

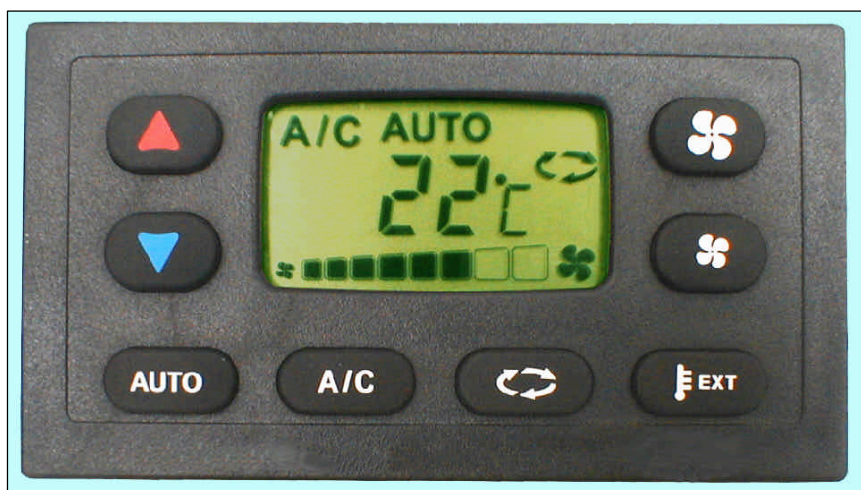
ISTRUZIONI DI MONTAGGIO

MOUNTING INSTRUCTIONS

INSTRUCTION POUR LE MONTAGE

EINBAU ANLEITUNG

INSTRUCCIONES DE MONTAJE



UNIVERSAL PLUS

Cod. **01.17.158**
CLIMATE VERSION 24V
WITH RECIRCULATION FUNCTION

- The E.C.S will constantly
maintain your **ideal climate**
inside your vehicle all year round

- Your desired temperature
needs to be selected **only once!!!**

- We work together !
Always **"automotiv"** ated

PRESCRIPTIONS FOR MOUNTING

PRESCRIPTIONS FOR MOUNTING THE CoMeS E.C.S. SYSTEM TO BE FOLLOWED BY THE TECHNICIAN INSTALLING THE SYSTEM. IF NOT OBSERVED THE TECHNICIAN WILL BE DIRECTLY AND EXCLUSIVELY RESPONSIBLE TOWARDS THE CUSTOMER.

- 1) Disconnect always the battery ground cable from the negative terminal before starting to work.
- 2) When working on vehicles equipped with Airbags, follow the vehicles manufacturer's procedure for the deactivation of this before install the E.C.S. Once upon completed the installing, reactivate the procedure.
- 3) Never drill a hole without knowing what is on the other side of the structure.
- 4) If during the installation of a system holes or cuts should be done, it is absolutely necessary to protect such parts with a rust-proof product.
- 5) When working on the cooling system of the motor, in particular when cutting the heater hose for installing the heater (water) valve, assure that the coolant has a room temperature and that the system is depressurized. Clamp the heater hose on each side of the cut for minimizing coolant loss, even if it's inevitable that some coolant will be lost. Before to complete the valve installation, assure that the cooling system is refilled and properly drained in accordance with the vehicle manufacturer's instructions. A missing compliance of this precaution may cause overheating in the vehicle and can bring serious mechanical damage.
- 6) Check of a correct electric insulation, fuse installation and of all parts of the electrical system. The adoption of a good wiring harness procedure makes the installing simply and reliable.
- 7) Carry out all operations in accordance with the rules of a good technique and follow the indication of the mounting instructions.
- 8) During the unpacking, check the entire kit parts for to see of components are missing or damaged.

SPECIFICATIONS

Performances

- Cabin temperature may be maintained within the range of 18 to 30°C selectable by the user.

Environment

- The system has been designed to operate in an ambient temperature between - 40 and +85°C.
- Storage temperature for all system components is going from - 40 to +85°C.

Electrical

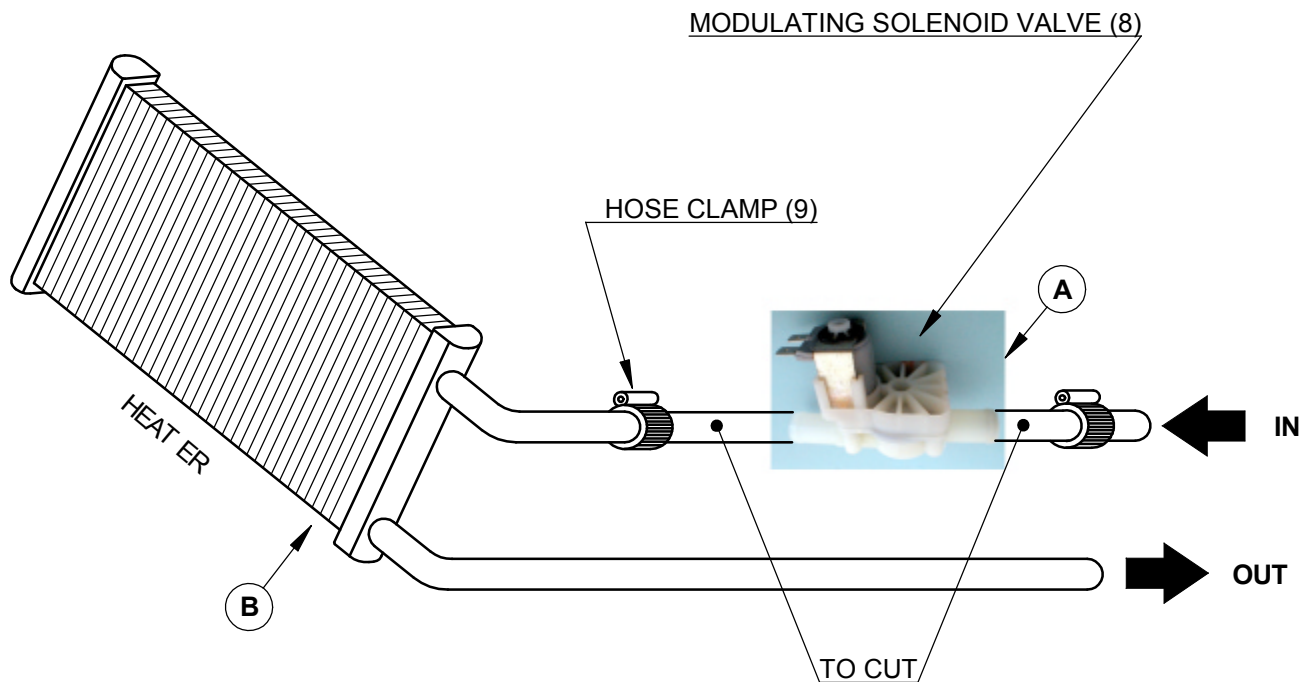
- Power supplied: 11 to 15V dc (for 12V systems)
21 to 29V dc (for 24V systems)
- Transient and shutdown protections

LIST OF SUPPLIED MATERIAL



POS.	DESCRIPTION	CODE	QTY
1	CONTROL UNIT 24V RECIRCULATION VERSION	02.17.120	1
2	WIRING HARNESS	23.01.075	1
3	EXTERNAL AIR TEMPERATURE SENSOR	24.01.019	1
4	INTERNAL AIR TEMPERATURE SENSOR	24.01.020	1
5	MIXER AIR TEMPERATURE SENSOR	24.01.017	1
6	DOUBLE SIDE ADHESIVE FOR SENSOR	35.04.011	3
6a	SELF-TAPPING SCREW Ø2,2x13	65.09.003	7
7	RELAY KIT 24V	61.01.051	1
8	MODULATING SOLENOID VALVE	26.01.001	1
9	HOSE CLAMP	65.51.307	2
10	12V - 24V ADAPTER	23.01.019	1
11	CONNECTOR KIT	61.01.248	1

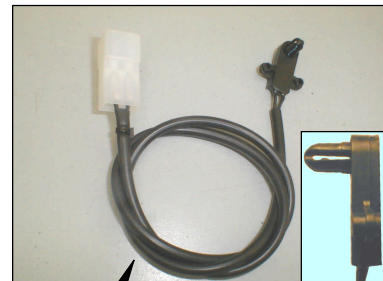
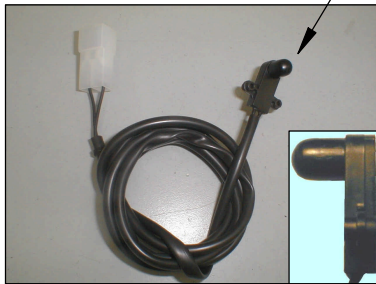
HEATER CONTROL VALVE



Find the heating hoses and identify the direction of circulation of the refrigeration liquid.
 Find the entry hose area enough long where to place the valve **[A]** without twisting the hose, avoiding blockage or reducing the water section passage.
 If in doubt consult the vehicle instruction manual or a competent technician.
 The automatic internal temperature setting is obtained by modulating the water passage in the heater **[B]**, this is obtained by using the solenoid valve (modulating) or the motor valve (proportional) **[A]** supplied, regulating in this way the quantity of heat into the car interior.
The valve should be installed at the entry of the heater and as close as possible to it. If the vehicle is provided with an air mixed air shutter, this should be blocked in the position of maximum heat. If the vehicle is provided with a tap for manual heating, this should be blocked in the position open (for maximum heat) allowing the water passage or eliminated.
 Make sure that the refrigerating liquid is at room temperature and that the system is de-pressurized. Remove carefully the radiator pressure tap to eliminate any excess pressure in the circuit.
 Cut the entry water hose of the heater, connect the water tap respecting the entry and exit of the water on the **[A]** valve.
 Execute the electrical connections as indicated in the wiring diagram.
 It is suggested to use a clamp on both sides of the cut hose so to minimize loss of refrigeration liquid although it is inevitable that some liquid will go lost.
 Also make sure that the valve should be installed in a position as indicated in the figure (only for solenoid valve), that it does not touch or interfere with cables, hoses or other mechanisms and do not position it nearly heating source that could damage it.
 By completing the installation of the valve make sure that the cooling system is properly filled to the brim and cleansed according to the car manufacturer instructions.
 If these precautions are not respected, vehicle over-heating and serious mechanical damages can be caused.

SUPPLIED SENSORS

EXTERNAL AIR TEMPERATURE SENSOR (3)



INTERNAL AIR TEMPERATURE SENSOR (4)



MIXED AIR TEMPERATURE SENSOR (5)

External air temperature sensor (3)

The external air temperature sensor must be positioned in a frontal area of the vehicle not influenced by heating sources or solar radiation and fix it with the two supplied screws Ø2.2x13 (6a).

It is advisable to use the lower area of the air grill.

Internal air temperature sensor (4)

Dowel the internal air temperature sensor in an area of the dash-board not influenced by heat sources and solar radiation and above all not influenced by air flows coming out the air openings.

Fix it with the two supplied screws Ø2,2x13 (6a).

Mixed air temperature sensor (5)

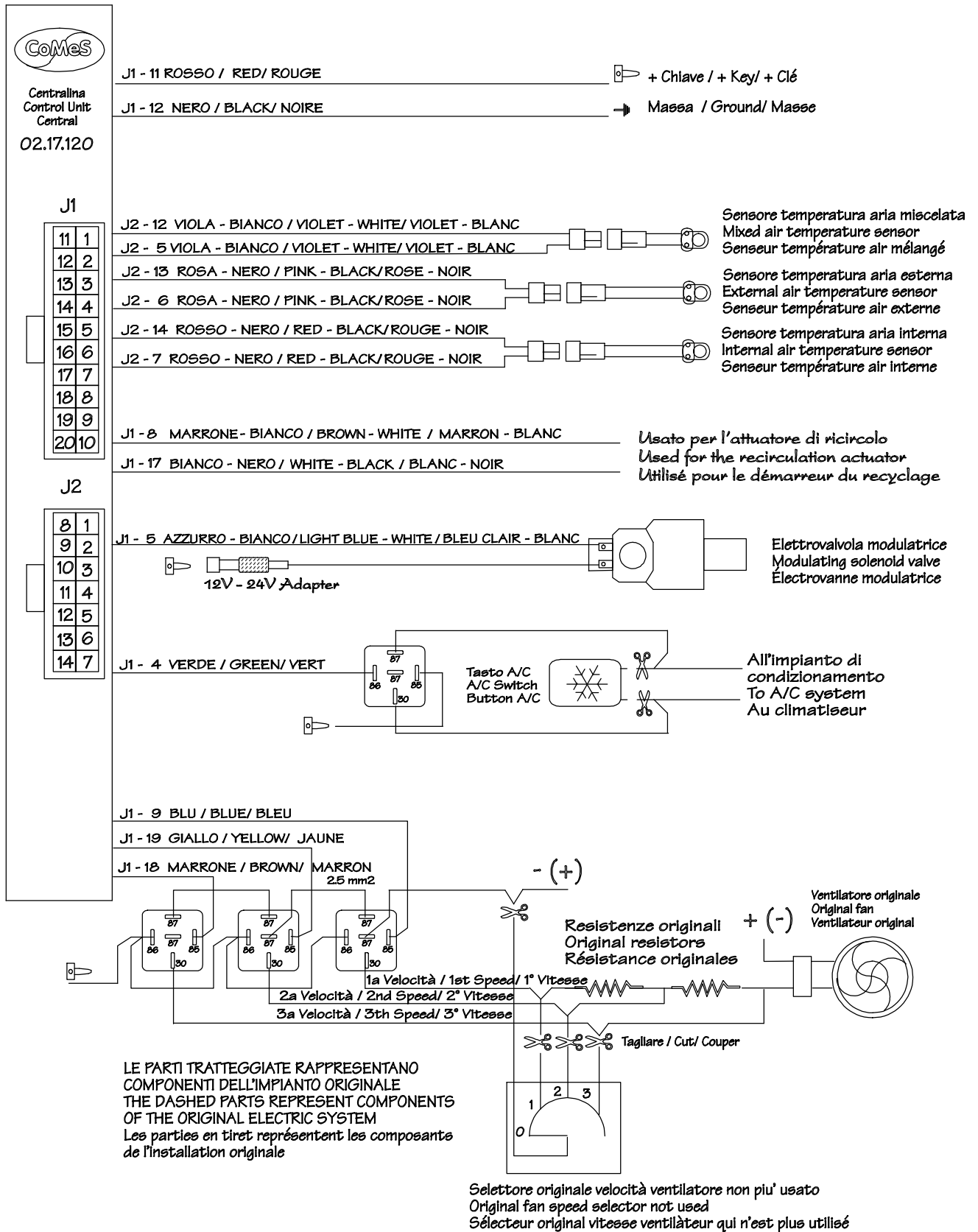
This sensor should measure the mixed air temperature of the car interior.

This sensor must be positioned in a air duct so that it will always be well ventilated.

Preferably in the air ducts to the feet or to the windscreen, avoid to install the sensor too closed to the heater.


Fix it with the two supplied screws Ø2.2x13 (6a).

WIRING DIAGRAM



DIAGNOSTIC PROCEDURE

The control unit is provided with a diagnostic procedure which verifies the elements of the a/c system.

Pressing the  push button, while the control unit is turned on activates the diagnostic mode. The push button should be released when on display will appear the information regarding the type of the control unit, the version, two values reserved and the value of mixed air sensor.

Water valve and mixed air temperature sensor control

By pressing selected temperature push-buttons   the water valve that controls mixed air into vehicle will be directly controlled.

By pressing the temperature increment push-button the mixed air temperature incoming into vehicle compartment will be increased until the **maximum warm** condition is reached, while by pressing the decrement push-button the mixed air temperature incoming into vehicle will be reduced until the **maximum cold** condition is reached.

While one of this push-button is pressed on display appear the opening rate of water valve (from 0% to 100%).


On the display the value of the **mixed air** introduced into the vehicle interior will be shown.

In case of malfunction of this sensor, instead of the temperature the following error codes will be visualized :


- E 5** if mixed air temperature sensor is cut off
- E 6** if mixed air temperature sensor is short-circuited

External and internal temperature sensors control

By pressing the external temperature push button  for less of 2 seconds, the external temperature values will be shown for approx 6 seconds.

When is show the external temperature value, the **EXT** and  symbols are lit.

By pressing the external temperature push button  for more of 2 seconds, the internal temperature values will be shown for approx 6 seconds.

When is show the internal temperature value, the **INT** and  symbols are lit.

In case of malfunction of these sensors, instead of the temperature value, the following error codes will be visualized:

- E 1** if external temperature sensor is cut off
- E 2** if external temperature sensor is short-circuited
- E 3** if internal temperature sensor is cut off
- E 4** if internal temperature sensor is short-circuited

Compressor control


By pressing the  push button the compressor state will be changed.


When the **A/C** symbol is lit, the compressor is activated, while when the **ECON** symbol is lit, the compressor is disconnected.

Blower speed control

By pressing these blower speed push buttons   the blower speed will be modified increasing / decreasing air quantity into vehicle interior. The bar graph will show air quantity.

Recirculation control

By pressing the  push button the recirculation state will be changed.

When the  symbol is lit, the control unit will force the recirculation air condition, while when this symbol is off the control unit will force the fresh air condition.

Diagnostic procedure end

By pressing the  push button the control unit goes in the normal operating mode



Electronic Climate System E.C.S.

