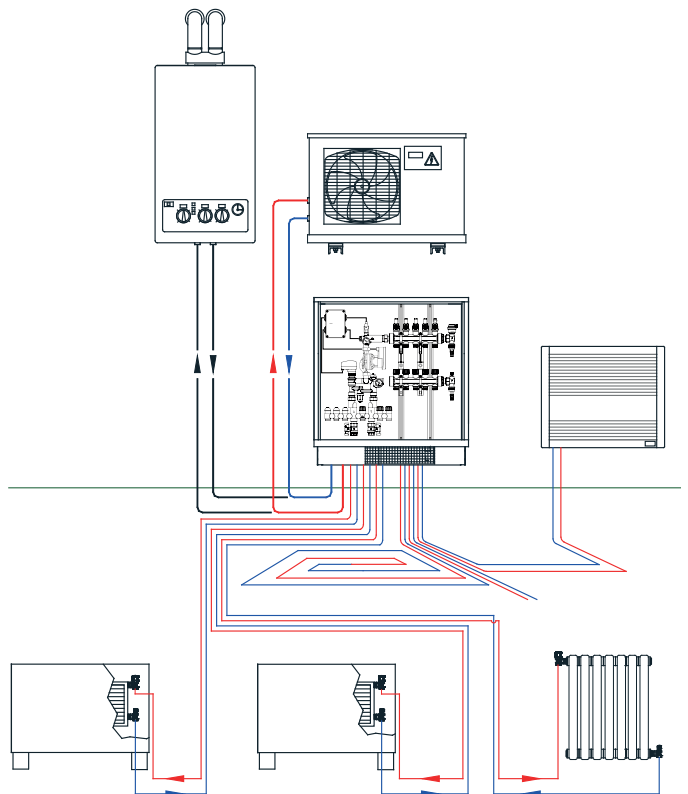
Box not available

## APPLICATIONS

Here is a diagram of a possible use of the **Kilma Basic 2** module in a hot and cold production system.



Here is a diagram of a possible use of the **Kilma Basic 2 H. T.** module in a hot and cold production system.



## AUXILIARY COMPONENTS\*



### EXTERNAL TEMPERATURE PROBE:

Prepared for wall mounting.  
Setting range -30 / 85 °C  
Probe/controller distance max 200 m



### KILMA DEHUMIDIFIERS AND AIR-CONDITIONING UNITS (DEW/DEU):

#### Isothermal dehumidifiers / Air conditioning units:

The control can be operated directly from the Kilma EVO HC controller



### TEMPERATURE PROBE AND HUMIDITY PROBE:

#### Ambient probes to control:

- Temperature only (**T°amb**)
- Temperature and Humidity (**T°HB**)



### PROGRAMMABLE THERMO-HUMIDISTAT AND HUMIDISTAT:

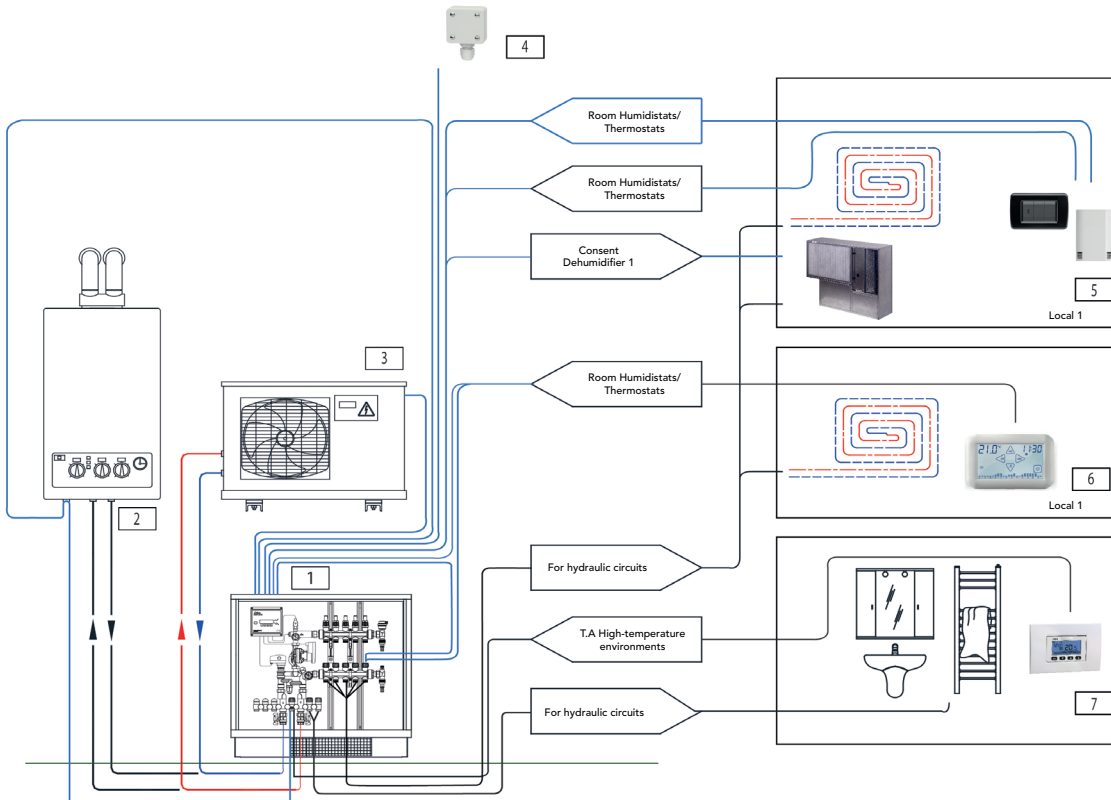
#### Ambient probes to control:

- Temperature and humidity (**UMICLIMA**)
- Humidity (**UMIDAY**)

\* This paragraph is merely a reminder of the products that can be used with the Kilma Basic 2 module. For the complete product range refer to the RBM catalogue - chapter ON Climate Comfort.

## AUXILIARY COMPONENTS APPLICATIONS

### INDIRECT CONTROL OF OTHER SERVED ROOMS FROM HIGH AND LOW TEMPERATURE CIRCUITS



### Example of Kilma Basic 2 system architecture:

- 1 Module **KILMA BASIC 2**
- 2 Heat generator / Boiler
- 3 Heat pump
- 4 External temperature probe
- 5 Programmable thermo-humidistat **UMICLIMA** / humidistat **UMIDAY**
- 6 Recessed or wall-mounted programmable thermostats

## INSTALLATION - EXTERNAL PROBE AND THERMOSTATS POSITIONING

### REGULATION AND CONTROL DEVICES: MECHANICAL ROOM THERMOSTATS

#### WARNING BEFORE INSTALLATION



The installation must be done **only by professionally qualified personnel**, in compliance with applicable laws and regulations.



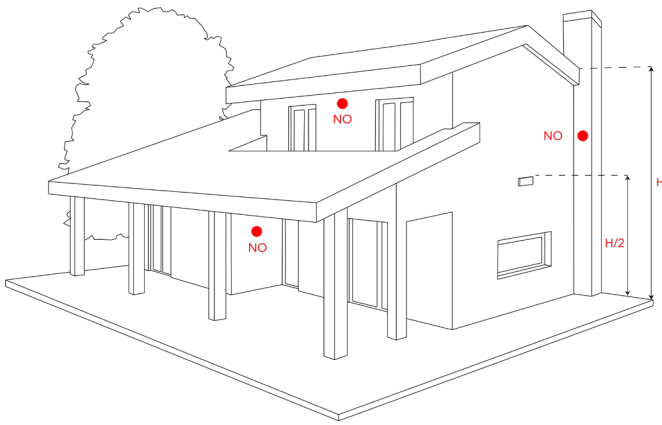
During electrical wiring connections, ensure that the electrical power supply has been deactivated.



**Due to the presence of hot fluids** it is also possible to get burns through contact: before performing any maintenance work, adequately cool the internal components by closing the water shut-off valves of the heat-carrying fluid circuit.

Also take all the protective precautions necessary to reduce the chances of injury.

#### EXTERNAL THERMAL PROBE



In the figure all the possible installation conditions are illustrated.

The thermal sensor must be installed on the **North, North-West** façade of the building.

The minimum installation height shall not be less than **2.5 metres** from the reference street level of the building façade.

Where possible, installation at a height equal to half the height of the heated building is correct.

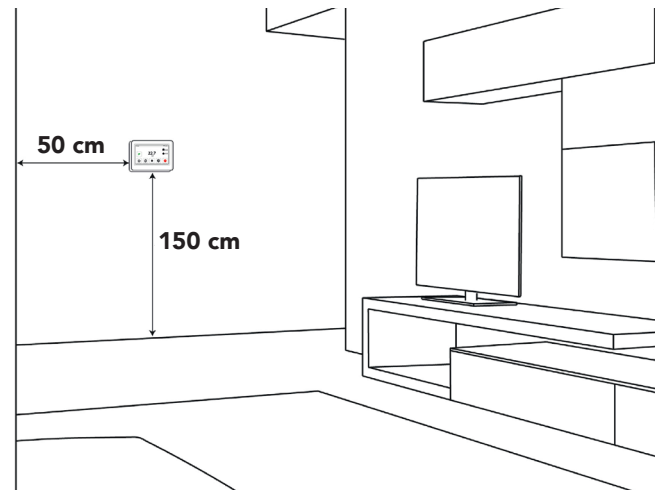
The device must be positioned away from **any heat sources** (flues), away from doors, terraces and attics and in any case where **air is likely to stagnate**.

#### ROOM THERMOSTATS-PROGRAMMABLE THERMOSTATS

The figures below illustrate the possible installation conditions.

The recommended installation height should be about **1.5 metres** from the floor and the distance from the adjoining wall should not be less than **0.5 metres** to avoid areas of probable air stagnation.

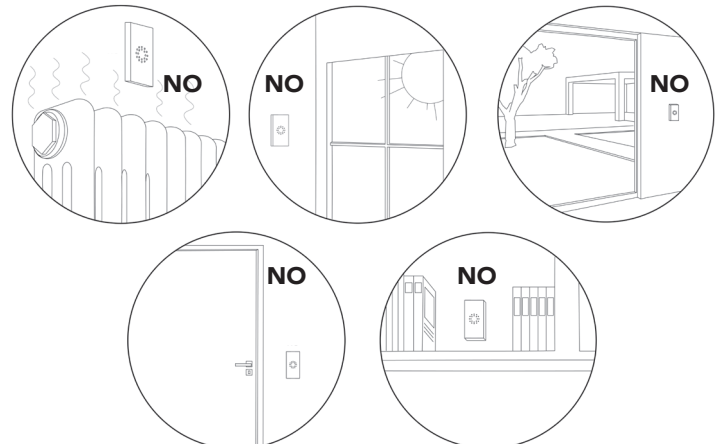
The positioning of the room thermostat-programmable thermostat must be performed in a way that its location may be accessible by the operator both for vision and for regulation.



**Care must also be taken to ensure that the survey is not subject to direct and indirect influences of any disturbances.**

It shall therefore normally be necessary to exclude the following installations:

- in proximity of heat sources
- on an internal wall irradiated by the sun
- on a wall in direct contact with the exterior
- in proximity of doors and windows
- separated and obscured by furnishings (furniture, books, etc.)



## ELECTRICAL CONNECTIONS

The connections between the various electrical components in the **Kilma Basic** distribution module (circulator, mixing valve, delivery sensor and limit thermostat - factory wiring), and the system's accessory components (probes, actuators, dehumidifiers, etc.) with the **Kilma Basic 2 HC** controller in the module are shown below.



**During electrical wiring connections, ensure that the electrical power supply has been deactivated.**

**The installation must be done only by professionally qualified personnel, in compliance with applicable laws and regulations.**

The electrical connections shown have the sole purpose of providing the technician with a quick reference for electrically connecting the whole system.

The electrical connections shown are not binding and therefore do not represent the performance limits of the components.

## KILMA EVO 2 HC ELECTRONIC CONTROLLER

### FUNCTIONS

The **Kilma Evo 2HC** controller, according to the factory default configuration, can manage:

- Changing Season and On/Standby from remote control
- The demand for delivery control operation from additional hot/cold zones
- The demand for dehumidification operation 1 from additional hot/cold zones
- The summer (dew point) and winter (climatic curve) system delivery set-point via probes and mixing unit
- Mix valve control
- Circulation pump operation

- Dehumidifier actuator(s) operation (other dehumidifiers can only be controlled in parallel)
- Dehumidifier operation
- Primary operation (boiler/chiller)
- Automatic exclusion of heating-only zones.
- Delivery temperature, probes, diagnostics alarm functions.

**For further configurations / functions, please refer to the diagrams in the Kilma EVO 2 HC controller manual.**

### ELECTRONIC MODULATING CONTROL UNIT FOR MODULATING CONTROL (CODE 3612.00.02)



Description	Value
Supply voltage	230V – 50Hz
Consumption	15 W
Electrical protection rating	IP 55
Operating temperature	0-40°C
Output signal for modulating valve	24Vac

### THREE-POINT SERVO CONTROL FOR VARIABLE POINT REGULATION (CODE 804.10.05)



Description	Value	Unit of measure
Nominal voltage	24V AC	AC/DC
Power absorbed	1.5	W
	2.5	VA
Time for 180° rotation	8	s/mm
Ambient temperature	0 - 50	°C
Electrical protection rating	IP43	-

# LH TERMINAL BOARD

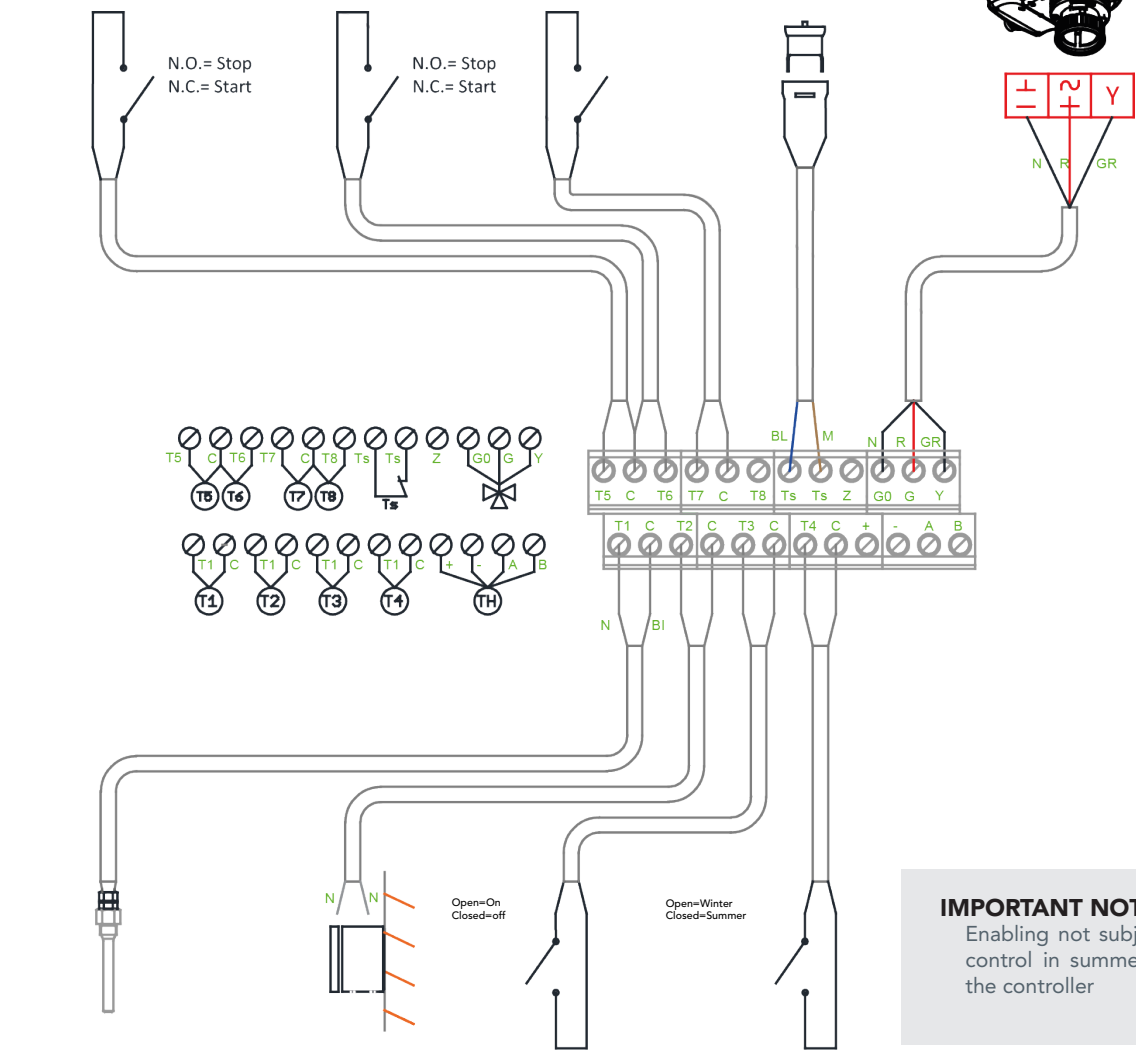
Input  
REGULATION  
OPERATION terminal  
boards T5-C (from  
umiclina amb.  
thermostat (CH1)/remote  
zone actuator limit switch  
cumulative\*

Input  
START  
DEHUMIDIFIER1  
T6-C terminal boards  
(from  
CH2 umiclina  
ambient contact)

Possible  
alarm  
DEW  
T7-C terminal  
boards  
(optional)

Delivery  
Safety Thermostat  
TS-TS terminal boards  
(FACTORY WIRING)

MIX Valve Output  
(0-10V ~ 24V AC)  
(FACTORY WIRING)



Delivery  
Probe  
NTC  
T1-C terminal boards  
(FACTORY WIRING)

External  
Probe  
NTC  
code 3502-00-12  
T2-C terminal boards  
(OPTIONAL)

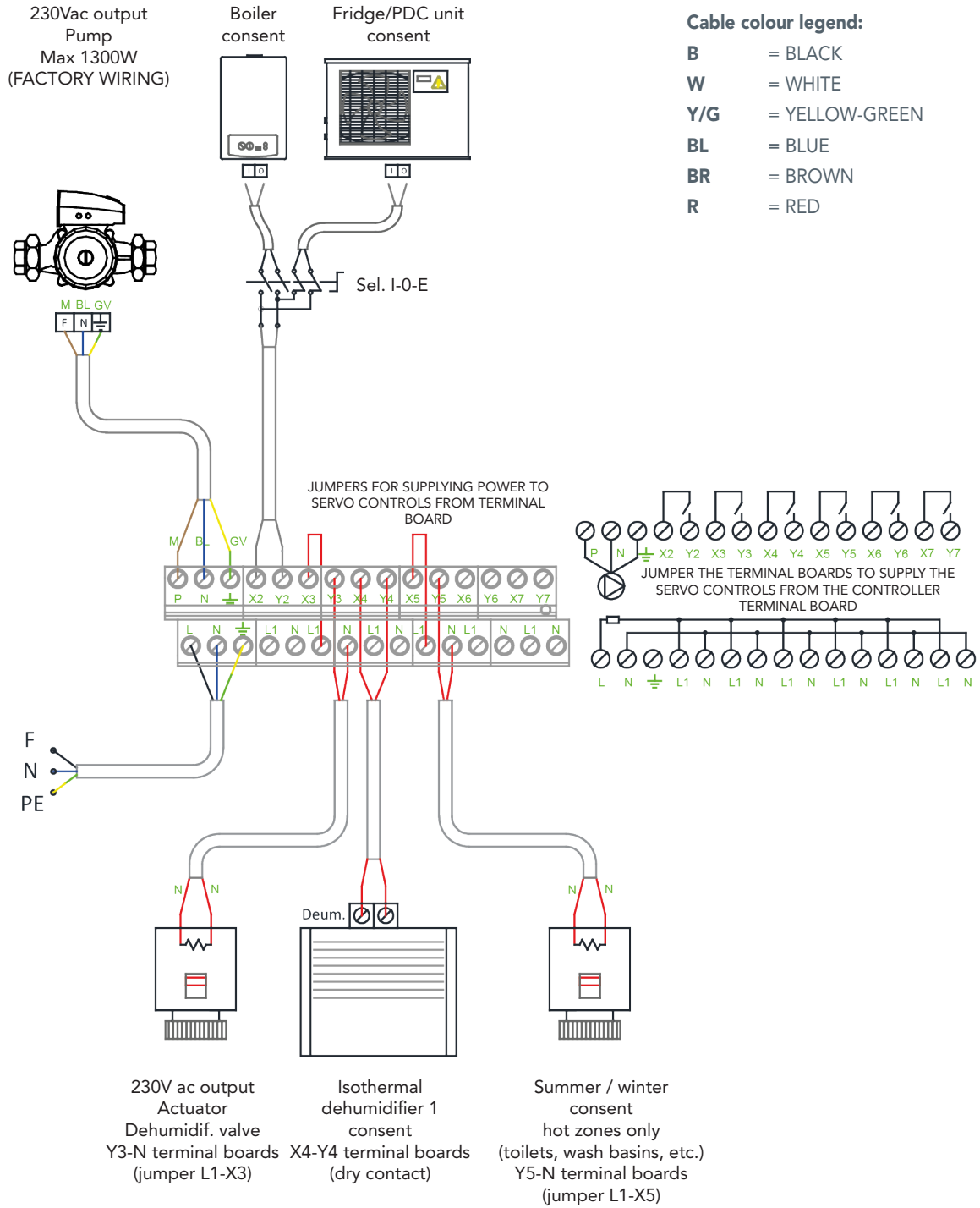
Remote  
STAND-By  
input  
T3-C terminal boards  
(OPTIONAL)

Input  
Summer/Winter from  
remote control of  
T4-C terminal boards  
(OPTIONAL only for  
summer/winter air  
conditioning systems)

**IMPORTANT NOTE**  
Enabling not subject to dew  
control in summer mode by  
the controller



# RH TERMINAL BOARD



## GENERAL WARNINGS




### THE IDENTIFICATION OF THE PRODUCT AND THE MANUFACTURER

Correct product identification is very important over time: it ensures that the manufacturer can provide the user with the required technical information quickly and safely and facilitates spare parts management. The identification medium is the nameplate on all **Kilma Basic 2** models.

As is clearly visible in the figure opposite (facsimile of the product identification plate), the plate contains the data to be mentioned to the installation company or, if necessary, to the manufacturer.

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**Tel.: +(39) 030-25.37.211, Fax: +(39) 030-25.31.798**

This plate is the only one recognised by the manufacturer as a means of identifying the product: **the supports required to identify the machine must therefore not be tampered with, damaged or removed.**

   <small>RBM S.p.A. - 25075 Nave - (Brescia) Italy  Via S. Giuseppe, 1  Tel. +039 030 2537211 - Fax +39 030 2531798</small>	<b>KILMA MODEL</b> YEAR - FRESHMAN	
	<b>MINIMUM PROTECTION</b> POWER SUPPLY ELECTRICAL POWER PRIMARY FLUID TEMP. CIRCUIT CLASS	IP 40 230V 50Hz max 200 W H <sub>2</sub> O < 90°C PN 6

Manufacturer's plate

### DESCRIPTION OF SYMBOLS USED

The symbols below, together with their associated wording, indicate the potential risk arising from failure to comply with the prescription to which they have been combined.



**Warning.**

Warns that failure to comply with the requirement entails a risk of damage to the equipment.



**Danger, risk of electric shock.**

Instruction on electrical safety, failure to comply results in impairment of electrical safety.



**Danger.**

Warns that failure to comply with the requirement entails a risk of harm to persons, animals and/or property.

### WARNING BEFORE INSTALLATION



The mixing unit described in this technical data sheet distributes water at a temperature below boiling point at atmospheric pressure.

The mixing unit must be connected to a hot water distribution system for room heating (primary circuit), within the limits of its specifications and capacity.

Before using the machine, read the warnings herein carefully, as they provide important information on safe installation, operation and maintenance.

**It is forbidden to use the equipment for purposes other than those specified.**



**Kilma Basic 2** is supplied with hot water produced by an autonomous or centralised heating system: check that the operating conditions are compatible with the functional characteristics".

Also check that the electrical power supply is adequately protected.

In order to avoid possible deposits and corrosion, the characteristics of the heat-carrying fluid must comply with the requirements of the relevant regulations and in particular with UNI 8065.

(Be reminded that installation must be done only by professionally specialised personnel, in compliance with applicable laws and regulations).



**During the electrical and hydraulic connections, make sure that both the water supply line and the power supply mains have been disconnected.**



Prior to installation, ensure that the electrical system, the hot water supply system (**primary circuit**), the low-temperature heating distribution system (**secondary circuit**) and the high-temperature heating distribution system (if present) have been carried out to professional standard by requesting the respective "**Declaration of Conformity**".

## GENERAL WARNINGS

### FOR SAFE USE



**An incorrect installation can cause damage to persons, animals or property: the manufacturer is not liable for damage caused by installation errors, by failure to comply with these instructions and improper use of the equipment.**



Also note the following:

- wet the equipment and do not install it unprotected, in a damp environment or near jets or splashes of water or other liquids.
- Due to the presence of hot fluids, do not place paper and/or plastic objects on the equipment.
- Packaging parts (plastic bags, expanded polystyrene, etc.) must not be left within the reach of children as they are potential sources of danger.



**The operation** of the control and monitoring equipment as well as the handling of the entire appliance must be prevented by children and incapacitated persons.

**Due to the presence of hot fluids** it is also possible to get burns through contact: before any maintenance work, adequately cool the internal components by closing the water shut-off valves of the primary circuit and letting the fluid recirculate in the secondary circuit. Also take all the protective precautions necessary to reduce the chances of injury.



**Any work** on the electrical and/or hydraulic circuit regarding ordinary or extraordinary maintenance operations must only be carried out by professionally specialised personnel, in compliance with current legislation and regulations: **refrain from intervening personally.**

It is strongly recommended to follow the maintenance instructions for the best operation of the system and, if parts of the machine have to be replaced, to use the original spare parts supplied by the manufacturer.



Before carrying out any cleaning and maintenance work, observe the following requirements:

- **The power supply is switched off.**
- It is very dangerous to operate the machine without any component, especially if this is a safety guard or mechanical and/or electrical safety device.
- It is forbidden to clean, oil or grease moving machine parts and components by hand.
- It is forbidden to carry out any maintenance, adjustment or setting operations on moving parts.
- Under no circumstances may the mixing unit be started up by unqualified personnel, it must be ascertained that maintenance operations have been completed.



**In the event of a fault** or malfunction of the equipment, switch it off, close the shut-off valves of the primary circuit and switch off the power supply.



**Do not tamper with the equipment.**

For reactivation and/or repair, contact the heating system installation company that issued the declaration of conformity, or alternatively contact your local electrical installer if there are no warranty claims.

## MAINTENANCE



**Before carrying out any maintenance work, ensure that both the water supply and the power supply networks are cut off.**

Note, however, that any maintenance operations must only be carried out when the system is stopped and cold and only by professionally specialised personnel, in compliance with current legislation and regulations.

**For the first heating season, a monthly check is advisable; thereafter**, once the phenomenon of 'air' build-up in the pipes and inside the heating system in general has been eliminated, checks can be carried out less frequently **on a quarterly basis.**

When carrying out maintenance work on your heat generator, it is in any case advisable to have the state of preservation and operation of the **Kilma Basic system inspected** by your trusted maintenance technician, remembering to always have this technical documentation **at hand.**

### PERIODIC CHECKS

- Check all threaded joints for dripping or lime deposits. If the finding is positive, replace the gaskets after thoroughly cleaning the seats.
- Check the filling pressure of the heating system according to the specifications of the design engineer and/or installer. In the absence of this information, check that the system's preload pressure (measured with the system cold and switched off) is not lower than the following values:
  - 100 kPa (i.e. 1 bar or approx. 10 m H<sub>2</sub>O) for systems in which the boiler is located on the same floor as the heating system
  - 100 kPa + 10 kPa for each metre of difference in height between the boiler and the system in cases where the boiler is located in rooms below the system being served (e.g. if the difference in height is 3 metres, the preload pressure must not be less than 130 kPa).
- The drain valves must be periodically opened slightly (anticlockwise rotation with a CH18 wrench) in order to drain the fluid for a few moments. This is necessary in order to prevent material deposits from forming over time, which would compromise the proper functioning of the discharge valves and thus the entire system. At the end of this operation, close the open discharge valves and remember to restore the system's pressure.

## CIRCUIT CLEANING

In order to protect the valve seats from impurities in the pipes, it is advisable to fit the primary circuit with a common Y filter, of removable metal mesh.

During routine annual maintenance of the boiler, clean the inner basket and, before putting the basket back in, check the condition of the flat cap gasket and replace it if necessary.



**Before using, checking or maintaining Kilma Basic, read the chapter 'General Warnings' in this manual.**

**Also check the existence of any restrictions on the use and maintenance of the boiler as well as the recommendations issued by the installer when installing the under-floor heating system.**

## SPECIFICATIONS

### SERIES 3691.A (KILMA BASIC 2)

Pre-assembled distribution module in Kilma Basic 2 recessed kit suitable for hot and cold hydronic circuits installed in inspectable metal housing box with metal cover painted white RAL9010 (also available in version with wall flush-mounted cover in paintable MDF for better architectural integration in the flat).

Kit equipped with a mixing unit consisting of a servo-controlled modulating valve and adjustable differential bypass, Kilma Evo 2 HC electronic climate controller, high-efficiency variable-flow circulator  $EI < 0.20$ , NTC delivery sensor in thermowell, and delivery safety thermostat, all pre-assembled and electrically pre-wired.

Pair of delivery and return thermometers on the radiant system side.

Module supplied complete with anti-condensation thermal insulation for metal parts (mixing unit) consisting of polyethylene foam half-shells with scratch-resistant outer coating.

Distribution manifold kit for 1" modular radiant system with several branches (2 to 14 ways) made of technopolymer with high thermal resistance, including support brackets and complete with graduated flow meters (scale 1-4 l/min) on the delivery circuit with the function of circuit balancing lockshield and easy visualisation of the flow rate in circulation and thermostatically-controlled valves on the return. Manifold equipped with filling units complete with automatic air vent/drainage valve already fitted with G1/8" F thread for installation of pressure gauge for system test and operating pressure monitoring (optional by-pass kit available).

There are 2 shut-off ball valves.

The Kilma Evo 2HC controller that KILMA BASIC 2 is equipped with, according to the factory default configuration, allows you to manage:

- Changing Season and On/Standby from remote control
- The demand for delivery control operation from additional hot/cold zones
- The demand for dehumidification operation 1 from additional hot/cold zones
- The summer (dew point) and winter (climatic curve) system delivery set-point via probes and mixing unit
- Mix valve control
- Circulation pump operation
- Dehumidifier actuator(s) operation (other dehumidifiers can only be controlled in parallel)
- Dehumidifier operation
- Primary operation (boiler/chiller)
- Automatic exclusion of heating-only zones.
- Delivery temperature, probes, diagnostics alarm functions. There are 2 shut-off ball valves.

Conditions of use:

Fluid: water \_ water glycol 30%

Fluid temperature: +7°...95 °C,

Ambient temperature (\*): +5°C...+60 °C

Operating pressure: 8 bar hydraulic unit and manifold - 6 bar circulator.

Electrical specifications:

Power supply: 230 V, Frequency: 50 Hz

Max. absorbed power: 87 W

Modulating mixing valve (0-10 V DC), 24V AC power supply.

Dimensional features: Low-temperature manifold connections G3/4" Euroconus, system side connections F G3/4" - input centre distance 111 mm

Box dimensions: h=700-820 mm, W=800/1200 mm, D=110-160 mm.

(\*) with fluid temperature not above 80°C.

Available branches 2+2 - 3+3 - 4+4 - 5+5 - 6+6 - 7+7 - 8+8 - 9+9 - 10+10 - 11+11 - 12+12 - 13+13 - 14+14

## SPECIFICATIONS

### SERIES 3691.B (KILMA BASIC 2 H.T.)

Pre-assembled distribution module in Kilma Basic 2 recessed kit suitable for hot and cold hydronic circuits installed in inspectable metal housing box with metal cover painted white RAL9010 (also available in version with wall flush-mounted cover in paintable MDF for better architectural integration in the flat) complete with junction branches for high temperature hydronic components.

Kit equipped with a mixing unit consisting of a servo-controlled modulating valve and adjustable differential bypass, Kilma Evo 2 HC electronic climate controller, high-efficiency variable-flow circulator EEI<0.20, NTC delivery sensor in thermowell, and delivery safety thermostat, all pre-assembled and electrically pre-wired.

**High-temperature 3x3-way manifold with thermostatically controlled valves on the return and micrometric lockshields on the delivery (to thermostatically-control the high-temperature circuits, suitable RBM 306 series thermo-electric servo controls must be provided)**

Pair of delivery and return thermometers on the radiant system side.

Module supplied complete with anti-condensation thermal insulation for metal parts (mixing unit) consisting of polyethylene foam half-shells with scratch-resistant outer coating.

Distribution manifold kit for 1" modular radiant system with several branches (2 to 14 ways) made of technopolymer with high thermal resistance, including support brackets and complete with graduated flow meters (scale 1-4 l/min) on the delivery circuit with the function of circuit balancing lockshield and easy visualisation of the flow rate in circulation and thermostatically-controlled valves on the return. Manifold equipped with filling units complete with automatic air vent/drainage valve already fitted with G1/8" F thread for installation of pressure gauge for system test and operating pressure monitoring (optional by-pass kit available).

There are 2 shut-off ball valves.

The Kilma Evo 2HC controller that KILMA BASIC 2 is equipped with, according to the factory default configuration, allows you to manage:

- Changing Season and On/Standby from remote control
- The demand for delivery control operation from additional hot/cold zones
- The demand for dehumidification operation 1 from additional hot/cold zones
- The summer (dew point) and winter (climatic curve) system delivery set-point via probes and mixing unit
- Mix valve control
- Circulation pump operation
- Dehumidifier actuator(s) operation (other dehumidifiers can only be controlled in parallel)
- Dehumidifier operation
- Primary operation (boiler/chiller)
- Automatic exclusion of heating-only zones.
- Delivery temperature, probes, diagnostics alarm functions. There are 2 shut-off ball valves.

Conditions of use:

Fluid: water \_ water glycol 30%

Fluid temperature: +7°...95 °C,

Ambient temperature (\*): +5°C...+60 °C

Operating pressure: 8 bar hydraulic unit and manifold - 6 bar circulator.

Electrical specifications:

Power supply: 230 V, Frequency: 50 Hz

Max. absorbed power: 95 W

Modulating mixing valve (0-10 V DC), 24V AC power supply.

Dimensional features: G3/4" Euroconus low temperature manifold connections,

Thermostatically controlled high temperature manifold: 45 mm centre distance between branches - G3/4" Euroconus - Primary system side connections F G3/4" - input centre distance 90 mm

Box dimensions: h=700-820 mm, W=800/1200 mm, D=110-160 mm.

(\* ) with fluid temperature not above 80°C.

Available branches:

Low temperature 2+2 - 3+3 - 4+4 - 5+5 - 6+6 - 7+7 - 8+8 - 9+9 - 10+10 - 11+11 - 12+12 - 13+13 - 14+14

High temperature 3+3

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