AERMEC
La prima per il clima

ENGLISH

Español

INSTALLATION MANUAL

Air-cooled heat pumps with high-efficiency scroll compressor

MANUAL DE INSTRUCCIONES

Bombas de calor condensadas por aire con compresor scroll de alta eficacia

he

R407C

CE

AERMEC
COMPANY QUALITY SYSTEM
ICIM
ISO 9001 - Cert. n° 0128/4
CISQ
IQNet
AERMEC S.P.A.

PRELIMINAY

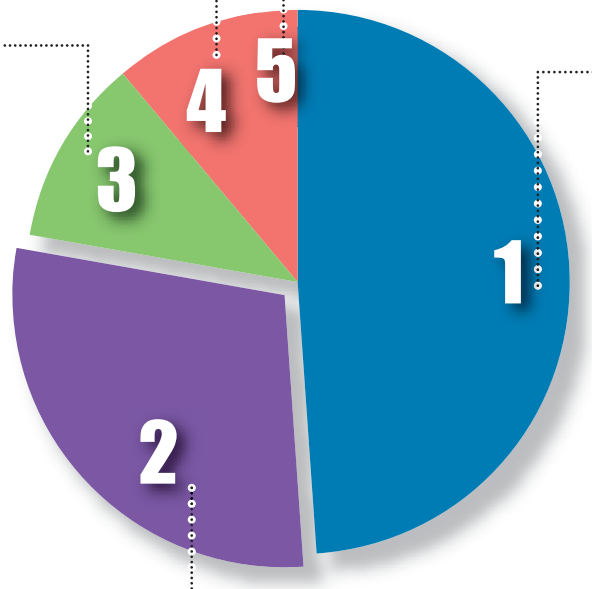
IHEIV. 0605 4030350_00

This manual contains :

- Electrical data
- Electrical wiring
- Putting into service
- Use

- Wiring diagrams
- MAINTENANCE

- Electrical data
- Electrical wiring
- Putting into service



- Receipt of the product
- Weights and their distribution on the supports
- Minimum space requirements

- Internal hydraulic circuit
- External hydraulic circuit recommended
- Position and dimensions Plumbing connections
- • Plumbing connections

TABLE OF CONTENTS

Receipt of the product	4
Position and fitting of the anti-vibration mountings	5
Plumbing section	7
Electrical wiring	10
Putting into service	11
Improper uses	12
Wiring diagrams	13

Dear Customer,
Thank you for choosing AERMEC. It is the fruit of many years of experience and special design studies and it has been made of the highest grade materials and with cutting edge technology.
In addition, all our products bear the CE mark indicating that they meet the requirements of the European Machine Directive regarding safety. The standard of quality is permanently being monitored and AERMEC products are therefore a synonym for Safety, Quality and Reliability.
If you do not know where our nearest After Sales Service is, you can get this from the dealership where the device was purchased.

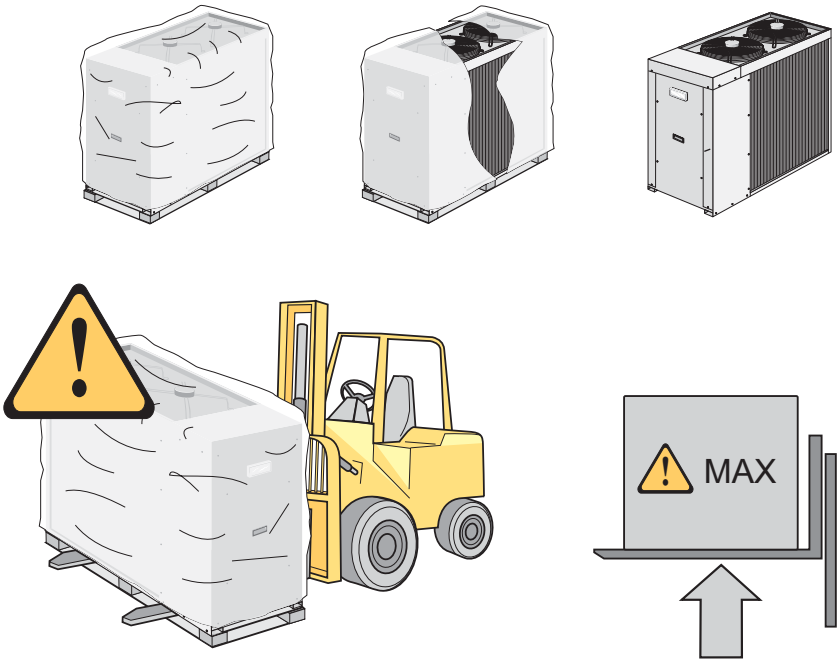
The data might undergo modifications considered necessary for the improvement of the product.

Thank you again.
AERMEC S.p.A

Receipt of the product

HANDLING

Before moving the unit, examine the sizes, weights, centre of gravity and lifting points, then check that the equipment for lifting and positioning are suitable and comply with safety regulations currently in force. Particular attention must be paid to all the loading, unloading and lifting operations so as to avoid hazardous situations for people and damage to the structure and operational parts of the machine. Under no circumstances may objects be placed on top of the unit. Personnel engaged in handling the machine must have the proper personal protection devices. Under no circumstance must anybody or anything stop under the unit even briefly. During lifting you are advised to fit anti-vibration mountings and fix them to the relative holes on the base unit in accordance with the mounting schematic supplied with the accessories (VT).

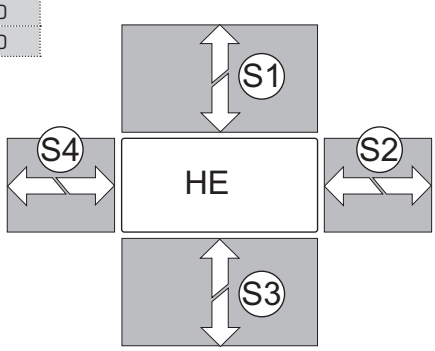


Positioning

The machines in the HE series must be installed externally in an area that is suitable for the purpose that has the required technical spaces. This is essential both to allow interventions of ordinary and extraordinary maintenance and for operating requirements For the proper functioning of the unit it must be installed on a perfectly flat surface. Make sure that the resting surface is able to bear the weight of the machine. The device is made of galvanised steel sheet and hot painted with polyester powders to resist bad weather. This means that no particular measures have to be taken to protect the unit. If the machine is to be placed in a particularly windy position, wind breaks must be provided to avoid the DCPX operating in an unstable condition.

N.B. The appliance must be installed in such a way that maintenance and/or repair operations are possible. The warranty of the device does not in any case cover costs incurred as a result of motorised ladders, scaffolding or any other lifting systems made necessary to carry out the operations under warranty.

Mod.	Minimum technical spaces			
mm	S1	S2	S3	S4
020	150	500	150	500
025	250	500	250	500
030	250	500	250	500
040	300	500	300	500
050	300	500	300	500
080	300	500	300	500
090	300	500	300	500
100	750	300	750	1400
150	750	300	750	1400
200	750	300	750	1400



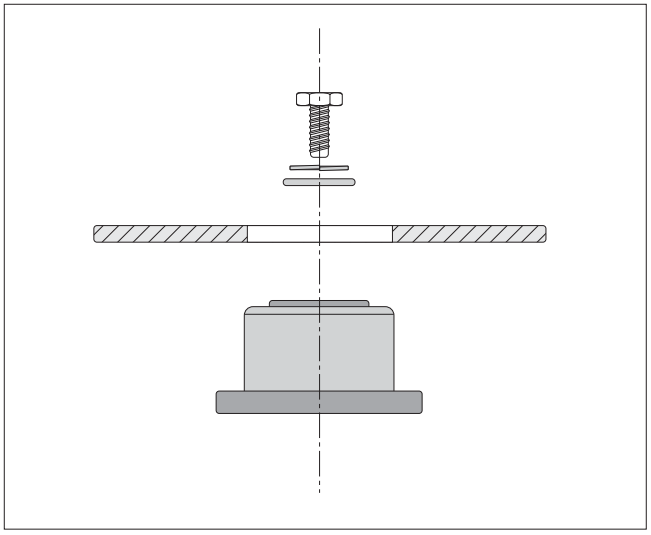
Position and fitting of the anti-vibration mountings

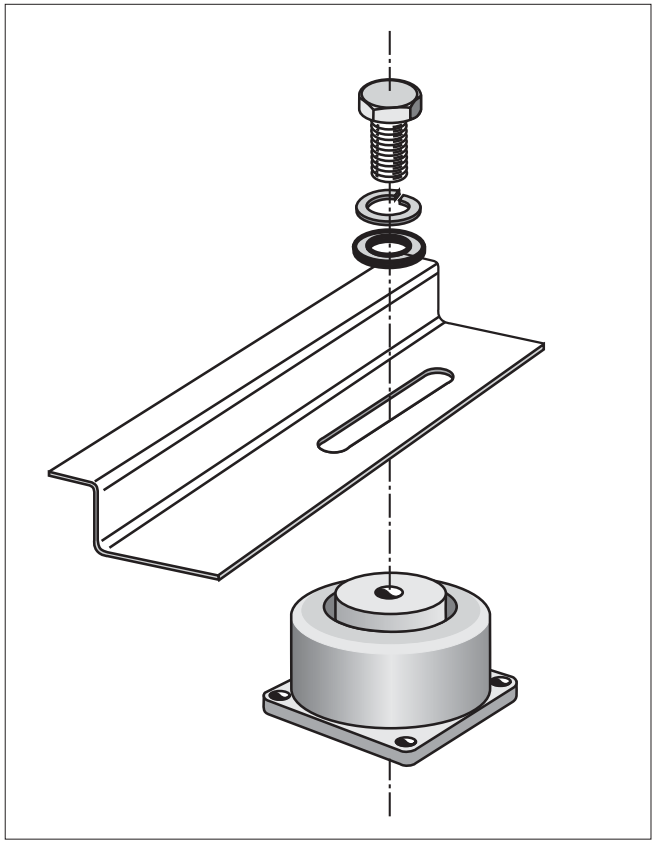
Fitting of the anti-vibration mountings:

Anti-vibration mountings can be combined with the unit (available as an accessory), thanks to which the vibrations produced by the compressor during its functioning are dampened; the following diagrams show how to install these accessories on the unit depending on the model of the unit purchased.Every kit includes four anti-vibration mountings with the nuts and bolts necessary for fitting them; remember to pay particular attention to the positioning of the unit during the fitting of the anti-vibration mountings, furthermore remember that the surface the unit is rested on must be perfectly level and able to support the weight of the unit.

Tableau des compatibilités:

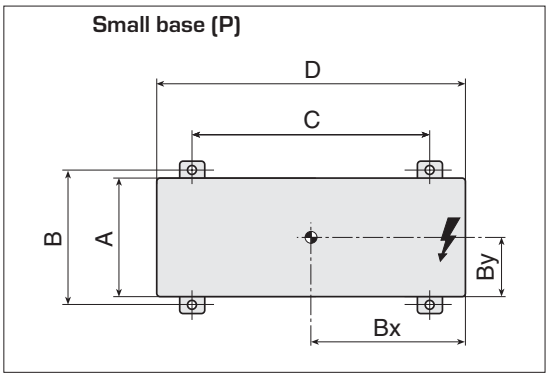
HE	VT 7	VT 8	VT 9
020	✔		
025	✔		
030	✔		
040		✔	
050		✔	
080		✔	
090		✔	
100			✔
150			✔
200			✔



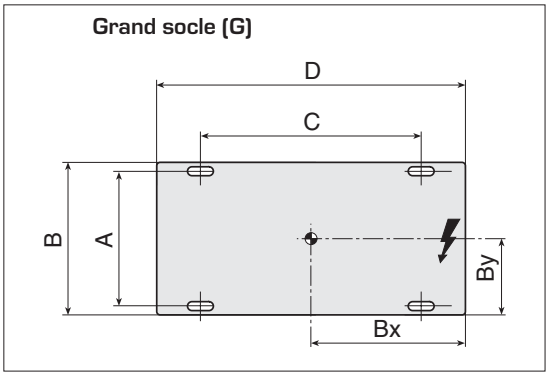


Barycentre and position of the anti-vibration mountings:

Version HE H (with accumulation empty)							
ANZ	Socle	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	P			408	435	660	1120
080	P			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750



Version HE H (with accumulation full of water)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750



Version HE (with accumulation empty)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750

Version HE (with accumulation full of water)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750

Plumbing section

hydraulic circuit inside the unit

N.B.
For the correct design of the hydraulic system comply with local safety regulations currently in force. The following information constitutes suggestions for the correct installation of the unit.

Standard equipment

The unit comes as standard with

In the versions (U):

- Plate-type heat exchanger
- Differential pressure switch between the inlet and outlet of the evaporator to avoid problems of freezing if there is no flow of water.
  For the sizes 020 - 025 - 030 - 040 - 050, the differential pressure switch is replaced by a flow switch.
- Diaphragm type expansion tank with precharge of nitrogen.
- The storage tank lowers the number of compressor peaks and standardise the temperature of the water to send to the users.
- Circulation pump

In the versions (B):

- Plate-type heat exchanger
- Differential pressure switch between the inlet and outlet of the evaporator to avoid problems of freezing if there is no flow of water.
  For the sizes 020 - 025 - 030 - 040 - 050, the differential pressure switch is replaced by a flow switch.
- Diaphragm type expansion tank with precharge of nitrogen.
- The storage tank lowers the number of compressor peaks and standardise the temperature of the water to send to the users.
- Circulation pump

Recommended hydraulic circuit

The figure shows some diagrams of the recommended hydraulic circuit between the HE chiller and the users.

In the case the following are not supplied with the unit, you are advised to install:
-Manual cut-off valves
- Inertia storage tank
- Charging assembly
- Flexible high-pressure joints
- Expansion tank
- Safety valve
- Drain valve

N.B.

The hydraulic piping for connection to the machine must be properly scaled for the actual water flow rate required by the plant in the functioning.

The installer is responsible for the hydraulic parallel.

The water flow rate to the heat exchanger must always be constant.

HE U (singolo anello)

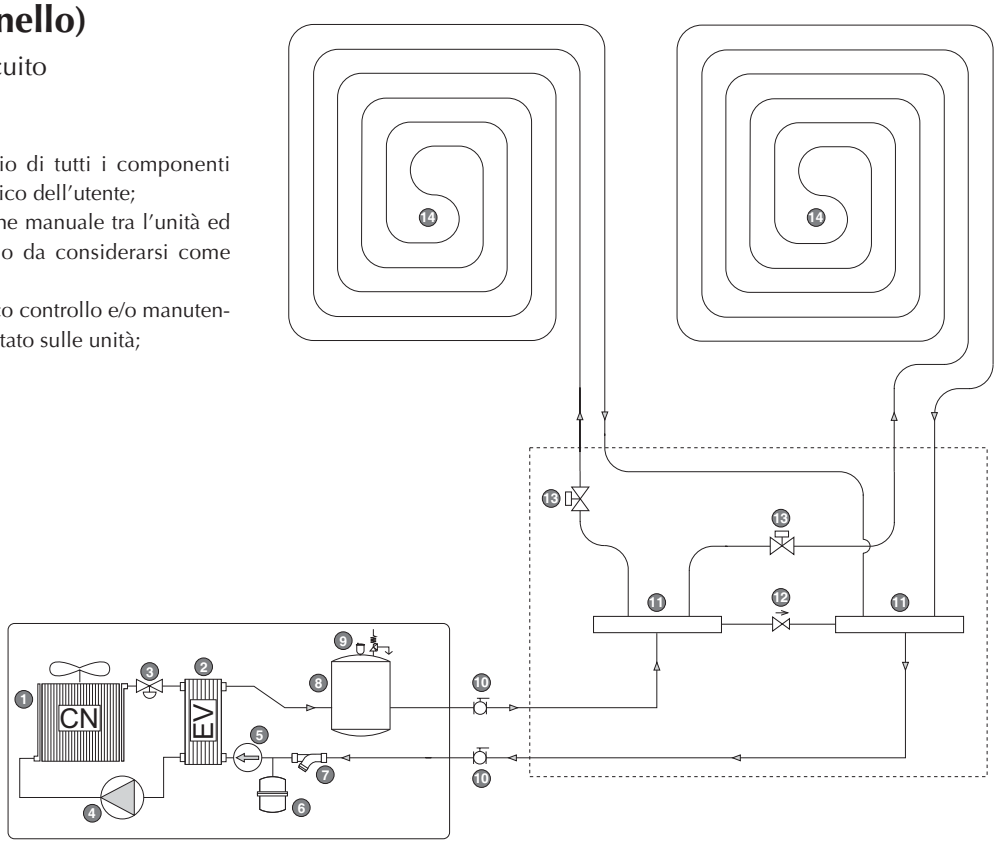
impianto a singolo circuito

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola solenoide
14. Pannelli radianti



HE U (singolo anello)

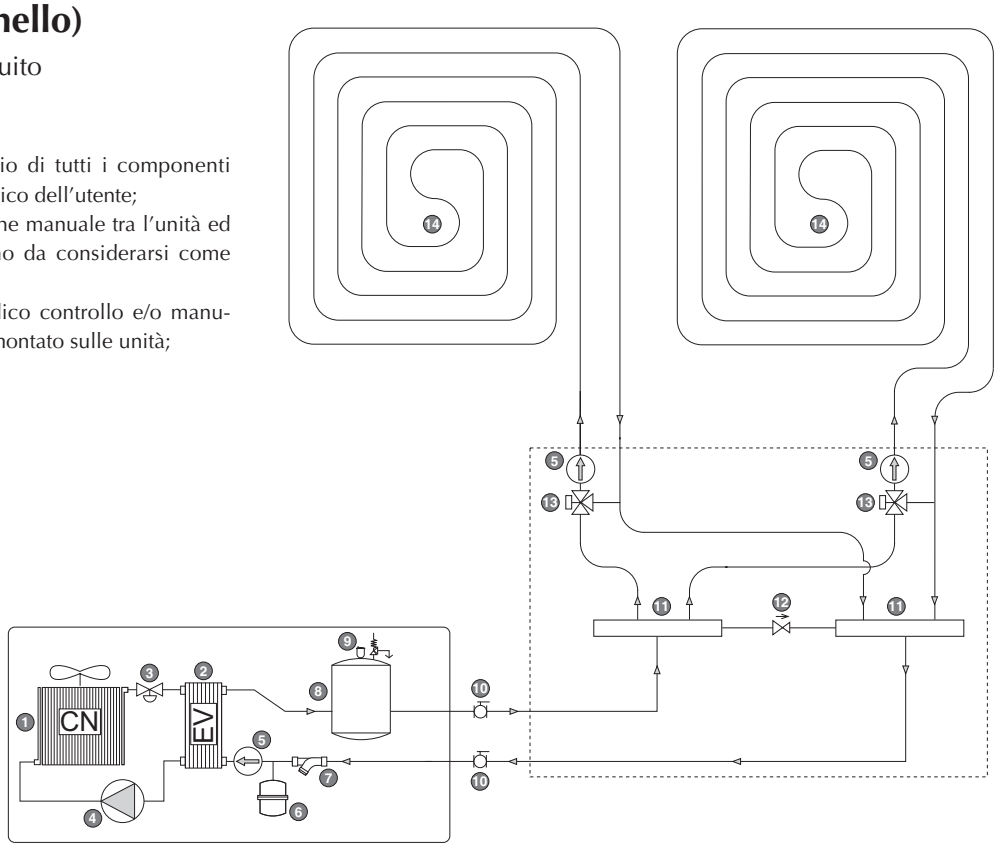
impianto a doppio circuito

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola tre vie
14. Pannelli radianti



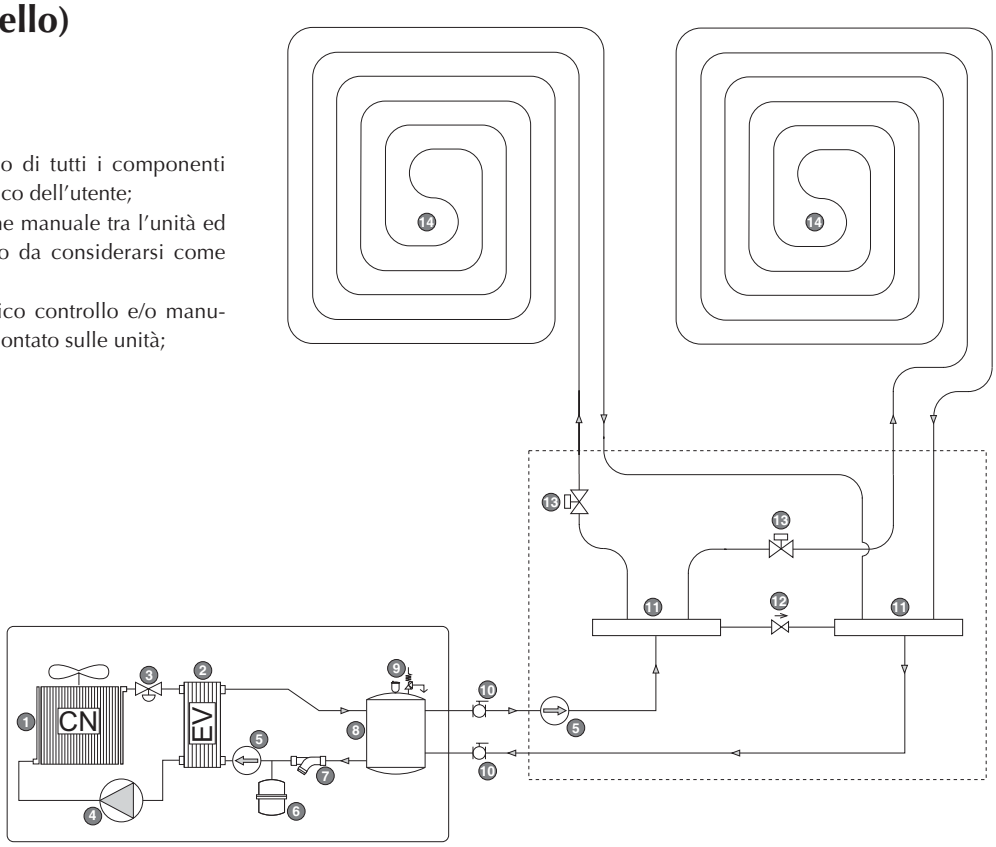
HE B (doppio anello)

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola solenoide
14. Pannelli radianti



Plumbing connection positions

Version (U)										
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
020	A5	A4	430	230	70	108	188	235	285	325
025	A5	A4	430	230	70	108	188	235	285	325
030	A5	A4	430	230	70	108	188	235	285	325
040	A5	A4	430	230	70	108	188	235	285	325
050	A5	A4	430	230	70	108	188	235	285	325

Version (B)										
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
020	A1	A4	430	230	70	108	188	235	285	325
025	A1	A4	430	230	70	108	188	235	285	325
030	A1	A4	430	230	70	108	188	235	285	325
040	A1	A4	430	230	70	108	188	235	285	325
050	A1	A4	430	230	70	108	188	235	285	325

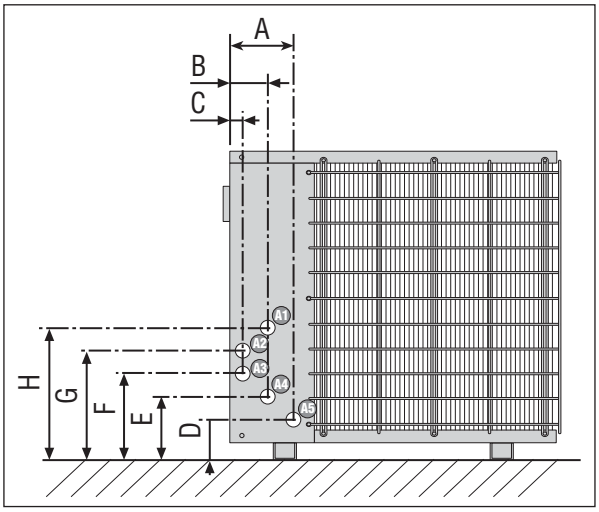
Version (U)								
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
080	A1	A5	46	210	280	340	388	440
090	A1	A5	46	210	280	340	388	440

Version (B)								
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
080	A4	A5	46	210	280	340	388	440
090	A4	A5	46	210	280	340	388	440

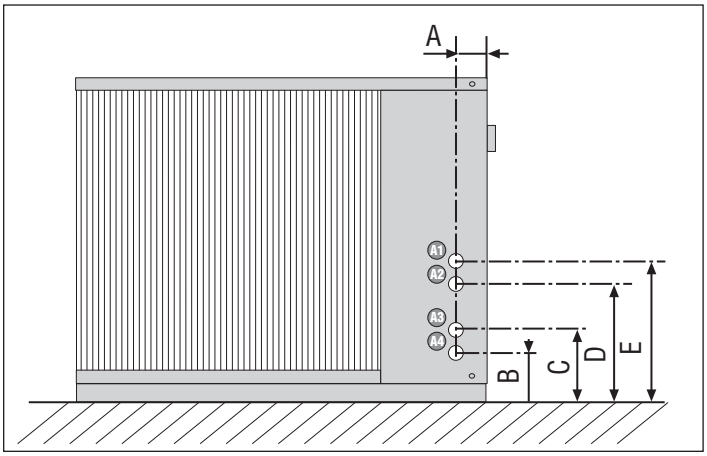
Version (U)							
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
100	A1	A2	57	100	160	300	415
150	A1	A2	57	100	160	300	415
200	A1	A2	57	100	160	300	415

Version (B)							
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
100	A1	A2	57	100	160	300	415
150	A1	A2	57	100	160	300	415
200	A1	A2	57	100	160	300	415

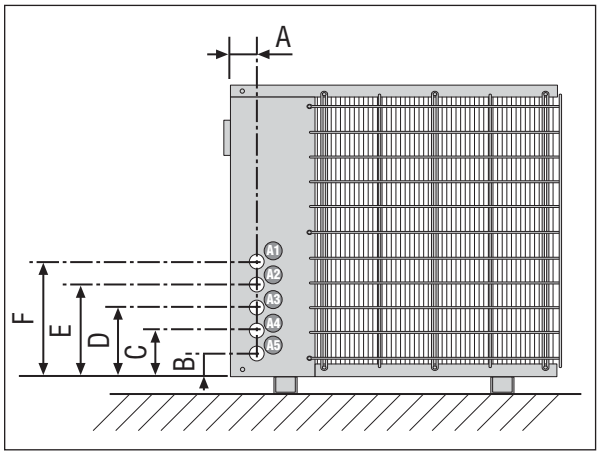
HE 020 - 025 - 030 - 040 - 050



HE 100 - 150 - 200



HE 080 - 090



Electrical wiring

factory and to start it up it is necessary to have a power supply that works according to the indications on the rating plate of the unit, with cut off with protective devices on the line.

The cable cross sections and the scaling of the line main switch are purely indicative.
It will be up to the installation engineer to properly dimension the power line depending on the length, type of cable, unit consumption and physical position.

All the electrical wirings must comply with the regulations in force at the time of the installation.
The diagrams and schematics in this documentation must only be used as an aid for the setting up of the electrical lines. Refer to the wiring diagram supplied with the device, for installation requirements.

N.B.
Check that all power cables are correctly secured to the terminals when switched on for the first time and after 30 days of use. Afterwards, check the connection of the power cables every six months. Slack terminals could cause the cables and components to overheat.

Cross sections recommended for the maximum length of 50 m. The cross section of the cable and the dimension of the line main switch are purely indicative.

HE U - HE B (230V single phase)

		020	025	030	040	050
SEZ A	mm²	2,5	2,5	4	4	6
SEZ B	mm²	1	1	1	1	1
Terra	mm²	2,5	2,5	4	4	6
IL	A	13	16	20	20	25

HE U - HE B (230V single phase)

		020H	025H	030H	040H
SEZ A	mm²	2,5	4	4	6
SEZ B	mm²	1	1	1	1
Terra	mm²	2,5	4	4	6
IL	A	16	20	20	25

HE U - HE B (400V three phase)

		020	025	030	040	050	080	090	100	150	200
SEZ A	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
SEZ B	mm²	1	1	1	1	1	1	1	1	1	1
Terra	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
IL	A	8	8	10	10	13	13	16	20	25	32

HE U - HE B (400V three phase)

		020H	025H	030H	040H	050H	080H	090H	100H	150H	200H
SEZ A	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
SEZ B	mm²	1	1	1	1	1	1	1	1	1	1
Terra	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
IL	A	8	8	8	13	13	13	16	20	25	32

Putting into service

Before putting the unit

Before start-up check that:

- – the system has been filled and the air has been bled;
- – the electrical wirings have been made properly;
- – the line voltage is within the admitted tolerance limits (±10% of the rated value);

WARNING:
At least twenty-four hours before the starting up of the unit (or at the end of each long downtime) the unit must be powered up in such a way as to allow the heating elements of the compressor casing to make any refrigerant in the oil evaporate.

If this precaution is not performed the compressor could be seriously damaged and the guarantee would no longer be valid.

Filling/emptying of the system

During the winter period, if the system needs to shut down, the water in the heat exchanger might freeze causing irreparable damage to the heat exchanger itself, the complete emptying of the cooling circuits and sometimes the damage of the compressors.

There are three solutions to avoid freezing:

- The complete drainage of the water from the heat exchanger at the end of the season and refilling at the beginning of the next season.
- Functioning with glycol water with a glycol percentage chosen on the basis of the minimum temperature temperature expected. In this case the different yields and absorption of the chiller, the scaling of the pumps and yield of the terminals must be taken into account.
- Use of the heat exchange heating elements (available as accessory KR). In this case the element must always be powered for the entire winter period (machine in standby).

Improper uses

The device is designed and built to ensure the maximum safety in its immediate vicinity (IP24) as well as to resist atmospheric agents. The fans are protected with unwanted intrusion of bodies through the protection grilles. The accidental opening of the electrical panel with the machine in operation is prevented by the door lock sectioning device. Do not rest tools or heavy objects on the side heat exchanger coils so as not to ruin the fins.

N.B. :

- **Do not introduce objects or allow them to fall through the grilles of the fan motors.**
- **Do not lean on the heat exchanger coil: Cutting surfaces.**

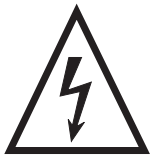
Important safety information

The machine must not exceed the pressure and temperature limits indicted in the table shown in the paragraph "Operating limits" technical manual.
Correct functioning is not guaranteed after a fire; before starting up the machine again, contact an authorised after sales centre.
The machine is fitted with safety valves that in the case of excessive pressure can discharge hot gases into the atmosphere.
Wind, earthquakes and other natural phenomena of
exceptional intensity have not been considered.

If the unit is used in aggressive atmosphere or with aggressive water consult head office.

Following extraordinary maintenance carried out on refrigeration circuits, with the replacement of components, carry out the following operations before starting up the machine again:

- Pay the closest attention when restoring the refrigerant load indicated on the machine's rating plate (inside the electrical panel).
- Open all the taps on the refrigerating circuit.
- Correctly connect the power supply and the grounding.
- Check the plumbing connections.
- Check that the water pump works properly.
- Clean the water filters.
- Check that the condenser coils are not dirty or clogged.
- Check the proper rotation of the fan unit.

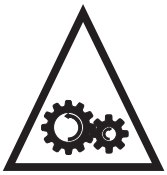


Danger:
Voltage

Danger:
Cut off the power

Danger!!!

Danger:
Temperature



Danger:
Moving
parts

Wiring diagrams

	KEY
AA	Auxiliary start up relay
AE	External alarm
AP	High pressure pressure switch
AT	Auxiliary thermostat relay
BP	Low pressure pressure switch
CD	Triangle compressor contactor
C/F	Hot/ cold changeover switch
CCP	Compressor contact
CM	Operating condenser
CMP	Motor pump contactor
CP	Compressor
CV	Fan contactor
CVC	Condensing fan contactor
CVE	Evaporating fan contactor
DCP	Low ambient temperature device
IA	Auxiliary ON / OFF switch
IL	Line main switch
L	Power phase
LB	Shutdown light
LF	Operating light
MP	Compressor protection module
MTA	Auxiliary magnetho-thermal switch
MTCP	Compressor magnetho-thermal
MTMP	Magnetho-thermal pump switch
MV	Fan motor
N	Feedin neutral
Pa	Start up and release button
PD	Differential pressure switch
PE	Earth connection
R	Casing heating element
RE	Antifreeze heating element (accessories KR - RA)
RP	Pump antifreeze heating element (5A 250V)
SCV	Fan control card
SWI	Water inlet probe

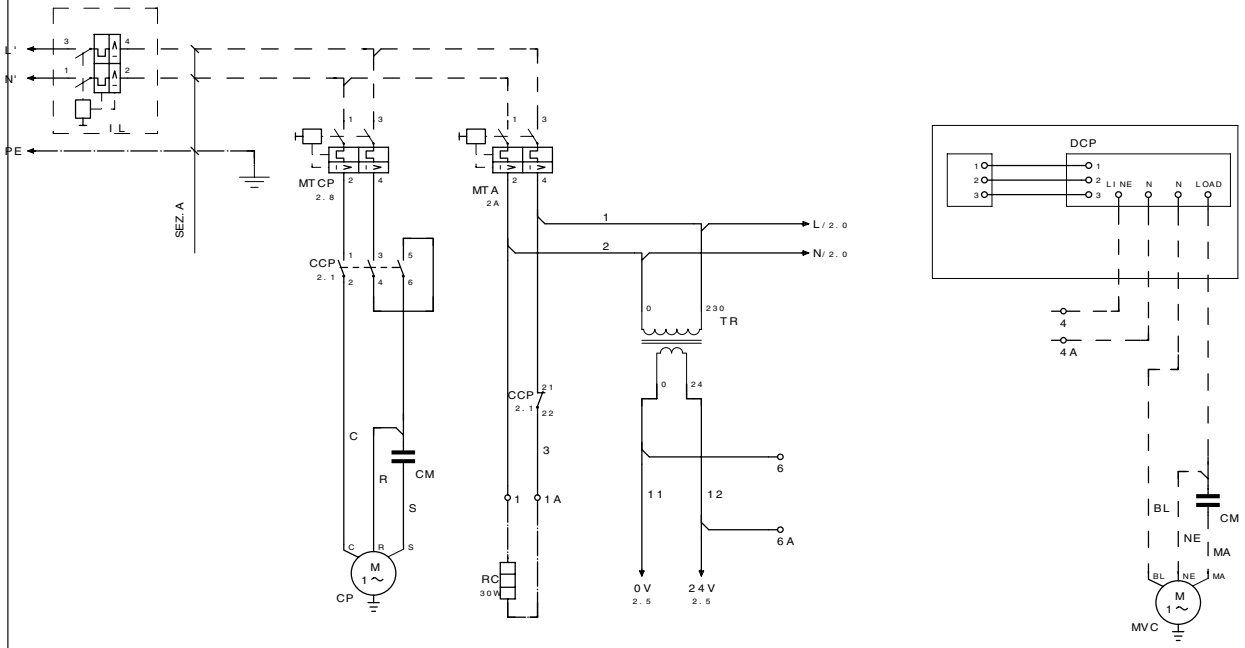
	KEY
SS	Coil probe
SUW	Water outlet probe
TCP	Compressor thermal protection
TMP	Thermal pump switch
TEB	By-pass timer
TEC	Compressor start-up timer
TER	Self start timer
TR	transformer
TER	Cold regulation thermostat
VIC	Cycle inversion valve
VSL	Liquid cut-off solenoid valve
VSB	By-pass solenoid valve
TGP	Pressing gas thermostat

	Optional components
	Components not supplied
	Connections to be wired on job site

N.B.
The wiring diagrams are subject to change, you should refer to the wiring diagram attached to the device.

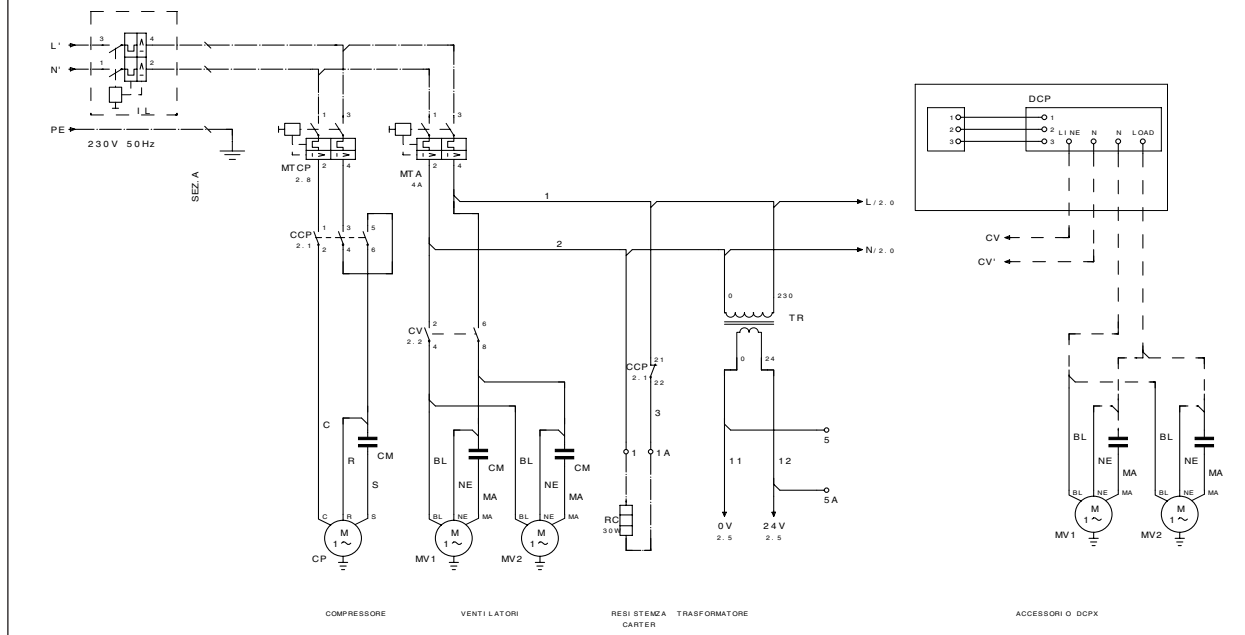
Power supply

- **HE 020 - 025 U / HE 020 - 025 B (single phase 1~230V-50Hz)**



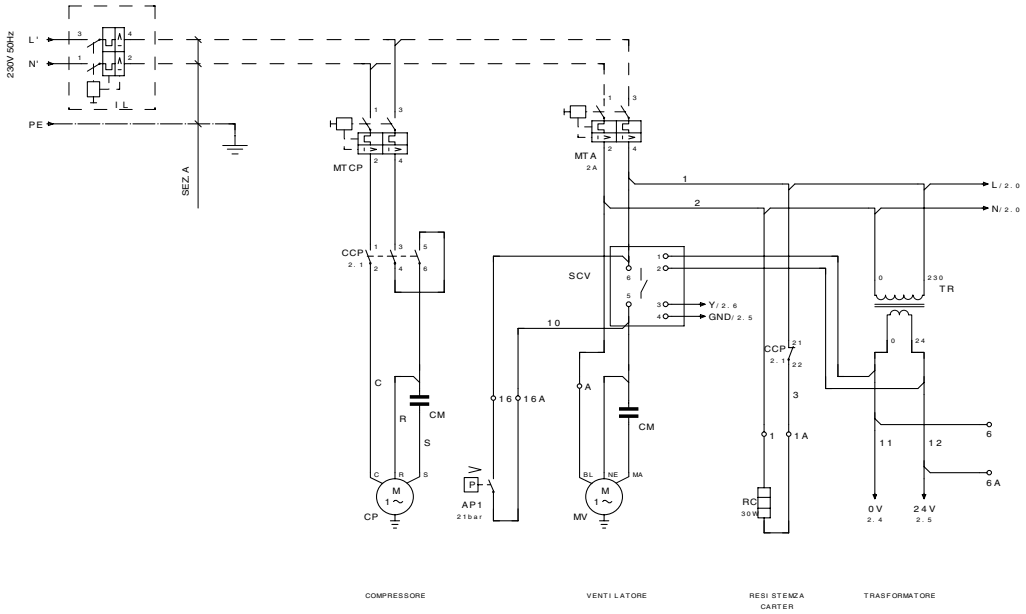
Power supply

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (single phase 1~230V-50Hz)**



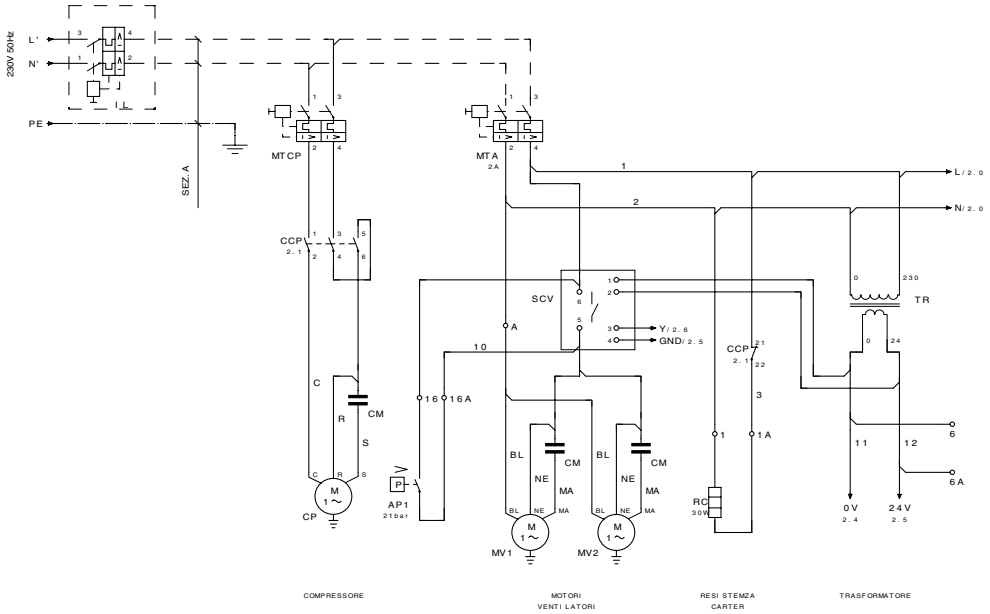
Power supply

- **HE 020H - 025H U / HE 020H - 025H B (single phase 1~230V-50Hz)**



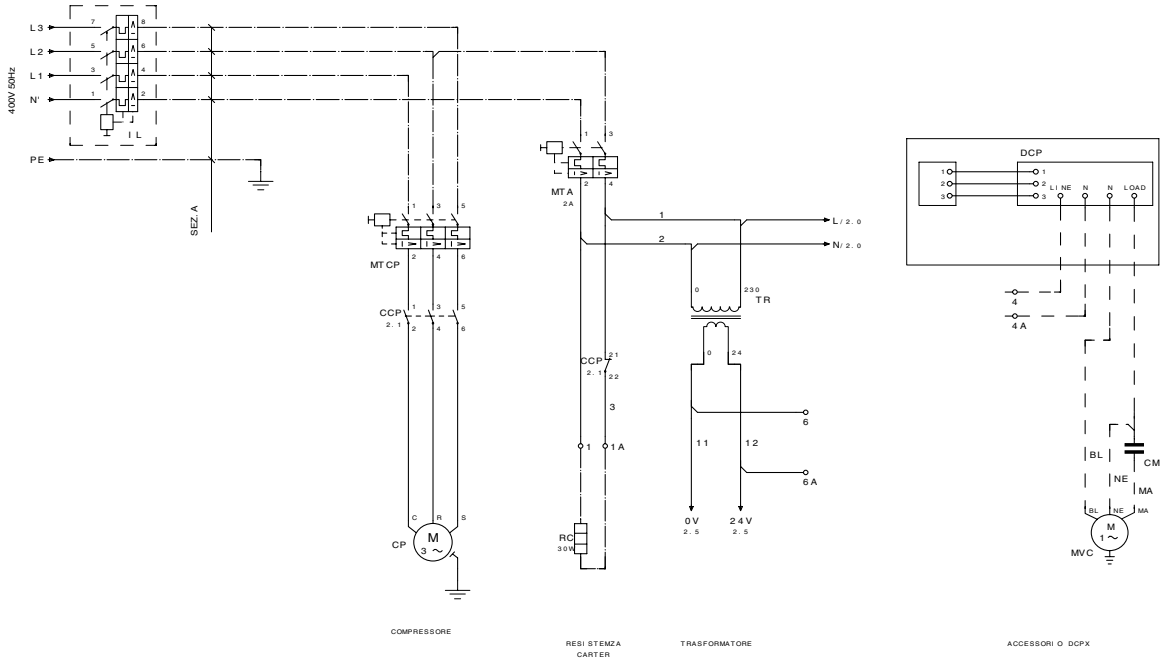
Power supply

- **HE 030H - 040H U / HE 030H - 040H B (single phase 1~230V-50Hz)**



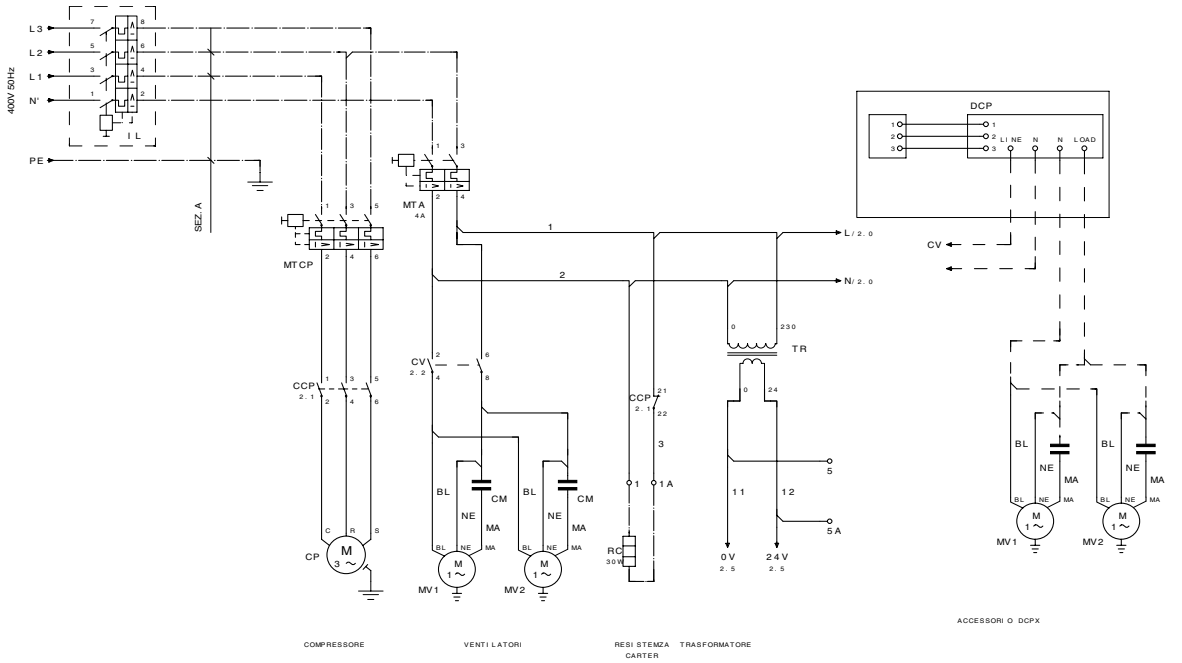
Power supply

- **HE 025 U / HE 025 B**



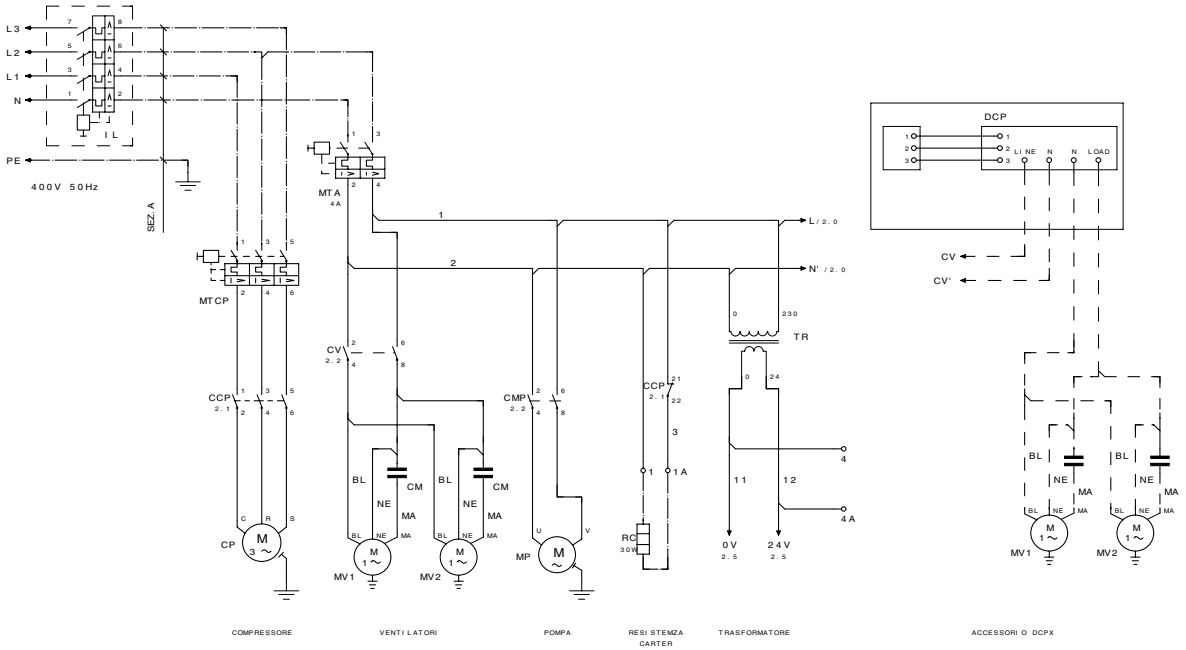
Power supply

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**



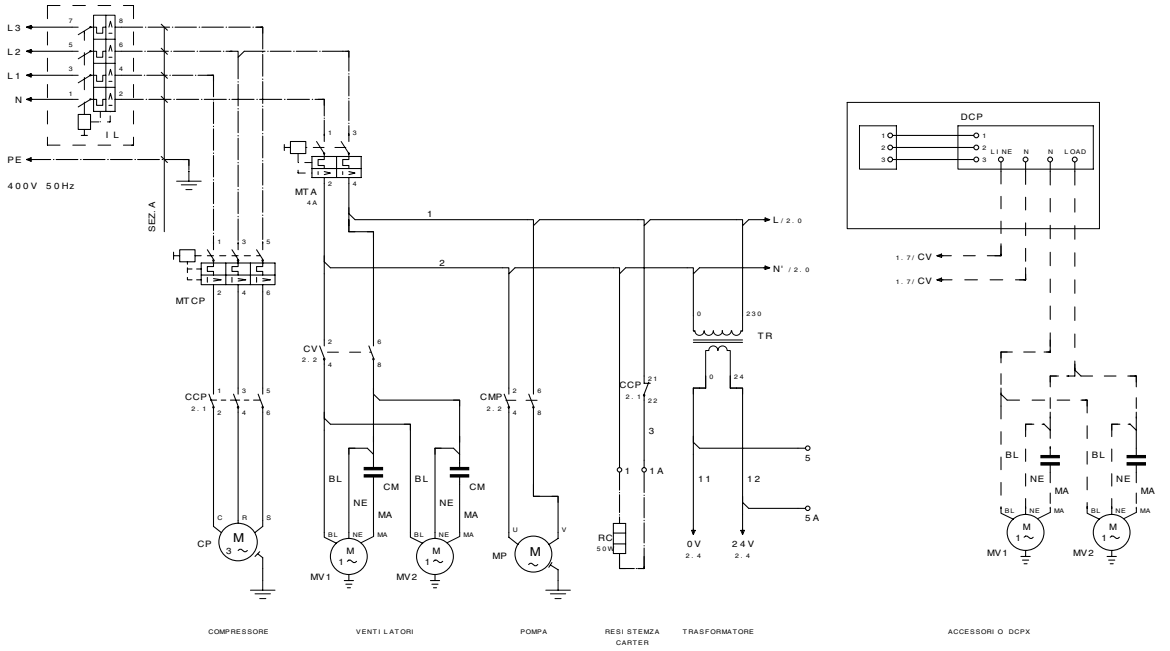
Power supply

- **HE 080 U / HE 080 B**



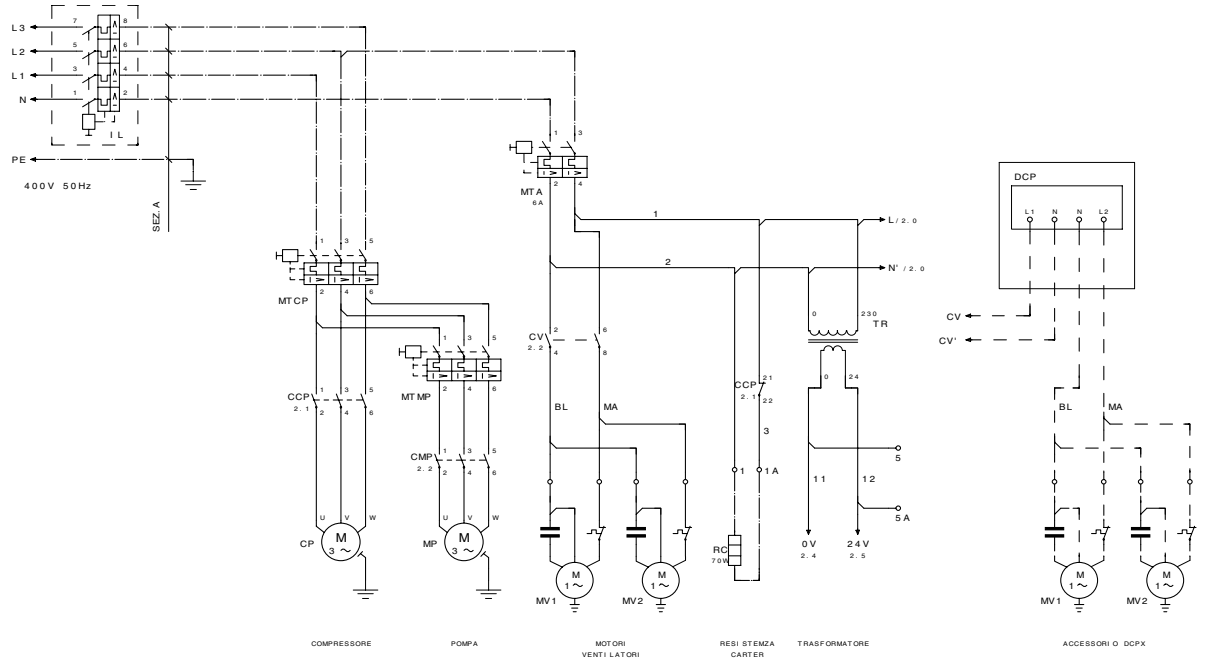
Power supply

- **HE 090 U / HE 090 B**



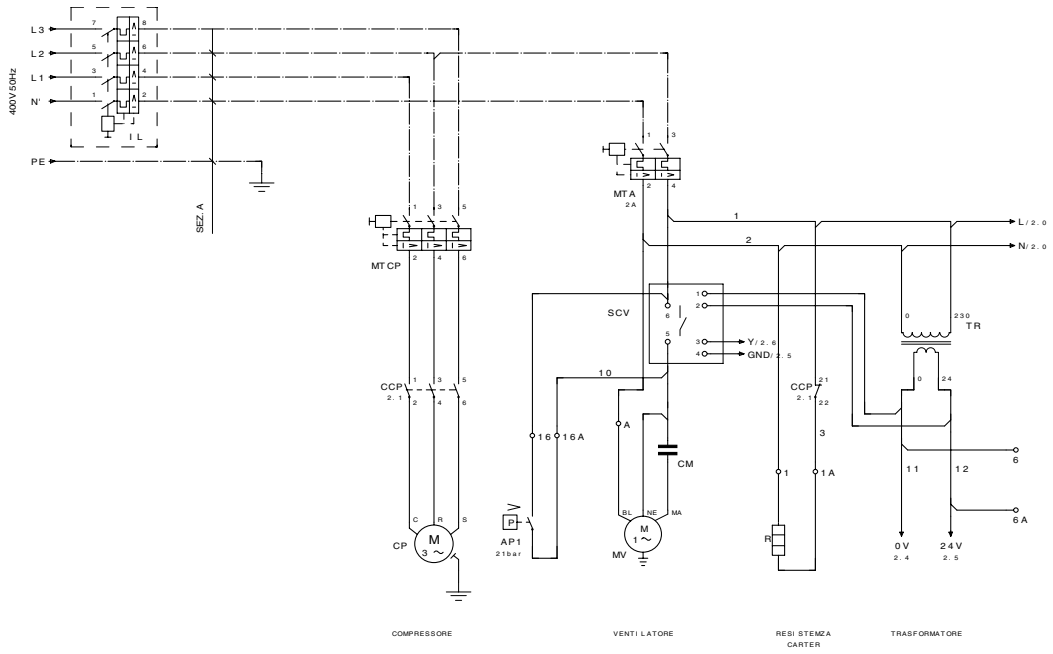
Power supply

- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**



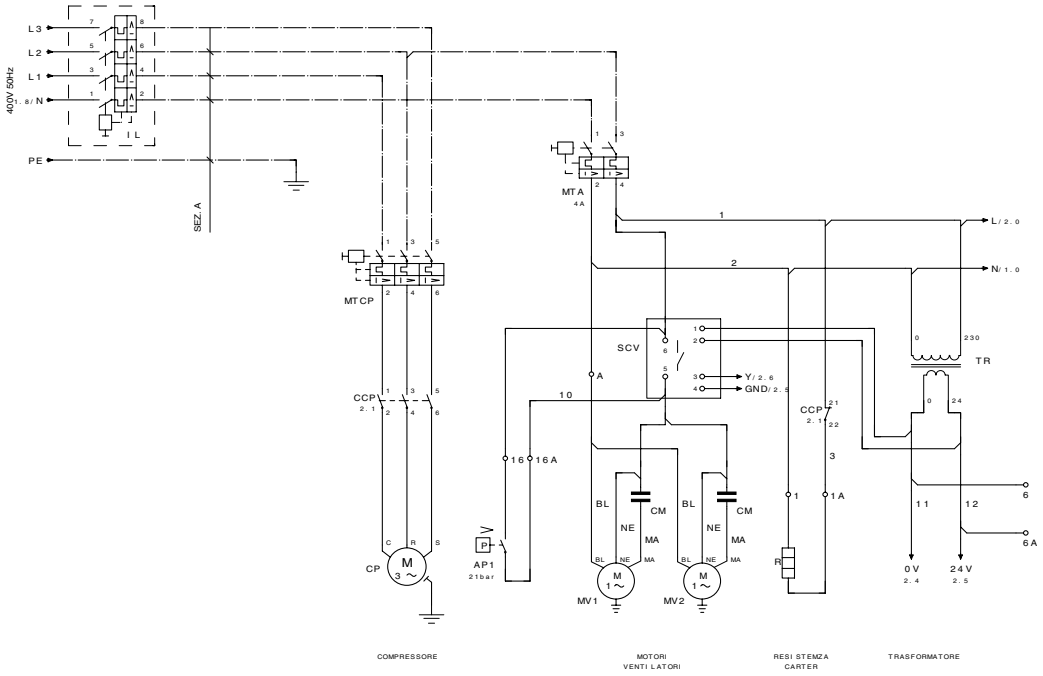
Power supply

- **HE 020H - 025H U / HE 020H - 025H B**



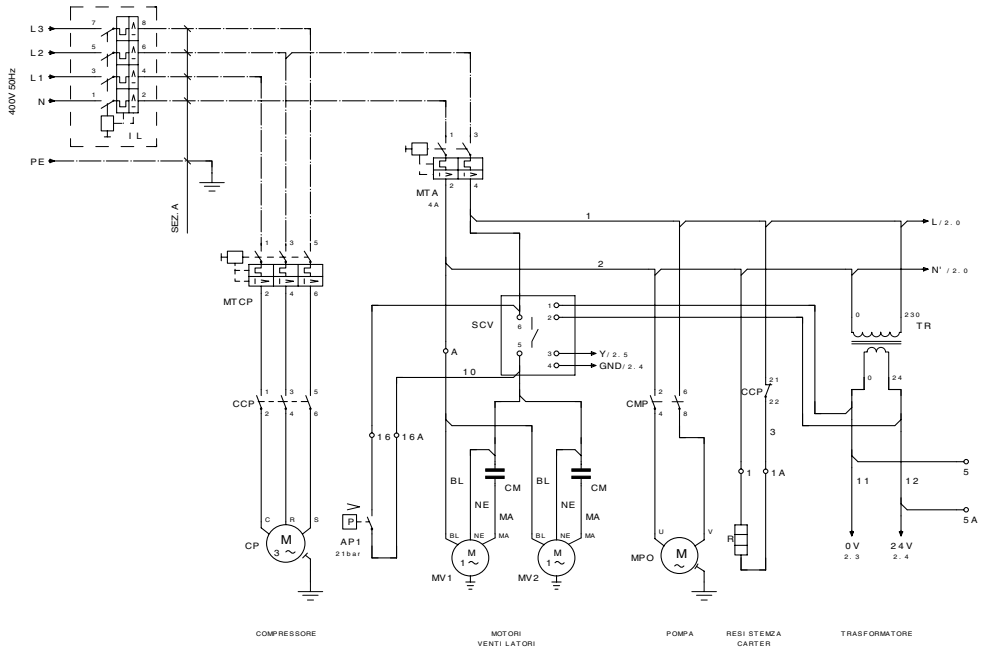
Power supply

- **HE 030H - 040H - 050H U / HE 030H - 040H - 050H B**



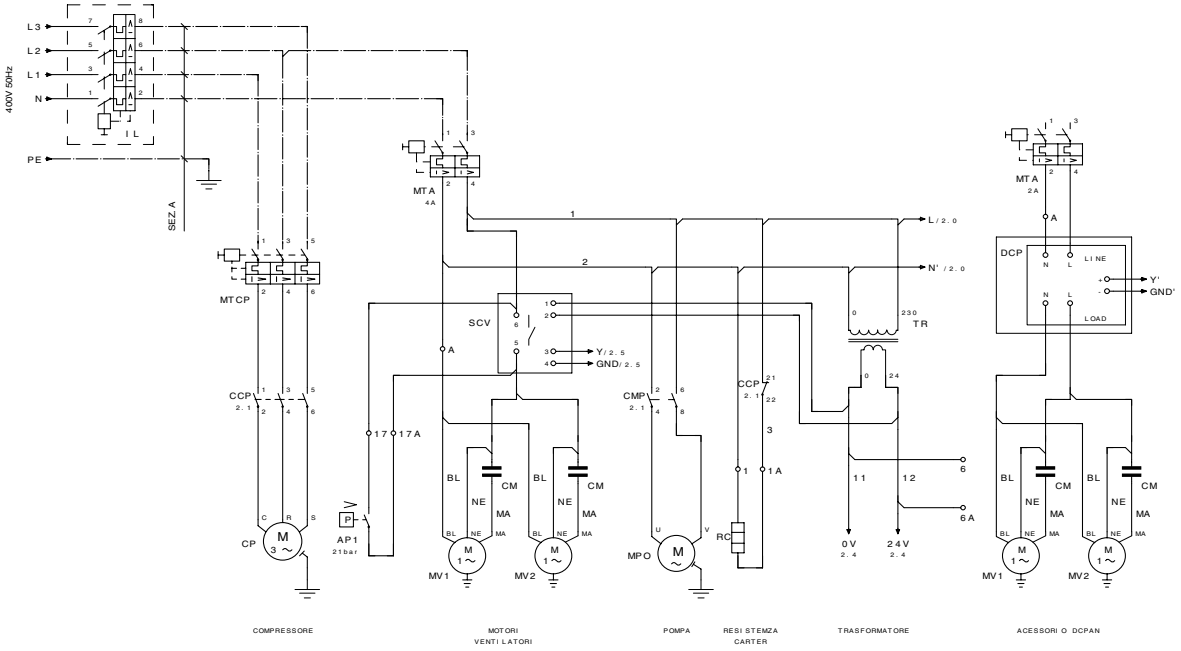
Power supply

- **HE 080H U / HE 080H B**



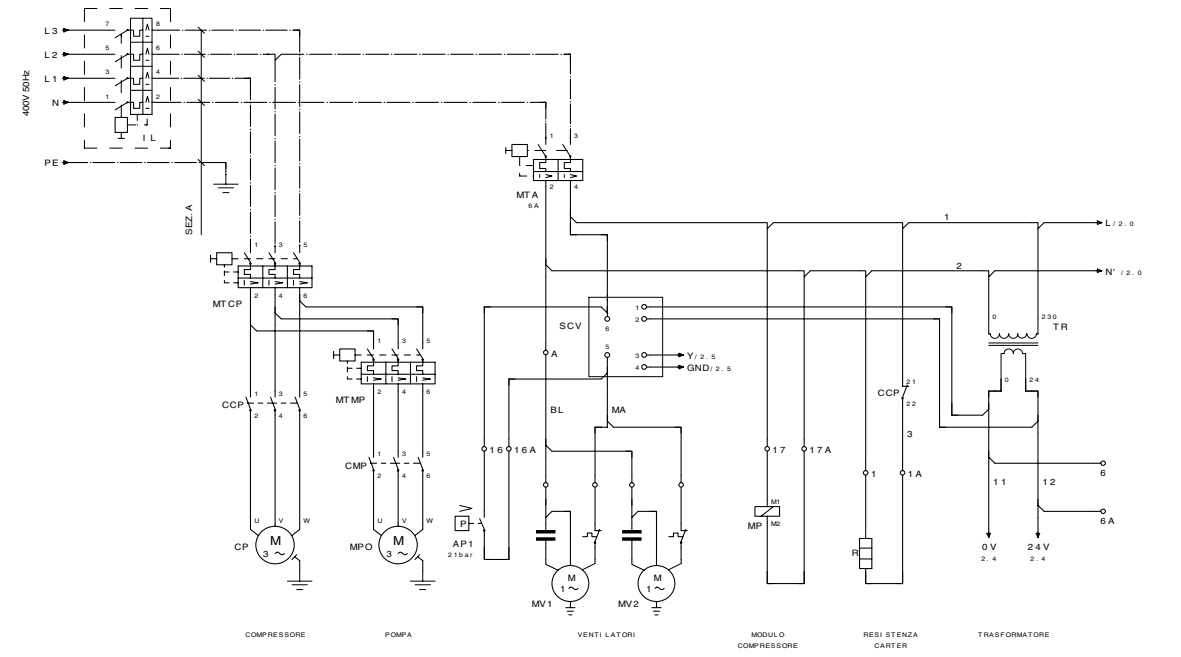
Power supply

- **HE 090H U / HE 090H B**



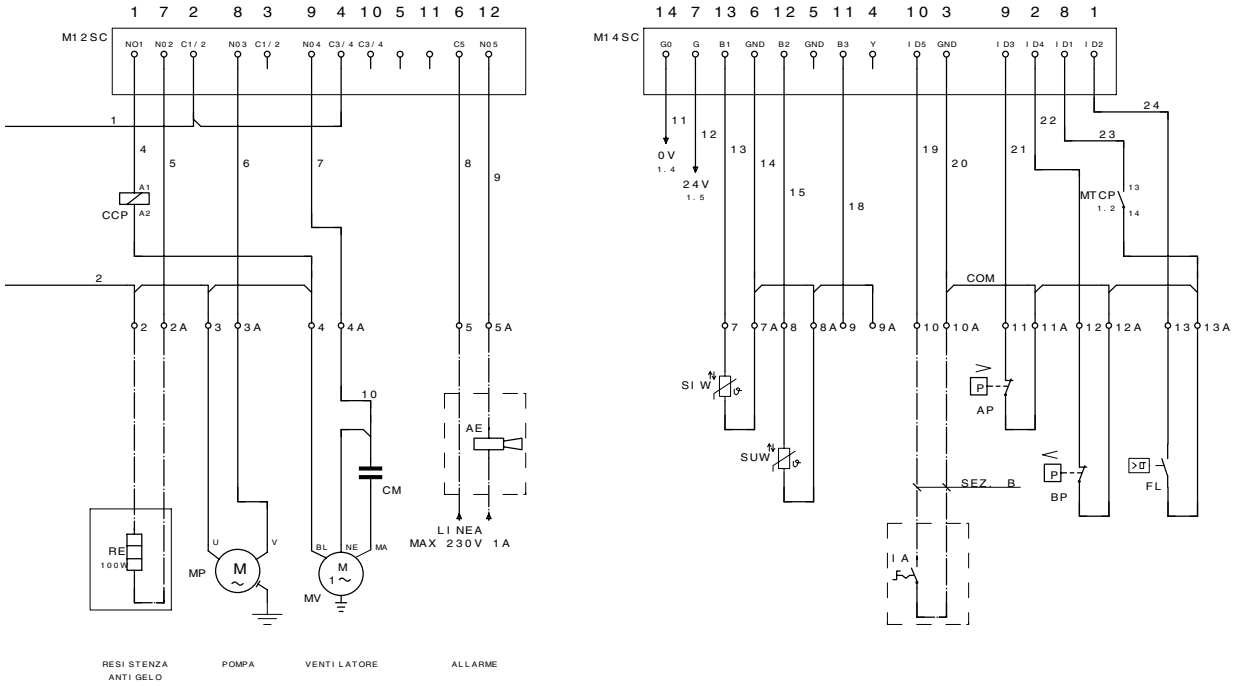
Power supply

- **HE 100H - 150H - 200H U / HE 100H - 150H - 200H B**



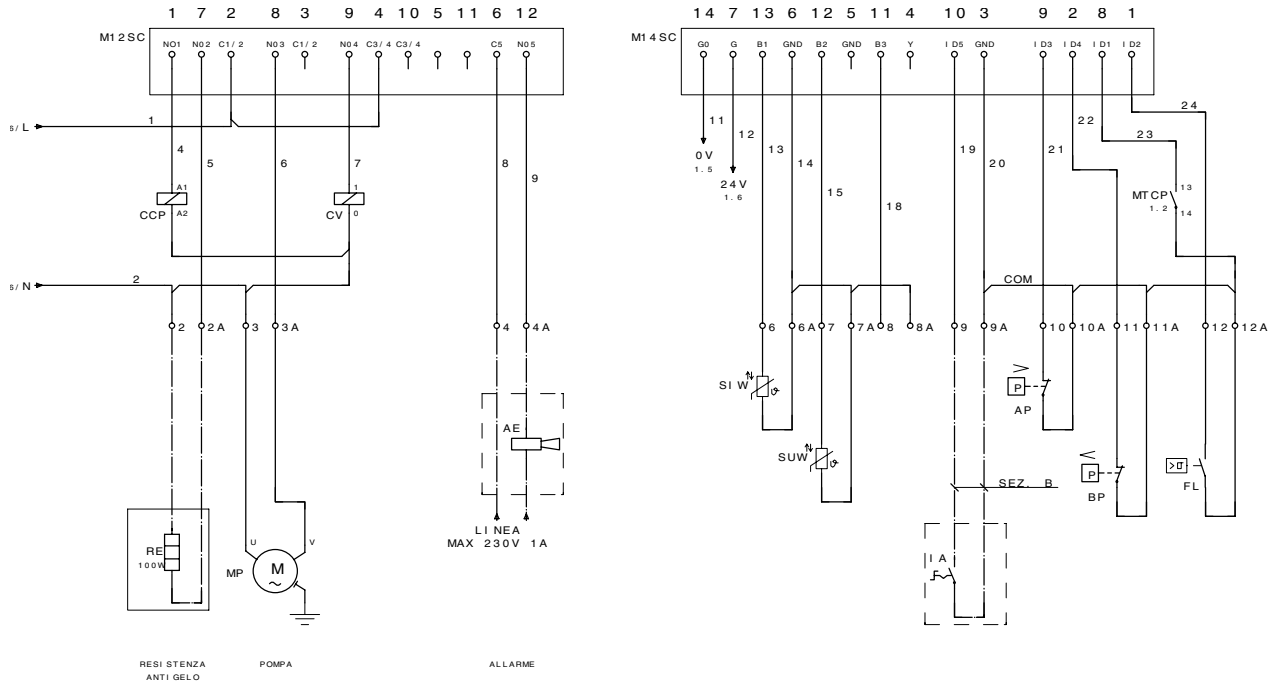
Load connections

- **HE 020 - 025 U / HE 020 - 025 B (single phase 1~230V-50Hz)**



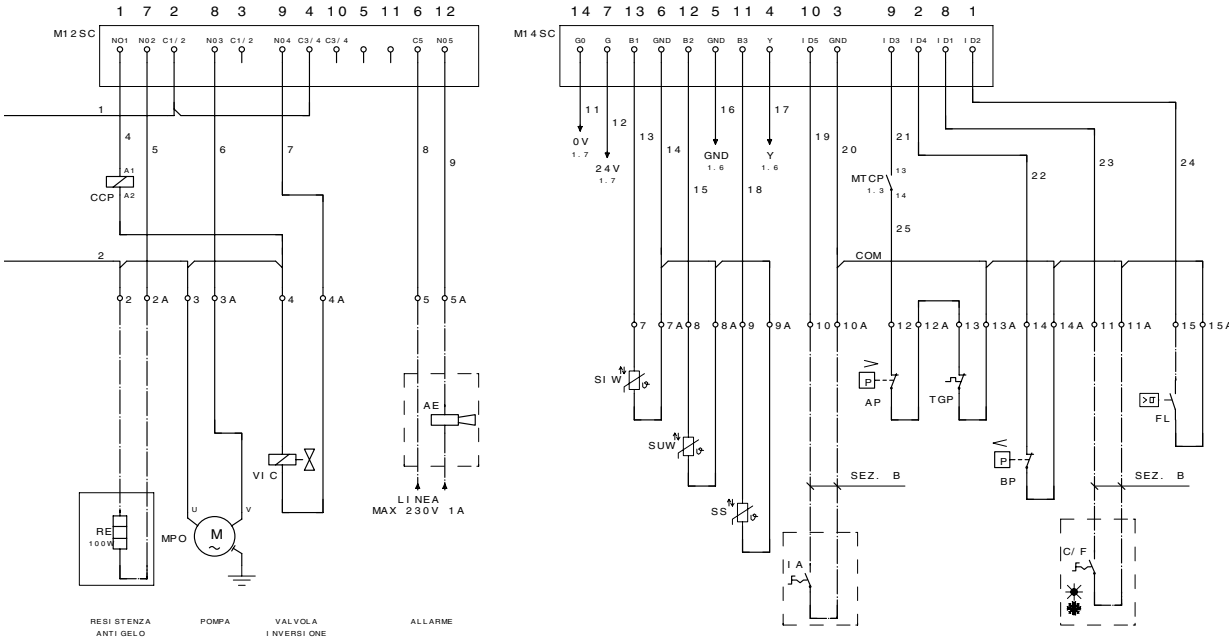
Load connections

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (single phase 1~230V-50Hz)**



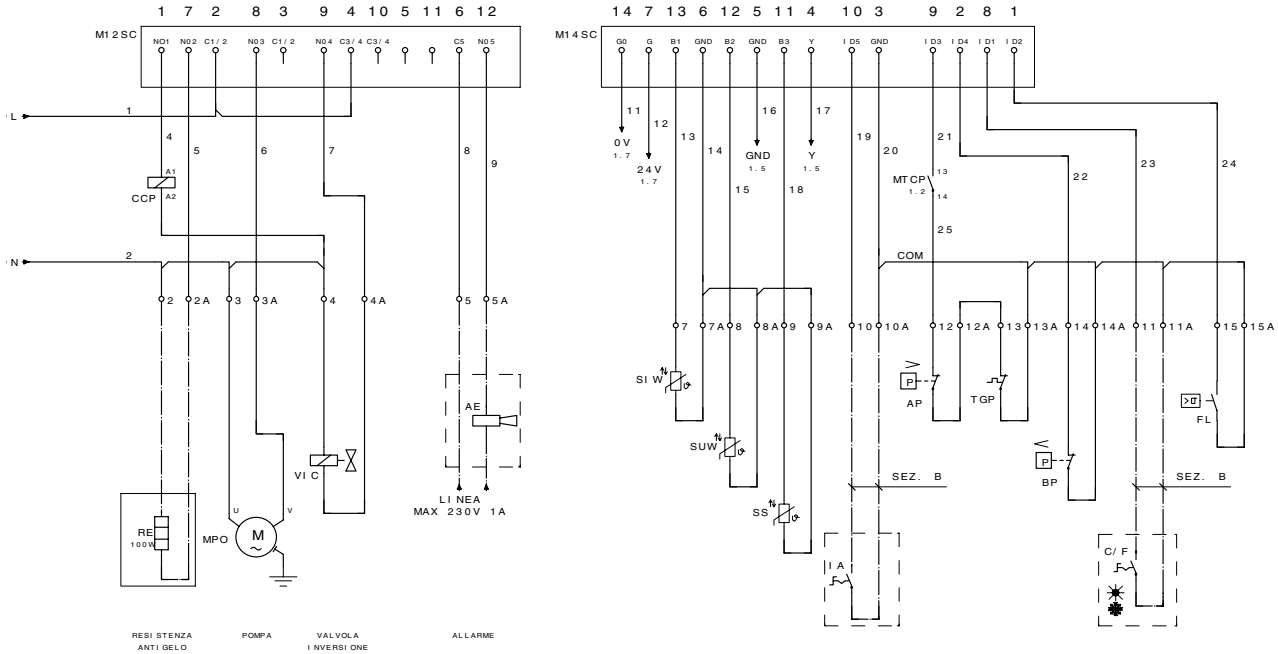
Load connections

- **HE 020H - 025H U / HE 020H - 025H B (single phase 1~230V-50Hz)**



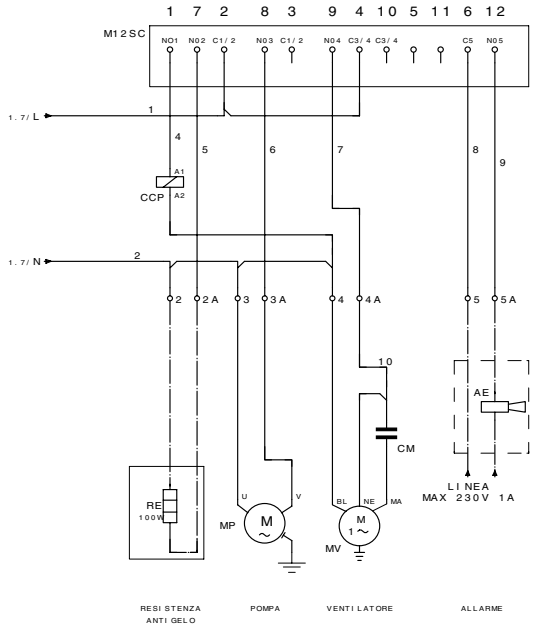
Load connections

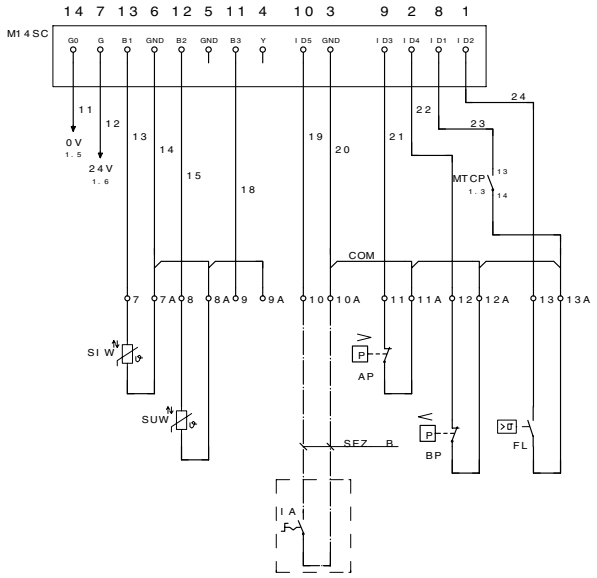
- **HE 030H - 040H U / HE 030H - 040H B (single phase 1~230V-50Hz)**



Load connections

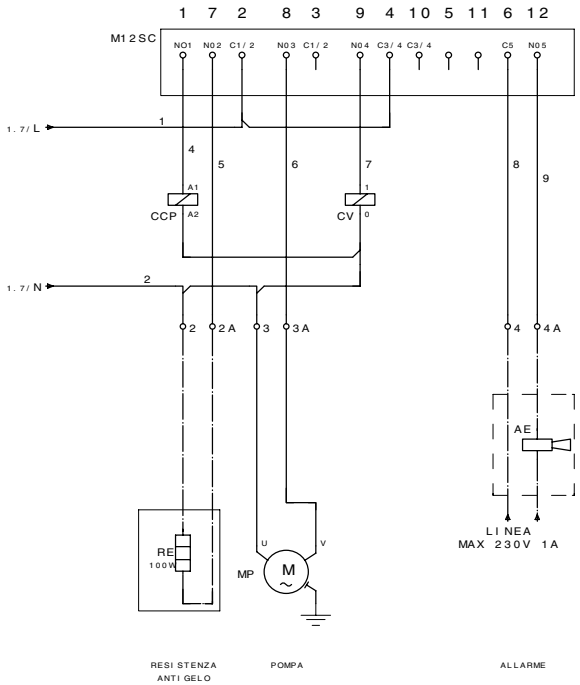
- **HE 025 U / HE 025 B**

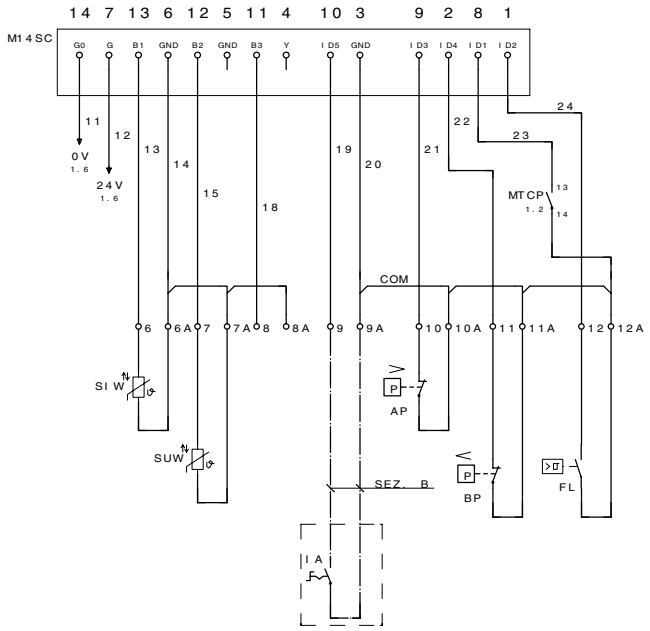




Load connections

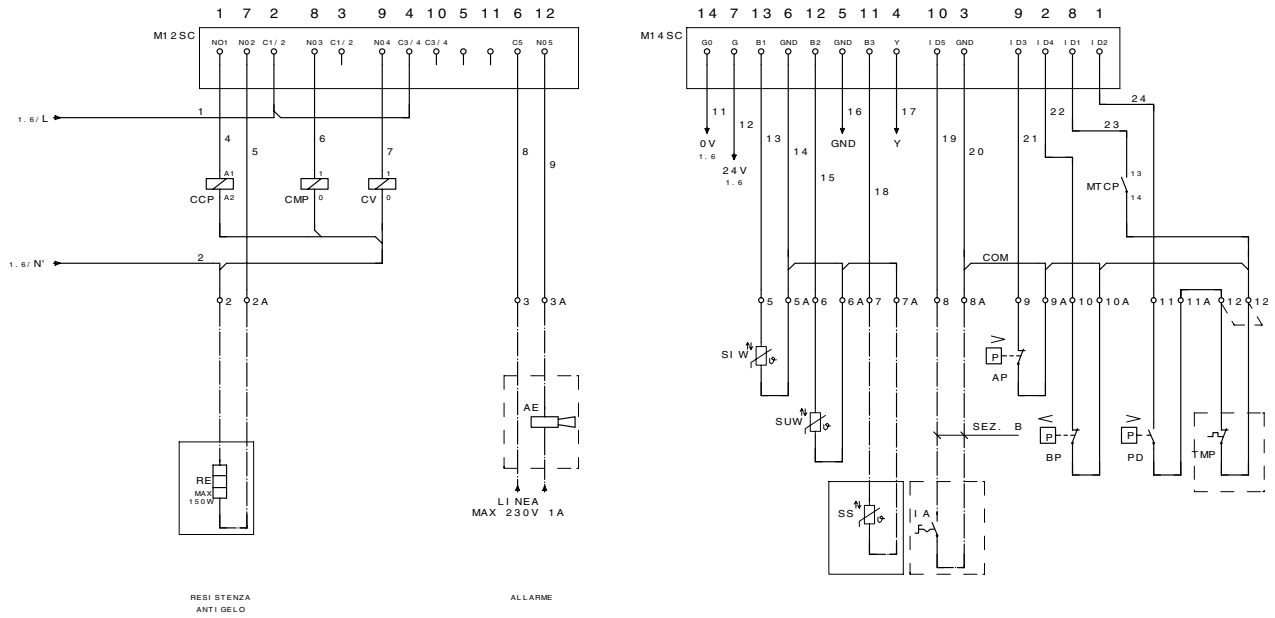
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**





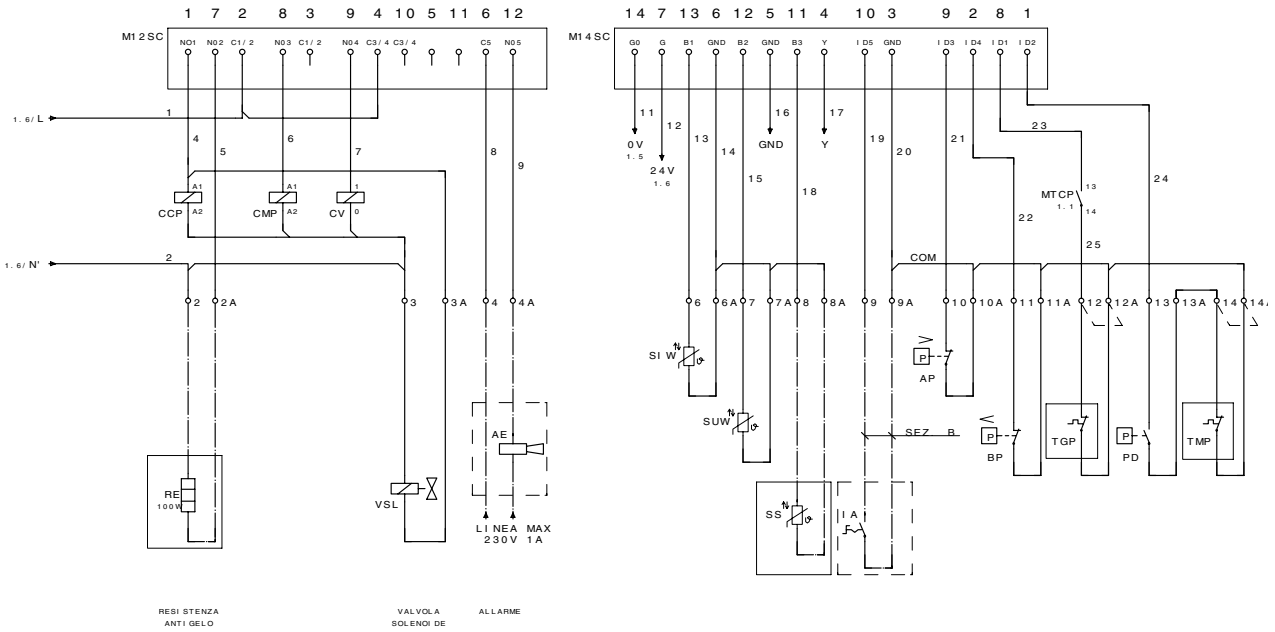
Load connections

- **HE 080 U / HE 080 B**



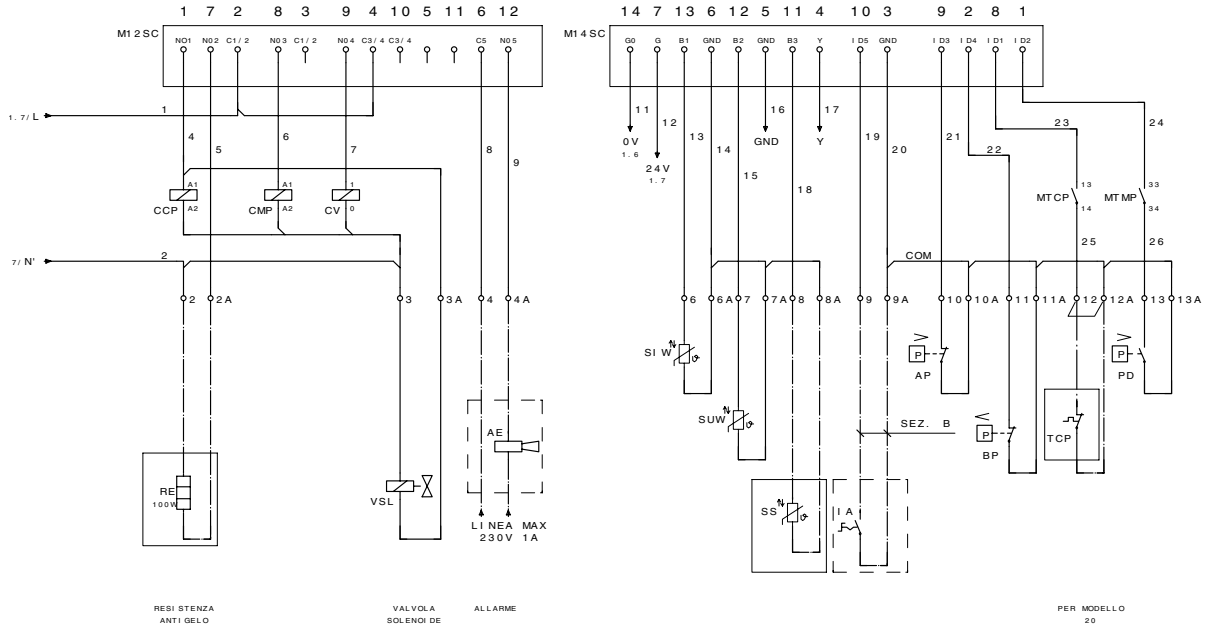
Load connections

- **HE 090 U / HE 090 B**



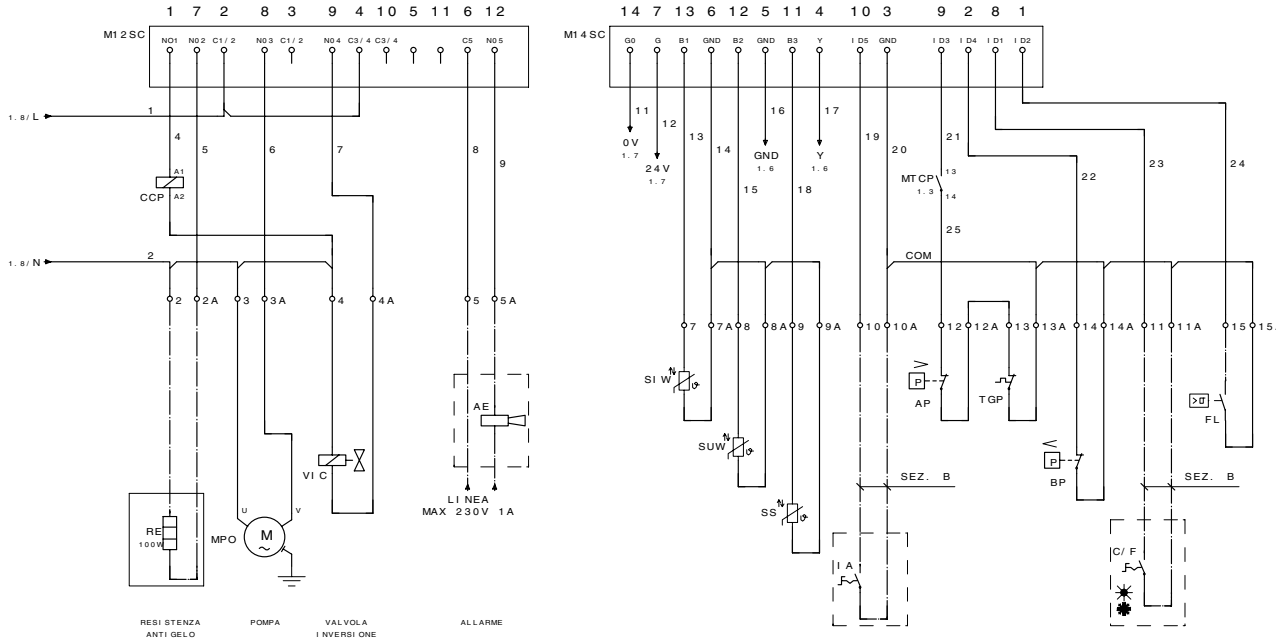
Load connections

- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**



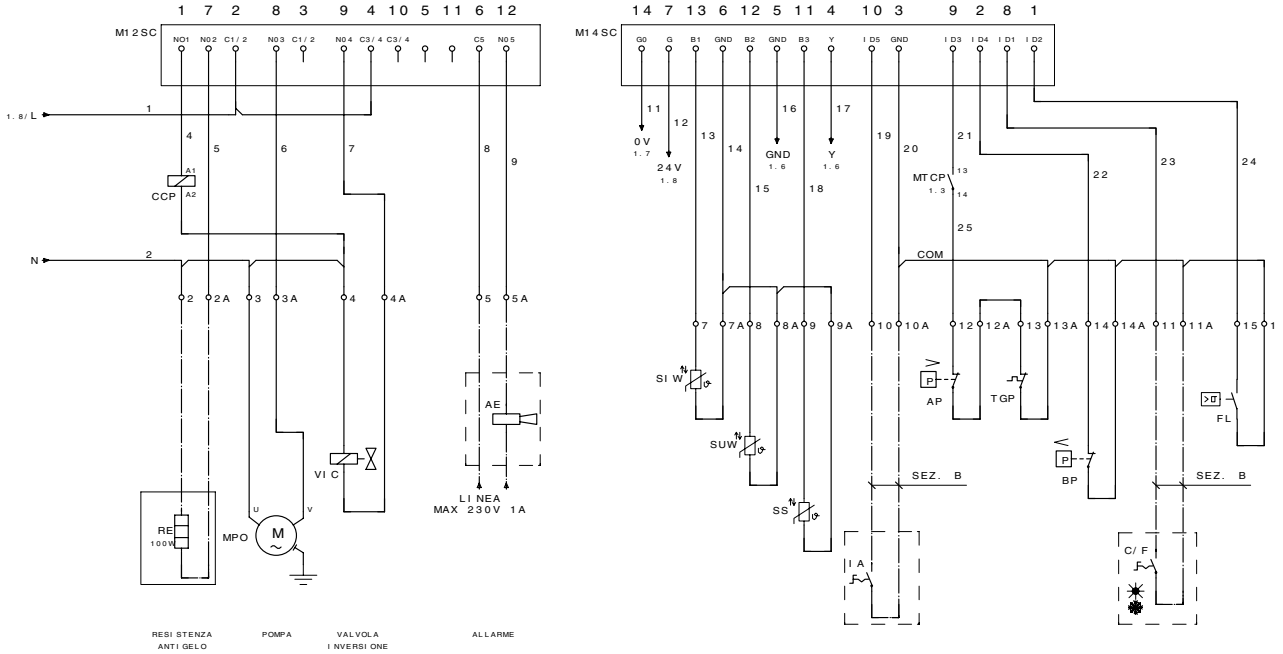
Load connections

- **HE 020H - 025H U / HE 020H - 025H B**



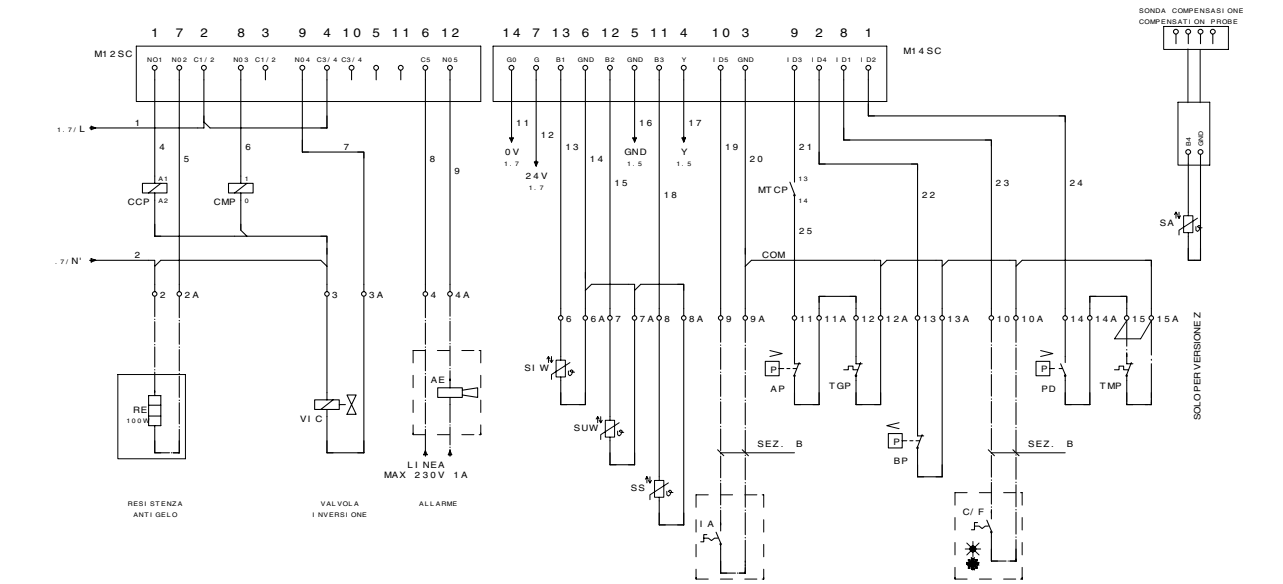
Load connections

- **HE 030H - 040H - 050H U / HE 030H - 040H - 050H B**



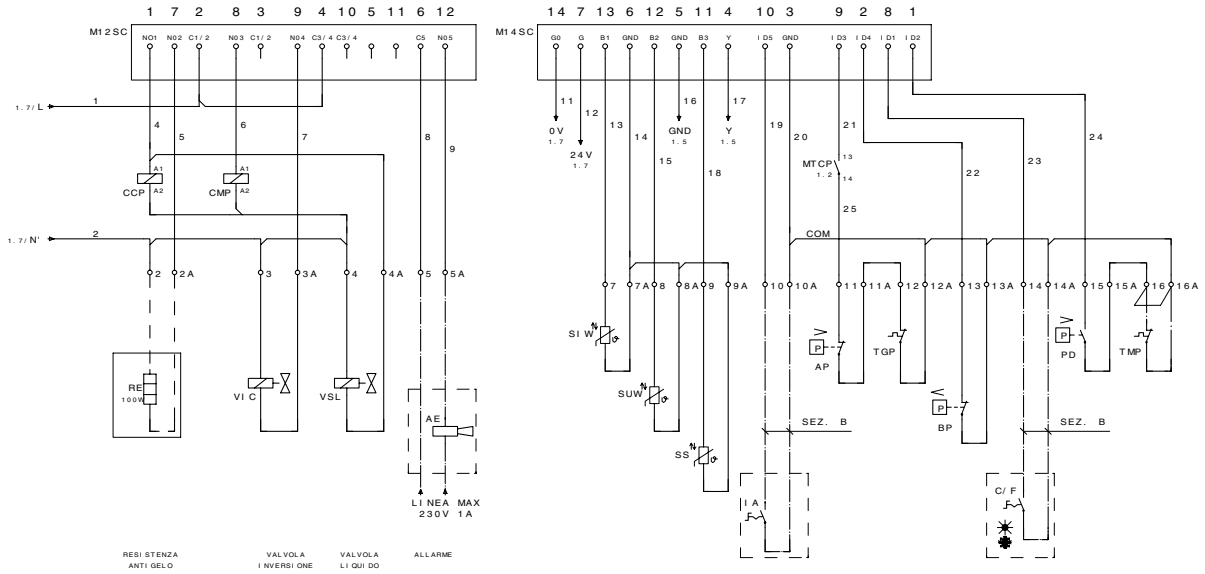
Load connections

- **HE 080H U / HE 080H B**



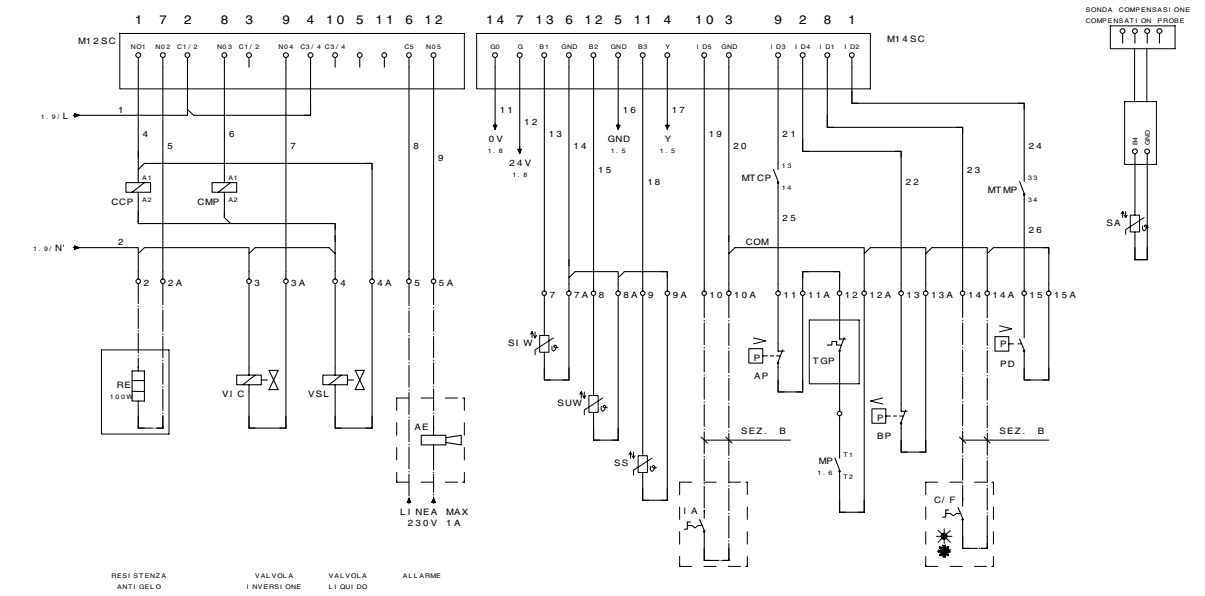
Load connections

- **HE 090H U / HE 090H B**



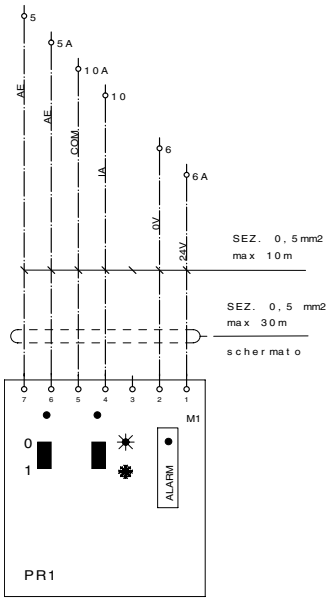
Load connections

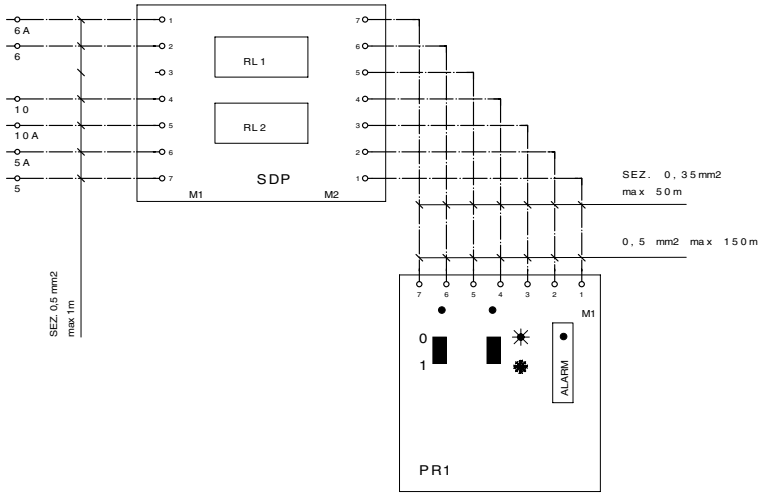
- **HE 100H - 150H - 200H U / HE 100H - 150H - 200H B**



Remote control

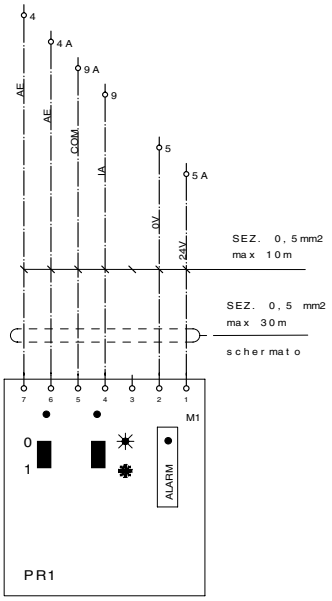
- **HE 020 - 025 U / HE 020 - 025 B (single phase 1~230V-50Hz)**

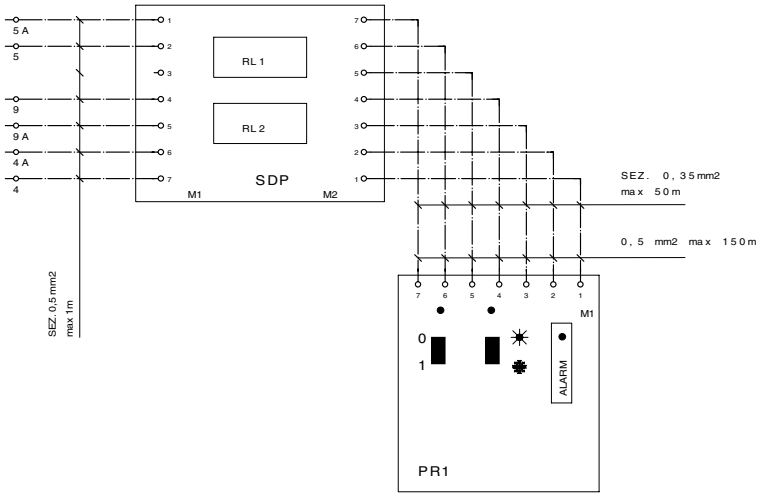




Remote control

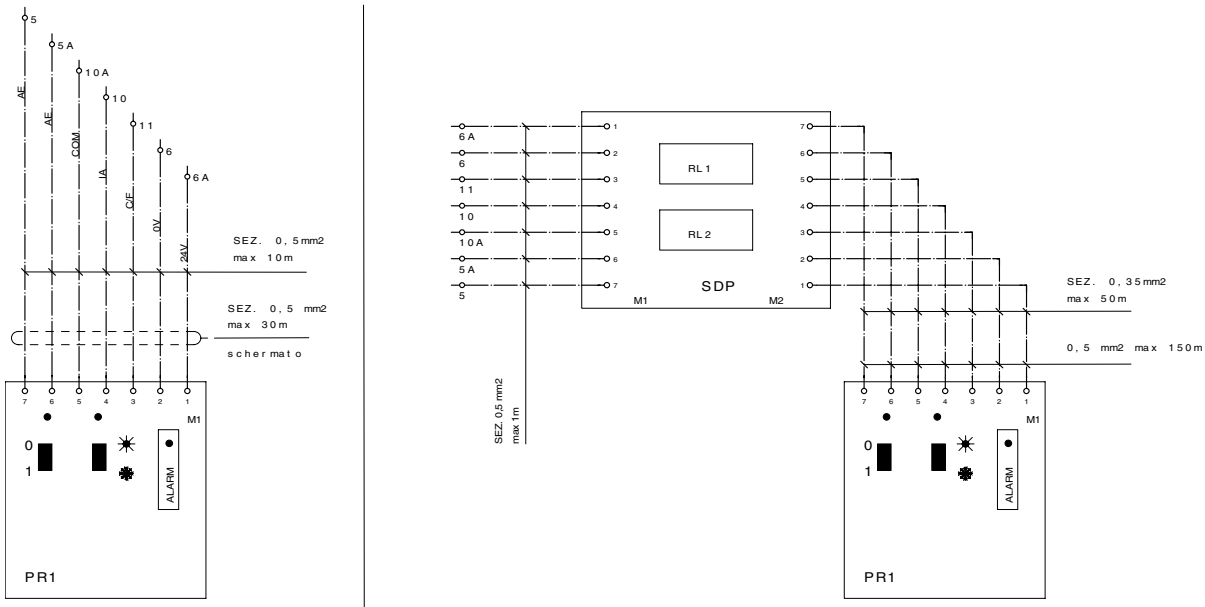
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (single phase 1~230V-50Hz)**





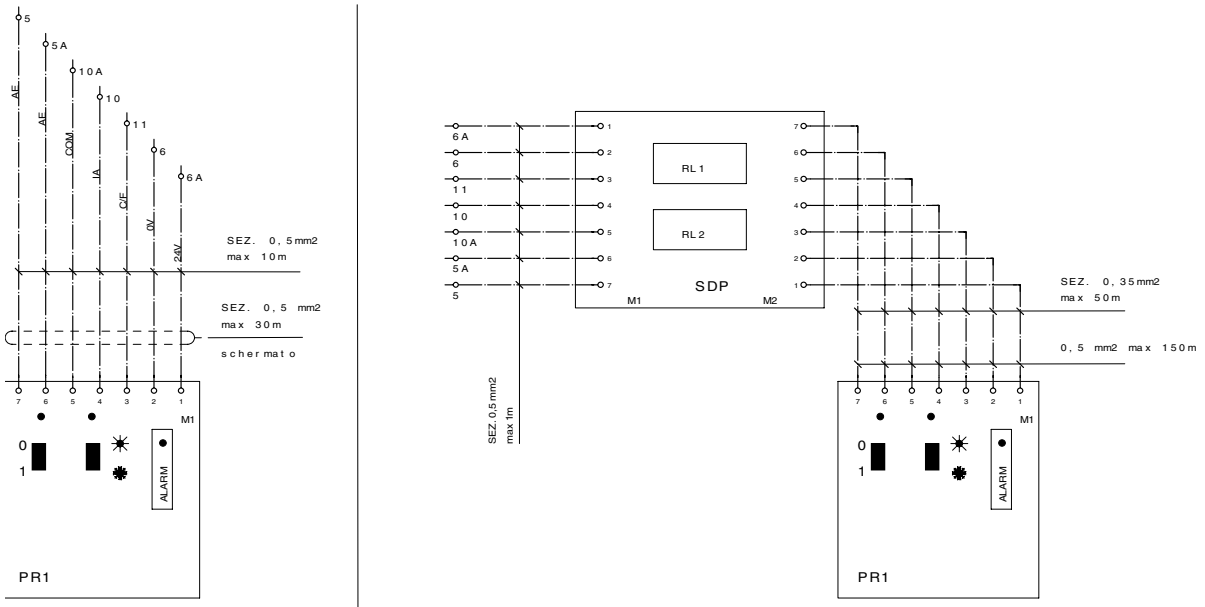
Remote control

- **HE 020H - 025H U / HE 020H - 025H B (single phase 1~230V-50Hz)**



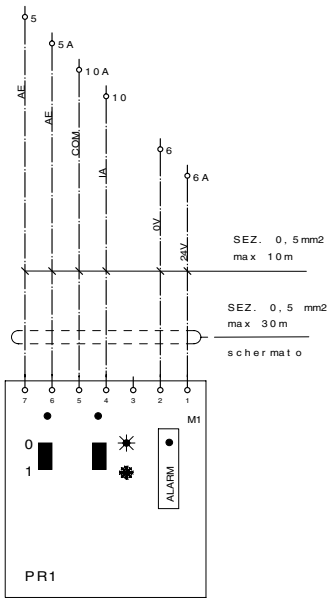
Remote control

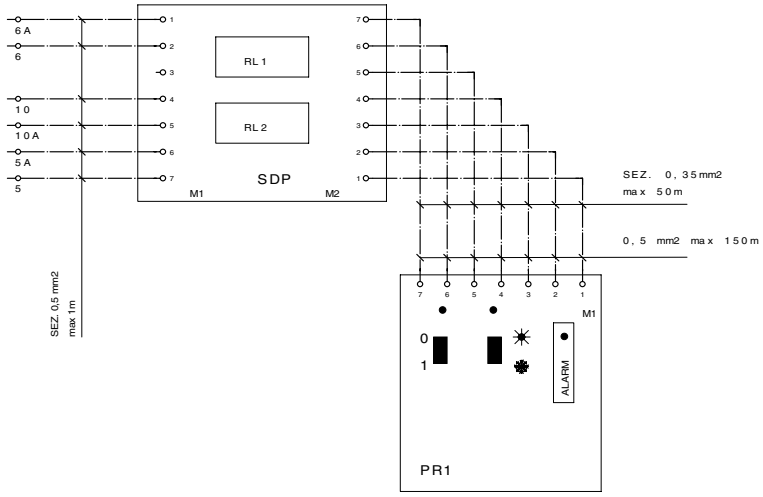
- **HE 030H - 040H U / HE 030H - 040H B (single phase 1~230V-50Hz)**



Remote control

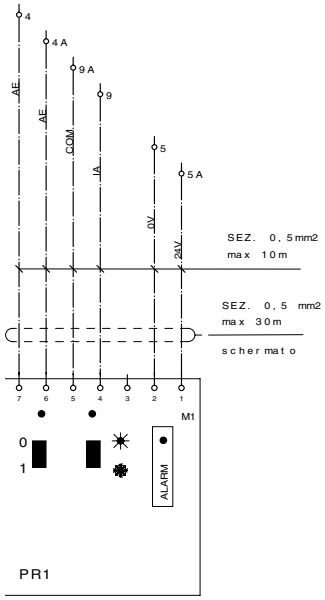
- **HE 020 U / HE 020 B**

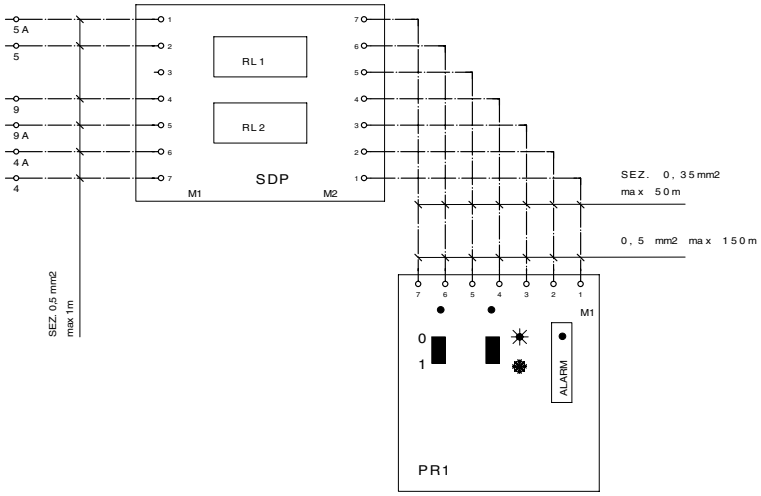




Remote control

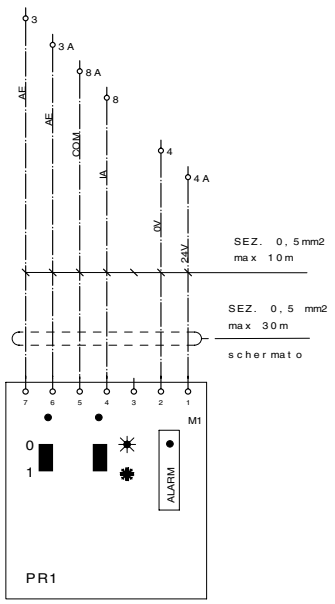
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**

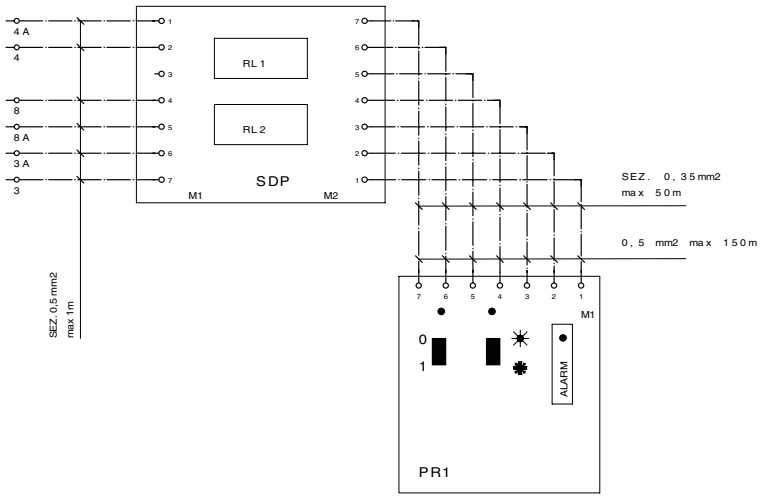




Remote control

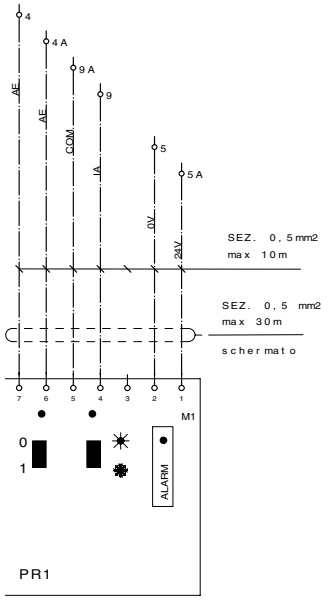
■ HE 080 U / HE 080 B

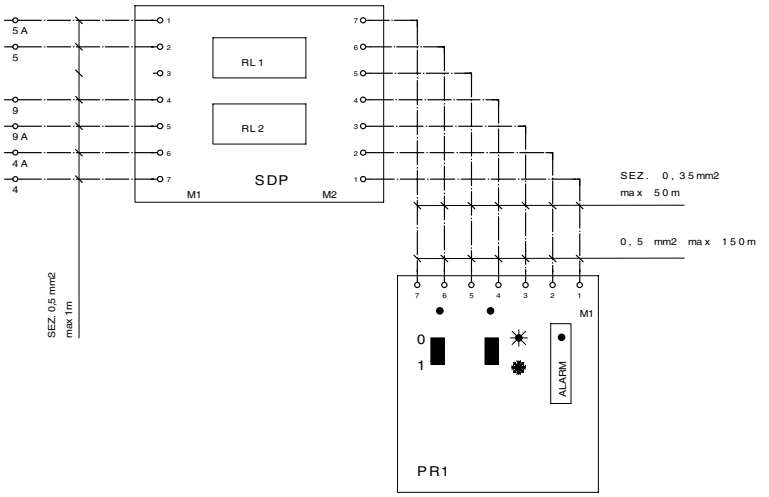




Remote control

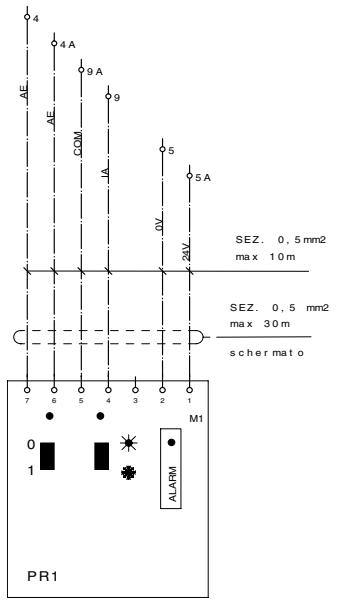
■ HE 090 U / HE 090 B

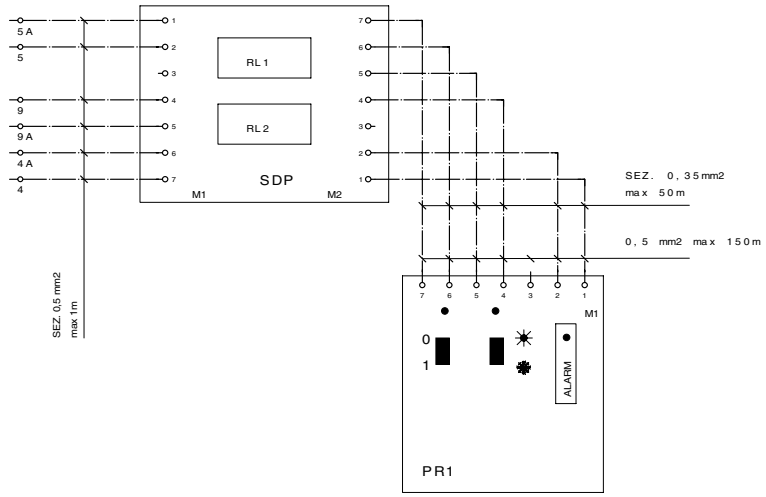




Remote control

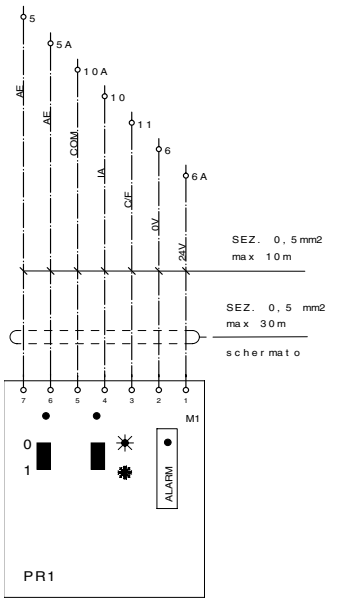
- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**

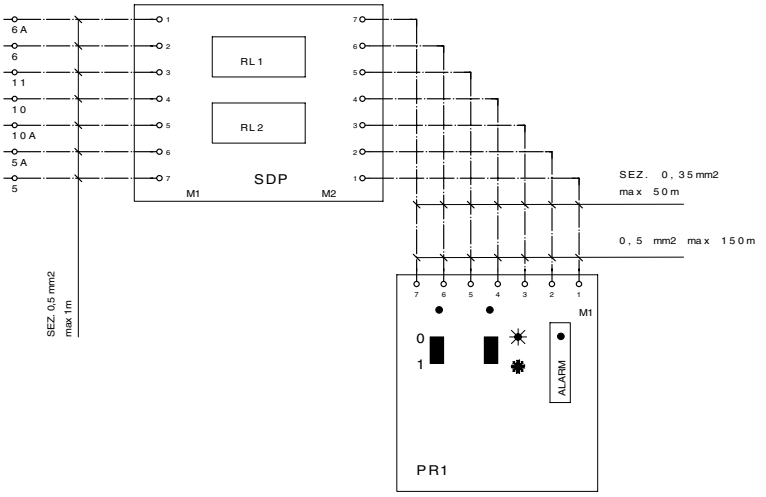




Remote control

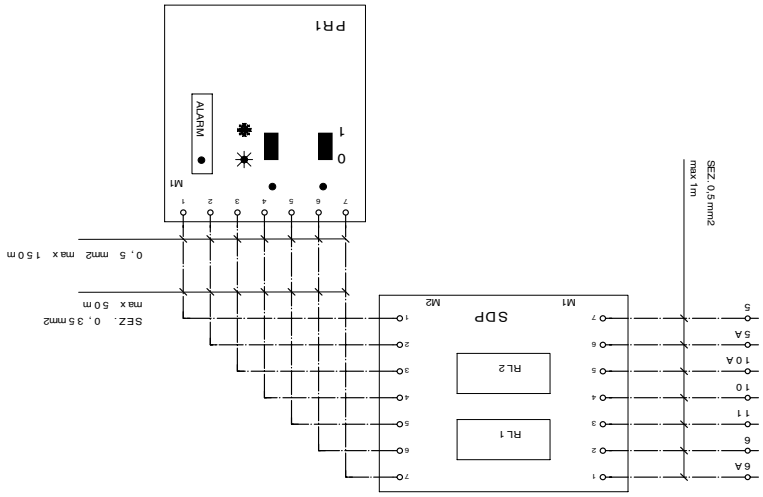
- **HE 020H - 025H U / HE 020H - 025H B**

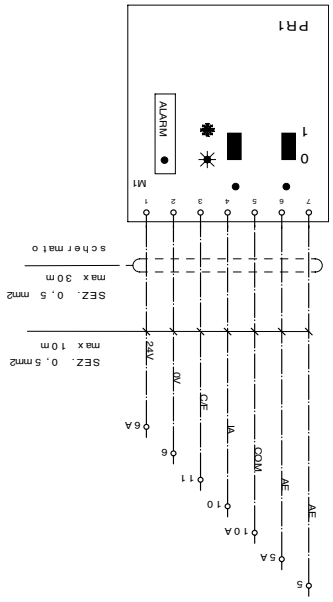




Remote control

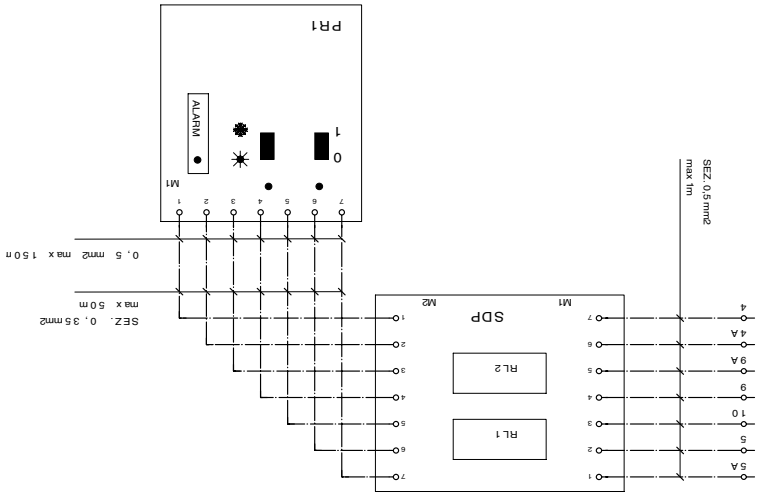
- **HE 30H - 040H - 050H U / HE 030H - 040H - 200 B**

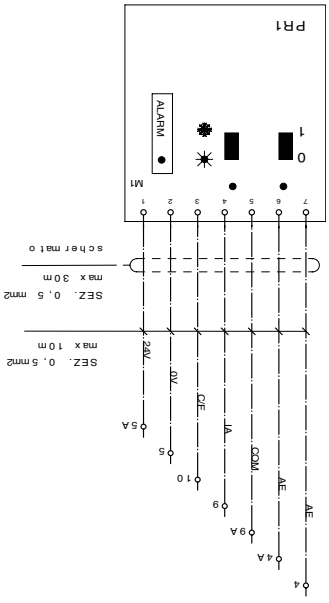




Remote control

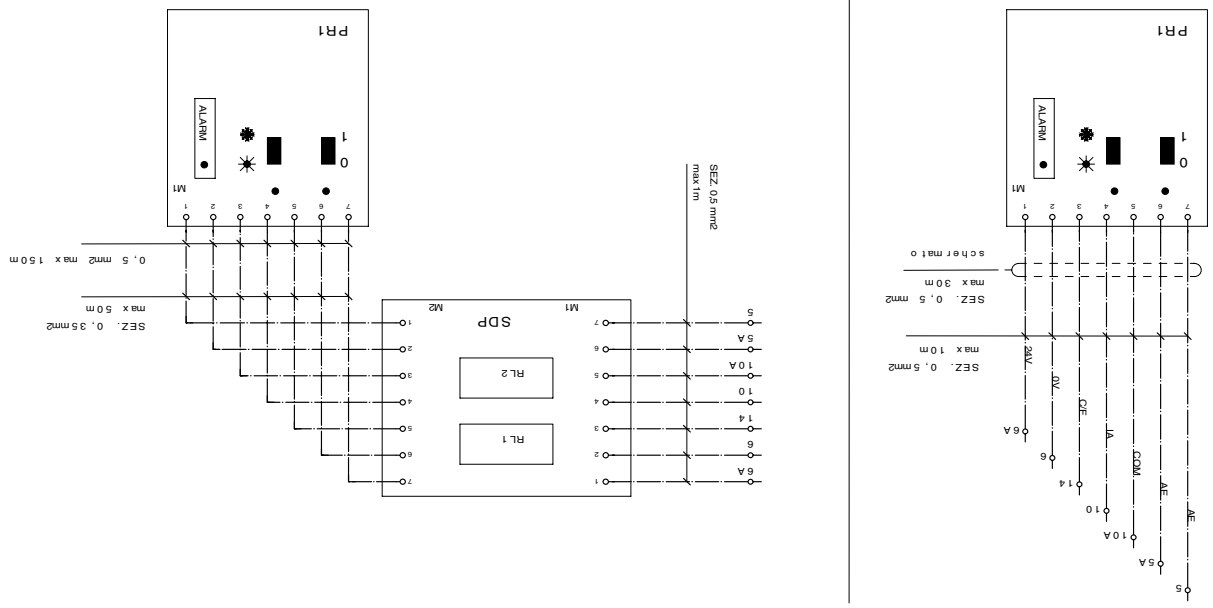
- **HE 080H U / HE 080H B**





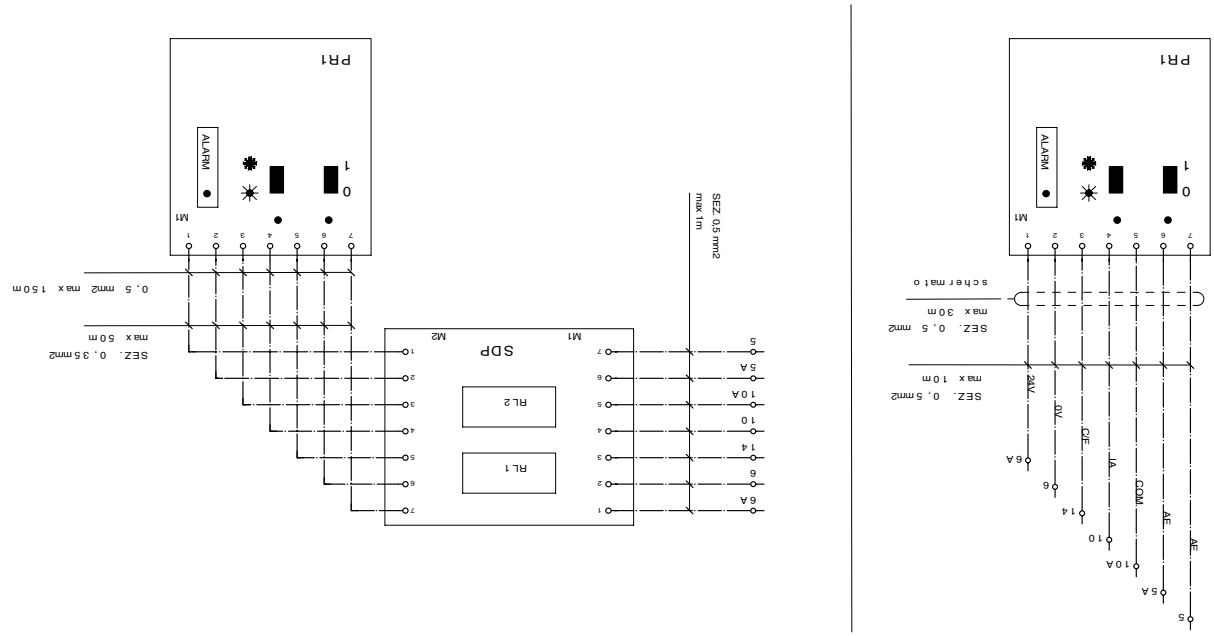
Remote control

■ HE 090H U / HE 090H B

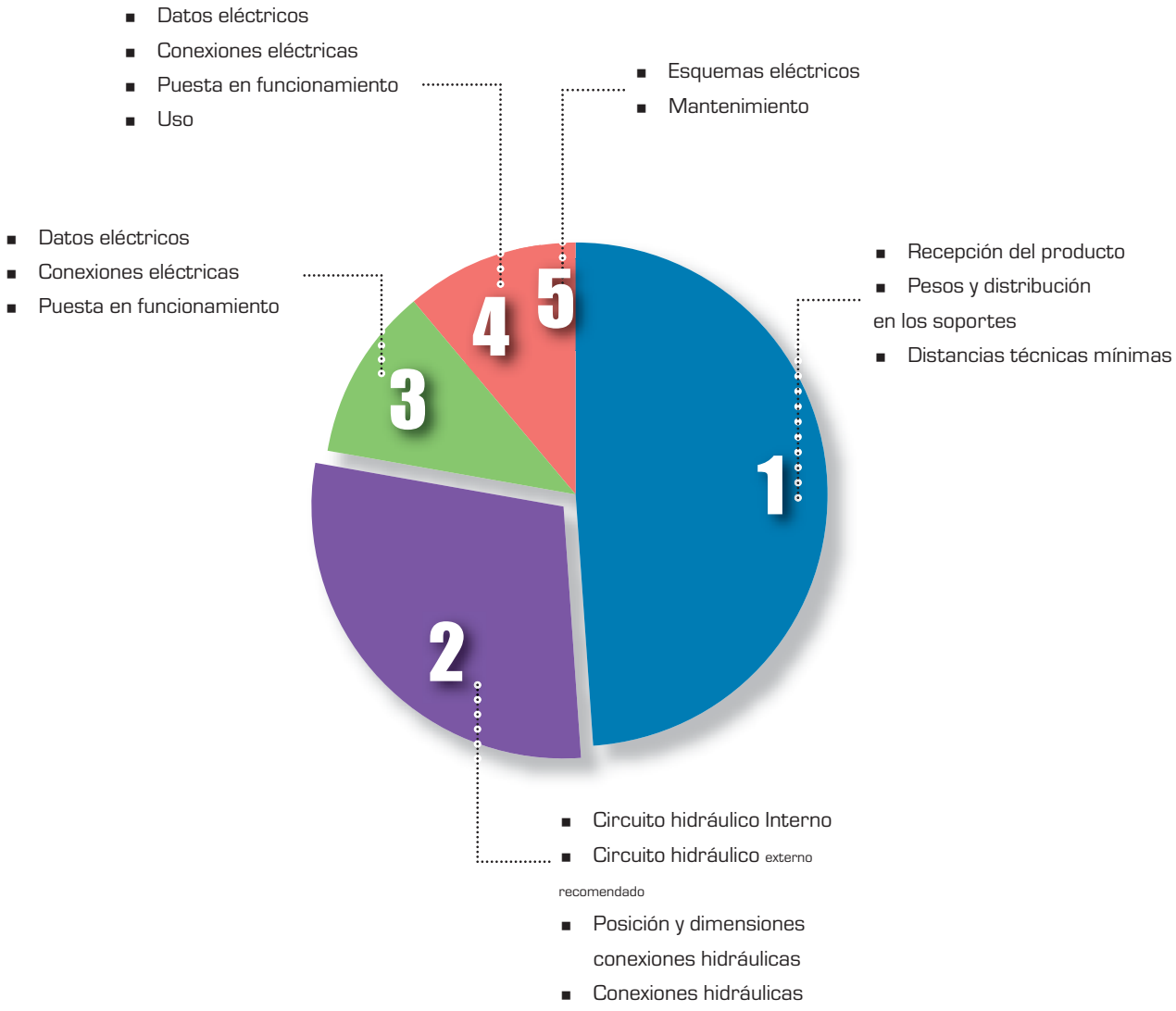


Remote control

■ HE 100H - 150H - 200H U / HE 100H - 150H - 200H B



Contenido del manual:



Índice

Recepción del producto	38
Posición y montaje antivibrantes	39
Sección hidráulica	41
CONEXIONES ELÉCTRICAS	45
Puesta en marcha	46
Usos incorrectos	47
Esquemas eléctricos	48

Estimado cliente,
Le agradecemos su elección por un producto AERMEC. Este producto es el resultado de varios años de experiencia y de estudios de proyectación minuciosos, y ha sido construido con materiales de primera calidad y tecnología de vanguardia.
Además, la marca CE garantiza que los aparatos cumplan los requisitos de la Directiva Europea Máquinas por lo que se refiere a la seguridad. Nuestro nivel de calidad está sometido a una vigilancia constante, por lo que los productos AERMEC son sinónimo de Seguridad, Calidad y Fiabilidad.
Sobre nuestro servicio de asistencia más cercano, si se desconoce, se puede obtener información en el concesionario donde ha adquirido al aparato.

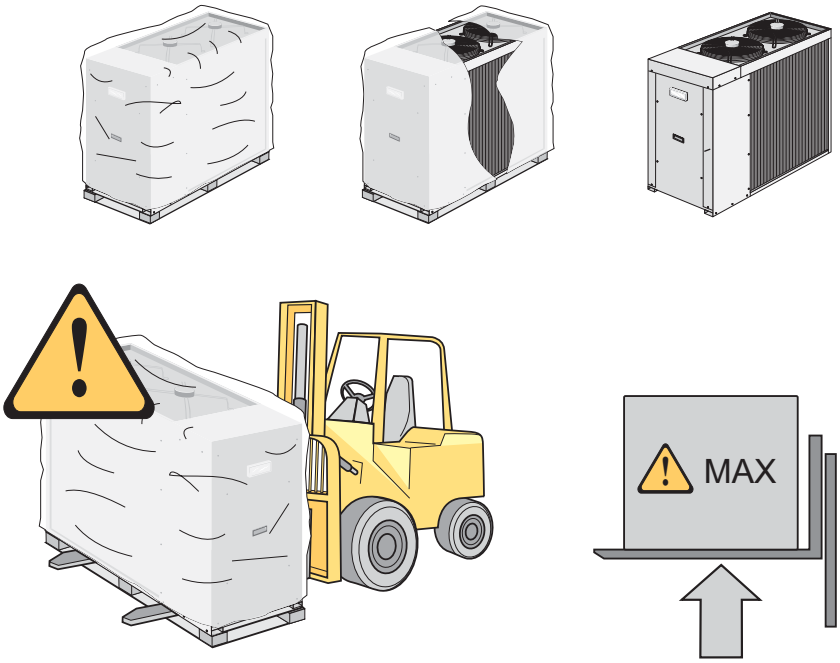
Los datos pueden sufrir modificaciones, consideradas necesarias para una mejora del producto.

Gracias de nuevo.
AERMEC S.p.A

Recepción del producto

MOVILIZACIÓN

Antes de mover la unidad asegúrese bien de las dimensiones, pesos, baricentro, y puntos de levantamiento, luego comprobar que el equipamiento para realizar el levantamiento sea adecuado y respete las normas vigentes de seguridad. Hay que prestar una atención especial a las operaciones de carga, descarga y levantamiento para evitar situaciones peligrosas para las personas, daños a la carpintería y a los órganos funcionales de la máquina. Está completamente prohibido colocar objetos encima de la unidad. El personal encargado a la movilización de la unidad debe estar provisto de medios de protección individual adecuados. Está terminantemente prohibido detenerse debajo de la unidad Durante el levantamiento se aconseja montar los soportes antivibrantes fijándolos en los orificios correspondientes de la base según el esquema de montaje que acompaña a los accesorios (VT).

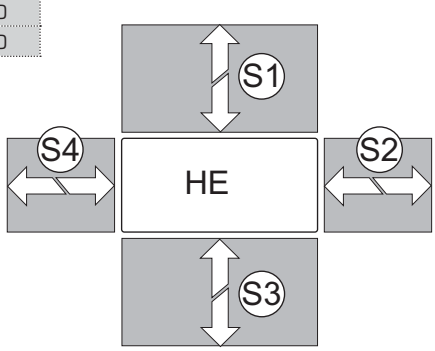


Ubicación

Los aparatos de la serie HE deben instalarse en el exterior, en un lugar adecuado, y respetando las distancias técnicas necesarias. Esto es indispensable, tanto para permitir las operaciones rutinarias y extraordinarias de mantenimiento, como por puras exigencias de funcionamiento. Para un correcto funcionamiento de la unidad, ésta deberá ser instalada sobre un plano perfectamente horizontal. Asegúrese de que la superficie de apoyo pueda soportar el peso de la máquina. El aparato está realizado en chapa de acero galvanizada y tratada utilizando pintura en caliente con polvos poliuretánicos para resistir a la intemperie. Por lo tanto, no se necesitan especiales precauciones para la protección de la unidad. En el caso de que la máquina se encuentre en una zona con corrientes de aire, seria conveniente instalar barreras contra el viento para evitar un mal funcionamiento del dispositivo DCPX.

Nota: El aparato debe ser instalado de manera que permita operaciones de mantenimiento y/o reparación. La garantía del aparato no cubrirá en ningún caso los costes derivados del uso de escaleras automáticas, andamios o cualquier otro sistema de elevación necesario para realizar las operaciones cubiertas por la garantía.

Mod.	Distancias técnicas mínimas			
mm	S1	S2	S3	S4
020	150	500	150	500
025	250	500	250	500
030	250	500	250	500
040	300	500	300	500
050	300	500	300	500
080	300	500	300	500
090	300	500	300	500
100	750	300	750	1400
150	750	300	750	1400
200	750	300	750	1400



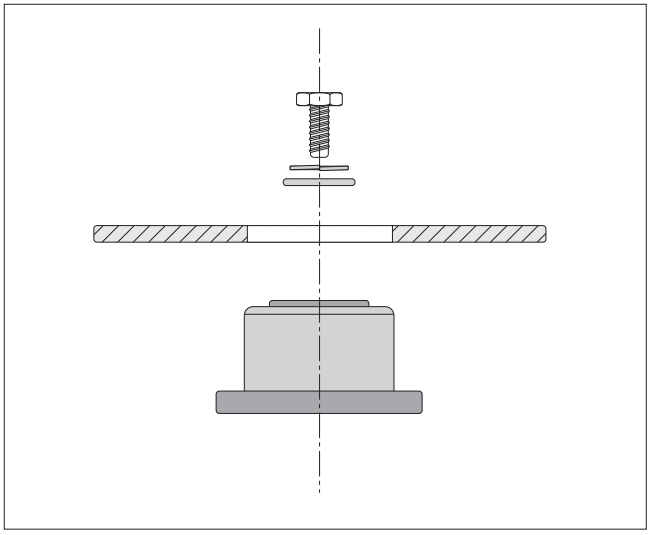
Posición y montaje antivibrantes

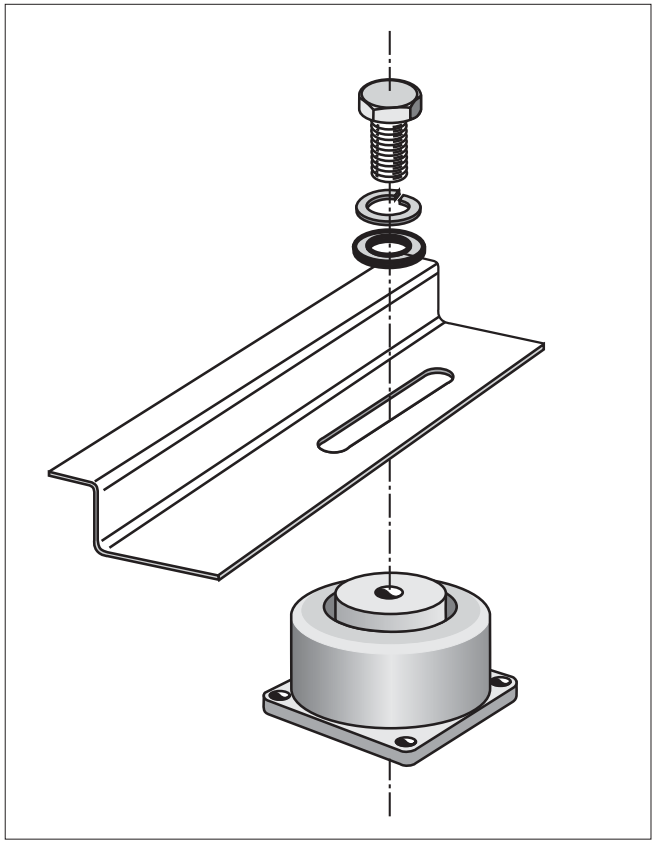
Montaje de los soportes antivibrantes:

Es posible aplicar a las unidades soportes antivibrantes (disponibles como accesorio), que permiten atenuar las vibraciones producidas por el compresor en funcionamiento; en los esquemas siguientes podrá consultar cómo se instalan dichos accesorios en las unidades, según el modelo de unidad adquirida. Cada juego está compuesto por cuatro antivibrantes, con la pernería necesaria para su montaje; recuerde prestar una atención especial a la colocación de la unidad durante el montaje de los soportes antivibrantes; recuerde además que la unidad debe colocarse en un plano perfectamente horizontal y capaz de soportar el peso del aparato.

Tabla compatibilidades:

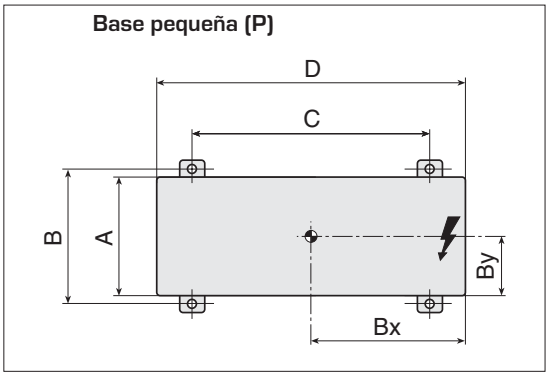
HE	VT 7	VT 8	VT 9
020	✔		
025	✔		
030	✔		
040		✔	
050		✔	
080		✔	
090		✔	
100			✔
150			✔
200			✔



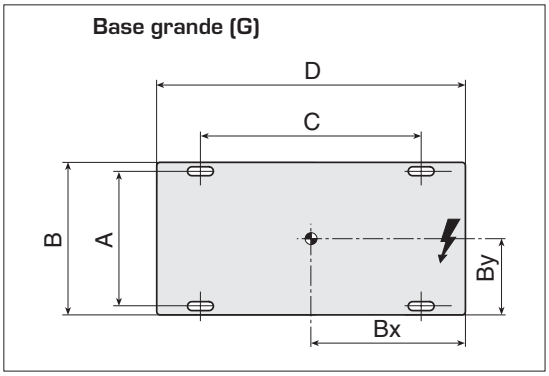


Baricentro y posición de los soportes antivibrantes:

Version HE H (con acumulación vacía)							
ANZ	Socle	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	P			408	435	660	1120
080	P			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750



Version HE H (con acumulación llena de agua)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750



Version HE (con acumulación vacía)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750

Version HE (con acumulación llena de agua)							
ANZ	Basamento	Bx (mm)	By (mm)	A (mm)	B (mm)	C (mm)	D (mm)
020	P			408	435	660	1120
025	P			408	435	660	1120
030	P			408	435	660	1120
040	P			408	435	660	1120
050	G			408	435	660	1120
080	G			408	435	660	1120
090	G			510	555	1072	1167
100	G			707	750	1670	1750
150	G			707	750	1670	1750
200	G			707	750	1670	1750

Sección hidráulica

circuito hidráulico interior de la unidad

Nota:
Para realizar una configuración correcta del sistema hidráulico, siga la normativa local de seguridad en vigor. La información siguiente le sugiere cómo realizar una correcta instalación de la unidad.

Dotación de serie

La unidad está equipada de serie

En las versions (U):

- Intercambiador de chapa
- Presostato diferencial entre la entrada y la salida del evaporador para evitar problemas de congelación en caso de falta de circulación del agua.
  Para los tamaños 020 - 025 - 030 - 040 - 050, se sustituye el presostato diferencial por un flujostato.
- Vaso de expansión con membrana precargada con nitrógeno.
- Depósito de acumulación para disminuir el número de tomas de fuerza del compresor y uniformar la temperatura del agua que hay que enviar a los distintos usos.
- Bomba de circulación.

En las versions (B):

- Intercambiador de chapa
- Presostato diferencial entre la entrada y la salida del evaporador para evitar problemas de congelación en caso de falta de circulación del agua.
  Para los tamaños 020 - 025 - 030 - 040 - 050, se sustituye el presostato diferencial por un flujostato.
- Vaso de expansión con membrana precargada con nitrógeno.
- Depósito de acumulación para disminuir el número de tomas de fuerza del compresor y uniformar la temperatura del agua que hay que enviar a los distintos usos.
- Bomba de circulación.

Circuito hidráulico aconsejado

En las figuras aparecen varios esquemas del circuito hidráulico recomendado entre el chiller HE y los usos.

En caso de que no estén incluidos con la unidad, se aconseja instalar:
-Válvulas manuales de cierre
- Depósito de acumulación inercial
- Grupo de carga
- Juntas flexibles de alta presión
– recipiente de expansión
Válvula de seguridad
- Válvula de ventilación

Notas:

Las tuberías hidráulicas de conexión a la máquina deben tener las dimensiones adecuadas para el caudal efectivo de agua demandado por el sistema en funcionamiento.

el paralelo hidráulico lo realiza el instalador.

El caudal del agua en el intercambiador debe ser siempre constante.

HE U (singolo anello)

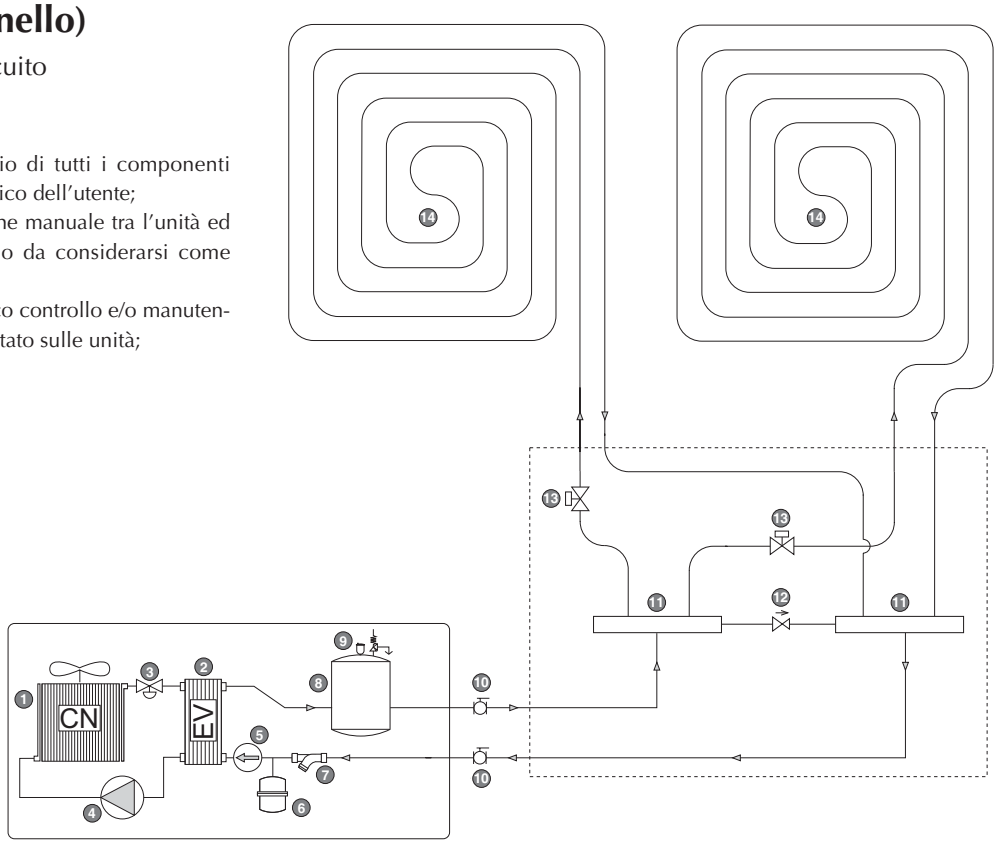
impianto a singolo circuito

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola solenoide
14. Pannelli radianti



HE U (singolo anello)

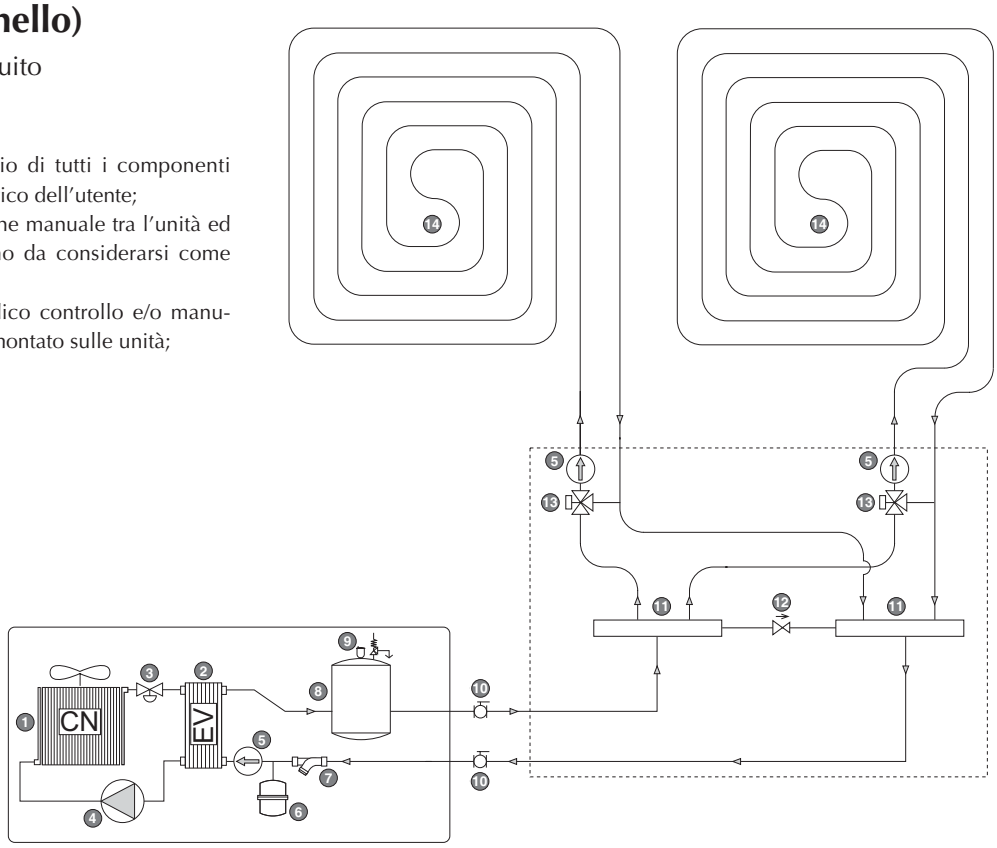
impianto a doppio circuito

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola tre vie
14. Pannelli radianti



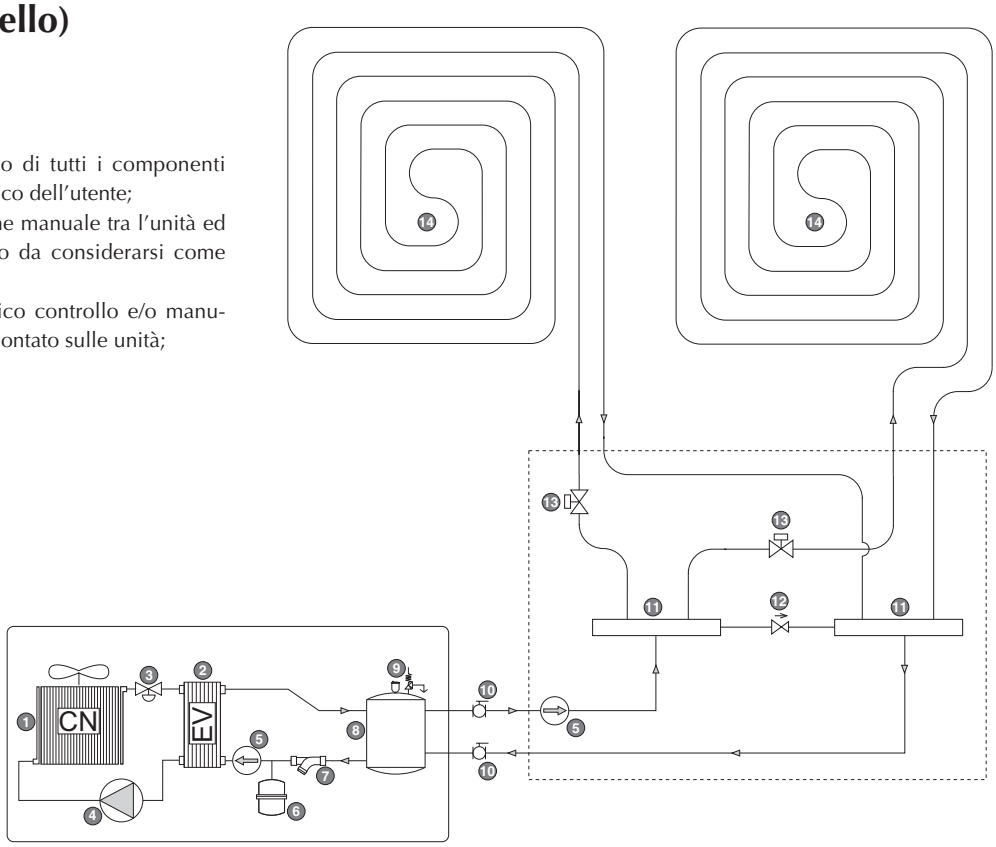
HE B (doppio anello)

ATTENZIONE:

- L'acquisto ed il montaggio di tutti i componenti esterni all'unità sono a carico dell'utente;
- Le valvole di intercettazione manuale tra l'unità ed il resto dell'impianto sono da considerarsi come **componente consigliato;**
- Si raccomanda un periodico controllo e/o manutenzione del filtro acqua montato sulle unità;

LEGENDA:

1. Scambiatore lato aria
2. Scambiatore lato acqua
3. Valvola termostatica
4. Compressore ZH
5. Pompa di circolazione
6. Vaso d'espansione
7. Filtro acqua
8. Serbatoio d'accumulo
9. Valvola di sicurezza
10. Rubinetti
11. Collettore
12. Valvola unidirezionale
13. Valvola solenoide
14. Pannelli radianti



Posiciones conexiones hidráulicas

Version (U)										
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
020	A5	A4	430	230	70	108	188	235	285	325
025	A5	A4	430	230	70	108	188	235	285	325
030	A5	A4	430	230	70	108	188	235	285	325
040	A5	A4	430	230	70	108	188	235	285	325
050	A5	A4	430	230	70	108	188	235	285	325

Version (B)										
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
020	A1	A4	430	230	70	108	188	235	285	325
025	A1	A4	430	230	70	108	188	235	285	325
030	A1	A4	430	230	70	108	188	235	285	325
040	A1	A4	430	230	70	108	188	235	285	325
050	A1	A4	430	230	70	108	188	235	285	325

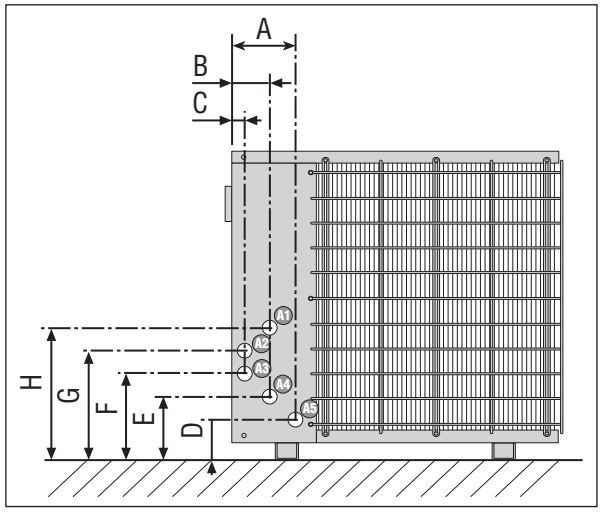
Version (U)								
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
080	A1	A5	46	210	280	340	388	440
090	A1	A5	46	210	280	340	388	440

Version (B)								
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
080	A4	A5	46	210	280	340	388	440
090	A4	A5	46	210	280	340	388	440

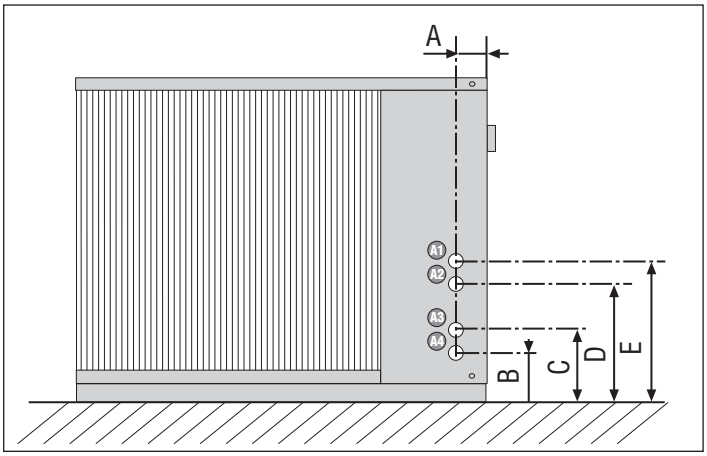
Version (U)							
HE U	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
100	A1	A2	57	100	160	300	415
150	A1	A2	57	100	160	300	415
200	A1	A2	57	100	160	300	415

Version (B)							
HE B	In	Out	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
100	A1	A2	57	100	160	300	415
150	A1	A2	57	100	160	300	415
200	A1	A2	57	100	160	300	415

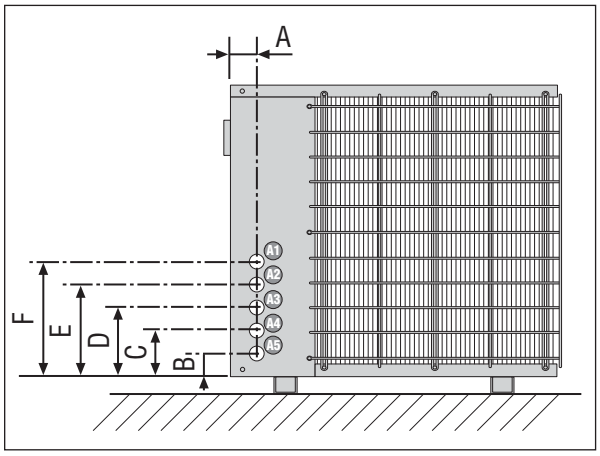
HE 020 - 025 - 030 - 040 - 050



HE 100 - 150 - 200



HE 080 - 090



Conexiones eléctricas

Todas las instalaciones eléctricas de la unidad vienen acabadas de fábrica. Para ponerla en marcha, se necesita una alimentación eléctrica de acuerdo con las indicaciones de la tarjeta de características de la unidad, que encontrará junto a las protecciones en línea.
Las secciones de los cables y el dimensionamiento del interruptor de línea son puramente indicativas.
El instalador debe determinar las dimensiones oportunas para la línea de alimentación en función de la longitud, del tipo de cable, de la absorción de la unidad y de la dislocación física.
Todas las conexiones eléctricas deben respetar la normativa vigente en el momento de la instalación.
Los diagramas incluidos en esta documentación deben utilizarse sólo como auxilio para la ubicación de las líneas eléctricas. En cuanto a las necesidades de instalación, consulte el esquema eléctrico suministrado con el aparato.

Nota:
Compruebe el calibrado de todas las abrazaderas de los conductores de potencia a la primera puesta en marcha y después de 30 días. Posteriormente, verifique el calibrado de todas las abrazaderas de potencia cada semestre. Si los terminales están aflojados, puede producirse un sobrecalentamiento de los cables y de los componentes.

Sección aconsejada para una longitud máxima de 50 m. La sección de los cables y las dimensiones del interruptor de línea son de carácter puramente indicativo.

HE U - HE B (230V monofásico)

		020	025	030	040	050
SEZ A	mm²	2,5	2,5	4	4	6
SEZ B	mm²	1	1	1	1	1
Terra	mm²	2,5	2,5	4	4	6
IL	A	13	16	20	20	25

HE U - HE B (230V monofásico)

		020H	025H	030H	040H
SEZ A	mm²	2,5	4	4	6
SEZ B	mm²	1	1	1	1
Terra	mm²	2,5	4	4	6
IL	A	16	20	20	25

HE U - HE B (400V trifásico)

		020	025	030	040	050	080	090	100	150	200
SEZ A	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
SEZ B	mm²	1	1	1	1	1	1	1	1	1	1
Terra	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
IL	A	8	8	10	10	13	13	16	20	25	32

HE U - HE B (400V trifásico)

		020H	025H	030H	040H	050H	080H	090H	100H	150H	200H
SEZ A	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
SEZ B	mm²	1	1	1	1	1	1	1	1	1	1
Terra	mm²	1,5	1,5	2,5	2,5	2,5	2,5	4	4	6	10
IL	A	8	8	8	13	13	13	16	20	25	32

Puesta en función

Antes de poner en marcha

Antes de la puesta en marcha se aconseja verificar que:

- la instalación está cargada y se ha purgado el aire;
- las conexiones eléctricas se han realizado correctamente;
- la tensión de la línea se encuentra dentro de los niveles de tolerancia admitidos (±10% del valor nominal);

ATENCIÓN:
Al menos 24 horas antes de la puesta en función de la unidad (o al final de cada periodo de pausa prolongado) se debe conectar la unidad a la corriente eléctrica para que las resistencias de calentamiento del cárter de los compresores puedan evaporar el refrigerante presente en el aceite.
El no cumplimiento de esta precaución puede causar graves daños al compresor y comporta la extinción de la garantía.

Carga / descarga de la instalación:
Durante el periodo invernal, en caso de no se utilice la instalación, el agua presente en el intercambiador puede helarse y causar así daños irreparables al propio intercambiador, la descarga completa de los circuitos de refrigeración y, a veces, la rotura de los compresores.
Para evitar el peligro del hielo existen tres soluciones posibles:

- Descarga completa del agua del intercambiador al final de la temporada, y llenado al comienzo de la temporada siguiente.
- Funcionamiento con agua glicolada, con un porcentaje de glicol en función de la temperatura mínima exterior prevista. En este caso habrá que tener en cuenta los distintos rendimientos y absorciones del refrigerador, el tamaño de las bombas y el rendimiento de los terminales.
- Uso de resistencias de calentamiento del intercambiador (disponible como accesorio KR). En tal caso las resistencias deben estar siempre bajo tensión, durante todo el periodo de posible hielo (máquina en modo espera).

Usos incorrectos

El aparato está proyectado y construido para garantizar la máxima seguridad en sus inmediatas cercanías (IP24), así como para resistir a los agentes atmosféricos. Los ventiladores se encuentran protegidos de intrusiones involuntarias mediante rejillas de protección. La apertura accidental del tablero eléctrico con máquina en funcionamiento se evita gracias al seccionador sujetapuerta. Evítese apoyar utensilios u objetos pesados directamente sobre las baterías laterales del cambio térmico, para no estropear las aletas.

Nota:

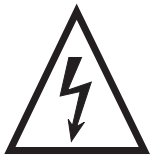
- **No introduzca ni deje caer objetos a través de las rejillas de los motores de los ventiladores.**
- **No se apoye en las baterías de intercambio térmico: superficie cortante.**

Importantes informaciones de seguridad

La máquina no debe superar los límites de presión y temperatura indicados en el cuadro presentado en el apartado "Límites de funcionamiento" del manual técnico.
Después de un incendio no se garantiza el correcto funcionamiento; antes de volver a encender la máquina póngase en contacto con un centro de asistencia autorizado.
La máquina está dotada de válvulas de seguridad que en el caso de excesiva presión pueden descargar gas a alta temperatura en la atmósfera.
El viento, los terremotos y otros fenómenos naturales especialmente intensos no se han tenido en cuenta.
En caso de empleo de la unidad en atmósfera agresiva o con agua agresiva consultar la sede.

Después de haber realizado intervenciones de mantenimiento en el circuito de refrigeración con sustituciones de componentes, se aconseja realizar las siguientes operaciones antes de volver a encender la máquina:

- Tenga muchísimo cuidado cuando reponga la carga del refrigerante indicada en la placa de la máquina (dentro del cuadro eléctrico).
- Abra todos los grifos del circuito de refrigeración.
- Conecte correctamente la alimentación eléctrica y la toma de tierra
- Comprobar las conexiones hidráulicas.
- Compruebe que la bomba de agua funciona correctamente
- Limpiar los filtros del agua.
- Comprobar que las baterías del condensador no estén sucias u obstruidas .
- Comprobar la correcta rotación del grupo ventiladores.

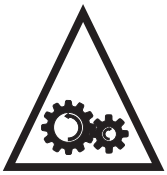


¡Peligro!
Corriente eléctrica

¡Peligro!
Quitar la corriente eléctrica

¡Peligro!

¡Peligro!
Temperatura



¡Peligro!
Órganos en movimiento

esquemas eléctricos

	Nota
AA	Relé auxiliar de encendido
AE	Alarma externa
AP	Presostato de alta presión
AT	Relé auxiliar termostato
BP	Presostato de baja presión
CD	Contactor Triángulo compresor
C/F	Interruptor de cambio calor / frío
CCP	contactor compresor
CM	Condensador de marcha
CMP	Contactor motobomba
CP	COMPRESOR
CV	contactor ventilador
CVC	Contactor ventilador condensador
CVE	Contactor ventilador evaporador
DCP	dispositivo baja temperatura
IA	Interruptor auxiliar ON / OFF
IL	Interruptor de línea
L	Fase de alimentación
LB	Lámpara de bloqueo
LF	Lámpara de funcionamiento
MP	módulo de protección del compresor
MTA	magnetotérmico auxiliar
MTCP	Magnetotérmico compresor
MTMP	Magnetotérmico bomba
MV	Motor ventilador
N	neutro de alimentación
Pa	Pulsador de encendido y desbloqueo
PD	presostato diferencial
PE	Conexión tierra
r	Resistencia cárter
RE	Resistencia antihielo (accesorios KR - RA)
RP	Resistencia antihielo bomba (5A 250V)
SCV	Tarjeta de control ventiladores
SWI	sonda entrada agua
SS	Sonda batería

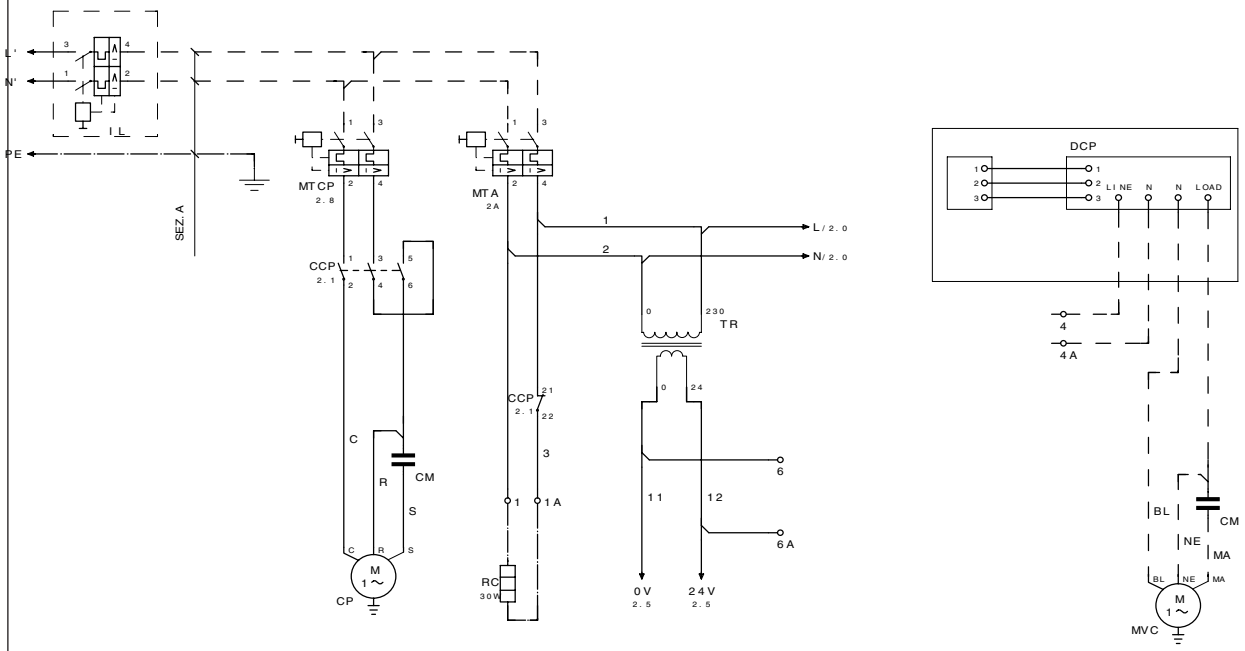
	Nota
SUW	Sonda salida agua
TCP	Protección térmica compresor
TMP	Térmico Bomba
TEB	Temporizador de by-pass
TEC	Temporizador encendido compresor
TER	Temporizador encendido automático
TR	transformador
TER	Termostato ajuste frío
VIC	Válvula de inversión del ciclo
VSL	Válvula solenoide cierre líquido
VSB	Válvula solenoide de by-pass
TGP	Termostato gas impelente

	componentes suministrados opcionales
	Componentes no suministrados
	conexiones que deben realizarse durante la instalación

Nota:
Los esquemas eléctricos pueden haber sido actualizados, por lo que es conveniente consultar el esquema eléctrico que acompaña al aparato.

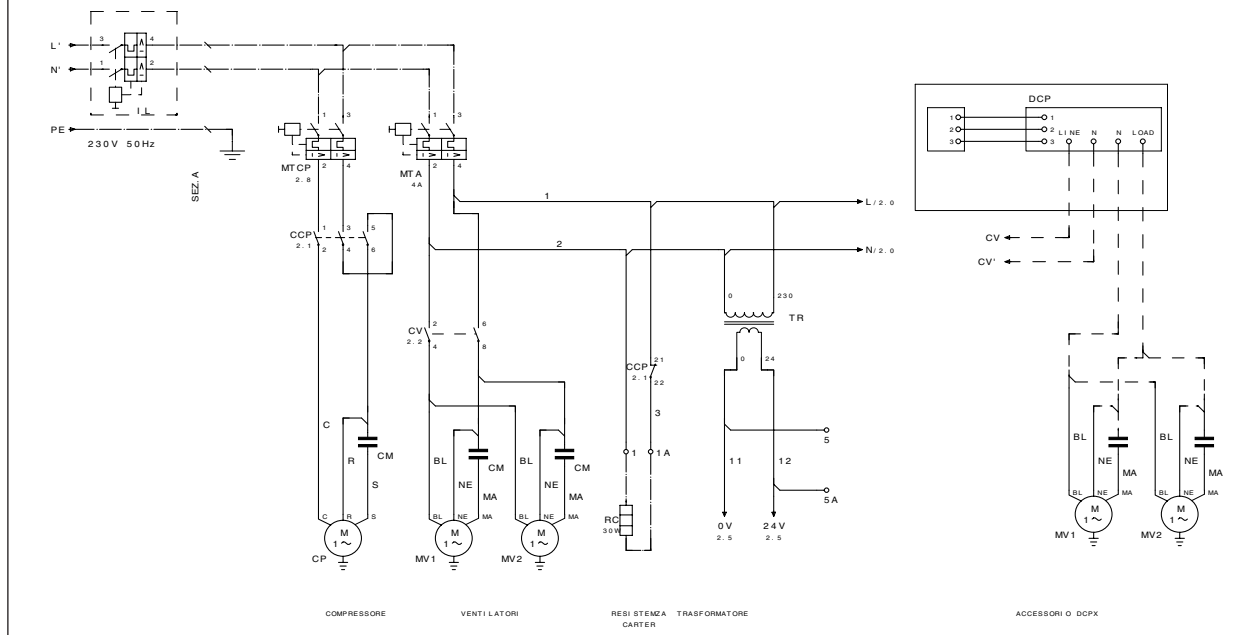
Alimentación

- **HE 020 - 025 U / HE 020 - 025 B (monofásico 1~230V-50Hz)**



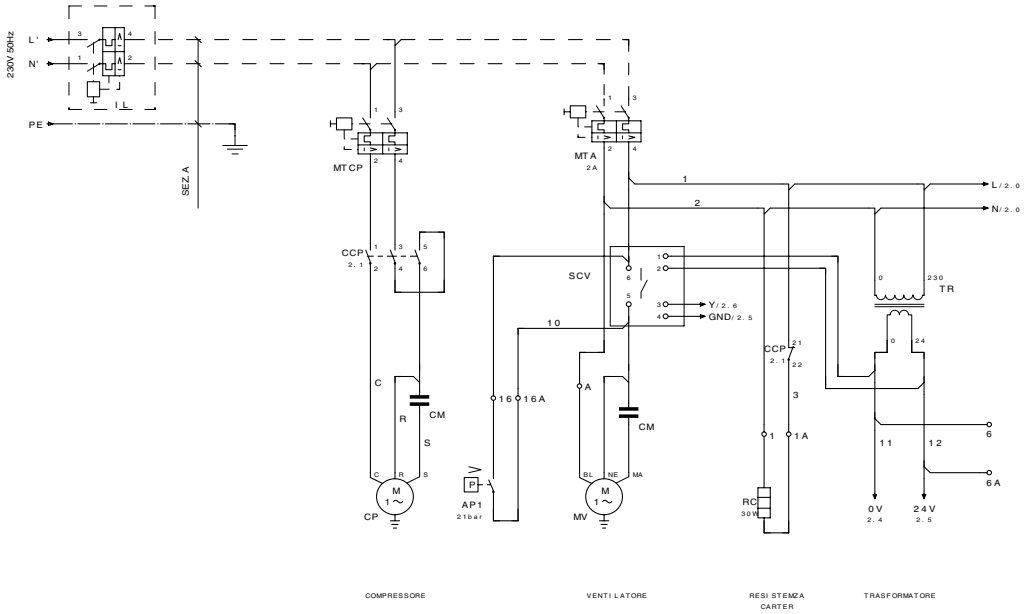
Alimentación

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (monofásico 1~230V-50Hz)**



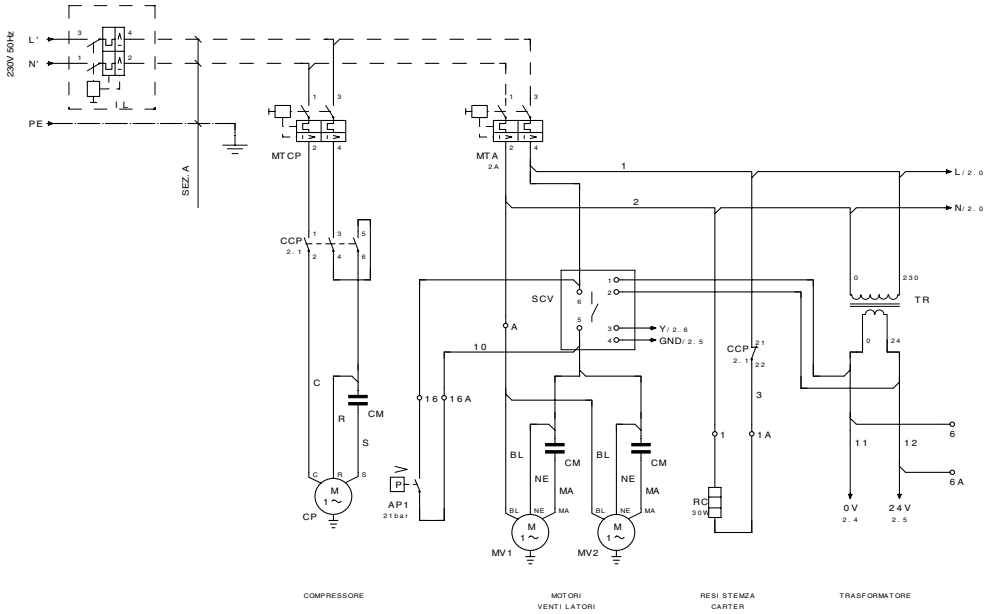
Alimentación

- **HE 020H - 025H U / HE 020H - 025H B (monofásico 1~230V-50Hz)**



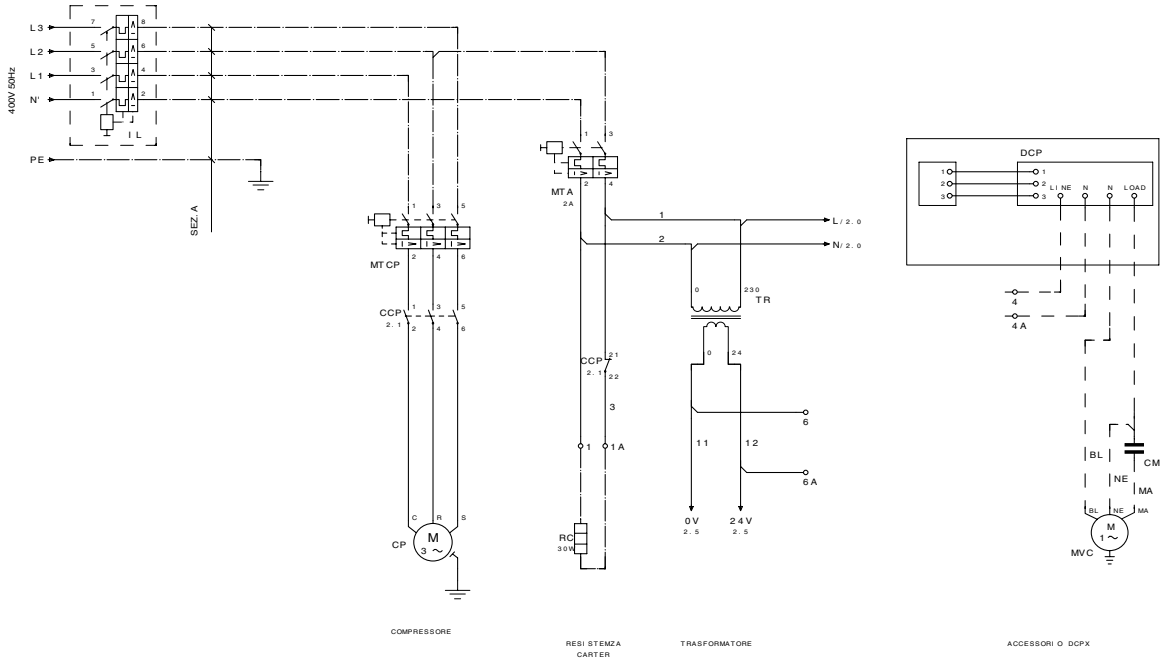
Alimentación

- **HE 030H - 040H U / HE 030H - 040H B (monofásico 1~230V-50Hz)**



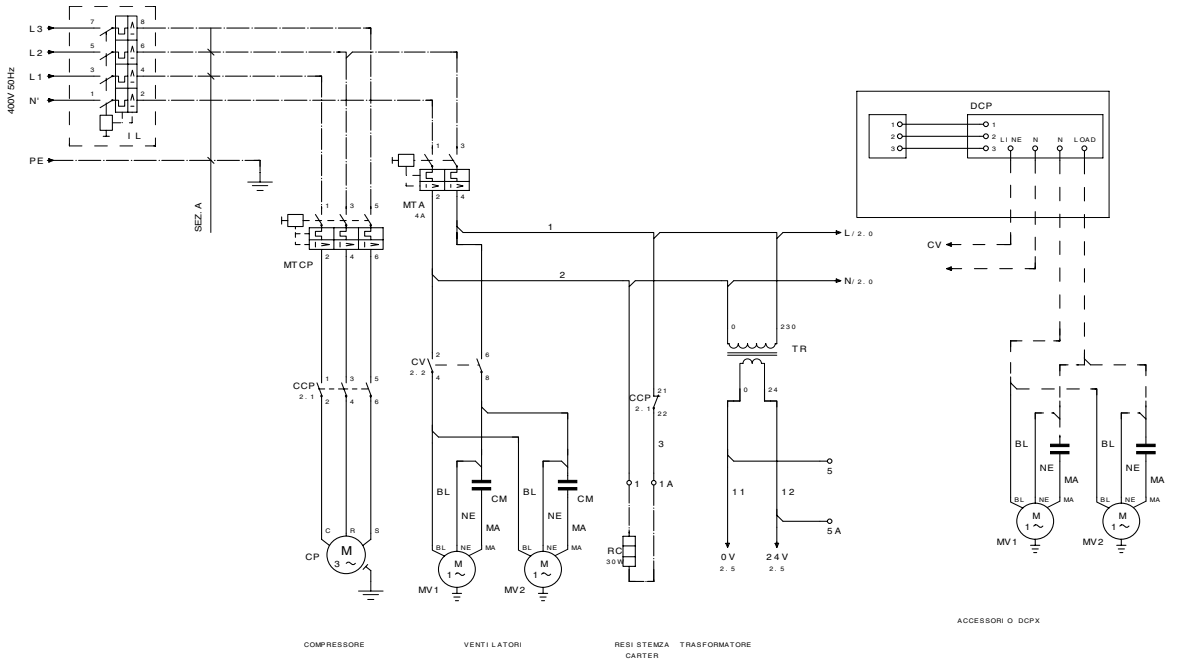
Alimentación

- **HE 025 U / HE 025 B**



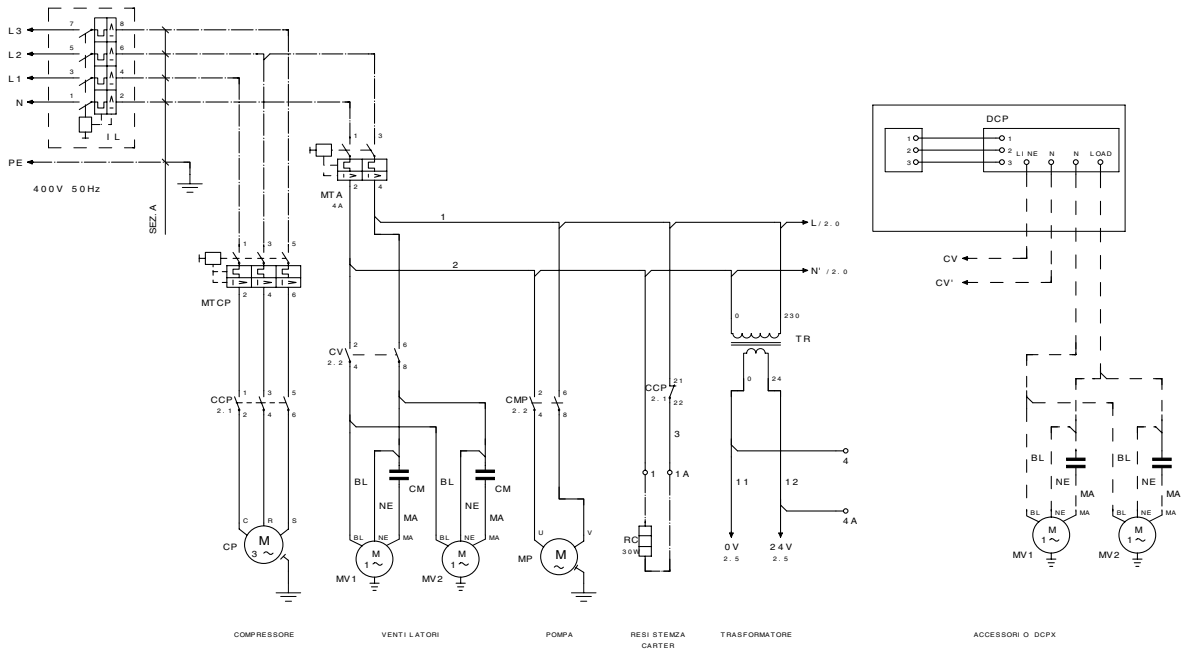
Alimentación

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**



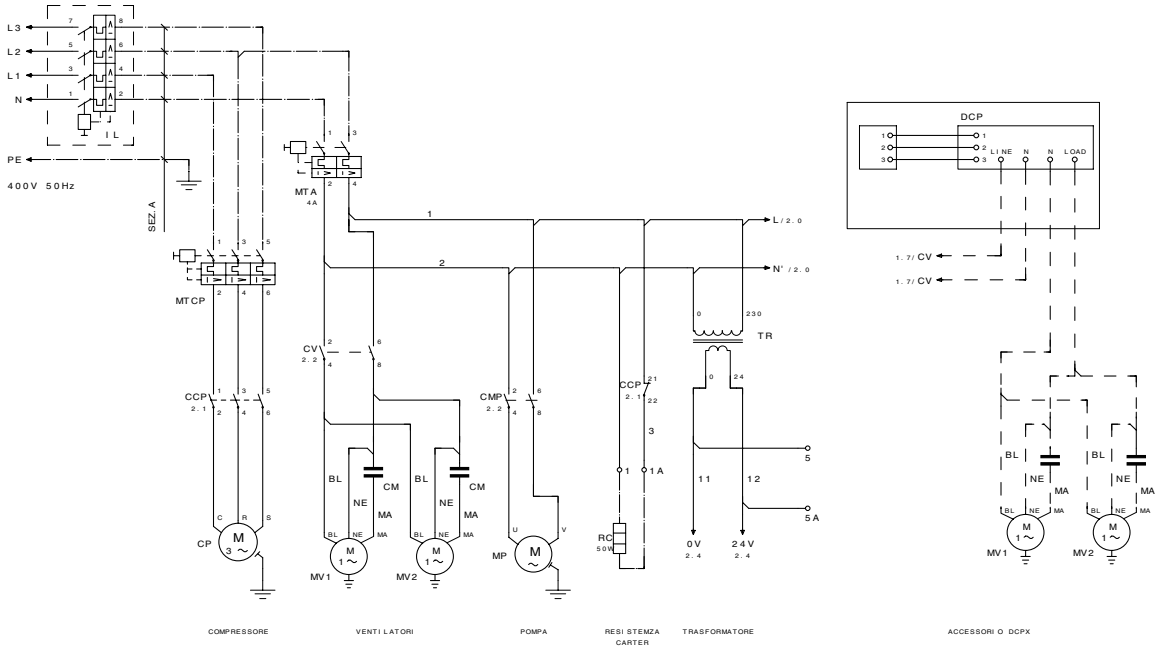
Alimentación

- **HE 080 U / HE 080 B**



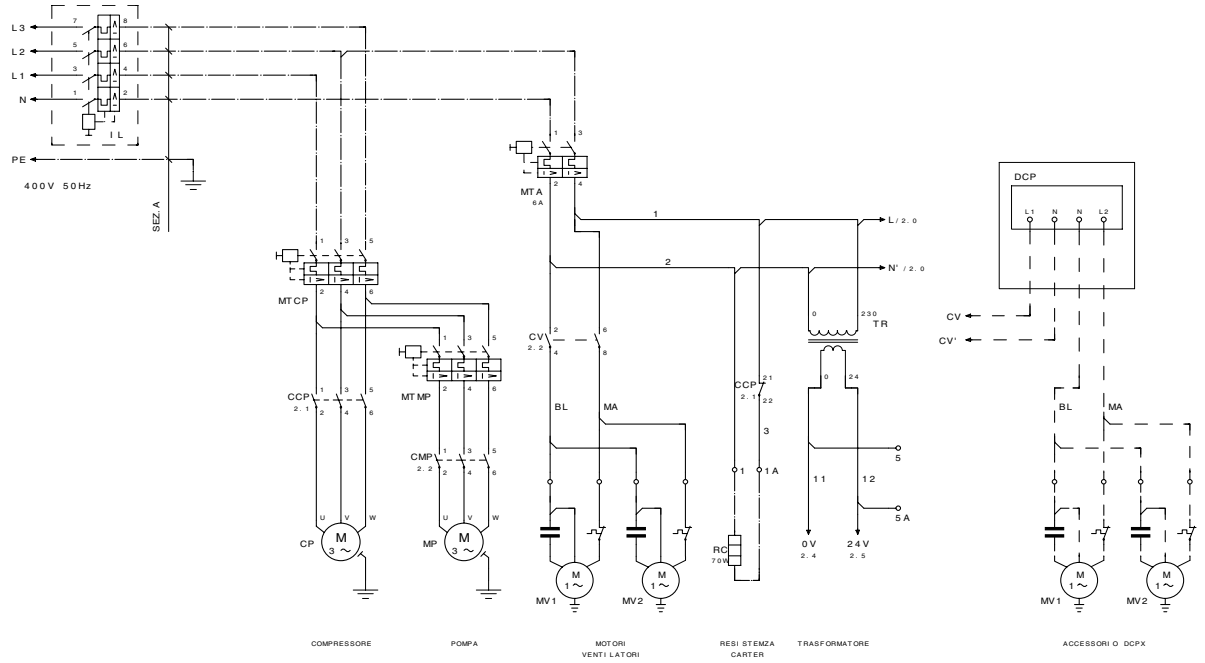
Alimentación

- **HE 090 U / HE 090 B**



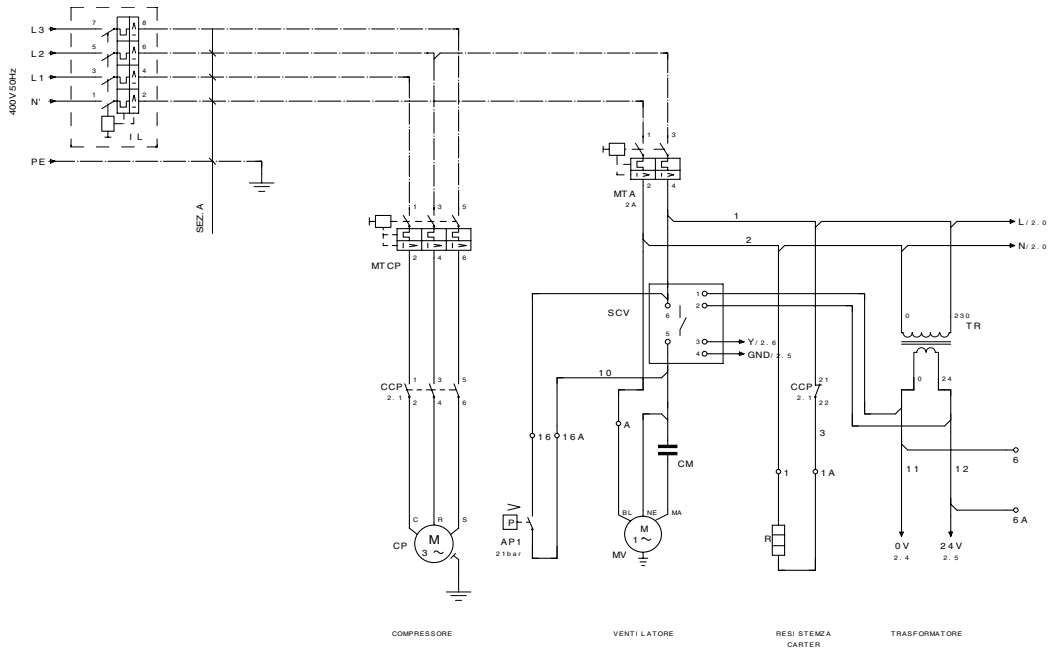
Alimentación

- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**



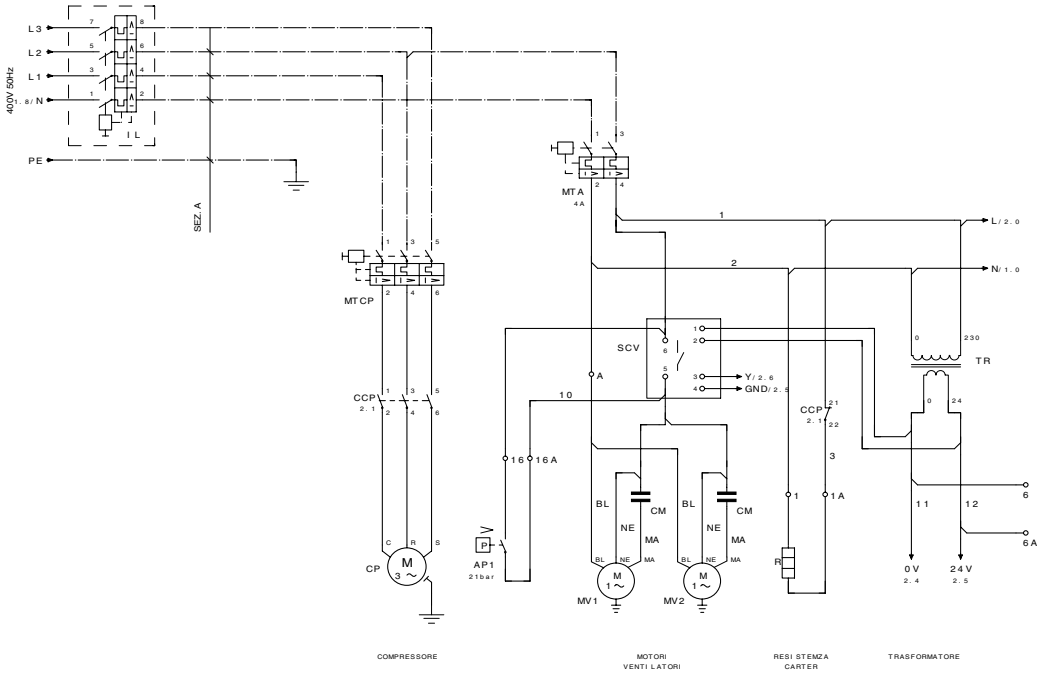
Alimentación

- **HE 020H - 025H U / HE 020H - 025H B**



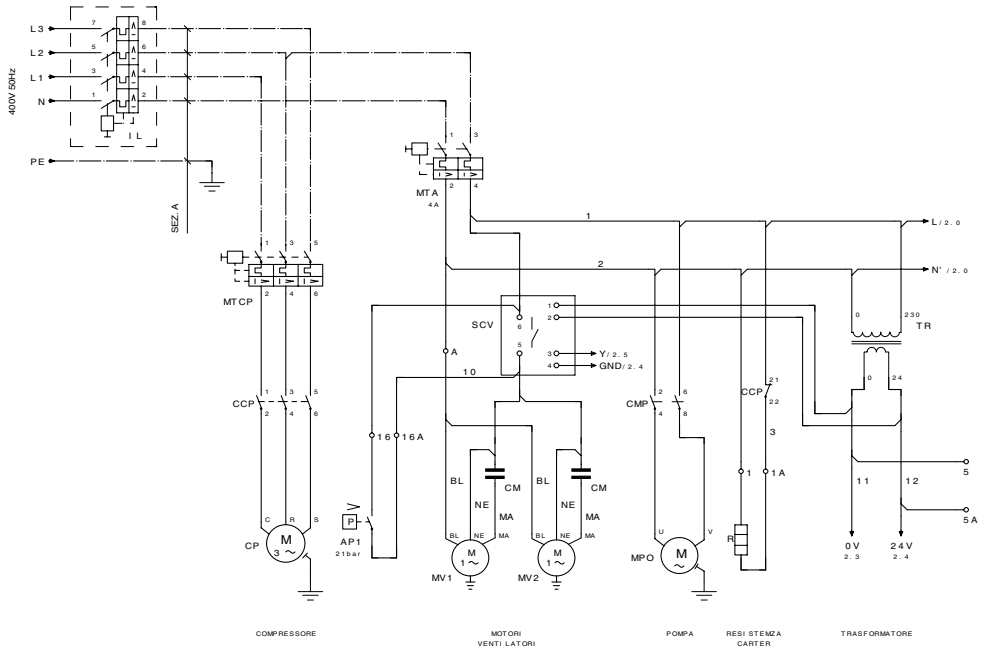
Alimentación

- **HE 030H - 040H - 050H U / HE 030H - 040H - 050H B**



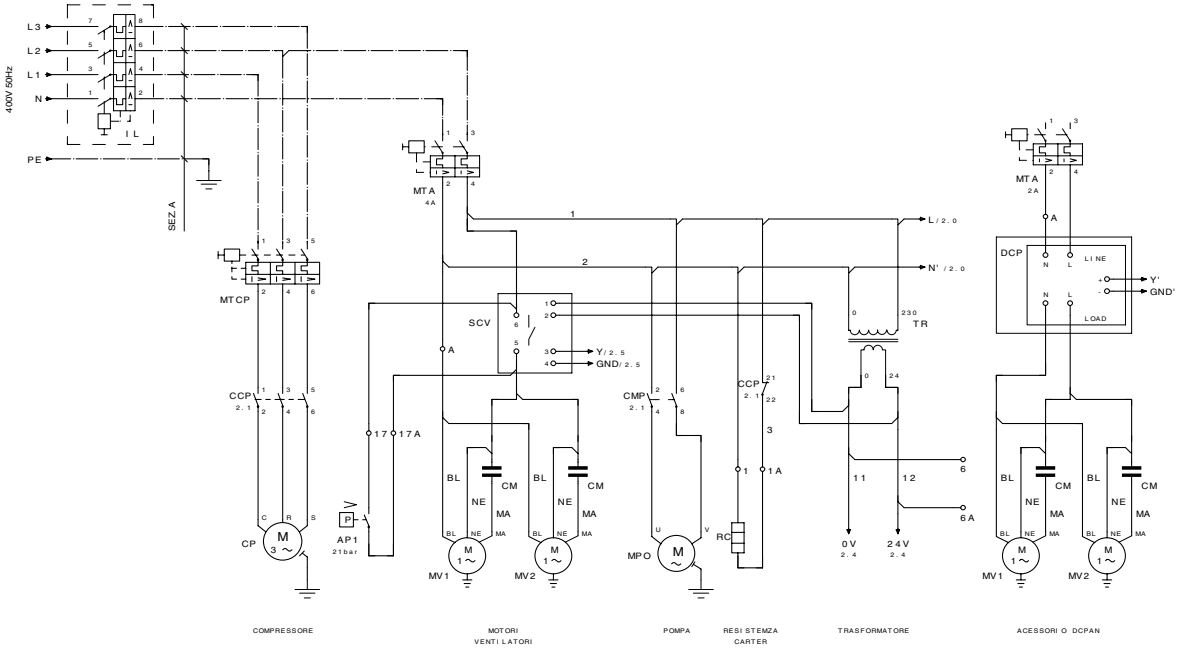
Alimentación

- **HE 080H U / HE 080H B**



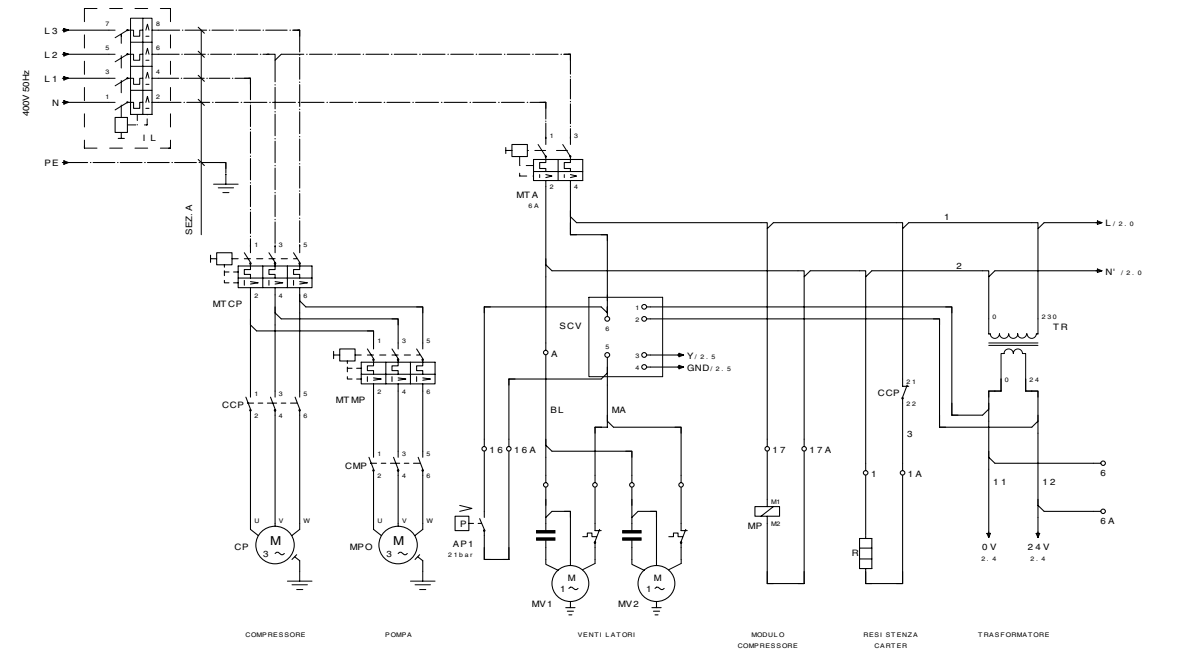
Alimentación

- **HE 090H U / HE 090H B**



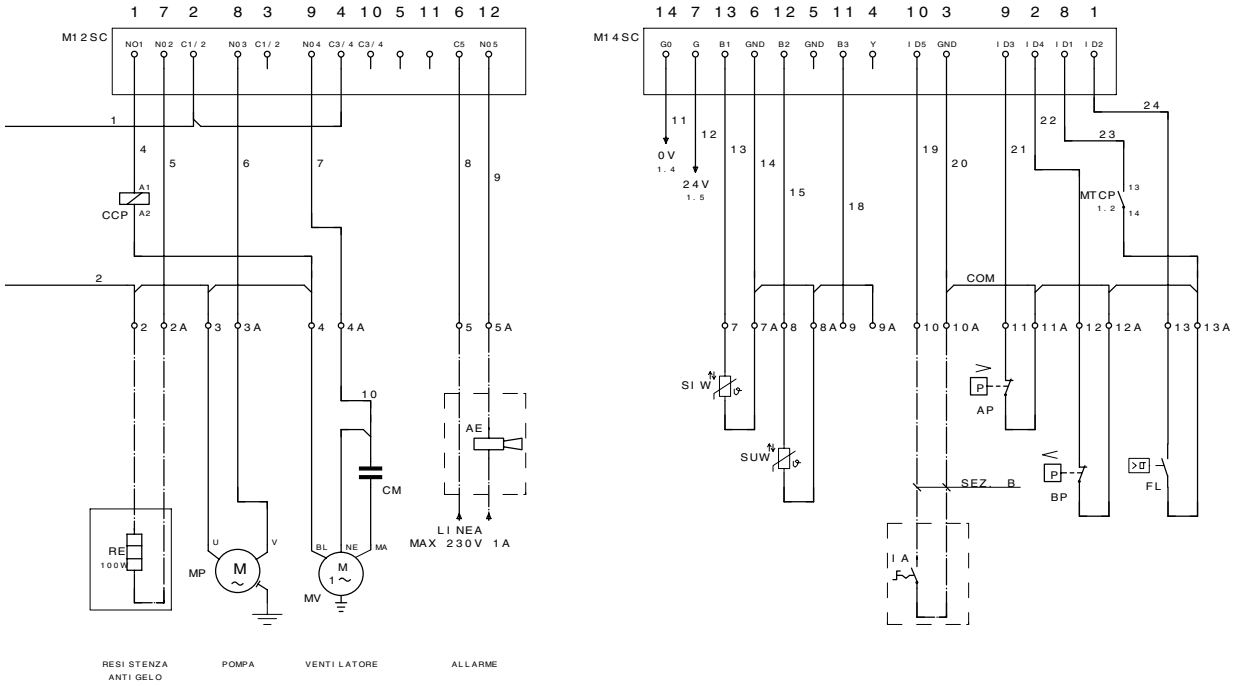
Alimentación

- **HE 100H - 150H - 200H U / HE 100H - 150H - 200H B**



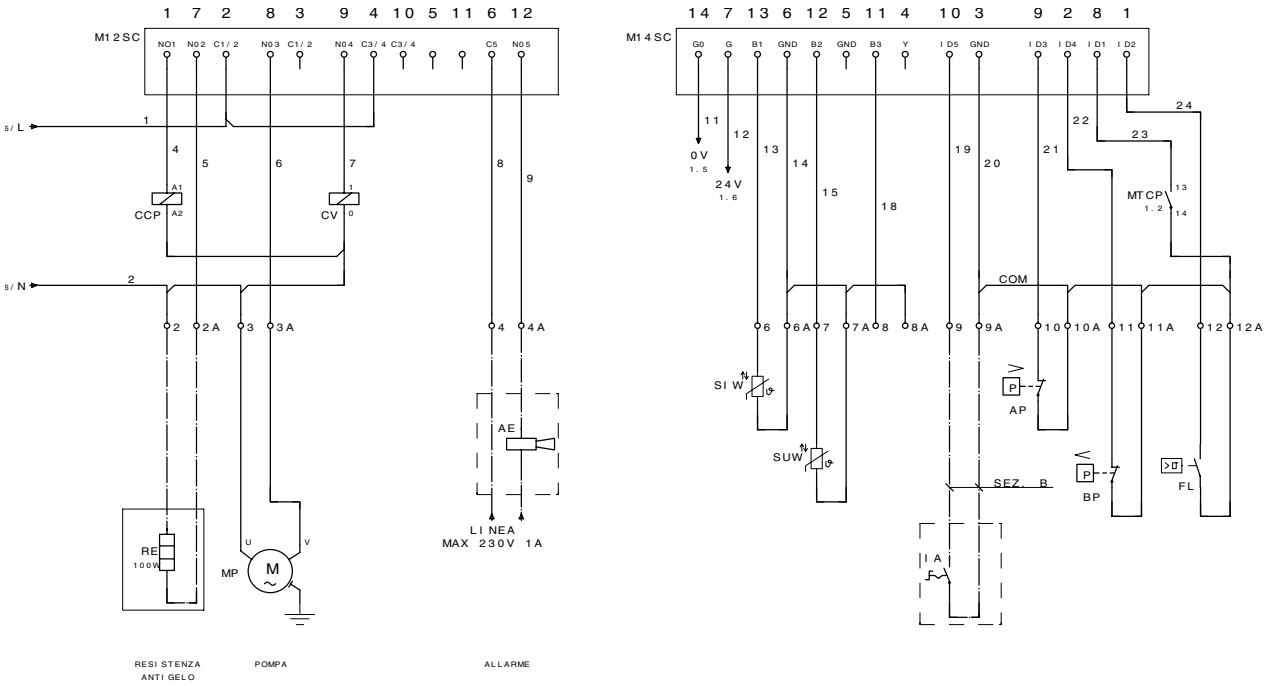
Conexiones cargas

- **HE 020 - 025 U / HE 020 - 025 B (monofásico 1~230V-50Hz)**



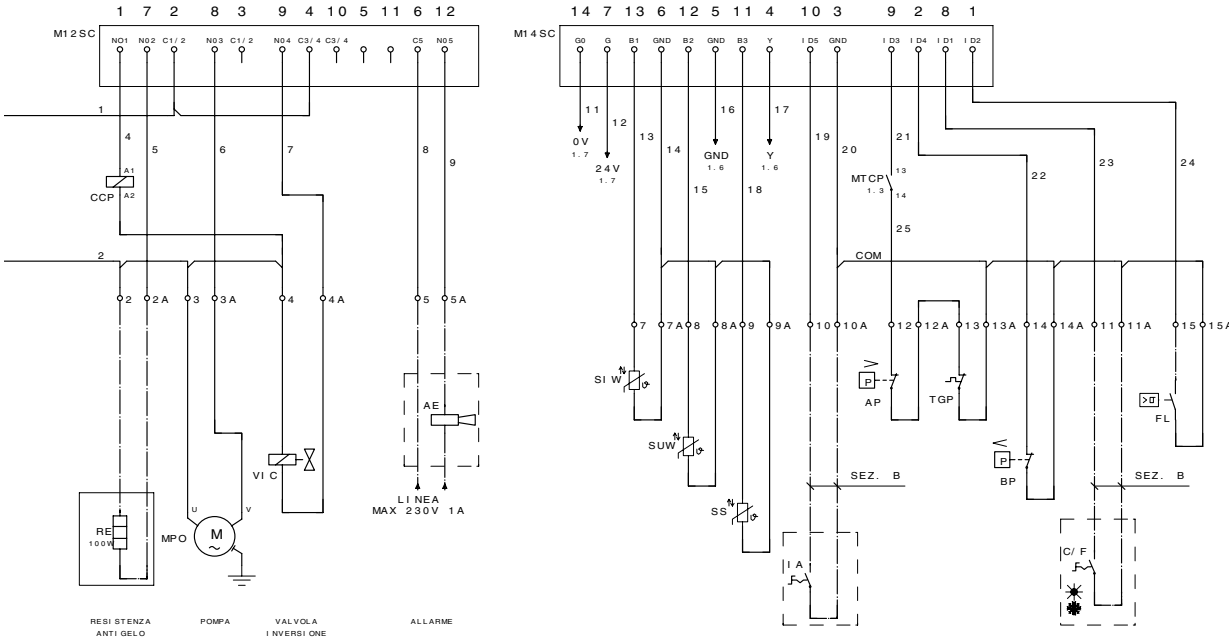
Conexiones cargas

- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (monofásico 1~230V-50Hz)**



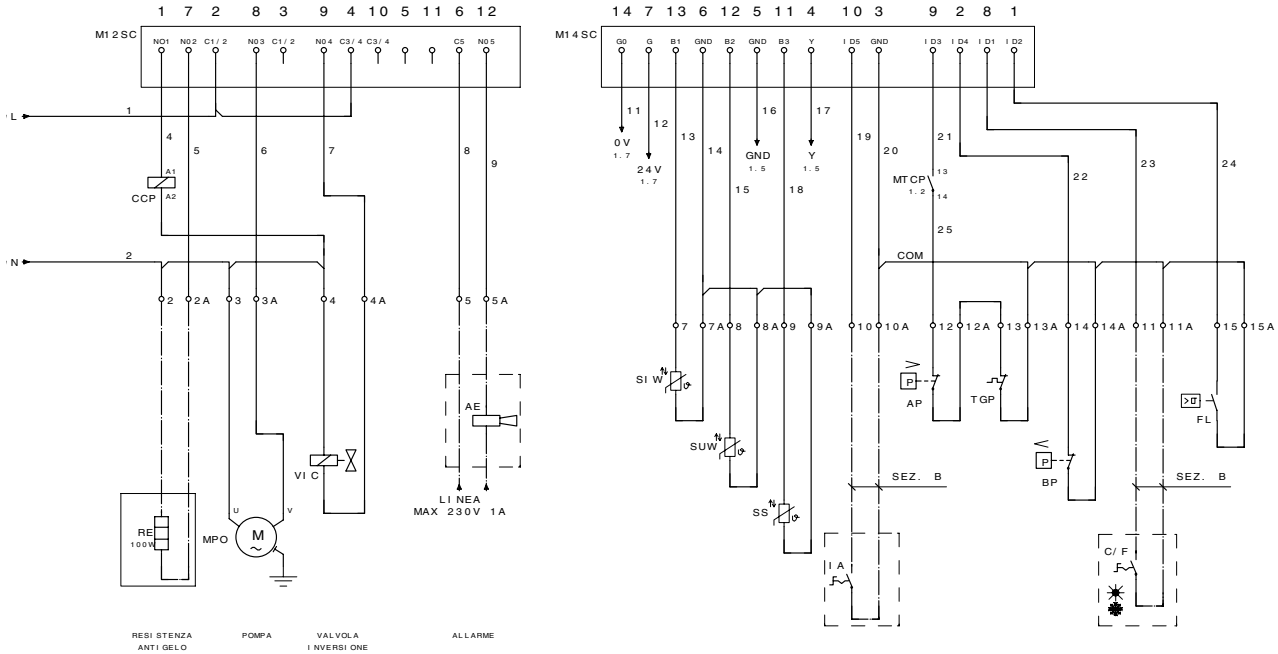
Conexiones cargas

- **HE 020H - 025H U / HE 020H - 025H B (monofásico 1~230V-50Hz)**



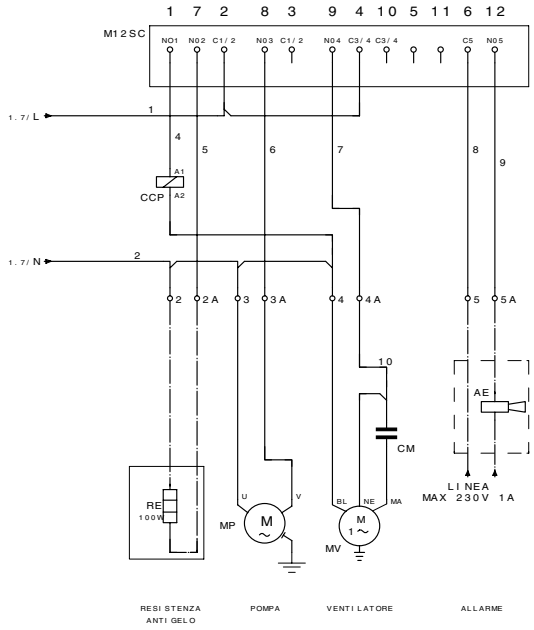
Conexiones cargas

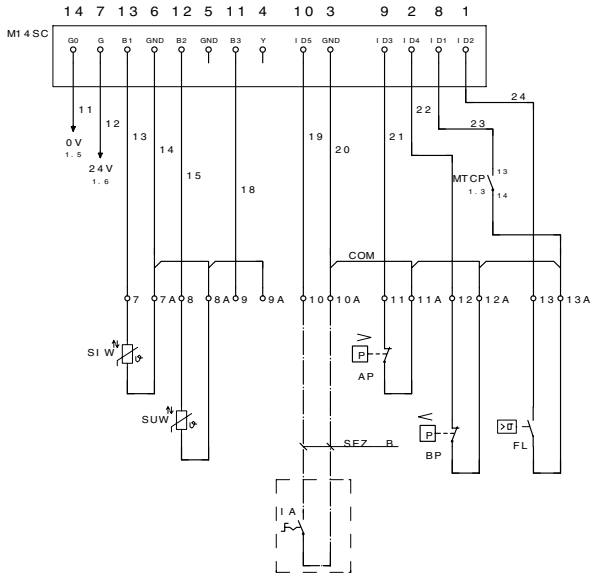
- **HE 030H - 040H U / HE 030H - 040H B (monofásico 1~230V-50Hz)**



Conexiones cargas

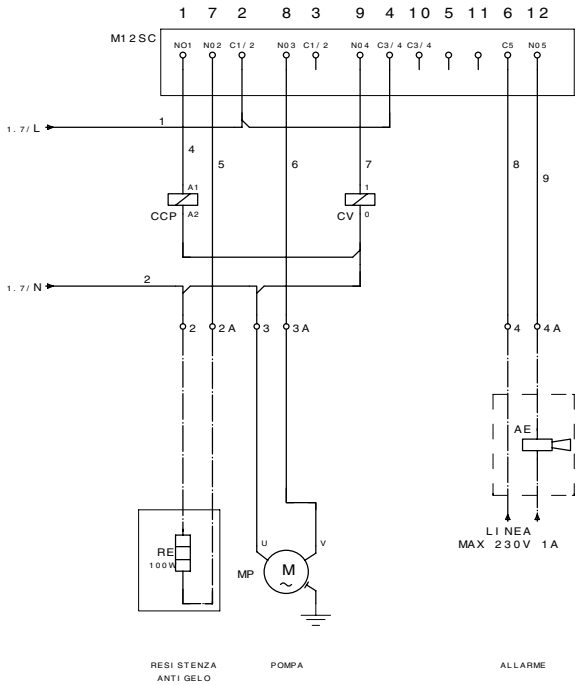
- **HE 025 U / HE 025 B**

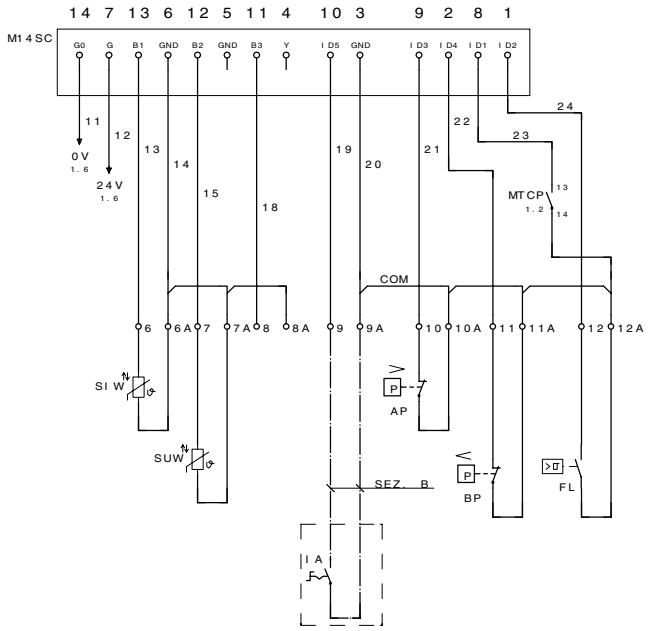




Conexiones cargas

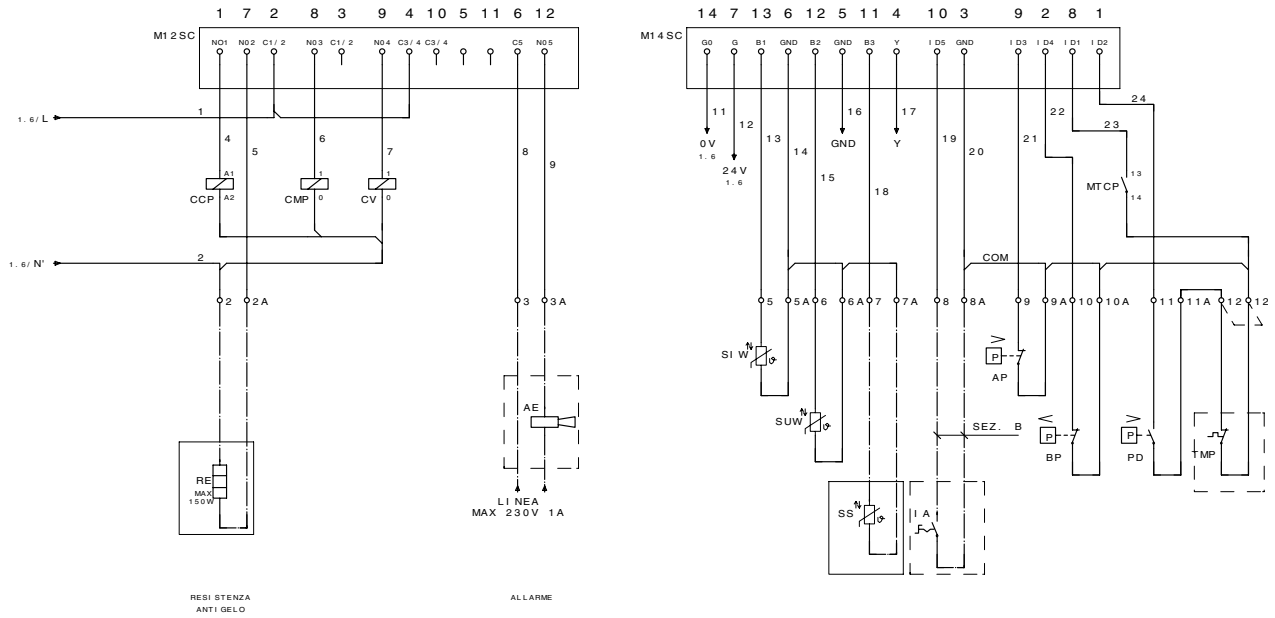
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**





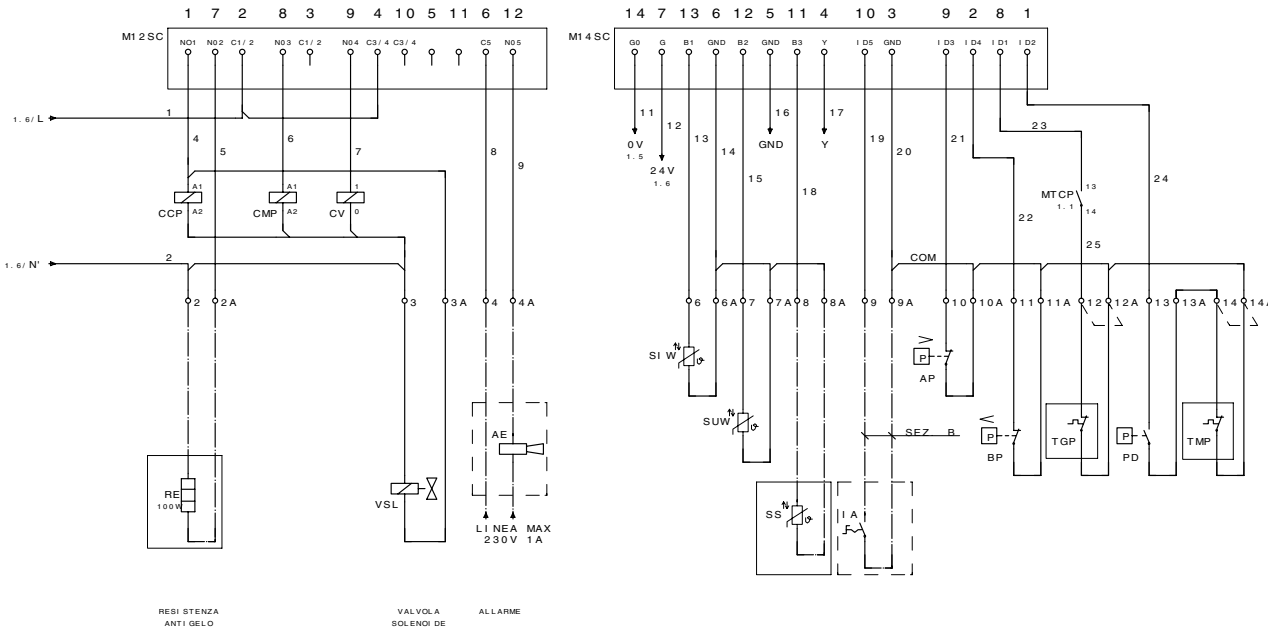
Conexiones cargas

- **HE 080 U / HE 080 B**



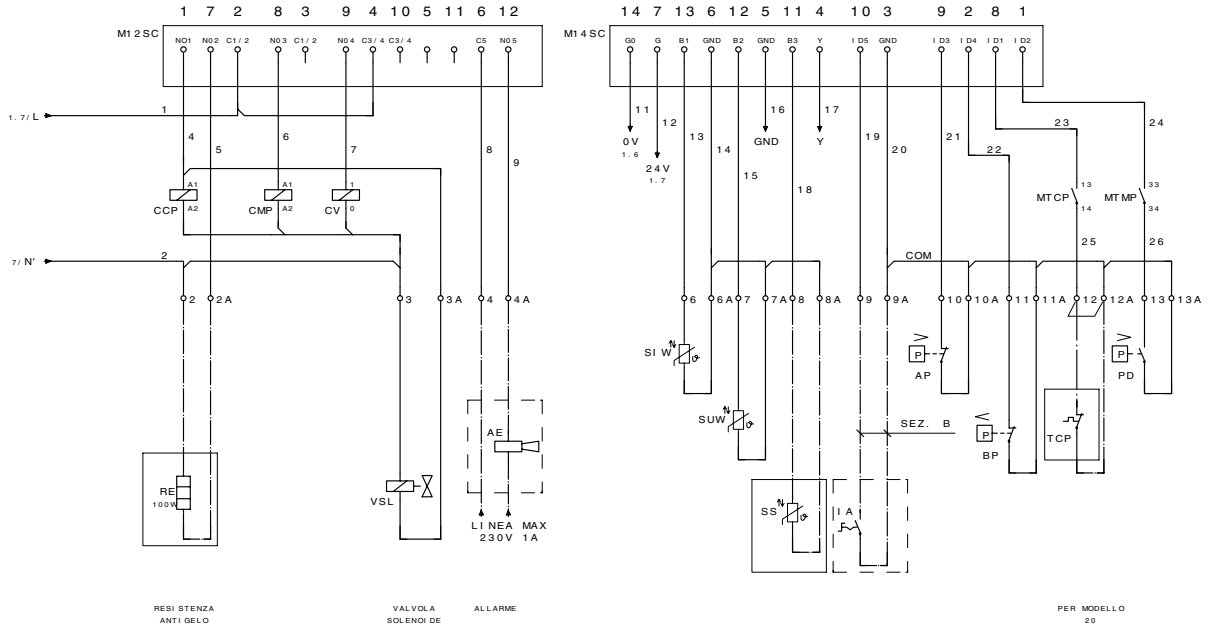
Conexiones cargas

- **HE 090 U / HE 090 B**



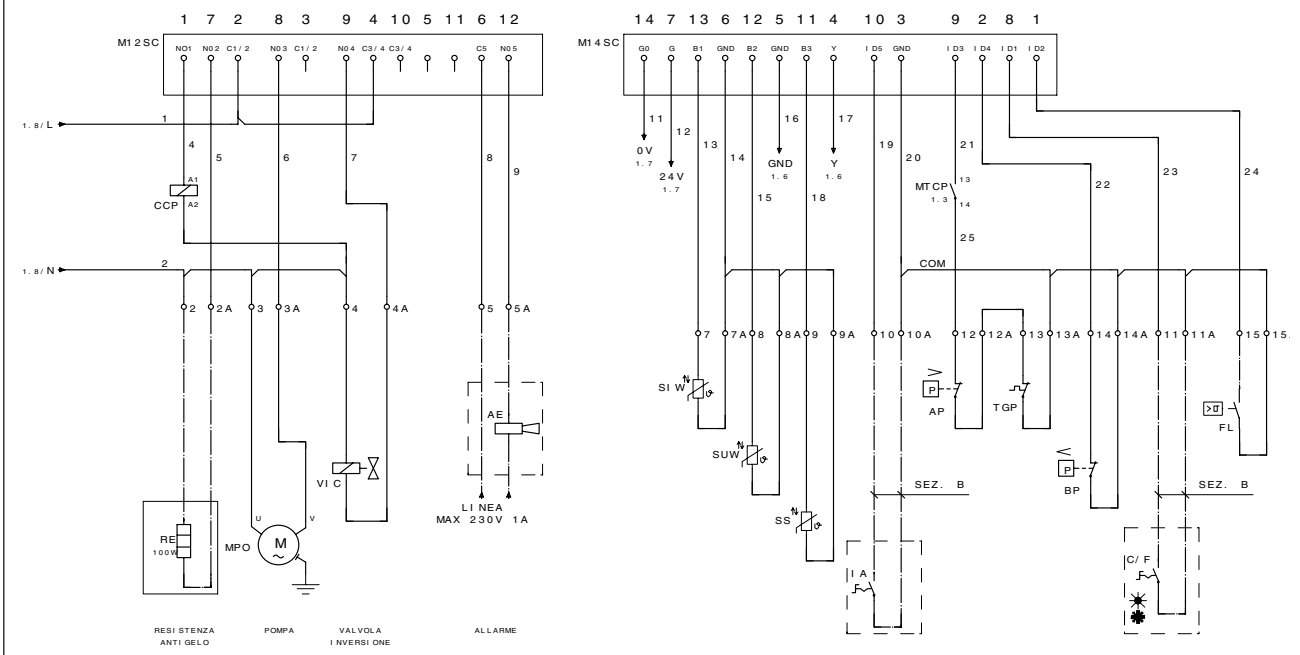
Conexiones cargas

- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**



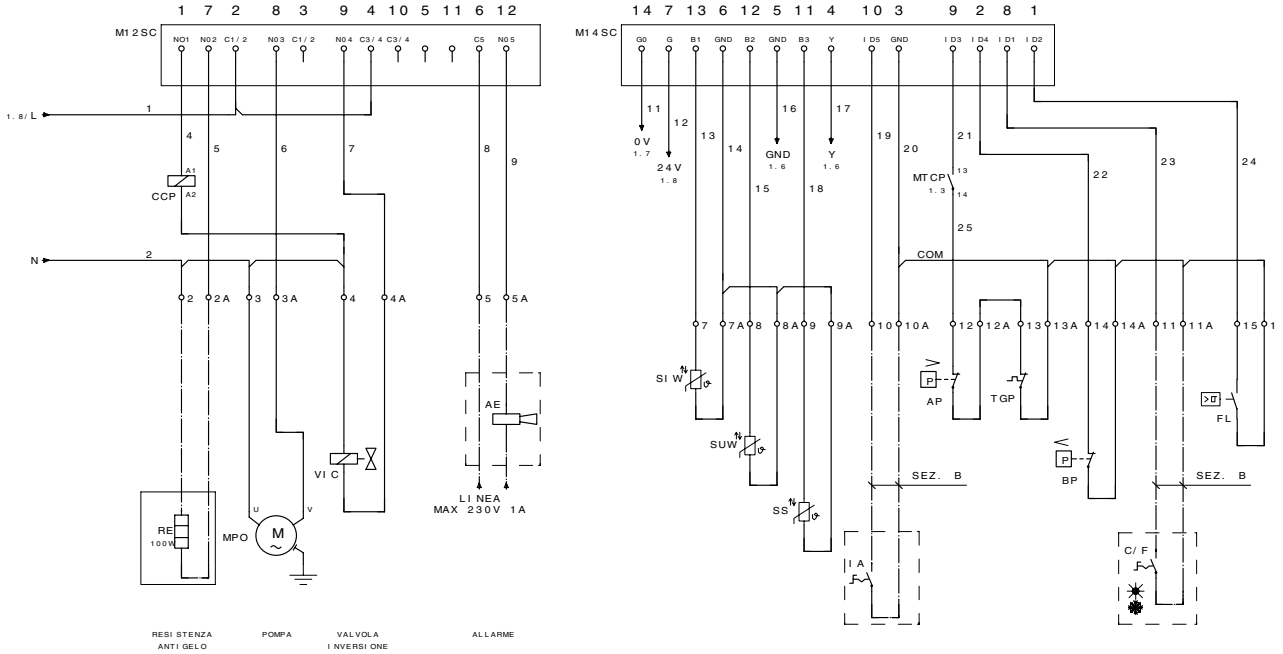
Conexiones cargas

- **HE 020H - 025H U / HE 020H - 025H B**



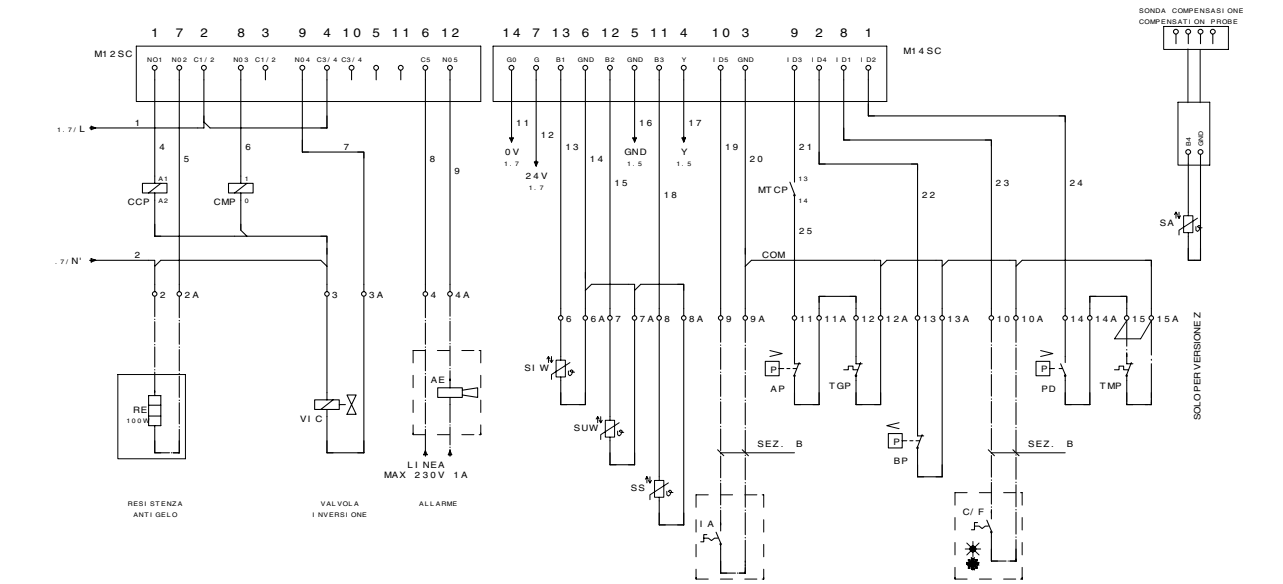
Conexiones cargas

- **HE 030H - 040H - 050H U / HE 030H - 040H - 050H B**



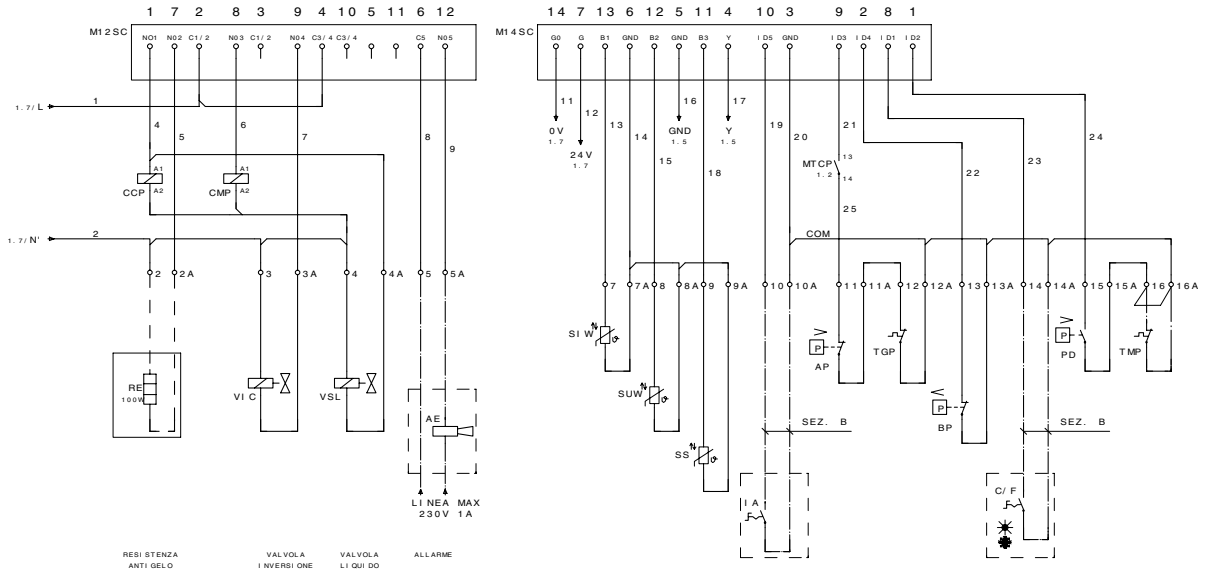
Conexiones cargas

- **HE 080H U / HE 080H B**



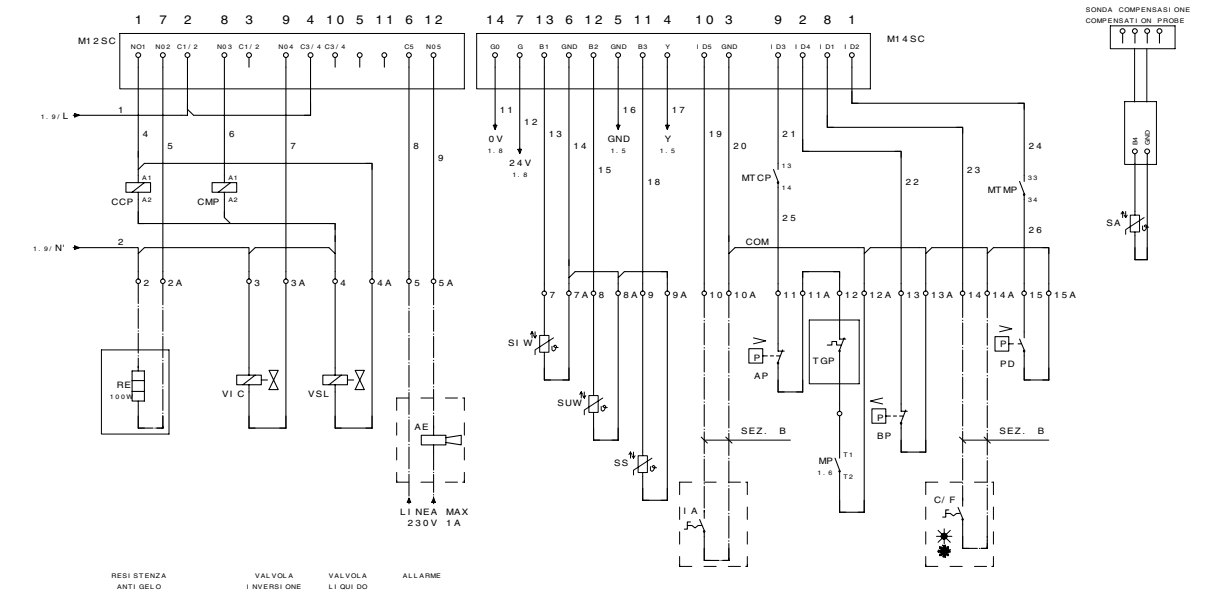
Conexiones cargas

- **HE 090H U / HE 090H B**



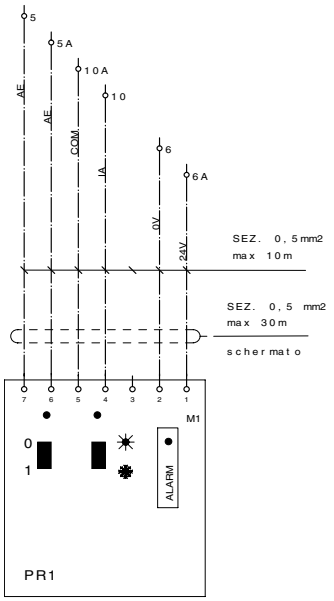
Conexiones cargas

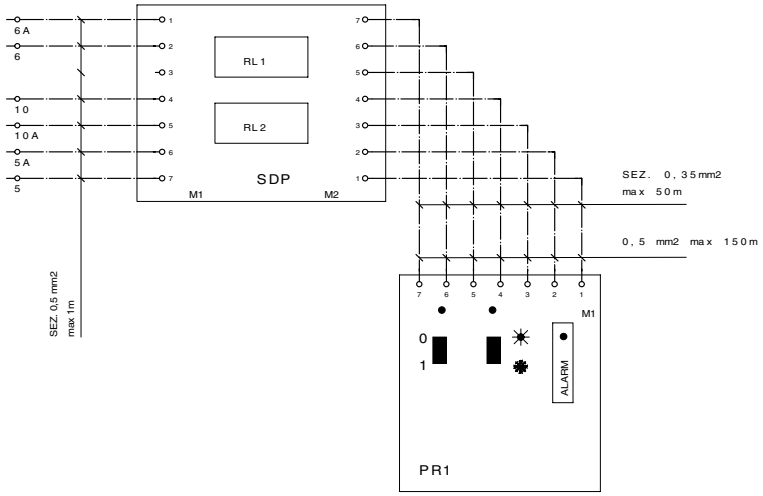
- **HE 100H - 150H - 200H U / HE 100H - 150H - 200H B**



Control a distancia

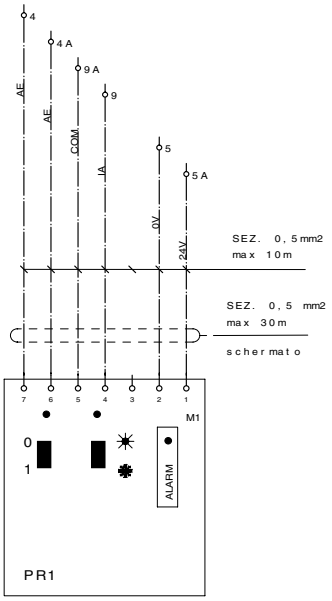
- **HE 020 - 025 U / HE 020 - 025 B (monofásico 1~230V-50Hz)**

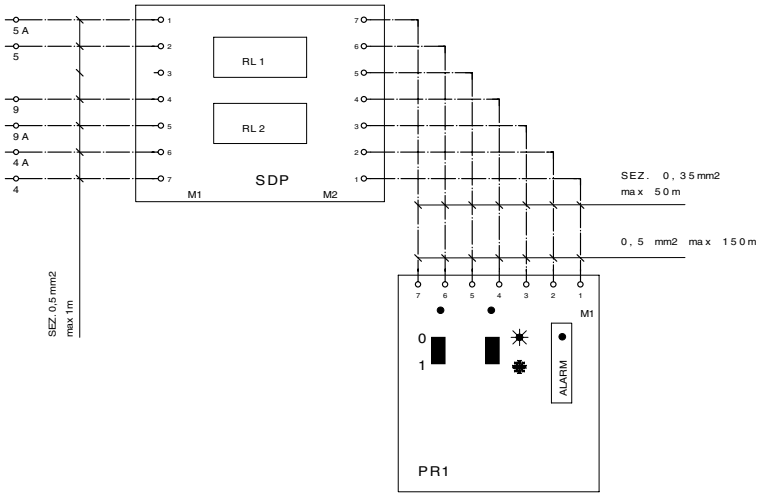




Control a distancia

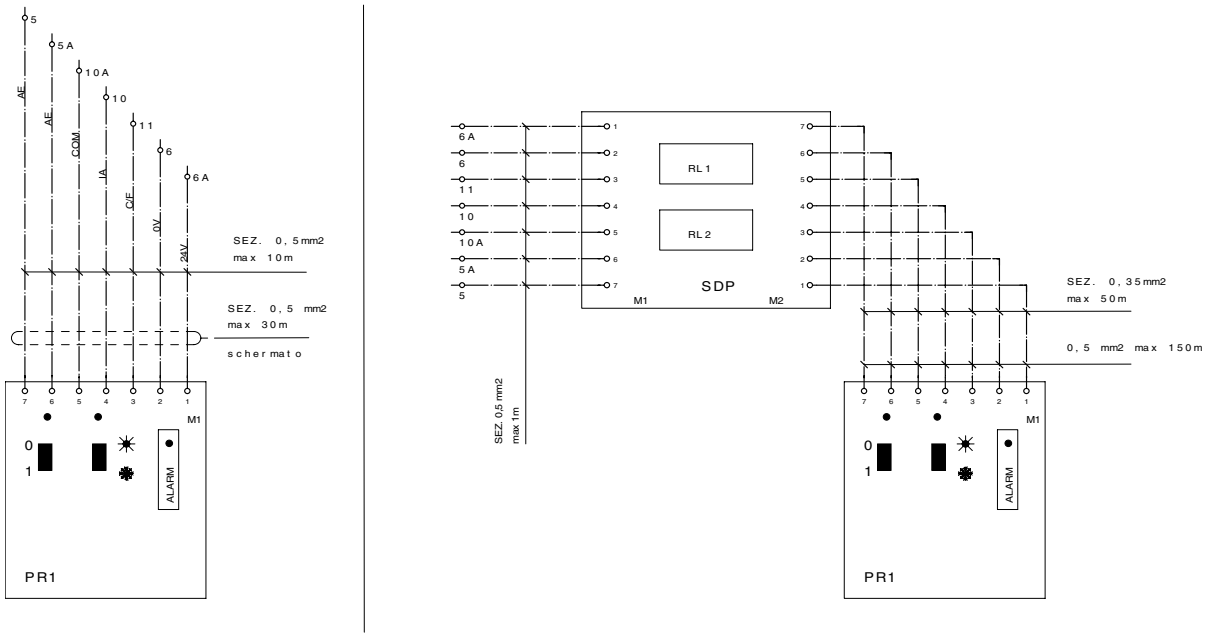
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B (monofásico 1~230V-50Hz)**





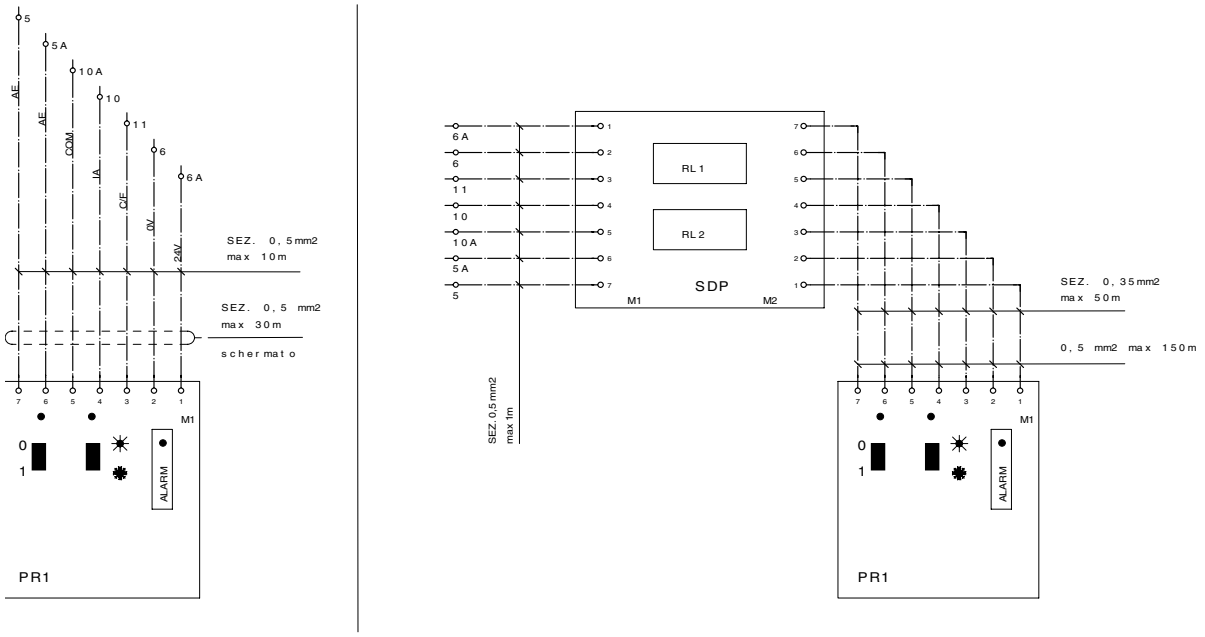
Control a distancia

- **HE 020H - 025H U / HE 020H - 025H B (monofásico 1~230V-50Hz)**



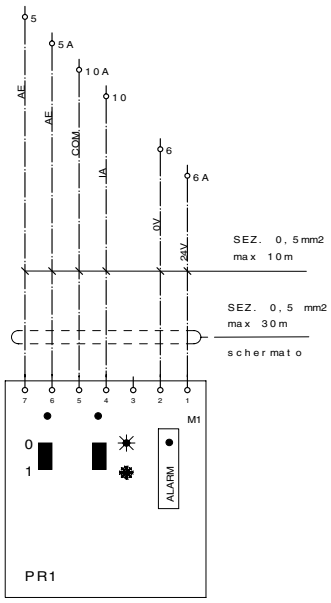
Control a distancia

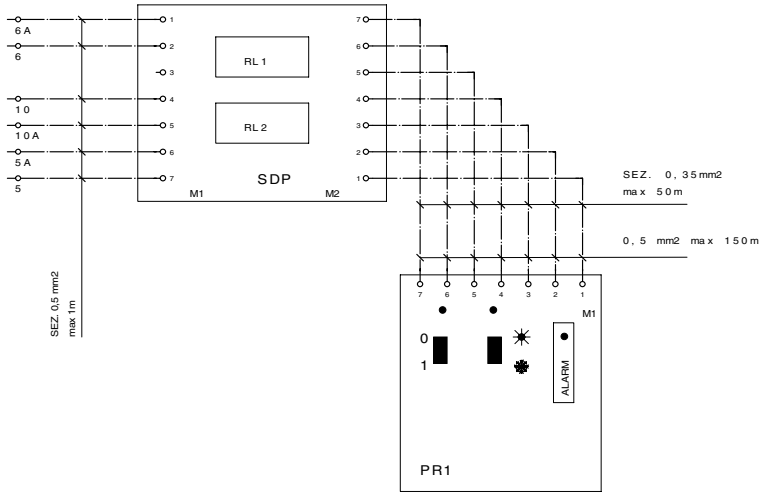
- **HE 030H - 040H U / HE 030H - 040H B (monofásico 1~230V-50Hz)**



Control a distancia

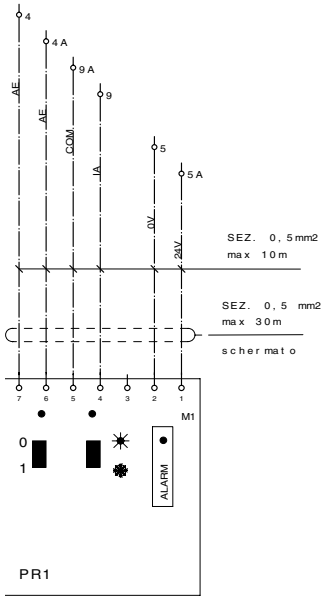
- **HE 020 U / HE 020 B**

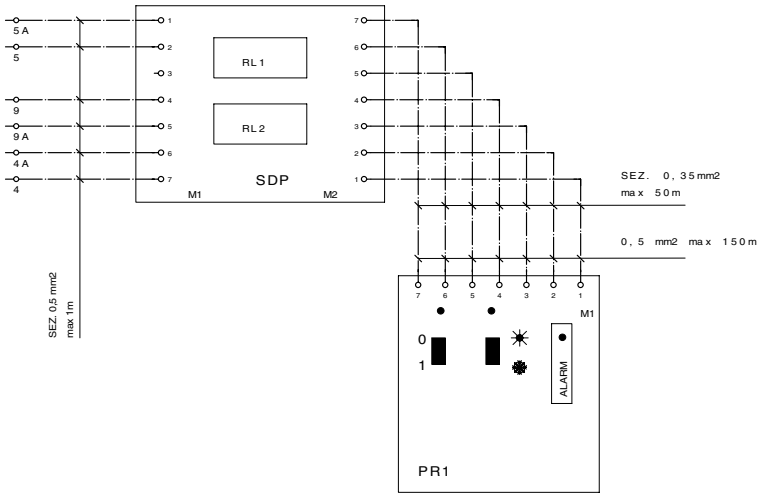




Control a distancia

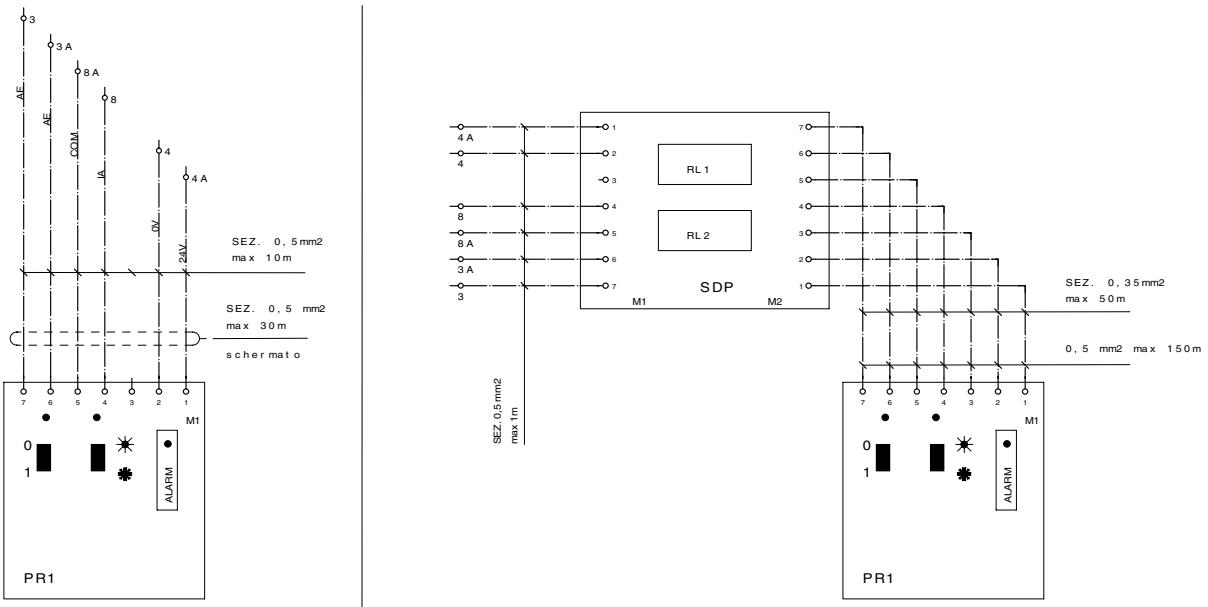
- **HE 030 - 040 - 050 U / HE 030 - 040 - 050 B**





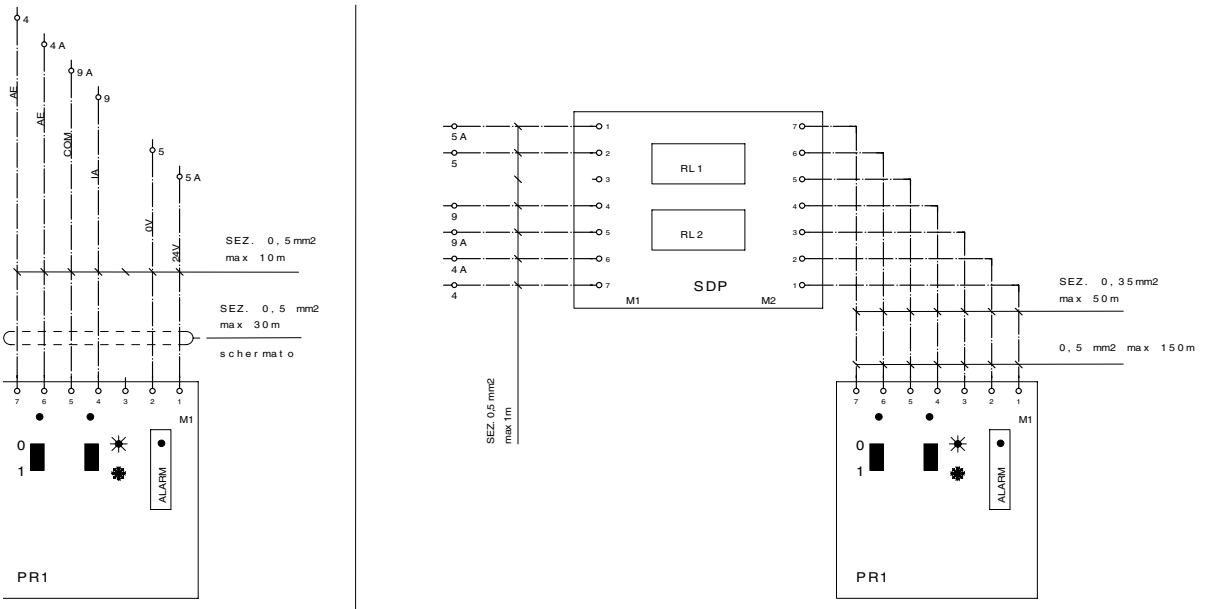
Control a distancia

- **HE 080 U / HE 080 B**



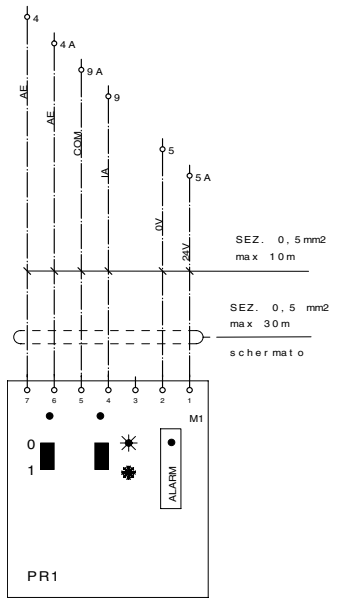
Control a distancia

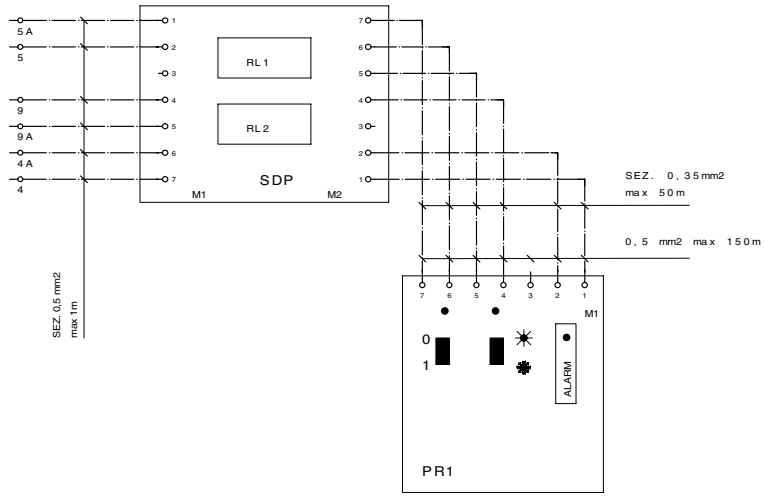
- **HE 090 U / HE 090 B**



Control a distancia

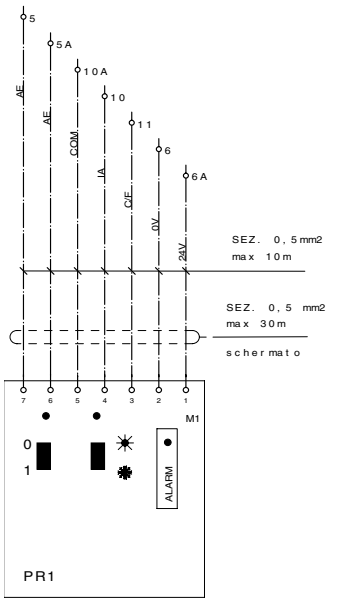
- **HE 100 - 150 - 200 U / HE 100 - 150 - 200 B**

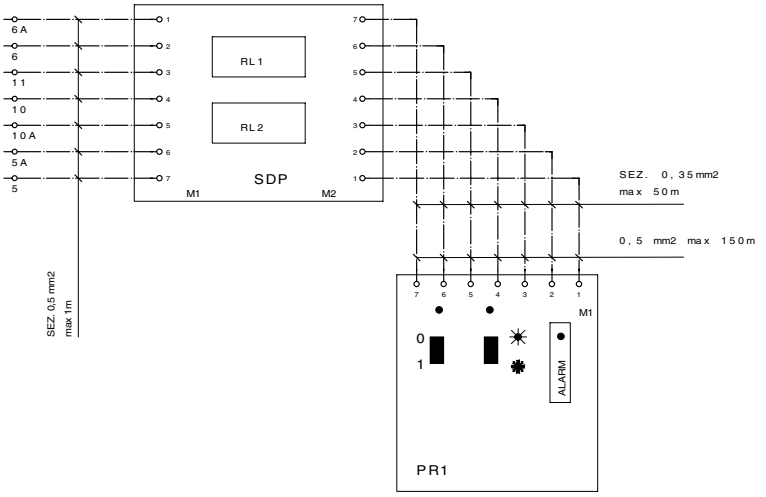




Control a distancia

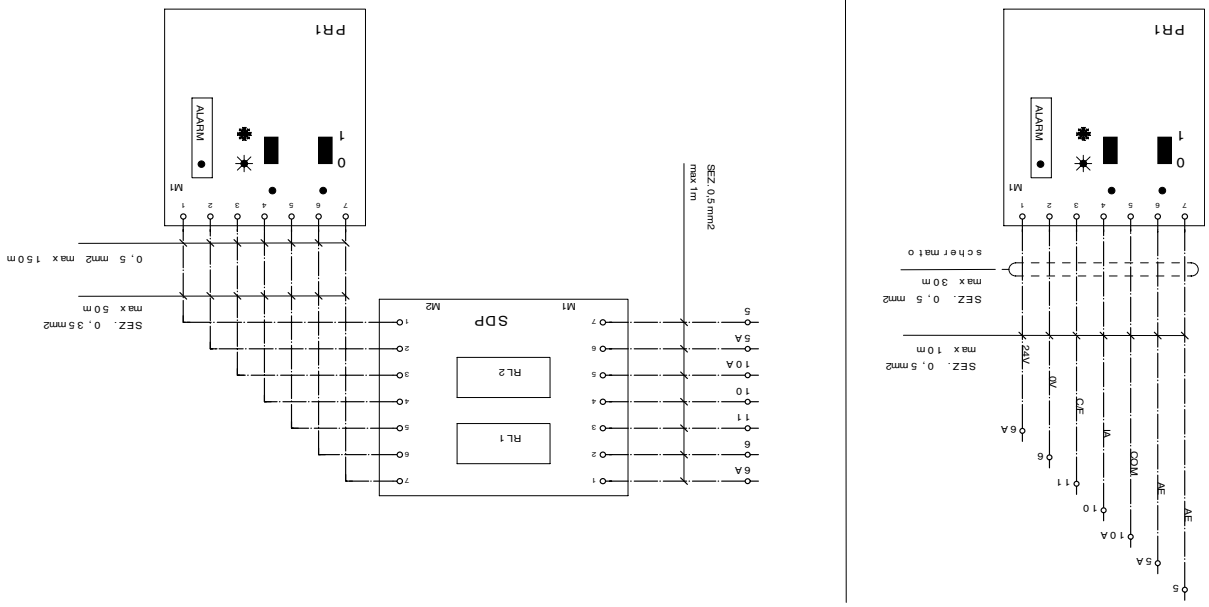
- **HE 020H - 025H U / HE 020H - 025H B**





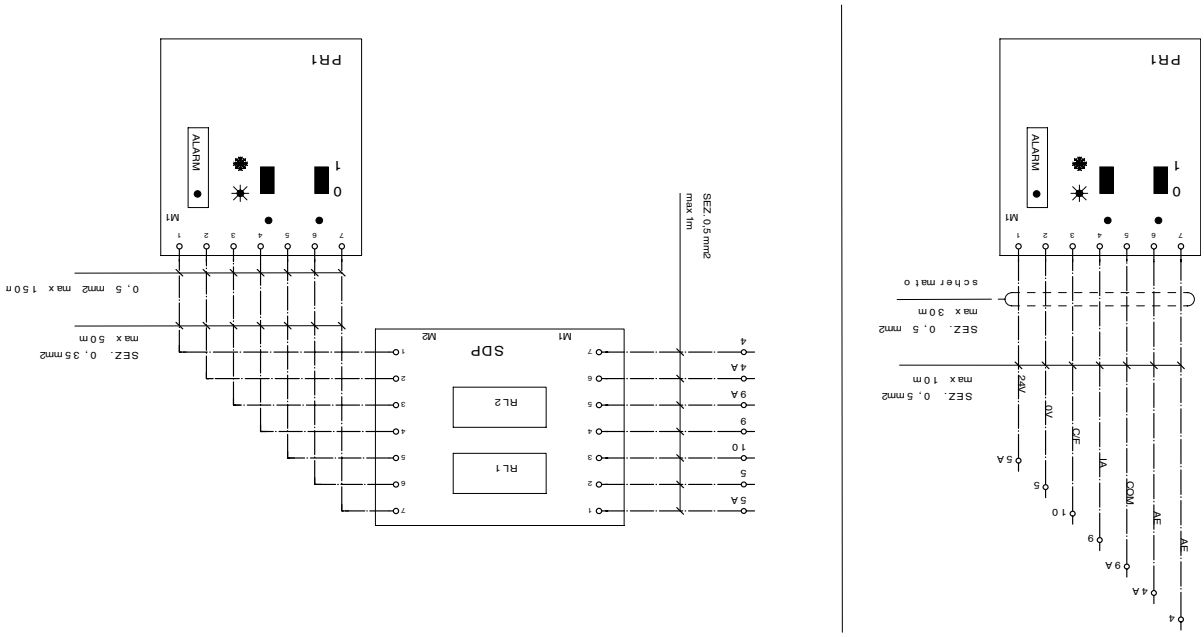
Control a distancia

- **HE 30H - 040H - 050H U / HE 030H - 040H - 200 B**



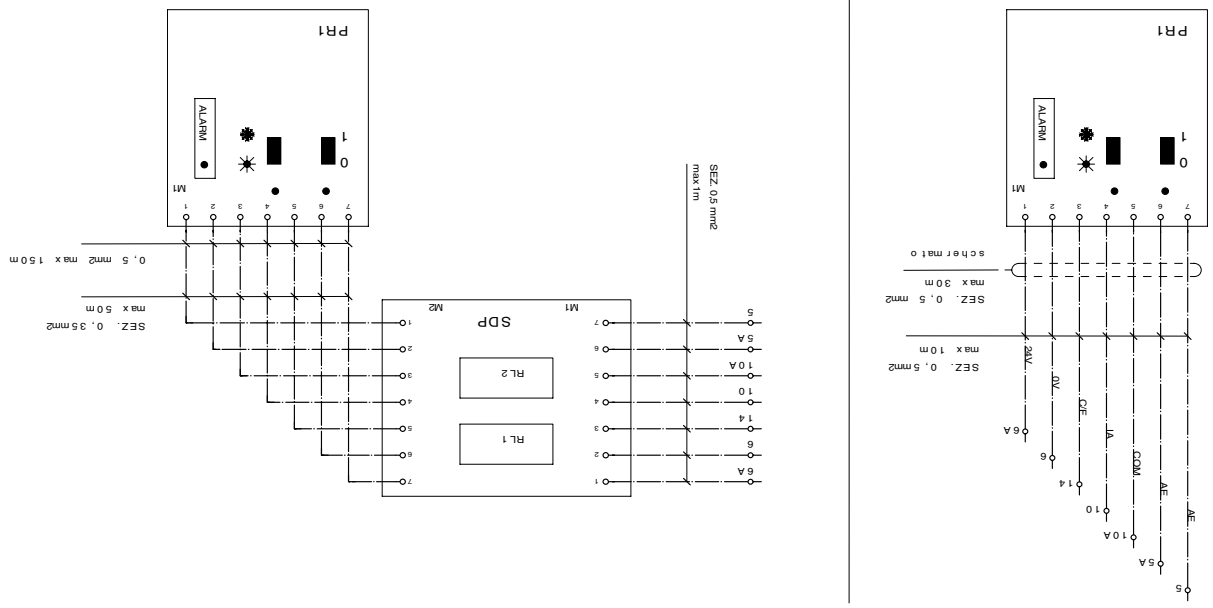
Control a distancia

- **HE 080H U / HE 080H B**



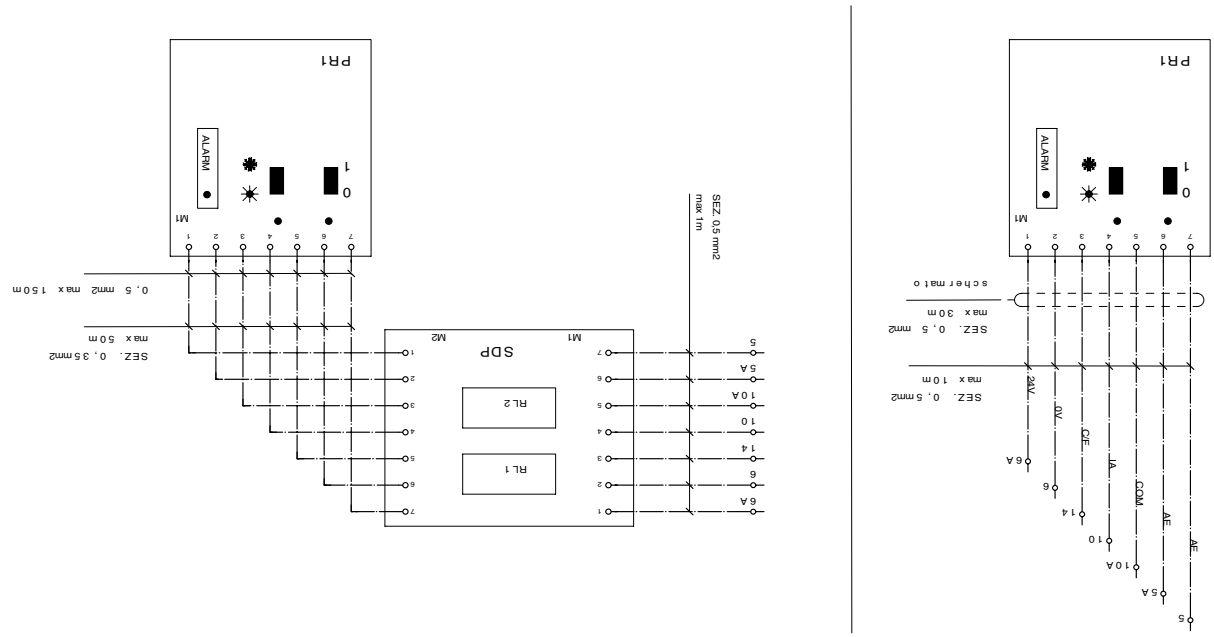
Control a distancia

- **HE 090H U / HE 090H B**



Control a distancia

- **HE 100H - 150H - 200H U / HE 100H - 150H - 200H B**



AERMEC S.p.A.
37040 Bevilacqua (VR) - Italy
Via Roma, 44 - Tel. (+39) 0442 633111
Telefax (+39) 0442 93730 – (+39) 0442 93566
www.aermec.com

Los datos técnicos contenidos en este documento no son vinculantes. AERMEC se reserva la facultad de aportar, en cualquier momento, todas las modificaciones consideradas necesarias para la mejora del producto.

The technical data in the following documentation are not binding. Aermec reserves the right to make all the modifications considered necessary for improving the product at any time.