

**INSTALLATION INSTRUCTIONS** 

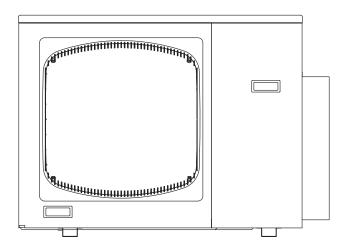
ISTRUZIONI D'INSTALLAZIONE IT

**NOTICE D'INSTALLATION** 

FR

**EN** 

## AEI1G65EMX AEI1G65EMX3PH



Split air conditioner system Condizionatore d'aria split system Climatiseur split

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**EN** 

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### REGULATION (EU) No. 517/2014 - F-GAS

The unit contains R410A, a fluorinated greenhouse gas with a global warming potential (GWP) of 2088. Do not release R410A into the atmosphere.

R410A: 2.70 kg / 5.64 t CO2 - eq

#### PRODUCT INFORMATION

The year of production of this unit is indicated in the Nameplate: s/n: \( \bar{Y}00000RR \)

Year of production example: 0=2020 1=2021

Serial number

#### **IMPORTANT!**

#### Please read before installation

This air conditioning system meets strict safety and operating standards.

For the installer or service person, it is important to install or service the system so that it operates safely and efficiently.

#### For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.
- •The unit must be supplied with a dedicated electrical line.



WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

These instructions are all you need for most installation sites and maintenance conditions.

If you require help for a special problem, contact our sale/service outlet or your certified dealer for additional instructions.

### In case of improper installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

#### SPECIAL PRECAUTIONS

• During installation, connect before the refrigerant system and then the wiring one; proceed in the reverse orden when removing the units.

WARNING

# ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIANS SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked, to ensure the grounding.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring.
  - Improper connections and inadequate grounding can cause accidental injury and death.
- Ground the unit following local electrical codes.
- The Yellow/Green wire cannot be used for any connection different from the ground connection.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.
- Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.
- Do not use multi-core cable when wiring the power supply and control lines. Use separate cables for each type of line

#### When transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminium fins on the air conditioner can cut your fingers.

### When installing...

### ... In a ceiling or wall

Make sure the ceiling/wall is strong enough to hold the unit-weight. It may be necessary to build a strong wooden or metal frame to provide added support.

## ... In a room

Properly insulate any tubing run inside a room to prevent "sweating", which can cause dripping and water damage to walls and floors.

#### ... In moist or uneven locations

Use a raised concrete base to provide a solid level foundation for the outdoor unit.

This prevents damage and abnormal vibrations.

#### ... In area with strong winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

#### ... In a snowy area

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

### When connecting refrigerant tubing

- Observe the information on the tubing length.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them; screw by hand and then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

#### NOTE:

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion, the refrigerant tubing for your particular model is specified as narrow tube for liquid, wide tube for gas.

## When servicing

- Turn the power OFF at the main power board before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after the work, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.
- Ventilate the room during the installation or testing the refrigeration system; make sure that, after the installation, no gas leaks are present, because this could produce toxic gas and dangerous if in contact with flames or heat-sources.

## 1 - INSTALLATION SITE SELECTION

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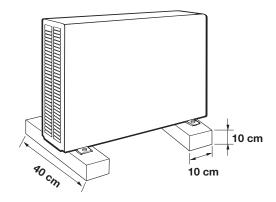
### **AVOID**

- Heat sources, exhaust fans.
- Direct sunlight.
- Damp, humid or uneven locations.
- To make holes in areas where electrical wiring or conduits are located.

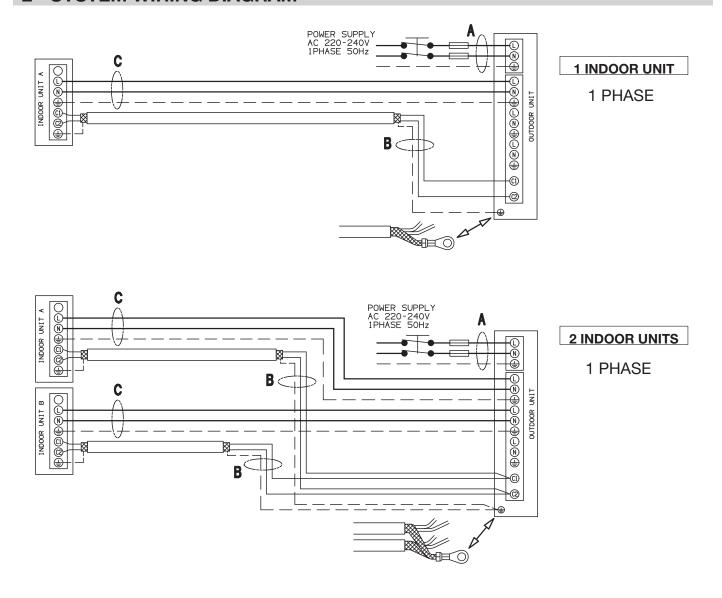
#### DO

- Choose places as cool as possible and well ventilated.
- use lug bolts or equal to bolt down the unit, reducing vibration and noise.

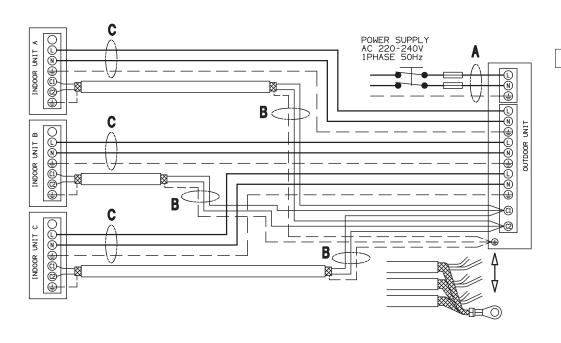
Provide a solid base for outdoor unit raised from the ground level. Fix unit to base using 4 anchor bolts.



## 2 - SYSTEM WIRING DIAGRAM

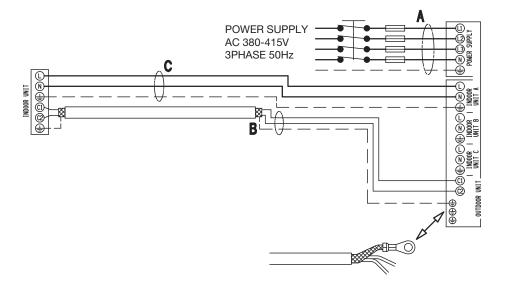






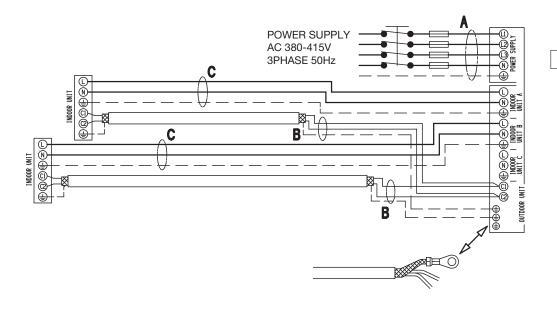
3 INDOOR UNITS

1 PHASE



1 INDOOR UNIT

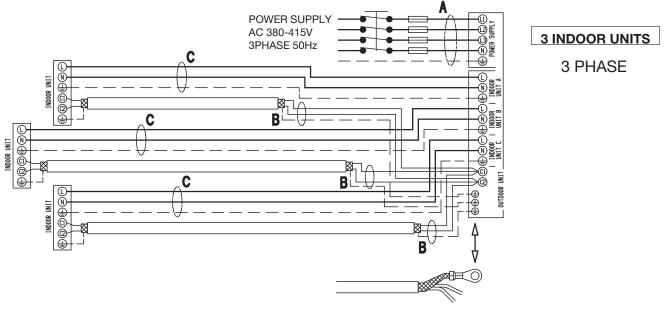
3 PHASE



2 INDOOR UNITS

3 PHASE

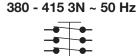
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DELAYED FUSE

220 - 240 V ~ 50 Hz





Main switch for disconnection from the supply line must have a contact separation in all poles that provides full disconnection under category III overvoltage conditions.

## 3 - WIRES' SIZE AND DELAYED FUSE

MODEL	Α	В	С	Max. electric input	
WIODEL	S ( mm <sup>2</sup> )	S ( mm <sup>2</sup> )	S ( mm²)	kW / A	
AEI1G65EMX	0.5	0.75	1 5	2,8 / 12,7	16 A
AEI1G65EMX3PH	2,5	0,75	1,5	2,8 / 4,7	12,5 A

#### Supply power wire A:

Multipolar electric wire; the size of the suggested electric wire is showed on the table. The wire must be Mod. H07RN-F (according to CEI 20-19 CENELEC HD 22). Make sure the length of the conductors between the fixing point and the terminals allows the straining of the conductors L, N before that of the grounding.

#### Connecting wire B (SHIELDED):

Bipolar electric shielded wire; the size of the suggested electric wire is showed on the table. The wires have not to be lighter than Mod. H05VVC4V5-K (according to CEI 20-20 CENELEC HD21).

## Connecting wire C (with ground conductor):

Multipolar electric wire; the size of the suggested electric wire is showed on the table. The wires have not to be lighter than Mod. H07RN-F (according to CEI 20-19 CENELEC HD22). Make sure the length of the conductors between the fixing point and the terminals allows the straining of the conductors L, N before that of the grounding.

## 4 - ADDITIONAL MATERIAL REQUIRED FOR INSTALLATION (NOT SUPPLIED)

• Deoxidized annealed copper tube for refrigerant tubing connecting the units of the system; it has to be insulated with foamed polyethylene (min. thickness 8mm).

INDOOR UNIT SIZE	NARRO!	W TUBE	LARGE	TUBE
INDOOR UNIT SIZE	OUTER DIAMETER	MIN. THICKNESS	OUTER DIAMETER	MIN. THICKNESS
А	6,35 mm	0,8 mm	9,52 mm	0,8 mm
B - C	6,35 mm	0,8 mm	12,7 mm	0,8 mm

- PVC pipe for condensate drain pipe (ø int.18mm) in length suitable to let the condensate flow into the outside drainage.
- Anti-freeze oil for flare connections (about 30g.).
- Electric wire: use insulated copper wires of size and length as shown at paragraph "WIRES' SIZE AND DELAYED FUSE".

## 5 - OPERATING LIMITS AND MODELS COMBINATION

### **OPERATING LIMITS**

■ Cooling Maximum conditions

Outdoor temperature : 43°C D.B.

Room temperature : 32°C D.B. / 23°C W.B.

■ Cooling Minimum conditions

Outdoor temperature : -15°C D.B.

Room temperature : 10°C D.B. / 6°C W.B.

■ Heating Maximum conditions

Outdoor temperature : 24°C D.B. / 18°C W.B.

Room temperature : 27°C D.B.

■ Heating Minimum conditions

Outdoor temperature : -15°C D.B. Room temperature : 5°C D.B.

## Outdoor - Indoor unit combination table - SYSTEM CONFIGURATION



System	Outdoor	Outdoor Combination Indoor unit port					
type	unit	n.	а	b	С	Emix tank	
mono	G65	1	B (A2W)			Х	

## **Outdoor - Indoor unit combination table - SYSTEM CONFIGURATION**





System	Outdoor	Combination	Ind	rt	Emix	
type	unit	n.	а	b	С	Emix tank
dual	G65	2	B (A2W)	В		Х
trial	G65	3	B (A2W)	А	А	Х

## **Outdoor - Indoor unit combination table - SYSTEM CONFIGURATION**



System	Outdoor	Combination	Combination Indoor unit port					
type	unit	n.	а	b	С	Emix tank		
mono	G65	4	В			Х		
dual	G65	5	А	Α		Х		
uuai	G05	6	В	А		Х		
trial	G65	7	А	А	А			

A - B = A2A indoor unit size (see catalogue)

**B** (A2W) = A2W indoor unit size (see catalogue)

**A2A** = air to air models **A2W** = air to water models

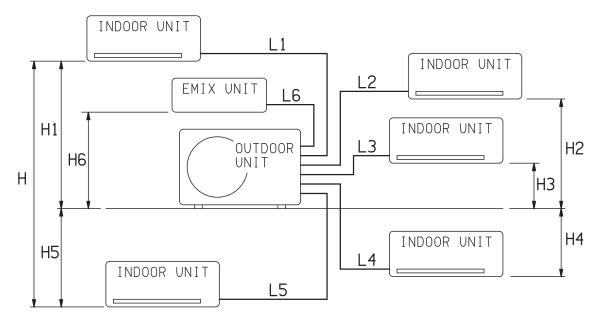
**X** = combination with Emix/Emix tank is possible

**Power Supply:** EMX = 220 - 240 V  $\sim$  50 Hz EMX3PH = 380 - 415 3N  $\sim$  50 Hz

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## 6 - TUBING LENGTH AND ELEVATION DIFFERENCE LIMITS

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		AT SHI	PMENT	ADDITIONAL REFRIGERANT		
		L Tot. (m)	L n (m)	L Tot. (m)	L n (m)	
	MONO SPLIT	20	-	35	-	
AEI1G65	DUAL SPLIT	30	25	45	30	
	TRIAL SPLIT	30	20	45	25	

L Tot. = Total tubing length (L1 + L2 + L3...)

Maximum tubing length of a single indoor unit (n=1,2,3...)

REQUIRED AMOUNT OF ADDITIONAL REFRIGERANT

For tubing 1/4 " - 3/8" = 15g/m For tubing 1/4 " - 1/2" = 20g/m

For tubing Emix (3/8") = 15g/m

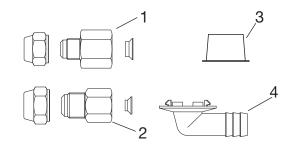
LIMIT OF ELEVATION DIFFERENCE - OUTDOOR UNIT/INDOOR UNIT: 10m (H1, H2, H3, H4, H5, H6)

LIMIT OF ELEVATION DIFFERENCE BETWEEN INDOOR UNITS: 5m (H)

No additional charge of compressor oil is necessary.

## 7 - ACCESSORIES SUPPLIED WITH THE UNIT

- 1. REDUCTION 1/2F 3/8M + PIPE UNION 3/8
- REDUCTION 3/8F 1/2M + PIPE UNION 1/2
- **CONICAL COVER**
- DRAIN TUBE



## 8 - TOOLS REQUIRED FOR INSTALLATION (NOT SUPPLIED)

1.Standard screwdriver 2. Phillips head screwdriver

3. Knife or wire stripper

4. Tape measure 5.Level

6. Sabre saw or key hole saw

7. Hacksaw

8. Core bits ø 5

9. Hammer

10.Drill

11.Tube cutter

12. Tube flaring tool

13. Torque wrench

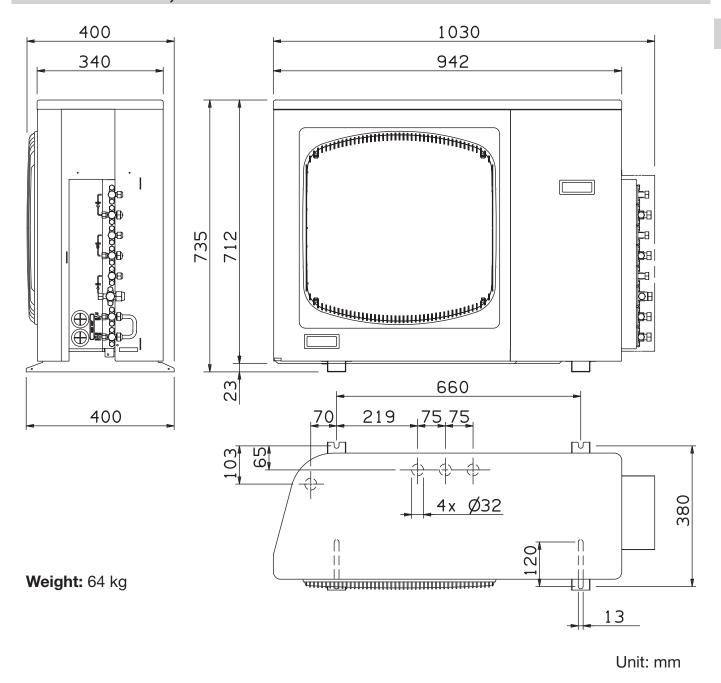
14. Adjustable wrench

15. Reamer (for reburring)

16.Hexagonal key

## 9 - DIMENSIONS, WEIGHT AND TUBES CONNECTION



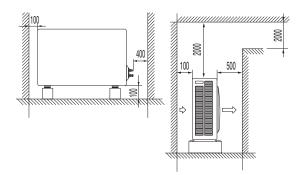


For TUBES CONNECTION see section at the end of this manual (page 20).

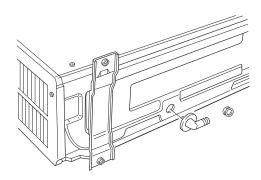
## 10 - INSTALLATION PROCEDURE

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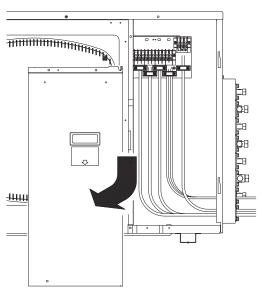
Minimum operation and maintenance area.



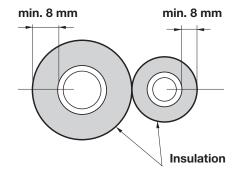
Heat pump version.
Use, if necessary, the accessories supplied.



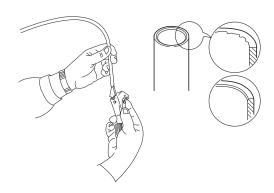
Remove the side cover, then connect the power line and interconnecting wires to outdoor unit on the terminal strip and secure them with clamps.



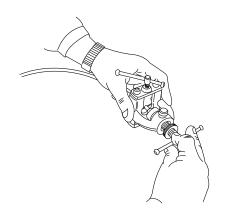
Use insulated copper tube. Cut approximate 30-50 cm. longer than actual distance between units.



Remove burrs at the ends of the copper tubes. Hold the tube end downward and be sure that no dirt falls into the tube.



F Insert flare nuts removed from the units, than make a flare at the end of copper tubes.



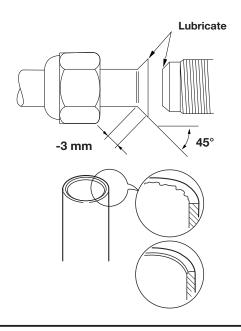
A good flare has the following characteristics:

- inside surface is glossy and smooth

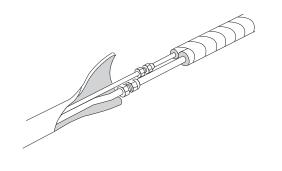
- edge is smooth

- tapered sides are of uniform length.

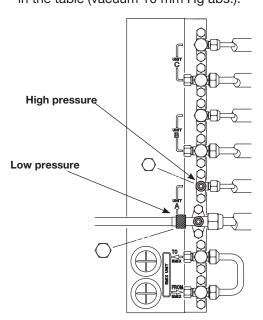
Apply refrigerant lubricant to the matching surface of the flare and union before connecting them together.



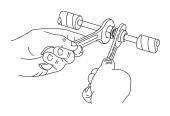
Insulate tubes leaving connections uncovered for leak test.



Connect the indoor units using, if required, the adapter on the low pressure valves. Remove caps from service valves of both tubes. Then start vacuum pump and let it run for the time indicated in the table (vacuum 10 mm Hg abs.).

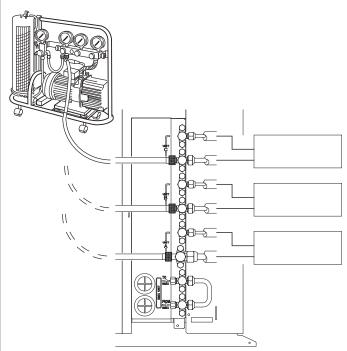


Tighten connections using a spanner and a torque wrench; apply specified torque (see table).



TUBE DIA.	TIGHTENING TORQUE
6,35 mm (1/4")	Approx. 150 – 200 kgcm (15 - 20 Nm)
9,52 mm (3/8")	Approx. 350 – 400 kgcm (30 - 40 Nm)
12,7 mm (1/2")	Approx. 500 – 550 kgcm (50 - 55 Nm)

Air purging of internal unit and refrigerant tubes. Connect the vacuum pump to the outside unit as shown in the figure. Air and moisture have undesiderable effects on the refrigerant system.



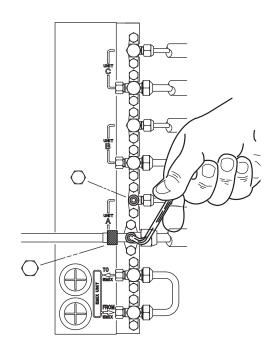
VACUUM PUMP CAPACITY 100 ℓ /h			
Tubing length: less than 10 m	Tubing length longer than 10 m		
10 min. or more	15 min. or more		

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With vacuum pump still running close the low pressure knob on valve manifold. Then stop vacuum pump. Using an hexagonal key, open the service valve on small tube, then close it after 10 seconds. Check tightness of all joints using liquid soap.

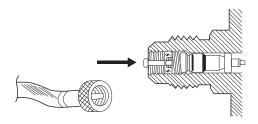
Turn the service valves stem in counterclockwise to fully open the valves. At this point vacuum pump flexible hose can be disconnected. Replace bonnet and flare nut, tighten them to 200 kg/cm with a torque wrench.

Repeat what described from K to L for the second and third circuit. The indoor units have to be marked as "indoor unit circuit A, B and C". Be sure that the idraulic connection to indoor unit circuit A, B or C corresponds to its own electrical connection.



## 11 - BASIC FUNCTIONS OF THE SERVICE VALVES

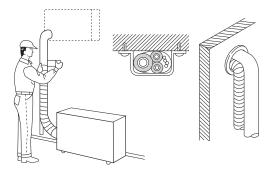
Action	Narrow tube service valve (2-way)	Wide tube service valve (3-way)
Shipping	CLOSED	Valve cap Stem
Operating and test running the air conditioner	OPEN	
Measuring pressure and gas charging	OPEN THE TOTAL PROPERTY OF THE TOTAL PROPERT	
Air purging with a vacuum pump	CLOSED	*



The service port on the wide tube service valve uses a Schrader core valve to access the refrigerant system. Therefore, be sure to use a hose connector which has a push-pin inside.



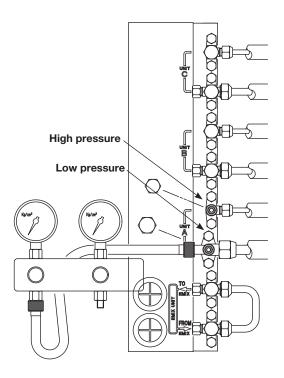
Complete insulation of refrigerant tubes; wrap with armoning tape. Fix and support tubes with brackets. Seal hole in the wall, if necessary.



## 12 - PUMP DOWN PROCEDURE

Pump down means collecting all refrigerant gas in the system back into the outdoor unit without losing gas. Pump down is used when the unit is to be moved of before servicing the refrigerant circuit.

Connect a valve manifold to the charge port on a wide tube service valve, partially open it (1/4 turn). Let the air purge from the manifold. Fully close the narrow tube service valves all the way.

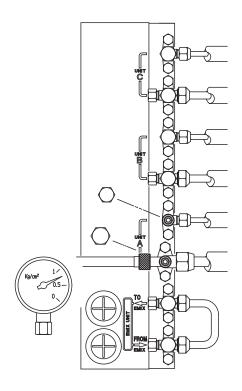


Turn on the unit's operating switch and start cooling operation. When the low-pressure gauge reading falls to 1 to 0,5 Kg/cm², close the wide tube valve and then quickly turn off the unit.

Remove the valve manifold.

Repeat the operations for each circuit

At that time, PUMP DOWN has been completed and all refrigerant gas will have been collected in the outdoor unit.



## 13 - OUTDOOR/INDOOR UNIT REFRIGERANT CIRCUIT ADDRESS

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CAUTION

BEFORE STARTING THE SYSTEM, IT IS NECESSARY TO SET THE REFRIGERANT CIRCUIT ADDRESSES.

THE SETTING HAS TO BE MADE ON THE INDOOR UNITS AND FOR EACH INDOOR UNIT OF THE SYSTEM.

FOR THE SETTING, SEE THE INSTALLATION MANUAL OF THE SPECIFIC INDOOR UNIT.

## **ADDRESSING EXAMPLE**

OUTDOOR UNIT

INDOOR UNITS

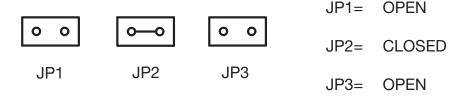
ADDRESS C

ADDRESS B

ADDRESS A

## 14 - JUMPERS SETTING (CONTROL BOARD)

## **FACTORY SETTING**



JP1

Internal use. Do not change factory setting. If changed, the unit will not run properly.

<u>JP2</u>

Defrost type selection:

CLOSED: the unit will automatically select between reverse cycle defrost and non-stop operation defrost.

OPEN: the unit will run only reverse cycle defrost.

JP3

Heating only option selection:

OPEN: the unit can run in heating and cooling mode.

CLOSED: the unit will run in heating mode only.



Disconnect the power before changing the setting.





### **CAUTION**

Disconnect power and wait that all LEDs are OFF before servicing on the electrical box.

X LED OFF

O LED ON

COD.		LEDs	ON BO	DARD		DESCRIPTION
101	₩	₩	₩	₩	Х	TEST MODE ERROR
100	₩.	Х	₩	Х	₩	WRONG OUTDOOR-INDOOR UNITS COMBINATION
19	₩.	Х	-}#-	₩.	₩	COMPRESSOR TOP SHELL PROBE DAMAGED OR NOT CONNECTED
16	₩	Х	Х	₩	₩	NTTC PROBE DAMAGED OR NOT CONNECTED
15	Х	-}≱-	Х	₩	₩	WTTC PROBE DAMAGED OR NOT CONNECTED
14	₩	Х	₩	Х	Х	NTTB PROBE DAMAGED OR NOT CONNECTED
13	Х	₩	Х	<b>₩</b>	Х	WTTB PROBE DAMAGED OR NOT CONNECTED
12	Х	Х	<b>₩</b>	Х	₩	NTTA PROBE DAMAGED OR NOT CONNECTED
11	Х	Х	Х	₩	Х	WTTA PROBE DAMAGED OR NOT CONNECTED
10	Х	Х	₩	Х	Χ	CDT PROBE DAMAGED OR NOT CONNECTED
9	Х	₩	Х	Х	Х	OAT PROBE DAMAGED OR NOT CONNECTED
8	*	Х	Х	Х	Х	OCT PROBE DAMAGED OR NOT CONNECTED
7	Х	Х	Х	₩	₩	COMPRESSOR ERROR
6	Х	Х	₩	₩	Х	PCB OVERTEMPERATURE (COMPRESSOR MODULE)
5	Х	₩	₩	Х	Х	FAN MOTOR ERROR
4	₩	₩	Х	Х	Х	PCB OVERTEMPERATURE (FAN MOTOR MODULE)
3	Х	Х	₩	<b>₩</b>	*	PFC PROTECTION
2	Х	<b>₩</b>	<b>⋡</b>	<b>₩</b>	Х	ERROR ON INDOOR UNITS
1	₩	<b>₩</b>	<b>⋡</b>	Х	Х	COMMUNICATION ERROR WITH INDOOR UNITS
	DL5	DL4	DL3	DL2	DL1	

## **LEGENDA**

PFC = Power factor corrector (\*)

OCT = Outdoor coil temperature

OAT = Outdoor air temperature

CDT = Compressor discharge temperature

WTTA = Wide tube temperature Port A

NTTA = Narrow tube temperature Port A

WTTB = Wide tube temperature Port B NTTB = Narrow tube temperature Port B

WTTC = Wide tube temperature Port C

NTTC = Narrow tube temperature Port C

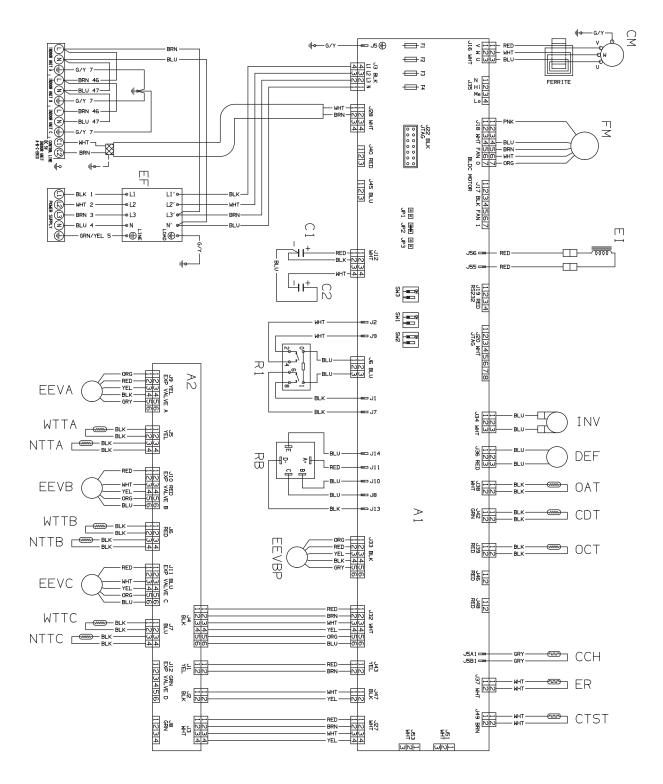
Automatic protection against power supply disturbances and instabilities.

### Unit working properly:

Х	Х	Χ	0	0	IF AT LEAST ONE INDOOR UNIT IS ON
Х	Χ	Χ	Χ	0	IF ALL INDOOR UNITS ARE OFF
DL5	DL4	DL3	DL2	DL1	DESCRIPTION

O DL6 (RED) ON: HIGH VOLTAGE PRESENT (NORMAL OPERATION) ONLY FOR THREE-PHASE MODELS

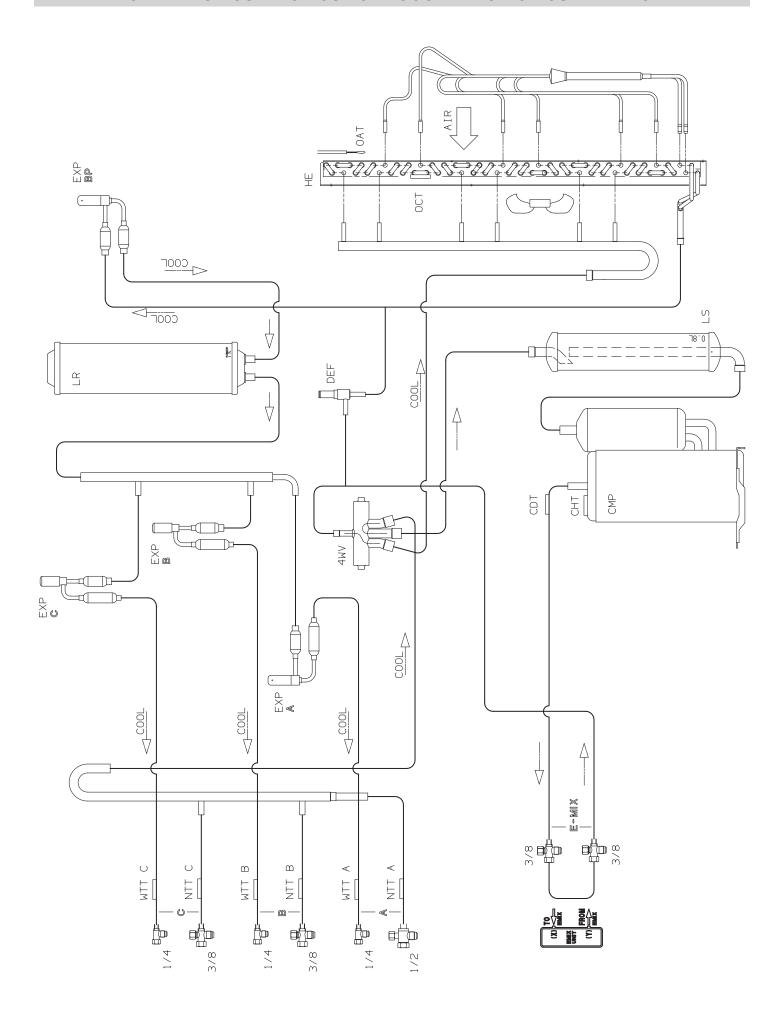
## 16 - ELECTRICAL WIRING DIAGRAM • SCHEMA ELETTRICO • SCHÉMA ÉLECTRIQUE



COLOURS	EG	I	F	D	E	Р
BLK	BLACK	NERO	NOIR	SCHWARZ	NEGRO	PRETO
BLU	BLUE	BLU	BLEU	BLAU	AZUL	AZUL
BRN	BROWN	MARRONE	MARRON	BRAUN	MARRÓN	CASTANHO
GRN / YEL - G / Y	GREEN / YELLOW	VERDE / GIALLO	VERT / JAUNE	GRÜN / GELB	VERDE / AMARILLO	VERDE / AMARELO
GRY	GREY	GRIGIO	GRIS	GRAU	GRIS	CINZENTO
ORG	ORANGE	ARANCIONE	ORANGE	ORANGE	NARANJA	COR-DE-LARANJA
PNK	PINK	ROSA	ROSE	ROSA	ROSA	COR-DE-ROSA
RED	RED	ROSSO	ROUGE	ROT	ROJO	ENCARNADO
VLT	VIOLET	VIOLA	VIOLET	VIOLETT	VIOLETA	VIOLETA
WHT	WHITE	BIANCO	BLANC	WEISS	BLANCO	BRANCO
YEL	YELLOW	GIALLO	JAUNE	GELB	AMARILLO	AMARELO

SYMB0L	EG	IT	FR
A1	CONTROL BOARD	SCHEDA CONTROLLO	CARTE DE COMMANDE
A2	2V EXPANSION BOARD	SCHEDA ESPANSIONE 2V	CARTE D'EXPANSION 2V
A3	4V EXPANSION BOARD	SCHEDA ESPANSIONE 4V	CARTE D'EXPANSION 4V
С	DC BUS 3PH CONDERSER	CONDENSATORE DC BUS 3PH	CONDENSATEUR DC BUS 3PH
CCH1	COMPRESSOR CRANK CASE HEATER	RESISTENZA COMPRESSORE	RESISTANCE DU COMPRESSEUR
CCH2	OIL SEPARATOR CRANK CASE HEATER	RESISTENZA SEPARATORE OLIO	RESISTANCE DU SEPARATEUR D'HUILE
CDT	COMPRESSOR DISCHARGE SENSOR	SENSORE SCARICO COMPRESSORE	CAPTEUR DECHARGE COMPRESSEUR
СМ	COMPRESSOR MOTOR	MOTORE COMPRESSORE	MOTEUR DU COMPRESSEUR
EEV	EXPANSION VALVE COIL	BOBINA VALVOLA ESPANSIONE	BOBINE DE LA VANNE D'EXPANSION
EF	EMI FILTER	FITRO EMI	FILTRE EMI
El	EXTERNAL INDUCTOR	INDUTTORE ESTERNO	INDUCTEUR EXTÉRIEUR
ER	EXTERNAL RESISTANCE	RESISTENZA ESTERNA	RESISTANCE EXTÉRIEURE
F	CONTROL BOARD FUSE	FUSIBILE SCHEDA CONTROLLO	FUSIBLE CARTE DE CONTRÔLE
FM1	UPPER FAN MOTOR	MOTORE VENTOLA SUPERIORE	MOTEUR DU VENTILATEUR SUPÉRIOR
FM2	LOWER FAN MOTOR	MOTORE VENTOLA INFERIORE	MOTEUR DU VENTILATEUR INFÉRIOR
CTST	COMPRESSOR TOP SHELL TEMPERATURE	SENSORE TESTA COMPRESSORE	CAPTEUR DE LA TÊTE DU COMPRESSEUR
INV	INVERSION VALVE COIL	BOBINA VALVOLA INVERSIONE	BOBINE DE LA VANNE RÉVERSIBLE
NTT	NARROW TUBE SENSOR	SENSORE TUBO PICCOLO	CAPTEUR DU PETIT TUBE
WTT	WIDE TUBE SENSOR	SENSORE TUBO GRANDE	CAPTEUR DU GROS TUBE
OAT	OUTDOOR AIR SENSOR	SENSORE ARIA ESTERNO	CAPTEUR AIR EXTÉRIEUR
OCT	OUTDOOR COIL SENSOR	SENSORE BATTERIA ESTERNO	CAPTEUR ECHANGEUR DE CHALEUR EXTÉRIEUR
R	DC BUS 3PH RELAY	RELÉ DC BUS 3PH	RELAIS DC BUS 3PH
RB	3PH RECTIFIER BRIDGE	PONTE RETTIFICATORE 3PH	PONTE REDRESSEUR 3PH
LP	LOW PRESSURE SWITCH	INTERRUTTORE BASSA PRESSIONE	INTERRUPTEUR BASSE PRESSION

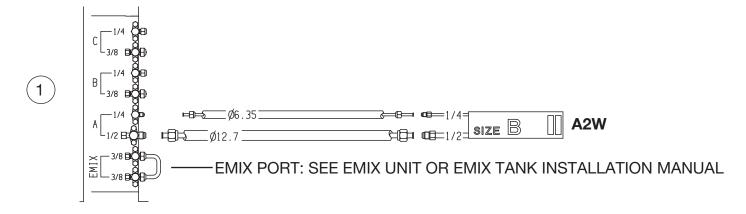
## 17 - REFRIGERANT CIRCUIT • CIRCUITO FROGORIFERO • CIRCUIT RÉFRIGÉRANT



SYMBOL	EG	IT	FR
СМР	COMPRESSOR	COMPRESSORE	COMPRESSEUR
4WV	4 WAY INVERSION VALVE	VALVOLA INVERSIONE 4 VIE	VANNE D'INVERSION 4 VOIES
DEF	DEFROST VALVE	VALVOLA DEFROST	SOUPAPE DE DÉGIVRAGE
EXP	EXPANSION VALVE A-B-C-D-E-F	VALVOLA DI ESPANSIONE A-B-C-D-E-F	VANNE RÉVERSIBLE A-B-C-D-E-F
CDT	COMPRESSOR DISCHARGE SENSOR	SONDA TEMP. MANDATA COMPRESS.	CAPTEUR DECHARGE COMPRESSEUR
CHT	COMPR. TOP SHELL TEMP. SENSOR	SONDA TEMP. TESTA COMPRESSORE	TEMP. CAPTEUR DE LA TÊTE DU COMPRESSEUR
0AT	OUTDOOR AIR TEMP. SENSOR	SONDA TEMP. ARIA ESTERNA	CAPTEUR AIR EXTÉRIEUR
OCT	OUTDOOR COIL TEMP. SENSOR	SONDA TEMP. BATTERIA ESTERNA	CAPTEUR ECHANGEUR DE CHALEUR EXTÉRIEUR
WTT	WIDE TUBE SENSOR	SENSORE TUBO GRANDE	CAPTEUR DU GROS TUBE
NTT	NARROW TUBE SENSOR	SENSORE TUBO PICCOLO	CAPTEUR DU PETIT TUBE
LP	LOW PRESSURE VALVE	PRESA DI BASSA PRESSIONE	INTERRUPTEUR BASSE PRESSION
HP	HIGH PRESSURE VALVE	PRESA ALTA PRESSIONE	INTERRUPTEUR HAUTE PRESSION
LR	LIQUID RECEIVER	RICEVITORE DI LIQUIDO	RÉCEPTEUR DE LIQUIDE
LS	LIQUID SEPARATOR	SEPARATORE DI LIQUIDO	SÉPARATEUR DE LIQUIDE
HE	HEAT EXCHANGER	SCAMBIATORE DI CALORE	ÉCHANGEUR DE CHALEUR
0S	OIL SEPARATOR	SEPARATORE DI OLIO	SÉPARATEUR D'HUILE
ВР	BY-PASS VALVE	VALVOLA BY-PASS	SOUPAPE DE BY-PASS
E-MIX	REFR. GAS CONNECT. EMIX-EMIX TANK	COLL. GAS REFRIG. EMIX-EMIX TANK	CONNEX. GAZ RÉFRIGÉRANT EMIX-EMIX TANK

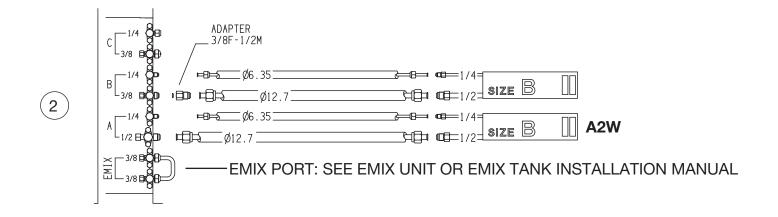
## **TUBES CONNECTION • CONNESSIONE TUBI • CONNEXION DES TUBES**

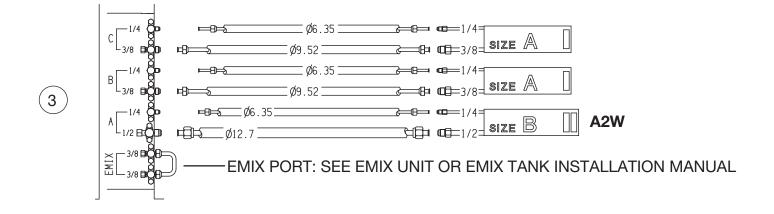
# SYSTEM CONFIGURATION



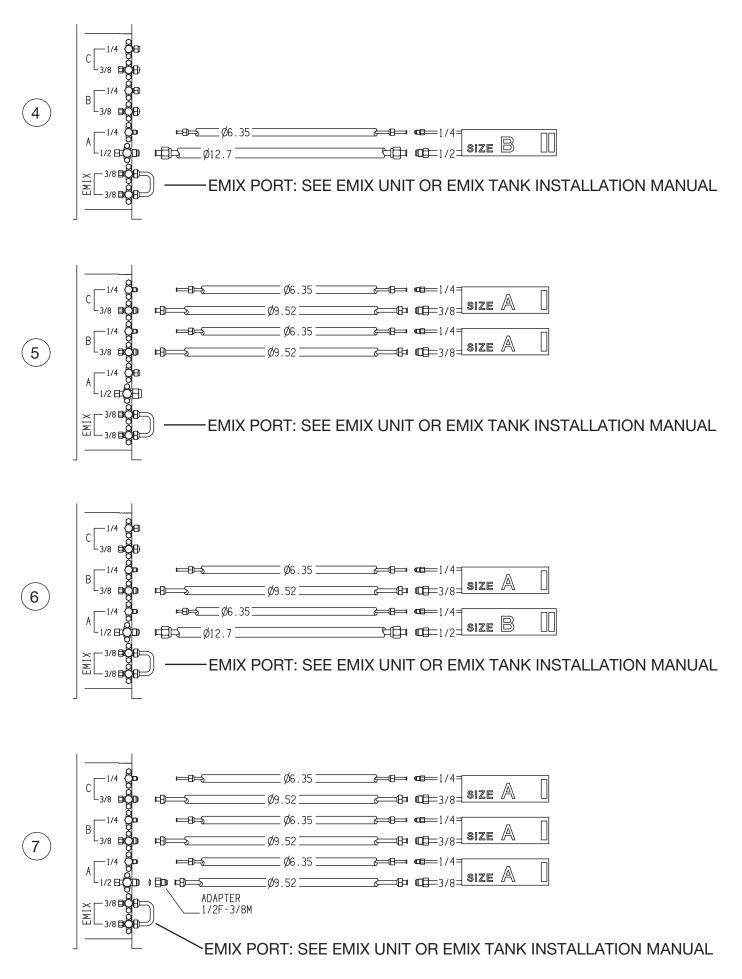
## **SYSTEM CONFIGURATION**











## argo*clima* 5.p.A.

Società a socio unico

Via Alfeno Varo, 35 - 25020 Alfianello - BS - Italy
Tel. +39 030 7285700
www.argoclima.com