

# STAR COMFORT

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**Control Bi-ZONE DRIVER / CABIN (PASSANGER)**  
**Ref. 7.807.600.080**

## 1. INTRODUCTION

Star Comfort has been designed to adapt the air inside the vehicle, to create a comfortable environment in the driver-guide and passenger zone and at the same time to ensure a perfect visibility through windscreen for driving.

The system automatically maintains selected temperature inside the coach. Therefore the following functions actuate automatically:

- Incoming air for a driver area (outside or recycled air)
- Fan speed (air flow) for a driver area
- Preheater operation
- Switching on/off of air conditioning for a driver area
- Water flow rate passing through convectors in passenger zone and defroster heater exchange

### 1.1 RECOMENDED SETTINGS FOR EVERY TIME OF THE YEAR

In general, it is considered that interior temperature of 22°C provides a high level of comfort, therefore is recommended to select this temperature by using automatic operation (pressing AUTO key).

Automatic operation is the fastest way of reaching the required conditions inside the vehicle. For this reason, it is recommended to use the controls and change them to manual operation only when it is necessary to change the standard conditions, in order to achieve higher comfort.

It should be remembered that in order to achieve maximum heating performance and fast demisting of windows, it is **essential** to allow the engine to reach its working temperature.

**iWarning! Safe driving requires optimum visibility. Ice, snow and other objects which obstruct air entrance must be removed in order to the Star Comfort system could achieve fast windscreen demisting.**

It is strongly recommended not to smoke in the vehicle when the air recycling function is active, because cigarette smoke from inside the vehicle will be deposit in an air conditioning system evaporator. This deposit will cause a bad smell every time Star Comfort is connected. The only way to get rid of this smell is to change the evaporator, which is a time-consuming and therefore costly operation.

## 2. CONTROL PANEL

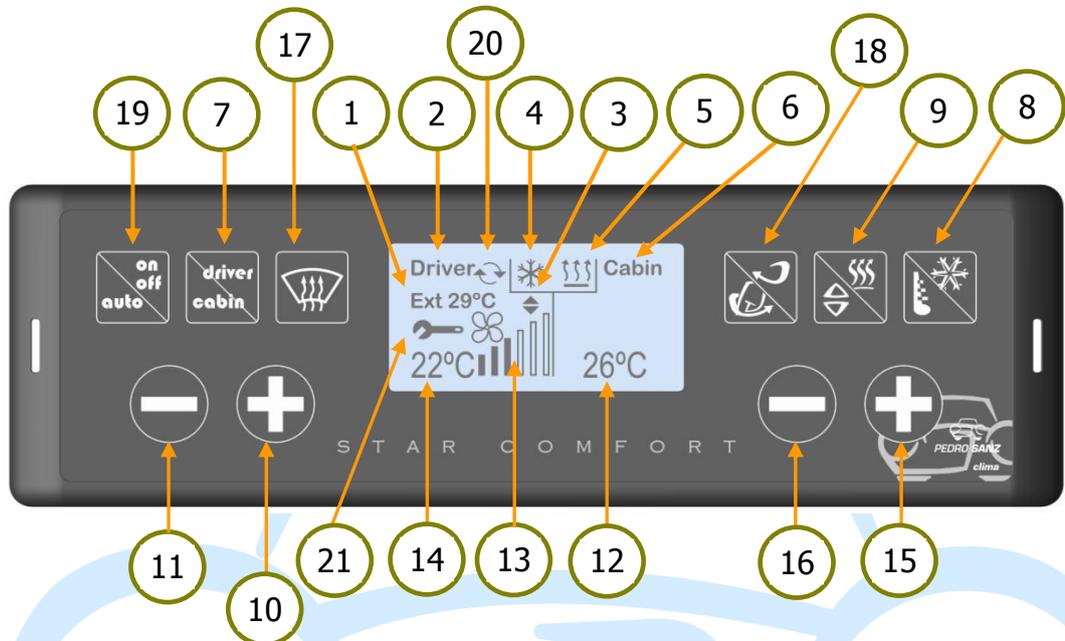


Fig.1

1. AUTO indicator (automatic operation on) or outside temperature.

**Hazard: possibility of ice on road.** When the outside temperature falls down below 5°C, this information stays permanently on the screen

2. Indicator of active driver zone.

3. Air-flow distribution indicator (◊ air directed towards windscreen and driver ▼ air directed towards driver, ▲ air directed towards windscreen).

4. Indicator showing that the front Air Conditioning unit is ready to be switched on. It can be switched on only if the roof AC unit is connected.

5. Indicator of connected Preheater.

6. Indicator of active passenger zone.

7. Indicator of zone selecting (driver "Driver" or passengers "Cabin").

8. Key of outside temperature or / switching off A/C for driver.

9. Key of Preheater switching on / off and key of changing an air distribution flow.

10. Key to increase speed of fans of the defroster, temperature in passenger zone and also to make settings and confirm menu options, depending on mode of operation at any given time.
11. Key to decrease speed of fans of the defroster, temperature in passenger zone and also to make settings and confirm menu options, depending on mode of operation at any given time.
12. Indicator of inside temperature in passenger zone.
13. Indicator of defroster's fans speed.
14. Indicator of inside temperature in driver zone.
15. Key to increase the temperature in driver zone or to move upwards through menu options.
16. Key to decrease the temperature in driver zone or to move downwards through menu options.
17. Fast windscreen demisting operation key.
18. Key of outside-inside air entrance (air recirculation function).
19. Key of switching on/off of the system or indicator of Automatic operation.
20. Indicator of active air recirculation function.
21. Indicator of system error. When appears icon , it means that the systems should be checked because some function may not work properly. If this icon appears on the screen, all settings can be realized manually until the system will be checked.

### 3. SYSTEM OPERATION

#### 3.1 FUNCTIONING WITHOUT CONTACT ACTIVATED

The screen will be blank except for the letter **P** and the word Eberspächer if the Preheater connection has been programmed. If it has been programmed for the next 24 hours, the connection time will also appear.



Fig.2

In this situation, press any key and you will see illuminated keys   on the left and the Preheater  key, what means that there are active the **"Preheater connection"** and **"Menu option"** (see Fig. 3).



Fig.3

### 3.1.1 PREHEATER CONNECTION



This key allows to switch on the Preheater for 120 minutes and in this situation are active functions **"Preheater Connection"** and **"Settings"**

The 120 minutes will be shown as a countdown on the screen, and at the end of this period, the Preheater will switch off\*, and the screen will show the original display (see Fig.2).



Fig.4

During the preheating operation, the **Setting** keys  $\ominus$   $\oplus$  (on the right) can be used to increase or decrease the Preheater connection time (maximum 120 minutes / minimum 1 minute).

In a situation when the Preheater will be working and the connection will be programmed in the same time, the programmed connection will be cancelled.

If the  key is pressed during the preheating operation, the Preheater will be switched off\* and the key will be like in Fig. 3. 10 seconds later, the situation will return to this in the screen in Fig. 2.

\* The Preheater fan and water pump will operate for 3 minutes after switch-off.

### 3.1.2 FUNCTIONS MENU

Beginning from the display showed at the Fig.3, touching either  or  key on the left, the keys and the screen will display as on the screen Fig 5.



Fig.5

The keys  or  on the left permit you to move up and down through the menu.

When you want to enter in one of the menu functions, press key  or  on the right.

When you are in the functions menu and no key is pressed the screen will return to the previous display.

#### 3.1.2.1 SETTING TIME AND A DAY

Beginning from the procedure described in point 3.1.2.

Select the "Setting time and day" option from the menu by pressing one of the keys  or  on the right. The screen display will change to that shown in Fig. 6 , showing submenu with flashing day of the week which is seted.

Use one of keys  or  on the left in order to move through the submenu (day, hour and return) and one of keys  or  on the right in order to set the required parameters.

The parameters selected in the menu are highlighted in a black box and the setting parameters are flashing.

If no key is pressed for more than 90 seconds, the screen will return to the previous display.



Fig.6

To return directly to the previous screen, chose the word **Return** using one of keys  $\ominus$  or  $\oplus$  on the left and press one of keys  $\ominus$  or  $\oplus$  on the right

### 3.1.2.2 PREHEATER PROGRAMMING

To enter submenu Preheater programming realise the procedure described in point 3.1.2.

Being in submenu keys  $\ominus$  or  $\oplus$  on the left allow moving through the submenu in order to chose options: programming, day, hour and return, while the keys  $\ominus$  or  $\oplus$  on the right allow to realize chosen programmed **Settings**.

Being in menu "Programming" and choosing one of keys  $\ominus$  or  $\oplus$  on the right, the display will change showing submenu with flashing word "**no**" when the Preheater has not been programmed earlier.

To program the Preheater touch one of keys  $\ominus$  or  $\oplus$  on the right until on the programming option appears Word "**yes**" (See Fig.7).

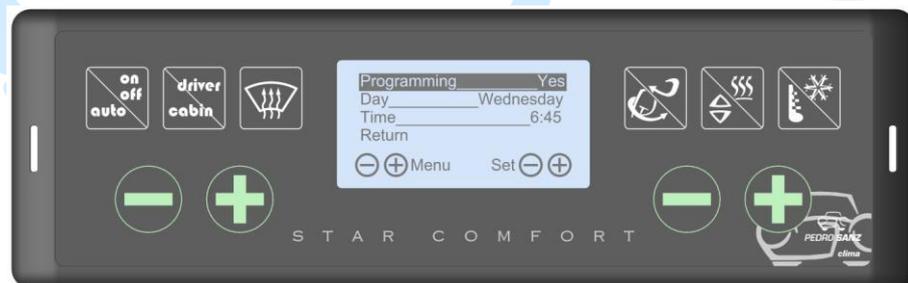


Fig.7

If no key is pressed for more than minute and a half, the screen will return to the previous display.

To return directly to the previous screen, chose the word **Return** using one of keys  $\ominus$  or  $\oplus$  on the left and press one of keys  $\ominus$  or  $\oplus$  on the right.

### 3.1.2.3 CANCELLATION OF PROGRAMMING

In order to cancel the Preheater programme, realize steps to access the display shown in Fig. 7 (see point 3.1.2 and 3.1.2.2). Next press one of keys  or  on the right in order to select word "no" from the "programming" option.

On this display the only possible option is "Return" using one of keys  or  on the right.

If no key is pressed for more than 60 seconds, the screen will return to the previous display.

### 3.1.2.4 SELF TESTING

To enter submenu Self Testing realise the procedure described in point 3.1.2 by choosing this option.

Being in chosen menu function, in that case Self Testing, selecting one of keys  or  on the right (see Fig.5), and the display will change showing the situation of each component (see Fig. 8).



Fig.8

### 3.1.2.5 EXIT THE MENU

To enter submenu "Exit the Menu" realise the procedure described in point 3.1.2.

Being in option "Exit the menu", select one of keys  or  on the right (see Fig.5), the screen will return to the previous display.

### 3.2 SYSTEM CONNECTION

The system can be connected in two ways:

- ❑ Switching on the ignition
- ❑ Pressing key On-Off/ Auto

When the system is switched on all the keys are flashing and on the display will appear during a few seconds **"Checking..."** .

#### ❑ CONNECTION BY SWITCHING ON THE IGNITION

If the system has been switched off with the ignition key, when the key is placed in the ignition again, the inside temperature programmed before the last disconnection will be initiated in automatic mode (see Fig.9).



Fig. 9

#### ❑ CONNECTION BY PRESSING THE ON-OFF / AUTO KEY

If the system is switched off by pressing the **On-Off / Auto** key, on the screen will appear logo, leaving as the only active and illuminated key **On-Off / Auto**, while the rest of keys will be inactive and without illumination.

To connect the system in control mode, press and hold for at least 2 seconds the key **On-Off / Auto**. The system will start working in the last active operation mode, except for the air conditioning and Preheater, which will be activated only if the current temperature allows for it.



Fig. 10

### 3.2.1 OPERATING

When the system is connected, its aim is to reach the temperature programmed on the screen as fast as possible in order to provide a comfortable environment.

In order to achieve this objective, the system automatically controls the operation of the involved components in order to achieve maximum degree of comfort.

The functions, selecting inside **temperature** and windscreen **demisting**, must be selected always **manually**.

Operation of all the active parameters may be modified at any given time, by pressing the corresponding key.

If you press any key which controls elements with automatic operation, this elements will change the position, the word **AUTO** will disappear from the screen, and then such elements will be controlled manually. This situation will be confirmed by a change of colour of the On-Off / Auto key. The rest of elements which can be operated automatically will continue to be operated automatically.

Any element or groups of elements which have been setted to be controlled manually, may work once again in automatic mode by short pressing the **On-Off / Auto** key (press < 2 seconds).

### 3.2.2. KEYS AND THEIR FUNCTIONS

When the system is working in automatic operation there are active all the keys except for an air conditioning key which will connect if are fulfilled the conditions for its operation.

#### SWITCH ON / OFF AND AUTOMATIC OPERATION



This key operates two functions depending on how long the key is held down.

- If the key is pressed and held for more than 2 seconds, the system is connecting or disconnecting.
- If the key is pressed and held for less than 2 seconds (when the system is switched on), the system will star working in automatic mode.
- The key is lit up in green when the system is disconnected or connected in automatic mode. If the system is operating in non-automatic mode, the key will change its illumination to red.

### ❑ ZONE SELECTION



This key allows changing the active zone giving a possibility to choose a driver or a passenger zone.

- ❑ When is active the driver zone, all the keys modify functions related to this zone.
- ❑ When is active the passenger zone, all they keys related with driver zone are active with the exception of selecting temperature and speed of fans keys, which is this situation allows changing the temperature in passenger zone.

### ❑ FAST DEMISTING FUNCTION



When this key is pressed, the screen display changes (see Fig. 11) and automatic operation is deactivated.

The system functions are setted to achieve maximum possible efficiency in demisting. However, it should be remembered that in order to achieve fast demisting of windscreen, it is **essential** to allow the engine to reach its working temperature.



Fig. 11

To return to the initial position, press the demisting key again or press the On/Off – Auto key to return to automatic operation.

### ❑ AIR RECYCLING FUNCTION



This key allows choosing an air entrance, from outside or inside of the vehicle.

When on the display appears this symbol the system will start an air recirculation pushing the air through the outlets on the distribution panel.

### ❑ CONNECTION / DISCONNECTION HYDRONIC AND / OR AIR DISTRIBUTION



This key operates two functions depending on how long the key is held down.

Time of held down > 2 Sec.

- ❖ When the Preheater is connected, allows to disconnect\* it, disappears the symbol  from the screen and the automatic operation is to be switched off (if was switched on).
- ❖ When the Preheater is disconnected, allows to connect it and on the screen appears the symbol .

When the system is operating in automatic mode, the Preheater will connect if the conditions for its operation are fulfilled and will disconnect if they are not.

Time of held down < 2 Sec

- ❖ Allows changing the air flap position and situating it to push the air on the windscreen, windscreen or driver or only on driver.

The functioning mode is showed on the screen (see Fig. 1) by indicative symbols, which change according to the number of times the key is pressed:

- ▲ air directed towards windscreen
- ◆ air directed towards windscreen and driver
- ▼ air directed towards driver

### ❑ OUTSIDE TEMPERATURE AND /OR AC CONNECTION



This key offers several functions depending on how long the key is held down and how many times it is pressed.

The symbol  which appears on the screen indicates that it is possible to switch on the Air Conditioning in the front unit (when certain requirements are fulfilled); it will be switched on only if the AC of the roof unit is connected.

When the key is pressed and held for **more than 2 seconds**, two different situations may occur:

- **When the air conditioning of the defroster is connected,**
  - The air conditioning symbol ❄ and A/C of the front unit will be disconnected.
  - Automatic operation is deactivated.
- **When the air conditioning is disconnected,**
  - It will be switched on and the symbol ❄ appears on the screen whenever will be fulfilled requirements for its operation.

**NOTE:** When the **air conditioning** is **working**, the **fan speed** never will be lower than the **programmed minimum** (third speed).

- If the key is pressed for less than 2 seconds, on the screen appears outside temperature for 15 seconds.

**Hazard: ice on road.** When the outside temperature falls down below 5°C, this information will stay permanently on the screen.

***iWarning!* When this indicator is used to warn against the possibility of ice on the road, it should be remembered that the road may also have ice if the temperature is 5°C or more.**

#### INSIDE TEMPERATURE SELECTION (DRIVER ZONE ACTIVE)



The required temperature for the inside of the vehicle is setted by pressing any of these keys on the left.

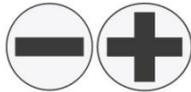
If one of these keys is pressed quickly, the temperature increase or decrease according to the number of times the key is pressed.

If the selected temperature is lower or higher than the accepted limits (17°C / 28°C), the temperature disappears from the screen and instead of the number appears MIN or MAX.

In MIN and MAX positions, the equipment is adjusts operation according to maximum refrigeration or heating performance, respectively.

These operating modes are programmed in order that the fan speed not achieves its maximum position until the processed air attains a temperature which will not cause discomfort to the driver or guide.

❑ FAN SPEED SELECTION OR TEMPERATURE PASSANGER AREA



When the keys on the right are pressed, when the driver zone is active, an automatic operation is deactivated, and the speed of the fans is increased or decreased, within the safety limits established according to the operation mode.  
Air speed variation is shown on the display by the number of black-coloured vertical bars.

Pressing any of keys when the passenger zone is active will be modified the selected temperature in the passenger zone.

#### 4. SWITCHING OFF THE SYSTEM

The system can be switched off in two different ways:

- By pressing the **On-Off / Auto** key for more than two seconds.
- By switching off the ignition.