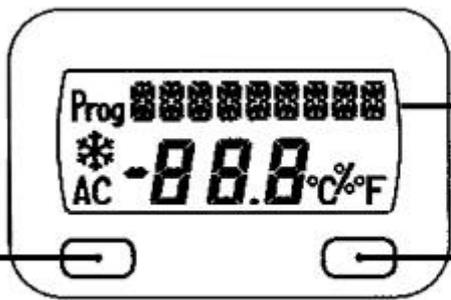
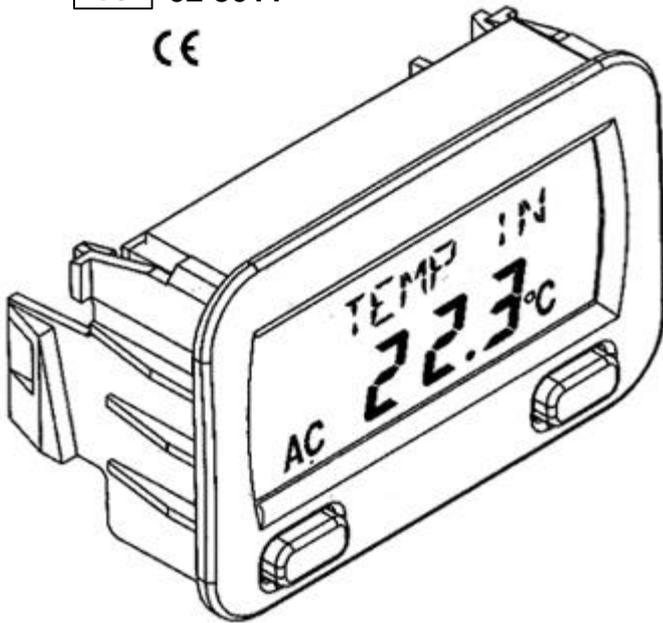


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DISPLAY READINGS

- **inside temperature** (detected value)
- **outside temperature** (detected value), according to settings: with/without **ice-alarm**
- **air humidity degree** (detected value) *option*

PROGRAMMING-MENU with:-

- **thermostat temperature** feed data: to control air conditioner or electrical switchable heating orby switching it on/off
- **thermostat function to cool or to warm up** setting must accord to device connected (either air conditioner or electrical switchable heating or.....)
- **sensor data display: alternately** inside- AND outside-temperature, or **only** inside- OR outside-temperature according to selection by key A
- **ice-alarm** to be activated at a critical outside-temperature to be set (- or to be disabled)
- **display illumination** to be selected and set: colour: red, blue or green. intensity
- **degree:** choose °Celsius or Fahrenheit

KEY B (controls)

- **STARTING OF PROGRAMMING MENU:** keep key B pressed for more than 2 seconds

KEY A (controls)

- **SWITCHING DISPLAY-READINGS OF INSIDE AND OUTSIDE TEMPERATURE**, and air humidity
- **PUTTING ON / OFF THERMOSTAT-CONTROL:** Keep key A pressed for more than 2 seconds. (3-beep-signal confirms). If thermostat-control is activated symbol AC appears on left side of display.

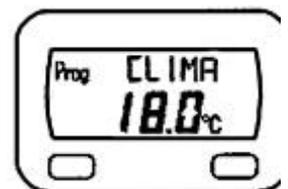
PROGRAMMING MENU: TO SELECT FUNCTIONS AND TO SET PARAMETERS

- start the programming menu:** keep key B pressed for more than 2 seconds
The menu starts by step 1 (thermostat temperature), afterwards all other steps appear step by step.
NOTE: After 5 seconds without any input, the menu is quitted automatically and without storage.
- FORWARD = stepping to next menu step:** press key A + B at the same time
- STORING = storing the programmed data:** press key A + B at the same time for about 4 seconds (confirmation occurs through three acoustic signals)

1 THERMOSTAT TEMPERATURE: SET DATA

Display shows "Prog CLIMA", and the presently selected thermostat temperature.

Press key A or B, to set the desired inside temperature, stepping by 0,5°C. In case of air conditioner (or electrical switchable heating) is being controlled by CLIMAT, its internal relay will keep the air conditioner compressor (or the electrical heating) ON, till the set thermostat temperature is matching the detected inside temperature $\pm 1^\circ\text{C}$.

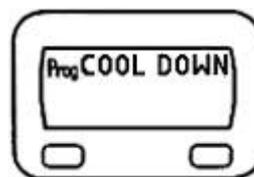


FORWARD or STORE

2. THERMOSTAT-FUNCTION: SELECT COOL DOWN OR WARM UP

Display shows: "Prog COOL DOWN" or "Prog WARM UP".

Press key A or B. The function **must be selected according to the unit being connected**, because in case of thermostat-control being activated the connected unit will be switched on as long as the detected inside-temperature is higher ("COOL DOWN") or lower ("WARM UP") as the thermostat-temperature set.



"COOL DOWN" must be selected in case of air-conditioner being connected. Only then the activated thermostat-control is able to cool the inside-temperature by switching on the air-conditioner.

ATTENTION: Of course, in this case air ventilation has to be adjusted manually to cold-air-feeding.

"WARM UP" must be selected in case of electrical switchable heating being connected, to enable activated thermostat-control to warm up inside temperature by switching on this heating.

ATTENTION: Of course, in this case air ventilation has to be adjusted manually to hot-air-feeding.

In case of CLIMAT being connected to an electrical switchable airing device in order to effect a faster mixing of air by thermostat-controlled switching on/off this device, "COOL DOWN" as well as "WARM UP" might be selected according to the season, and, of course, according to the manually adjusted air-feeding.

F ORWARD or STORE

3. DISPLAY of SENSOR DATA CHOOSE

Display shows "Prog AUTO VIEW" or "Prog MANU VIEW".

Press key A or B. In mode AUTO-VIEW the detected data of inside TEMP IN and outside TEMP OUT temperatures, and, if connected, of inside-air-HUMIDITY will alternate automatically at intervals of 4 - 5 seconds.



MANU VIEW displays the detected values of one sensor, which later on can be selected by key A.

F ORWARD or STORE

4. ICE-ALARM PUTTING ON OR OFF

Display shows "Prog ALARM ON" or "Prog ALARM OFF".

Press key A or B. If ALARM ON is selected, possible frost on the road is represented by a critical outside temperature

(to be set in step 5). As soon as outside temperature falls below this set value, ice-alarm warns by 3 acoustic signals and flashing of frostwork symbol on the left side of display (flashing till ice-alarm is put off.).



F ORWARD or STORE

5. ICE-ALARM: SET CRITICAL OUTSIDE TEMPERATURE

Display shows: "Prog ICE ALARM", the ice-frostwork-symbol, and the value set.

Press key A or B, to set, stepping by 0,5°C, threshold of outside temperature between -5°C and +5°C. When outside temperature drops below set value ice-alarm can warn.

F ORWARD or STORE

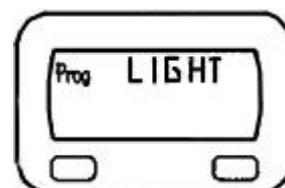


6. COLOUR of DISPLAY ILLUMINATION: SELECT

Display shows: "Prog LIGHT", and the presently chosen colour.

Press key A or B to select desired colour of display background illumination, either RED, GREEN or BLUE.

F ORWARD or STORE



7. INTENSITY of DISPLAY ILLUMINATION CHOOSE

Display shows: "Prog INTENSITY", and the presently chosen intensity value.

Press key A or B to set the intensity of the display background illumination, ranging on a scale from value 20 down to value 0 (= colourless).

F ORWARD or STORE

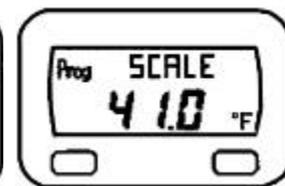
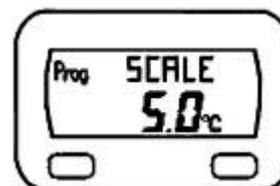


8. CELSIUS or FAHRENHEIT: SELECT

Display shows: "Prog SCALE", and the chosen dimension.

Press key A or B to choose between temperature unit Celsius ("°C") or Fahrenheit ("°F").

F ORWARD or STORE



(After step 8 follows again step 1 a.s.o.....)

IN- / OUTSIDE TEMPERATURES

(menu step 3: **choose display of sensor data**)

In mode **AUTO VIEW** display of detected values of inside (TEMP IN) and outside temperature (TEMP OUT) alternates at intervals of approx. 5 seconds.

MANU VIEW displays the detected values of one sensor, which can be selected by key A.

By pressing briefly key A the detected values of the other sensor will be displayed.

AIR HUMIDITY SENSOR

The supplied components do not contain the cabin air humidity sensor, but it can be retrofitted optionally.

ICE-ALARM

In case of activated ice-alarm (menu step 4: **put ON / OFF ice-alarm**) acoustic beeps and frostwork symbol flashing in the display warn and indicate risk of ice on the road, as soon as the detected outside temperature falls below a critical (menu step 5: **set critical outside temperature**) value.

The frostwork symbol flashes till ice-alarm is put off (see menu step 4).

USER MANUAL

TECHNICAL SPECIFICATIONS

power feeding: 12 Volt dc

temperature measuring:

range: -40°C to +100°C (-40°F to +212°F)

sensitivity: ± 1,1°C (1,8°F)

reliability min.: ± 0,3°C (0,54°F) at +25°C (+77°F)

max.: ± 0,7°C (1,26°F) at -35°C (-31°F)
and at +100°C (+212°F)

air humidity measuring:

range: from 0% to 100%

sensitivity ± 2,0%

internal relay:

current capacity 1 Ampère

NC idle position 30 (blue) is connected to 87A (grey)

NOTE

Only air conditioners, which will be automatically switched off together with ignition (+15), can be connected to CLIMAT !

SWITCHING ON / OFF AIR CONDITIONER BY CLIMAT CONTROL

a. PROGRAMMING THE CLIMAT THERMOSTAT-CONTROL

a.1 **set desired inside temperature** (menu step 1: **input of thermostat temperature**)

NOTE: The thermostat temperature being set now could be kept forever. Since, however, health aspects recommend that difference between outside and inside temperature should not be too big, the setting of thermostat temperature should be adjusted to seasonal surroundings, if required.

a.2 **select thermostat function "COOL DOWN"** (menu step 2 **choose "cooling" function**)

NOTE: The thermostat control, once activated, switches on air conditioner as long as detected inside temperature is higher than thermostat temperature that has been set in menu step 1.

b. SET BASIC ADJUSTMENTS OF AIR CONDITIONER

b.1 **select desired blast regulator stage** (The selected blast regulator stage can be kept forever, but of course any other selection is possible at any time according to user's choice.)

b.2 **adjust air ventilation to cold-air-supply**, or, according to season, choose mixture with little bit of warm air. Here again, the cold-air-adjustment could be fixed forever, or re-adjusted at any time. However, in any case, activation of air conditioner operation always requires cold-air-supply !

b.3 **switch on air conditioner**, air conditioner's switch must be ON to allow for CLIMAT-control.

NOTE Some air conditioners require that separately the cabin-air circulation has to be switched ON too, because only thereby air conditioner becomes electrically switchable.

c. SWITCH ON THERMOSTAT CONTROL OF CLIMAT

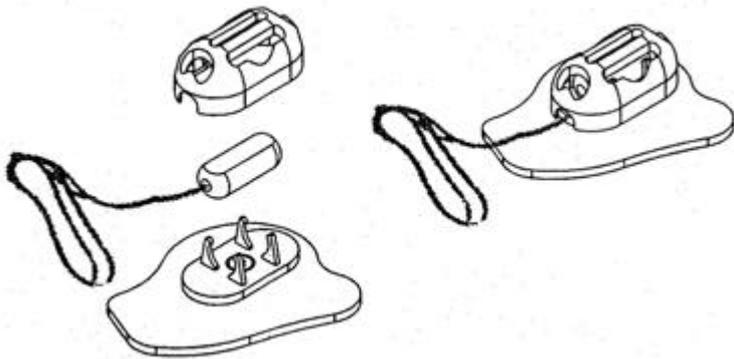
c.1 **keep key A pressed for 2 seconds**, to activate the CLIMAT thermostat to control the switching on and off of air conditioner. (And pressing key A again for 2 seconds disables the CLIMAT-control.)

NOTE: The basic adjustments, once being selected according to "a" and "b", may now be kept fixed.

CLIMAT thermostat control, too, can be kept fixed for a long time. As soon as, and as long as ignition (+15) is switched on, the activated thermostat control is switched on, too, and performs its control of switching on/off of the air conditioner, confirmed by symbol AC in the display.

NOTE: When CLIMAT thermostat control gets disabled (switched off), air conditioner (if connected to CLIMAT relay's idle position NC-contacts) as well as cabin-air-circulation in case of separate switches become manually switchable again, that is: it/they will be switched on in this moment

FITTING INSTRUCTIONS



TEMPERATURE SENSORS

Be conscious of the lengths of existing wirings !
Installation positions are for example:-

- (1.) **inside temperature sensor**
on about 1/3 level of cabin's height, and far away from ventilation flaps, as well as far away from direct sun irradiation
 - onto middle console
 - or at dashboard
- (2.) **outside temperature sensor**
protected against relative wind, and far away from heat sources
 - into outside window mirror (if this does not contain a heater), or
 - behind front license plate, or....

FITTING THE DISPLAY-, SET- AND CONTROL-UNIT

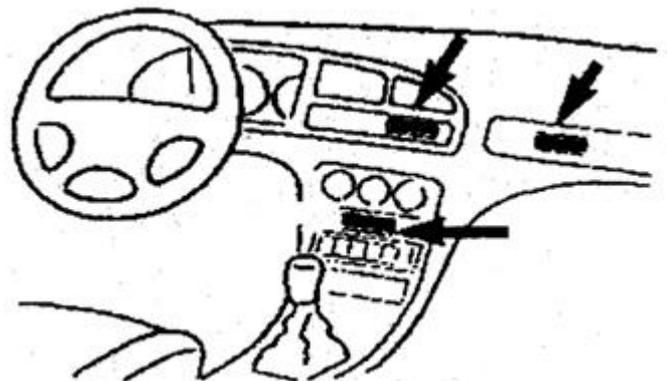
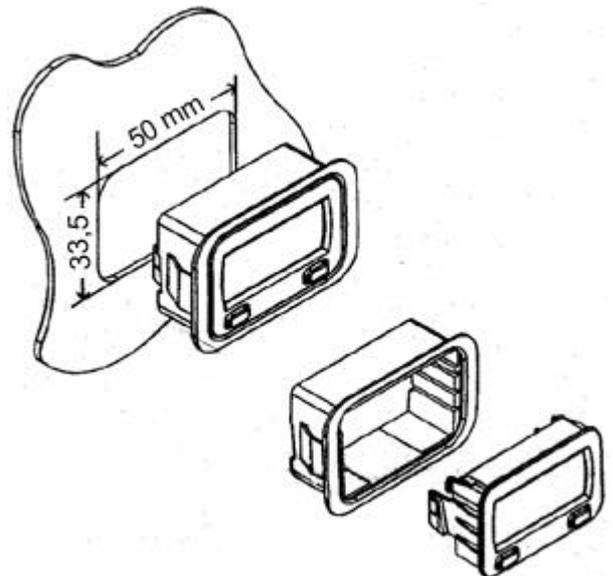
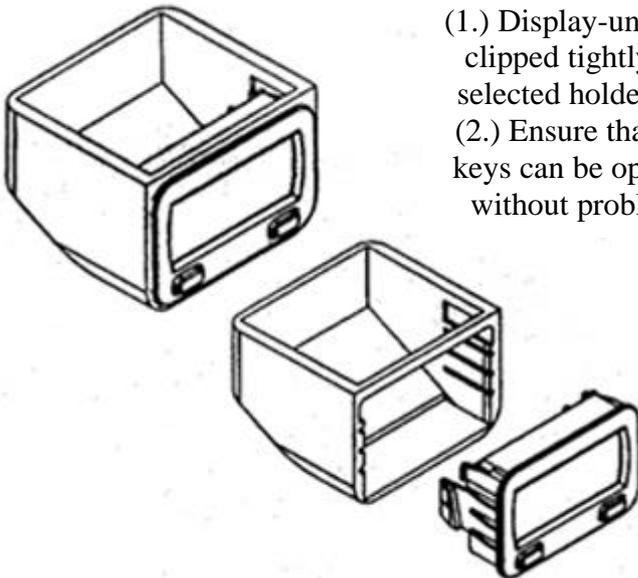
put in underneath-box to be screwed tightly
i.e. at or above rear-view mirror,
or under or beside dashboard

OR:

put in plug-in-holder to be inserted
in 50mm • 33,5mm opening (or
drilled hole) i.e. on dashboard or on
main console

NOTE:

- (1.) Display-unit to be clipped tightly into selected holder-box.
- (2.) Ensure that both keys can be operated without problems.



GENERAL SECURITY DIRECTIONS FOR INSTALLATION

INSTALLATION INSTRUCTIONS

Read complete instructions before starting installation.

Observe the security-directions and injunctions prescribed by handicraft, and by producers of car as well as of device to be connected.

When working on the car's electrics, first - if possible - disconnect battery's minus-pole (negative) to prevent short circuit risks.

NOTE: On account of disconnecting car's battery-minus all transitory memories will or may lose their programmed data, and will require a re-programming or new input or adaptation (car- and engine-management, clocks, radios, heatings, etc.)

Verification of electrical voltages and polarities has to be performed by digital diode-volt-tester or voltmeter, only. Traditional test-lamps consume too high currents - hence electrical or electronic components of the car could be damaged or triggered unintentionally.

Power supply of additionally installed electrical or electronic components requires connections to properly fused car's wirings.

All electrical connections must be pinch- or solder-connections, and must be insulated and protected against mechanical strain and stress. Wires have to be fixed along their ways by wiring-ties or insulating tape in a way, that they will not be squeezed or bruised or broken.

All components have to be secured properly, and to be assembled tightly. It is strictly forbidden to mount any component within the air-bag's deployment zone, at the steering wheel or within passenger head's collision zone (risk of passenger injury).

When drilling (as far as drilling is required at all) be aware of existing wirings, tubes - and of sufficient space for the driller's leaving.

If not common with car's electrics, it is recommendable to let CLIMAT be installed by an expert workshop.

Producer's liability does not cover any damage caused by incautious use of the CLIMAT device or caused by non-proper functions, which result from installation-deficiencies or surpassing of technical data or non-observance of these directions. Product liability only covers guaranty claims, which consider the CLIMAT device itself.

COMPONENTS SUPPLIED:

[1] display-/ input-/ control-unit, with plug-socket

[2] wiring (5 wires + 2 temperature sensors)

[3] holders (2 pieces) for both temperature sensors

[4] plug-in holder (fitting into 50mm * 33,5mm opening) for display

[5] underneath-box for display

TOOLS AND ADDITIONAL MATERIALS:

Nippers and pinch-tongs, 12V-digital-voltmeter, pinch-connectors. Wiring-ties and/or insulating tape to fix the wires along their ways. If necessary: solder and soldering-iron, 1.5mm drill and three 2mm-screws to mount underneath-box. If necessary, additionally: 1A-fuse, switch, power-transistor and/or relay.

RECYCLING DIRECTIONS:

Electronic devices contain a lot of recycable and/or (environmental) harmful components. Take care that these components will be deposited according to the regulations. In case of any doubt, please contact the supplier.

CLIMAT may perform its thermostat-control in a manifold of possibilities.

Hereafter, some examples are shown to describe how the CLIMAT-unit can be

connected to one certain device (for example: an air conditioner, electrically switchable heating, or.....).

All schematics always show the device to be connected on the left side (note: it is figured in its state manually switched off), and on the right the CLIMAT-unit with its connection wires being figured relatively thick.

The examples shown here are only assisting hints without obligation, and they do not claim for entireness, that is:

The installer is obliged to verify in the special case of a device actually concerned by means of digital measuring instruments, whether and how far the CLIMAT-unit can be connected according to one of these examples.

ELECTRICAL CONNECTIONS

1. AIR CONDITIONER

CLIMAT can be connected only to air conditioners, which will be automatically switched off together with ignition (+15).

CLIMAT only can properly control an air conditioner as long as:-

- a thermostat-temperature is set (see menu-step 1),
- thermostat-function is selected to "COOL DOWN" (see menu-step 2),
- thermostat-control is activated by key A (to be pressed for 2 seconds, confirmed by symbol AC on display),
- air conditioner is switched on manually, that is: air conditioner's switch (and, if present, initiating and separate switch of cabin-air-circulation) must be kept in ON position,
- air-ventilation is adjusted manually to cold-air-supply, whereas exact endowment as well as selection of blast regulator stage are free to user's own discretion.

NOTE

Identify type and control manner of the manual air conditioner:

Scheme **1.1** shows the most common air conditioner wiring **with 1 main switch and NC main relay**, where the sole ON-OFF-SWITCH simultaneously switches on and off fan (ventilator, cabin-air-circulation) and compressor. The MAIN RELAY controlling the compressor is of NC-type (its contacts 30 and 87A are closed in relay's idle position = "Normally Closed").

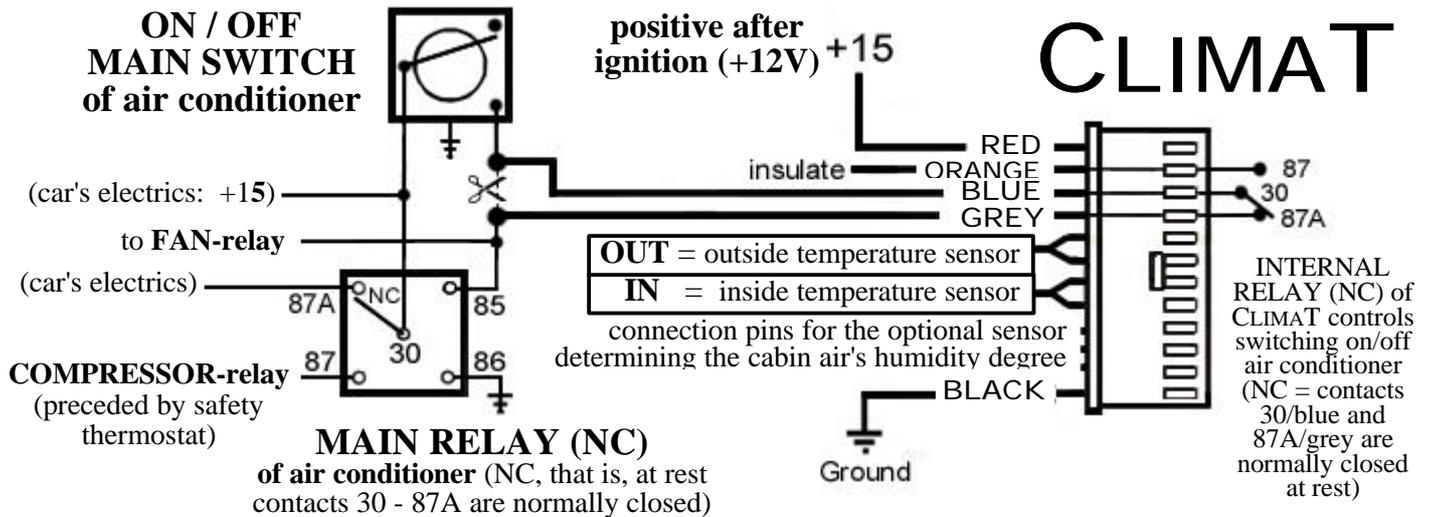
Scheme **1.2** shows an air conditioner wiring **with 2 switches and NC main relay**, requiring to switch on at first cabin-air-circulation (FAN SWITCH), because only thereby air conditioner and (via the NC MAIN RELAY) its compressor can be switched on, too.

NOTE: Before activating CLIMAT thermostat-control, both switches have to be put ON.

Cut air conditioner's wire that switches +12V (which in **1.1 connects sole main switch and NC main relay, preceding the branch to the fan; whereas in case of **1.2** it connects fan switch on one side and ON/OFF-switch + air-circulation-device on the other side), and loop it through CLIMAT-unit.**

1.1 AIR CONDITIONER with MAIN SWITCH and NC MAIN RELAY

Cut the air conditioner's wire, which switches +12V, between the sole ON/OFF MAIN SWITCH and the MAIN RELAY (NC), but before its branch to the fan, and loop it into the CLIMAT-unit.

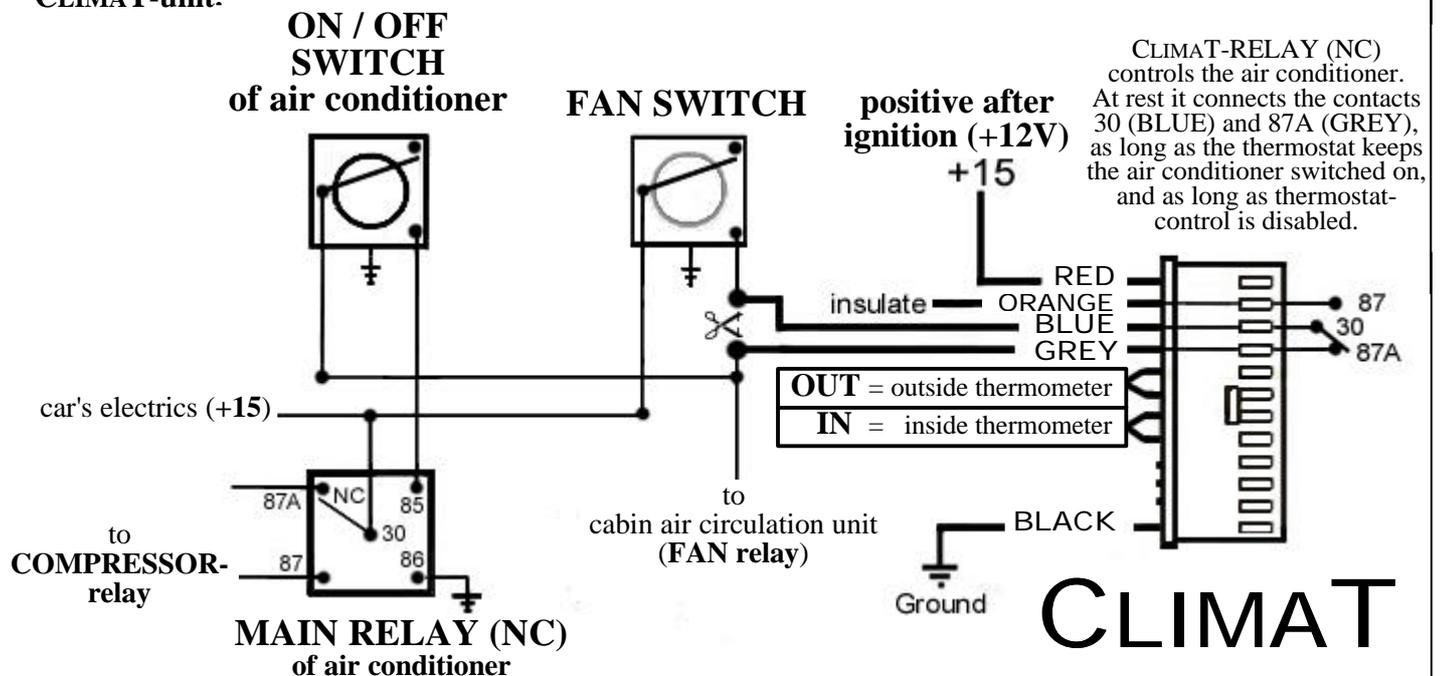


The figured air conditioner with one sole main switch and with main relay in NC resting position can be switched on and off as usual by its main ON / OFF switch, as long as the CLIMAT thermostat-function is not activated.

BLUE to wire's terminal leading to ON / OFF switch
 GREY to wire's terminal (preceding branch to fan) leading to contact 85 of the NC main relay
 ORANGE insulate
 RED to positive after ignition (+15)
 BLACK to ground

1.2 AIR CONDITIONER with FAN SWITCH plus ON / OFF SWITCH

Cut the air conditioner's wire, which switches +12V, between the FAN SWITCH on one side and the ON / OFF SWITCH + CABIN-AIR-CIRCULATION-UNIT on the other side, and loop it into the CLIMAT-unit.

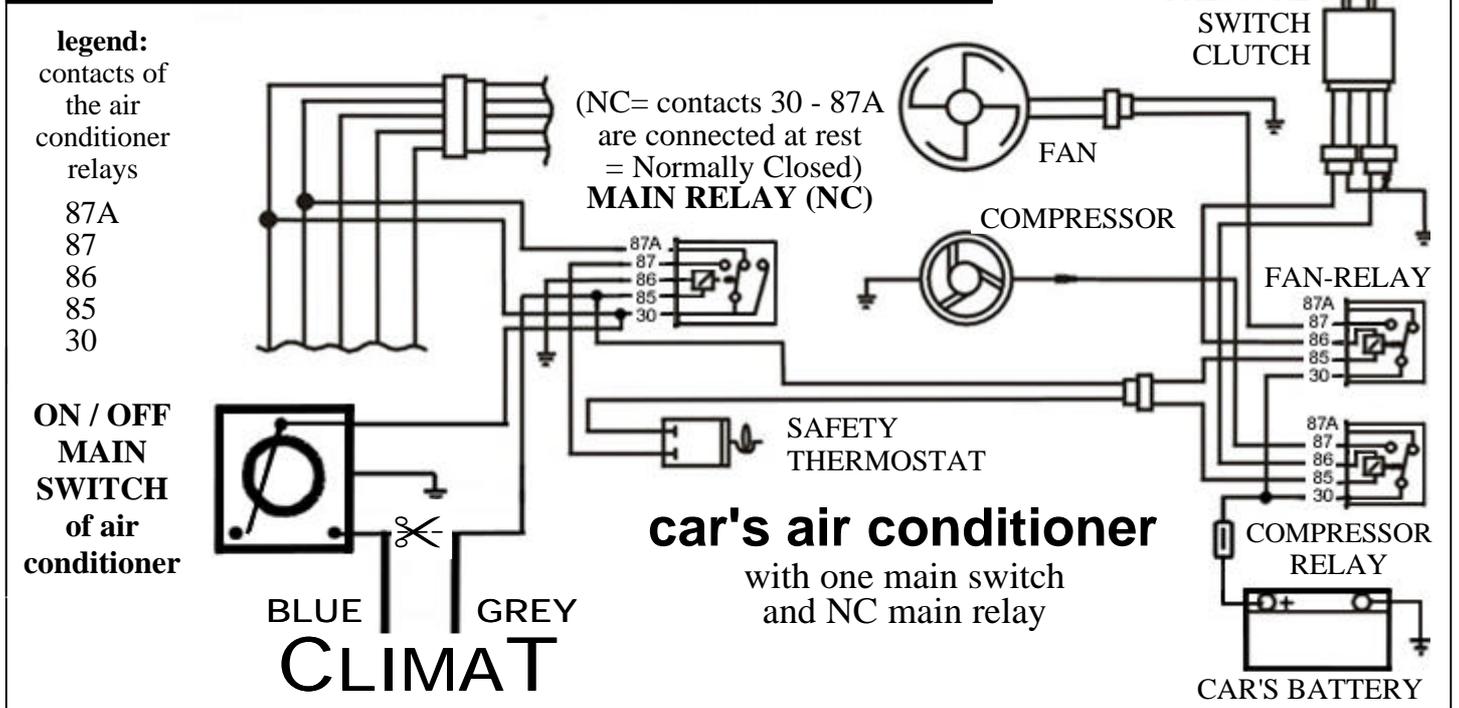


This air conditioner with separated FAN-switch and ON/OFF-switch can be switched on and off as usual, as long as the thermostat control of CLIMAT is not activated.

BLUE to wire's terminal leading to the FAN SWITCH
 GREY to wire's terminal leading to ON/OFF SWITCH and to cabin-air-circulation-unit
 ORANGE insulate
 RED to positive after ignition (+15)
 BLACK to ground

NOTE: To enable CLIMAT thermostat control, FAN + ON/OFF switches must be both in ON-position !

see SCHEMATICS of an AIR CONDITIONER 1.1 with MAIN SWITCH and NC MAIN RELAY



GENERAL DIRECTIONS

If a device contains a (**Normally Open** =) **NO main relay** (i.e. a possible air conditioner of such type), it can be connected to CLIMAT unit (in comparison with the examples shown here) by simply replacing the GREY cable by the ORANGE one, whereas the GREY cable has to be insulated now. But, although the activated CLIMAT thermostat can control the device's switching on and now, this kind of connection is not recommendable, because the device could not be switched on and off by its own switch(es) any more [since CLIMAT-relay contacts 87 (ORANGE) and 30 (BLUE) are not connected at rest].

2. ELECTRICAL SWITCHABLE HEATING or VENTILATION

The CLIMAT thermostat can be applied to other electrically switchable devices, too, in order to switch on and off automatically such a device like auxiliary heating or ventilation or....., **provided**, the controlled switching of such a device does not confine readiness and operation of the vehicle itself !

NOTE

Ensure that the power consumption of switching on the device does not exceed 1 Ampère !

When connecting the device, **cut its wire that switches +12V** and **use an 1A-fuse** to loop that wire's terminals into the CLIMAT-relay at resting position: that is: connect **one wire's terminal to BLUE (30)** and **the other wire's terminal to GREY (87A)**, in order to allow also for switching on and off the device as usual, as long as the CLIMAT-thermostat-control will be deactivated.

ORANGE (87) to be insulated.

When determining the manner of **CLIMAT's power supply**, first decide, when and how long the CLIMAT itself shall be switched on to perform its thermostat control. CLIMAT can be switched by its connection to negative (**BLACK**) as well as by that one to positive (**RED**). Hereafter, however, only such cases will be described, where the CLIMAT-unit is switched on and off by (**RED**) its positive power supply:-

BLACK to be connected to a good negative (ground)

RED to be connected to +12V, hereby observing and selecting:-

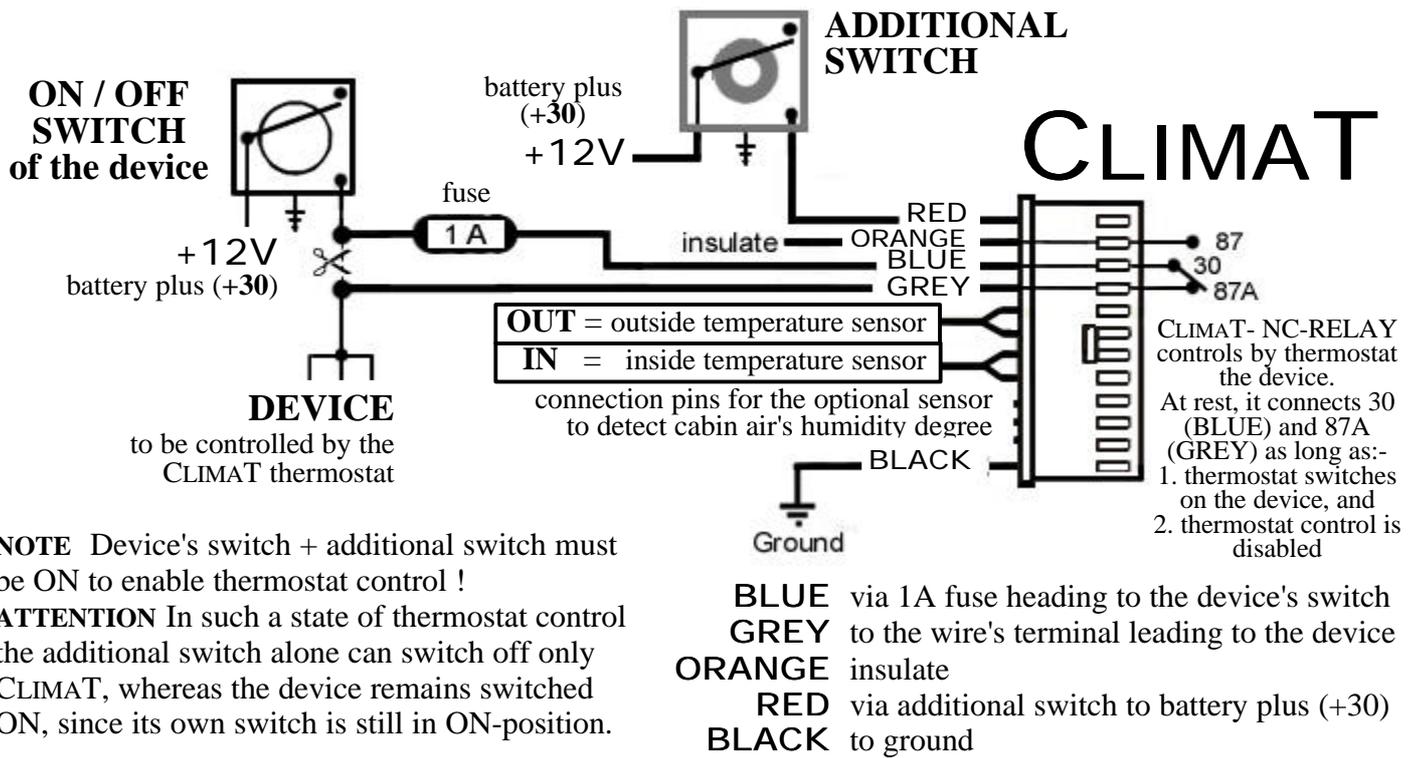
to positive after ignition (+15), if the device (like for example an air conditioner, see scheme **1.1**) to be controlled by CLIMAT-thermostat must or shall be operated only while ignition is switched on.

to battery positive (+30) via an additional switch, if the device to be controlled by CLIMAT-thermostat shall be operated while ignition is switched off, too, (see scheme **2.1**, for example an auxiliary heating in a caravan). Note that in this case, always at first CLIMAT itself has to be switched on.

to the switched +12V-supply of the device itself, if the device (for example special auxiliary heatings) to be controlled by CLIMAT-thermostat, is of a type that has to be switched on by remote control or by a manually adjustable timer-clock, see i.e. scheme **2.2**.

2.1 CLIMAT POWERED via ADDITIONAL SWITCH by BATTERY (+30)

Cut the device's wire, which switches +12V, between its ON/OFF SWITCH and the DEVICE itself, and loop it into the CLIMAT unit, by using a 1A fuse
 Connect CLIMAT power supply to battery plus (+30), via an ADDITIONAL SWITCH to be inserted



2.2 CLIMAT POWERED by SWITCHABLE POWER SUPPLY of DEVICE

Cut the device's wire, which switches +12V, between device and device's TIMER-CLOCK (or REMOTE RECEIVER or ON/OFF-SWITCH), and loop it into the CLIMAT unit, by using a 1A fuse.
 Connect CLIMAT power supply to TIMER-CLOCK (and, if need be, to an additional switch [note ✕✕] powered by +30, in order to enable programming of CLIMAT and temperature sensing at any time).

✕NOTE: Power-transistor or relay have to precede RED, if TIMER-CLOCK switches less than +12V

