

Introduction

The possibilities with Viper Mark 1

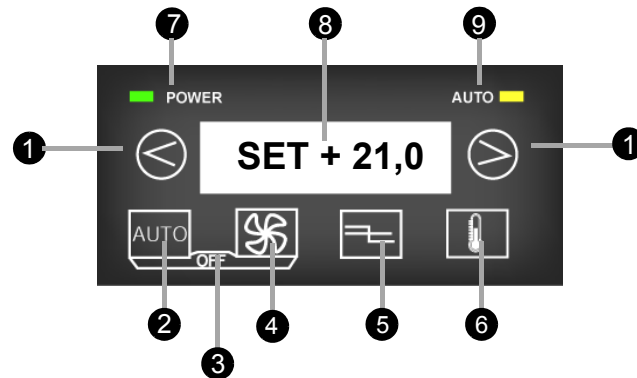
The control system Viper Mark 1 is a complete solution for automatic control of climate systems in large vehicles, like buses. It has the capacity of controlling climate parameters such as heating, air conditioning, ventilation, and air freshness.



What settings are necessary to be performed by the driver?

In fact, the driver only has to select temperature and the Viper controls the rest. But, if the driver likes to set, for instance fan speed manually, the possibility is there. Also, there are possibilities to control recirculation flaps and view current temperatures.

Front panel - overview



① Set buttons

Used to change the set temperature, AC (air conditioning)-blower speed or flap position, depending on what function the display is showing.

② AUTO

Resets all settings to automatic position.

③ System OFF

Press AUTO and FAN simultaneously and the system shuts down.

④ AC blower speed

Press this button to view or change the air conditioning blower speed.

⑤ Flap position

Press this button to view or change the flap position from fresh air to recirculation and vice versa.

⑥ View temperature

With this button you choose if you want to view the present set temperature: outdoor or indoor temperature.

⑦ Power indicator

Indicates when the system is operating.

⑧ LCD Display

⑨ Auto indicator

Indicates when the system operates in fully automatic mode.

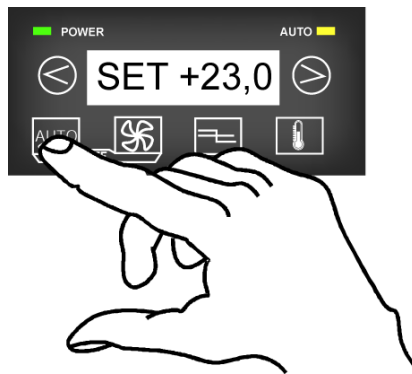
Getting started

Start up of the bus

When you start the bus, the system begins a self diagnosis routine and a communication test that takes a few seconds. During this test "CommTest" will be shown on the display. After a few moments, this message will be replaced with "Viper ON", provided that the generator signal is available, otherwise "Viper OFF" will be displayed.

Automatic operation

1. Press **AUTO** in order to set the system to automatic operation and to use the last temperature setting.



To change temperature, see instructions on the next page.

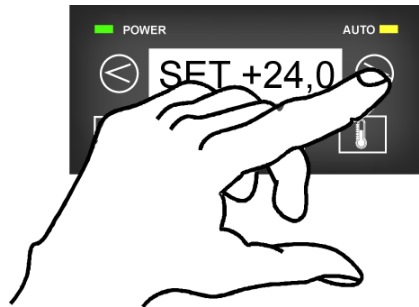
Basic functions

Change the temperature setting

It is possible to set the temperature from +17°C to +27°C by pressing the ◀ ▶ buttons.

Example: The temperature is set to 23°C and you want to change the temperature to 24°C, do as follows:

1. Change the setting from 23°C to 24°C by pressing the set button, according to the figure. The display will now show 24°C:



View different temperatures

1. Press the button according to the figure



2. Select which of the set temperatures you want to view, outside or interior, by pressing the thermometer button.

Possible selections:

SET=selected temperature setting

INT=indoor temperature

OUT=outdoor temperature

Change the AC blower speed

The AC blower speed is governed automatically. But, if you would like to change the speed, just follow the instructions below.

1. Press the button according to the figure below.



2. Change the fan speed by pressing the ◀ ▶ buttons.

The blower speed is represented by a number between 0 and 3. If you override the automatic regulation the AUTO- indicator will turn off, indicating that the VIPER module no longer is in fully automatic mode.

Note: If the air conditioner is on, you are limited to choosing between 2nd and 3rd speed.

Change the flap position fresh/ recirculation

Like the fan speed, the control unit automatically takes care of the position of the flap. However, if you want to change the position for any reason then do as follows:

1. Press the button according to the figure below.



2. Change the position of the flap by pressing the ◀ ▶ buttons.

Possible selections:

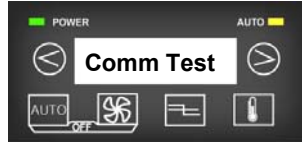
FRESH=The ventilation air is taken via the fresh air intake.

RECIRC=The ventilation air is taken from the compartment, recirculated.

Note: The fresh air intake flap will close automatically if the air conditioner can not hold the set temperature. This is to avoid the inlet of hot air into the coach.

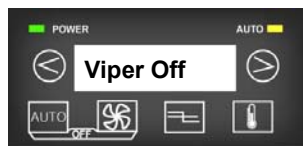
Viper Display Messages

Communication fault



This message will be shown at start of the Viper, which is normal. However, if the message remains this means that there is a communication fault. Check for broken connections and that you have the correct version of the Viper.

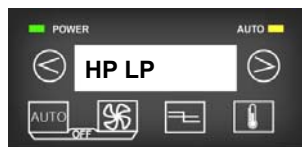
Viper OFF



The message VIPER OFF will appear if you press the OFF buttons simultaneously. Normally, you only turn off the system if there is some kind of malfunction.

This message will also appear when the generator (+) signal is missing or when the engine stops.

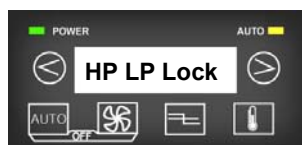
HPLP (High pressure/ low pressure fault)



This message is displayed alternating with the normal display if the pressure in the air conditioning refrigerant circuit becomes too high or too low.

The compressor clutch will be disengaged in order to protect the air conditioning system. When the pressure is normalized the VIPER returns to normal operation after a minimum delay of four minutes.

HPLP Lock fault



After five failed compressor start attempts, or if the fault remains for more than 10 minutes, there will be an interlock, called HP/LP Lock. It is possible to unlock the HPLP Lock by turning the battery power OFF and ON.

ICE thermostat



This message is displayed alternating with the normal display if the air conditioning evaporator becomes iced. When the condition is normalised, the VIPER returns to normal operation after a minimum delay of three minutes.

Under voltage

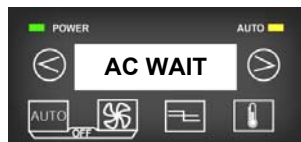


If the voltage is too low, the current demanding air conditioner is turned off in order to protect the batteries. The heating system remains active. When the voltage returns to normal the AC system is activated without delay.

AC Wait

When the system intends to start the AC-unit and the bus recently has been in the heat mode, the AC is delayed and this message is displayed.

This message is also displayed when the outdoor temperature is below 8°C or the outside sensor is broken.



Outdoor sensor

When the display shows "OUT NC" the system indicates that the outdoor sensor is not connected.

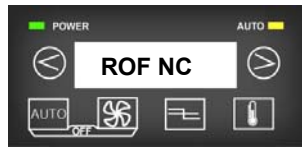
SH means that the sensor is short-circuited.



Roof sensor

"Rof NC" means that the roof sensor is not connected.

"Rof SH" indicates that it is a short-circuit



Water sensor

"Cnv NC" means that the sensor is not connected.

"Cnv SH" indicates that it is a short-circuit.



Internal sensor

"Int NC" means that the sensor is not connected.

"Int SH" indicates that it is a short-circuit.

