

**CONTROL MODES** MITOS VT6 HVAC terminal can be used to set the SET POINT of inverter PID block and to control motor RUN and STOP, else it can be used as simple display only. By using  $CnOd$  and  $FnOd$  parameters it is possible to establish the level of control as following:

Model	VF-Nc3	VF-S15	VF-Mb1	VF-FS1	VF-AS1	VF-PS1
<b>Control start/stop by MITOS VT6 HVAC</b>	Cmod=2 Fmod#3	Cmod=2 F389=0	Cmod=2 Fmod#4	Cmod=2 Fmod#4	Cmod=2 Fmod#5	Cmod=2 Fmod#5
<b>Set the PID Setpoint by VT6 HVAC</b>	Cmod#2 Fmod=3	Cmod#2 F389=3	Cmod#2 Fmod=4	Cmod#2 Fmod=4	Cmod#2 Fmod=5	Cmod#2 Fmod=5
<b>Total control by VT6 HVAC</b>	Cmod=2 Fmod=3	Cmod=2 F389=3	Cmod=2 Fmod=4	Cmod=2 Fmod=4	Cmod=2 Fmod=5	Cmod=2 Fmod=5

## CONFIGURATION MENU



Access to setting menu is done by contemporary pressing of these keys at switching on.

## CONFIGURATION MENU OPTIONS

<b>Rotatiopn sense</b>	Forward RUN Reverse RUN	Select the motor rotation direction when START key is pressed
<b>Release</b>		Display the firmware release
<b>Set K parameter<sup>2</sup></b>	0 - 5000	It select a converting factor between Pressure (various units) and FLOW (m <sup>3</sup> /h) to be displayed in AUTO mode
<b>Set C parameter</b>	0-5000	It set the pressure/temperature transducer max value
<b>Speed unit<sup>4</sup></b>	Hz, RPM, m/min, ---	Selects the speed unit to be displayed in mode MAN (use F702 for scaling)
<b>Manual variable<sup>3</sup></b>	Real, h, Ampere	In MAN mode selects the second variable to be displayed
<b>Unit selection<sup>1</sup></b>	BAR, mBAR, PA, kPA, mmH2O, m3/h, m3/min, l/h, l/min, °C, °F, ---	Select the main UNIT in AUTO mode
<b>Select Language</b>	Italian, English, Spanish, German, Russian	
<b>Storage Set</b>	ON/OFF	If ON, after switching off the last Set-point value is stored. If OFF, the value is always resetted. In MAN mode this parameter concerns the speed set.
<b>Transparent mode</b>	ON OFF	If ON, MITOS VT6 is used as a simple display only with no possibility to control the inverter

**SETTING OF CONFIGURATION MENU** Values on configuration menu can be selected through arrow keys. Values can be changed by using START and MAN/AUTO keys. To exit configuration MENU use STOP/RESET key.

## AUTO MODE

In Auto Mode the first line of display always show the PID Set point in the unit that has been selected (1). Second line shows the feedback variable. If the setpoint is expressed as pressure variable, the feedback can be either pressure or flow and calculated by multiplying the square root of pressure for the parameter K (2). If K is different from zero, the feedback (REAL) will be displayed as FLOW.

**CHANGING THE PID SETPOINT** If MITOS VT6 HVAC is used for changing the setpoint of PID, by using arrows key sit will be possible to modify the setpoint. If another method (selected by Fmod) is used for changing the setpoint, the displayed value will be only read one.

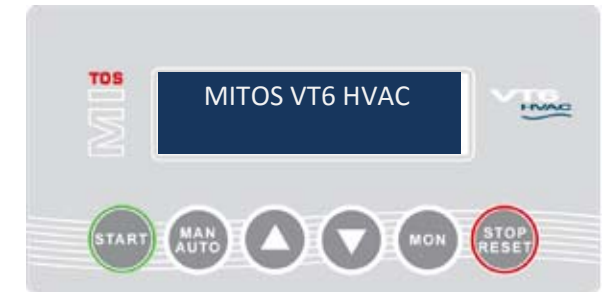
**MONITOR MODE** Pressing the MON key it could be shown alternatively to SETPOINT a different variable choosing from Power (power requested from line), Freq. (actual frequency), Iout (output current), Vin (input voltage), Vout (output voltage), Et1-4 (last alarms), Cnt (total working hours)

## EMERGENCY MANUAL MODE

When motor is not running it is possible to switch from AUTO to MANUAL mode by pressing the MAN/AUTO key and keep it hold for 3 sec.. In this mode, independently from  $CnOd$  and  $FnOd$  setting, VT6 HVAC completely controls the motor; start and stop is managed through START and STOP/RESET keys and motor speed is changed by arrow keys. The variable to be shown in second line of display can be selected by the "manual variable" (3) from configuration menu. The measure unit for speed can be selected through the "Speed unit" (4) variable in configuration mode. The displayed value of speed can be converted by a multiplying factor using  $F702$  inverter parameter.



Advanced control terminal for TOSHIBA inverters in HVAC applications. (V 5.1)



- Multilanguage
- RS485 or TTL interface selectable
- Customizable front layout
- Pressures and temperatures selectable units
- Emergency manual mode

## SAFETY INFORMATIONS

### Mandatory



Always read carefully this manual before installing and operating MITOS VT6 HVAC control panels

### Warning



Always delivery a copy of this manual to end user of inverter or machine

### Danger



MITOS VT6 HVAC transfers serial communication commands to TOSHIBA inverters. In case of failure or missing communication (or for communication cable breakage) it might be impossible to stop the motor. Always use a safe system to stop the motor.

### Safety precautions

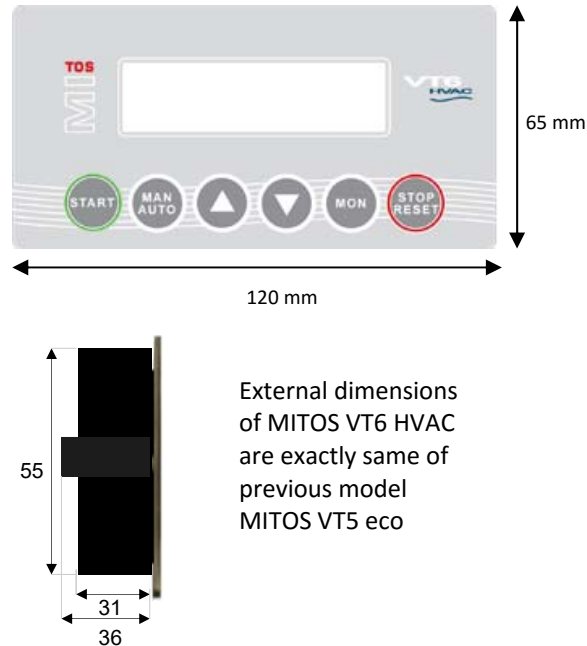


MITOS VT6 HVAC can't be used in any device that would present danger to human body or from which malfunction or error would present a direct threat to human life.

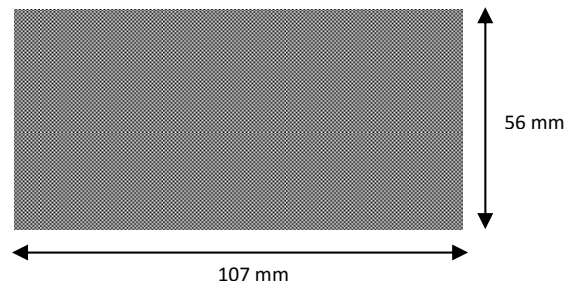
This product was manufactured under the strictest quality controls but if it is to be used in critical equipment safety devices must be installed on the equipment.

This manual may be changed without prior notice.

## EXTERNAL DIMENSIONS



## FITTING HOLE ON CONTROL PANEL

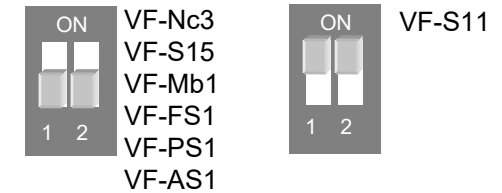


## CONNECTION

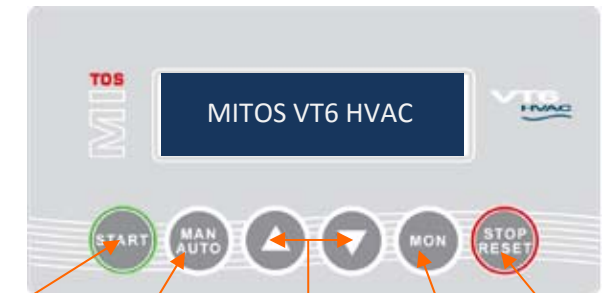
MITOS VT6 HVAC can be used with following TOSHIBA inverters: **VF-Nc3, VF-S11, VF-S15, VF-Mb1, VF-FS1, VF-AS1 e VF-PS1.**

Connection can be made with a standard RJ45 8 wires cable "pin to pin".

For VF-S11 inverters the communication port used is standard TTL. Inverters VF-Nc3, VF-S15, VF-Mb1, VF-FS1, VF-PS1 e VF-AS1, can be connected through RS485 serial port allowing long distance communication cables. The connection method can be selected by two microswitches on VT6 HVAC back:



## FUNCTION OF KEYS



Starts the motor if motor control is selected through MITOS VT6 HVAC

By 3 sec. pressure with stopped motor it can switch from AUTO to MAN mode and vice versa

In AUTO mode arrows set PID SETPOINT. In MAN mode arrows set the output inverter frequency. In MON mode some monitor values can be displayed

Enter the MONitor mode  
Stop the motor if control is selected through MITOS VT6 HVAC. Reset inverter alarms.