CENTRAL AIR CONDITIONER SPLIT SYSTEM

WITH ELECTRONIC CONTROL SERIES BS



INSTALLATION INSTRUCTIONS

Airwell

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1. GENERAL

The installation instructions relate to BS air-conditioners. BS air-conditioners are made up of two units: an indoor unit (evaporator) and an outdoor unit (condenser). The two units are interconnected by two refrigerant tubes, an electric cable and a control cable.

Below are recommendations for correct installation of apartment air-conditioner systems:

- Evaluate the building's heat absorption.
- Choose the shortest route for the refrigerant lines, with minimum bends.
- A 0.3% loss of efficiency for each meter of tubing beyond the first 7.5 meters should be taken into account.
- Check the return air route from the air-conditioned area through the return air grille to the inlet grille of the indoor unit. The route must be free of obstruction and must not pass through non air-conditioned areas.
- On a second level of homes (with two levels) the return air grille will be installed close to the floor and with verification of air outlet from the rooms.
- Use air manifold and return air grilles of a correct size, in conformity with the company's recommendations.
- In systems with articulated air ducts:
 - Articulated ducts of a correct diameter, following the shortest and straightest possible routes without bends.
 - Use of deep adapters only (at least 220 mm) for connecting air ducts and grilles.

ATTENTION!

Frequent problems in installations are presented below. In order to avoid them, relate to them prior to the planned installation:

- A. Lack of suitable ducts for air return. Air exchange through an open door a bad solution!
- **B.** No access to air filters and the electrical component box.
- **C.** There are openings and passages to unconditioned floors, or even open to outside air.
- **D.** Air circulation between rooms.
- E. Use of incorrect air distributors. The injection and distribution cannot be properly directed.
- **F.** De-icing thermostat does not work; telephone cable was not installed between the outdoor unit and the indoor unit.
- **G.** Noise in the ducts, when there is no sound insulation inside the ducts.
- **H.** Absence of fresh air influx in a public place.
- I. Feeling of discomfort in a office having internal areas and rooms with outside looking windows both connected to the same unit.
- J. Units installed in high places may not provide sufficient heating on a cold day. Installation of an auxiliary heating element is recommended. This is extremely important in units that operate at night. (An optional heating element kit can be ordered from the factory).

INDOOR UNIT (Evaporator)



Figure 1

Dimensions (mm)	BS 30E	BS 36	BS 43
А	1100	1100	1185
В	965	965	1140
С	200	200	168
D	930	930	1105
E	256	256	312
G	3/4"	3/4"	3/4"

- 1. Air Supply
- 2. Electrical Box
- 3. Refrigeration Tubing Port
- 4. Drain port G (OD)
- 5. Filters
- 6. Access Panel
- 7. Control Unit Port
- 8. Main Power Port

OUTDOOR UNIT (Condenser)



Figure 2: BS Series Air Conditioner - General Outline Dimensions

2. SELECTING THE LOCATION OF UNITS

Only qualified service personnel trained by the company should install the air conditioner. The installation will be performed in pursuance of the company specifications and using pipes, wiring, and the standard installation accessories of the company. Any service call, maintenance or repair carried out by the company on equipment that was installed in noncompliance with the company's instructions will require payment.

In selecting the location of the units, the following requirements should be taken into account:

2.1 Relative location of the units

Install the outdoor unit (condenser) and the indoor unit (evaporator) as close as possible to each other. For determining the maximum permitted distance between them, see page 10. If it is necessary to exceed this distance, consult the company.

2.2 Selecting the outdoor unit (condenser) location

- Allow sufficient space for servicing and air flow around the unit.
- Avoid the unit's exposure to direct sunlight.
- Select a place for the unit that will cause minimum disturbance and/or inconvenience to the user and the neighbors.
- A minimum of 200 mm is required between the unit and any wall as illustrated in figure 7.
- When installing in an enclosed space (balcony, laundry room etc.), make sure that there are vents ensuring the release of the warm air outside and preventing its return into the outdoor unit.
- In the case of several outdoor units installed in a group, make sure that the warm air discharged by one outdoor unit is not directed toward another outdoor unit.
- It is recommended to attach the condenser to the wall by using a special, hot-dip galvanized bracket. When installing it on the floor or a platform, the unit should be elevated at least 100 mm above the surface.
- Make sure that the wall on which the outdoor unit is to be installed has a minimum thickness of 200 mm and is strong enough to support the weight of the unit. Don't install the outdoor unit on a light structure that is not resonance vibration-proof.
- When the outdoor unit is installed below the level of the indoor unit, ensure that the height difference between the units is as explained on page 10.
- When installing on the balcony of a second floor or higher, make sure that the level of the upper housing of the outdoor unit is at the height of the railing. If the outdoor unit is nonetheless installed lower, ensure that it is installed in a way that will allow easy access and possibility of removing the cover when servicing the unit.
- When the outdoor unit is installed in an alcove or in a place without free access, install tubing longer than that usually required, with several loops, to allow for moving the unit when servicing.
- Take into account that water dripping occurs during the heating operation. If it disturbs neighbors, ensure drainage.
- It is recommended not to hang outdoor units on bedroom walls.
- Do not install outdoor units on tile and asbestos roofs. Servicing would not be provided for these condensers.

2.3 Selecting the indoor unit (evaporator) location

Take into account the following requirements when selecting the place of the indoor unit:

- Allow maximum air diffusion, to as great as possible a distance within the space to be air-conditioned.
- Allow free passage for the return air coming into the air-conditioner.
- Ensure adequate drainage of condensation water produced inside the unit.
- Ensure maximum quiet near the bedrooms.
- A minimum of 100 mm is required between the filter and the nearby wall.
- Easy access to the electrical component box and other parts of the indoor unit for servicing.
- Lower ceiling at least 70 mm under the bottom of the unit.
- Allow easy access to the outdoor unit at the bottom of the units. Take care to provide for a corresponding aperture in the lower ceiling.

3. INSTALLATION OF THE INDOOR UNIT (EVAPORATOR)

3.1 Indoor Unit Location (See Figure 3)

The indoor unit is designed for installation on a false ceiling or other compartment, where there is no influence from outdoor conditions.

While selecting the location, the following conditions must be assured:

- a) The location should assure free flow of the return air into the unit without interference.
- b) The unit should not be installed close to rooms where noise should be avoided (bedrooms, children rooms, etc.).

The location should allow good air circulation.



- 1. Frame installed by Technical Personnel
- 2. Flexible Joint
- 3. 1" thick Duct Acoustic insulation
- 4. Cross Section Area min. 800X300 mm
- 5. Return Air Intake Grille 800x900 (or similar)
- 6. Return Air Intake
- 7. Air Filter Opening and Cover
- 8. Bottom Access
- 9. Acoustic Insulation

ATTENTION!

BOTTOM ACCESS MUST BE KEPT FREE FOR MAINTENANCE

Figure 3: Requirements for Indoor Unit Location

Where the unit must be installed in an attic space or outside, the following conditions must be assured:

- a) The unit must be protected from rain, heat and radiation by an additional layer of 1" thick thermal insulation.
- b) The return-air duct should be as short as possible, with a minimum dimension of 700x300 mm (or similar cross section) with full acoustical lining inside, and no more than two long-radius elbows. The cross sections at the duct connection to the unit shall be equal to that of the unit.
- c) The distance between the return air grille and the air intake on the unit must be as short as possible. A minimum free passage of 0.3 m is necessary along the entire return-air path.
- d) The installation should be designed to withstand the weight of the unit and avoid resonance vibrations. Use serrated rubber mounting under the unit and flexible joints for the air duct.

Design and prepare in advance easy access for servicing as follows: (See Figure 3).

- 1. The minimum height clearance for the installation is 370 mm.
- 2. A minimum distance of 200 mm must be kept between the rear side of the unit and any near-by wall, to allow free air passage.
- 3. A minimum distance of 300 mm must be kept to allow free air intake and convenient access to air filters.
- 4. Allow access for the maintenance only from the bottom panel. Allow the access to the electrical control box to facilitate its easy removal by opening the cover (fastened by 3 screws).

The unit must be insulated so that outside air can flow into the return air opening. Every surface facing outdoor environment should be thermally insulated. The indoor unit may be installed on the ceiling (suspended) or mounted on a concrete floor.

3.2 Ceiling Mounting

The indoor unit can be mounted using spring or serrated rubber isolators.

a) Spring isolators mouting

Insert four 3/8" studs in the ceiling according to the dimensions of the spring-Type isolators. Mount four spring type isolators as shown in Figure 4. Attach indoor unit to the spring-type isolators and level it, using the leveling nuts. Secure in place by tightening the fastening nuts.

<u>NOTE</u>

The location of units should allow proper clearance from the bottom to facilitate maintenance.



- 1. Concrete Ceiling
- 2. Bolt for Ceiling Insert
- 3. Leveling Nut
- 4. Fastening Nut

Figure 4: Indoor Unit Installation Ceiling Mounting using Spring Isolators



- 1. Concrete Ceiling
- 2. Bolt for Ceiling Insert
- 3. Leveling Nut
- 4. Fastening Nut

Figure 5: Indoor Unit Installation Ceiling Mounting using Rubber Isolators

b) Serrated Rubber Mounting

In sites where the spring isolators assemble cannot be installed, mount the unit as show in Figure 5. Insert four 3/8" studs in the ceiling according to the dimensions of the suspension angle frame mounted on the unit. Prepare two 30x30 mm, 1.5 mm thick galvanized sheet metal for each stud and assemble according to Figure 5. The rubber pads may be substituted by springs suitable for this type of installation.

3.3 Condensate drain piping of the indoor unit

- It is recommended to have a professional plumber prepare a drain outlet having a 32 mm diameter rigid PVC tube near the indoor unit, to which a flexible drain pipe for the drainage of the indoor unit can be attached.
- Connect drainage siph ##F(optional) to unit, as described in figure
 6. The siphon should be inserted to the indoor unit drainage port until it stops. Do not apply "excessive force". If the drainage is connected to the other side of the indoor unit, it is necessary to change between grommet 2 and 3.
- Plan in advance the path of the drain line with a downward slope of at least 2% and a water trap (siphon) on the line in order to prevent intake of air through the tube into the unit and to facilitate the evacuation of condensate water from the unit.

Figure 6: Siphon on the drain line (optional)

Plan in advance an easy access to the unit for servicing:

- The unit is accessible for servicing from its bottom only. Allow a minimum of 100 mm between the wall and the air filters.
- Height of the space required for installation is 100 mm minimum.
- Access for servicing to all the bottom area of the unit to the size of the service panel.
- Seal the space in which the unit is installed in order to prevent penetration of unconditioned air into the return air. Also insulate with thermal insulation every partition bordering on an area that is not air-conditioned.

4. OUTDOOR UNIT INSTALLATION

Installation on flat surface (roof, ground, etc.)

The outdoor unit should be elevated at least 100 mm above the ground by using concrete pad, concrete blocks or wooden beams, in order to allow free flow of condensate water. (See Figure 7).



Figure 7: Outdoor Unit Installation Criteria

- 1. Outside the building
- 2. Outdoor Unit
- 3. Serrated Rubber 40x80 mm
- 4. Floor
- 5. Concrete base or floor tiles
- 6. Anchor bolts
- 7. Wall

5. CONNECTION OF REFRIGERANT TUBING BETWEEN INDOOR AND OUTDOOR UNITS

5.1 General (See Figure 8)

The indoor and outdoor units are connected by two copper tubes and an electric cable, all passed through a 60-mm wall opening. In addition, a drainage hose connects the indoor unit with the nearest drain system. Connect both units taking the shortest, most direct route.



- 1. To outdoor unit
- 2. Connecting tubing
- 3. Electric cable
- 4. Inclination angle
- 5. To indoor unit

Figure 8: Connection of tubing and cable

WARNING!

When laying the tubing for the installation, make sure that the ends are sealed to prevent penetration of dirt, moisture etc. To prevent dust or moisture from entering the tubes, seal them with caps or masking tape. It is recommended to clean the inside space of the tubes with nitrogen before connecting them to the unit.

Whenever possible, avoid passing tubes through hot zones, such as walls next to ovens, chimneys, etc. When not possible to avoid this, additional insulation or other means of protection should be provided.

Route the tubing as straight as possible. Keep the number of tube bends to a minimum. If bends are necessary, perform them only by using professional tube benders and not manually.

Make sure that tubing is insulated on its entire length, including tube ends and quick-attach couplings, or flared nuts, to avoid tube "sweating" and water dripping from it.

Tubing must be of the "L" type, without any damage. Tubes' inner walls must be kept absolutely clean prior to and during installation operations.

Each tube must be individually insulated as follows: tubes up to 5/8" O. D. with 6 mm wall thick sleeve; above 3/4" O. D. with 9 mm wall thick sleeve.

For diameters, length of liquid and suction lines, and height difference, see Table No. 1 for each model. If the liquid or suction tube diameters differ from the corresponding flared nuts (mounted on the unit's branch pipes) diameter, use a suitable adapter (it is forbidden to insert a tube into another tube) between the flare connection and the unit's branch pipes.

UNIT MODEL	INTERCONNECTING TUBING	TUBING LENGTH, UP TO - (IN METERS, ONE WAY)				MAX TUBING LENGHT	MAX HEIGHT		
		10	15	20	25	30	50		DIFFERENCE
BS 20E	Suction	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"*	30/50*	10/25*
B3 30E	Liquid	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"*	30/30	10/25
BS 26	Suction	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	50	25
D3 30	Liquid	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	50	25
BS 42	Suction	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	50	25
65 45	Liquid	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	50	20

* Special order

Table No. 1: Unit Interconnecting Tubing (indoor and outdoor units)

5.2 Recommendations for refrigerant tubing installation

There are three possible variants, a shown on the diagrams:

1. The outdoor unit is installed above the indoor unit (Figure 9) - such installation requires an oil trap in the suction line at the lowest point of the riser. The radius of the oil trap should be as short as possible (see Figure 10). Horizontal runs of the suction line should have a 0.5% minimum pitch toward the outdoor unit. The liquid line should parallel the suction line (except for the oil trap). In case the tubing insulation had to be partially removed for installation purposes, it is imperative that the lines be fully insulated with Armaflex, or equivalent insulation, after installation has been completed.









5. Liquid Line

6. Indoor unit



Figure 9: Connection of refrigerant tubing-Outdoor Unit above Indoor Unit

Figure 10: Tube Bending

- 2. The outdoor unit is installed below the indoor unit (Figure 11) no trap is required in such installation. Besides it, the same applies as above.
- 3. The units are installed at the same level (Figure 12) no trap is required in such installation. Besides it, the same applies as above.





- 1. Air outlet
- 2. Outdoor Unit
- 3. Liquid Line
- 4. Suction Line
- 5. Indoor Unit

Figure 11: Connection of refrigerant tubing -Outdoor Unit below Indoor Unit

5.3 Setting in Operation

WARNING

1. Air outlet

- 2. Outdoor Unit
- 3. Suction Line
- 4. Liquid Line
- 5. Indoor Unit

Figure 12: Connection of refrigerant tubing -Outdoor Unit and Indoor Unit at the same level

This paragraph describes the necessary steps for setting the unit into operation; be sure to follow the instructions, to assure proper functioning of the air-conditioner.

The outdoor unit is charged with the correct amount of refrigerant. In extended runs, for additional refrigerant charge please refer to the outdoor unit nameplate. Only qualified refrigeration technicians with a professional charging set shall perform this operation.

5.3.1 Flare preparation

- a) Cut the tube, using a tube cutter. Make sure that the cut is perpendicular to the tube axis and free of burrs (see Figure 13).
- b) Slip the flared nut over the tube, secure the tube in the flaring tool, as shown in Figure 14 and perform the flare on the tube end. The tube projection length (A) from the flaring block varies with tube diameter and shall be set as indicated in the table. Apply few drops of refrigeration oil to the tube before flaring.

5.3.2 Connecting the tubes (See Figure 15)

Connect and tighten the flare nuts to the refrigeration valves on the outdoor unit and to the male connectors of the indoor unit. Coat the flared surfaces lightly with refrigeration oil to improve sealing.

Note: First tighten manually the flare nuts, then use a wrench. See Table No. 2 for tightening torque values.

A (mm)	TUBE OD
1.3	3/8"
1.6	1/2"
1.9	5/8"
2.1	3/4"



Figure 13: Tube cutting



Figure 14: Tube flaring

- 1. Copper Tube
- 2. Flaring Tool

5.3.3 Evacuation and setting in operation

- a) Take two charging hoses equipped with a pushpin on one side, as shown in Figure 15. Connect the two hose ends without the push-pin to the LOW (suction) and HIGH (liquid) valves of the charging set; remove the guard caps from the service ports of the tree-way suction and liquid valves and connect the hose ends with the push-pins to the service ports (see Figure 16). On units without service valve on the liquid port, connect only the hose to the suction 3-way valve.
- b) Connect the center hose of the charging set to a vacuum pump.
- c) Turn on the vacuum pump and make sure that the low pressure gauge reading moves from 0 cm Hg to 76 cm Hg; then evacuate the system for 10 minutes.
 If gauge needle does not move from 0 cm Hg to 76 cm Hg, this indicate a leak. In this case, tighten all connections; if leaking stops after the tightening of tubing connections, proceed from step c. If leaking persists even after the connections had been tighten, detect the leak and repair it; be sure to proceed only after all leaks have been eliminated.
- d) Close the valves of both the suction and liquid ports of the charging set and turn off the vacuum pump. Make sure that the gauge needle does not move for about 5 minutes.
- e) Disconnect the charging hoses from the vacuum pump and from the service ports of both the tree-way valves.
- f) Replace the service port and valve caps of both tree-way valves and tighten them with a torque wrench; see table of torque values in table No. 2.

CAUTION

When performing the following steps, avoid any exposure to the service valve ports; remember that the system is under pressure.

- g) Remove the valve caps (1) from both valves; position both valves to "Open" using an hexagonal wrench (See Figure 16).
- h) Replace valve caps of both three-way valves. Check for gas leakage with a leak detector or soapy water.



- 1. Charging set
- 2. Vacuum pump
- 3. Outdoor unit
- 4. Service port
- 5. Valve cap
- 6. Suction valve
- 7. Valve cap
- 8. Liquid valve
- 9. Indoor unit
- 10. Suction flare connection
- 11. Liquid flare connection

NOTE:

- 1. For additional refrigerant charge, for various tubing lengths refer to outdoor unit nameplate.
- Service port on liquid line
 3-way valve is not supplied on all units.

Figure 15: Refrigerant Tubing Service Connection

Tube (Inch) TORQUE (N.m.)	1/4"	3/8"	1/2"	5/8"	3/4"
FLARE NUTS	11-13	40-45	60-65	70-75	80-85
VALVE CAP	13-20	13-20	18-25	18-25	40-50
SERVICE PORT CAP	11-13	11-13	11-13	11-13	11-13

Table N. 2: Tightening Torque Values



- 1. Valve Protection Cap-end
- 2. Use Allen Wrench to open/close the Refrigerant Valve
- 3. Valve Protection Cap
- 4. Refrigerant Valve
- 5. Service Port Cap
- 6. Flare Nut
- 7. Unit Back Side
- 8. Copper Tube



6. ELECTRICAL CONNECTIONS

6.1 Power Supply

WARNING

Electrical connection shall be made only by authorized electricians and in accordance with local electrical requirements and codes. The system must be grounded.

Single-phase models and three phase models are available; for each of them, the necessary wiring diagram is shown. Connect the unit to the main power supply as for its applicable wiring diagram.

- a) Single phase-models (See Figure 17). The main power supply cable must be HO5VV-K5G-type and contain 3x4 mm² leads.
- b) Three phase-models (See Figure 18). The main power supply cable must be HOVV-K5G-type and contain 5x2.5 mm² leads.

WARNING

On unit with scroll type compressors, it is mandatory to listen to compressor operation upon initial startup. Should there be an unusual noise in operation, it is necessary to interchange the phases at the power supply connection.



Figure 17: Single Phase Units: Electrical Scheme power to outdoor

MODEL	INTERCONNECTING CABLE WIRELESS (mm2)	CIRCUIT BREAKER WITHOUT HEATING ELEMENT
BS 30E	6x2.5	20A
BS 36	6x2.5	25A



- 1. Outdoor unit
- 2. Inter connecting cable
- 3. Power Supply
- 4. Semi-automatic switch
- 5. Indoor unit
- 6. Display Quick connector
- 7. Display control unit

- 8. Wireless Remote Control
- 9. Wired Remote Control (optional)
- 10. Remote ON/OFF Switch (by Installer)
- 11. Control Cable (Shielded)
- 12. Switch ON/OFF (by Installer)
- 13. Heater Cable (Optional)
- 14. Switch ON/OFF for Heater (by Installer)

MODEL	INTERCONNECTING CABLE WIRELESS (mm2)	CIRCUIT BREAKER WITHOUT HEATING ELEMENT
BS 30E	6x2.5	3x16A
BS 36	6x2.5	3x16A
BS 43	6x2.5	3x16A

Figure 18: Three Phase Units: Electrical Scheme

6.2 Interconnecting cable

The electrical cable between the indoor and outdoor units, for all models, must be HO5VV-K5G-type. Conductors shall be of size and number as indicated in Figure 17, 18. The electrical cable must be onepiece, without any joints. When installing the cable under the floor, it must be protected and isolated from any possible contact with water. When the cable path runs through a wall or an acoustic ceiling, it will be protected with fireproof tubing. In addition, the two units should be interconnected by a telephone-type cable, 2 x 0.5 mm². See applicable wiring diagram in Figure 17, 18.

6.3 Display control unit

6.3.1 Location criteria

It is recommended to install the Display Control Unit close to a ceiling in a central and neutral zone at typical conditions. In addition, the aesthetic aspect should be considered. The Display Control Unit is connected to the main control board on the air conditioner (the indoor unit) by a communication cable. The cable is connected to the Display Control Unit by a quick-attach 8 pin connector.

6.3.2 Installation of Display Control Unit on Wall

Drill a 12 mm diameter hole on the wall, for routing the communication cable. Open the unit cover, drill 3 holes in the wall to match the holes in the Display Control Unit, install the wall studs and fasten the unit to the wall with 3 screws.

The Display Control Unit (4) is provided with a 7 meters long special communication cable (2), terminated by a plug for connecting to a distribution box (3), which enables the control of the air conditioner from several different rooms, each one from its own Display Control Unit (See figure 19 and 20). Connect the quick-attach connector to the appropriate socket on the main control board in the indoor unit electrical component box (1). Should it not be possible to route the communication cable plug (2) through the wall to the display board (4), the cable end may be cut off and connected to the terminal board on the display unit, according to the colors indicated in figure 19.

WARNING

The plug should not be cut off the communication cable if the cable length is insufficient. In such case, a 5-meter extension cable may be added.

6.3.3 Considerations in locating the Remote-controller

- a) Locate the Remote-controller in such a way that when mounted on its support on the wall, it will be in line sight with the Display Control Unit (at less than 8 m).
- b) It is recommended to establish the final location of the Remote Control Unit only after the first operation, assuring proper transmission and reception between the Remote Control Unit and the Display Control Unit.



- 1. Main Control Board on Indoor Unit
- 2. Control Display Unit
- 3. Connection Wire

*Option: Connecting the cable to control display terminal

COLOR CHART				
Conn. Point	Wire Color			
1	Gold			
2	Green			
3	Black			
4	Brown			
5	Purple			
6	Yellow			
7	Orange			
8	Red			

Figure 19: Connection of a single Display Control Unit



- 1. Main Control Board on Indoor Unit, Cat. N. 402616 and 402676
- 2. Distribution Board, Cat N. 402729
- 3. Communication cable Cat. N. 402730
- 4. Display Control Unit N. 1 Cat. N. 402713
- 5. Display Control Unit N. 2 Cat. N. 402713
- 6. Display Control Unit N. 3 Cat. N. 402713
- 7. Display Control Unit N. 4 Cat. N. 402713

Figure 20: Connection to 4 Display Control Units in Parallel (optional)

6.3.4 Remote-controller mounting

- a) Secure the Remote-controller bracket on the wall, using two screws and wall studs (supplied with the unit) and peel the outside protection paper from the adhesive surface.
- b) Prior to operating the air conditioner, open the battery compartment cover and make sure that the red tab protecting the batteries has been removed. Replace the cover and verify that the Remote-controller functions properly.
- c) Attach the Remote-controller to the bracket with a firm movement.

6.4 BS Remote Control (Optional)

The wall-mounted remote control is available in two versions, in infrared wireless or wired.

The remote control installation instructions are supplied with the unit.

<u>NOTE</u>: The infra-red remote control should be located in a place that have eye contact with the display unit, at a distance no more then 10 m.

The system can measure the temperature in two alternative modes:

- By a sensor located at the air inlet of the indoor unit
- By a sensor located in the Remote-controller, in mode "I FEEL" or "LOCAL". In this mode, the temperature measuring point shifts with the location of the Remote-controller. Its location should therefore be determined as follows:
 - a) Avoid installation at location exposed to direct sunlight or near heat sources.
 - b) Select a location free of any obstructions such as curtains, etc.
 - c) Select a neutral zone where the conditions are those typical for the whole air conditioned space; avoid direct exposure to cool air blown out by the air conditioner.
 - d) Select a location about 1.5 m above the floor, to assure accurate sensing of room temperature.
 - e) Avoid locations exposed to water splashing, dampness or humidity.
- Batteries should be replaced when the LCD no longer displays data. Remove the Remote-controller from its bracket, open the battery compartment cover in the back of the unit and change the batteries.
- Use two 1.5 Volt, size AAA batteries.

7. FINAL TASKS

- 1. Replace all caps and covers and check that they are well shut.
- 2. Seal all the cracks and holes at the sides of the tubes and bores.
- 3. Attach the wiring and tubes to the wall with clamps.
- 4. Check all the operations of the air-conditioner. If necessary, use the operating manual.
 - 4.1 Indoor unit
 - Are all the remote commands received on the air-conditioner control panel?
 - Do the indicator led on the control board work properly?
 - Does the air-conditioner execute all the remote control commands?
 - 4.2 Outdoor unit
 - Check for any abnormal noise or vibrations during operation of the air conditioner.
 - Check that the noise, condensate drain water or air flow does not disturb the neighbors.
- 5. Run the air-conditioner for cooling and heating
- 6. Instruct customer on air conditioner exploitation:
 - How to remove, clean and replace the filter.
 - How to turn the air-conditioner on and off.
 - How to choose between heating and cooling and how to set the desired temperature.
 - How to adjust on or off time using the timer.
 - How to operate the air conditioner from the control panel.
 - Give the customer the operating and installation manuals.
 - Help the customer fill in the guarantee certificate.

BS / CAT. NO. 402962 MULTILINŐ WOBSÁKÜÖX ÉREGÁ ÁLÍ ÁLÁGEE