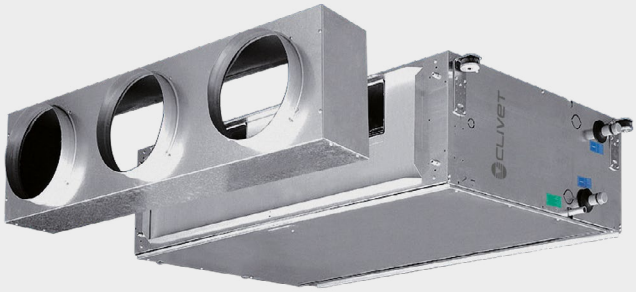
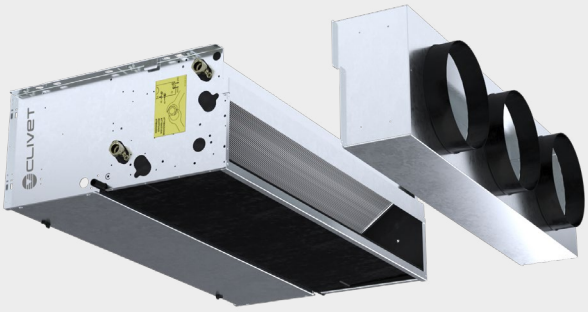
LARICE

DUA-M1 / DUE-M1 / DUA-H1 / DUE-H1





Manual for installation, use and maintenance

en

16127160006766-B
03-2026

FRANCE GERMANY ROMANIAN BULGARIAN SLOVENIAN HRVATSKI

Keep this manual together with the wiring diagram in an accessible place for the operator for future reference.

Dear Customer,

We congratulate you on choosing this product.
Clivet has been working for years to offer systems able to assure the maximum comfort for a long time with highly-reliable, efficient, high-quality and safe solutions.
The target of the company is to offer advanced systems, that assure the best comfort and reduce energy consumption as well as the installation and maintenance costs for the entire life-cycle of the system.
With this manual, we want to give you information that is useful for all phases: from reception, installation and use to disposal - so that such an advanced system can provide the best performances during installation and use.

Best regards and have a good read.

CLIVET Spa

The original instructions are written in Italian.
All other languages are translations of the original instructions.

Summary

1. General

1.1 About the manual

- The manual ensures proper installation, use and maintenance of the unit
- this manual is an integral and essential part of the product
- keep this manual together with the wiring diagram in an accessible place for the operator. It should always accompany the product, even if it is transferred to another owner or user
- recipients of the instructions in the manual are indicated in the “Recipients” chapter
- the recipient is indicated at the beginning of each section of the manual
- recipients, to the extent of their responsibility, are required to read the instructions and warnings in this manual as they provide important information on safe installation, use and maintenance.

Remember that:

- the manufacturer accepts no liability for damage to persons or property resulting from failure to observe the rules in this manual
- failure to observe the instructions in this manual will result in forfeiture of the warranty
- the manufacturer reserves the right to make changes or improvements to this documentary material and to the units without prior notice
- visit the manufacturer’s website for up-to-date details
- this manual contains proprietary information, all rights reserved, it may not be reproduced or photocopied, either in whole or in part, without the prior written consent of manufacturer.

1.1.1 Symbols

The symbols in the following chapter can be found in the manual and on the product, and provide quick and clear information for correct and safe use.

1.1.1.1 Safety symbols

Danger

This symbol indicates warnings, failure to comply may result in serious harm to health and fatal injuries.

Warning

This symbol indicates warnings, failure to comply may result in irreparable damage to the product or harm to the environment.

Prohibition

This symbol indicates operations that must never be carried out.

Note

This symbol indicates important information.

1.1.1.2 Editorial symbols

In the texts

Purpose of the action: indicates the purpose of a sequence of actions.
(it is identified by bold text followed by :)

► this symbol indicates actions that are required

○ this symbol indicates the expected result after an action

• this symbol indicates the lists

In the images

1 uniquely indicates a component

(A) indicates a group of components

1 indicates a sequence of actions

In the images, dimensions are expressed in millimetres unless otherwise indicated.

1.1.1.3 Symbols on the unit

The following symbols are used in some parts of the product:

Instructions for the User

Read the User Manual carefully before using the product.

Instructions for the User

Read the Installer Manual carefully before installing the product.

Instructions for the Technical Support Service

Read the Technical Support Service Manual carefully before carrying out any operation on the product.

1.1.2 Recipients

1.1.2.1 User

Inexperienced person who is capable of:

- operating the product safely for people, for the product and for the environment
- interpreting elementary diagnostics of faults and abnormal operating conditions
- carrying out simple adjustment, test and maintenance operations.

1.1.2.2 Installer

Experienced and qualified person able to:

- to put the product in a safe operating condition for people, for the product and for the environment
- to comply with the regulations in force in the country of destination
- to provide the user with basic information on safe use and maintenance in accordance with this manual and current national regulations
- comply with the regulations in force in the country of destination.

1.1.2.3 Technical support service

Experienced person, qualified and authorised directly by the manufacturer to:

- carry out a diagnosis of product faults and abnormal operation, possibly using information provided by the user
- rectify faults, carrying out the necessary repairs, replacements and adjustments that will restore the product's ability to function correctly and safely for the people, for the product and for the environment
- comply with the regulations in force in the country of destination.

1.1.3 Document organisation

- The manual is divided into sections, each dedicated to one or more recipients
- the recipient is indicated at the beginning of each section of the manual.

1.2 General safety warnings

⚠ Read the "About the manual" chapter carefully before proceeding with any operation.

⚠ Each chapter contains specific warnings for the operations given therein. These warnings should be read before starting any activities.

⚠ For every operation, always comply with current national regulations.

⚠ All personnel must be aware of the operations and of the hazardous situations that may arise when starting any operations on the unit.

⚠ Any contractual and non-contractual liability for damage caused to persons, animals or property by installation, adjustment or maintenance errors or improper use is excluded.

⚠ Any uses not expressly indicated in this manual are not permitted.

⚠ Do not change or tamper with the device as this can lead to hazardous situations.

⚠ Use appropriate safety clothing and equipment.

⚠ The manufacturer accepts no liability for failure to comply with current safety and accident prevention regulations.

⚠ The manufacturer reserves the right to make changes to its models at any time to improve its product, subject to the essential characteristics described in this manual.

⚠ The manufacturer is not obliged to add these changes to units previously manufactured, already delivered or being built.

⚠ The unit is suitable for use by children aged 8 years and over and by persons with reduced physical, sensory or mental capabilities or lack of experience or knowledge if they are properly supervised or have received instructions on the safe use of the device and have understood the associated hazardous situations. Children must not play with the device. Cleaning and maintenance operations must not be carried out by children without supervision.

⛔ It is forbidden to touch the device with wet or damp parts of the body.

- It is forbidden to carry out any operation before disconnecting the device from the mains power supply by turning the system's main switch to "off".
- It is forbidden to change the safety or control devices without the device manufacturer's authorisation and instructions.
- It is forbidden to pull, unplug or twist the electrical cables coming out of the device, even if it is disconnected from the mains power supply.
- It is forbidden to introduce objects and substances through the air intake and supply grills.
- It is forbidden to open the access doors to internal parts of the unit without first turning the system's main switch to "off".

2. Presentation of the product

2.1 Identification

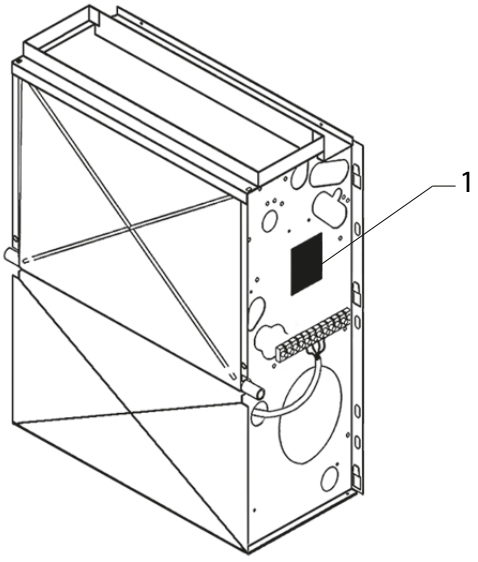
The serial number label is positioned on the unit and allows to identify all the unit features.
The matriculation plate shows the indications foreseen by the standards, in particular:

- unit type
- serial number
- year of manufacture
- wiring diagram number
- electrical data
- manufacturer logo and address

ⓘ The serial number uniquely identifies each unit and enables specific parts to be identified.

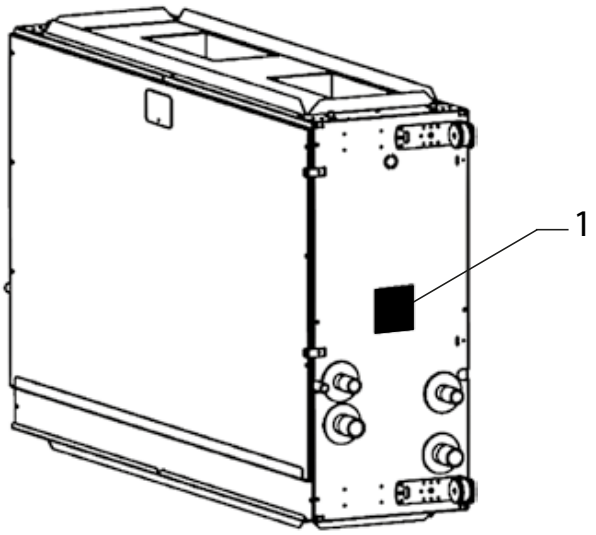
⚠ Tampering, removal, missing identification labels or anything else that does not allow the product to be safely identified, makes installation and maintenance operations difficult.

Series DUA-M1 / DUE-M1



1 Serial number label

Series DUA-H1 / DUE-H1



1 Serial number label

2.2 Regulatory framework

The relevant regulatory framework can be found in the declaration of conformity enclosed with this document.

2.3 Intended use

The units are designed for:

- indoor installation
- operation within the limits and with their performance characteristics set out in this document and in the bulletin.

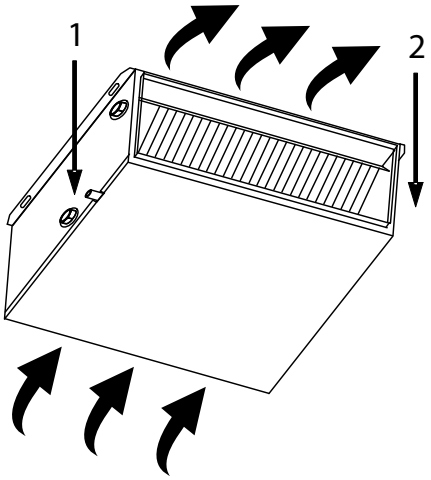
2.4 Description

New generation ductable horizontal and vertical built-in water terminal units for medium and large systems

2.5 Unit versions

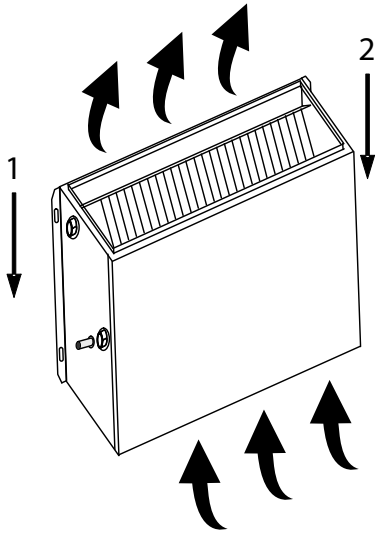
Built-in horizontal

Series DUA-M1 / DUE-M1



Return from behind
1 Water connections on the right
2 Water connections on the left

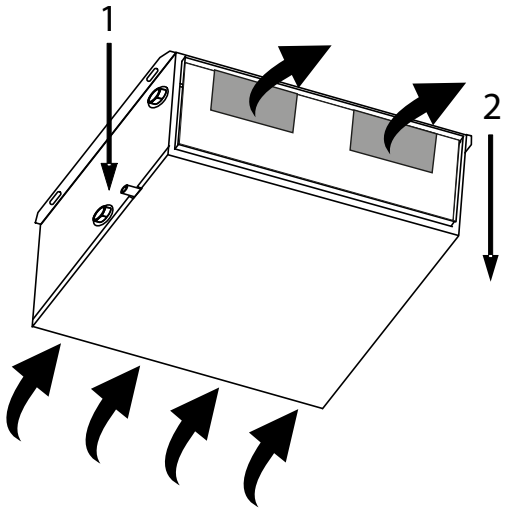
Built-in vertical



Standard downward air return
1 Water connections on the right
2 Water connections on the left

Built-in horizontal

Series DUA-H1 / DUE-H1



Front air return
1 Water connections on the right
2 Water connections on the left

ⓘ References for position of connections: right and left defined by placing yourself in the air stream with the air blowing on your back.

2.6 Components supplied with the unit

The following components can be found in the package:

Description	Quantity
Installation and maintenance manual	1

2.7 Accessories supplied separately

PECF00001	Box for wall installation of the KJRP-86R thermostat
PE870005	Simplified ambient control E/I + 3V+ on/off selector for wall installation
PEGF00004	Electronic wired controller KJRP-86R for assembly on the machine or on wall for AC versions
PED800002	Thermostat for fancoil units with 0-10V port and water probe included

2.8 Compatible accessories

The list of accessories can be found in the technical bulletin.

3. Before installation

3.1 Prerequisites

⚠ This section is intended exclusively for the Installer.

⚠ Refer to the Technical data chapter for details.

⚠ When handling the unit, use equipment appropriate to the weight of the unit.

⚠ Check that all handling equipment complies with local safety regulations (crane, forklifts, ropes, hooks, etc.).

⚠ During manual operations, it is mandatory to comply with the maximum weight per person as required by current legislation.

⚠ Provide personnel with personal protective equipment appropriate for the situation, such as hard hat, gloves, safety shoes, etc.

⚠ Observe all safety procedures in order to guarantee the safety of the personnel present and the material.

⚠ To avoid injury, do not touch the unit's air inlet or aluminium fins.

⚠ Do not use the fan grills handles to move the unit.

⚠ Keep the unit packed during handling.

⚠ Remove the packaging when you have reached the point of installation.

3.2 Reception

Before accepting the delivery, check:

- that the unit has not been damaged during transport
- that the materials delivered match those indicated on the transport document, comparing the data with the serial number label on the packaging.

In case of damage or anomaly:

- immediately write down the damage found on the transport document and quote this sentence: "Accepted with reservation due to evident shortages/damages during transport"
- refer to the contractual document.

ⓘ Any disputes must be made within 8 days from the date of the delivery. Complaints after this period are invalid .

3.3 Storage

Respect the indications on the outside of the pack.

In particolar:

- minimum ambient temperature -10 °C
- maximum ambient temperature +50 °C
- maximum relative humidity 95%

⚠ Exceeding these limits can cause irreversible damage to the unit.

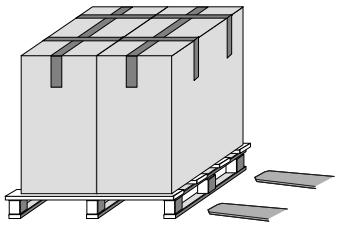
3.4 Handling

The unit can be handled:

- with a forklift truck or pallet truck.

The following examples are guidelines; the choice of means and handling modes will depend on the actual installation situation.

Lifting with a forklift truck



⛔ Do not leave packages loose during transport

⛔ Do not move the unit yourself

⛔ Do not step on top

⚠ When the load is lifted off the ground, stay clear of the area below and around it.

⚠ Identify critical points during handling (disconnected routes, flights, steps, doors).

⚠ Before starting the handling, make sure that the unit is stable.

3.5 Removal of the packaging

On reaching the installation site.

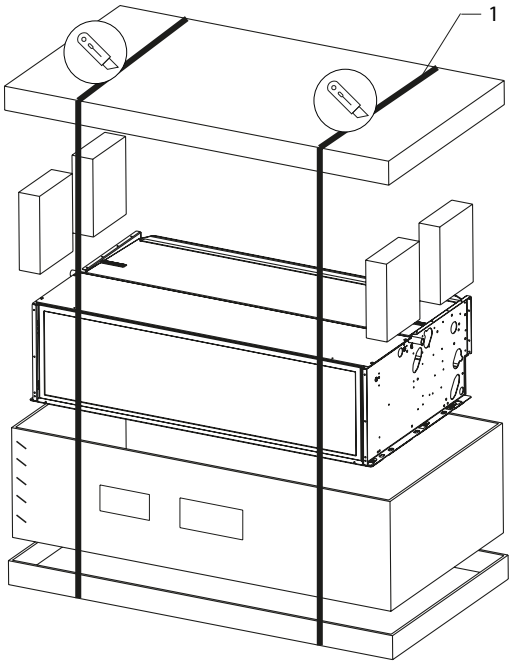
Horizontal vertical unit

Series DUA-M1 / DUE-M1

Carry out the following procedure:

► cut the straps

► pull out the unit



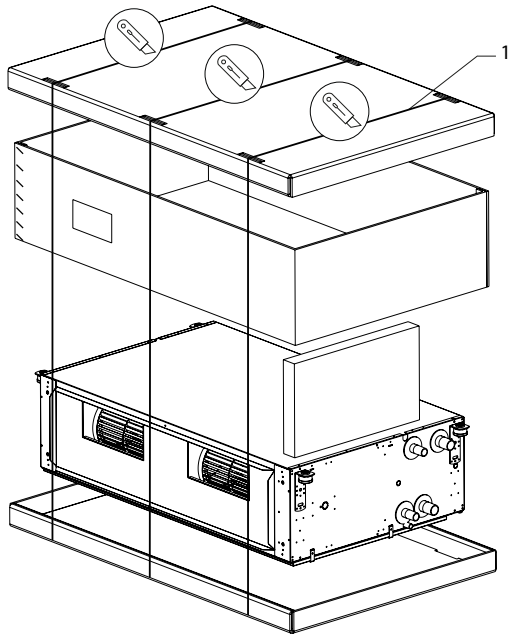
1 Straps

Horizontal built-in unit

Series DUA-H1 / DUE-H1

Carry out the following procedure:

- ► cut the straps
- ► pull out the unit



1 Straps

⚠ Be careful not to damage the unit.

⚠ Keep the packaging material out of children's reach as it may be dangerous.

⚠ Recycle and dispose of the packaging material in conformity with local regulations.

4. Installation

4.1 Prerequisites

⚠ This section is intended exclusively for the Installer.

⚠ Refer to the Technical data chapter for details.

⚠ The electrical system and its components must be designed by a qualified technician who must work according to the rules of good practice and national regulations.

⚠ **Ensure that:**

- the location can be accessed safely
- the clearances are guaranteed
- there is an area free from obstacles that could affect the circulation of inlet and outlet air
- the installation wall should preferably be an external perimeter wall to allow condensation to drain outside
- to use a suitable means of lifting the unit for the installation
- with a ceiling installation, the air flow is not channelled directly towards people
- the support surface or the wall can withstand the weight of the unit
- the floor or wall section does not interfere with power lines or water piping and no load-bearing elements of the construction are compromised.

⚠ **Avoid therefore:**

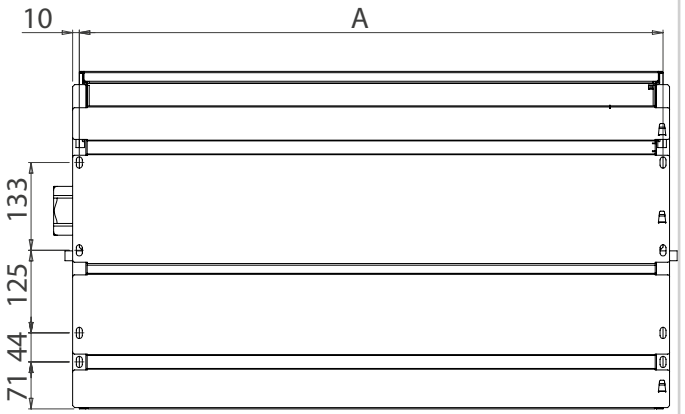
- places that may be subject to flooding
- areas near to heat sources
- damp environments and areas with probable contact with water
- environments with flammable gases or materials
- environments with acid or alkaline gas vapours
- environments with oil in the air (e.g. kitchens)
- thermal areas where there are corrosive gases
- environments containing mineral oils such as lubricants
- environments subjected to high frequencies.

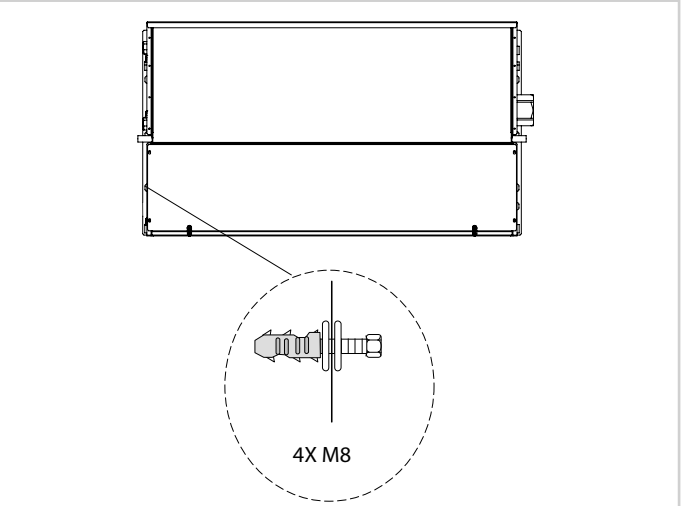
⛔ The unit cannot be installed outdoors or in a room/compartment where the temperature can fall below 0°C.

4.2 General diagram

Positioning

Vertical built-in installation

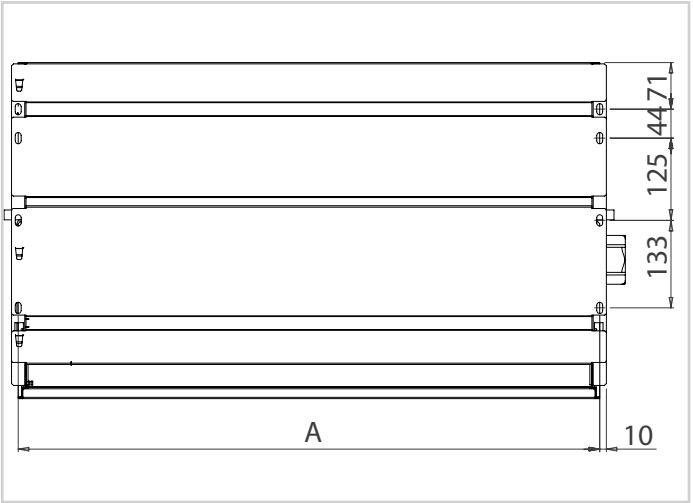




DUA-M1					
Size		12-14-22	24-32-42	34-52-62	44-72-82
A	mm	645	860	1075	1290

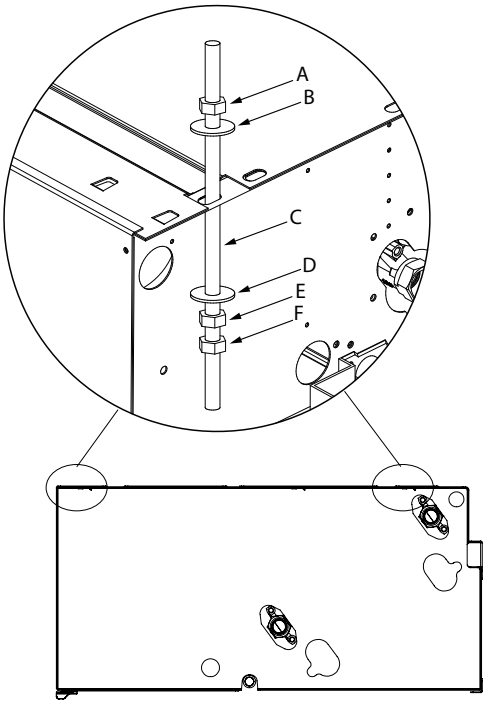
Size		54-92-102	64-112-122
A	mm	1505	1505

Horizontal built-in installation



DUE-M1					
Size		12-14-22	24-32-42	34-52-62	44-72-82
A	mm	454	669	884	1099

Size		54-92-102	64-112-122
A	mm	1505	1744

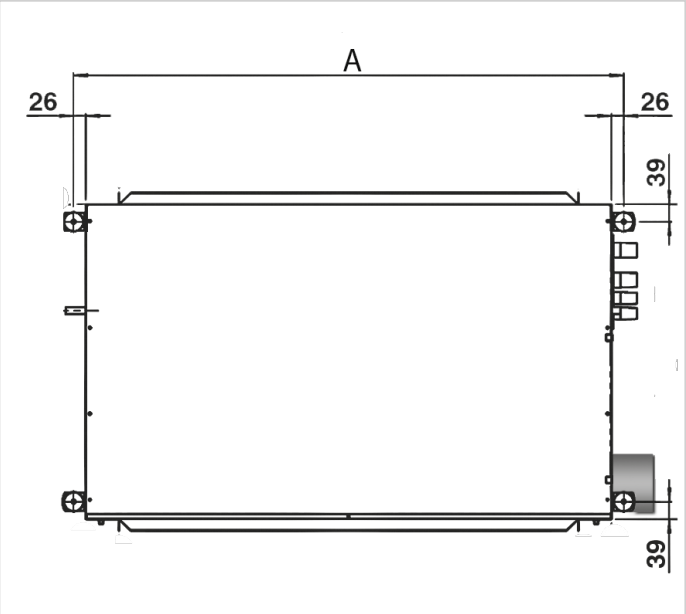


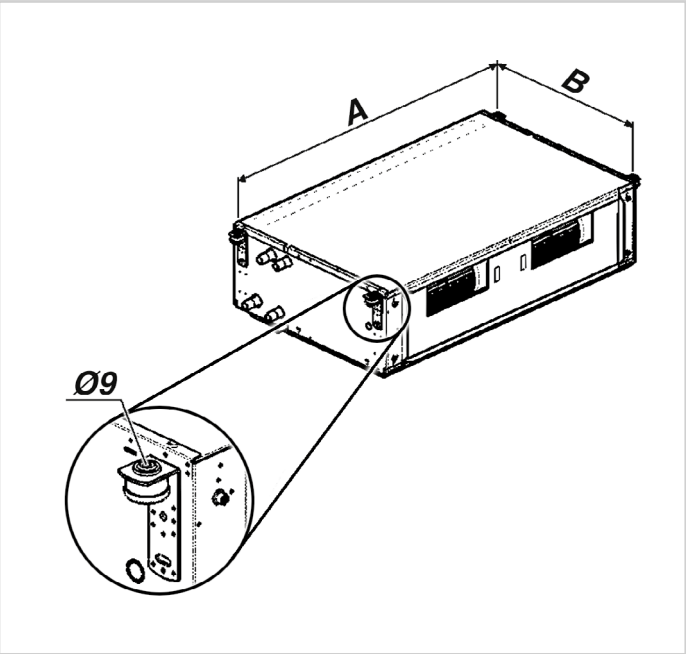
A nut
B washer
C M8 screw bar
D washer
E nut
F lock nut

ⓘ Not supplied

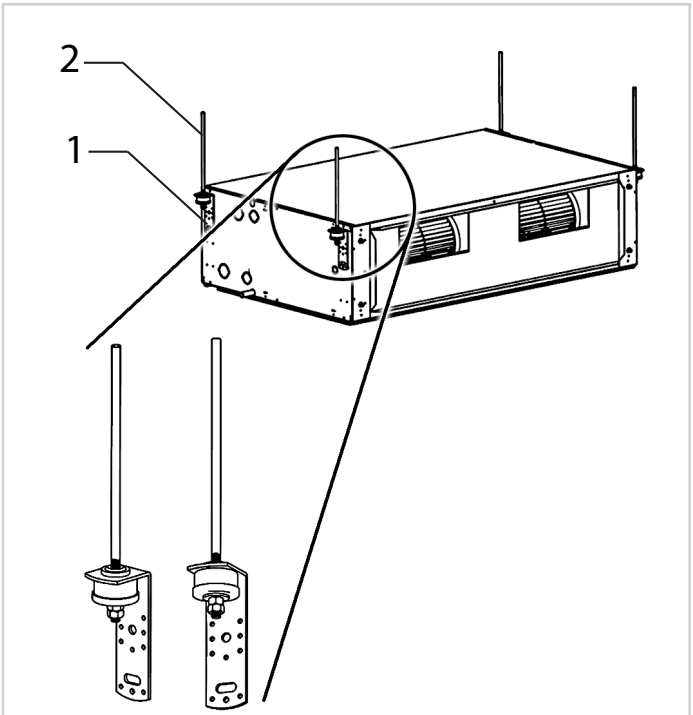
Positioning

Horizontal built-in installation





DUA-H1 / DUE-H1				
Size		12-14-22-24-32-34	42-44-52-54	62-64
A	mm	1185	1497	1587
B	mm	620	775	1022



1 Fixing bracket

2 M8 screw bar

ⓘ Not supplied

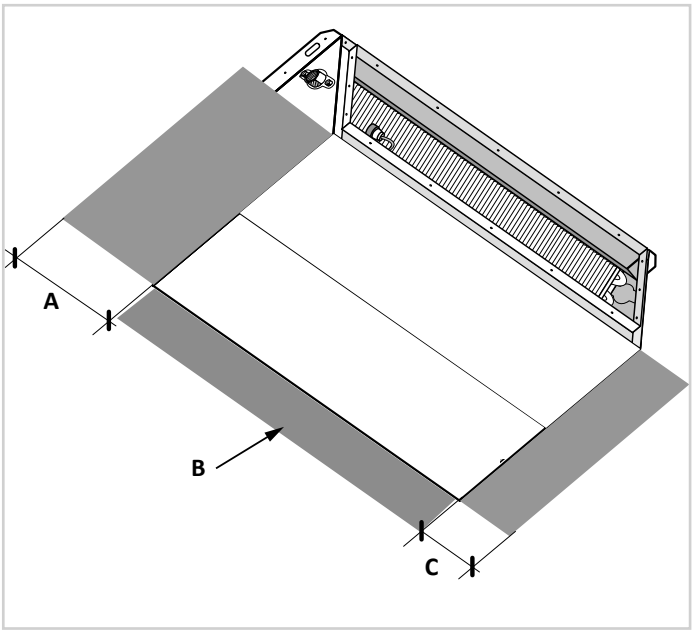
The unit is equipped with 4 drilled brackets for ceiling mounting.

4.3 Clearances

The clearances for installation and maintenance of the unit are shown in the figure.

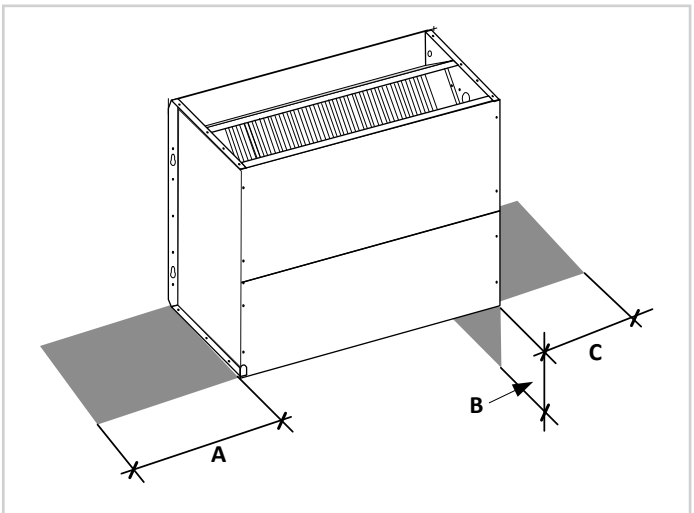
Built-in horizontal

Series DUA-M1 / DUE-M1



A	mm	200
B	mm	200
C	mm	200

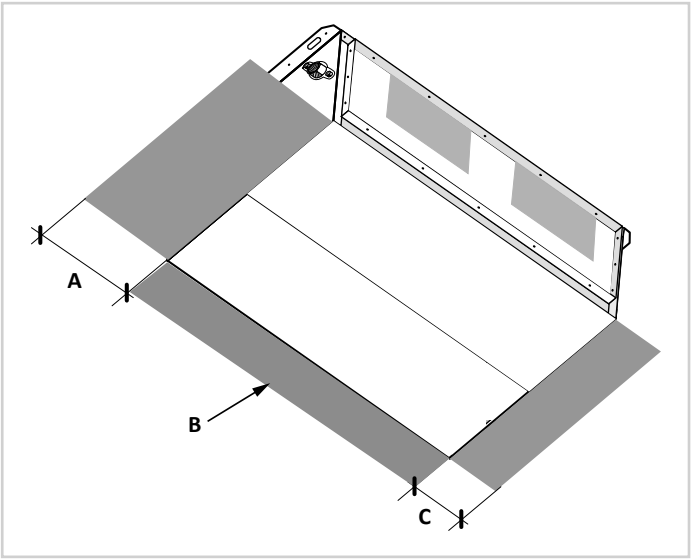
Built-in vertical



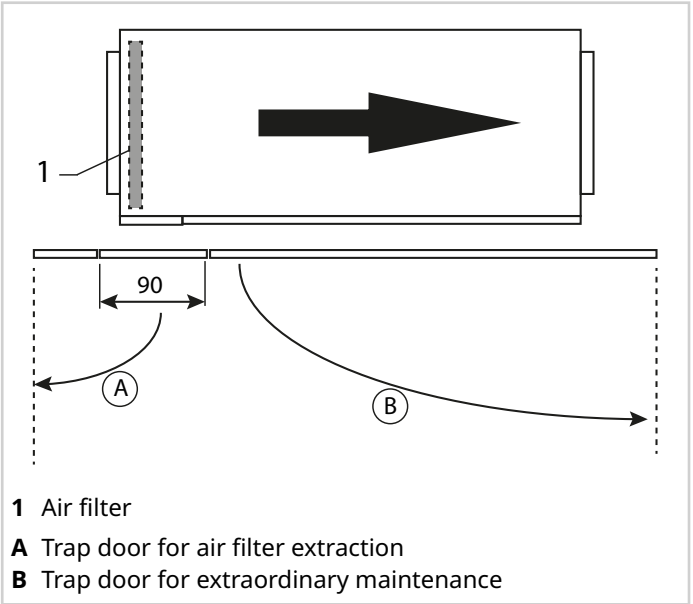
A	mm	200
B	mm	200
C	mm	200

Built-in horizontal

Series DUA-H1 / DUE-H1



A	mm	200
B	mm	200
C	mm	200



1 Air filter

A Trap door for air filter extraction

B Trap door for extraordinary maintenance

⚠ Provide the openings indicated in the functional spaces in the false ceiling (or in the floor) to allow access to the unit for maintenance work.

⚠ Positioning on the ceiling: leave the floor projection of the unit and functional spaces free to allow access with ladders or other means.

5. Water connections

5.1 Prerequisites

⚠ This section is intended exclusively for the Installer.

⚠ Refer to the Technical data chapter for details.

⚠ The hydraulic system and its components must be designed by a qualified technician who must work according to the rules of good practice and national regulations.

⚠ **Check that:**

- the maximum water pressure and temperature are compatible with the operating limits of the unit
- discharge shut-off valves are installed at the lowest points of the system so that the circuit can be completely drained during maintenance
- air vents are installed at the highest points of the system, in easily accessible places
- the unit is only connected to closed hydraulic circuits.

5.2 Cleaning

Before connecting the unit to the system:

- clean the system thoroughly with specific products to remove residues or impurities that could affect operation.

⚠ The warranty does not cover damage caused by limescale build-up, deposits and impurities in the water and/or failure of the hydraulic circuit cleaning system.

Existing systems

If a new unit is installed in an existing system:

- the system must be flushed thoroughly to eliminate any particles, sludge and waste.

⚠ The system must be cleaned before installing the new unit.

⚠ Dirt can be removed only with a suitable water flow rate.

⚠ Each section must be cleaned separately.

⚠ Pay particular attention to “blind spots”, where a lot of dirt can accumulate due to the reduced flow-rate.

⚠ If necessary, install an additional filter sized according to the type of pollutant to be removed.

5.3 Piping insulation

Isolate the entire hydraulic circuit, including all components to avoid:

- the formation of condensation during cooling
- the reduction of heating and cooling capacity

5.4 Hydraulic circuit antifreeze protection

Outdoor temperatures close to zero can cause the water in the piping and in the unit to freeze.

⚠ Frost can lead to irreversible damage to the unit.

⚠ Damage from freezing is not covered by the warranty.

To avoid freezing problems:

- mix the water with glycol, or:
- protect the piping with heating cables laid under the insulation, or
- empty the system in the event of long downtime

⚠ If the power supply has to be disconnected water in the circuit must be drained so that the unit and piping are not damaged by freezing.

⚠ Do not reconnect the unit if there is no water in the circuit.

5.4.1 Antifreeze solutions

For the use of freezable solutions, follow the manufacturer's instructions.

ⓘ The use of unfreezable solutions causes an increase in pressure drops and a reduction in performance.

ⓘ For details, refer to the technical bulletin.

⚠ The type of glycol used must be inhibited (non-corrosive) and compatible with the hydraulic circuit components.

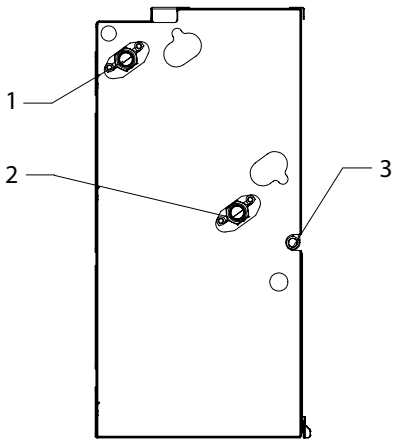
⛔ Do not use different glycol mixtures (e.g. ethylene with propylene).

⚠ Glycol is a toxic fluid, should not be discharged freely it must be collected and possibly reused.

5.5 Position of connections

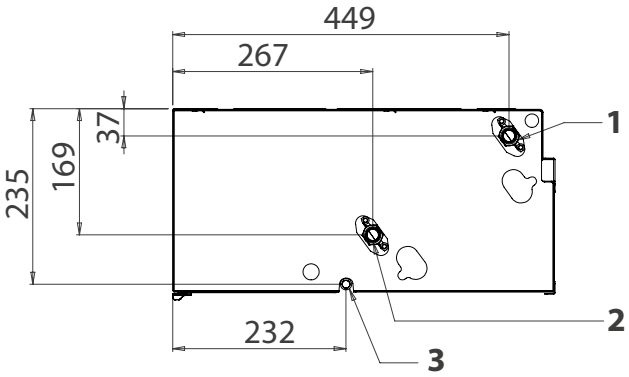
5.5.1 Vertical horizontal built-in installation

Series DUA-M1 / DUE-M1



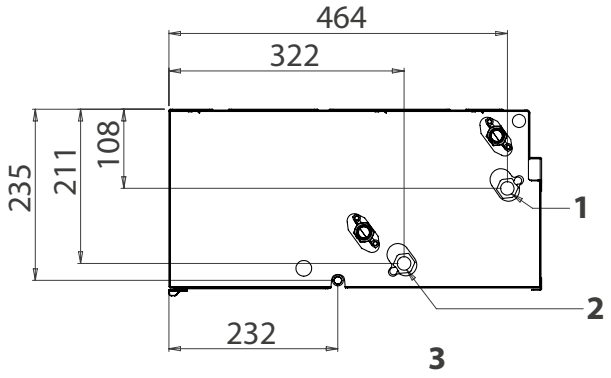
1 Water outlet Ø 1/2" GF
2 Water inlet Ø 1/2" GF
3 Condensate drain Ø 15 external

5.5.3 3 or 4 row battery



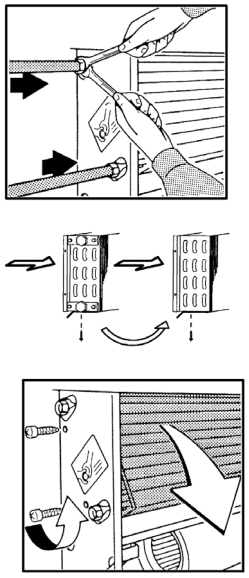
1 Water outlet Ø 1/2" GF
2 Water inlet Ø 1/2" GF
3 Condensate drain Ø 15 external

5.5.4 Additional heating battery (1 row or 2 rows)



1 Water outlet Ø 1/2" GF
2 Water inlet Ø 1/2" GF
3 Condensate drain Ø 15 external

5.5.5 Battery rotation for right-hand connections



- ► unscrew the 4 fixing screws (2 on each side) of the battery to the frame
- ► remove the battery
- ► disconnect the connection cables (note the colours of the cables)
- ► unscrew the fixing screws
- ► remove the terminal block
- ► insert the battery and secure it with the 4 screws
- ► fix the control panel and terminal block on the side opposite the connections
- ► restore previously removed electrical connections.

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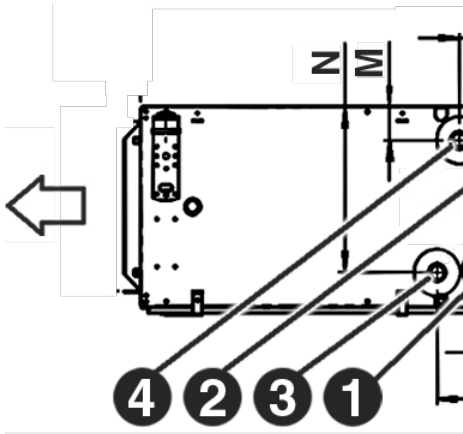
5.5.6 Horizontal built-in installation

Standard connections on the left

Series DUA-H1 / DUE-H1



1 Main battery water inlet
2 Main battery water outlet
3 Auxiliary battery water inlet
4 Auxiliary battery water outlet

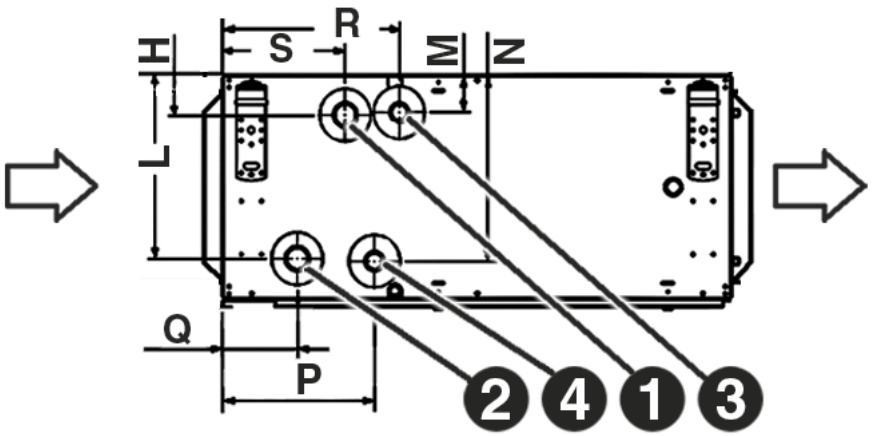
Size		12-14	22-24	32-34	42-44	52-54
H	mm	54	54	54	58	58
L	mm	245	245	295	291	367
M	mm	50	50	50	54	54
N	mm	249	249	299	295	370
O	mm	236	236	236	236	236
P	mm	209	209	209	209	209
Q	mm	103	103	103	103	103
R	mm	243	243	243	243	243
S	mm	169	169	169	169	169

Diameter of the connections

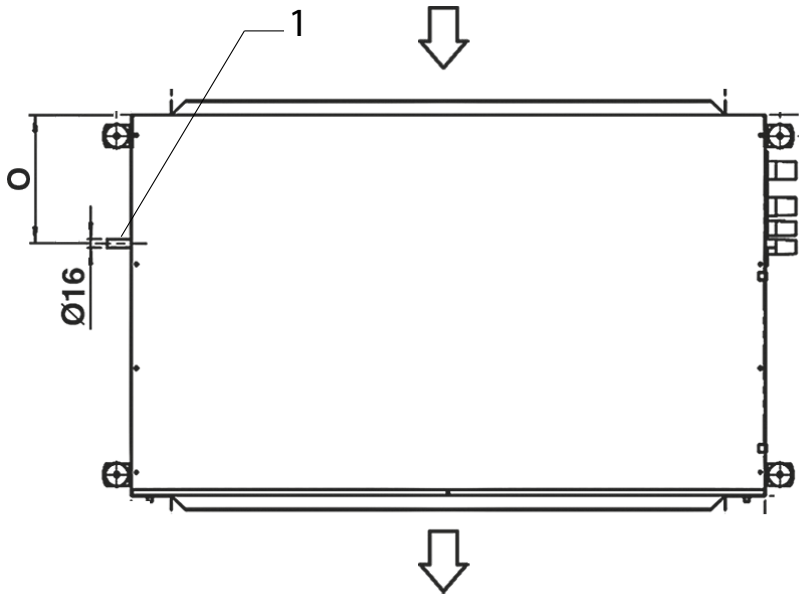
Size		12-14	22-24	32-34	42-44	52-54
1	mm	3/4"	1"	1"	1 1/4"	1 1/4"
2	mm	3/4"	1"	1"	1 1/4"	1 1/4"
3	mm	3/4"	3/4"	3/4"	1"	1"
4	mm	3/4"	3/4"	3/4"	1"	1"

Right side fittings

Option



1 Main battery water inlet
2 Main battery water outlet
3 Auxiliary battery water inlet
4 Auxiliary battery water outlet



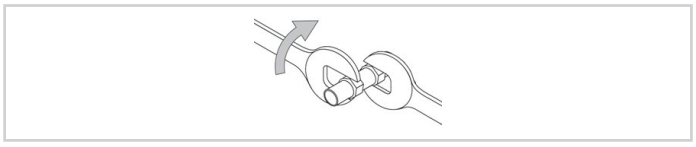
1 Condensate drain Ø 16 external

5.6 Hydraulic connection

Ensure that:

- uses supports for the hydraulic pipes weight which mustn't weigh down the unit connections
- provide drainage taps installed in the lowest points of the system to allow bleeding
- provide shut-off valves to isolate the battery from the rest of the circuit when extraordinary maintenance is carried out
- hydraulic connections must be made with larger diameter hoses (equal minimum limit) than those of the unit's hydraulic connections
- clean piping with no moisture, air, dirt or dust is used
- the end of the pipe is kept downwards when removing burrs
- the end of the pipe is covered when passing it through a wall to prevent dust and dirt from entering
- thread sealant is used to seal the connections that must withstand the pressures and temperatures of the circuit
- the two types of materials are isolated from each other to prevent galvanic corrosion when using non-copper metal piping
- the piping is not deformed by using excessive force or unsuitable tools during connection: this could cause the unit to malfunction.

⚠ Always use the wrench and counter wrench method in tightening operations.



⚠ **Maximum operating pressure 16 bar.**

5.7 Relief valves

Install them at all the highest points of the piping in order to vent air from the circuit.

5.8 Water filter

Provided by the customer

⚠ Installation of the filter is mandatory.

⚠ Operation without a filter can cause irreversible damage to the unit.

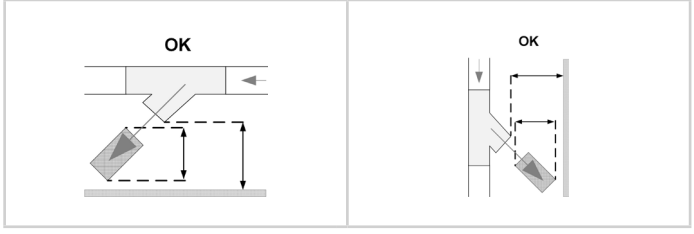
⚠ Operation without a filter will void the warranty.

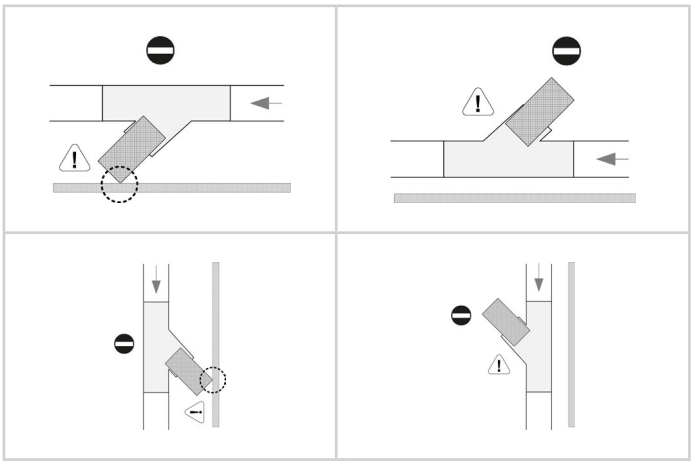
Remember that the filter must be:

- installed immediately at inlet to the water supply system
- easily accessible for maintenance work

⚠ Periodically check for clogging.

⛔ The filter should never be removed.





5.9 Condensate drain

The condensate must be disposed of in order to avoid damage to people and property.

Check that:

- the piping must have a minimum slope of 3% to allow outflow
- to provide a siphon which, by eliminating the vacuum caused by the fan, prevents the intake of air from the drain piping
- to anchor the piping with a suitable number of brackets, otherwise pipe sagging and air pockets obstructing the outflow will occur
- the piping and siphon are isolated to prevent condensation drips
- the condensate drain is connected a rainwater drain network
- at the end of the work to check the regular outflow of condensation by pouring water into the basin.

⚠ The connection must not be hermetically sealed in order to allow air to escape and prevent possible liquid backflow.

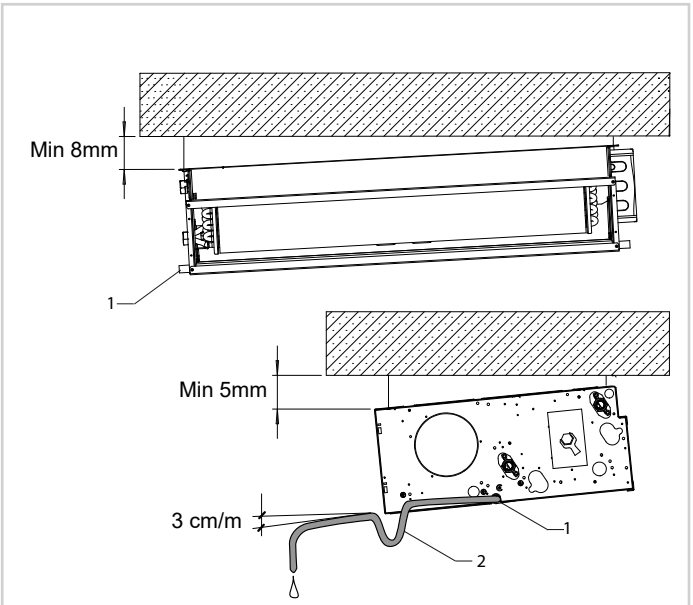
⛔ DO NOT use white or sewage water drains to avoid the possible inhaling of odours if the water in the siphon evaporates.

Condensation drain connection

► connect the pipe to the condensation drain

► direct the pipe towards a suitable drain

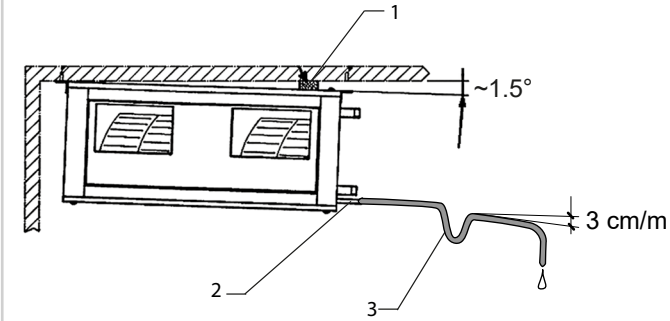
Series DUA-M1 / DUE-M1



1 Condensate drain connection

2 Condensate drain pipe Ø 16mm

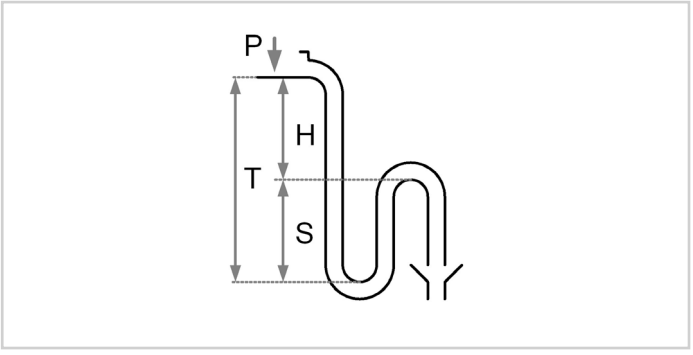
Series DUA-H1 / DUE-H1



1 Thickness

2 Condensate drain connection

3 Condensate drain pipe Ø 16mm



Example:
P = 300 Pa = 30 mm

T = 2P = 60 mm
S = T/2 = 30 mm

Siphon height calculation
T = 2P
S = T/2
P is the pressure determined by the fan in correspondence of the condense collection bowl (approx. 1 mm = 9.81 Pa)

6. Aeraulic connections

6.1 Prerequisites

⚠ This section is intended exclusively for the Installer.

⚠ The aeraulic system and its components must be designed by a qualified technician who shall work according to the rules of good practice and national regulations.

⚠ Operate in compliance with safety regulations in force.

⚠ The sizing and correct execution of the aeraulic connections are essential to ensure smooth operation of the unit and an adequate level of silence in the room.

⚠ When designing and manufacturing the channels, consider PRESSURE DROPS, AIR FLOWRATE AND SPEED that must be consistent with the characteristics of the unit.

⚠ Particularly consider that pressure drops higher than the unit's available pressure lead to a reduction in the flowrate with consequent unit shutdowns.

⚠ **Check that:**

- the ducts have a section that is larger (or equal to, but never smaller) than the unit's suction inlet and supply
- the weight of the channels must not burden on the connection flanges
- anti-vibration joints are placed between the ducts and unit
- connection to the flanges and between the various sections of the channels must guarantee air seal, avoiding dispersions penalising the overall efficiency of the system
- pressure drops are limited by optimising the circuit, type and number of bends and branches
- large radius bends are used and consider fitting them with deflectors (especially with fast air speed or small radius bends)

6.2 Treated air channelling

⚠ The inner surface of the channel must be smooth, allow it to be washed and must not contaminate the air.

⚠ Thermally insulate the channels, flanges, silencers, etc. to avoid energy losses and condensation.

⚠ To attenuate the noise level, it is advisable to use insulated channels.

Diffusers inlets grills

A correct diffusion of the air in the room is determining for the level of comfort and correct operation of the unit. When choosing and positioning the grills, inlets and diffusers, avoid:

- excessive air speed
- forming of stagnant and stratification areas
- cold air delivery in room
- forming of localised currents (also due to uneven distribution of air)
- excessive room temperature variations, vertically and horizontally
- short circuits of the supply air towards the return air

For sound comfort, consider that:

- the air diffusers must be chosen verifying the sound power generated at nominal flow rate conditions
- the cut-off to diffusers must be carried out with flexible elements

7. Electrical connections

7.1 Prerequisites

⚠ This section is intended exclusively for the Installer.

⚠ The electrical system and its components must be designed by a qualified technician who must work according to the rules of good practice and national regulations.

⚠ All electrical operations should be performed by trained personnel having the necessary requirements by the regulations in force and being informed about the risks relevant to these activities.

⚠ Operate in compliance with safety regulations in force.

⚠ The power cables and the protection cable section must be defined in accordance with the characteristics of the protections adopted.

⚠ The protection devices of the unit power line must be able to stop the presumed short circuit current, whose value must be determined in function of system features.

⚠ Refer to the unit electrical diagram (the number of the diagram is shown on the serial number label).

⚠ verify that the network has characteristics conforming to the data shown on the serial number label.

⚠ Before starting work, verify that the sectioning device at the start of the unit power line is open, blocked and equipped with cartel warning.

⚠ The supply line must be disconnectable from the rest of the building's power mains with an all-pole magnetothermic circuit breaker with separation of contacts on all poles, to be implemented in accordance with current laws and regulations.

⚠ The protection must be sized in accordance with the electrical data declared by the manufacturer.

⚠ Disconnect the power supply before making any connection.

⚠ Do not crush cable bundles and prevent them from coming into contact with piping and any sharp edges.

⚠ Primarily you have to realize the earthing connection.

⚠ Incorrect grounding may cause electric shocks.

⚠ All external high voltage loads, if connected to a metal fitting or grounding clip, must be earthed.

⚠ The current required for each external load must be less than 0.2 A. If the current required for a single load is greater than 0,2 A, insert a contactor for control.

⚠ Install an earth leakage breaker (30 mA).

⚠ Failure to observe this precaution may result in electric shocks.

⚠ Power and signal cables should be routed as separately as possible to avoid any interference.

⚠ Keep the unit's controller wiring as far away from hot surfaces as possible. It is advisable to use cables with cross-linked polyvinyl chloride sheath.

⚠ For the electrical connection, use a cable of sufficient length to cover the entire distance without any connection work. Do not use extension cords. Do not apply other loads on the power supply.

⚠ If the power cable is damaged, it must be replaced by qualified personnel and

in accordance with current national regulations.

⚠ The manufacturer is not liable for any damage caused by failure to install a grounding system or failure to comply with the diagrams.

⚠ Check the voltage values which must be within the limits: 220-240V +/- 10%.

⚠ Before power the unit, make sure that all the protections that were removed during the electrical connection work have been restored.

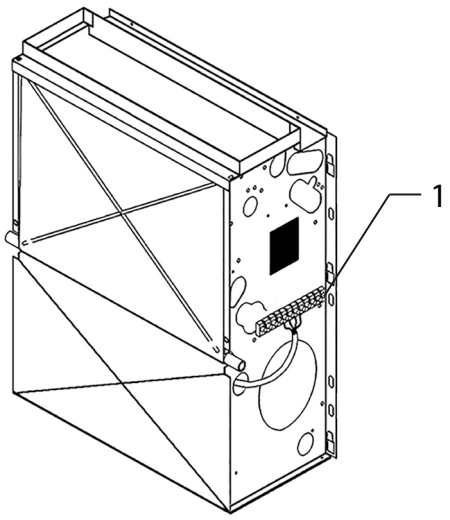
⛔ It is forbidden to connect the earth wire to gas or water pipes, lightning rods or telephone ground.

7.2 Cable inlet

⚠ Before removing the protection panel from the electrical panel, disconnect the power supply to the indoor and outdoor units and to all the other electrically powered components.

Vertical built-in installation

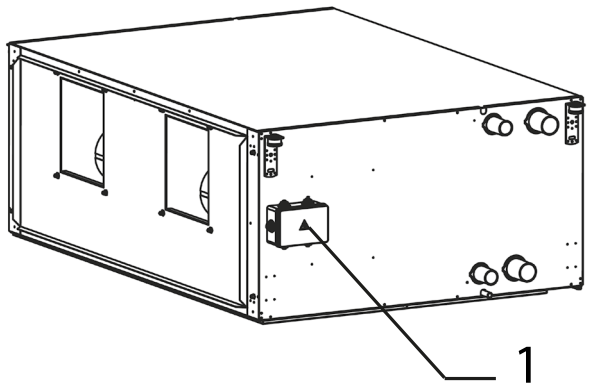
Series DUA-M1 / DUE-M1



1 Connection terminal block

Horizontal built-in installation

Series DUA-H1 / DUE-H1



1 Connection terminal block

► remove the protection cover

⚠ Connect as shown in the wiring diagrams.

7.3 Connecting the power supply

⚠ **Ensure that:**

- no cables of different cross-sections are connected to the same power supply terminal block (loosening of the power supply wires could cause overheating)
- terminal block screws are not over-tightened
- an earth leakage breaker and a fuse or magnetothermic circuit breaker are connected to the supply line

7.3.1 Electric cable sizes

Series DUA-M1 / DUE-M1

Size		12-122
Cable cross-section (mm^2)	min.	0,75

Series DUA-H1 / DUE-H1

Size	12-14	22 - 64
Cable cross-section (mm^2)	1,0	1,5

Connection procedure:

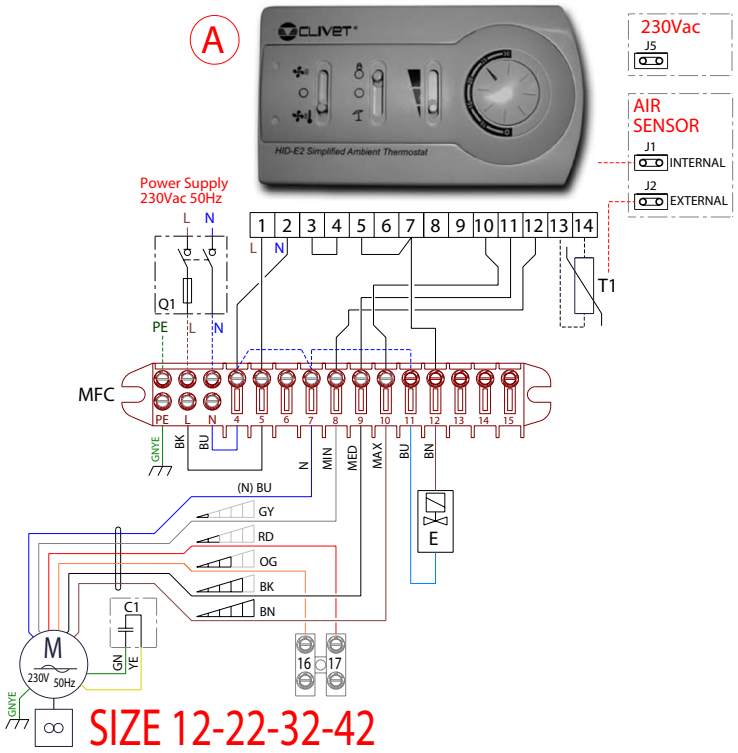
► connect the cables to the appropriate terminals as shown in the diagram

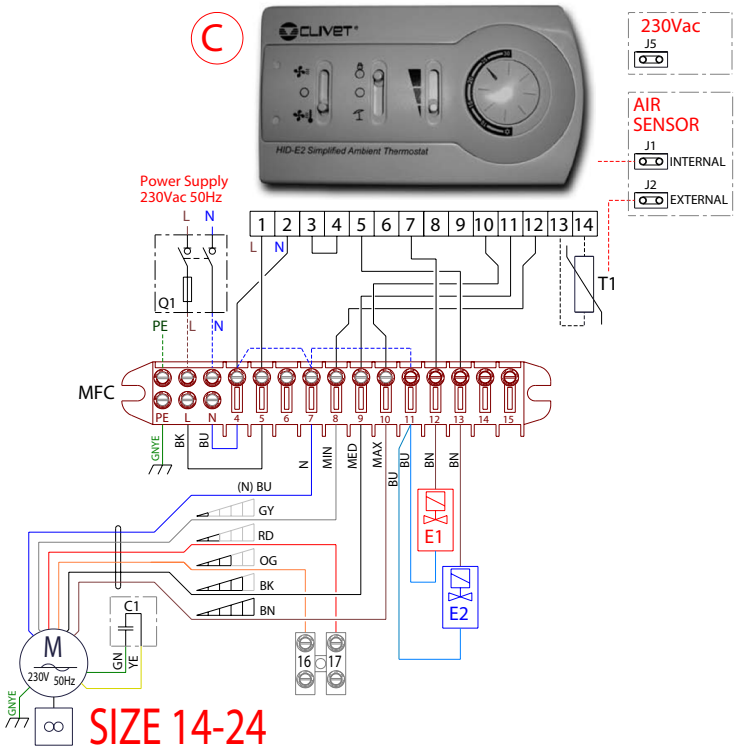
► secure the cables with cable clamps.

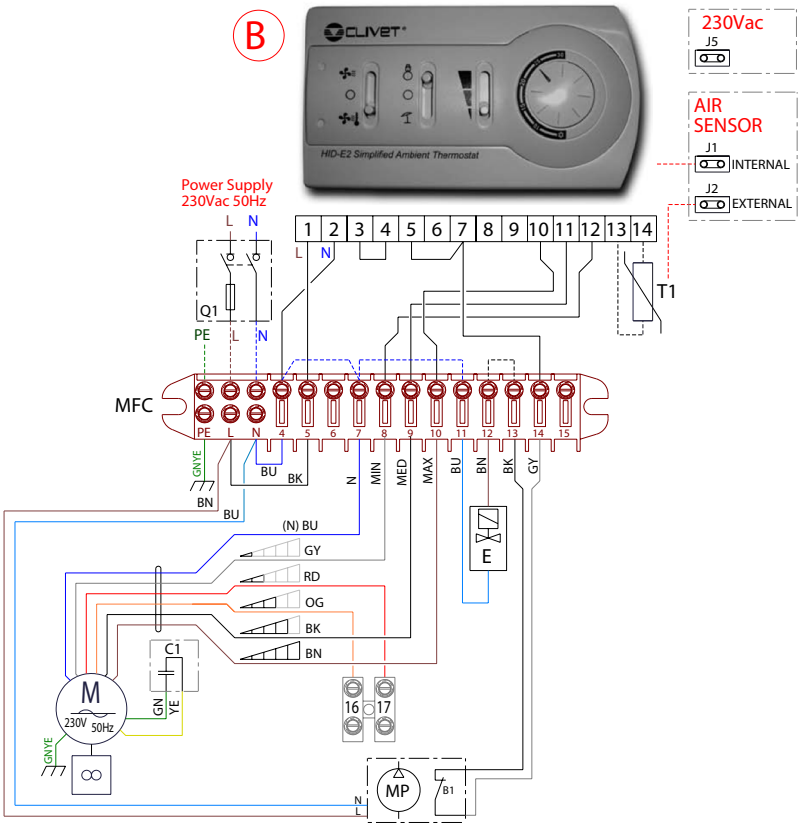
7.4 Connections with the HID-E2 thermostat

SE-0145 - DUA-M1

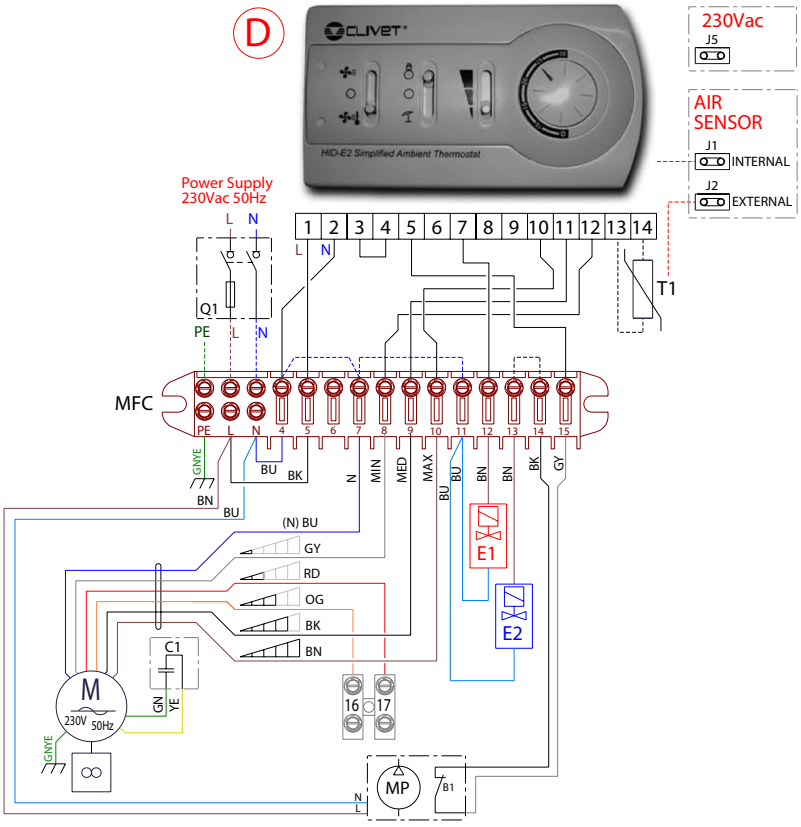
A -	2-pipe system (1 valve)	B -	2-pipe system (1 valve) Condensate drain pump	C-	4-pipe systems (1 valve)	D-	4-pipe systems (1 valve) Condensate drain pump



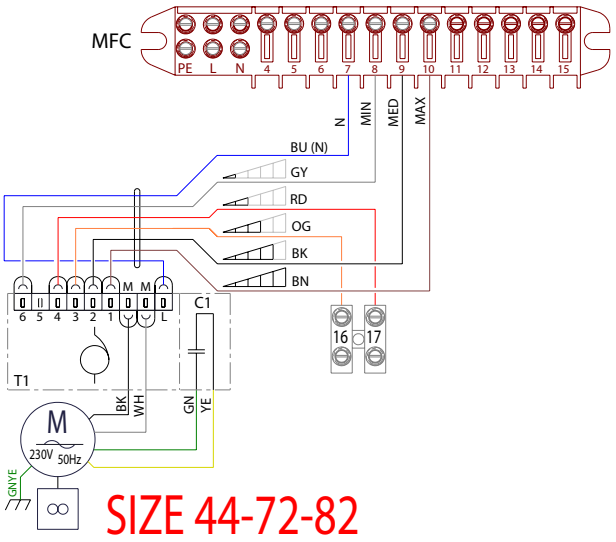


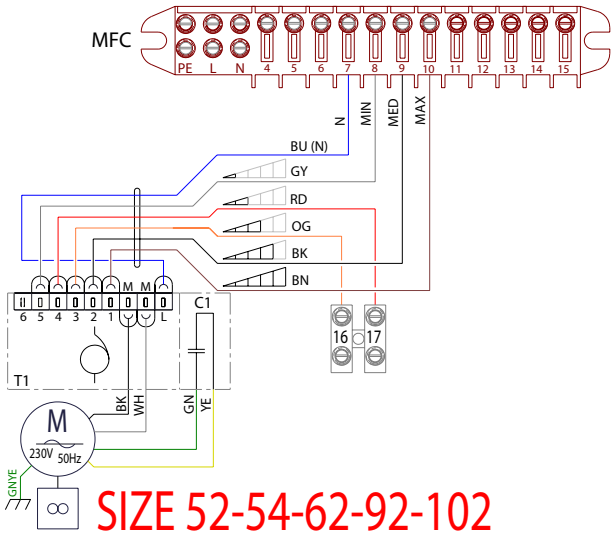


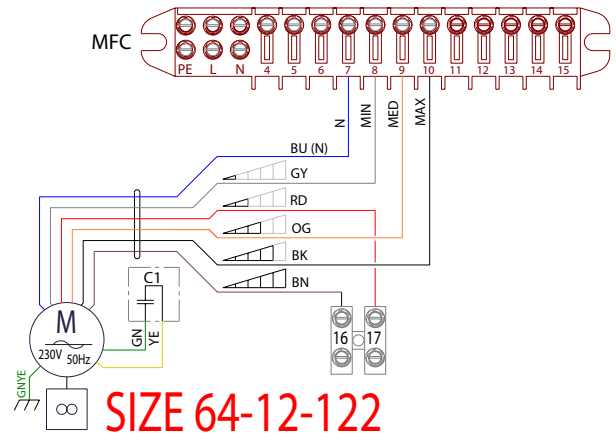
SIZE 12-22-32-42



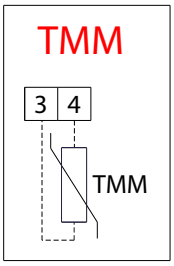
SIZE 14-24







Minimum water probe



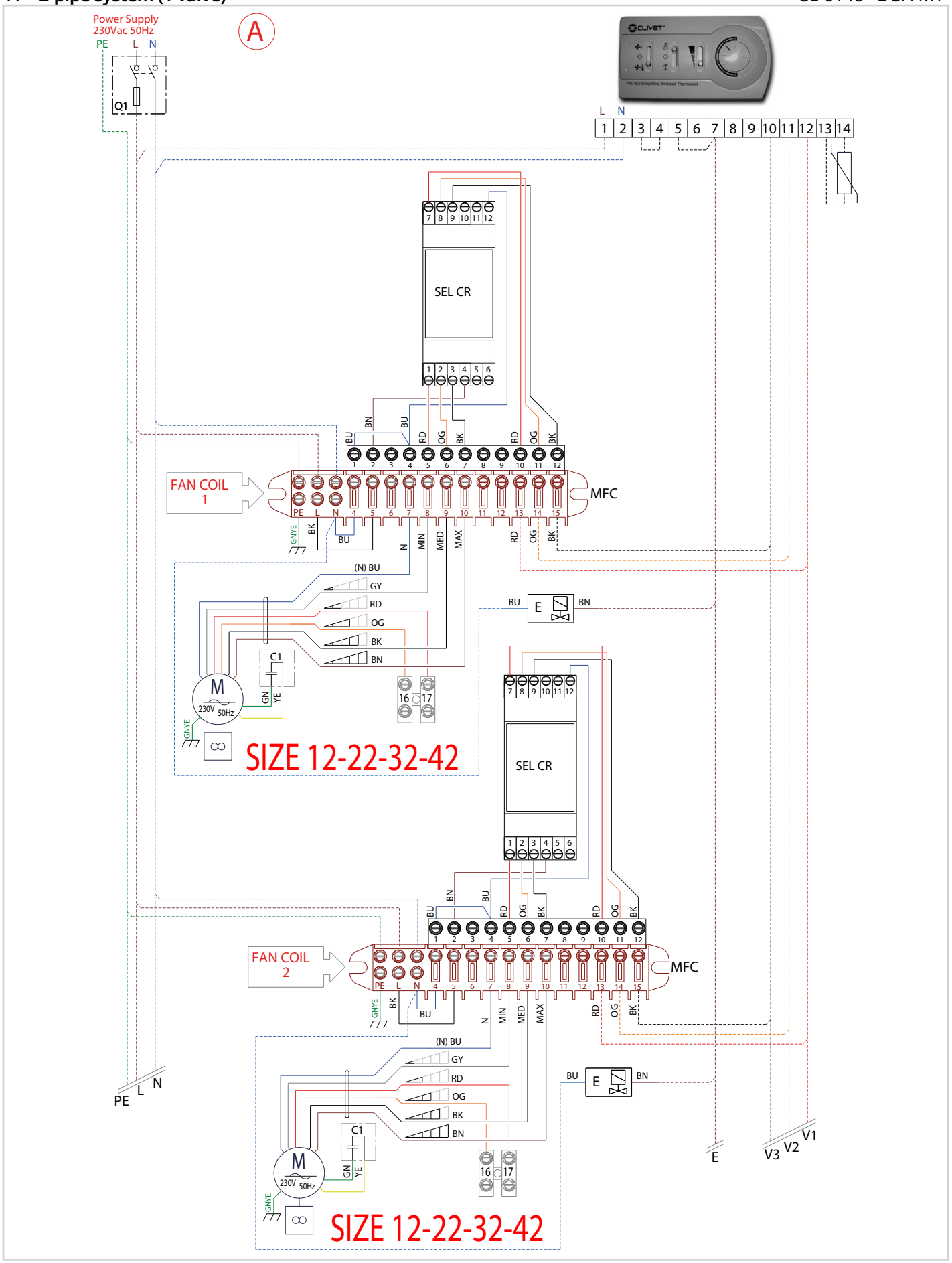
MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230v on-off actuator water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

_____	Production wiring
- - - - - - -	Connection by installer

Sigle colori cavi	
BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GR	Green
BU	Blue
VT	Violet
GY	Grey
WH	White
PK	Pink
GD	Gold
TQ	Turquoise
SR	Silver
GNYE	Green-yellow

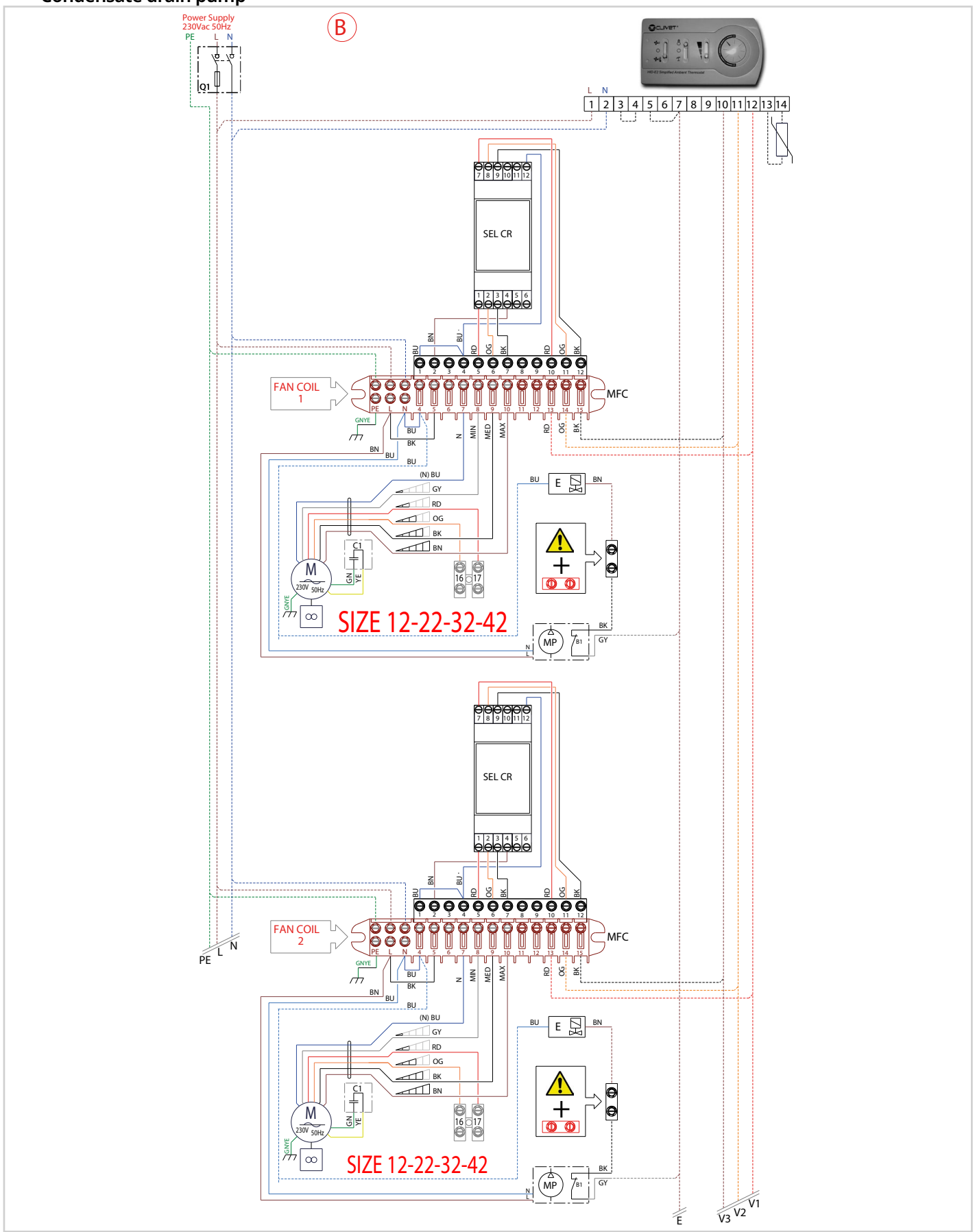
A - 2-pipe system (1 valve)

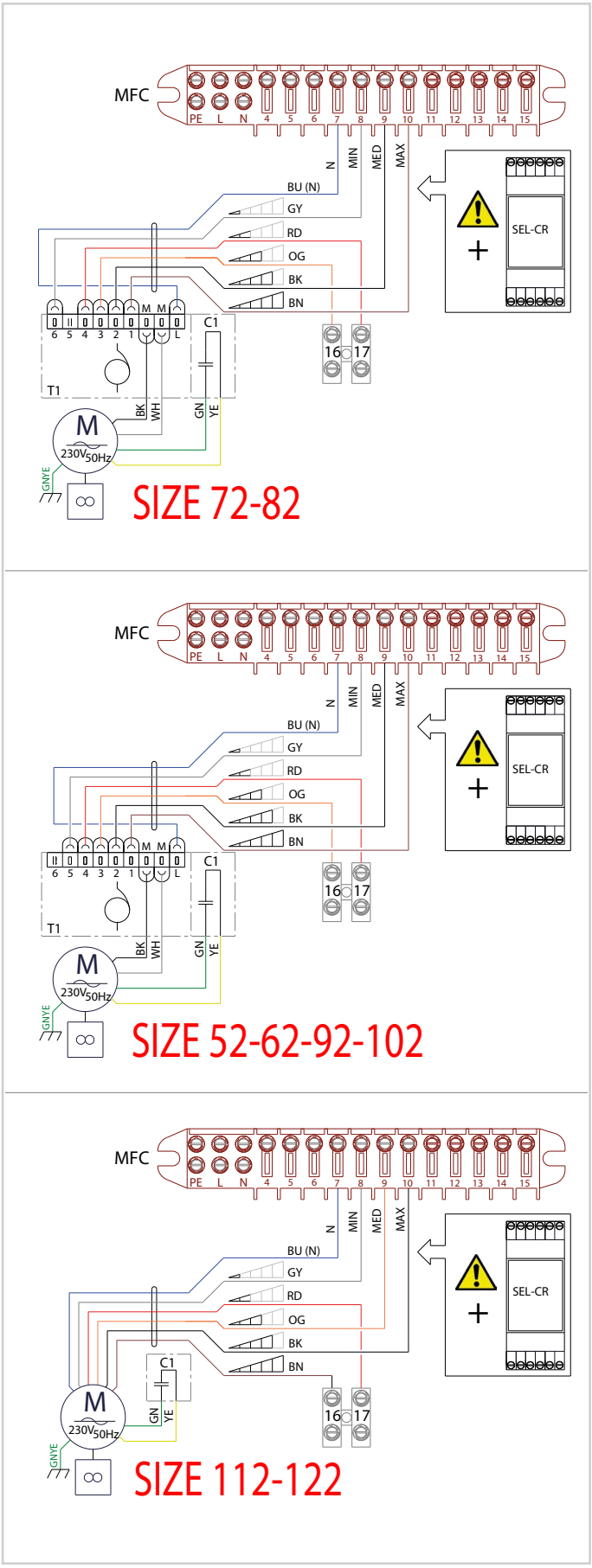
SE-0146 - DUA-M1



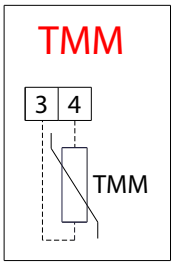
B - 2-pipe system (1 valve)

Condensate drain pump





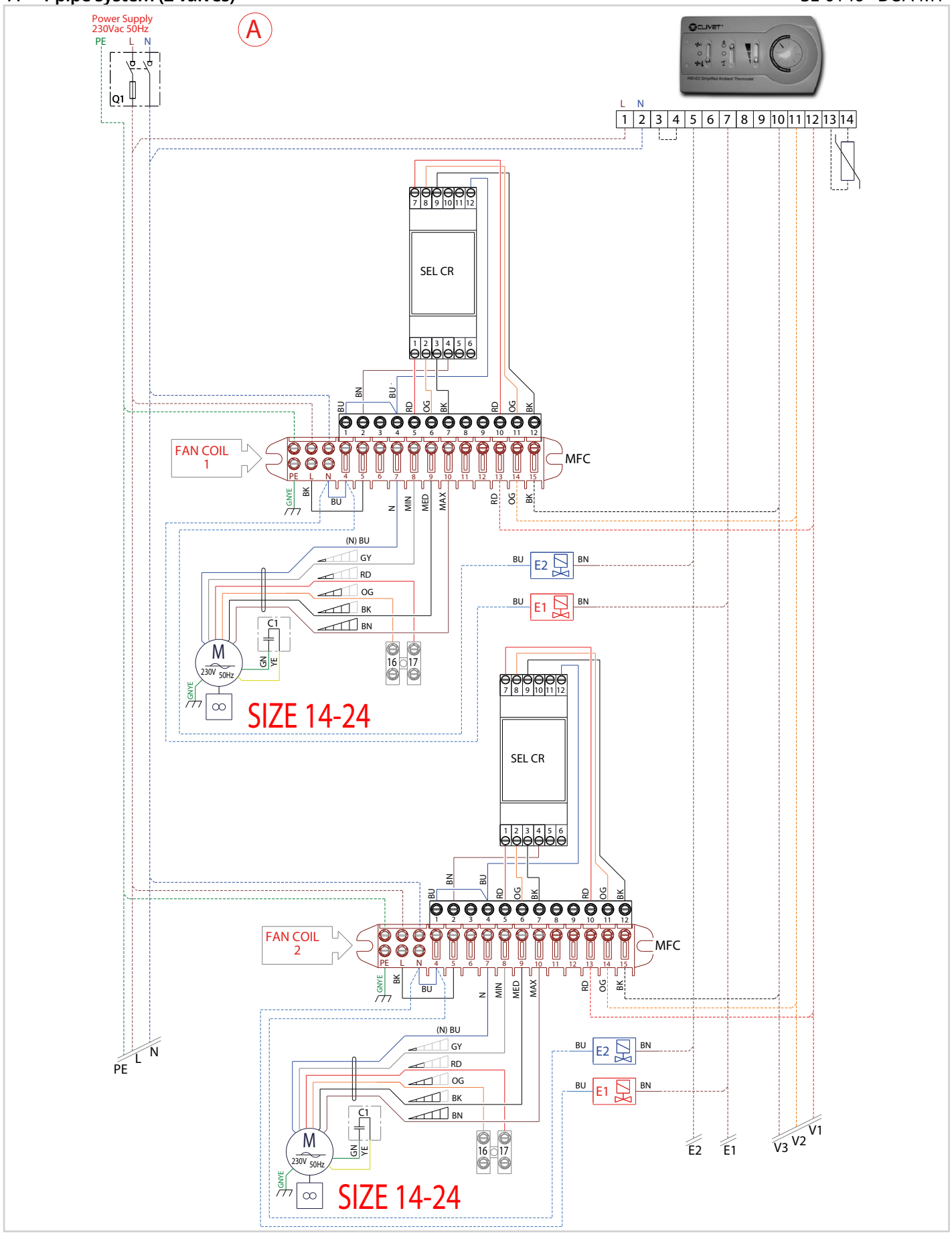
Minimum water probe



MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230V on-off actuator water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

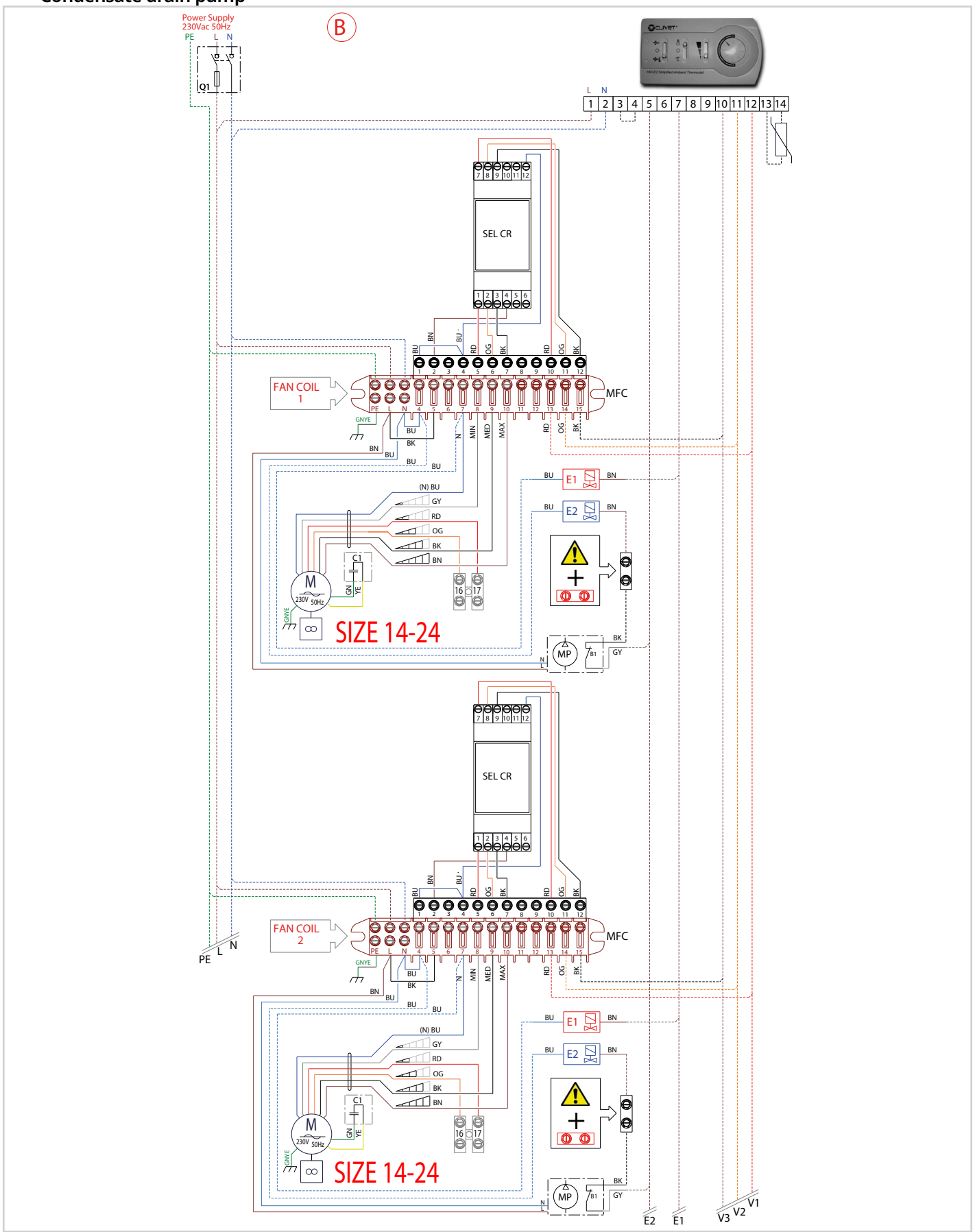
A - 4-pipe system (2 valves)

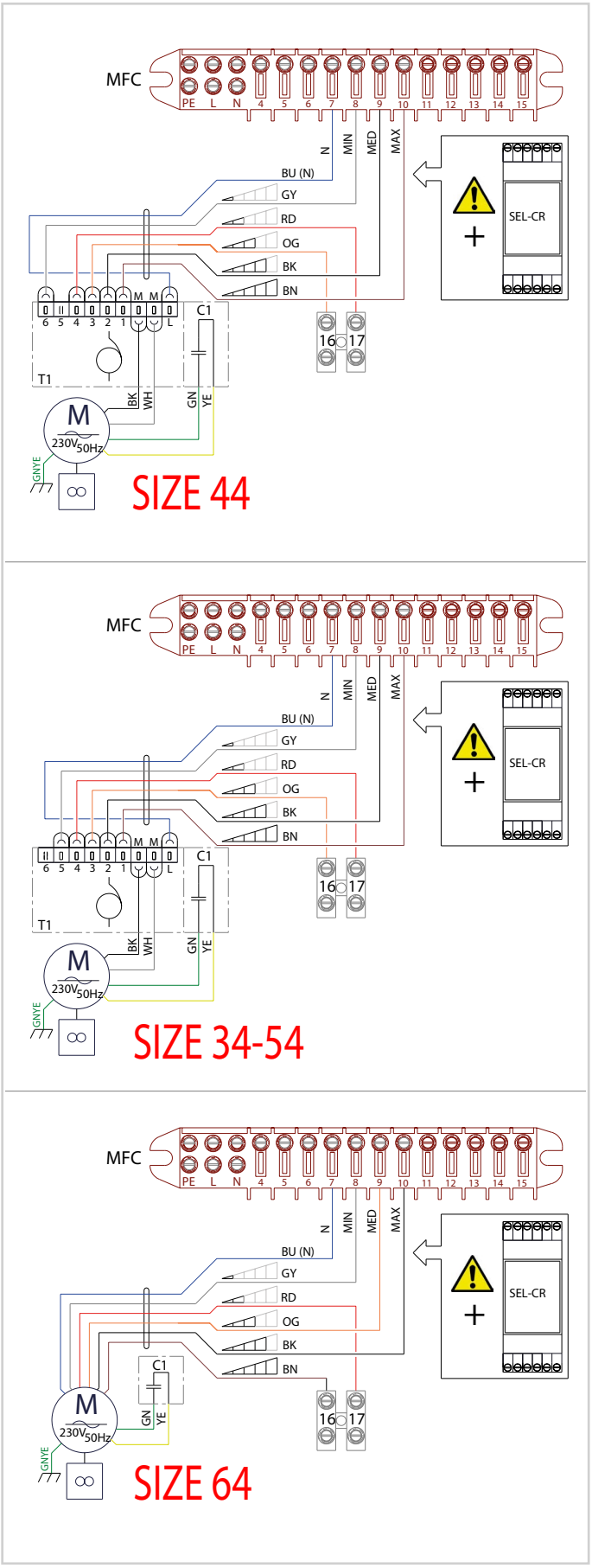
SE-0146 - DUA-M1



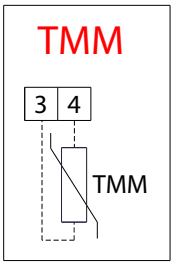
B - 4-pipe system (2 valves)

Condensate drain pump





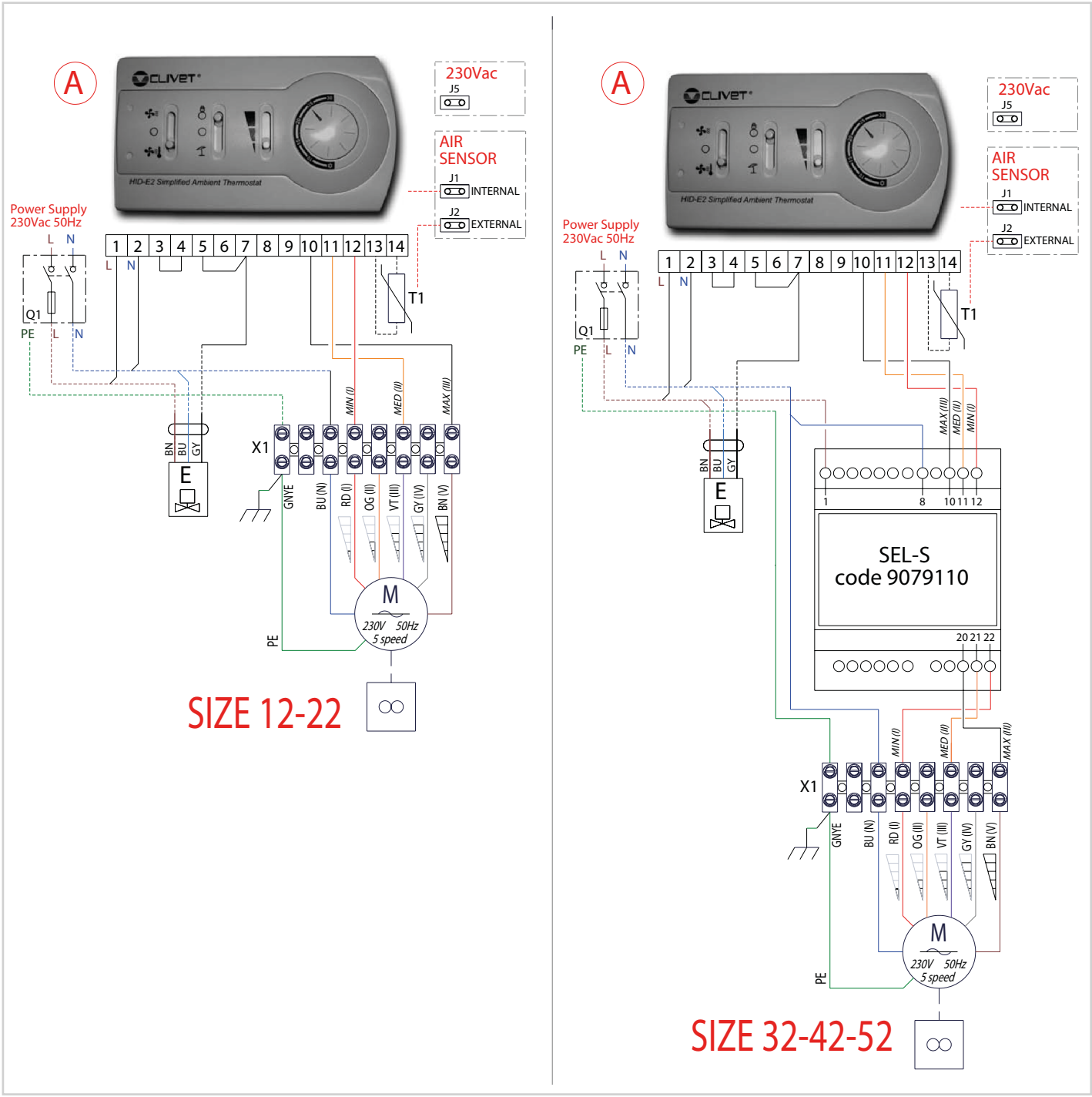
Minimum water probe



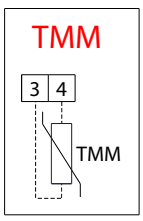
MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

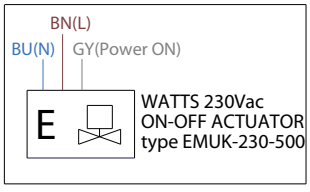
A - 2-pipe system (1 valve)

SE-0147 - DUA-H1



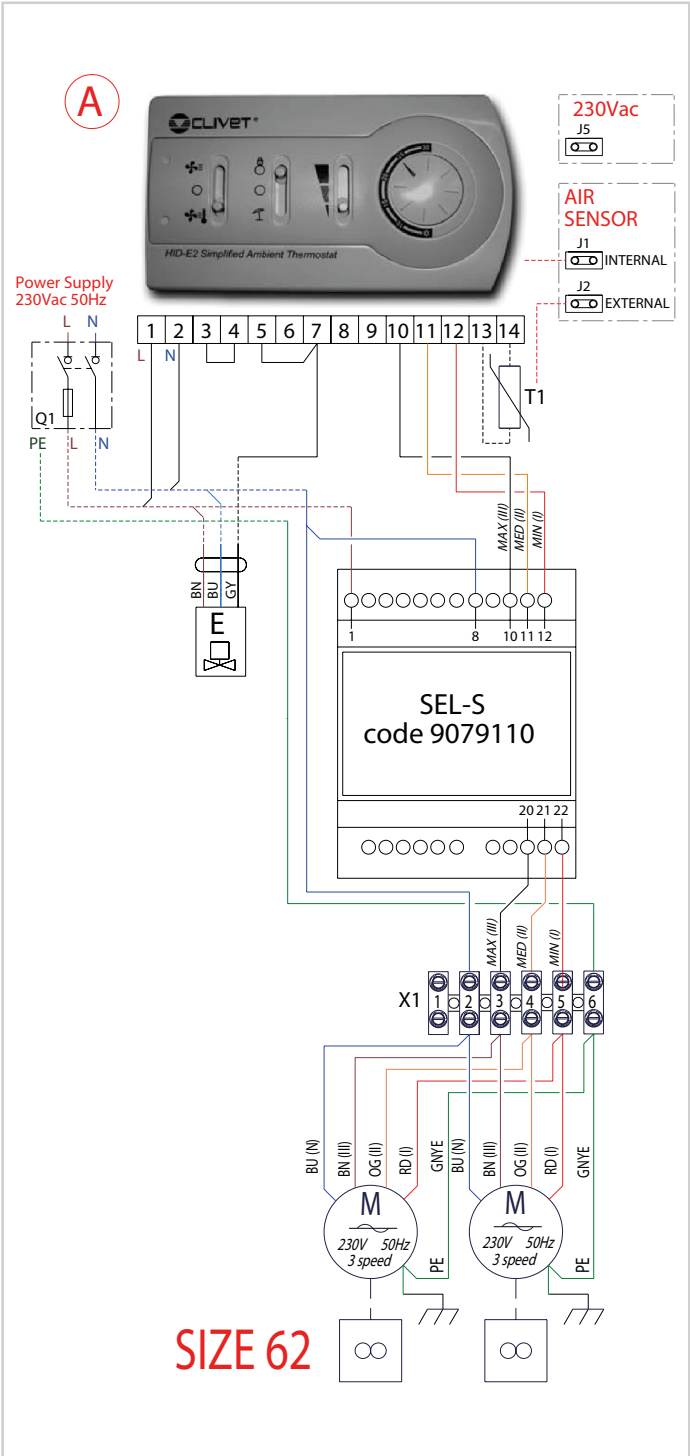
Minimum water probe





230v on-off actuator water valve

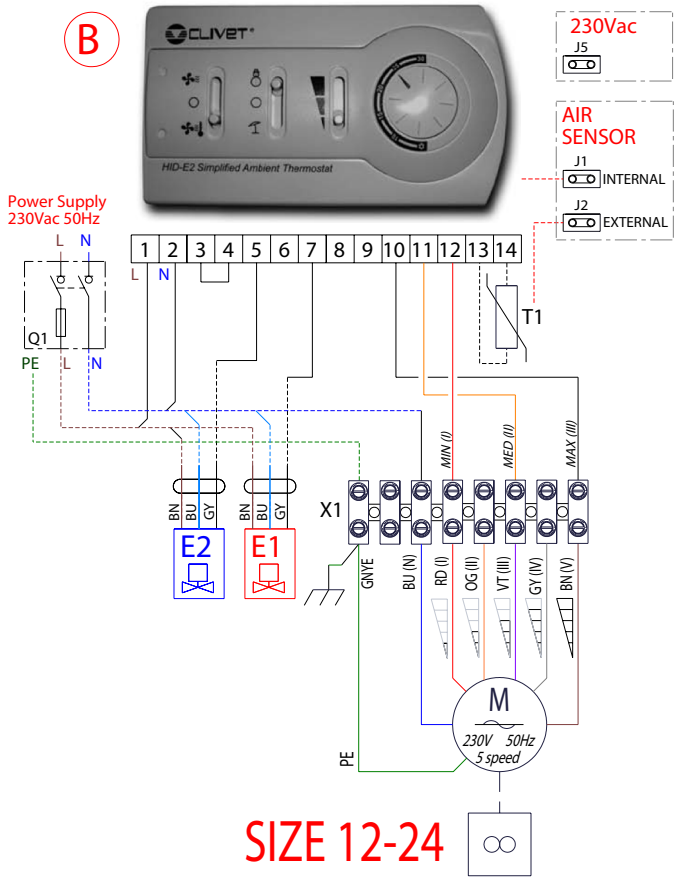
B - 4-pipe system (2 valves)

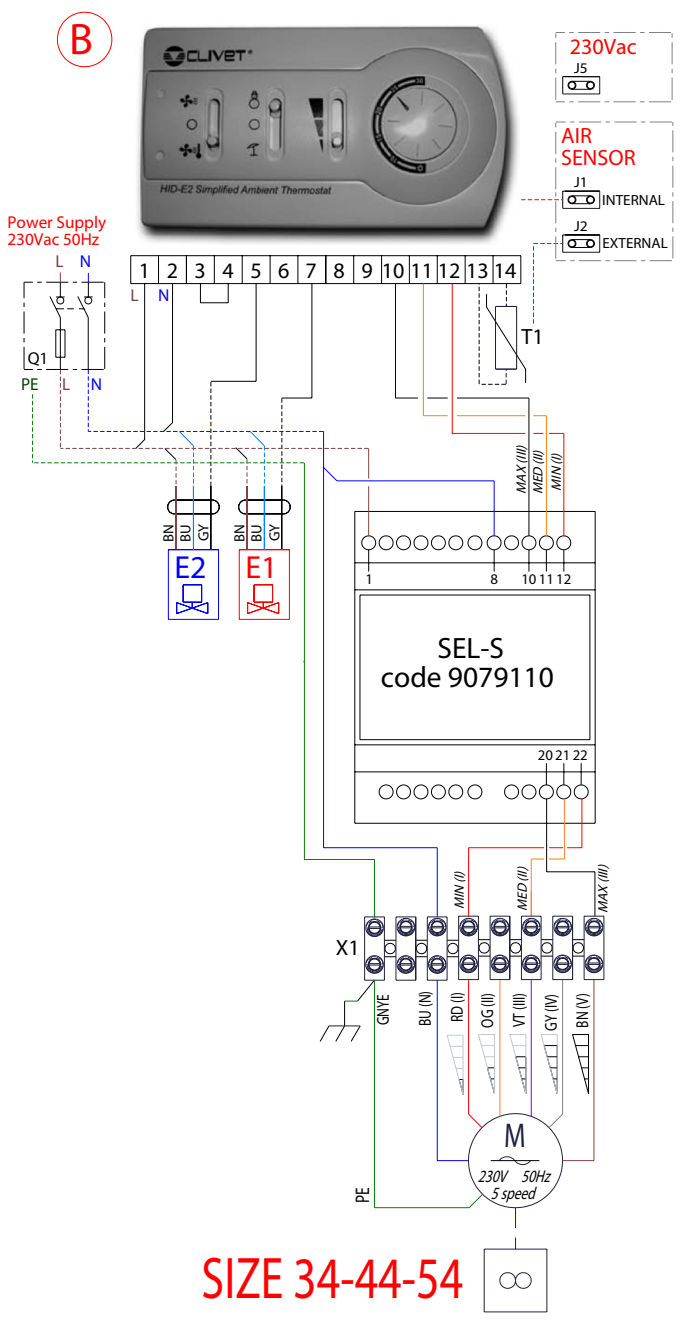


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230V on-off actuator water valve

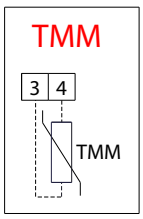
_____	Production wiring
- - - - - - -	Connection by installer

SE-0147 - DUA-H1

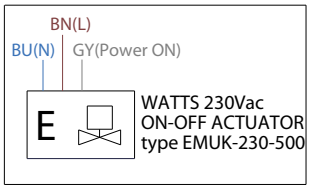


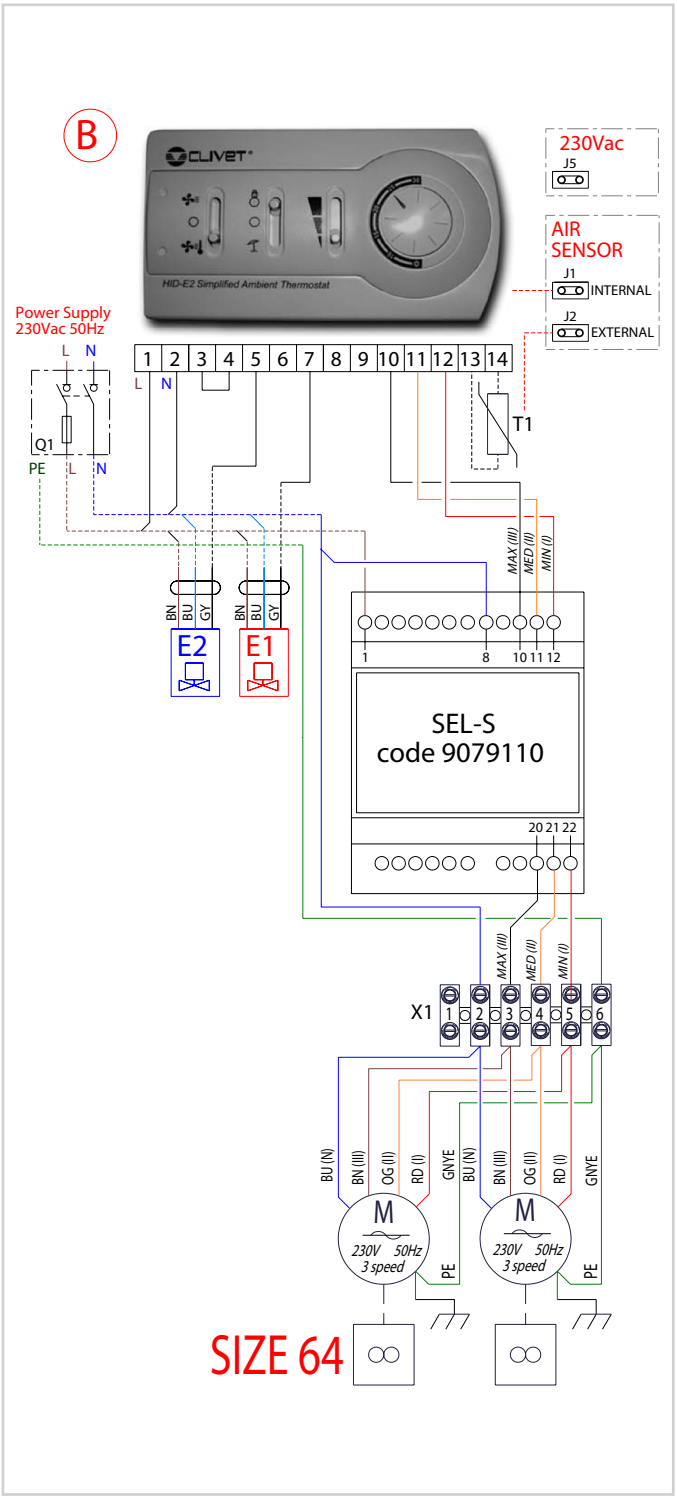


Minimum water probe



230v on-off actuator water valve



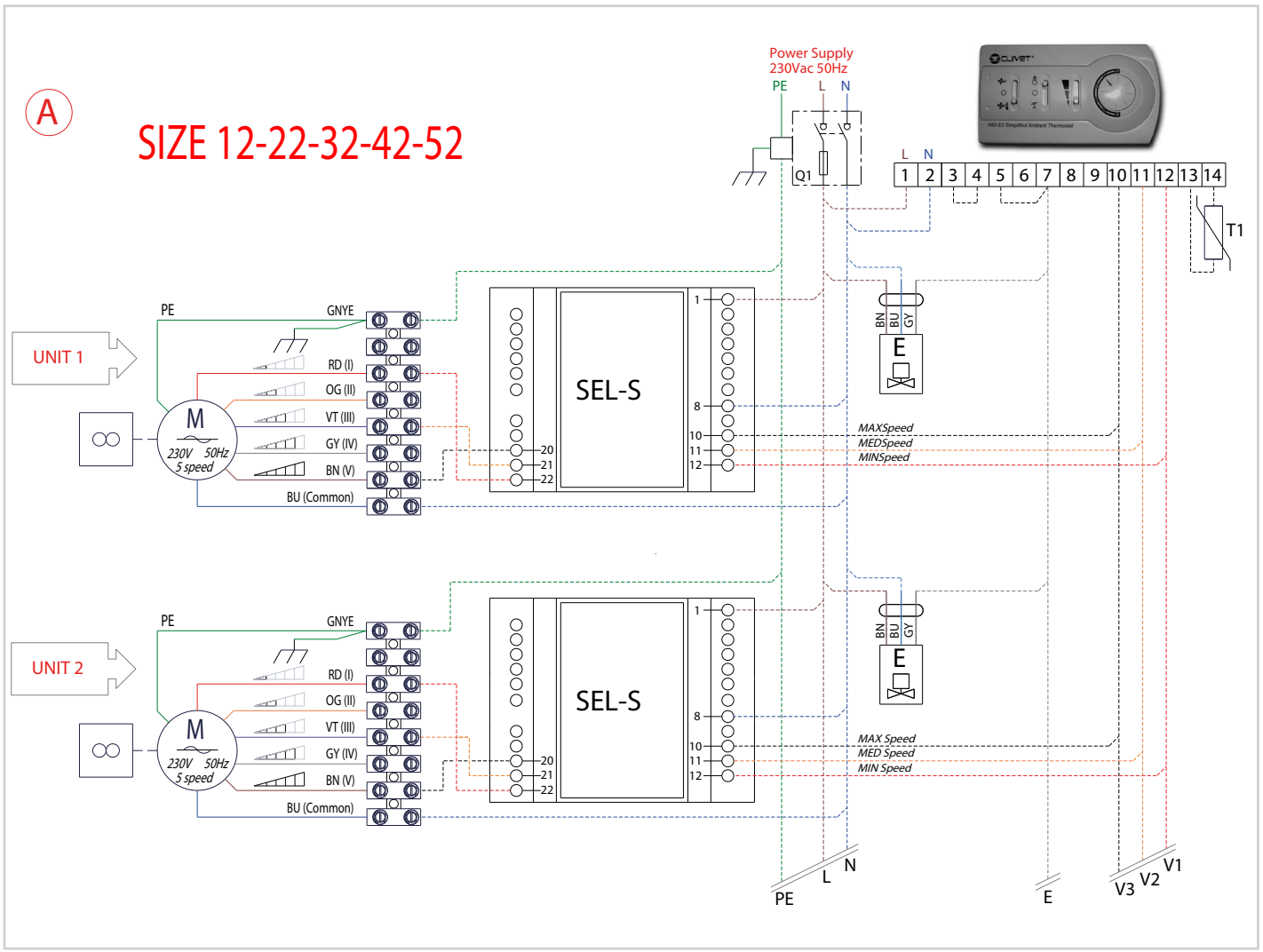


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E1	230V on-off actuator water valve
E2	230V on-off actuator cold valve

_____	Production wiring
- - - - - - -	Connection by installer

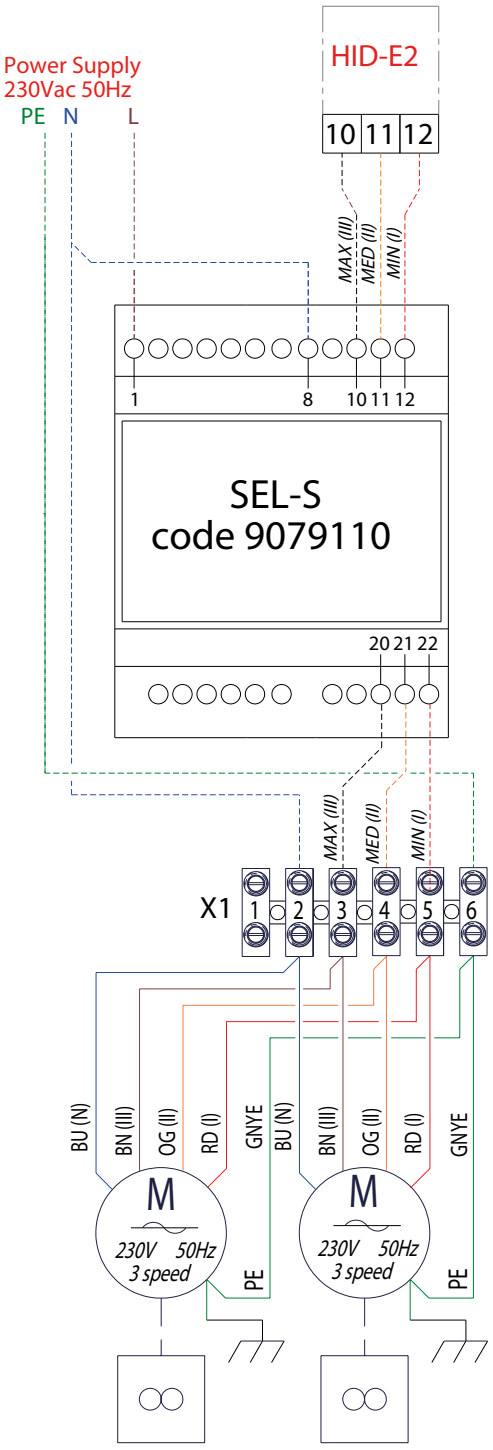
A - 2-pipe system (1 valve)

SE-0148 - DUA-H1



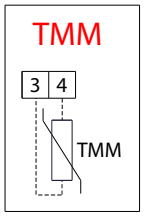
X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230V on-off actuator water valve

_____	Production wiring
- - - - - - -	Connection by installer



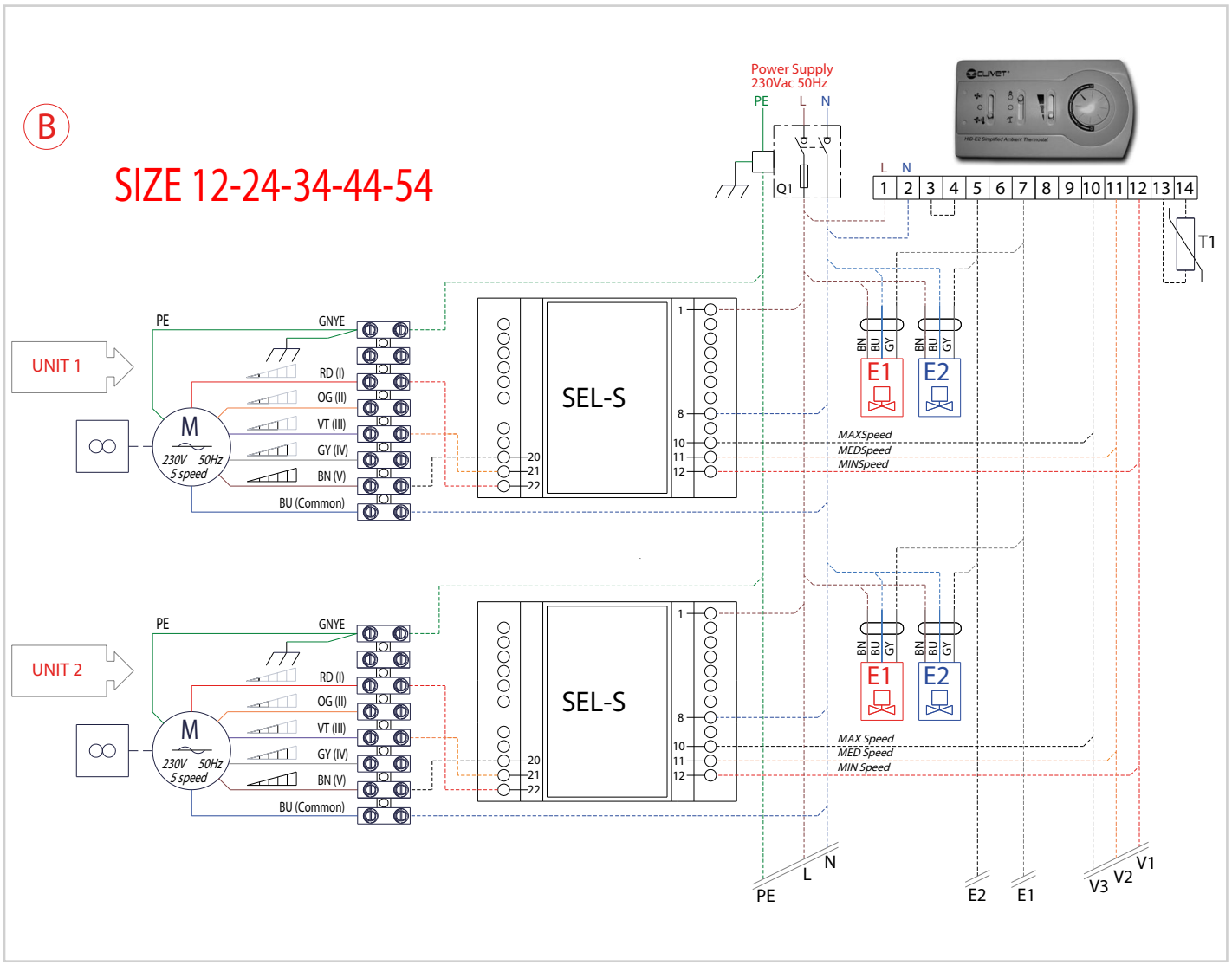
SIZE 62

Minimum water probe



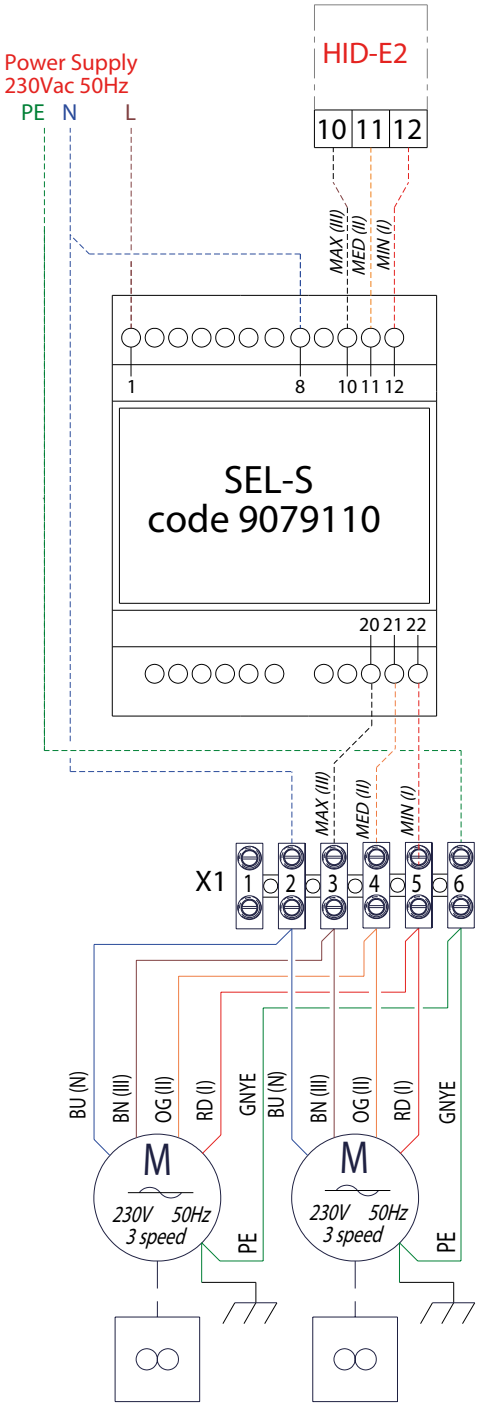
B - 4-pipe system (2 valves)

SE-0148 - DUA-H1



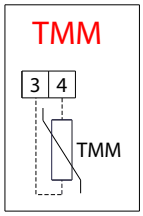
X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E1	230V on-off actuator water valve
E2	230V on-off actuator cold valve

_____	Production wiring
_ _ _ _ _ _ _	Connection by installer



SIZE 64

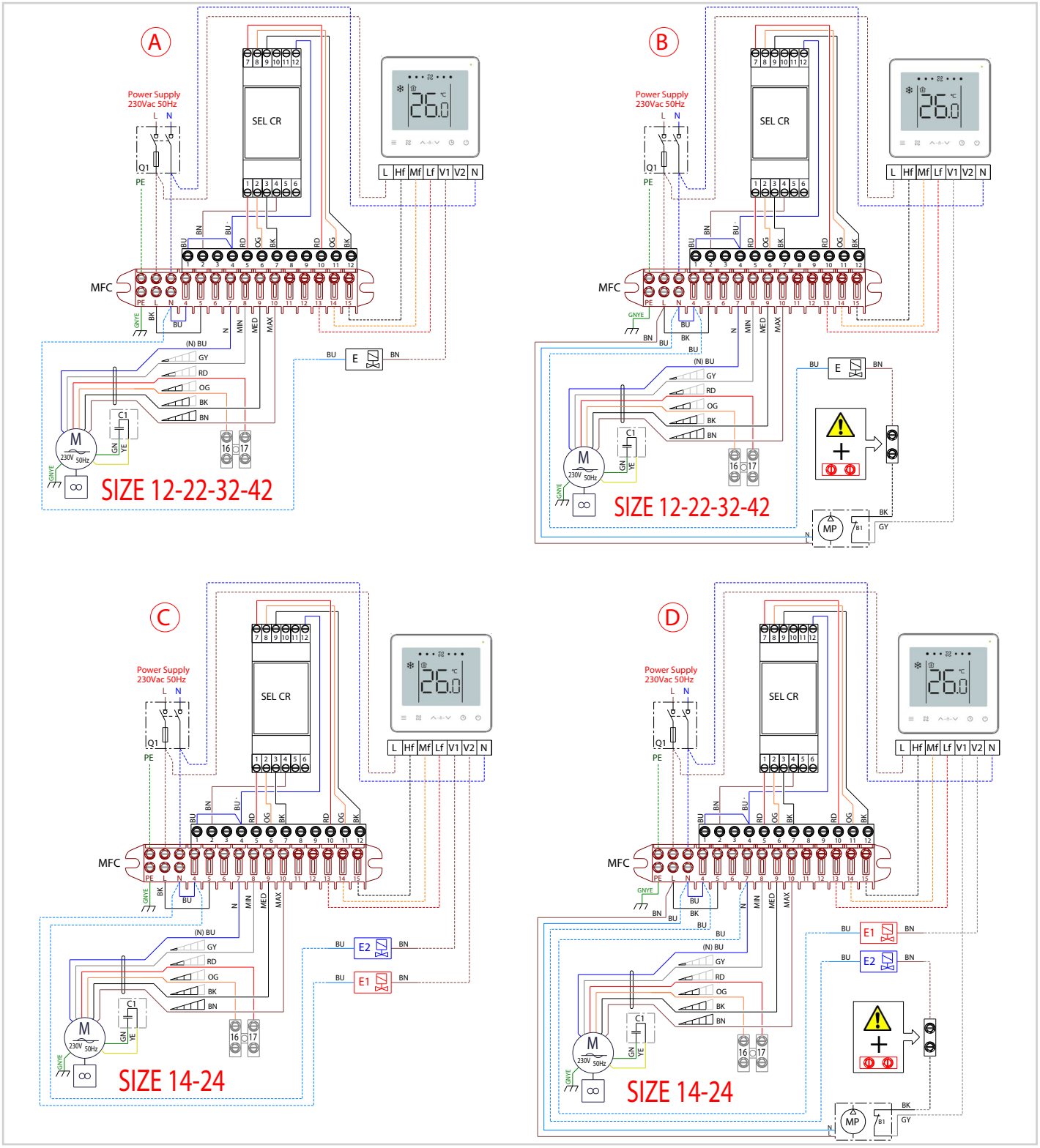
Minimum water probe

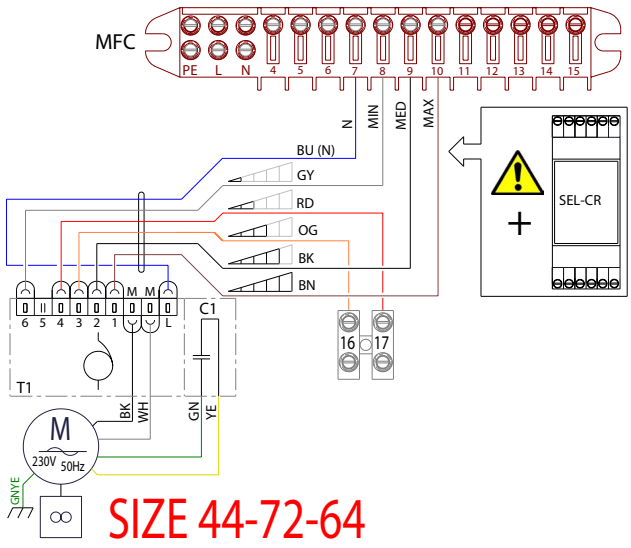


7.5 Connections with the KJRP-86R thermostat

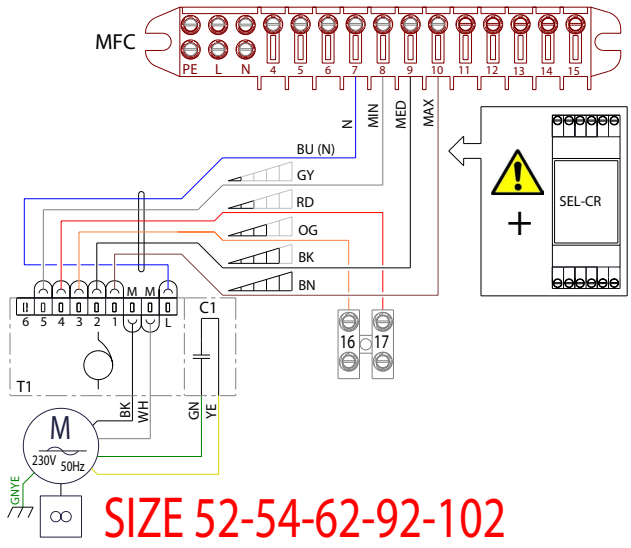
SE-0183 - DUA-M1

A -	2-pipe system (1 valve)	B -	2-pipe system (1 valve) Condensate drain pump	C-	4-pipe systems (1 valve)	D-	4-pipe systems (1 valve) Condensate drain pump

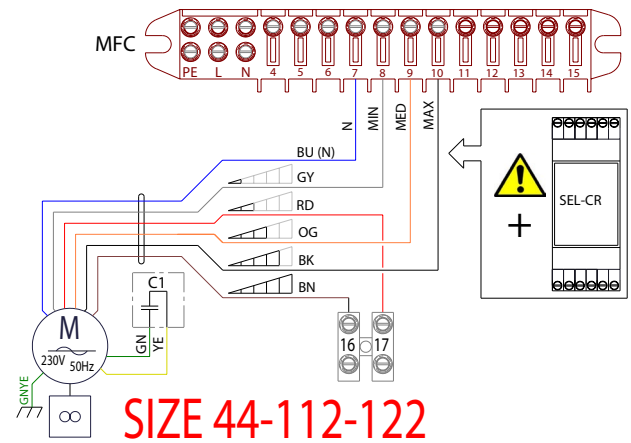




SIZE 44-72-64



SIZE 52-54-62-92-102



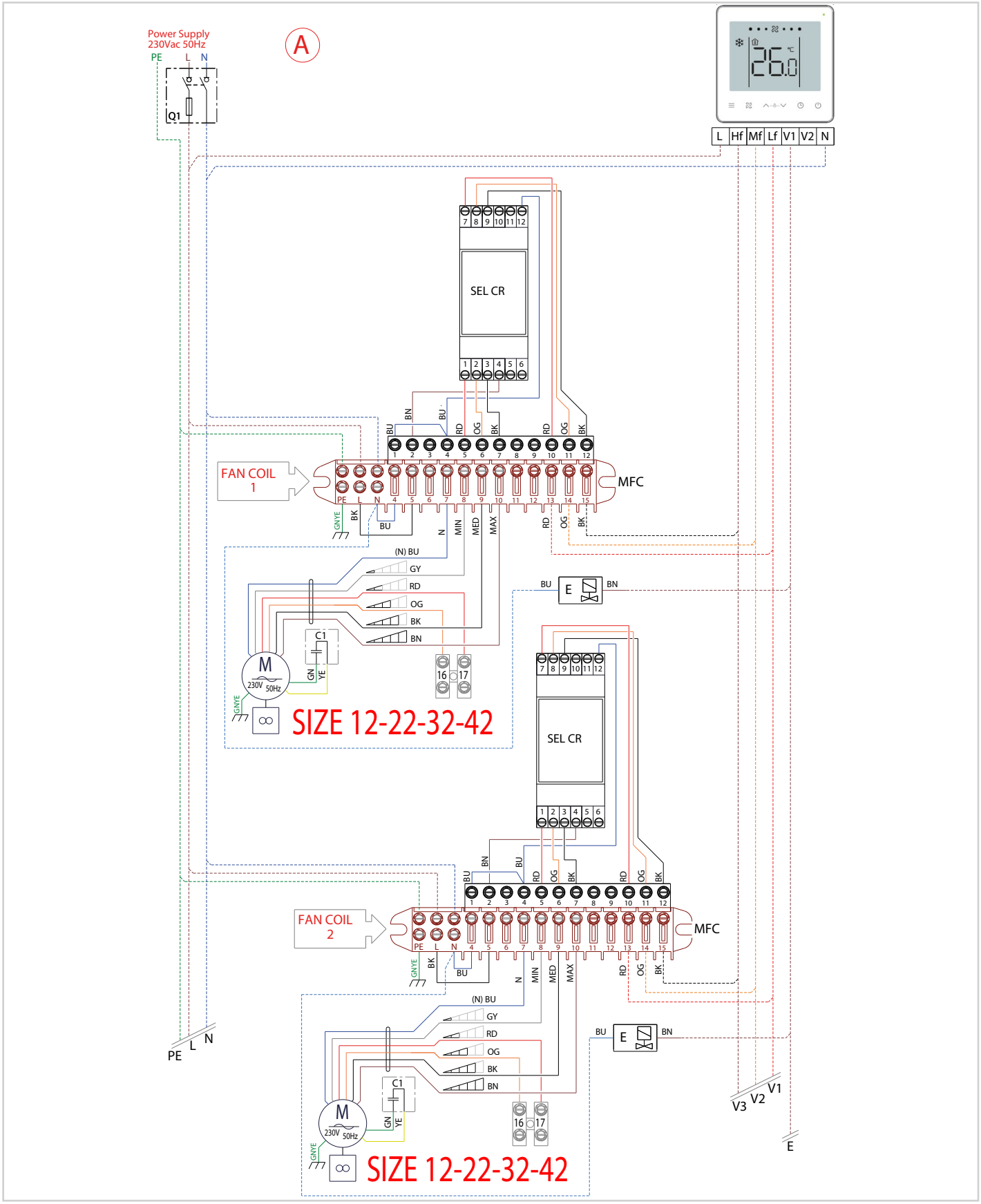
SIZE 44-112-122

MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
E	230v on-off actuator water valve
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

_____	Production wiring
- - - - - - -	Connection by installer

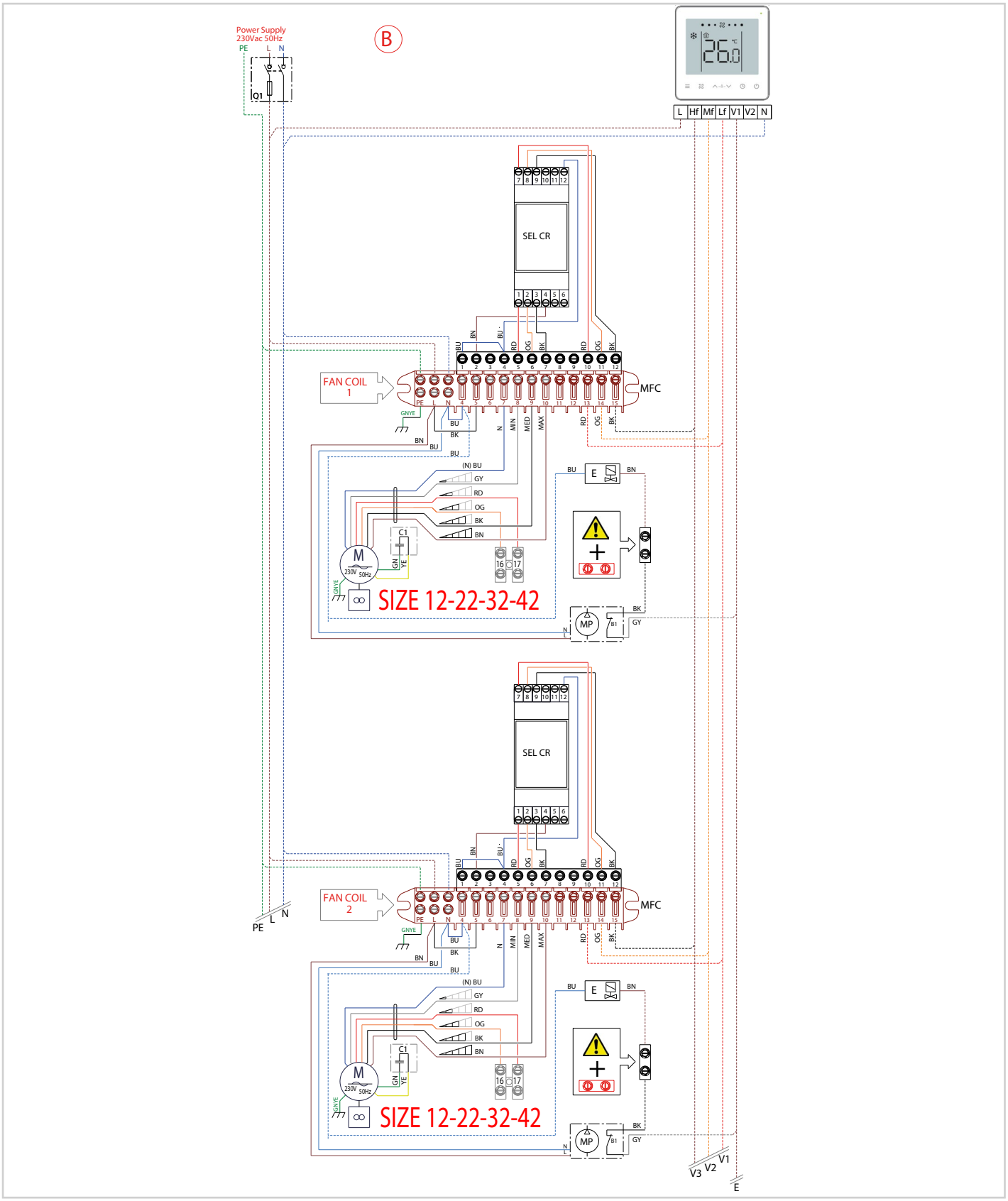
A - 2-pipe system (1 valve)

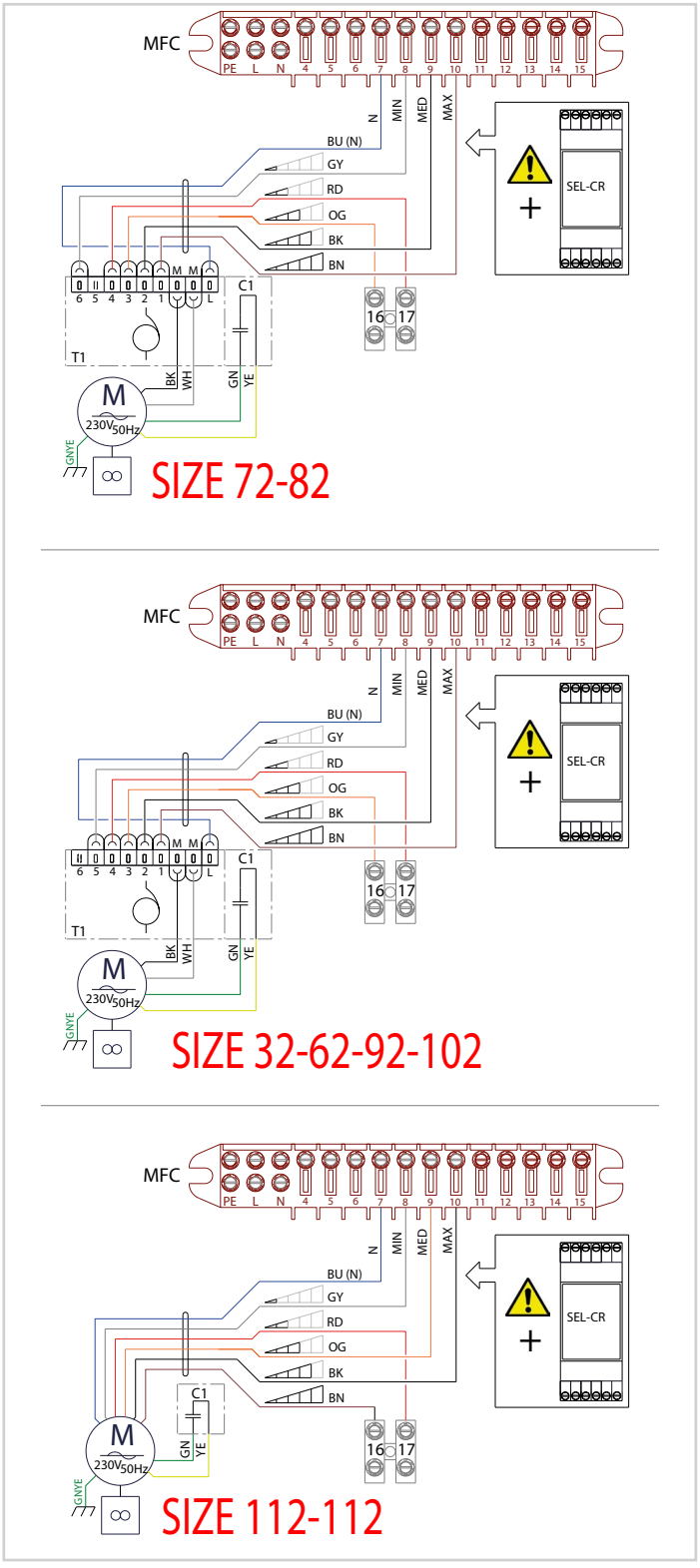
SE-0184 - DUA-M1



B - 2-pipe system (1 valve)

Condensate drain pump

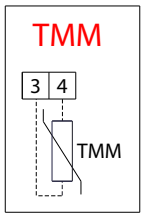




MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230v on-off actuator water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

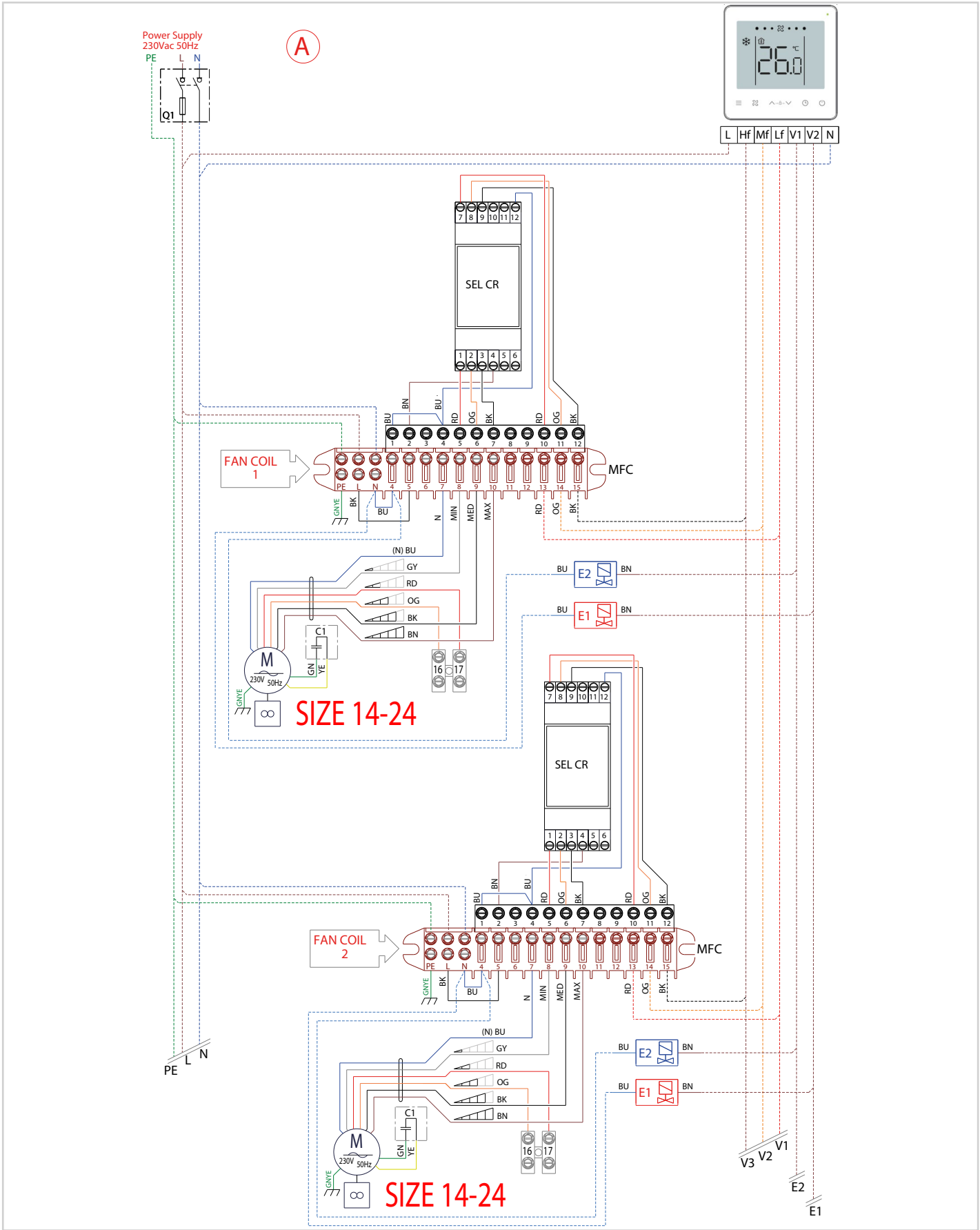
_____	Production wiring
- - - - - - -	Connection by installer

Minimum water probe



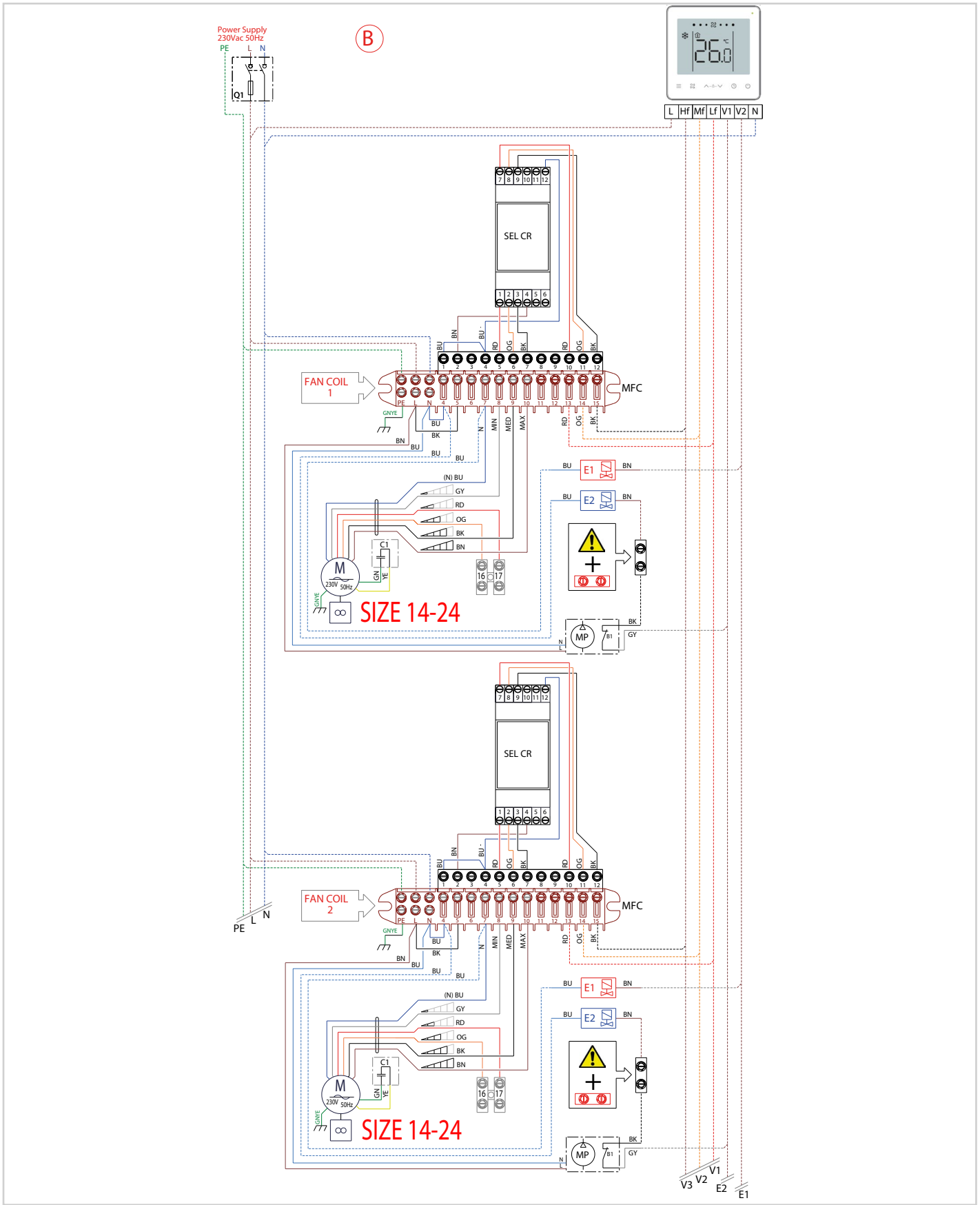
A - 4-pipe system (2 valves)

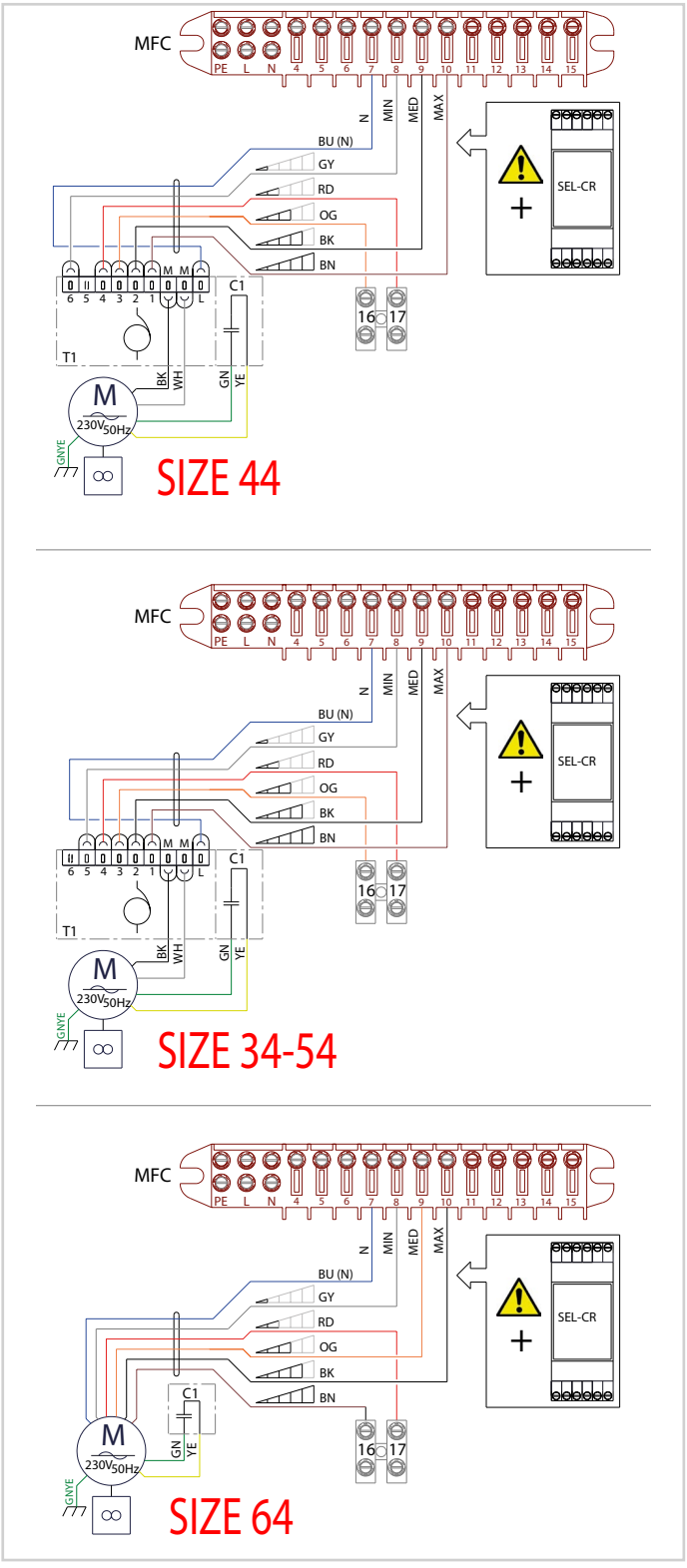
SE-0184 - DUA-M1



B - 4-pipe system (2 valves)

Condensate drain pump

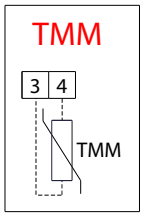




MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

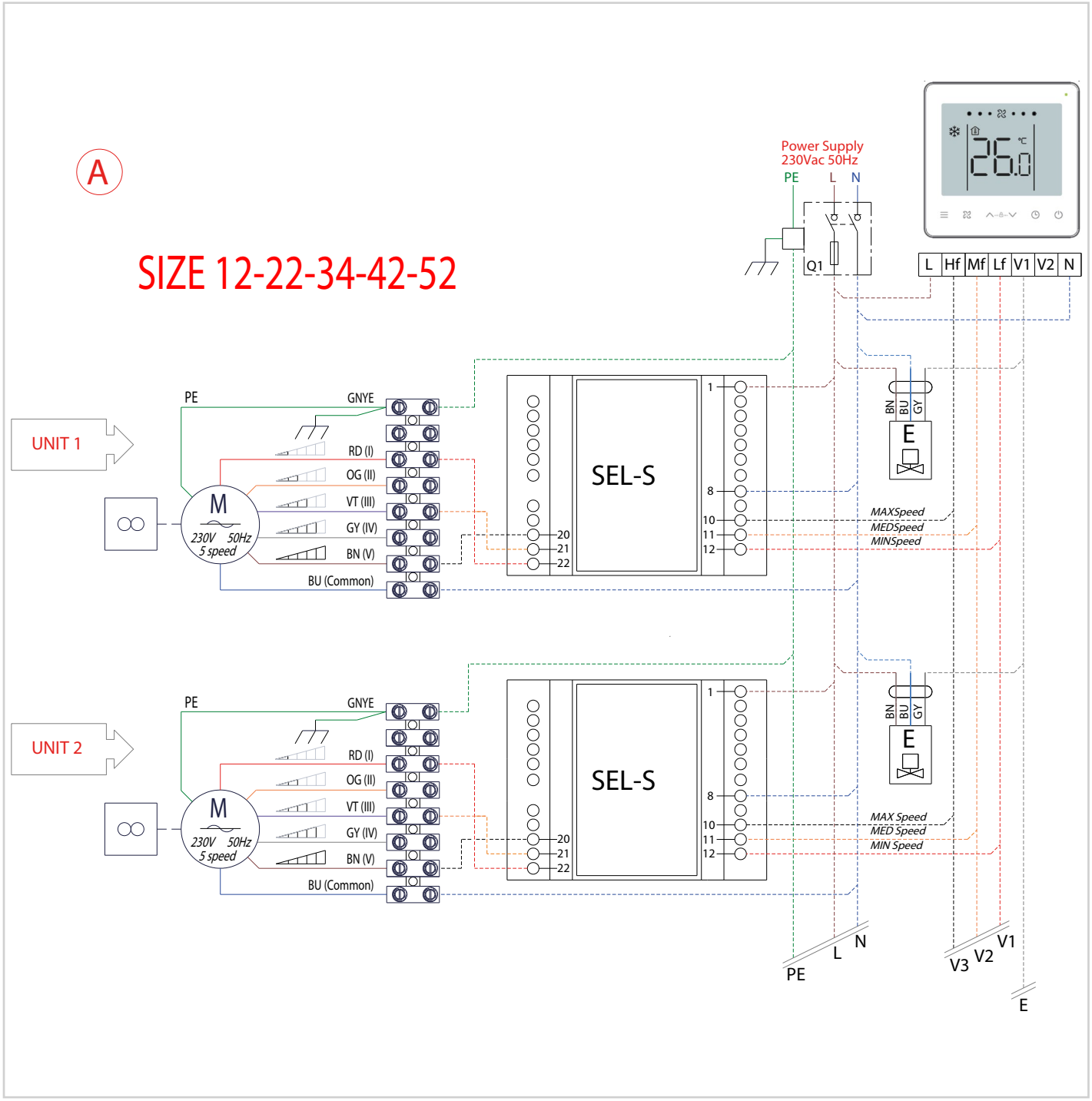
_____	Production wiring
- - - - - - -	Connection by installer

Minimum water probe



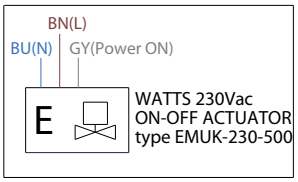
A - 2-pipe system (1 valve)

SE-0185 - DUA-H1

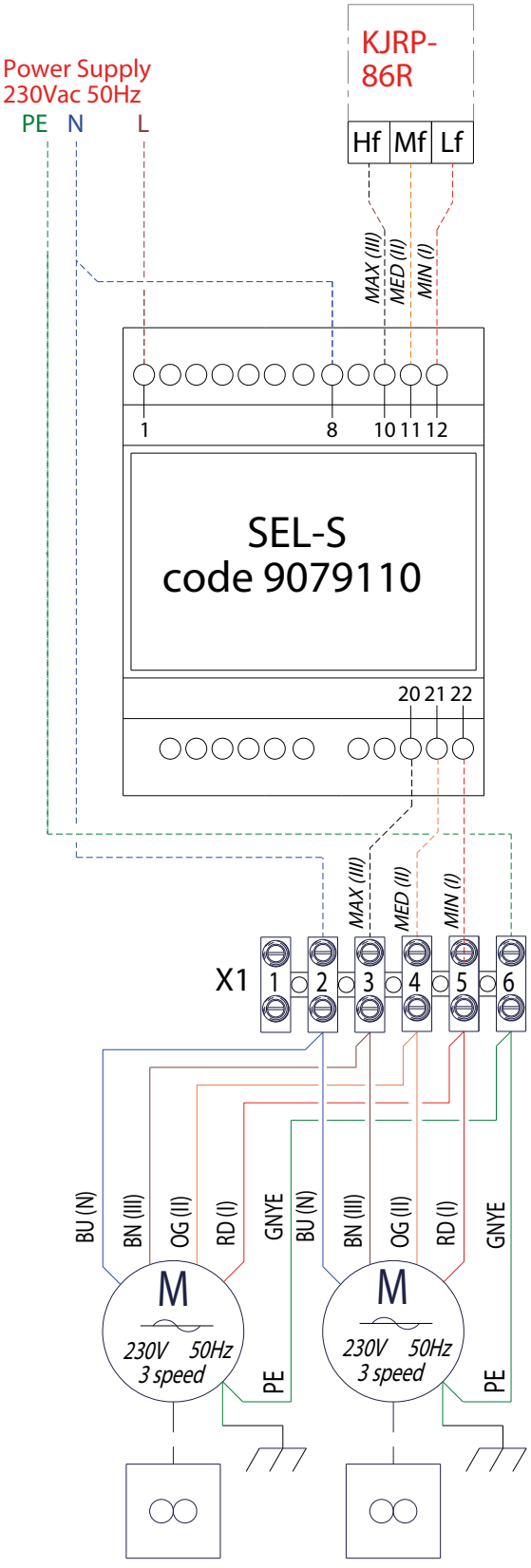


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
E	230V on-off actuator water valve

230v on-off actuator water valve

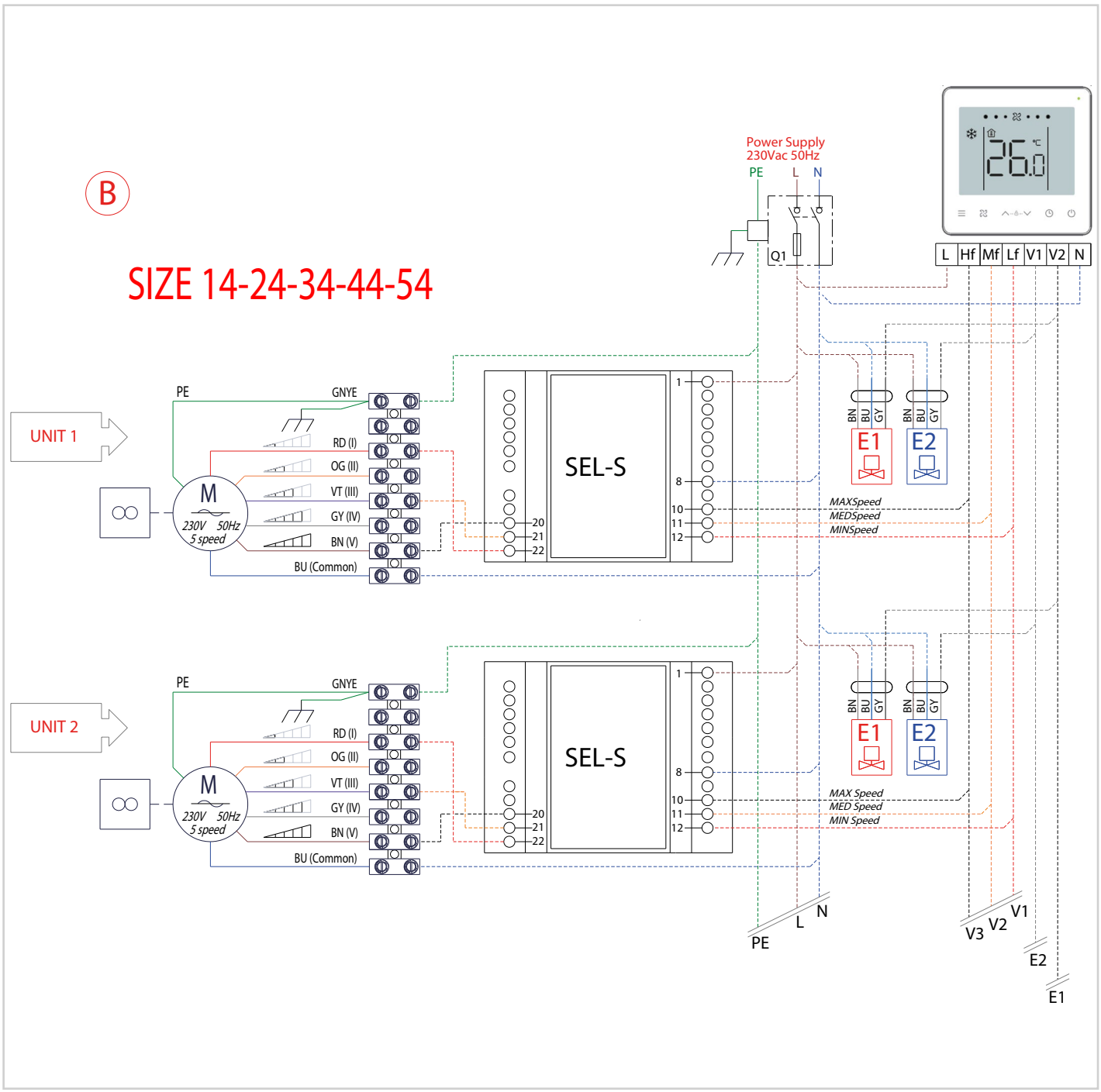


_____	Production wiring
- - - - - - -	Connection by installer


Power Supply
230Vac 50Hz
PE N L
KJRP-
86R
Hf Mf Lf
MAX (III)
MED (II)
MIN (I)
1 8 10 11 12
SEL-S
code 9079110
20 21 22
MAX (III)
MED (II)
MIN (I)
X1
1 2 3 4 5 6
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
M
230V 50Hz
3 speed
M
230V 50Hz
3 speed
PE
PE

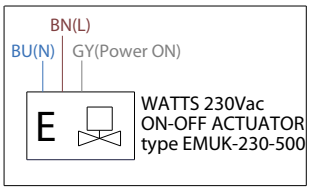
SIZE 64

B - 4-pipe system (2 valves)

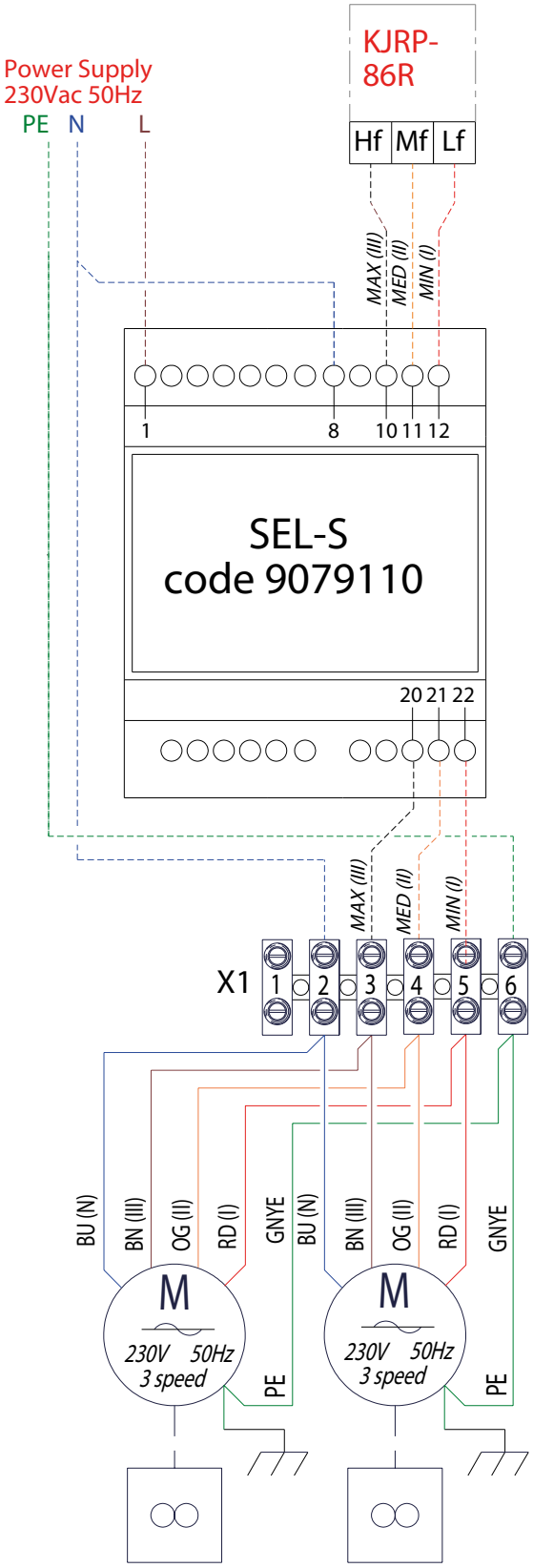


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
E1	230V on-off actuator water valve
E2	230V on-off actuator cold valve

_____	Production wiring
- - - - - - -	Connection by installer



230v on-off actuator water valve

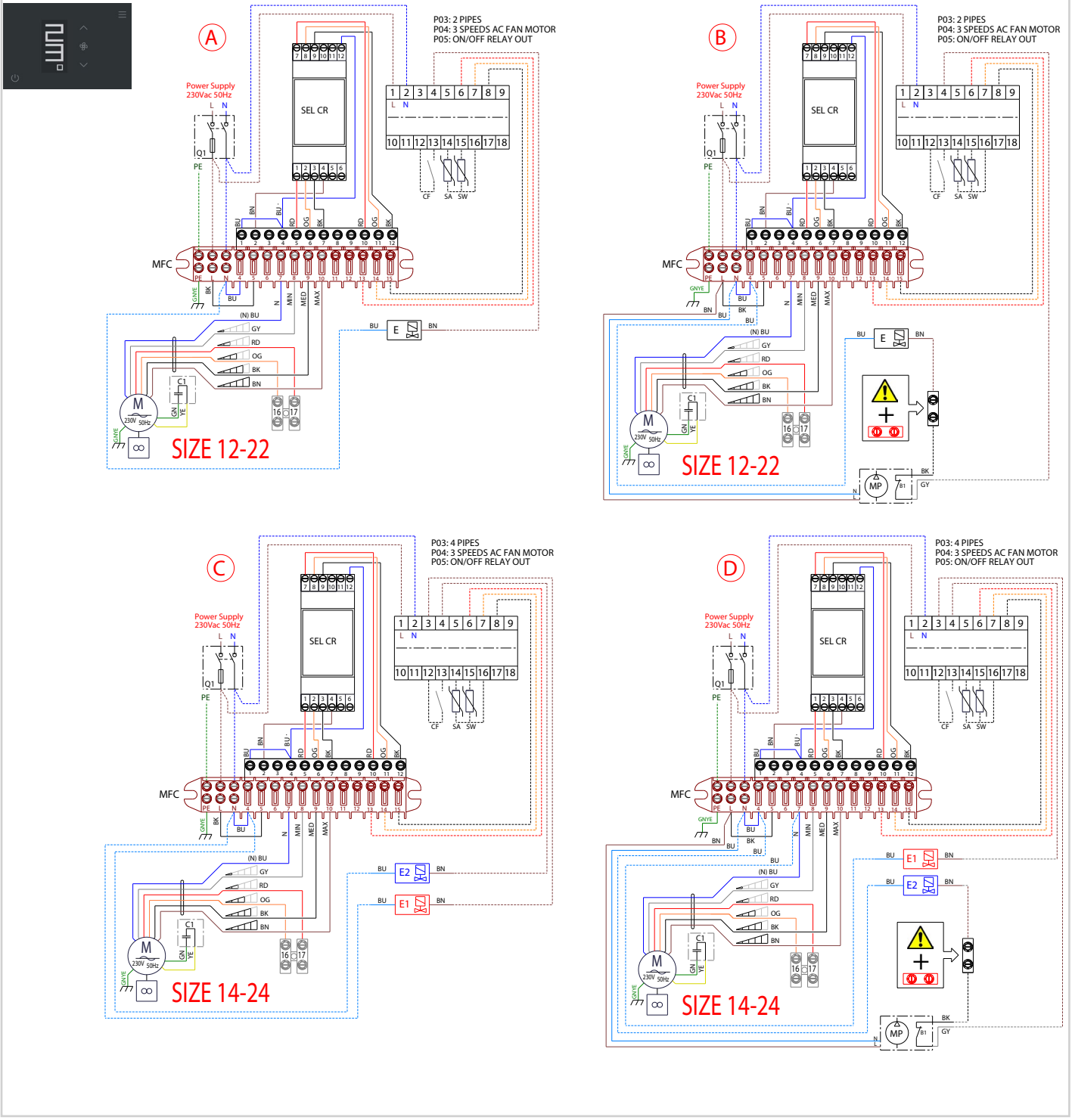

Power Supply
230Vac 50Hz
PE N L
KJRP-
86R
Hf Mf Lf
MAX (III)
MED (II)
MIN (I)
1 8 10 11 12
SEL-S
code 9079110
20 21 22
MAX (III)
MED (II)
MIN (I)
X1
1 2 3 4 5 6
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
M
230V 50Hz
3 speed
PE
M
230V 50Hz
3 speed
PE

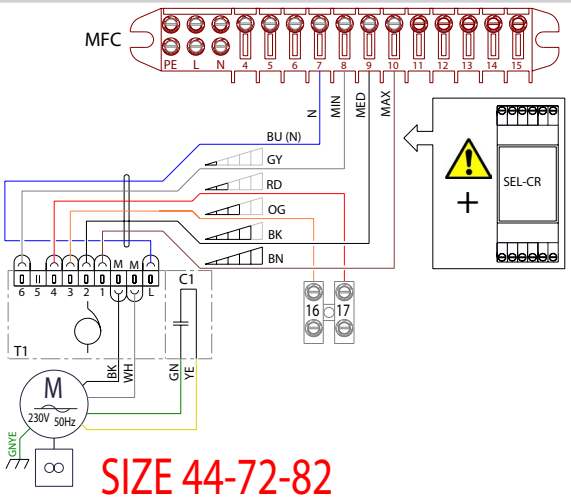
SIZE 64

7.6 Connections with the GFW01XZ001AN thermostat

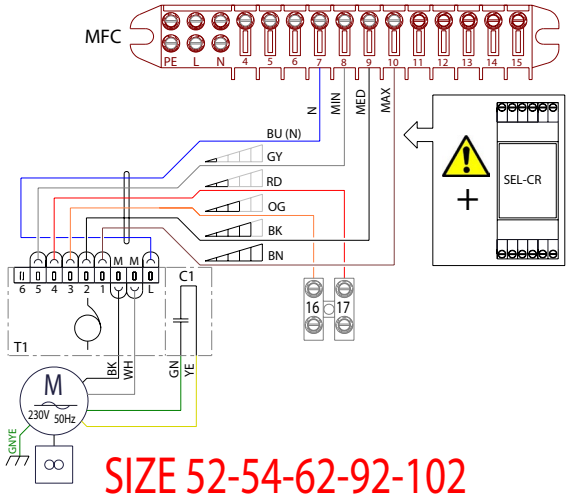
SE-0187 - DUA-M1

A -	2-pipe system (1 valve)	B -	2-pipe system (1 valve) Condensate drain pump	C-	4-pipe system (2 valves)	D-	4-pipe system (2 valves) Condensate drain pump

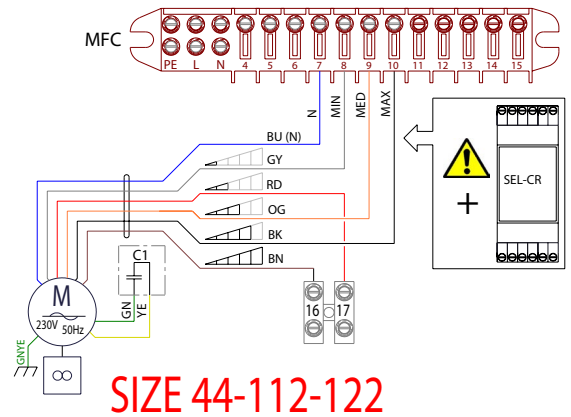




SIZE 44-72-82



SIZE 52-54-62-92-102



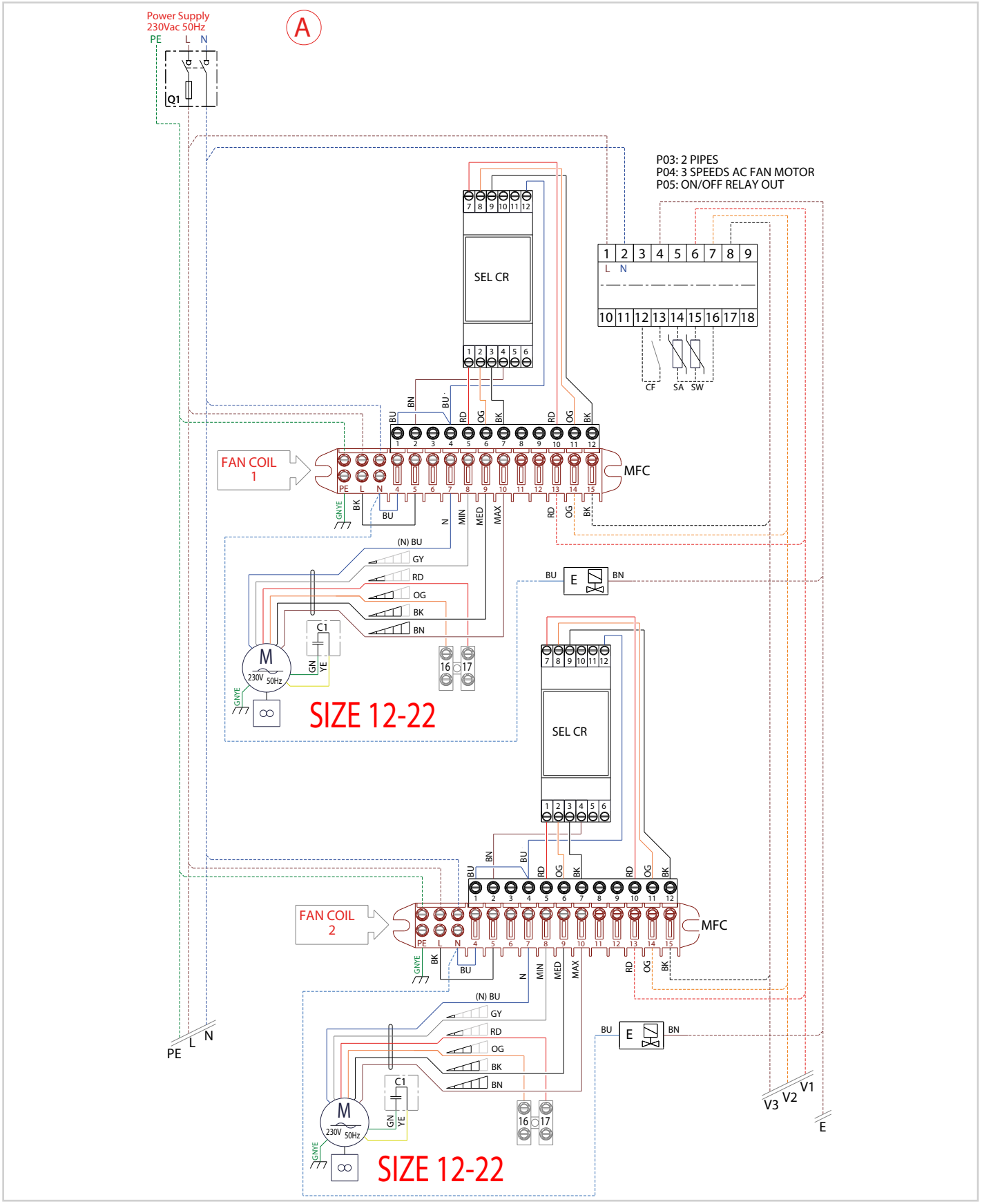
SIZE 44-112-122

MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
CF	Window contact
SA	Air probe
SW	Minimum water probe
E	230V on-off actuator water valve
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

_____	Production wiring
- - - - - - -	Connection by installer

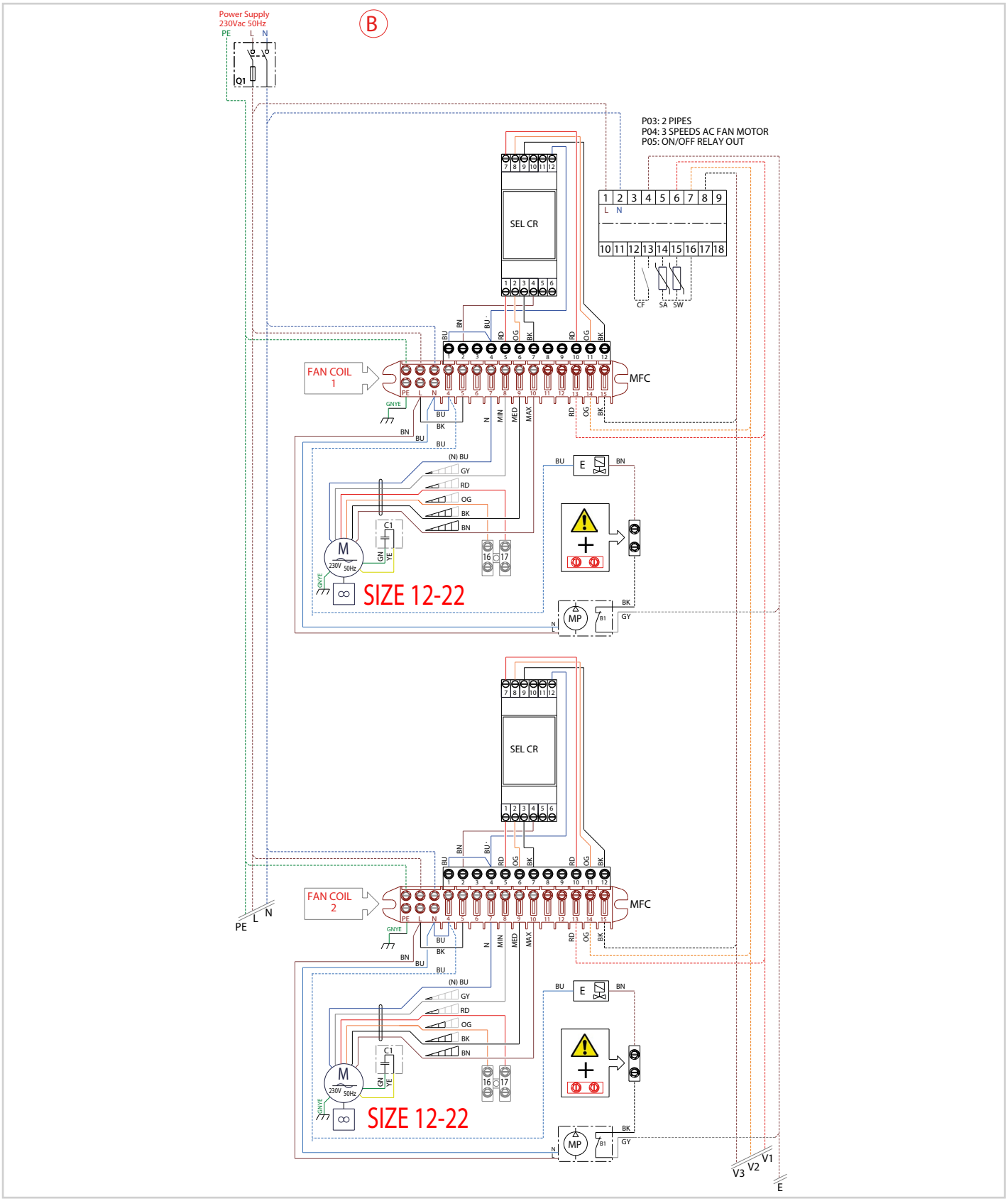
A - 2-pipe system (1 valve)

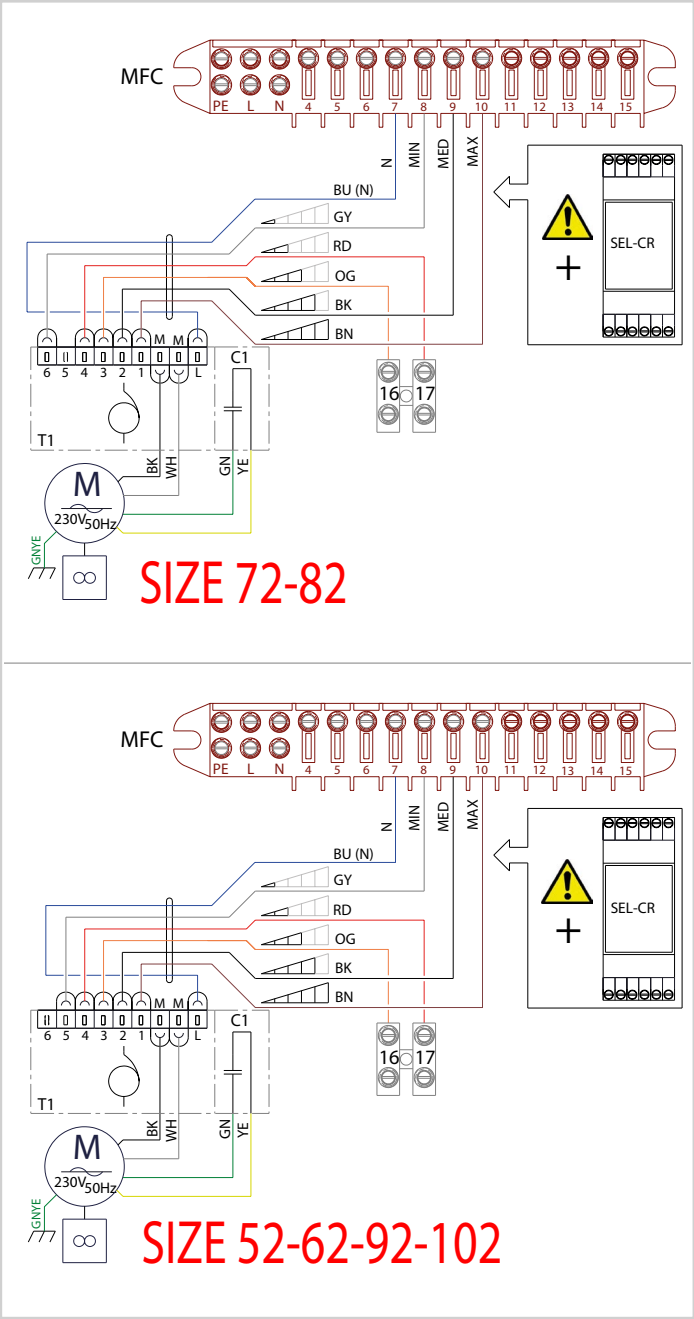
SE-0189-03 - DUA-M1



B - 2-pipe system (1 valve)

Condensate drain pump

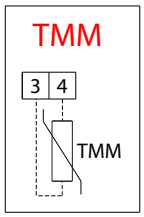




MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E	230v on-off actuator water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

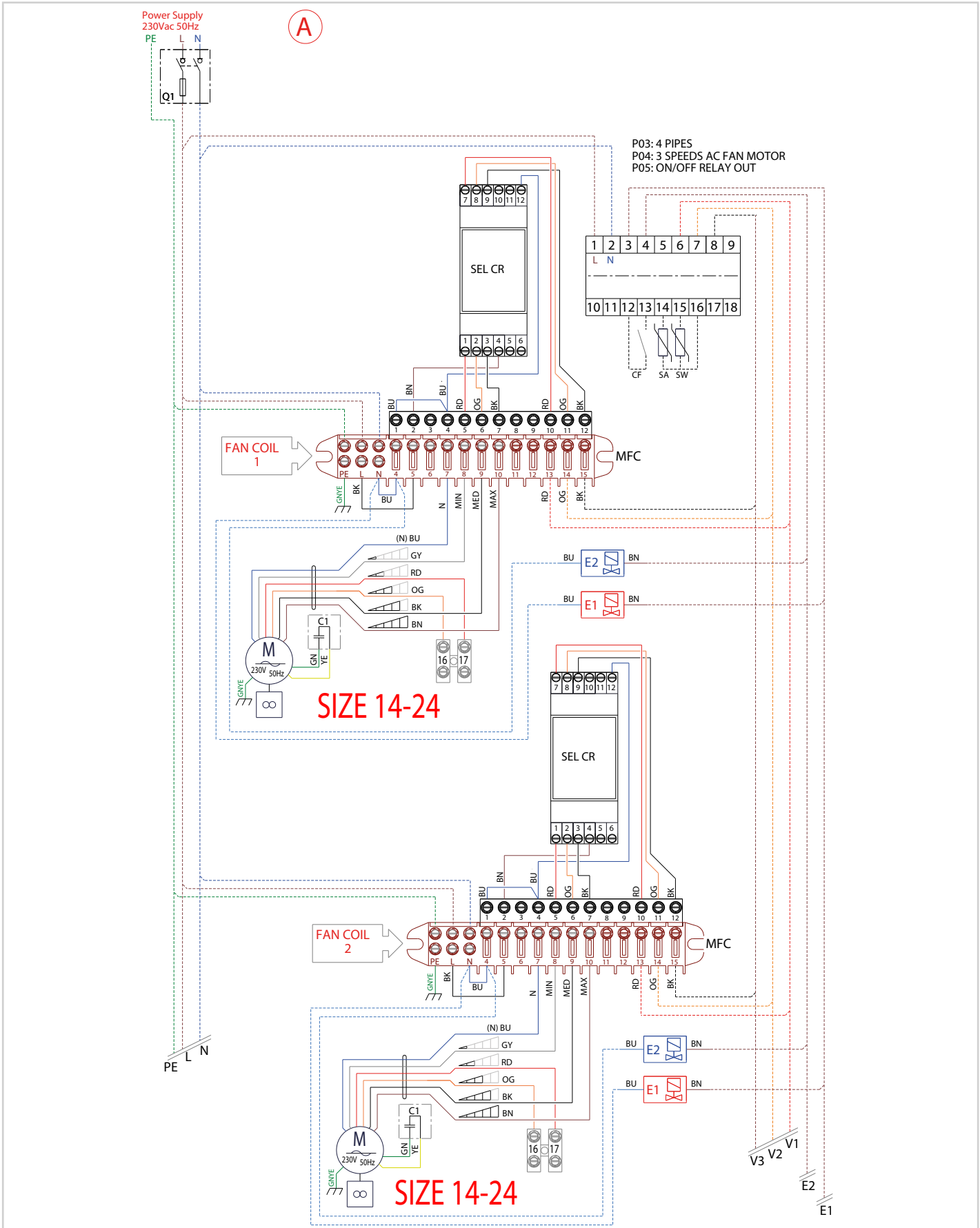
_____	Production wiring
- - - - - - -	Connection by installer

Minimum water probe



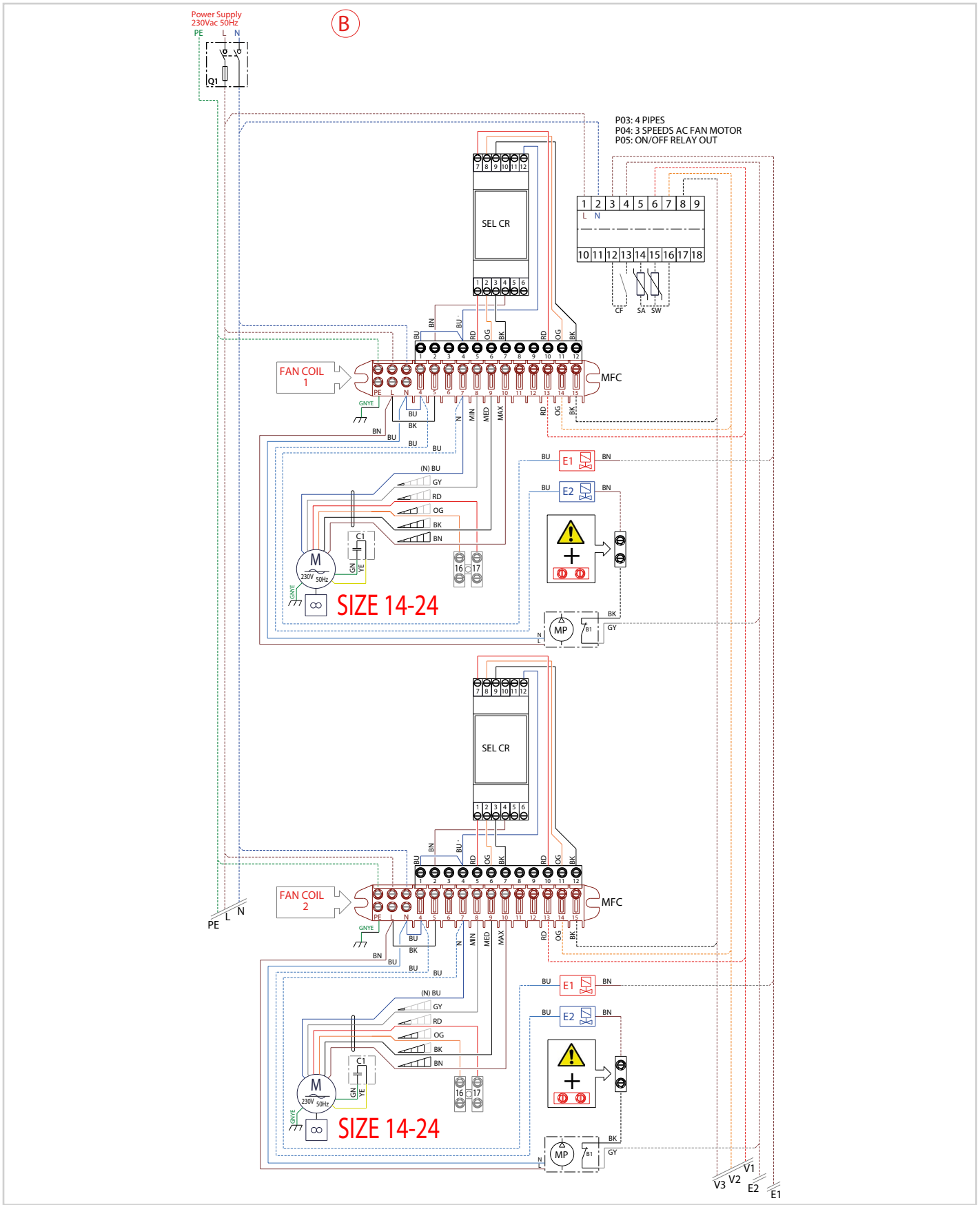
A - 4-pipe system (2 valves)

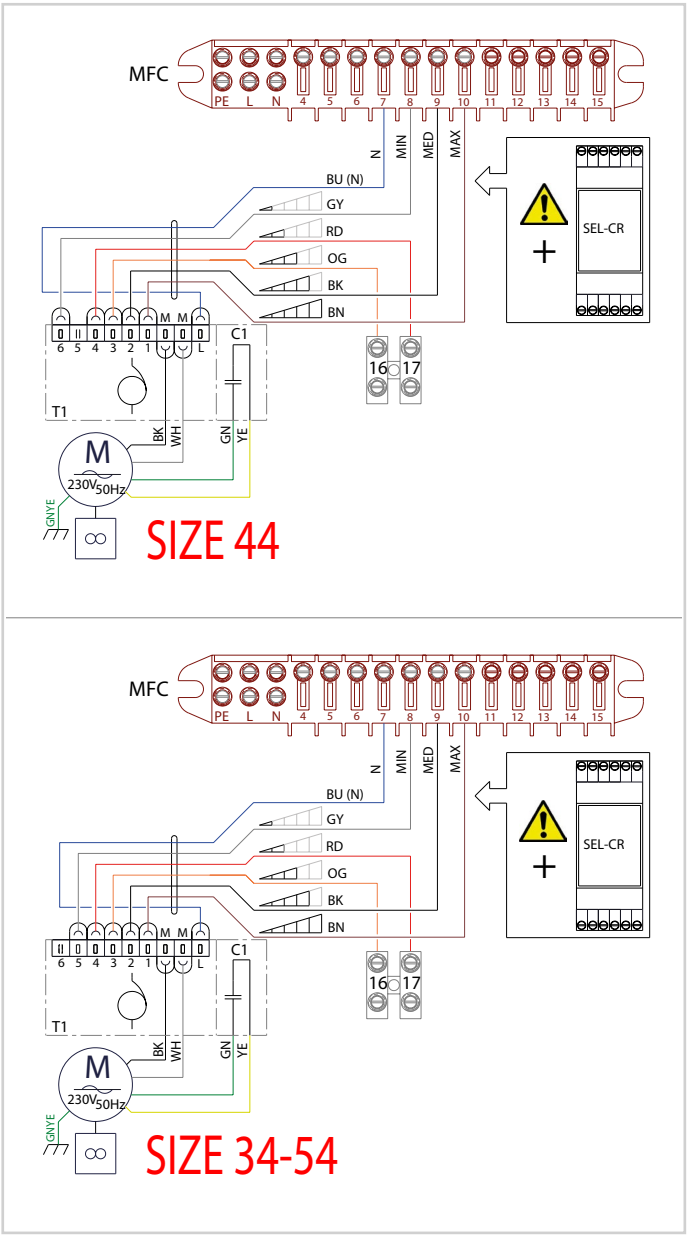
SE-0184-04 - DUA-M1



B - 4-pipe system (2 valves)

Condensate drain pump

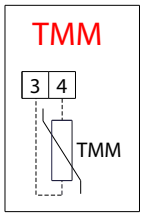




MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
TMM	Minimum water probe
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact

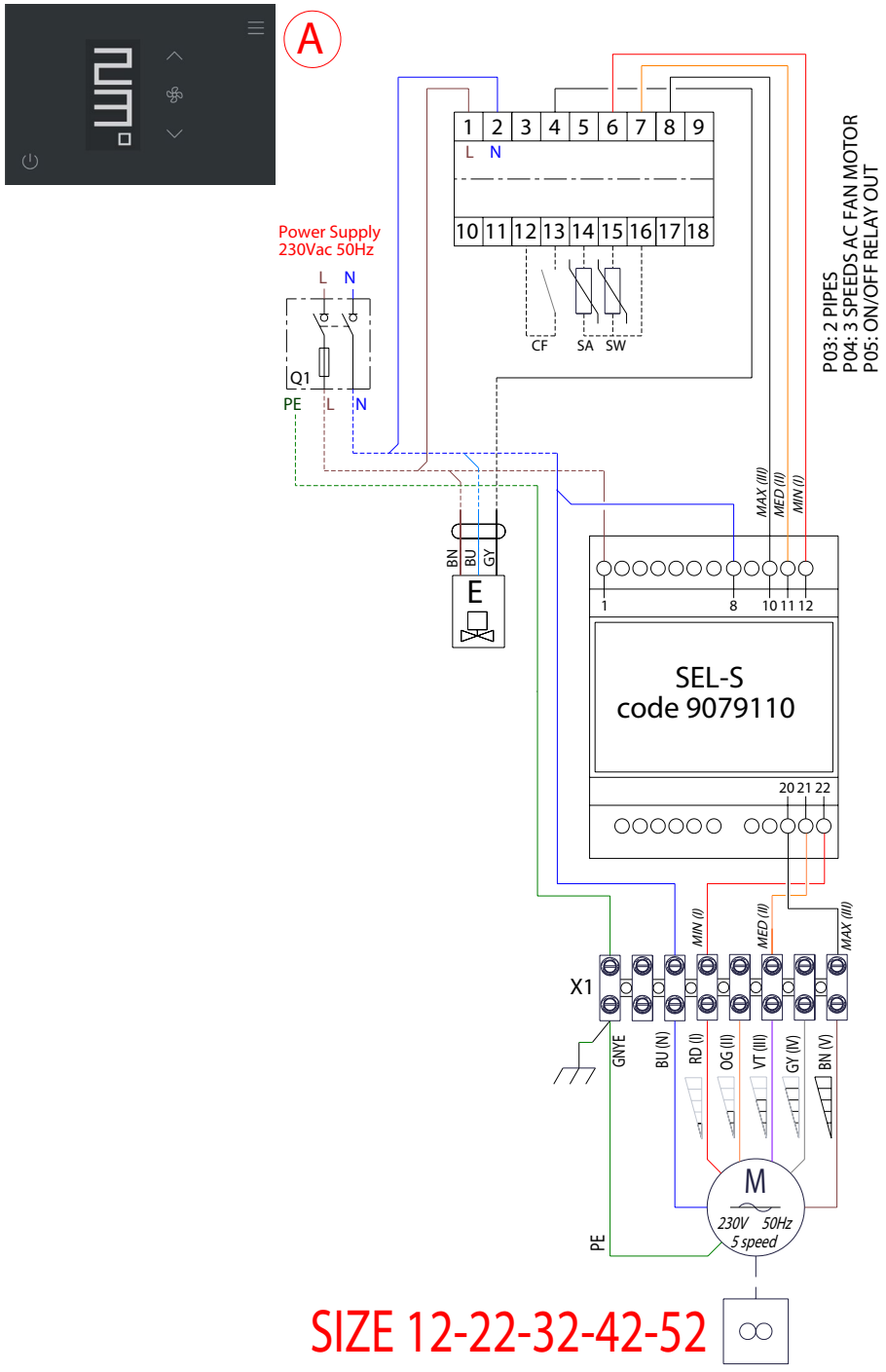
_____	Production wiring
- - - - - - -	Connection by installer

Minimum water probe



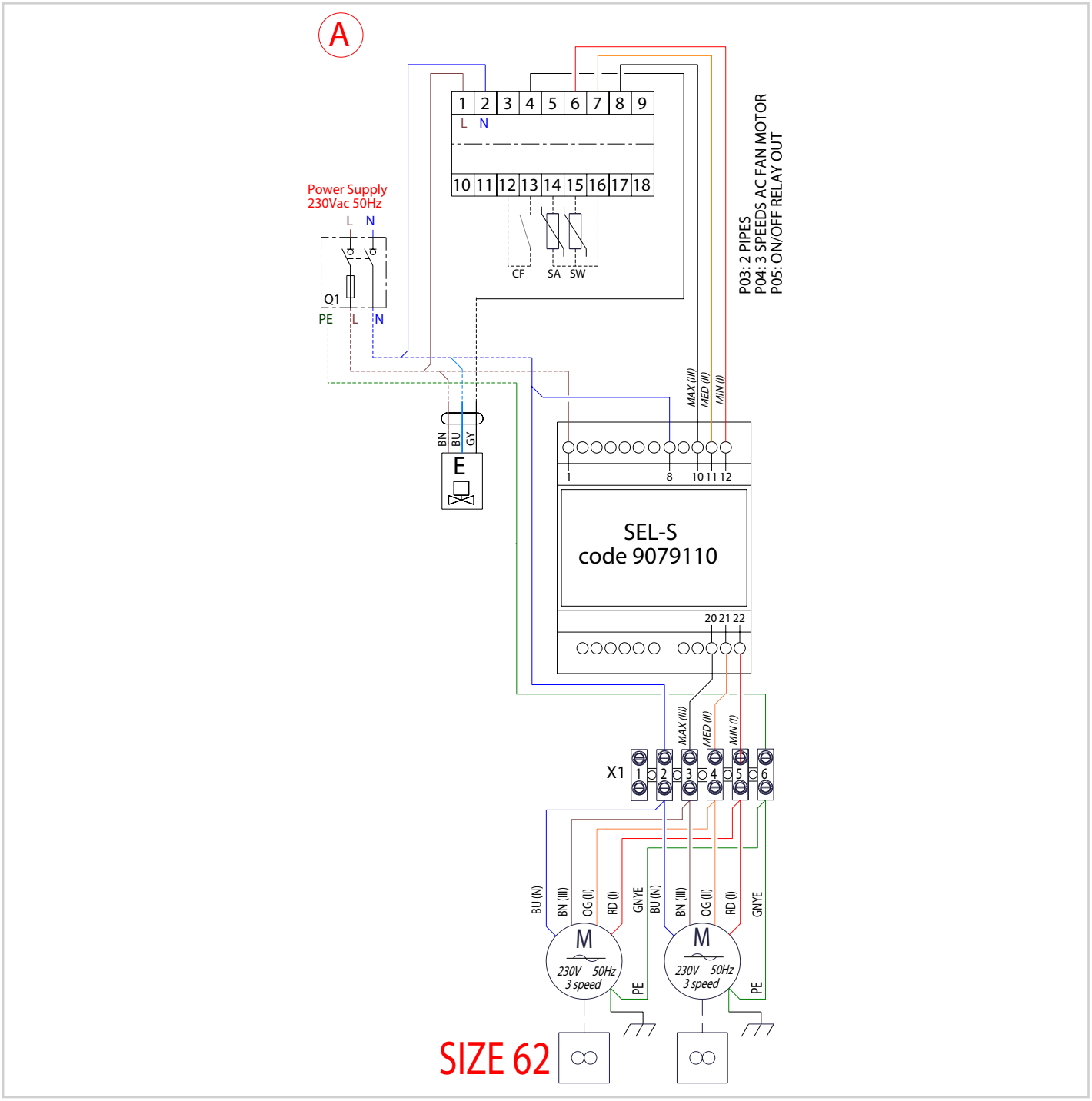
A - 2-pipe system (1 valve)

SE-0190 - DUA-H1

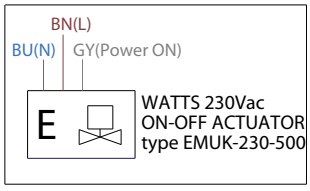


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
CF	Window contact
SA	Air probe
E	230V on-off actuator water valve
SW	Minimum water probe

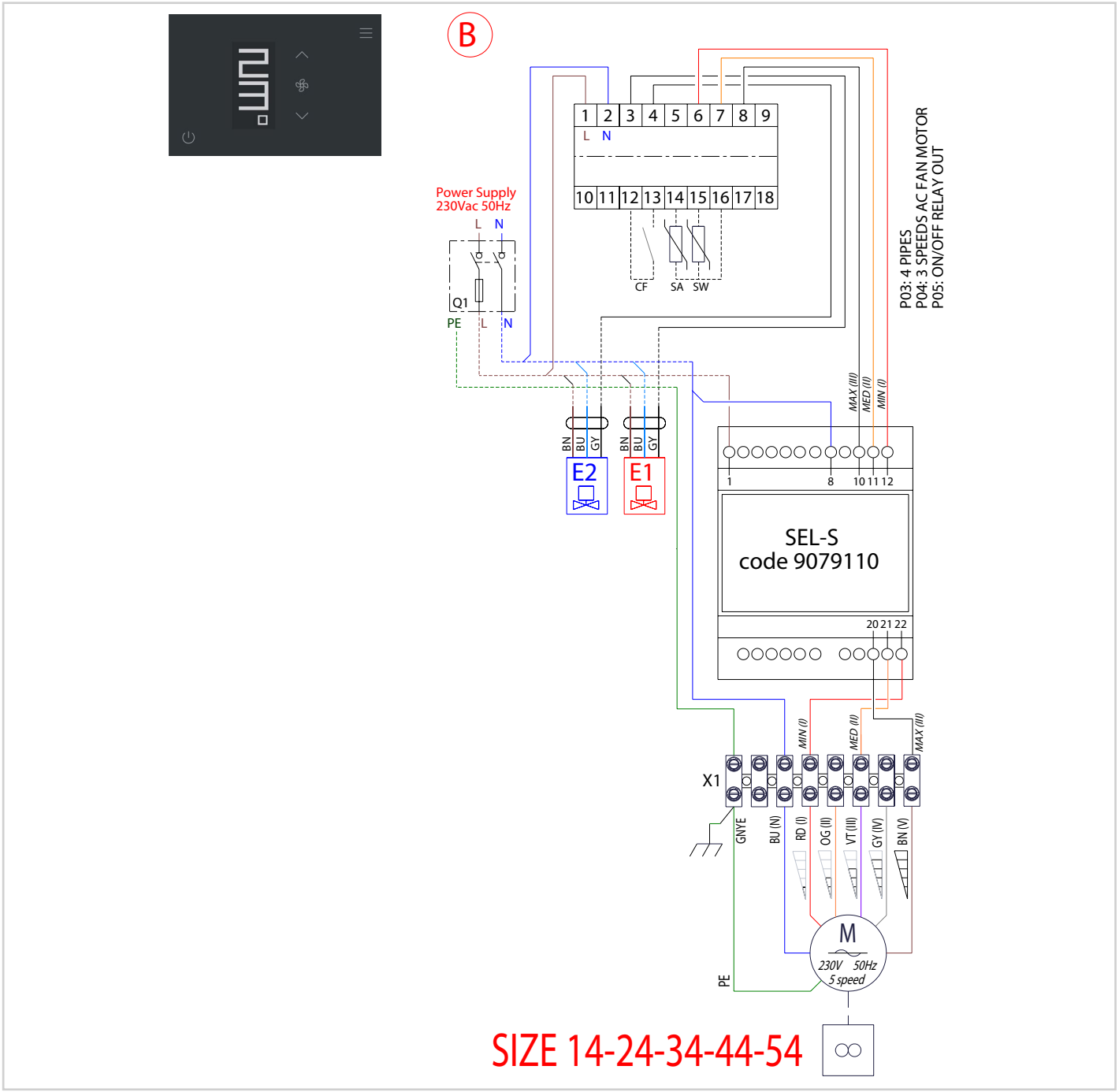
_____	Production wiring
- - - - - - -	Connection by installer



230v on-off actuator water valve

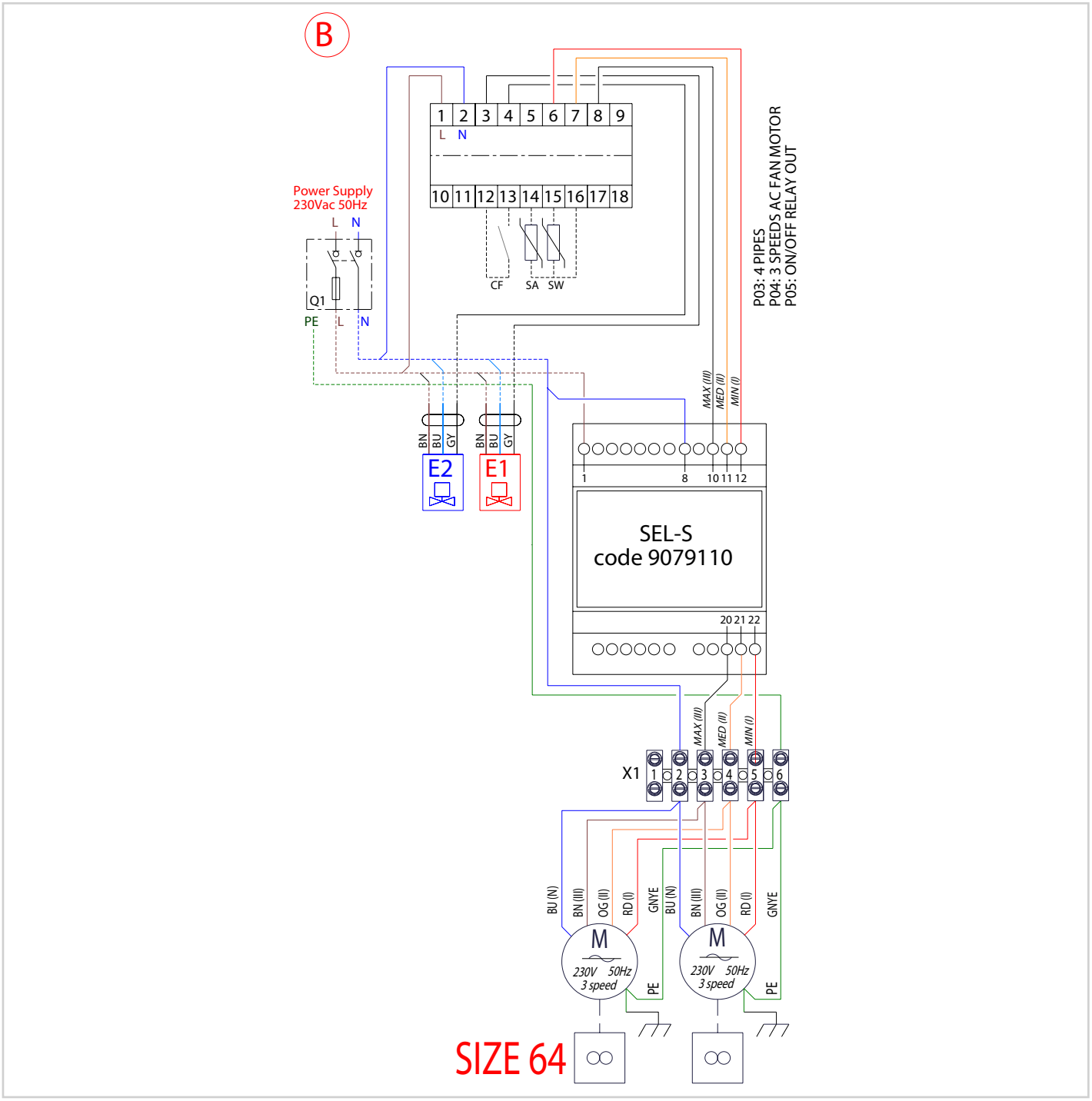


B - 4-pipe system (2 valves)

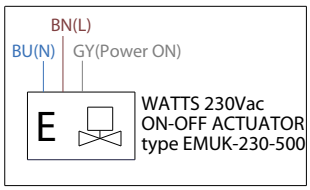


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
CF	Window contact
SA	Air probe
SW	Minimum water probe
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
E	230V on-off actuator water valve

_____	Production wiring
- - - - - - -	Connection by installer

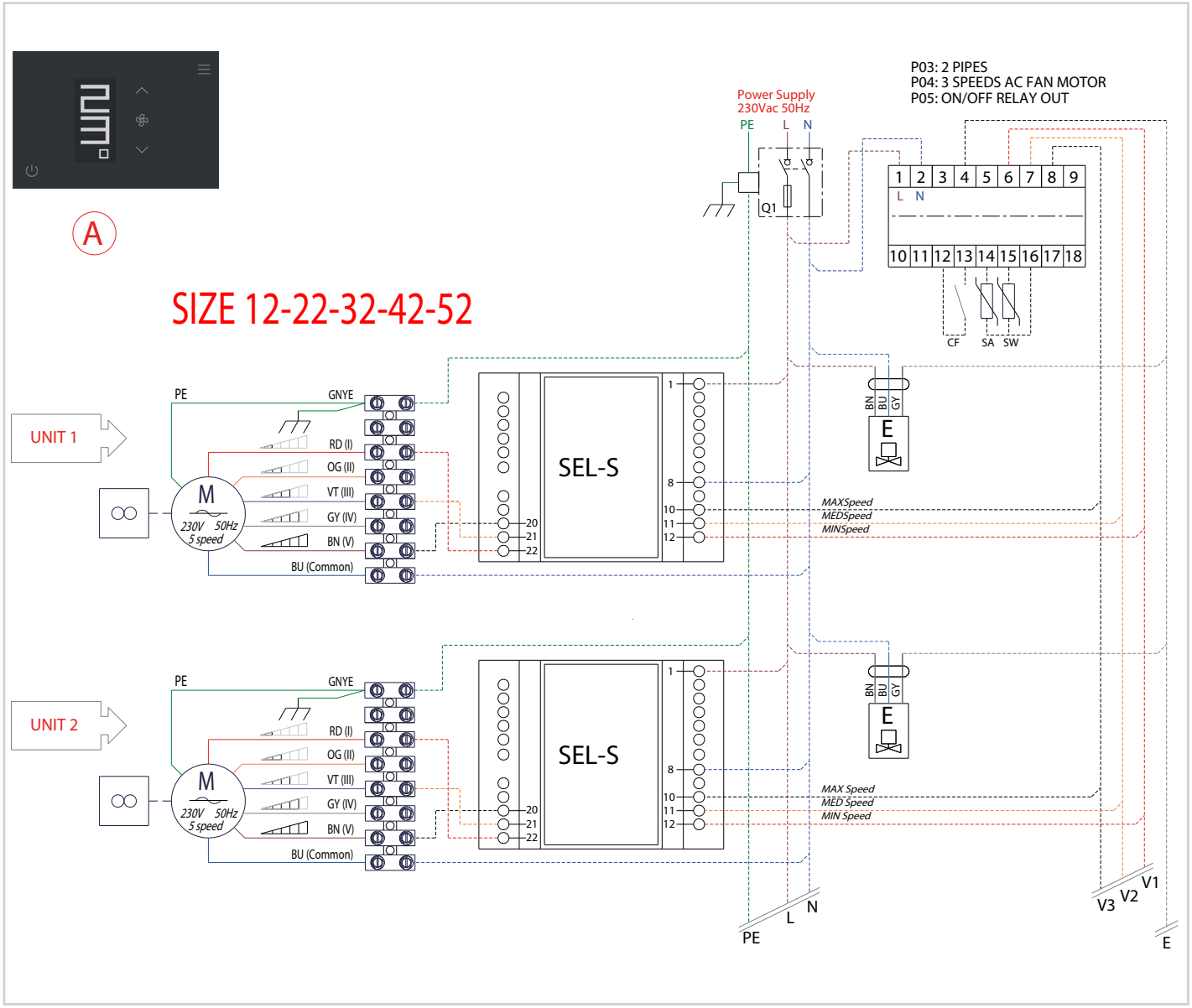


230v on-off actuator water valve



A - 2-pipe system (1 valve)

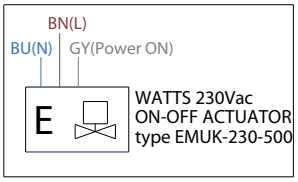
SE-192-03 - DUA-H1

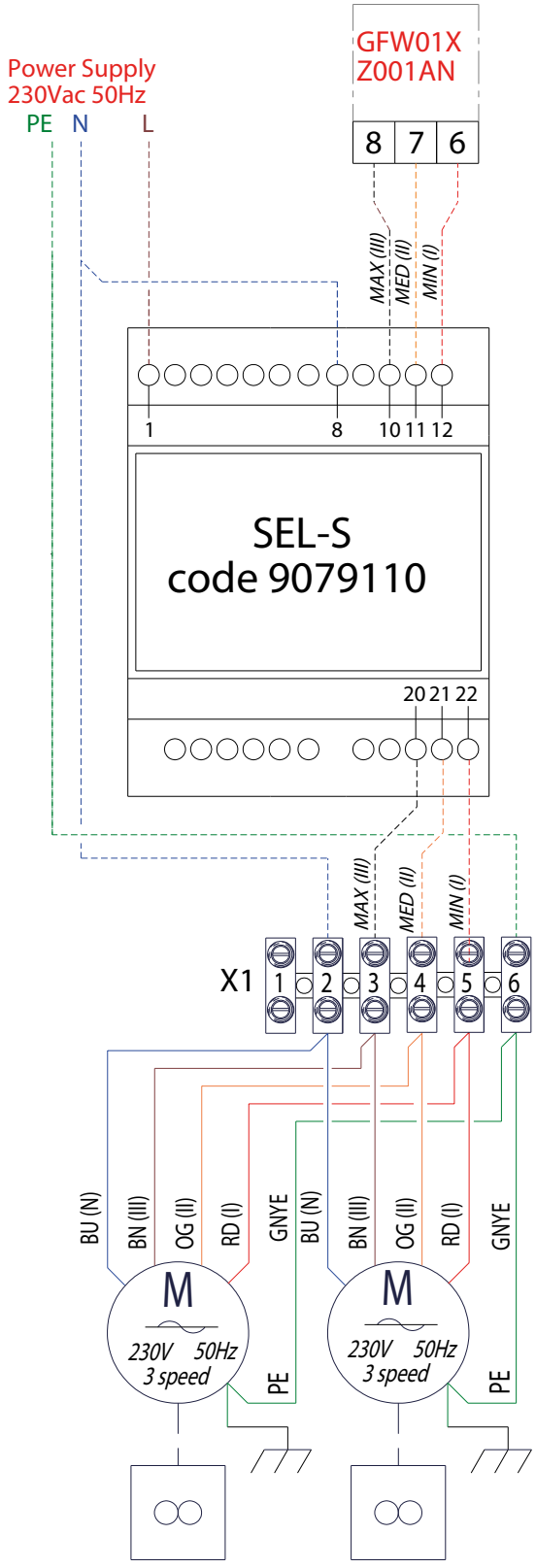


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
E	230V on-off actuator water valve

_____	Production wiring
_ _ _ _ _ _ _	Connection by installer

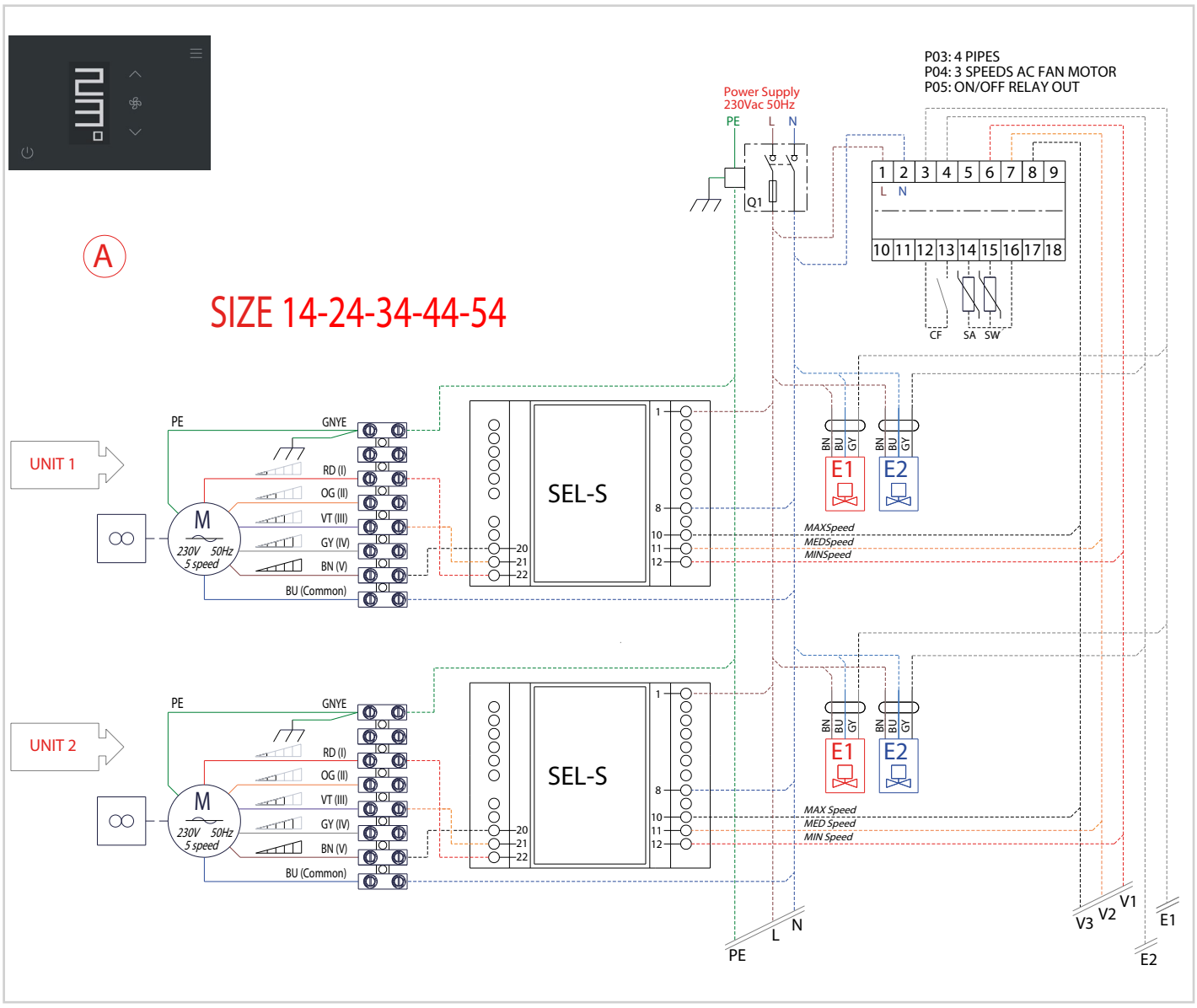
230v on-off actuator water valve




Power Supply
230Vac 50Hz
PE N L
GFW01X
Z001AN
8 7 6
MAX (III)
MED (II)
MIN (I)
1 8 10 11 12
SEL-S
code 9079110
20 21 22
MAX (III)
MED (II)
MIN (I)
X1
1 2 3 4 5 6
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
M
230V 50Hz
3 speed
M
230V 50Hz
3 speed
PE
PE

SIZE 64

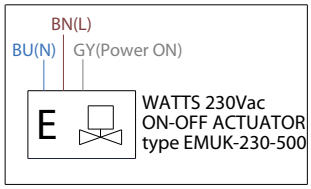
B - 4-pipe system (2 valves)

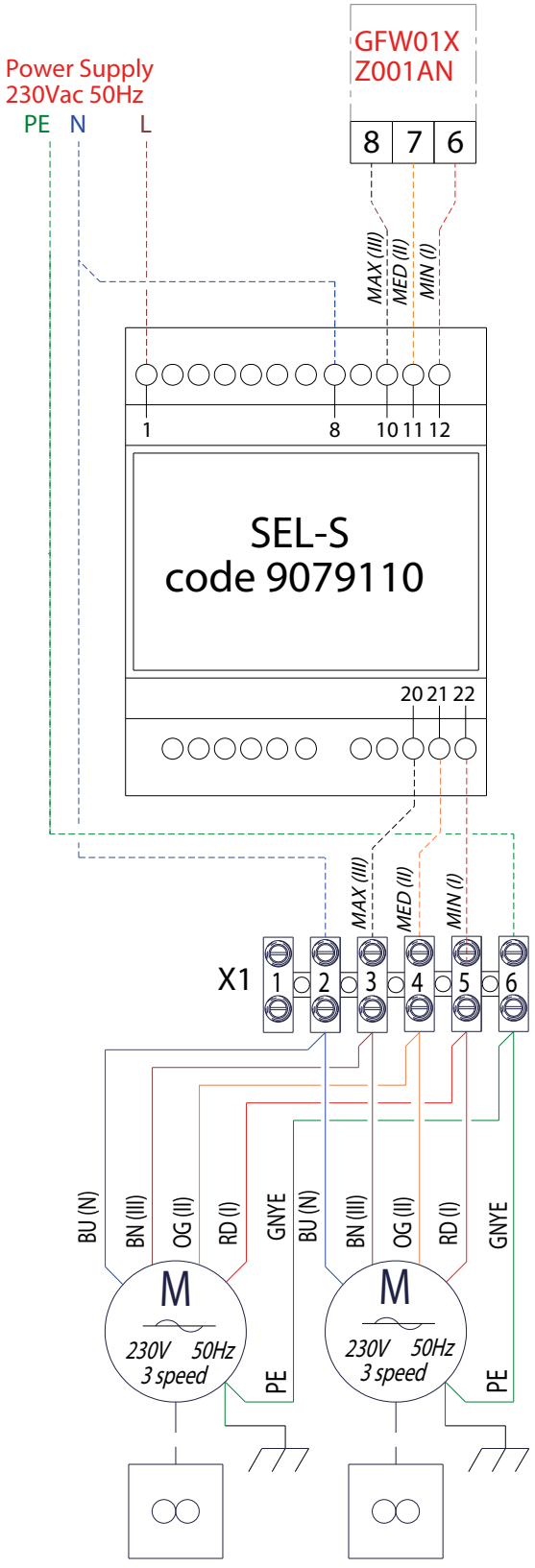


X1	Motor terminal block 1
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
T1	Air probe
E1	230V on-off actuator water valve
E2	230V on-off actuator cold valve

_____	Production wiring
- - - - - - -	Connection by installer

230v on-off actuator water valve

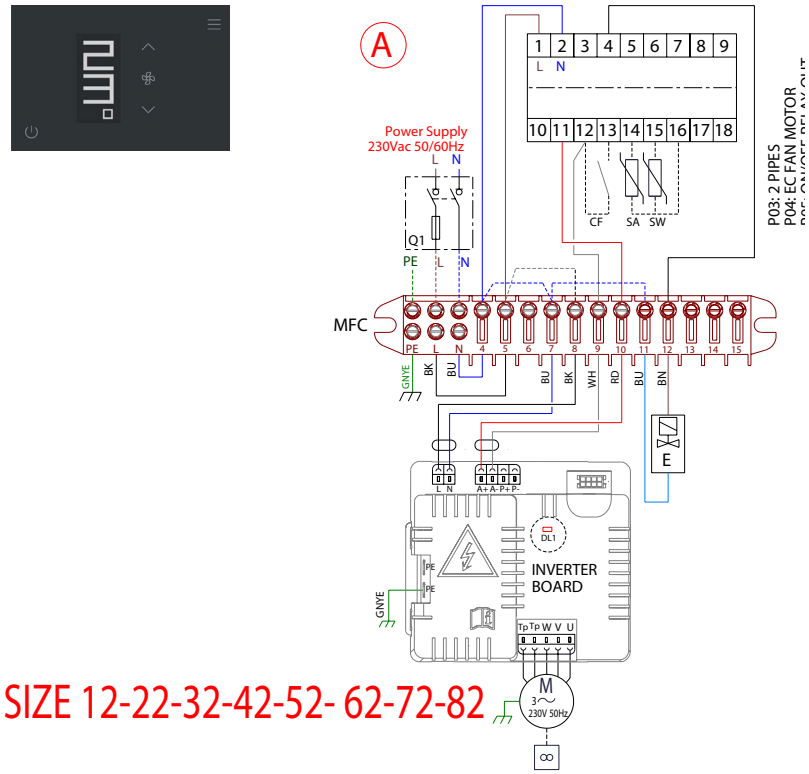



Power Supply
230Vac 50Hz
PE N L
GFW01X
Z001AN
8 7 6
MAX (III)
MED (II)
MIN (I)
1 8 10 11 12
SEL-S
code 9079110
20 21 22
MAX (III)
MED (II)
MIN (I)
X1
1 2 3 4 5 6
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
BU (N)
BN (III)
OG (II)
RD (I)
GNYE
M
230V 50Hz
3 speed
M
230V 50Hz
3 speed
PE
PE

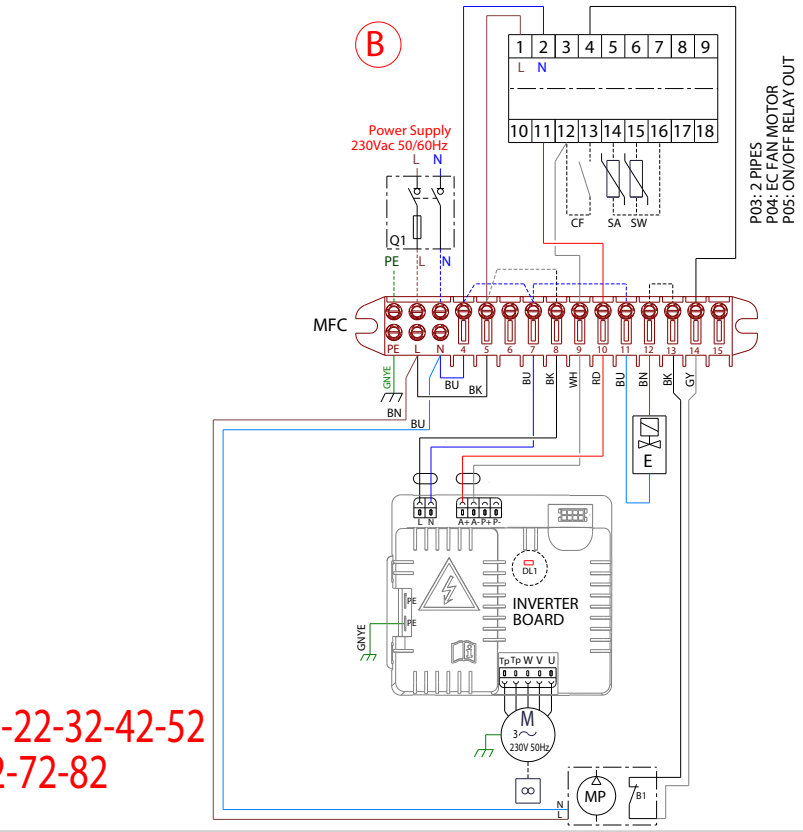
SIZE 64

SE-0193 - DUE-M1

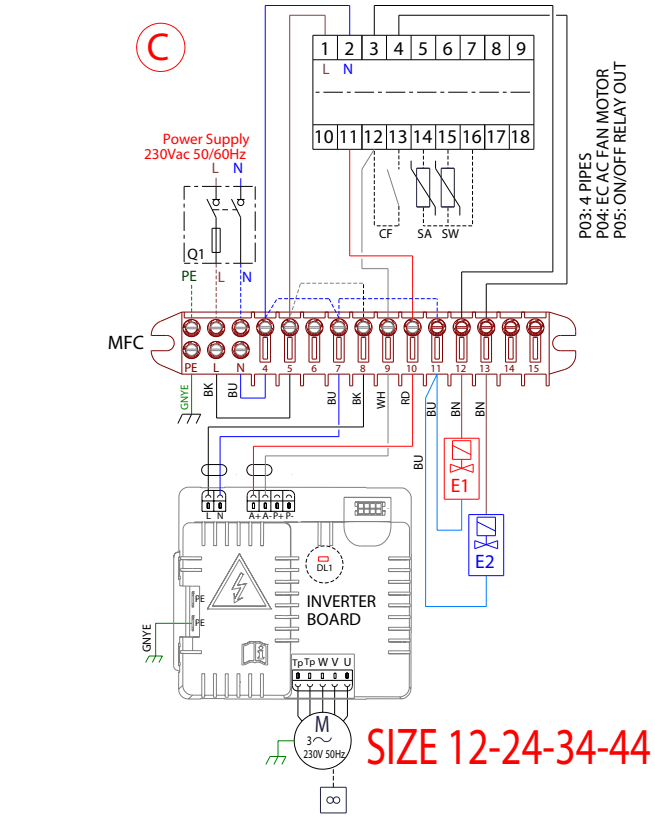
A -	2-pipe system (1 valve)	B -	2-pipe system (1 valve) Condensate drain pump	C-	4-pipe system (2 valves)	D-	4-pipe system (2 valves) Condensate drain pump

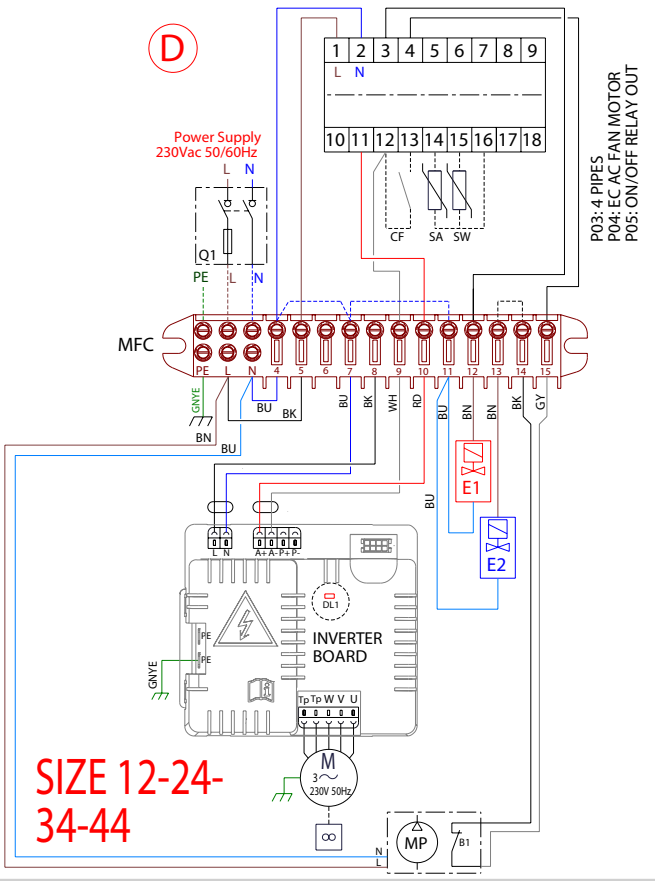


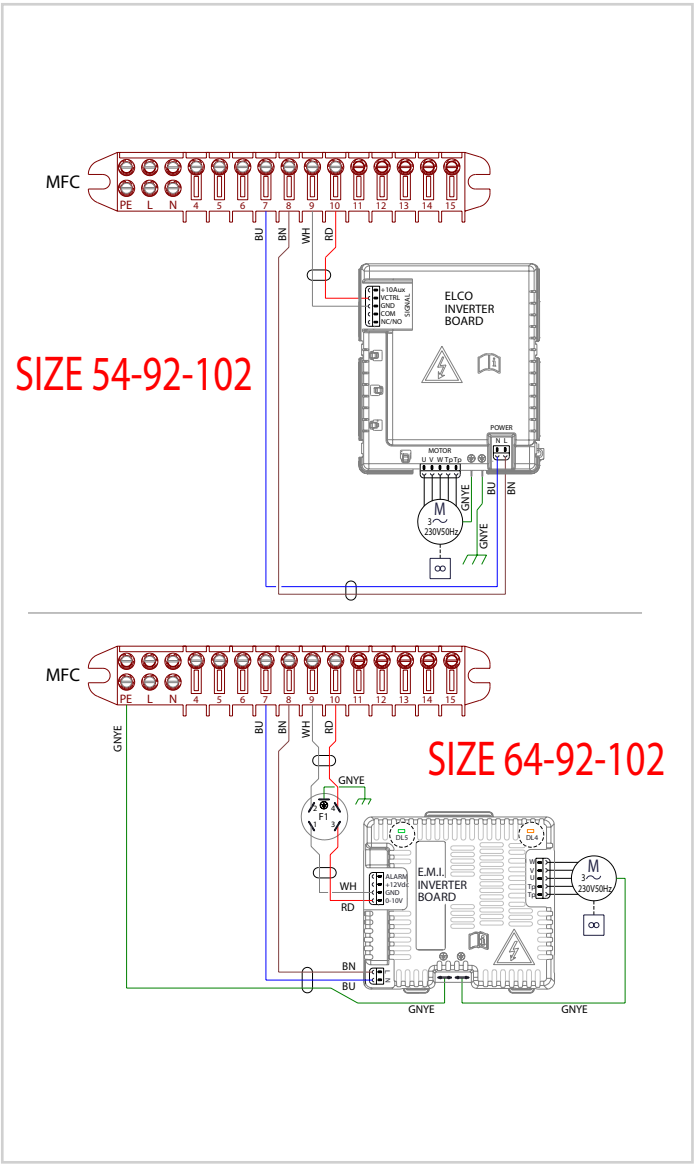
SIZE 12-22-32-42-52- 62-72-82



SIZE 12-22-32-42-52
62-72-82


C
1 2 3 4 5 6 7 8 9
L N
10 11 12 13 14 15 16 17 18
Power Supply
230Vac 50/60Hz
L N
Q1
PE L N
CF SA SW
P03: 4 PIPES
P04: EC AC FAN MOTOR
P05: ON/OFF RELAY OUT
MFC
PE L N 4 5 6 7 8 9 10 11 12 13 14 15
GNYE BK BU BU BK WH RD BU BN BN BU
E1
E2
L N A+ A- P+ P-
DL1
INVERTER
BOARD
PE PE
GNYE
Tp Tp W V U
M
3~
230V 50Hz
SIZE 12-24-34-44


D
1 2 3 4 5 6 7 8 9
L N
10 11 12 13 14 15 16 17 18
Power Supply
230Vac 50/60Hz
L N
Q1
PE L N
CF SA SW
P03: 4 PIPES
P04: EC AC FAN MOTOR
P05: ON/OFF RELAY OUT
MFC
PE L N 4 5 6 7 8 9 10 11 12 13 14 15
GNYE BU BK BU BK WH RD BU BN BN BK GY
BN BU
E1
E2
L N A+ A- P+ P-
DL1
INVERTER
BOARD
PE PE
GNYE
Tp Tp W V U
M
3~
230V 50Hz
SIZE 12-24-
34-44
MP
B1
N
L

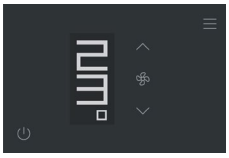


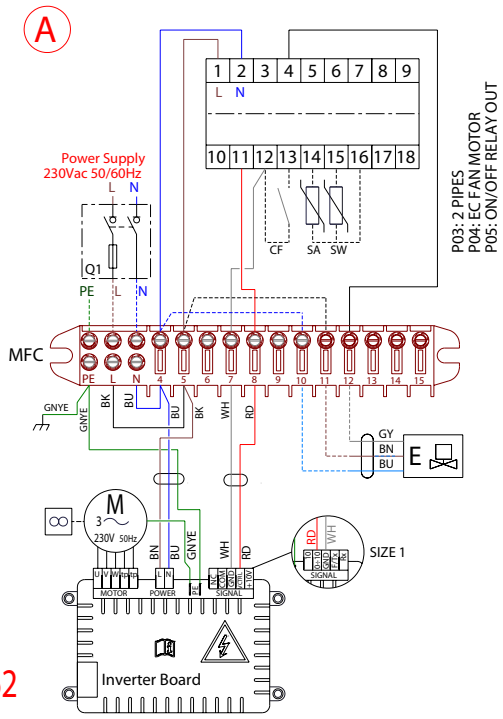
MFC	Fancoil terminal block
C1	Capacitor
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
CF	Window contact
SA	Air probe
SW	Minimum water probe
E	230V on-off actuator water valve
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
MP	Condensate drain pump
B1	Condensate pump alarm contact
F1	RFI LC Filter

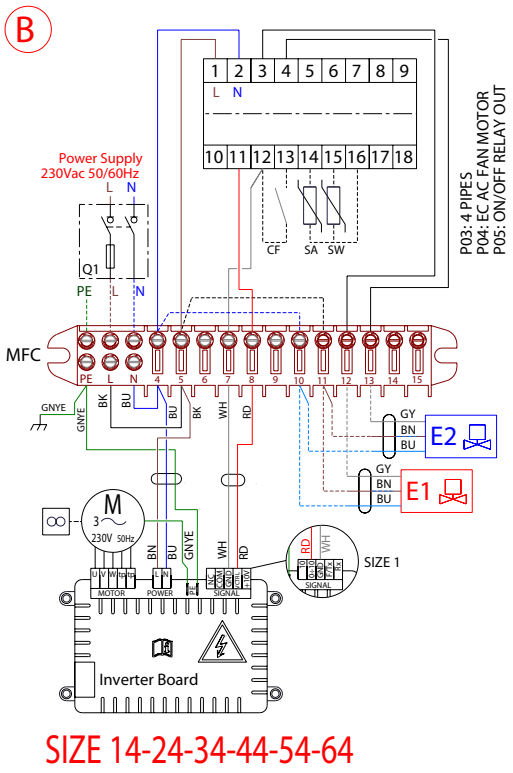
_____	Production wiring
- - - - - - -	Connection by installer

SE-0195 - DUE-H1

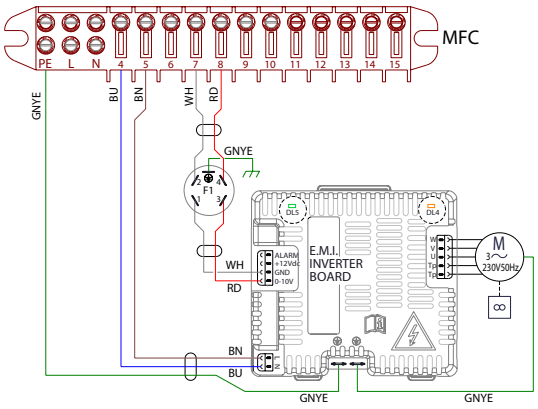
A -	2-pipe system (1 valve)	B -	4-pipe system (2 valves)







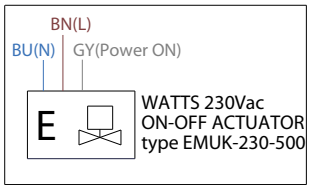
OPZIONE SIZE 12-14



MFC	Fancoil terminal block
M	Fan motor
Q1	Fuse-protected one-pole switch-disconnector
CF	Window contact
SA	Air probe
SW	Minimum water probe
E	230V on-off actuator water valve
E1	230V on-off actuator hot water valve
E2	230V on-off actuator cold water valve
F1	RFI LC Filter

_____	Production wiring
- - - - - - -	Connection by installer

230v on-off actuator water valve



8. Starting up the system

⚠ This section is intended only for the Technical Support Service.

⚠ The electrical and hydraulic connections and other works typical of the system are the responsibility of the Installer.

⚠ Operate in compliance with safety regulations in force.

⚠ Upon request, the service centres performing the start-up.

⚠ Agree upon in advance the star-up data with the service centre.

⚠ When installing or servicing, never leave the unit unattended after removing the service panels.

⚠ **Check that:**

- the unit should be installed properly and in conformity with this manual
- the electrical power supply line should be isolated at the beginning
- the unit isolator is open, locked and equipped with the suitable warning
- the unit is not powered.

Remember that:

- during installation, unit settings and parameters should be configured by the Installer according to the installation configuration, climatic conditions, and end-user preferences
- the relevant settings are accessible and programmable through the user interface.

ⓘ Refer to the user interface manual for operation.

8.1 Preliminary checks

ⓘ For details refer to the different manual sections.

Unit power supply: OFF

1	Clearances: • check that distances are observed
2	Unit inspection: • check integrity
3	Fans: • check that they run freely
4	Water filter: • check that it is correctly installed at the entrance to the aqueduct
5	Water line input: • check the correct connection of the water outlet and water inlet
6	Shut-off valve: • check that all shut-off valves are open
7	System: • check that it is charged • check the system pressure • check that it has been vented
8	Air filters: • check cleanliness • check the correct installation
9	Aeraulic system: • check that it is complete in all its parts
10	Condensate drain: • check the attachment to the coupling • check the siphoning
11	Fuses, circuit breakers or protection devices: • check the size and type • ensure that no fuses or protective devices have been bypassed
12	Electrical wiring: • check that the wiring and the connections are perfectly tightened and in good condition • check that the grounding wiring is perfectly tightened and in good condition
13	Assembly: • check that hydraulic connections are properly tightened to avoid water leaks, abnormal noises and vibrations when starting the unit
14	Damaged components: • check the components and circuitry inside the unit for damage or deformation
15	Power supply voltage: • check that the power supply voltage is within the values indicated on the unit’s serial number label

16	Structure: • check all the structure of the unit is mounted correctly

Unit Power: ON

1	Voltage: • measure the off-load voltage
2	Absorptions: • measure load voltage and absorptions
3	Fans: • check the operation of the fans
4	Airflow: • measure the air flow rate
5	Water temperature: • measure the supply and return water temperature
6	Vibrations: • check no anomalous vibrations are present
7	Complete and available unit documentation

9. Start-up

9.1 Start-up report

Identifying the operating objective conditions is useful to control the unit over time.
With the unit at steady state, i.e. in stable and close to working conditions, collect the following data:

- total voltages and absorptions with unit at full load
- absorptions of the different electric loads (compressors, fans, pumps etc)
- temperatures and flows of the different fluids (water, air) both in input and in output from the unit
- temperature and pressures on the characteristic points of the refrigerating circuit (compressor discharge, liquid, intake)

The measurements must be kept and made available during maintenance interventions.

9.2 2014/68/UE PED directive

DIRECTIVE 2014/68/UE PED gives instructions for installers, users and maintenance technicians as well.
Refer to local implementing regulations; briefly and for information only.
Compulsory verification of the first installation:

- only for units assembled on the installer's building site (for ex. Condensing circuit + direct expansion unit)
- Certification of setting in service:
- for all the units

Periodical verifications:

- to be executed with the frequency indicated by the Manufacturer (see the "maintenance inspections" paragraph)

10. **Maintenance**

10.1 **Prerequisites**

⚠ This section is intended only for the Technical Support Service.

⚠ All operations must be carried out by personnel who meet the requirements of current regulations and are trained in the risks related to such operations.

⚠ Operate in compliance with safety regulations in force.

The maintenance allows to:

- maintaining the unit efficient
- reduce the deterioration speed all the equipment is subject to over time
- assemble information and data to understand the unit's efficiency status and prevent possible failures.

⚠ **Check that:**

- the electrical power supply line should be isolated at the beginning
- the unit isolator is open, locked and equipped with the suitable warning
- the unit is not powered.

⚠ After turning off the power, wait at least 5 minutes before accessing to the electrical panel or any other electrical component.

⚠ Before accessing check with a multimeter that there are no residual voltage.

⚠ When installing or servicing, never leave the unit unattended after removing the service panels.

10.2 Maintenance check list

Intervention frequency (months)		1	6	12
1	presence of corrosions			X
2	panel fixing			X
3	pan fixing		X	
4	coil cleaning		X	
5	bowl cleaning + sanitisation		X	
6	outflow test		X	
7	air filters cleaning / inspection	X		
8	air flow rate measurement			X
9	channelling: anti-vibration devices and fastenings check			X
10	check of the fixing and the insulation of the power lead			X
11	check of the earthing cable			X
12	electric panel cleaning			X
13	clamp closure, cable isolation integrity			X
14	supply voltages (no load and on-load)		X	
15	absorptions of the single electrical loads		X	
16	protection device test: pressure relief valves, pressure switches, thermostats, flow switches, etc.		X	
17	control system test: setpoint, climatic compensations, capacity stepping, air flow-rate variations		X	
18	control device test: alarm signalling, thermometers, probes, pressure gauges etc		X	
19	water coil check - options			X
20	fill in the unit’s booklet			X

10.3 Unit booklet

It's advisable to create a unit booklet to take notes of the unit interventions.
In this way it will be easier to adequately note the various interventions and aid any troubleshooting.

Report on the booklet:

- date
- intervention description
- carried out measures etc.

10.4 Standby mode

In case of a long period of inactivity:

► turn off the power
► avoid the risk of frost (use glycol or empty the system)

10.5 Emptying the system

The units are not fitted with a drain valve, so one must be provided on a pipe connecting to the system near to the device and below it.

⚠ All operations must be carried out with the unit shut down and disconnected from the mains power supply.

Before emptying:

► check that the system water filling/refilling valve is closed

To drain the system:

► open the drain valve on the outside of the device
► open all of the system and terminal relief valves

10.6 Structure

⚠ Check the condition of the parts making up the structure.

⚠ Paint so as to eliminate or reduce oxidation at the points in the unit where this problem may occur

⚠ Check the fastening of the external paneling of the unit. Poor fastening may give rise to malfunctions and abnormal noise and vibration,

10.7 Water filter

► check and clean the water filter

In case of obstruction:

► clean the filter

10.8 Coil

The coil must allow maximum thermal exchange, therefore, the surface must be clear from dirt and scaling.

ⓘ Clean at least every six months.

To clean:

► use a soft brush or aspirator or pressurised air jet or high-pressure water jet machine
► clean the air inlet side
► keep the direction parallel to the flow of the flaps to avoid damages

⚠ Check that the aluminium fins are not bent or damaged, in the event of damages contact the authorised service centre which will "comb" the coil to restore optimal air flow

⚠ Accidental contact with the exchanger flaps can cause injuries from cut: use protective gloves.

10.9 Condensation collection basin

Dirt or scale can give rise to clogging.
Also, microorganisms and mould can flourish in the bowl.

⚠ It is very important to foresee periodical cleaning with suitable detergents and, eventually, disinfect with sanitising products.

⚠ Once cleaning is completed, pour water inside the bowl to check the regular outflow.

10.10 **Air filter**

It is very important that the air handling coil can offer maximum heat exchange: the unit must therefore always operate with filters installed and clean.

⚠ For hygiene reasons, it is extremely important to clean and replace the filters.

⚠ Operation with clogged filters leads to a reduction in the air flow rate with malfunctionings and block, up to possible breaks in the unit.

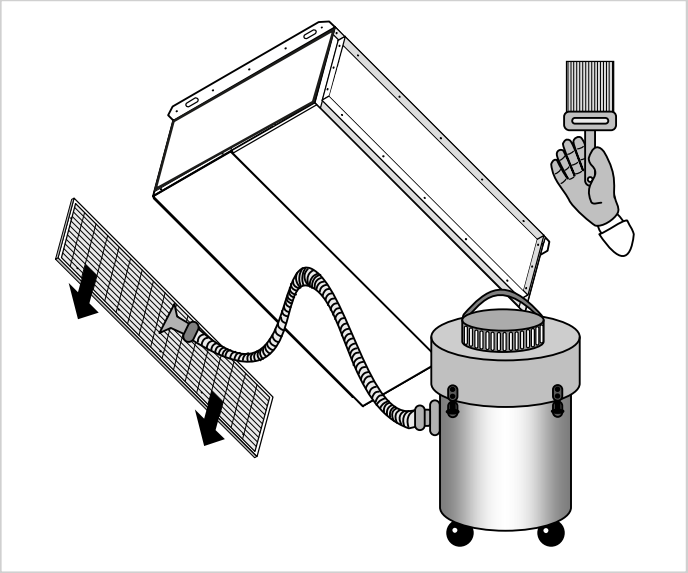
⚠ The frequency with which the filters must be checked depends on the quality of the air, the unit operation hours, the dustiness and crowding of rooms.

⚠ Frequency can indicatively vary from WEEKLY to MONTHLY.

It is advised to start with frequent checks, subsequently adjusting the frequency to the degree of dirtying.

To clean:

- ► remove the closing panels
- ► delicately remove the filter avoiding dirtying the area below
- ► vacuum the dust from the filter with a hoover
- ► wash the filter in warm water and with common detergent
- ► rinse thoroughly under running water, avoiding spillage into the ambient
- ► dry the filter
- ► insert it back in its seat
- ► remount the closing panels



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11. **Anomalies and remedies**

⚠ Work must be carried out by a qualified installer or a specialised service centre.

Fault	Remedy
The motor does not turn or turns incorrectly	Check for electrical voltage Check that the wires are connected correctly, observing the wiring diagrams The power supply is switched on - Switches and/or thermostats are in the correct operating position There are no foreign objects blocking the rotation of the fan
The unit no longer heats/cools as before	The air filter and battery are clean No air has entered the hydraulic circuit by venting through the special air vent valve Set the control panel correctly
The unit leaks water	Check that the slope is in the direction of the condensate drain Check that the condensate drain is not obstructed
Clogged siphon Missing siphon	Clean the siphon Insert a siphon

12. **Decommissioning**

12.1 **Disconnection**

⚠ Awaiting decommissioning and disposal, the unit can also be stored outdoors, as bad weather and rapid changes in temperature do not harm the environment provided that the electric, cooling and hydraulic circuits of the unit are intact and closed.

12.1.1 **WEEE INFORMATION**

The manufacturer is registered on the EEE National Register, in compliance with implementation of Directive 2012/19/EU and relevant national regulations on waste electrical and electronic equipment.
This Directive requires electrical and electronic equipment to be disposed of properly.
Equipment bearing the crossed-out wheelie bin mark must be disposed of separately at the end of its life cycle to prevent damage to human health and to the environment.
Electrical and electronic equipment must be disposed of together with all of its parts.
To dispose of “household” electrical and electronic equipment, the manufacturer recommends you contact an authorised dealer or an authorised ecological area.
“Professional” electrical and electronic equipment must be disposed of by authorised personnel through established waste disposal authorities around the country.
In this regard, here is the definition of household WEEE and professional WEEE:
WEEE from private households: WEEE originating from private households and WEEE which comes from commercial, industrial, institutional and other sources which, because of its nature and quantity, is similar to that from private households. Subject to the nature and quantity, where the waste from EEE was likely to have been by both a private household and users of other than private households, it will be classed as private household WEEE;
Professional WEEE: all WEEE which comes from users other than private households.
This equipment may contain:

- refrigerant gas, the entire contents of which must be recovered in suitable containers by specialised personnel with the necessary qualifications;
- lubrication oil contained in compressors and in the cooling circuit to be collected;
- mixtures with antifreeze in the water circuit, the contents of which are to be collected;
- mechanical and electrical parts to be separated and disposed of as authorised.

When machine components to be replaced for maintenance purposes are removed or when the entire unit reaches the end of its life and needs to be removed from the installation, waste should be separated by its nature and disposed of by authorised personnel at existing collection centres.

13. **Residual risks**

13.1 **General**

In this section the most common situations are indicated,as these cannot be controlled by the manufacturer and could be a source of risk situations for people or things.

13.2 **Danger zone**

- This is an area in which only an authorised operator may work.
- The danger zone is the area inside the unit which is accessible only with the deliberate removal of protections or parts thereof.

13.3 **Handling**

- The handling operations, if implemented without all of the protection necesssary and without due caution, may cause the drop or the tipping of the unit with the consequent damage, even serious, to persons, things or the unit itself.
- Handle the unit following the instructions provided in the present manual regarding the packaging and in compliance with the local regulations in force.
- Should the refrigerant leak please refer to the refrigerant “Safety sheet”.

13.4 **Installation**

Remember that:

- incorrect installation of the unit can lead to water leaks, condensate accumulation, refrigerant leakage, electric shock, fire, malfunction or damage to the unit itself
- installation of the unit in a place where even infrequent flammable gas leaks are possible and the accumulation of these gases in the area around the unit can cause explosions and fires
- installation of the unit in a place that is not suitable to support its weight and/or provide adequate anchorage may cause it to fall and/or tip over, resulting in damage to property, people or the unit itself

⚠ **Check:**

- the location of the unit carefully
- that the installation is only carried out by qualified technical personnel and the instructions in this manual and current local regulations are followed
- the location of the unit carefully

⚠ Easy access to the unit by children, unauthorised persons or animals may be the source of accidents, some serious.

⚠ Install the unit in areas which are only accessible to authorised person and/or provide protection against intrusion into the danger zone.

13.4.1 **General risks**

⚠ Smell of burning, smoke or other signals of serious anomalies may indicate a situation which could cause damage to people, things or the unit itself.

In this case:

- electrically disconnect the unit
- contact the authorised service centre to identify and solve the problem causing the anomaly

⚠ Accidental contact with exchange batteries, compressors, air delivery tubes or other components may cause injuries and/or burns.

⚠ Always wear suitable clothing including protective gloves to work inside the danger zone.

⚠ Maintenance and repair operations carried out by non-qualified personnel may cause damage to persons, things or the unit itself.

⚠ Always contact the qualified assistance centre.

⚠ Failing to close the unit panels or failure to check the correct tightening of all of the panelling fixing screws may cause damage to persons, things or the unit itself.

⚠ Periodically check that all of the panels are correctly closed and fixed.

⚠ If there is a fire the temperature of the refrigerant could reach values that increase the pressure to beyond the safety valve with the consequent possible projection of the refrigerant itself or explosion of the circuit parts that remain isolated by the closure of the tap.

⚠ Do not remain in the vicinity of the safety

valve and never leave the refrigerating system taps closed.

13.4.2 **Electric parts**

⚠ An incomplete attachment line to the electric network or with incorrectly sized cables and/or unsuitable protective devices can cause electric shocks, intoxication, damage to the unit or fires.

⚠ Carry out all of the work on the electric system referring to the electric layout and the present manual ensuring the use of a system thereto dedicated.

⚠ An incorrect fixing of the electric components cover may lead to the entry of dust, water etc inside and may consequently electric shocks, damage to the unit or fires.

⚠ Always fix the unit cover properly.

⚠ When the metallic mass of the unit is under voltage and is not correctly connected to the earthing system it may be a source of electric shock and electrocution.

⚠ Always pay particular attention to the implementation of the earthing system connections.

⚠ Contact with parts under voltage accessible inside the unit after the removal of the guards can cause electric shocks, burns and electrocution.

⚠ Open and padlock the general isolator prior to removing the guards and signal work in progress with the appropriate sign.

⚠ Contact with parts that could be under voltage due to the start up of the unit may cause electric shocks, burns and electrocution.

⚠ When voltage is unnecessary for the circuit open the isolator on the attachment line of the unit itself, padlock it and display the appropriate warning sign.

13.4.3 **Moving parts**

⚠ Contact with the transmissions or with the fan aspiration can cause injuries.

Remember that:

- before accessing inside the unit, open the disconnector switch on the unit connection line, padlock it and display the appropriate warning sign
- contact with fans can cause injury.
- before removing the protection grills or fans, open the disconnector switch on the unit connection line, padlock it and display the appropriate warning sign.

13.5 **Hydraulic parts**

⚠ Defects in tubing, the attachments or the removal parts may cause a leak or water projection with the consequent damages to people, things or shortcircuit the unit.

14. **Technical data**

14.1 **General technical data**

DUE-M1 2-pipe system

Size			**12**	**22**	**32**	**42**	**52**	**62**	**72**	**82**	**92**	**102**	**112**	**122**
High speed														
Airflow		m^3/h	110	110	240	240	430	430	595	595	900	900	1238	1238
External static pressure		Pa	10	10	32	32	34	34	24	24	30	30	28	28
Cooling capacity	1	kW	0,75	0,8	1,64	1,77	2,72	3,14	3,84	4,09	5,66	6,12	6,75	7,2
Sensible capacity	1	kW	0,55	0,6	1,17	1,25	1,99	2,2	2,83	2,95	4,15	4,4	5,05	5,5
Water flow-rate	1	l/h	129	138	282	305	469	541	661	661	975	1054	1163	1240
Water pressure drops	1	kPa	3,5	3,5	13	7	12	18	12	8	12	10	19	20
Heating capacity	2	kW	0,8	0,8	1,65	1,73	2,88	3,08	4,07	4,19	5,69	6,26	7	8
Water flow-rate	2	l/h	138	138	284	298	496	531	701	722	980	1078	1206	1378
Water pressure drops	2	kPa	1,7	2,6	12	7	10	14	11	6	10	9	25	20
Rated power input		W	7	7	18	18	26	26	30	30	52	52	84	84
Medium speed														
Airflow		m^3/h	110	110	240	240	430	430	595	595	900	900	1238	1238
External static pressure		Pa	10	10	32	32	34	34	24	24	30	30	28	28
Cooling capacity	1	kW	0,75	0,8	1,64	1,77	2,72	3,14	3,84	4,09	5,66	6,12	6,75	7,2
Sensible capacity	1	kW	0,55	0,6	1,17	1,25	1,99	2,2	2,83	2,95	4,15	4,4	5,05	5,5
Water flow-rate	1	l/h	129	138	282	305	469	541	661	661	975	1054	1163	1240
Water pressure drops	1	kPa	3,5	3,5	13	7	12	18	12	8	12	10	19	20
Heating capacity	2	kW	0,8	0,8	1,65	1,73	2,88	3,08	4,07	4,19	5,69	6,26	7	8
Water flow-rate	2	l/h	138	138	284	298	496	531	701	722	980	1078	1206	1378
Water pressure drops	2	kPa	1,7	2,6	12	7	10	14	11	6	10	9	25	20
Rated power input		W	7	7	18	18	26	26	30	30	52	52	84	84
Minimum speed														
Airflow		m^3/h	110	110	240	240	430	430	595	595	900	900	1238	1238
External static pressure		Pa	10	10	32	32	34	34	24	24	30	30	28	28
Cooling capacity	1	kW	0,75	0,8	1,64	1,77	2,72	3,14	3,84	4,09	5,66	6,12	6,75	7,2
Sensible capacity	1	kW	0,55	0,6	1,17	1,25	1,99	2,2	2,83	2,95	4,15	4,4	5,05	5,5
Water flow-rate	1	l/h	129	138	282	305	469	541	661	661	975	1054	1163	1240
Water pressure drops	1	kPa	3,5	3,5	13	7	12	18	12	8	12	10	19	20
Heating capacity	2	kW	0,8	0,8	1,65	1,73	2,88	3,08	4,07	4,19	5,69	6,26	7	8
Water flow-rate	2	l/h	138	138	284	298	496	531	701	722	980	1078	1206	1378
Water pressure drops	2	kPa	1,7	2,6	12	7	10	14	11	6	10	9	25	20
Rated power input		W	7	7	18	18	26	26	30	30	52	52	84	84
Standard power supply	3	230/1/50												
Supply fan type		CFG EC												
Supply fan number			1	1	1	1	1	2	2	2	2	2	3	3

DUA-M1 2-pipe system

Size			**12**	**22**	**32**	**42**	**52**	**62**	**72**	**82**	**92**	**102**	**112**	**122**
High speed														
Airflow		m^3/h	315	315	625	625	790	790	980	980	1240	1240	1425	1425
External static pressure		Pa	58	58	58	58	60	60	65	65	60	60	63	63
Cooling capacity	1	kW	2	2,22	3,6	4,28	4,72	5,36	5,47	5,94	7,11	7,82	7,7	8,62
Sensible capacity	1	kW	1,44	1,57	2,7	3,04	3,55	3,84	4,22	4,46	5,36	5,72	5,89	6,38
Water flow-rate	1	l/h	345	382	620	737	813	923	942	1023	1225	1347	1326	1485
Water pressure drops	1	kPa	20	11	19,6	31,3	17,7	36,1	23,2	15,6	18,7	15,6	21,7	18,7
Heating capacity	2	kW	2,11	2,23	3,98	4,34	5,22	5,42	6,27	6,55	7,58	8,34	8,49	9,42
Water flow-rate	2	l/h	363	384	686	748	899	934	1080	1128	1306	1437	1462	1623
Water pressure drops	2	kPa	18	10,5	18,3	26,2	16,6	28,9	23	14,5	16,5	15	20,2	18,6
Rated power input		W	51	51	94	94	110	110	148	148	145	145	186	186
Medium speed														
Airflow		m^3/h	290	290	575	575	720	720	850	850	1120	1120	1270	1270
External static pressure		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Cooling capacity	1	kW	1,88	2,07	3,4	4,01	4,42	4,99	4,97	5,36	6,62	7,25	7,11	7,92
Sensible capacity	1	kW	1,35	1,46	2,53	2,84	3,3	3,55	3,77	3,97	4,94	5,26	5,37	5,8
Water flow-rate	1	l/h	324	357	586	691	761	860	856	923	1140	1249	1225	1364
Water pressure drops	1	kPa	17	9,7	17,7	27,9	15,7	31,7	19,4	12,9	16,4	13,6	18,8	16,1
Heating capacity	2	kW	1,96	2,07	3,7	4,02	4,82	4,99	5,56	5,77	6,96	7,63	7,73	8,52
Water flow-rate	2	l/h	338	357	637	692	830	860	958	994	1199	1314	1331	1468
Water pressure drops	2	kPa	16	9,2	16,1	22,8	14,3	24,9	18,6	11,5	14,2	12,7	17,1	15,6
Rated power input		W	45	45	87	87	96	96	122	122	125	125	177	177
Minimum speed														
Airflow		m^3/h	205	205	395	395	380	380	600	600	580	580	905	905
External static pressure		Pa	25	25	26	26	14	14	23	23	15	15	26	26
Cooling capacity	1	kW	1,43	1,54	2,57	2,93	2,68	2,89	3,85	4,1	3,99	4,23	5,58	6,1
Sensible capacity	1	kW	1,01	1,07	1,85	2,03	1,9	2	2,82	2,95	2,83	2,96	4,06	4,34
Water flow-rate	1	l/h	246	265	443	505	462	498	663	706	687	729	961	1051
Water pressure drops	1	kPa	11	5,6	10,6	15,8	6,3	11,8	12,2	7,9	6,6	5,1	12,2	10,1
Heating capacity	2	kW	1,43	1,49	2,67	2,85	2,71	2,76	4,1	4,22	3,94	4,17	5,82	6,3
Water flow-rate	2	l/h	246	257	460	491	467	475	706	727	679	718	1002	1085
Water pressure drops	2	kPa	9	5,1	8,9	12,3	5,1	8,6	10,7	6,6	5,1	4,3	10,3	9
Rated power input		W	27	27	59	59	50	50	88	88	69	69	155	155
Standard power supply	3	230/1/50												
Supply fan type		CFG EC												
Supply fan number			1	1	1	1	1	2	2	2	2	2	3	3

DUE-M1 4-pipe system

Size			12	22	32	42	52	62	72	82	92	102	112	122
High speed														
Airflow		m^3/h	205	205	395	395	380	380	600	600	580	580	905	905
External static pressure		Pa	25	25	26	26	14	14	23	23	15	15	26	26
Cooling capacity	1	kW	1,43	1,54	2,57	2,93	2,68	2,89	3,85	4,1	3,99	4,23	5,58	6,1
Sensible capacity	1	kW	1,01	1,07	1,85	2,03	1,9	2	2,82	2,95	2,83	2,96	4,06	4,34
Water flow-rate	1	l/h	246	265	443	505	462	498	663	706	687	729	961	1051
Water pressure drops	1	kPa	11	5,6	10,6	15,8	6,3	11,8	12,2	7,9	6,6	5,1	12,2	10,1
Heating capacity	2	kW	1,43	1,49	2,67	2,85	2,71	2,76	4,1	4,22	3,94	4,17	5,82	6,3
Water flow-rate	2	l/h	246	257	460	491	467	475	706	727	679	718	1002	1085
Water pressure drops	2	kPa	9	5,1	8,9	12,3	5,1	8,6	10,7	6,6	5,1	4,3	10,3	9
Rated power input		W	27	27	59	59	50	50	88	88	69	69	155	155
Medium speed														
Airflow		m^3/h	290	290	575	575	720	720	850	850	1120	1120	1270	1270
External static pressure		Pa	50	50	50	50	50	50	50	50	50	50	50	50
Cooling capacity	1	kW	1,88	2,07	3,4	4,01	4,42	4,99	4,97	5,36	6,62	7,25	7,11	7,92
Sensible capacity	1	kW	1,35	1,46	2,53	2,84	3,3	3,55	3,77	3,97	4,94	5,26	5,37	5,8
Water flow-rate	1	l/h	324	357	586	691	761	860	856	923	1140	1249	1225	1364
Water pressure drops	1	kPa	17	9,7	17,7	27,9	15,7	31,7	19,4	12,9	16,4	13,6	18,8	16,1
Heating capacity	2	kW	1,96	2,07	3,7	4,02	4,82	4,99	5,56	5,77	6,96	7,63	7,73	8,52
Water flow-rate	2	l/h	338	357	637	692	830	860	958	994	1199	1314	1331	1468
Water pressure drops	2	kPa	16	9,2	16,1	22,8	14,3	24,9	18,6	11,5	14,2	12,7	17,1	15,6
Rated power input		W												
Minimum speed														
Airflow		m^3/h	205	205	395	395	380	380	600	600	580	580	905	905
External static pressure		Pa	25	25	26	26	14	14	23	23	15	15	26	26
Cooling capacity	1	kW	1,43	1,54	2,57	2,93	2,68	2,89	3,85	4,1	3,99	4,23	5,58	6,1
Sensible capacity	1	kW	1,01	1,07	1,85	2,03	1,9	2	2,82	2,95	2,83	2,96	4,06	4,34
Water flow-rate	1	l/h	246	265	443	505	462	498	663	706	687	729	961	1051
Water pressure drops	1	kPa	11	5,6	10,6	15,8	6,3	11,8	12,2	7,9	6,6	5,1	12,2	10,1
Heating capacity	2	kW	1,43	1,49	2,67	2,85	2,71	2,76	4,1	4,22	3,94	4,17	5,82	6,3
Water flow-rate	2	l/h	246	257	460	491	467	475	706	727	679	718	1002	1085
Water pressure drops	2	kPa	9	5,1	8,9	12,3	5,1	8,6	10,7	6,6	5,1	4,3	10,3	9
Rated power input		W	27	27	59	59	50	50	88	88	69	69	155	155
Standard power supply	3	230/1/50												
Supply fan type		CFG EC												
Supply fan number			1	1	1	1	1	2	2	2	2	2	3	3

DUA-M1 **4-pipe system**

Size			**14**	**24**	**34**	**44**	**54**	**64**
High speed								
Airflow		m^3/h	315	625	790	980	1240	1425
External static pressure		Pa	58	58	60	65	60	63
Cooling capacity	1	kW	2	3,6	4,72	5,47	7,11	7,7
Sensible capacity	1	kW	1,44	2,7	3,55	4,22	5,36	5,89
Water flow-rate	1	l/h	345	620	813	942	1225	1326
Water pressure drops	1	kPa	19,5	19,6	17,7	23,2	18,7	21,7
Heating capacity	2	kW	1,76	3,02	3,91	4,49	5,8	6,35
Water flow-rate	2	l/h	152	260	337	387	500	547
Water pressure drops	2	kPa	7,5	4,8	7,5	9,6	15,3	18,1
Rated power input		W	51	94	110	148	145	186
Medium speed								
Airflow		m^3/h	290	575	720	850	1120	1270
External static pressure		Pa	50	50	50	50	50	50
Cooling capacity	1	kW	1,88	3,4	4,42	4,97	6,62	7,11
Sensible capacity	1	kW	1,35	2,53	3,3	3,77	4,94	5,37
Water flow-rate	1	l/h	324	586	761	856	1140	1225
Water pressure drops	1	kPa	17,4	17,7	15,7	19,4	16,4	18,8
Heating capacity	2	kW	1,66	2,85	3,68	4,1	5,44	5,9
Water flow-rate	2	l/h	143	245	317	353	469	508
Water pressure drops	2	kPa	6,8	4,3	6,7	8,2	13,7	15,8
Rated power input		W	45	87	96	122	125	177
Minimum speed								
Airflow		m^3/h	205	395	380	600	580	905
External static pressure		Pa	25	26	14	23	15	26
Cooling capacity	1	kW	1,43	2,57	2,68	3,85	3,99	5,58
Sensible capacity	1	kW	1,01	1,85	1,9	2,82	2,83	4,06
Water flow-rate	1	l/h	246	443	462	663	687	961
Water pressure drops	1	kPa	10,5	10,6	6,3	12,2	6,6	12,2
Heating capacity	2	kW	1,3	2,22	2,38	3,26	3,48	4,72
Water flow-rate	2	l/h	112	191	205	281	300	407
Water pressure drops	2	kPa	4,4	2,8	3,1	5,4	6,1	10,6
Rated power input		W	27	59	50	88	69	155
Standard power supply	3	230/1/50						
Supply fan type		CFG EC						
Supply fan number			1	2	2	2	2	3

DUE-H1 2-pipe system

Size			14	24	34	44	54	64
High speed								
Airflow		m^3/h	315	625	790	980	1240	1425
External static pressure		Pa	58	58	60	65	60	63
Cooling capacity	1	kW	2	3,6	4,72	5,47	7,11	7,7
Sensible capacity	1	kW	1,44	2,7	3,55	4,22	5,36	5,89
Water flow-rate	1	l/h	345	620	813	942	1225	1326
Water pressure drops	1	kPa	19,5	19,6	17,7	23,2	18,7	21,7
Heating capacity	2	kW	1,76	3,02	3,91	4,49	5,8	6,35
Water flow-rate	2	l/h	152	260	337	387	500	547
Water pressure drops	2	kPa	7,5	4,8	7,5	9,6	15,3	18,1
Rated power input		W	51	94	110	148	145	186
Medium speed								
Airflow		m^3/h	290	575	720	850	1120	1270
External static pressure		Pa	50	50	50	50	50	50
Cooling capacity	1	kW	1,88	3,4	4,42	4,97	6,62	7,11
Sensible capacity	1	kW	1,35	2,53	3,3	3,77	4,94	5,37
Water flow-rate	1	l/h	324	586	761	856	1140	1225
Water pressure drops	1	kPa	17,4	17,7	15,7	19,4	16,4	18,8
Heating capacity	2	kW	1,66	2,85	3,68	4,1	5,44	5,9
Water flow-rate	2	l/h	143	245	317	353	469	508
Water pressure drops	2	kPa	6,8	4,3	6,7	8,2	13,7	15,8
Rated power input		W	45	87	96	122	125	177
Minimum speed								
Airflow		m^3/h	205	395	380	600	580	905
External static pressure		Pa	25	26	14	23	15	26
Cooling capacity	1	kW	1,43	2,57	2,68	3,85	3,99	5,58
Sensible capacity	1	kW	1,01	1,85	1,9	2,82	2,83	4,06
Water flow-rate	1	l/h	246	443	462	663	687	961
Water pressure drops	1	kPa	10,5	10,6	6,3	12,2	6,6	12,2
Heating capacity	2	kW	1,3	2,22	2,38	3,26	3,48	4,72
Water flow-rate	2	l/h	112	191	205	281	300	407
Water pressure drops	2	kPa	4,4	2,8	3,1	5,4	6,1	10,6
Rated power input		W	27	59	50	88	69	155
Standard power supply	3	230/1/50						
Supply fan type		CFG EC						
Supply fan number			1	2	2	2	2	3

DUA-H1 2-pipe system

Size			14	24	34	44	54	64
High speed								
Airflow		m^3/h	1734	1825	2440	3020	3850	5062
External static pressure		Pa	75	80	70	67	70	70
Cooling capacity	1	kW	8,89	8,16	10,7	13,6	17,76	25,31
Sensible capacity	1	kW	6,58	6,62	8,65	10,9	14,37	19,74
Water flow-rate	1	l/h	1590	1406	1843	2343	3059	4608
Water pressure drops	1	kPa	8,9	17	23	21	19,4	15,3
Heating capacity	2	kW	7,67	10,1	13,13	16,53	22,93	29,6
Water flow-rate	2	l/h	1321	1740	2351	2847	3950	5350
Water pressure drops	2	kPa	11,3	18,3	15	21,3	22,8	16,9
Rated power input		W	358	285	470	570	760	1334
Medium speed								
Airflow		m^3/h	801	1410	2075	2580	3280	3546
External static pressure		Pa	50	50	50	50	50	50
Cooling capacity	1	kW	4,83	7,01	9,76	12,4	16,19	20,06
Sensible capacity	1	kW	3,53	5,48	7,68	9,7	12,8	15,04
Water flow-rate	1	l/h	856	1207	1681	2136	2789	3600
Water pressure drops	1	kPa	3,8	13	20	18	16,3	10,1
Heating capacity	2	kW	6,44	8,27	11,8	14,92	20,32	22,47
Water flow-rate	2	l/h	1109	1425	2033	2570	3500	4507
Water pressure drops	2	kPa	8,2	12,7	20,2	17,7	18,3	10,2
Rated power input		W	152	230	420	490	617	909
Minimum speed								
Airflow		m^3/h	790	840	1710	2070	2740	2127
External static pressure		Pa	25	15	30	35	35	35
Cooling capacity	1	kW	4,17	4,99	8,71	10,9	14,54	13,7
Sensible capacity	1	kW	3,25	3,66	6,67	8,25	11,21	10
Water flow-rate	1	l/h	718	860	1500	1878	2505	2473
Water pressure drops	1	kPa	5	7	16	14	13,3	5,2
Heating capacity	2	kW	4,98	5,57	10,43	12,79	17,67	14,57
Water flow-rate	2	l/h	858	959	1868	2203	3044	2639
Water pressure drops	2	kPa	5,2	6,2	9,9	13,4	13,3	4,8
Rated power input		W	115	170	350	390	500	693
Standard power supply	3	230/1/50						
Supply fan type		CFG EC						
Supply fan number			1	2	2	2	2	3

DUE-H1 4-pipe system

Size			12	22	32	42	52	62
High speed								
Airflow		m^3/h	1264	1750	2350	3040	3858	5140
External static pressure		Pa	70	85	75	80	70	74
Cooling capacity	1	kW	5,98	7,87	10,7	13,9	19,38	24,1
Sensible capacity	1	kW	4,61	6,35	8,61	11,13	15,12	20,09
Water flow-rate	1	l/h	1053	1356	1843	2394	3436	4151
Water pressure drops	1	kPa	3,9	15,5	21,2	21,4	10,7	31,4
Heating capacity	2	kW	4,8	6,25	8,02	10,75	14,25	34,54
Water flow-rate	2	l/h	431	538	691	926	1295	2975
Water pressure drops	2	kPa	12,2	26,4	17,3	33	31,4	41,3
Rated power input		W	144	225	340	530	609	661
Medium speed								
Airflow		m^3/h	1040	1340	1920	2400	3300	4235
External static pressure		Pa	50	50	50	50	50	50
Cooling capacity	1	kW	4,94	6,79	9,59	12,27	16,62	21,71
Sensible capacity	1	kW	4,01	5,3	7,51	9,53	13,19	17,59
Water flow-rate	1	l/h	851	1170	1652	2113	2863	3740
Water pressure drops	1	kPa	6,8	11,6	17,1	16,6	16,3	25,4
Heating capacity	2	kW	4,18	5,42	7,2	9,48	12,67	30,58
Water flow-rate	2	l/h	360	467	620	816	1091	2634
Water pressure drops	2	kPa	13,4	20,4	14,3	26,3	25,7	33,2
Rated power input		W	88	115	200	253	384	343
Minimum speed								
Airflow		m^3/h	750	920	1350	1810	2428	2629
External static pressure		Pa	26	24	25	28	25	22
Cooling capacity	1	kW	4,04	5,36	7,76	10,36	14,38	14,94
Sensible capacity	1	kW	3,14	4,01	5,83	7,79	10,79	10,75
Water flow-rate	1	l/h	696	923	1337	1785	2500	2588
Water pressure drops	1	kPa	4,9	7,5	11,4	12	6,1	5,6
Heating capacity	2	kW	3,43	4,33	5,9	8,06	10,88	22,98
Water flow-rate	2	l/h	295	373	508	694	962	1979
Water pressure drops	2	kPa	9,4	13,6	9,9	19,6	18,4	19,8
Rated power input		W	40	44	80	110	164	124
Standard power supply	3	230/1/50						
Supply fan type		CFG EC						
Supply fan number			2	2	2	2	2	2

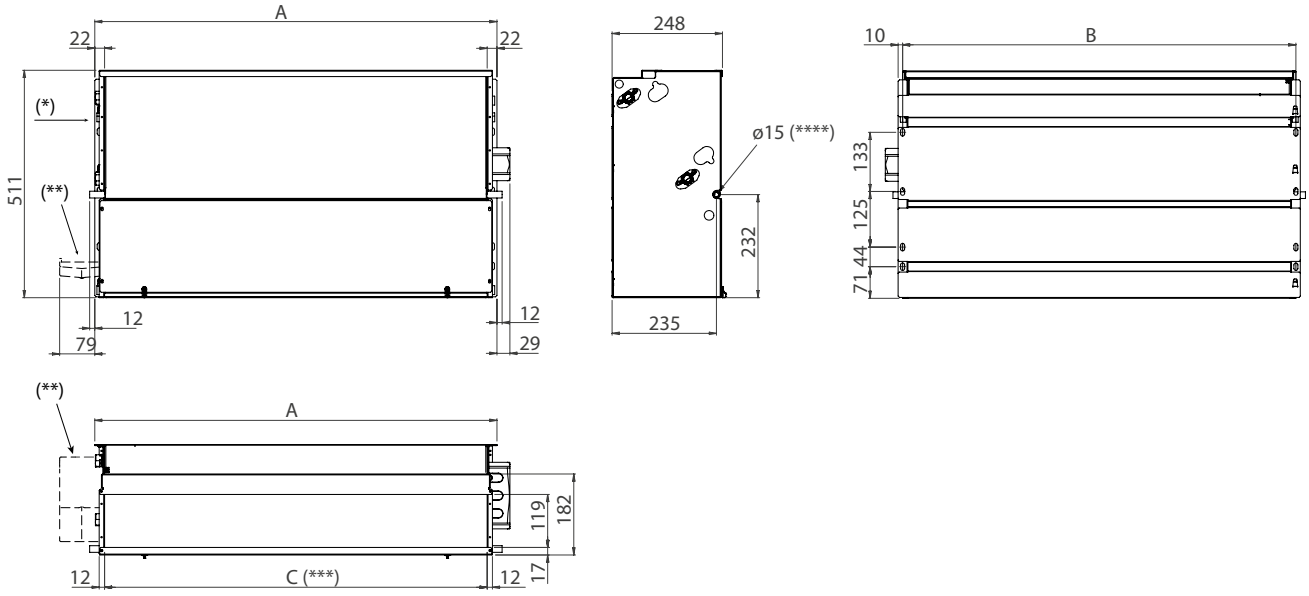
DUA-H1 4-pipe system

Size			12	22	32	42	52	62
High speed								
Airflow		m^3/h	1350	1775	2390	2960	3800	4993
External static pressure		Pa	75	80	70	67	70	70
Cooling capacity	1	kW	5,79	8,03	10,58	13,47	16,73	25,79
Sensible capacity	1	kW	4,87	6,49	8,51	10,72	13,56	19,86
Water flow-rate	1	l/h	997	1383	1822	2320	2882	4658
Water pressure drops	1	kPa	9	16	23	20	17,4	15,8
Heating capacity	2	kW	4,81	6,3	8,08	10,6	13,64	35,13
Water flow-rate	2	l/h	414	543	696	913	1175	3175
Water pressure drops	2	kPa	17,5	26,3	18,1	33,9	38,4	22,5
Rated power input		W	185	275	460	570	760	1310
Medium speed								
Airflow		m^3/h	1090	1390	2045	2545	3245	3531
External static pressure		Pa	50	50	50	50	50	50
Cooling capacity	1	kW	5,11	6,96	9,67	12,34	15,31	20,52
Sensible capacity	1	kW	4,16	5,42	7,6	9,61	12,13	15,34
Water flow-rate	1	l/h	880	1199	1666	2126	2637	3600
Water pressure drops	1	kPa	7	13	19	17	14,7	10,4
Heating capacity	2	kW	4,29	5,53	7,44	9,95	12,55	27,97
Water flow-rate	2	l/h	369	476	641	857	1081	2516
Water pressure drops	2	kPa	14,2	20,8	15,6	29,9	32,9	14,8
Rated power input		W	155	225	415	490	617	894
Minimum speed								
Airflow		m^3/h	770	840	1680	2055	2700	2117
External static pressure		Pa	25	15	30	35	35	35
Cooling capacity	1	kW	4,09	4,99	8,61	10,85	13,75	13,99
Sensible capacity	1	kW	3,18	3,66	6,58	8,21	10,62	10,07
Water flow-rate	1	l/h	705	860	1483	1869	2368	2520
Water pressure drops	1	kPa	5	7	15,7	13,8	12	5,4
Heating capacity	2	kW	3,49	4,09	6,7	8,95	11,34	19,34
Water flow-rate	2	l/h	301	352	577	771	977	1746
Water pressure drops	2	kPa	9,8	12	12,9	24,6	27,4	7,7
Rated power input		W	115	170	345	390	500	689
Standard power supply	3	230/1/50						
Supply fan type		CFG EC						
Supply fan number			2	2	2	2	2	2

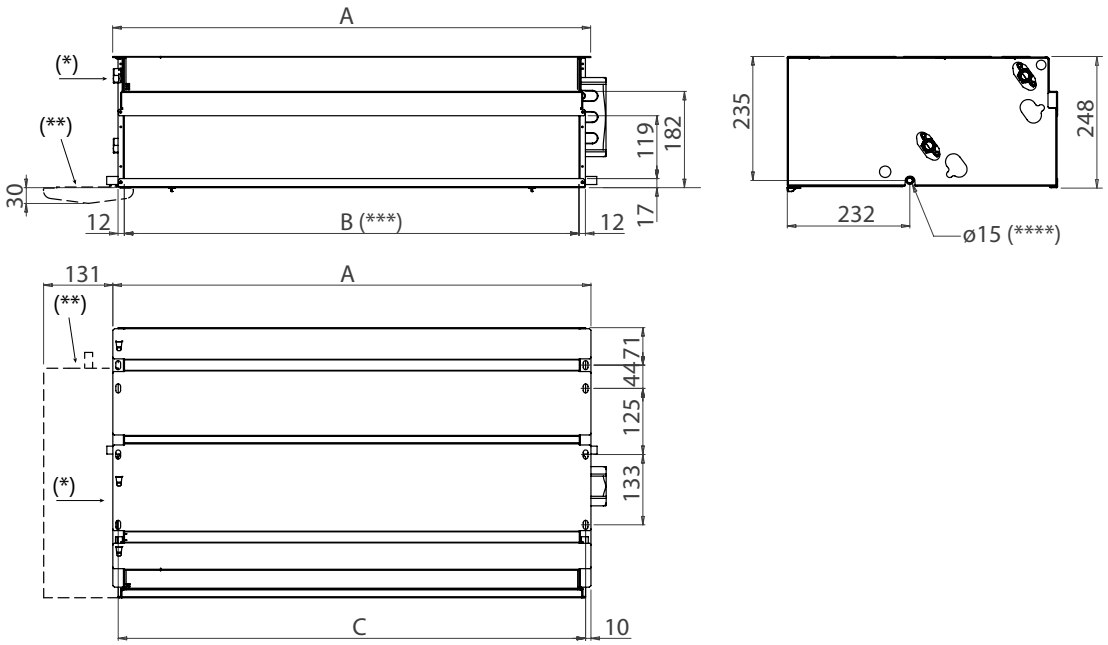
14.2 **Dimensional**

DUA-M1 / DUE-M1

Vertical installation



Horizontal installation



	Size		12-14-22	24-32-42	34-52-62	44-72-82	54-92-102	64-112-122
DUA-M1	**A**	mm	689	904	1119	1334	1549	1549
	B	mm	645	860	1075	1290	1505	1505
	C	mm	669	884	1099	1314	1529	1529

	Size		12-14-22	24-32-42	34-52-62	44-72-82	54-92-102	64-112-122
DUE-M1	**A**	mm	474	689	904	1119	1549	1764
	B	mm	430	645	860	1075	1505	1720
	C	mm	454	669	884	1099	1529	1744

(*) **Hydraulic connections on the left**

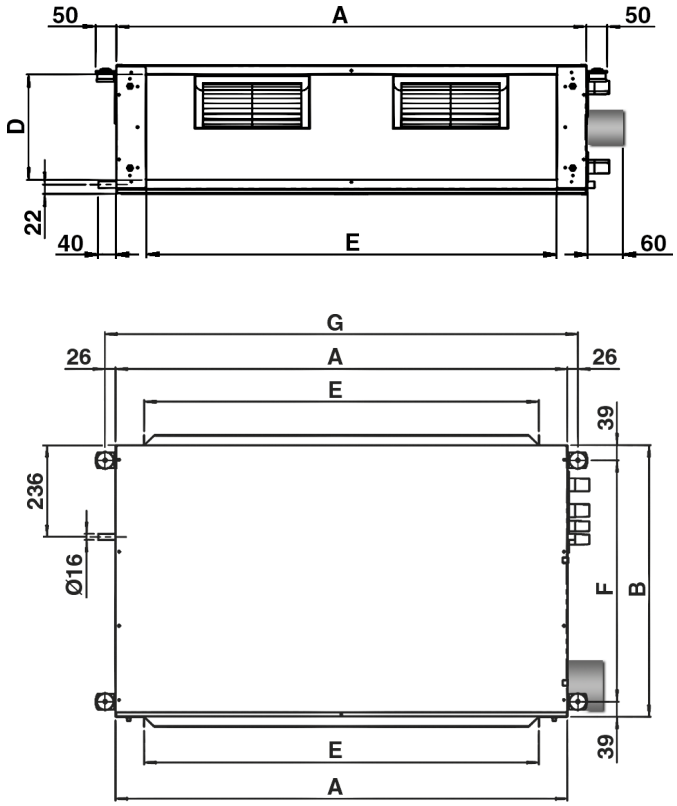
(**) **Drain pan (optional)**

(***) **Supply section E x 119 mm**

(****) **Outer diameter**

DUA-H1 / DUE-H1

Horizontal installation



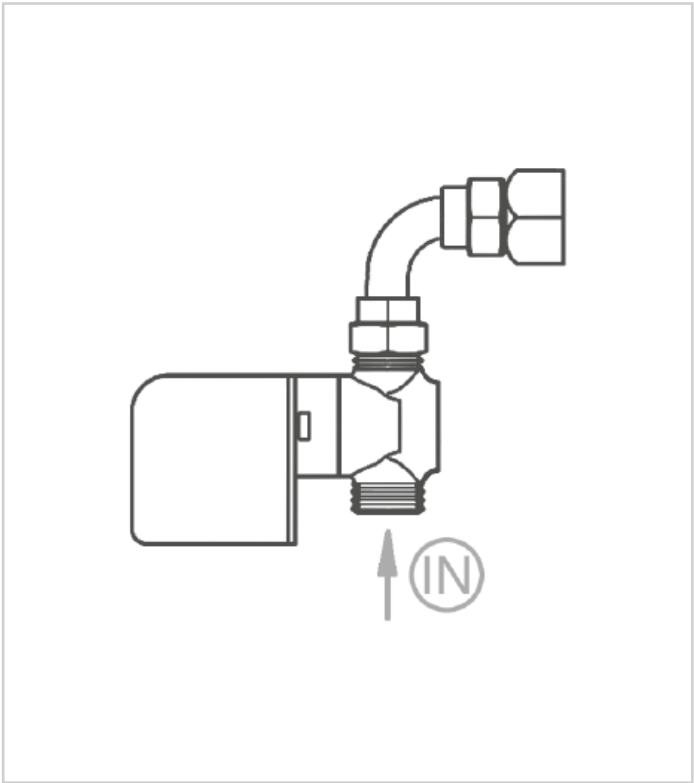
Size		12-14	22-24	32-34	42-44	52-54	62-64
A	mm	1133	1133	1133	1445	1445	1535
B	mm	698	698	698	853	853	1100
D	mm	255	255	305	293	368	421
E	mm	991	991	991	1302	1302	1393
F	mm	620	620	620	775	775	1022
G	mm	1185	1185	1185	1497	1497	1587

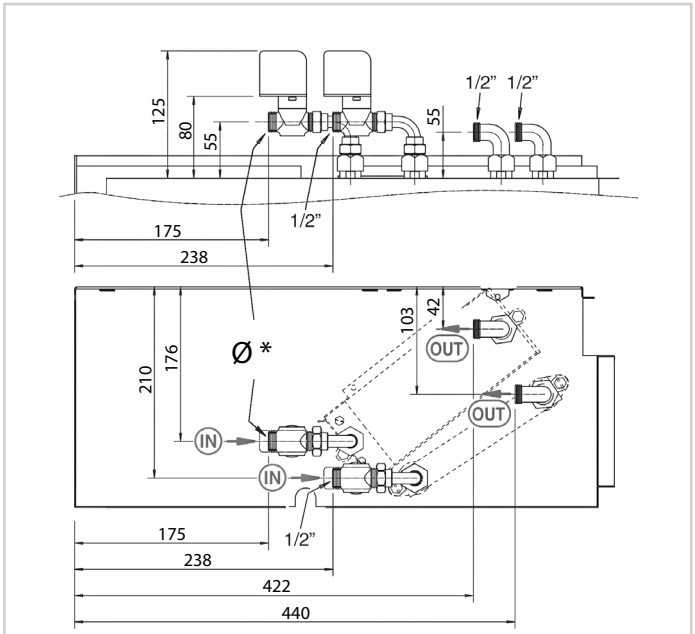
15. **Accessories**

DUA-M1 / DUE-M1

15.1 Two-way valve kit for main battery for 2-pipe “on/off” system

15.2 Two-way valve kit for additional battery 4-pipe “on/off” system





Dimensions ± 10 mm
Ø * = see table

Code		Coil				DN	Ø	Kvs
		DUE CC2	DUE CC4	DUA CC2	DUA CC4			
PED800003	Size	12-42	14-24	12-22	14	15	1/2”	1,7
PED800029	Size	52-82	34-44	32-82	24-44	20	3/4”	2,8
PED800030	Size	92-102	54	92-122	54-64	25	1”	4,0
PED800031	Size	112-122	64	/	/	25	1”	4,5

Code		Additional battery				DN	Ø	Kvs
		DUE CC2	DUE CC4	DUA CC2	DUA CC4			
PED800005	Size	/	14-54	/	14-64	15	1/2”	1,7
PED800035	Size	/	64	/	/	20	3/4”	2,8

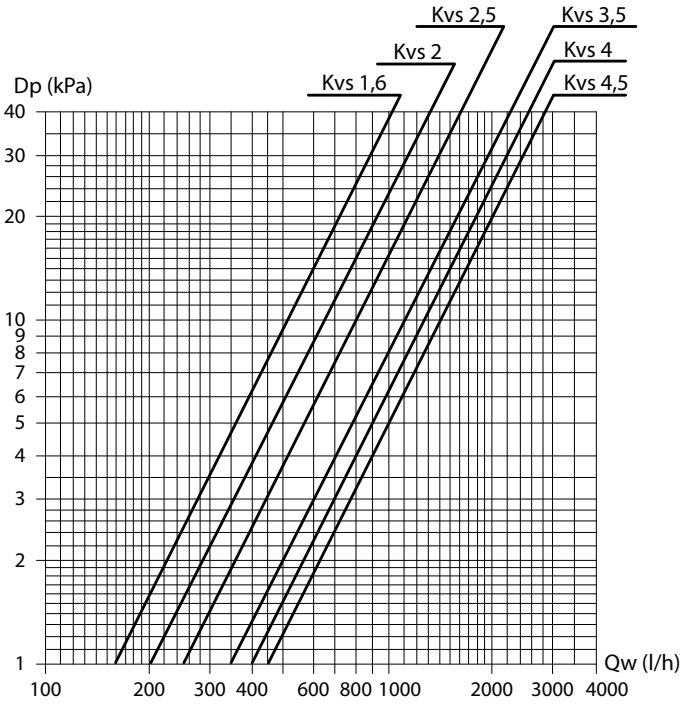
CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

Pressure drop graphs (Kvs) page 112

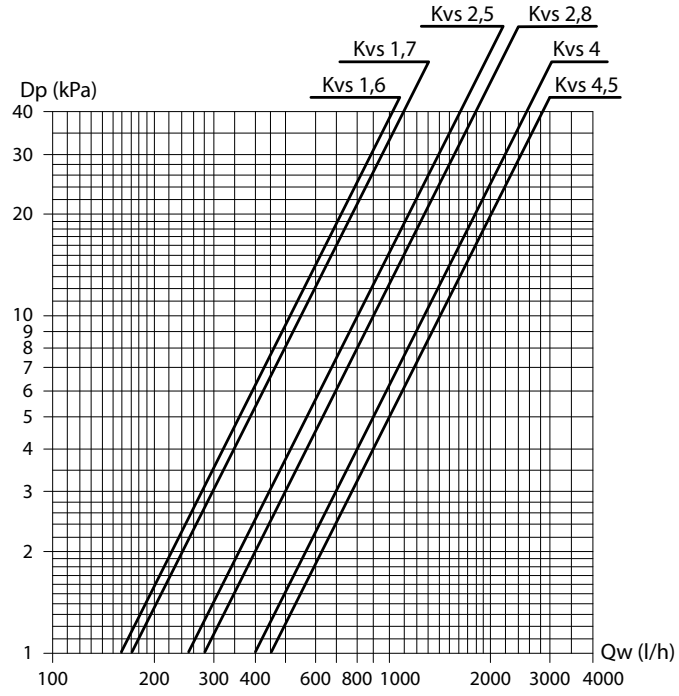
15.2.1 **Pressure drop graphs (Kvs)**

Three-way valve load losses



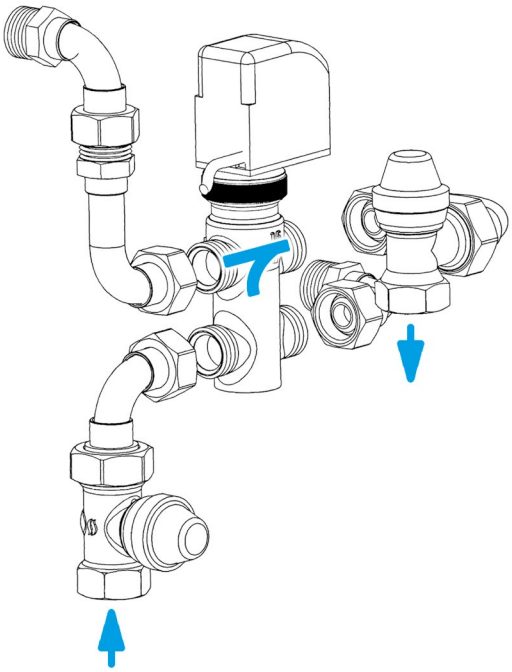
Dp = pressure drop
Qw = water flow rate

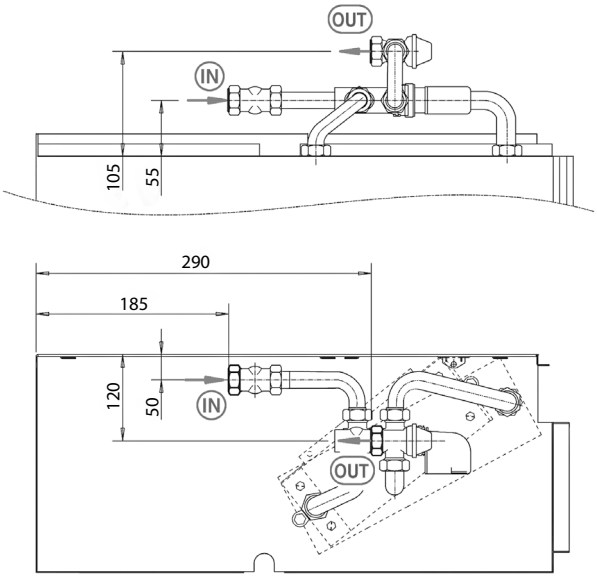
Perdite di carico valvole a due vie



Dp = pressure drop
Qw = water flow rate

15.3 Three-way valve kit for main battery for 2-pipe “on/off” system





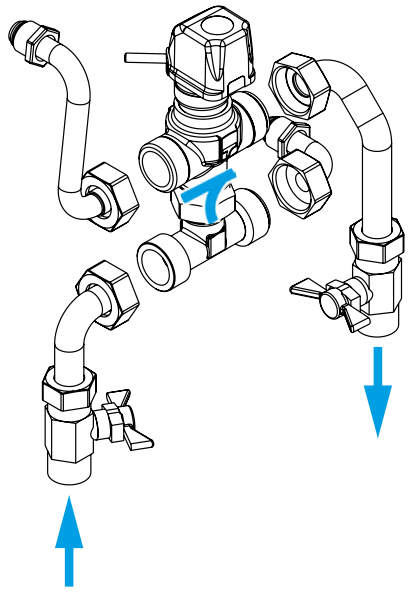
Dimensions ± 10 mm

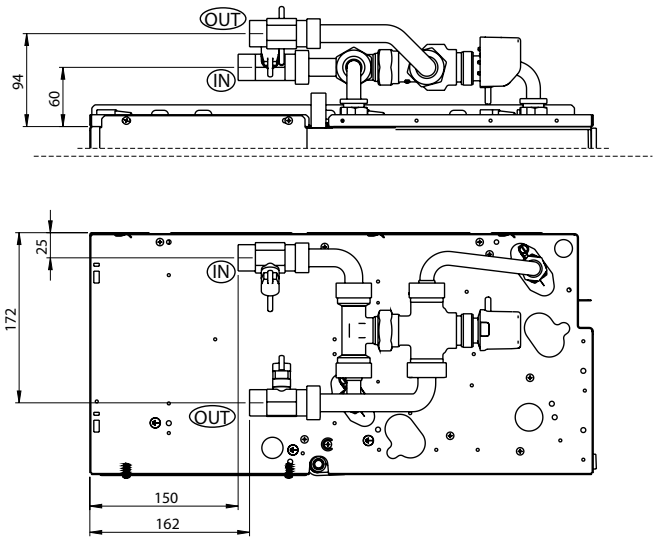
Code		Coil				Valve			Holder		
		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Kvs	DN	Ø	Kvs
PED800004	Size	12-42	14-24	12-22	14	15	1/2”	1,6	15	1/2” F	2,0
PED800032	Size	52-82	34-44	32-82	24-44	20	3/4”	2,5	15	3/4” F	2,0
PED800033	Size	92-102	54	92-122	54	20	3/4”	4,0	20	3/4” F	3,5

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

Pressure drop graphs (Kvs) page 112





Dimensions ± 10 mm

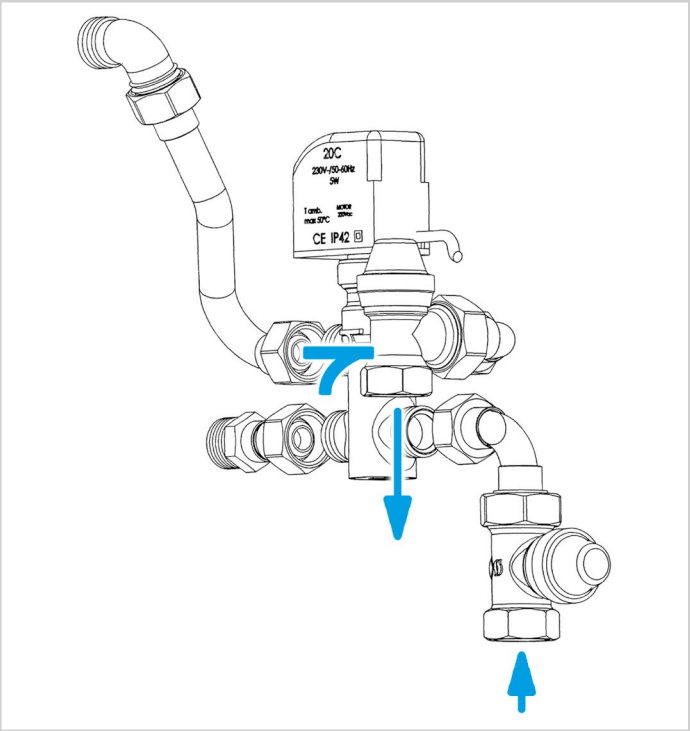
Code		Coil				Valve			Tap
		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Kvs	Ø
PED800034	Size	112-122	64	/	64	25	1”	4,5	3/4” M

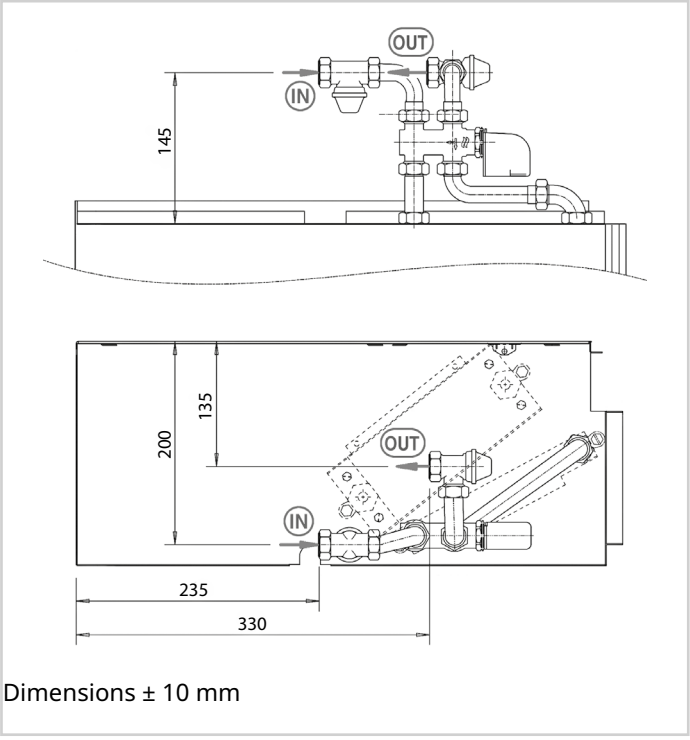
CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

Pressure drop graphs (Kvs) page 112

15.4 Three-way valve kit for additional battery for 4-pipe “on/off” system





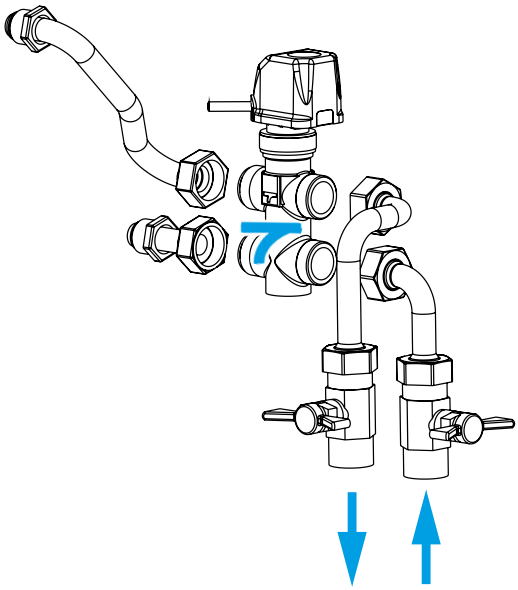
Dimensions ± 10 mm

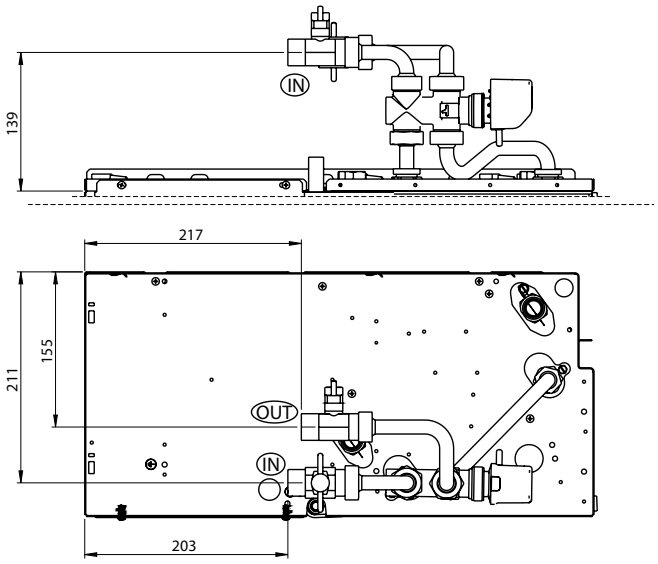
Code		Coil				Valve			Holder		
		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Kvs	DN	Ø	Kvs
PED800006	Size	/	14-54	/	14-64	15	1/2”	1,6	15	1/2” F	2,0

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

Pressure drop graphs (Kvs) page 112





Dimensions ± 10 mm

Code		Coil				Valve			Tap
		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Kvs	Ø
PED800036	Size	/	64	/	/	20	3/4”	2,5	3/4” M

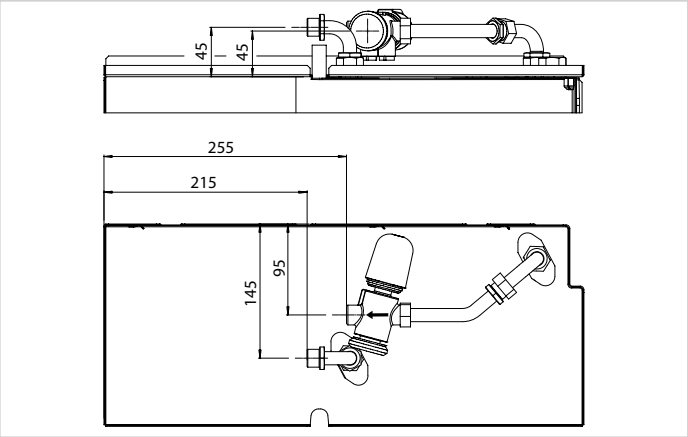
CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

Pressure drop graphs (Kvs) page 112

15.5 Balancing valve kit for main battery for 2-pipe system

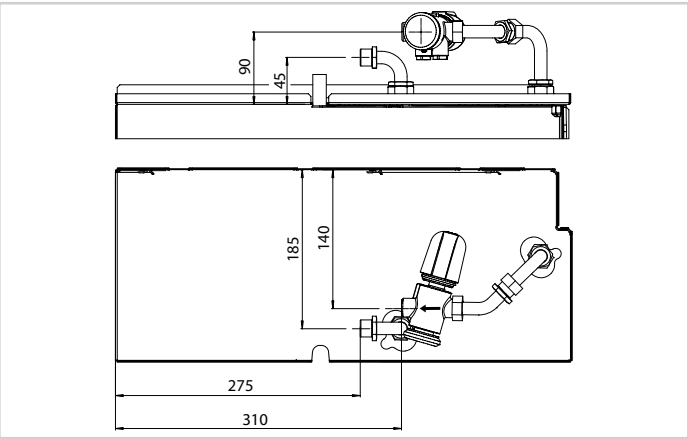
2-way valve for main battery and mounting kit.
The valve is supplied with a 230 Volt electro-thermal actuator for ON/OFF control.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Range (l/h)
PED800007	Size	12-42	14-24	12-22	14	15	3/4"	90-450
PED800037	Size	52-82	34-44	32-82	24-44	15	3/4"	1590-450
PED800038	Size	92-102	54	92-122	54-64	0	1"	190-1300

15.6 Balancing valve kit for additional battery for 4-pipe system

2-way valve for addional battery and mounting kit.
The valve is supplied with a 230 Volt electro-thermal actuator for ON/OFF control.

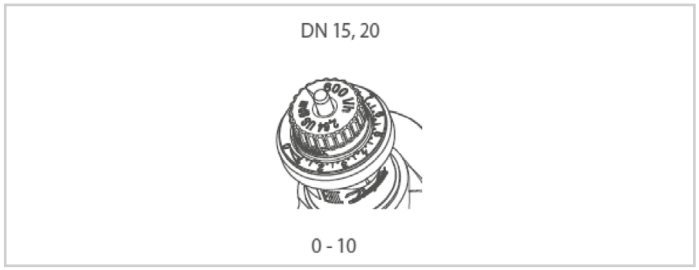


Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	DN	Ø	Range (l/h)
PED800008	Size	/	14-44	/	14-44	15	3/4"	90-450
PED800039	Size	/	54	/	54-64	15	3/4"	150-1050

The calculated flow rate can be achieved without special tools.
To change the preset (factory value is 100%).
Proceed as follows:

- ► Remove blue protective cover or mounted actuator
- ► Raise the indicator (DN 25-32)
- ► Turn (clockwise to decrease) to the new value
- ► Set the grey indicator back into the closed position (DN 25-32)

The presetting scale indicates supply values between 10-0 (DN 15-20). Clockwise rotation reduces the required flow rate and anticlockwise rotation increases it.



Technical characteristics

Nominal diameter		DN	15	15HF	20HF
Flow range		l/h	650	1200	1900
Adjustment range		%	10-100		
Differential pressure	Dp min.	kPa	16	25	25
	Dp max.		600		
Nominal pressure		PN	25		

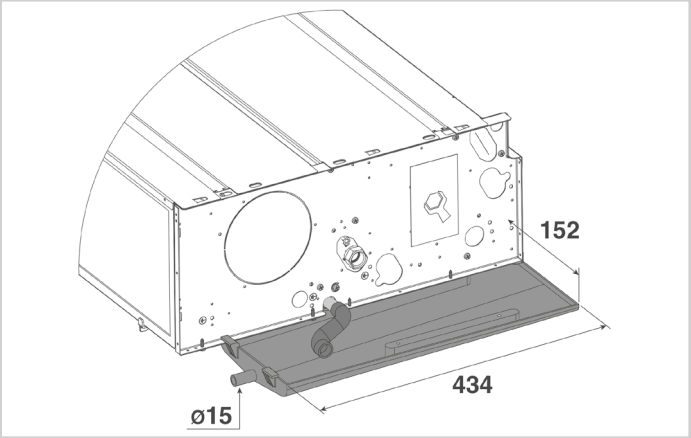
Operating limits of balancing valves

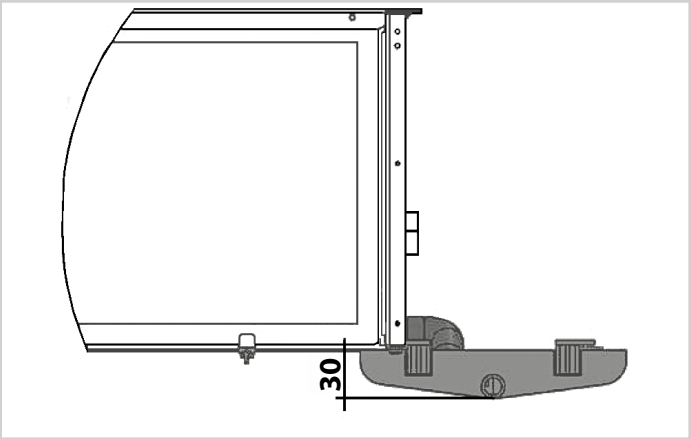
- Maximum operating temperature: 120 °C
- Maximum % water/glycol mixture: 50%
- Minimum operating temperature: -10 °C

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

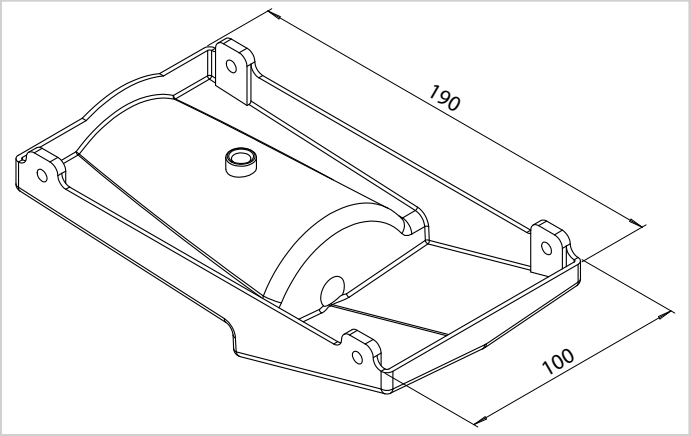
15.7 Auxiliary drain pan (horizontal installation)





Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4
PED800009	Size	12-122	14-64	12-122	14-64

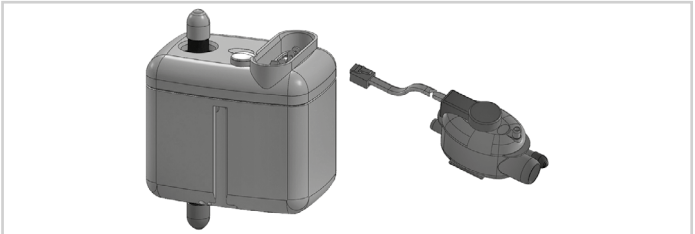
15.8 Auxiliary drain pan (vertical installation)



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4
PED800010	Size	12-122	14-64	12-122	14-64

15.9 Condensate drain pump for horizontal installation

15.10 Condensate drain pump for vertical installation



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4
PED800011	Size	12-122	14-64	12-122	14-64
PED800012	Size	12-122	14-64	12-122	14-64

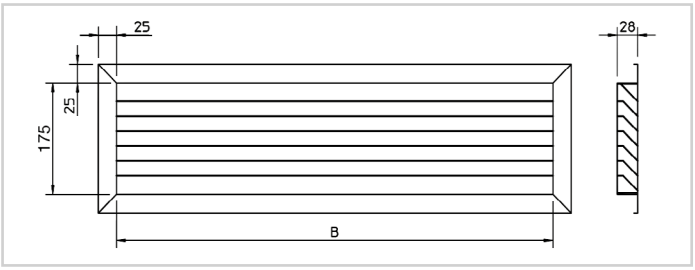
Vertical flow height (m)	Flow rate (l/h) as a function of horizontal supply length	
	5 m	10 m
1	7,6	7,2
2	5,6	5,2
3	4,0	3,7
4	3,2	2,9

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

15.11 Air intake grille for straight flange

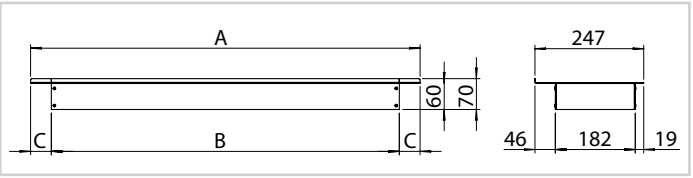
To be applied to the straight intake flange.
Made of anodised aluminium.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4
PED800013	Size	12-22	14	/	/
PED800040	Size	32-42	24	12-22	14
PED800041	Size	52-62	34	32-42	24
PED800042	Size	72-82	44	52-82	34-44
PED800043	Size	92-102	54	92-122	54-64
PED800044	Size	112-122	64	/	/

15.12 Straight flange for air intake

Can be combined with with air intake grille.
Made of galvanised sheet steel.

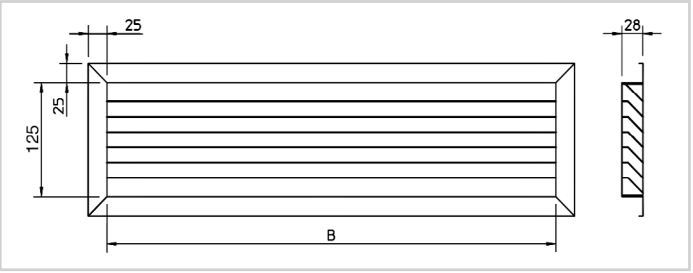


Measurements in mm

Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C
PED800014	Size	12-22	14	/	/	454	390	32
PED800045	Size	32-42	24	12-22	14	669	589	40
PED800046	Size	52-62	34	32-42	24	884	790	47
PED800047	Size	72-82	44	52-82	34-44	1099	989	55
PED800048	Size	92-102	54	92-122	54-64	1529	1439	45
PED800049	Size	112-122	64	/	/	1744	1642	51

15.13 Air intake grille for 90° flange

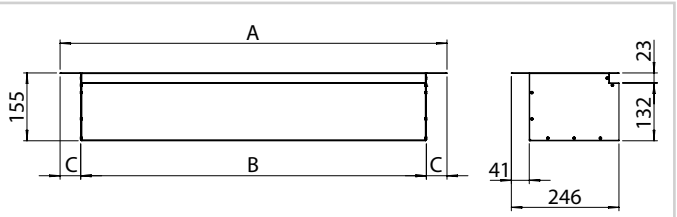
To be attached to the 90° intake flange
Made of anodised aluminium.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	B
PED800015	Size	12-22	14	/	/	375
PED800050	Size	32-42	24	12-22	14	575
PED800051	Size	52-62	34	32-42	24	775
PED800052	Size	72-82	44	52-82	34-44	975
PED800053	Size	92-102	54	92-122	54-64	1425
PED800054	Size	112-122	64	/	/	1625

15.14 90° air return flange

Can be combined with with air intake grille.
Made of galvanised sheet steel.



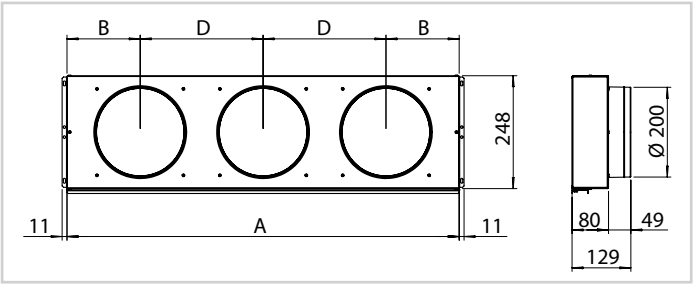
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C
PED800016	Size	12-22	14	/	/	454	390	32
PED800055	Size	32-42	24	12-22	14	669	589	40
PED800056	Size	52-62	34	32-42	24	884	790	47
PED800057	Size	72-82	44	52-82	34-44	1099	989	55
PED800058	Size	92-102	54	92-122	54-64	1529	1439	45
PED800059	Size	112-122	64	/	/	1744	1642	51

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

15.15 **Air return plenum with circular connections**

It consists of a galvanised sheet steel box, insulated internally by a polyethylene matting.
All plenums are equipped with circular tangs that allow flexible tubular fittings to be connected for air distribution.

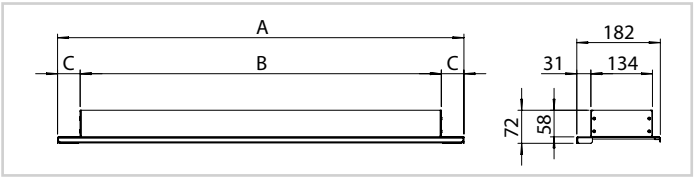


Measurements in mm

Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	D	Tangs No.
PED800017	Size	12-22	14	/	/	432	108	216	2
PED800060	Size	32-42	24	12-22	14	647	167	313	2
PED800061	Size	52-62	34	32-42	24	862	161	270	3
PED800062	Size	72-82	44	52-82	34-44	1077	190	348	3
PED800063	Size	92-102	54	92-122	54-64	1507	223	354	4
PED800064	Size	112-122	64	/	/	1722	221	320	5

15.16 **Straight flange for air supply**

Made of galvanised sheet steel.



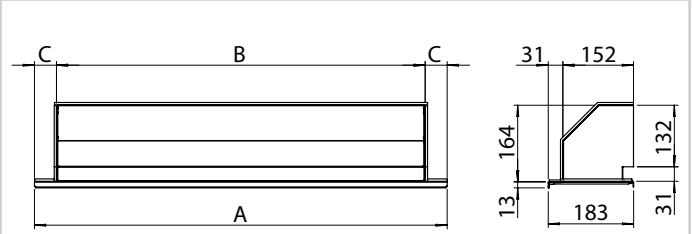
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C
PED800018	Size	12-22	14	/	/	452	390	31
PED800065	Size	32-42	24	12-22	14	673	589	42
PED800066	Size	52-62	34	32-42	24	888	790	49
PED800067	Size	72-82	44	52-82	34-44	1103	989	57
PED800068	Size	92-102	54	92-122	54-64	1533	1439	47
PED800069	Size	112-122	64	/	/	1748	1642	53

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

15.17 **90° air supply flange**

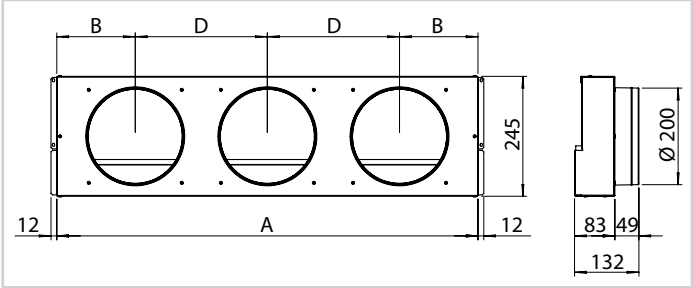
Made of galvanised sheet steel, coated on the outside with polyethylene matting.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C
PED800019	Size	12-22	14	/	/	452	390	31
PED800070	Size	32-42	24	12-22	14	669	589	40
PED800071	Size	52-62	34	32-42	24	884	790	47
PED800072	Size	72-82	44	52-82	34-44	1099	989	55
PED800073	Size	92-102	54	92-122	54-64	1529	1439	45
PED800074	Size	112-122	64	/	/	1744	1642	51

15.18 **Air supply plenum with circular connections**

It consists of a galvanised sheet steel box, insulated internally by a polyethylene matting.
All plenums are equipped with circular tangs that allow flexible tubular fittings to be connected for air distribution.

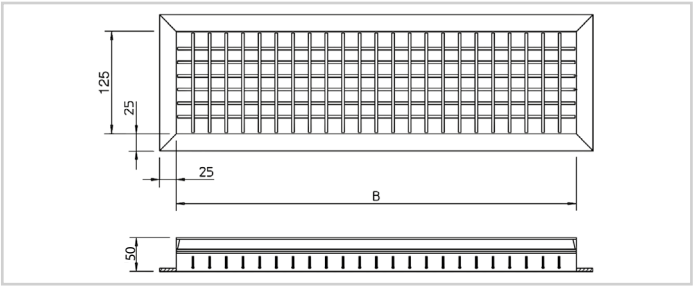


Measurements in mm

Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	D	Tangs No.
PED800020	Size	12-22	14	/	/	430	107	216	2
PED800075	Size	32-42	24	12-22	14	645	166	313	2
PED800076	Size	52-62	34	32-42	24	860	160	270	3
PED800077	Size	72-82	44	52-82	34-44	1075	189	348	3
PED800078	Size	92-102	54	92-122	54-64	1505	222	354	4
PED800079	Size	112-122	64	/	/	1728	224	320	5

15.19 **Air supply inlet**

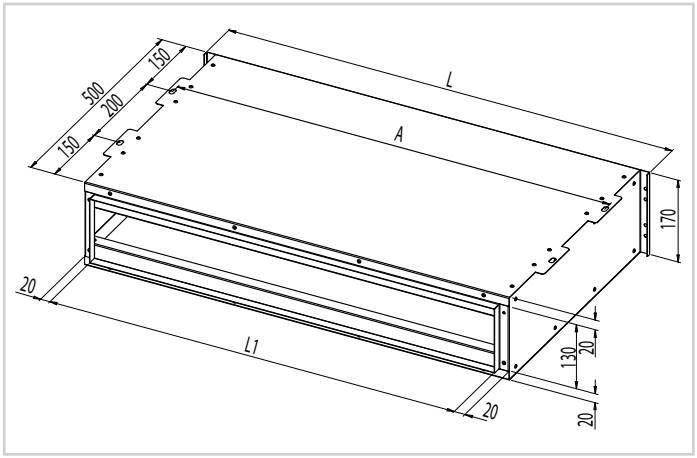
Double row of fins to be attached to the duct, straight supply flange or 90° supply flange.
Made of anodised aluminium.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	B
PED800021	Size	12-22	14	/	/	375
PED800080	Size	32-42	24	12-22	14	575
PED800081	Size	52-62	34	32-42	24	775
PED800082	Size	72-82	44	52-82	34-44	975
PED800083	Size	92-102	54	92-122	54-64	1425
PED800084	Size	112-122	64	/	/	1625

15.20 **Straight air supply plenum**

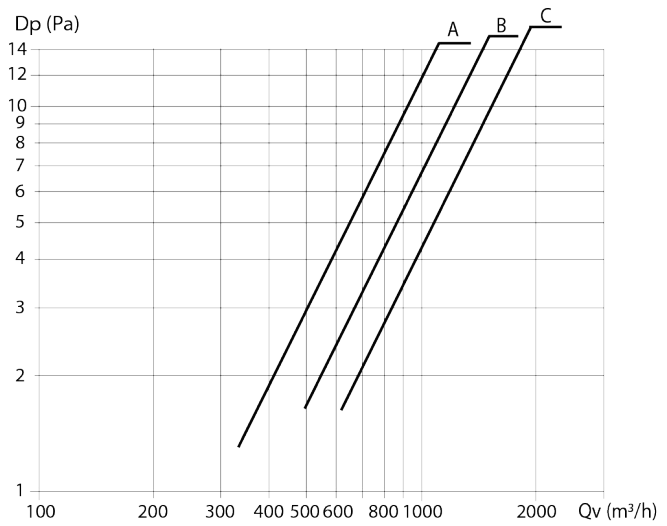
Made of galvanised sheet steel, internally lined with glass wool matting reinforced on both sides with a black glass fleece; the 50 mm thick lining with a density of 30 kg/m^3 garantisce elevati abbattimenti del rumore con perdite di carico molto ridotte.



ⓘ The silencer plenum only reduces sound levels on the supply side; sound levels on the return side are not affected by the silencer.

Frequency	Hz	125	250	500	1000	2000	4000	8000	Total
Sound attenuation	dB	2,5	5,0	11,5	14,0	13,5	12,0	11,0	5,5

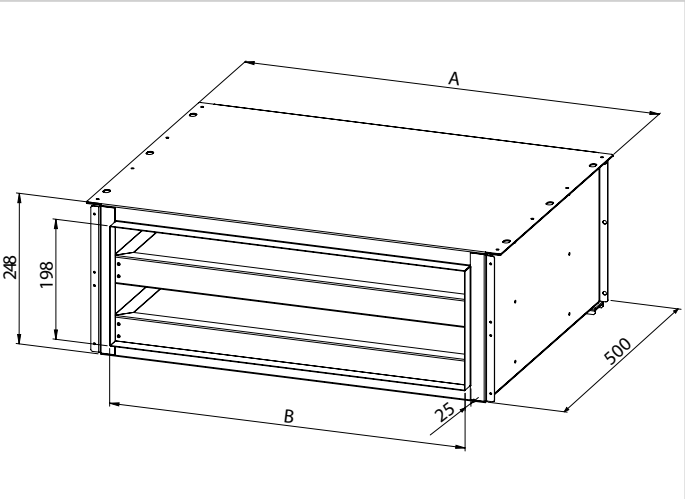
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	L	L1
PED800022	Size	32-42	24	12-22	14	653	675	597
PED800085	Size	52-62	34	32-42	24	868	890	812
PED800086	Size	72-82	44	52-82	34-44	1083	1105	1027



Dp = pressure drop
Qv = airflow

15.21 **Silencer air return plenum**

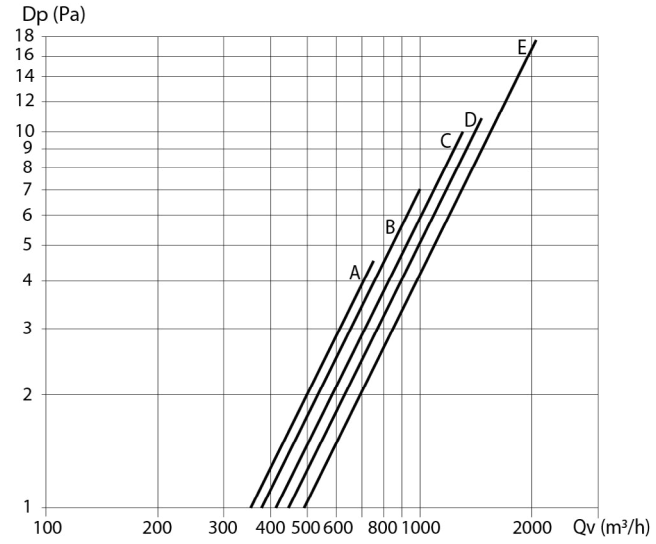
Galvanised sheet steel structure with 3 sound-absorbing partitions inside, with a high sound absorption coefficient, made of 50 mm thick glass wool with a density of 30 kg/m³ rinforzato su entrambi i lati con un velo di vetro colore nero.



ⓘ The silencer plenum only reduces sound levels on the supply side; sound levels on the return side are not affected by the silencer.

Frequency	Hz	125	250	500	1000	2000	4000	8000	Total
Sound attenuation	dB	0,5	7,4	9,5	10,4	8,6	6,8	7,2	8,5

Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B
PED800023	Size	32-42	24	12-22	14	689	591
PED800103	Size	52-62	34	32-42	24	904	806
PED800087	Size	72-82	44	52-82	34-44	1119	1021
PED800088	Size	92-102	54	92-122	54-64	1549	1451



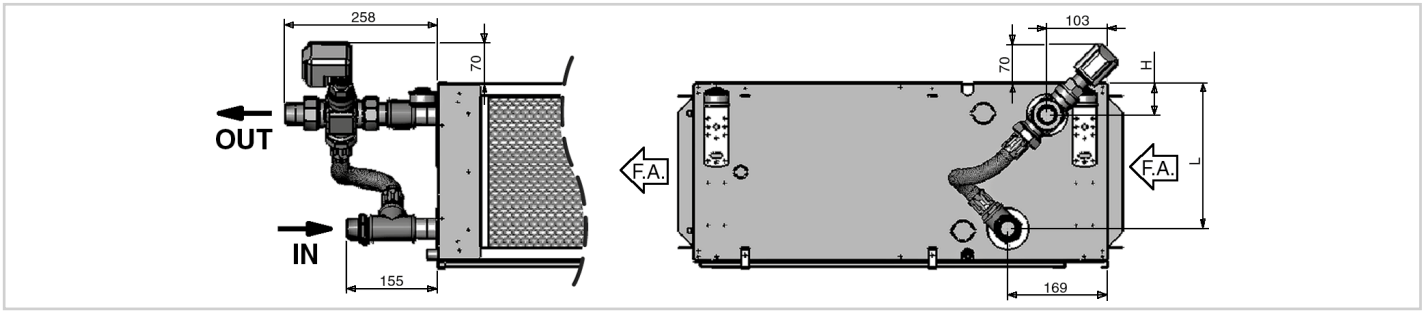
Dp = pressure drop
Qv = airflow

16. **Accessories**

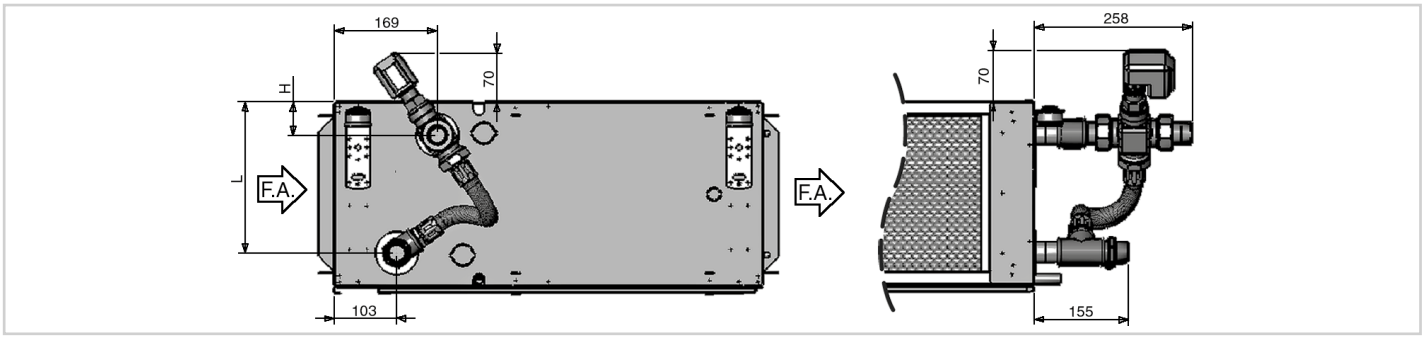
DUA-H1 / DUE-H1

16.1 Three-way valve kit for main battery for 2-pipe “on/off” system

Left-hand execution (standard)

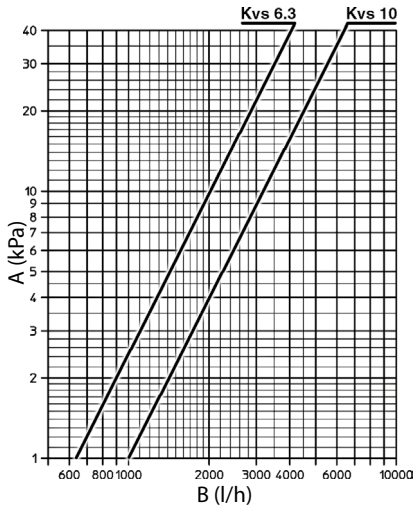


Right-hand execution (on request)



Measurements in mm

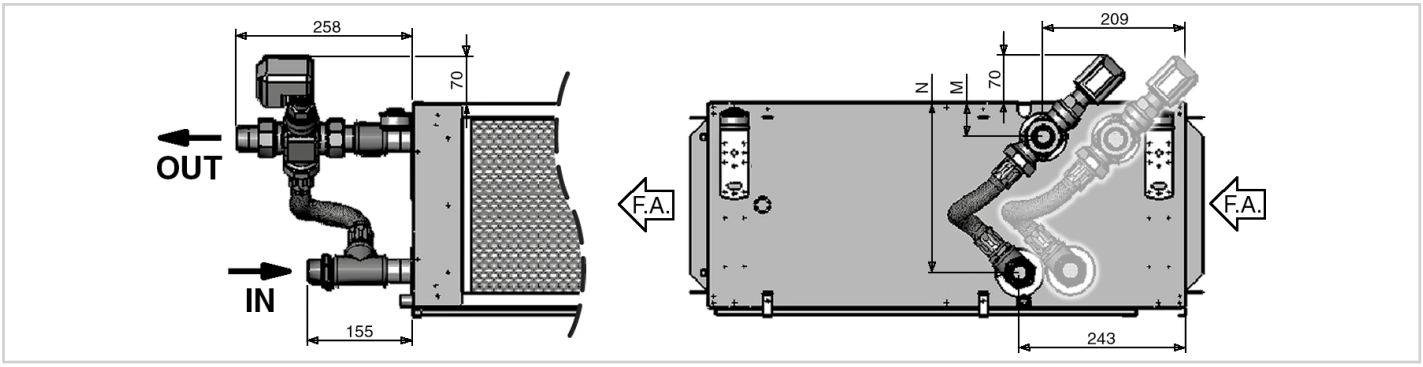
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	H	L	Valve connection Ø	Kvs m³/h
PED800025	Size	12	14	12	14	54	245	3/4”	6,3
PED800093	Size	22-32	24-34	22-32	24-34	54	245	1”	6,3
PED800094	Size	42-52	44-54	42-52	44-54	58	291	1 1/4”	10
PED800095	Size	62	64	62	64	59	416	1 1/4”	10



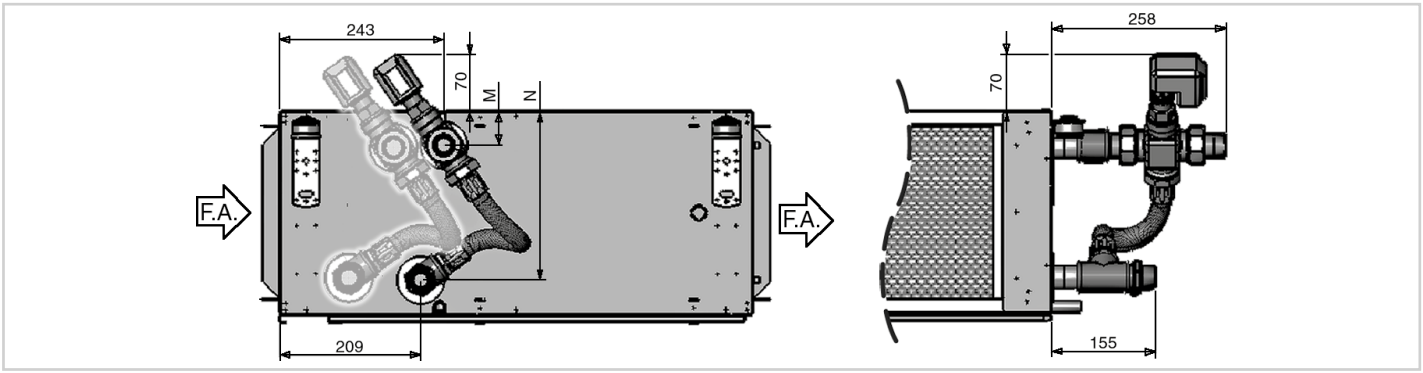
A Pressure drop
B Water flow-rate

16.2 Three-way valve kit for additional battery for 4-pipe "on/off" system

Left-hand execution (standard)

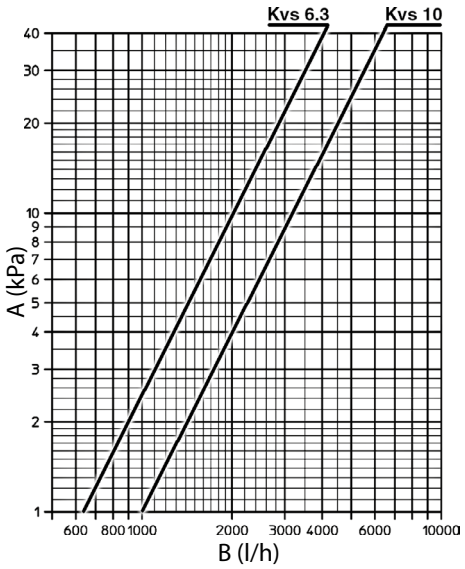


Right-hand execution (on request)



Measurements in mm

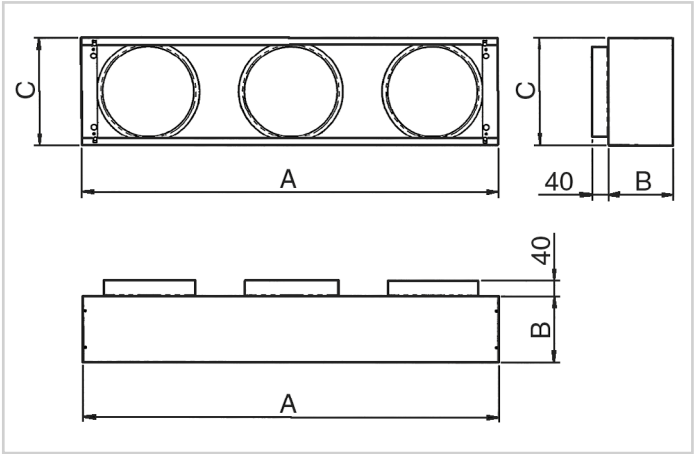
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	M	N	Valve connection Ø	Kvs m³/h
PED800026	Size	12-32	14-34	12-32	14-34	50	249	3/4"	6,3
PED800096	Size	42-52	44-54	42-52	44-54	54	295	1"	10
PED800097	Size	62	64	62	64	55	521	1"	10



A Pressure drop
B Water flow-rate

16.3 Air supply and return plenum with circular connections

Supply and/or suction plenum with 3-tang or 4-tang circular diffusers.



Measurements in mm

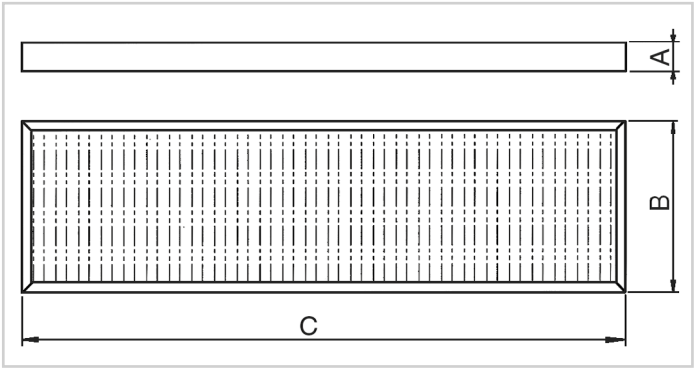
Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C	Tangs No.	Ø tangs
PED800024	Size	12-22	14-24	12-22	14-24	1133	182	298	3	250
PED800089	Size	32	34	32	34	1133	182	348	3	250
PED800090	Size	42	44	42	44	1445	300	348	4	250
PED800091	Size	52	54	52	54	1445	300	442	4	300
PED800092	Size	62	64	62	64	1535	300	472	4	355

CC2 = Battery 2 pipes

CC4 = Battery 4 pipes

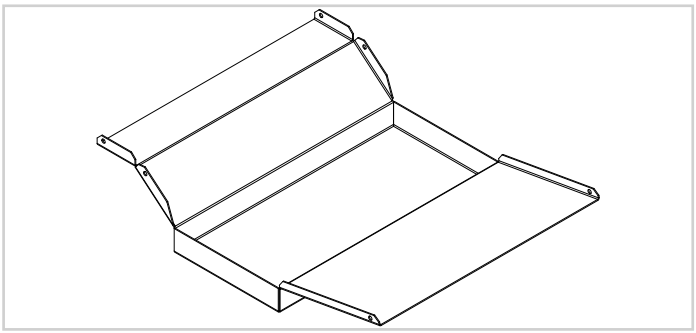
16.4 Synthetic filter Class G4 (ePM10 50%)

High-efficiency compact filter, the filter material is glass microfibre paper. The reference standard is EN16890. The filter is supplied as a separate accessory and must be inserted inside the unit, once the machine installation is complete, in place of the standard one.



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4	A	B	C
PED800027	Size	12-22	14-24	12-22	14-24	48	285	1000
PED800098	Size	32	34	32	34	48	335	988
PED800099	Size	42	44	42	44	48	335	1298
PED800100	Size	52	54	52	54	48	410	1298
PED800101	Size	62	64	62	64	48	460	1385

16.5 Auxiliary drain pan (horizontal installation)



Code		DUE CC2	DUE CC4	DUA CC2	DUA CC4
PED800028	Size	12-62	14-64	12-62	14-64

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CATEGORIE	**UNITÉS TERMINALES À EAU - froid & chaud**
CATEGORIA	**TERMINALES DE AGUA - frió & calor**

TYPE / TIPO / TYP / TYPE / TIPO

DUA-H1 12 DUA-H1 22 DUA-H1 32
DUA-H1 42 DUA-H1 52 DUA-H1 62

- **COMPLIES WITH THE FOLLOWING EC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:**
- RISULTA IN CONFORMITÀ CON QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE CE, COMPRESE LE ULTIME MODIFICHE, E CON LA RELATIVA LEGISLAZIONE NAZIONALE DI RECEPIMENTO:
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- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

☒ **2014/53/EU** **Radio Equipment Directive /** Direttiva sulle apparecchiature radio
Richtlinie über Funkanlagen / Directive sur les équipements radio
Directiva sobre equipos radioeléctricos

☒ **2014/30/EU** **electromagnetic compatibility /** compatibilità elettromagnetica
Elektromagnetische Verträglichkeit / compatibilité électromagnétique / compatibilidad electromagnética

☒ **2014/35/EC** **low voltage directive /** direttiva bassa tensione / Bestimmungen der Niederspannungsrichtlinie
directive basse tension / directiva de baja tensión

☒ **2011/65/UE** **2015/863/UE** **RoHS**

☒ **2009/125/CE** **Ecodesign/**Progettazione ecocompatibile/Ecodesign/Éco-conception/Ecodiseño

-Unit manufactured and tested according to the followings Standards:	EN 60335-1 :2012+A1 :2019+A2 :2019+A11 :2014+A13 :2017+A14 :2019+A15 :2021 EN 60335-2-40 :2003+A1 :2006+A2 :2009+A11 :2004+A12 :2005+A12 :2012
-Unità costruita e collaudata in conformità alle seguenti Normative:	EN 62233 :2008 EN IEC 55014-1 :2021 EN IEC 55014-2 :2021
-Unité construite et testée en conformité avec les Réglementations suivantes	EN 61000-3-2 :2019+A1 :2021 EN 6100-3-3 :2013+A1 :2019+A2 :2021/AC :2022
-Unidad construida y probada de acuerdo con las siguientes Normativas	EN IEC 63000 :2018 REG 327/2011 REG 2016/2281 EN 300 328 V.2.2 :2019
-Gebautes und geprüftes Gerät nach folgenden Normen	EN 301 489-17 V3.2.4 :2020 EN IEC 62311 :2020

-Responsible to constitute the technical file is the company n°.00708410253 and registered at the Chamber of Commerce of Belluno Italy
-Responsabile a costituire il fascicolo tecnico è la società n° 00708410253 registrata presso la Camera di Commercio di Belluno Italia
-Verantwortliche für die technischen Unterlagen zusammenstellen n°.00708410253 ist das Unternehmen bei der Handelskammer von Belluno Italien registriert
-Responsable pour compiler le dossier technique est la société n°00708410253 enregistrée à la Chambre de Commerce de Belluno en Italie
-Encargado de elaborar el expediente técnico es la empresa n ° 00708410253 registrada en la Cámara de Comercio de Belluno Italia

FELTRE, 21/02/2025

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SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS BELLÒ
COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO AMMINISTRATORE DELEGATO

CLIVET S.P.A. - Via Camp Lonc, 25 - Z.I. VILLAPAIERA - 32030 FELTRE (BL) – ITALIA
Cap.Soc. Eur 20.000.000 i.v. C.F. e Reg.Impr. BL n°.00708410253 – R.E.A. n°.66577 – P.I. /VAT:IT 00708410253
Tel. +39 0439 3131 - Fax +39 0439 313300 –Web: www.clivet.it Mail: info@clivet.it PEC: amministrazione.clivet@pec.it - Registro A.E.E. IT08020000001697

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KATEGORIE	**WASSERGEKÜHLTE INNENEINHEITEN - Kühlen & Heizen**
CATEGORIE	**UNITÉS TERMINALES À EAU - froid & chaud**
CATEGORIA	**TERMINALES DE AGUA - frió & calor**

TYPE / TIPO / TYP / TYPE / TIPO

DUA-H1 14 DUA-H1 24 DUA-H1 34
DUA-H1 44 DUA-H1 54 DUA-H1 64

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TYPE / TIPO / TYP / TYPE / TIPO

DUA-M1 12	DUA-M1 22	DUA-M1 32
DUA-M1 42	DUA-M1 52	DUA-M1 62
DUA-M1 72	DUA-M1 82	DUA-M1 92
DUA-M1 102	DUA-M1 112	DUA-M1 122

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- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

☒ **2014/53/EU** **Radio Equipment Directive /** Direttiva sulle apparecchiature radio
Richtlinie über Funkanlagen / Directive sur les équipements radio
Directiva sobre equipos radioeléctricos

☒ **2014/30/EU** **electromagnetic compatibility /** compatibilità elettromagnetica
Elektromagnetische Verträglichkeit / compatibilité électromagnétique / compatibilidad electromagnética

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FELTRE, 21/02/2025

NAME / NOME / VORNAME / PRÉNOM / NOMBRE: STEFANO
SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS: BELLÒ
COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO: AMMINISTRATORE DELEGATO

CLIVET S.P.A. - Via Camp Lonc, 25 - Z.I. VILLAPAIERA - 32030 FELTRE (BL) – ITALIA
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WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE MACHINE
DICHIARIAMO SOTTO LA NOSTRA SOLA RESPONSABILITÀ CHE LA MACCHINA
WIR ERKLÄREN EIGENVERANTWORTLICH, DASS DIE MASCHINE
NOUS DÉCLARONS SOUS NOTRE SEULE RESPONSABILITÉ QUE LA MACHINE
EL FABRICANTE DECLARA BAJO SU EXCLUSIVA RESPONSABILIDAD QUE LA MÁQUINA

CATEGORY	**HYDRONIC TERMINAL UNITS - cool & heat**
CATEGORIA	**TERMINALI AD ACQUA - freddo & caldo**
KATEGORIE	**WASSERGEKÜHLTE INNENEINHEITEN - Kühlen & Heizen**
CATEGORIE	**UNITÉS TERMINALES À EAU - froid & chaud**
CATEGORIA	**TERMINALES DE AGUA - frió & calor**

TYPE / TIPO / TYP / TYPE / TIPO

DUA-M1 14 DUA-M1 24 DUA-M1 34
DUA-M1 44 DUA-M1 54 DUA-M1 64

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CATEGORY	**HYDRONIC TERMINAL UNITS - cool & heat**
CATEGORIA	**TERMINALI AD ACQUA - freddo & caldo**
KATEGORIE	**WASSERGEKÜHLTE INNENEINHEITEN - Kühlen & Heizen**
CATEGORIE	**UNITÉS TERMINALES À EAU - froid & chaud**
CATEGORIA	**TERMINALES DE AGUA - frió & calor**

TYPE / TIPO / TYP / TYPE / TIPO

DUE-H1 12 DUE-H1 22 DUE-H1 32
DUE-H1 42 DUE-H1 52 DUE-H1 62

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NAME / NOME / VORNAME / PRÉNOM / NOMBRE STEFANO
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CATEGORY	**HYDRONIC TERMINAL UNITS - cool & heat**
CATEGORIA	**TERMINALI AD ACQUA - freddo & caldo**
KATEGORIE	**WASSERGEKÜHLTE INNENEINHEITEN - Kühlen & Heizen**
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TYPE / TIPO / TYP / TYPE / TIPO

DUE-H1 14 DUE-H1 24 DUE-H1 34
DUE-H1 44 DUE-H1 54 DUE-H1 64

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FELTRE, 21/02/2025

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CATEGORY	**HYDRONIC TERMINAL UNITS - cool & heat**
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KATEGORIE	**WASSERGEKÜHLTE INNENEINHEITEN - Kühlen & Heizen**
CATEGORIE	**UNITÉS TERMINALES À EAU - froid & chaud**
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TYPE / TIPO / TYP / TYPE / TIPO

DUE-M1 12	DUE-M1 22	DUE-M1 32
DUE-M1 42	DUE-M1 52	DUE-M1 62
DUE-M1 72	DUE-M1 82	DUE-M1 92
DUE-M1 102	DUE-M1 112	DUE-M1 122

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FELTRE, 22/02/2025

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DUE-M1 14 DUE-M1 24 DUE-M1 34
DUE-M1 44 DUE-M1 54 DUE-M1 64

- **COMPLIES WITH THE FOLLOWING EC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:**
- RISULTA IN CONFORMITÀ CON QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE CE, COMPRESE LE ULTIME MODIFICHE, E CON LA RELATIVA LEGISLAZIONE NAZIONALE DI RECEPIMENTO:
- DEN IN DEN FOLGENDEN EG-RICHTLINIEN VORGESEHENEN VORSCHRIFTEN, EINSCHLIEßLICH DER LETZTEN ÄNDERUNGEN, SOWIE DEN ANGEWANDTEN LANDESGESETZEN ENTSPRICHT:
- EST CONFORME AUX DIRECTIVES CE SUIVANTES, Y COMPRIS LES DERNIÈRES MODIFICATIONS, ET À LA LÉGISLATION NATIONALE D'ACCUEIL CORRESPONDANTE:
- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

☒ **2014/53/EU** **Radio Equipment Directive /** Direttiva sulle apparecchiature radio
Richtlinie über Funkanlagen / Directive sur les équipements radio
Directiva sobre equipos radioeléctricos

☒ **2014/30/EU** **electromagnetic compatibility /** compatibilità elettromagnetica
Elektromagnetische Verträglichkeit / compatibilité électromagnétique / compatibilidad electromagnética

☒ **2014/35/EC** **low voltage directive /** direttiva bassa tensione / Bestimmungen der Niederspannungsrichtlinie
directive basse tension / directiva de baja tensión

☒ **2011/65/UE** **2015/863/UE** **RoHS**

☒ **2009/125/CE** **Ecodesign/**Progettazione ecocompatibile/Ecodesign/Éco-conception/Ecodiseño

-Unit manufactured and tested according to the followings Standards:	EN 60335-1 :2012+A1 :2019+A2 :2019+A11 :2014+A13 :2017+A14 :2019+A15 :2021 EN 60335-2-40 :2003+A1 :2006+A2 :2009+A11 :2004+A12 :2005+A13 :2012
-Unità costruita e collaudata in conformità alle seguenti Normative:	EN 62233 :2008 EN IEC 55014-1 :2021 EN IEC 55014-2 :2021
-Unité construite et testée en conformité avec les Réglementations suivantes	EN 61000-3-2 :2019+A1 :2021 EN 61000-3-3 :2013+A1 :2019+A2 :2021/AC :2022
-Unidad construida y probada de acuerdo con las siguientes Normativas	EN IEC 63000 :2018 REG 2016/2281 EN 300 328 V2.2.2 :2019
-Gebautes und geprüftes Gerät nach folgenden Normen	EN 301 489-17 V3.2.4_2020 EN IEC 62311 :2020

-Responsible to constitute the technical file is the company n°.00708410253 and registered at the Chamber of Commerce of Belluno Italy
-Responsabile a costituire il fascicolo tecnico è la società n° 00708410253 registrata presso la Camera di Commercio di Belluno Italia
-Verantwortliche für die technischen Unterlagen zusammenstellen n°.00708410253 ist das Unternehmen bei der Handelskammer von Belluno Italien registriert
-Responsable pour compiler le dossier technique est la société n°00708410253 enregistrée à la Chambre de Commerce de Belluno en Italie
-Encargado de elaborar el expediente técnico es la empresa n º 00708410253 registrada en la Cámara de Comercio de Belluno Italia

FELTRE, 22/02/2025

NAME / NOME / VORNAME / PRÉNOM / NOMBRE STEFANO
SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS BELLÒ
COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO AMMINISTRATORE DELEGATO

CLIVET S.P.A. - Via Camp Lonc, 25 - Z.I. VILLAPAIERA - 32030 FELTRE (BL) – ITALIA
Cap.Soc. Eur 20.000.000 i.v. C.F. e Reg.Impr. BL n°.00708410253 – R.E.A. n°.66577 – P.I. /VAT:IT 00708410253
Tel. +39 0439 3131 - Fax +39 0439 313300 –Web: www.clivet.it Mail: info@clivet.it PEC: amministrazione.clivet@pec.it - Registro A.E.E. IT08020000001697

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