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TERMINAL FOR POWER SUPPLY AFV2009 SERIAL RS485

SP090602



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SAFETY INSTRUCTIONS

Before the start-up of the power supply read carefully this instruction manual.

Attention: in order to reduce fire risks, electric shock or accident when carrying out installation work and making connections please observe the following safety instructions:

- **Install the equipment in a place clean, dry and not subject to vibrations**
- Do not use in presence of gas or flammable liquids
- Installation must be made from qualified staff
- Isolate from mains before installation or dismantling work, as well as for fuse changes or post installation modifications
- The earth connection must be checked, for correct function, after installation
- Before putting into operation check if the local supply voltage conforms the rated voltage
- Verify absence of ground dispersions into the connections between power supply and vibrator and use shielded cable for this connection

DECLARATION OF CONFORMITY

We declare under our sole responsibility that the product

Power Control for vibrators, code SP090602

to which this declaration refers, on the basis of the provisions of the directives:

73/23/EEC e 93/68/EEC (LOW VOLTAGE)

complies with the following standards or normative documents:

LVD CEI EN60439-1 (LOW VOLTAGE)

if operating and connection instructions, as mentioned into the instruction manual, are observed.







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KEYS

KEYS		Description
	Key UP:	Slide the menu, in modify function increases the value
	Key DOWN:	Slide the menu, in modify function decreases the value
	Key BACK:	In the menu goes back to the previous menu; in modify function goes back without modifying value
	Key ENTER:	In the menu enter to modify a value or to go to next menu; in modify function modifies the value and goes back
	Key START:	Run
	Key STOP:	Stop

Main Menu Equipment

AFV 01 Standby V=020% F=050.0Hz

Status and value of the inverter

In the scrolling menu of the equipment will display the status and values of the inverter.

The number indicates which device the terminal reads the data, then displays the status of the device:

AFV 01 Standby	(device 1 connected in standby state)
AFV 01 Run	(device 1 connected in running state)
AFV 01 Sensor	(device 1 connected in stop state cause additional sensor)
AFV 01 Overheat	(device 1 connected in overheating state)
AFV 01 Saturat.	(device 1 connected in saturation state)
AFV 01 not conn.	(device 1 disconnected, not on the RS485 line)
AFV 01 Waiting	(device 1 waiting for communication on the line)
AFV 01 Incompat.	(device 1 incompatible with the terminal connected)

In the second line displays the current values of voltage and frequency inverter or if the accelerometer enabled inverter has abnormalities, you will read "Acc.not conn.".

This menu is automatically updated every half second.

In multiple connection of few inverters AFV2009 on the serial line, the terminal every 2.5 seconds switches to the state and the values of the next device if you have set the menu as inverter total more than one AFV.

Insert access code

PRESS THE BACK BUTTON FOR FEW SECONDS

Insert access code: _____

Insert the access code that inhibit the access to anyone.

After the insertion of the access code you enter in the menu where you can change the values of voltage, frequency etc.

There are three access levels:

Operator: can only change the voltage and the start or stop of the inverter selected.

Programmer: can change voltage, frequency, soft start, soft stop, start delay, stop delay, enables accelerometer, the management of the minimum and maximum reference voltage, management of settings, reading and sending values, factory reset, the language change, the change of operator and programmer codes.

Technician: in addition to the functions of the programmer can save the technical code, can modify the parameters proportional and integral and the baud rate, determine what is the first inverter of the serial line and how many inverters are connected.

Default Access Codes

<u>Operator:</u>	0000
<u>Programmer:</u>	1111
<u>Technician:</u>	0001

PRESS ENTER TO ACCESS AND MODIFY PARAMETERS OF OPERATOR, TECHNICAL OR PROGRAMMER

After 20 sec., without pressing buttons, returns to the main menu of the equipment

Menu

Operator access with code:

State of the equipment and voltage

AFV 01 Standby Voltage= 020.0%

Displays the state and device number of the inverter connected to the terminal.

If you press the Back button, or wait 20 sec. without pressing buttons, you return to
MAIN MENU OF EQUIPMENT

PRESS ENTER TO CONTINUE

Access with programmer code:**State of the equipment**

```
AFV 01 Standby
V=000% F=050.0Hz
```

Displays the state and device number of the inverter connected to the terminal.

If you press the Back button, or wait 20 sec. without pressing buttons, you return to **MAIN MENU OF EQUIPMENT**

PRESS ENTER TO CONTINUE

Voltage

```
Voltage= 020.0%
Frequenc=050.0Hz
```

Allows to change the output voltage to increase or decrease the flow rate of the system.

Frequency

```
Frequenc=050.0Hz
Soft Start=00.5S
```

Allows to change the output frequency to search the resonance frequency of the system.

Soft Start

```
Soft Start=00.5S
Soft Stop= 00.5S
```

Allows to change the slope of the start ramp.

Soft Stop

```
Soft Stop= 00.5S
Start Del.=00.0S
```

Allows to change the slope of the stop ramp.

Start Delay

```
Start Del.=00.0S
Stop Delay=00.0S
```

Allows to change the time of start delay compared to control start / stop.

Stop Delay

```
Stop Delay=00.0S
Acceleromet=OFF
```

Allows to change the time of stop delay compared to control start / stop.

Enable Accelerometer

```
Acceleromet=OFF
Enab.Analog= NO
```

Enables tracking vibration with accelerometer.

Enable Analog (displays the status of the adjustment output)

```
Enab.Analog= NO
Invert.Start= NO
```

Allows you to Enable the reference output from external (POT or 0-10V whith JS1 closed).

Start inversion

```
Invert.Start= NO
Invert.Sens= NO
```

If = YES Determines the normal state on the run inverter (the external control stops)

Sensor inversion

```
Invert.Sens= NO
Ref.Vmin= 000.0%
```

If= NO Determines the presence of an additional sensor enabling the inverter run (or SW1inverter=UP)

Minimum Voltage Reference

```
Ref.Vmin= 000.0%
Ref.Vmax= 100.0%
```

Allows to change the minimum threshold voltage.

Change the minimum threshold voltage variation of the terminal.

Maximum Voltage Reference

```
Ref.Vmax= 100.0%
Save Setting
```

Allows to change the maximum threshold voltage.

Change the maximum threshold voltage variation of the terminal.

Save Setting

```
Save Setting
Load Setting
```

Allows to save with a name all data.

```
Save whit name
?????????
```

When you enter the menu save *whith name* in place of "?????????", with the up and down arrows enter the name to identify the settings.

Press ENTER to go to the next letter. With BACK you go to the previous letter.

If it is the ***first*** character with BACK cancels the save.

If it is the ***eighth*** character with ENTER confirm the save.

If you save a setting with a name already present in the memory, **overwrite** the current settings.

At most 25 settings are saved; exceed these, when you confirm to save, it displays "Memory full", then delete a setting or enter a name equal to an existing one to be able to overwrite.

Load Setting

```

Load Setting
Erase Setting
    
```

Allows you to recall a previously saved setting.

```

?????????
Load?_
    
```

When you view the first saved setting, move the down arrow to go to the next setting.

If there are not settings saved displays "**Memory empty**".

After calling the settings, data are loaded to the current device, otherwise cancel by pressing the BACK button.

Erase Setting

```

Erase Setting
Factory Data ->
    
```

Allows you to delete the saved settings.

```

?????????
Erase?_
    
```

When you view the first saved setting, move the down arrow to go to the next setting.

If there are not settings saved displays "**Memory empty**".

When setting to be deleted appears press ENTER to clear.

Restore Factory Settings

```

Factory Data ->
Language= ENG
    
```

Allows to change the current values, with those of the factory, without deleting the saved settings. Also restores the access codes to default.

```

Factory Data= R
Language = ENG
    
```

```

Impost.Fabb= W
Language = ENG
    
```

You can override your default settings if you do not want the default.

To restore the factory select = R (read)

To save the new factory settings select = W (write),

The code of the technician can only restore the technician

Factory Settings

Parameter	Setting	Factory Setting:
Operator Code	0000 ... ZZZZ	0000
Planner Code	0000 ... ZZZZ	1111
Technician Code	0000 ... ZZZZ	0001
Voltage	0.0 % ... 100.0 %	20.0 %
Frequency	10.0 Hz ... 150.0 Hz	50.0 Hz
Soft Start	0.5 Sec ... 5.0 Sec	0.5 Sec
Soft Stop	0.5 Sec ... 5.0 Sec	0.5 Sec
Start Delay	0.0 Sec ... 30.0 Sec	0.0 Sec
Stop Delay	0.0 Sec ... 30.0 Sec	0.0 Sec
name Setting	any	???????
Language	ITA,ENG,DEU,FRA,POL,ESP,POR,RUS	ENG
Parameters P/I	0-9/0-20	00
Current limit	0-9.99°	According the inverter size
Search / tracking	OFF/ON	OFF

Change Language

```
Language= ENG
Device Num.= 01
```

Allows to change the menu language in the terminal command.

The languages are: Italian, English, German, French, Spanish, Polish, Portuguese, Russian.

Device Number

```
Device Num.= 01
Save Plann. Code
```

Allows to save the number of the device you want to talk on the RS485 serial line.

The maximum of inverter connectable to the terminal is 127 , from the first set with the number 1.

Save Code Programmer

```
Save Plann. Code
Save Techn. Code
```

Allows to save a new Planner code.

```
New Code
Planner: 1111
```

To insert the new Planner code:

Up & down buttons determine character, Enter confirms the character, Back cancels the character.

If it is the **first** character with BACK cancels the code.

If it is the **fourth** character with ENTER confirms the new planner code.

Technician Access whith code:

Save Technical Code

```
Save Techn. Code
Prop.Param.= 00
```

```
New Code
Technic: 0001
```

Allows to save a new technician code.

To insert the new technician code:

Up & down buttons determine character, Enter confirms the character, Back cancels the character. If it is the **first** character with BACK cancels the code.

If it is the **fourth** character with ENTER confirms the new code planner.

Proportional Parameter

```
Prop.Param.= 00
Integ.Param.=00
```

Allows to change the feedback parameter proportional.

The parameter proportional and the integral parameter are used to slow down or speed up the reaction related to changes of the mains voltage or the load variations.

The range of the proportional parameter is from 0 to 9.

Integral Parameter

```
Integ.Param.=000
Primo AFV = 01
```

Allows to change the feedback parameter integral.

The parameter proportional and the integral parameter are used to slow down or speed up the reaction attributable to changes of the mains voltage or the flow rate of the load.

The range of the integral parameter is from 0 to 20.

Minimum frequency reference for automatic research

```
Ref.Fmin=030.0Hz
Ref.Fmax=140.0Hz
```

Allows to set the minimum threshold to research of the resonance frequency.

Maximum frequency reference for research

```
Ref.Fmax=140.0Hz
Enable2Speed=NO
```

Allows to set the maximun threshold to research of the resonance frequency.

Enable second speed

```
Enable2Speed=NO
Vol2Speed=010.0%
```

Allows enabling the sensor input as a command to the second speed.

Voltage second speed

```
Vol2Speed=010.0%
Enab.Timeout= NO
```

Allows to set the reference voltage of the second speed.

Enable Timeout

```
Enab.Timeout= NO
Timeout=020.0Sec
```

Allows to set the function Timeout (stop after a certain maximum time).

Timeout

```
Timeout=020.0Sec  
EnableInterm= NO
```

Allows to set the maximum delay time to turn off the equipment (20.0-300.0 Sec).

Enable Intermittence

```
EnableInterm= NO  
Inter.TON= 03.0S
```

Allows to enable intermittent (switching on regulated by specified time 0-30 Sec).

Starting Time Intermittence

```
Inter.TON= 03.0S  
Inter.TOff=06.0S
```

Allows to set the time of the inverter run.

Turn off Time

```
Inter.TOFF=06.0S  
Enable Blow=Yes
```

Allows to set the time the inverter is in stop.

Enable blow

```
Enable Blow=Yes  
Advance Blow= NO
```

Allows to enable the excitation relay for air blow.

Advance blow

```
Advance Blow= NO  
Blow T.Adw=01.0S
```

Allows to enable the function of anticipate blow.

Blow Advance Time

```
Blow T.Adw=01.0S  
Blow time= 04.0S
```

Allows to set the time to advance air blow to the run (0-5 Sec).

Blow Length Time

```
Blow time= 04.0S  
Inverter= OK/KO
```

Allows to set the time duration of the air blow (0-20 Sec).

Inverter OK/KO

```
Inverter= OK/KO  
Ampl.sear=020.0%
```

Allows to set the reporting of inverter failure or inverter running.

Amplitude search

```
Amp.Ricer=020.0%  
CurrActual=0.00A
```

Allows to set the output voltage to perform the search of the frequency resonance.

Actual current

```
CurrActual=0.00A  
LimCurrent=08.0A
```

It can display the current that the inverter is delivering.

Current Limit

```
LimCurrent=03.0A
RicerFreqRis=OFF
```

Allows to set the current limit supply in output.

Search resonance frequency

```
ResFreSearch=OFF
ResFreTrack= OFF
```

Will start the search for the best frequency of use.

Tracking the resonant frequency

```
ResFreTrack= OFF
Baudrate= 9600
```

Allows to enable tracking of the best frequency used.

Baud Rate

```
Baudrate= 9600
PowerSupply=230V
```

Allows to change the baud rate of communication between terminal and inverter.

The baud rates are: 2400, 4800, 9600, 19200, 38400, 57600.

Power Supply

```
PowerSupply=230V
Temperat=021.0°C
```

View (and allows to set 115Vac whether 230Vac) supply to the current network.

Temperature

```
Temperat=021.0°C
Val.Brake=001.0%
```

It can display the temperature inside the inverter.

Brake Value

```
Val.Brake=001.0%
OutVolt= 000.0%
```

Allows to set a percentage value 0-100% braking at the stop of the load.

Error Messages**Disconnect device, connected**

This message appears when:

- 1- The serial communication cable is disconnected
- 2- The number of the power supply is different from that set
- 3- The earth is not connected

If you resolve the problem is to appear the message "**device connected**".

Existing code

When you enter a invalid code operator, programmer or technician set a operator function, enter a different code and confirm.

Note: If a command is not executed (if not inhibited by special procedures), please try holding the button down longer, the equipment may be at a time of intense calculation.

Note: If you experience problems in viewing or operation of the display, try again and / or remove power, wait a few minutes, reconnect the power supply.

If the problem persists or corrective actions do not resolve the problem, contact the technical support service (email: info@digisystemsrl.it).