OPEN DRIVE

OPEN DRIVE

Super Visor

INDEX

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1. INTRODUCTION

This supervision software is a program designed to easy configure and control the OPEN DRIVE drives.
The program uses the PC RS485 serial line to communicate with the drive.

2. MINIMUM SYSTEM REQUIREMENTS

- Developed for Windows 2000, NT, XP, ME, 9X.
- Minimum video resolution: 800x600 (optimal)
- 32 Mbyte RAM

3. SOFTWARE INSTALLATION

- Launch the file "setup.exe" from the CD or from the folder in wich the files have been copied.
- Follow the instructions of the setup program. It will install the supervisor software and the Runtime Engine (Labview 6.1)

During the setup procedure the program will ask you to specify the folder where you desire to install the supervisor. The default floder is:

C:\Supervisori azionamenti\Open v xx

In this folder are created the support files for the supervisor, and the supervisor itself: "Open v xx.exe"

If the files are compressed, before to launch the setup procedure decompress them using the program pkunzip.

To uninstall the supervisor program double click on the same file "setup.exe" used to install it and follow the instructions.
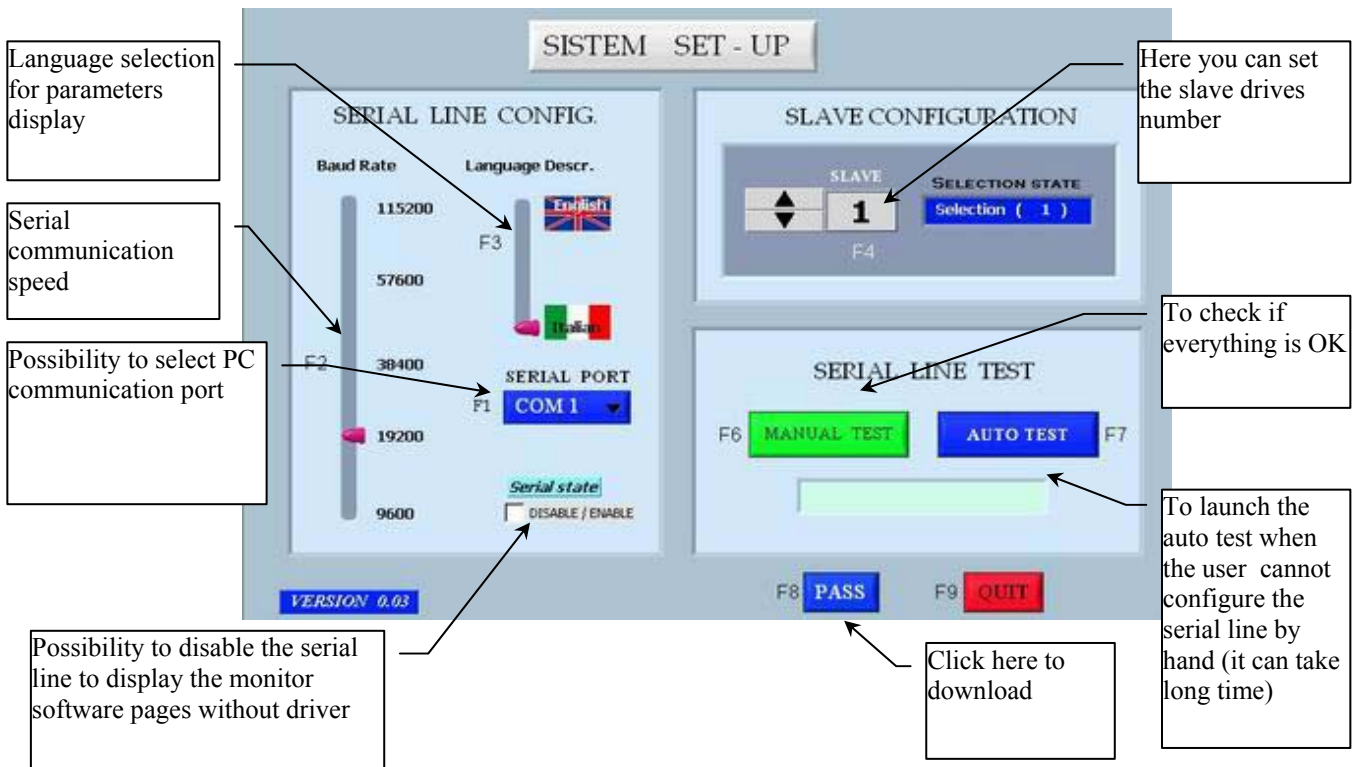
4. CONNECTION WITH THE DRIVE

Two different modes are available to connect the PC to the drive:

- Connect to the RS485 port in the drive. In this case it is needed a RS485/RS232 adapter. the cable type and the pinout depend on the adapter used.

TDEMACNO can provide the RS232/485 adapter with relative cable.

5. GETTING STARTED

The first step to access the program is the setting of the correct communication parameters:

- the slave number set in the supervisor must correspond to the slave number set in the drive (see parameter P92)
- the baudrate set in the supervisor must correspond to the baudrate set in the drive (see P93)
- select the COM port where the communication cable is connected

In the drive the default values are:
- Baudrate: 19200 baud (P93 =19.2)
- N. slave: 1 (P 92 = 1).

The user can select the language that will used in the program.

The second step is to check if the communication is correct:

- manual test: the communication between the PC and the drive is checked with the data set in the screen.
- automatic test: the first 20 slave number, the COM ports and the baudrates are scanned until the correct combination is found. (to abort the test disable the button)

When the communication is correct the message "Communication OK" is displayed, and the user can access the program pressing the "PASS" button.
The download screen is displayed to indicate that data are being downloaded from the drive:

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Note: the supervisor program uses the Modbus RTU communication protocol.

The supervisor program can work in "**OFFLINE**" mode, to allow the setting and saving of parameters configurations in the hard disk without having a drive connected to the serial line. To work in "OFFLINE" mode check the "Serial state" checkbox, and then press the "PASS" button.

6. PAGES DESCRIPTION

6.1. INTRODUCTION

In the first page you can go back to the serial configuration page or terminate the program pressing "ESC".

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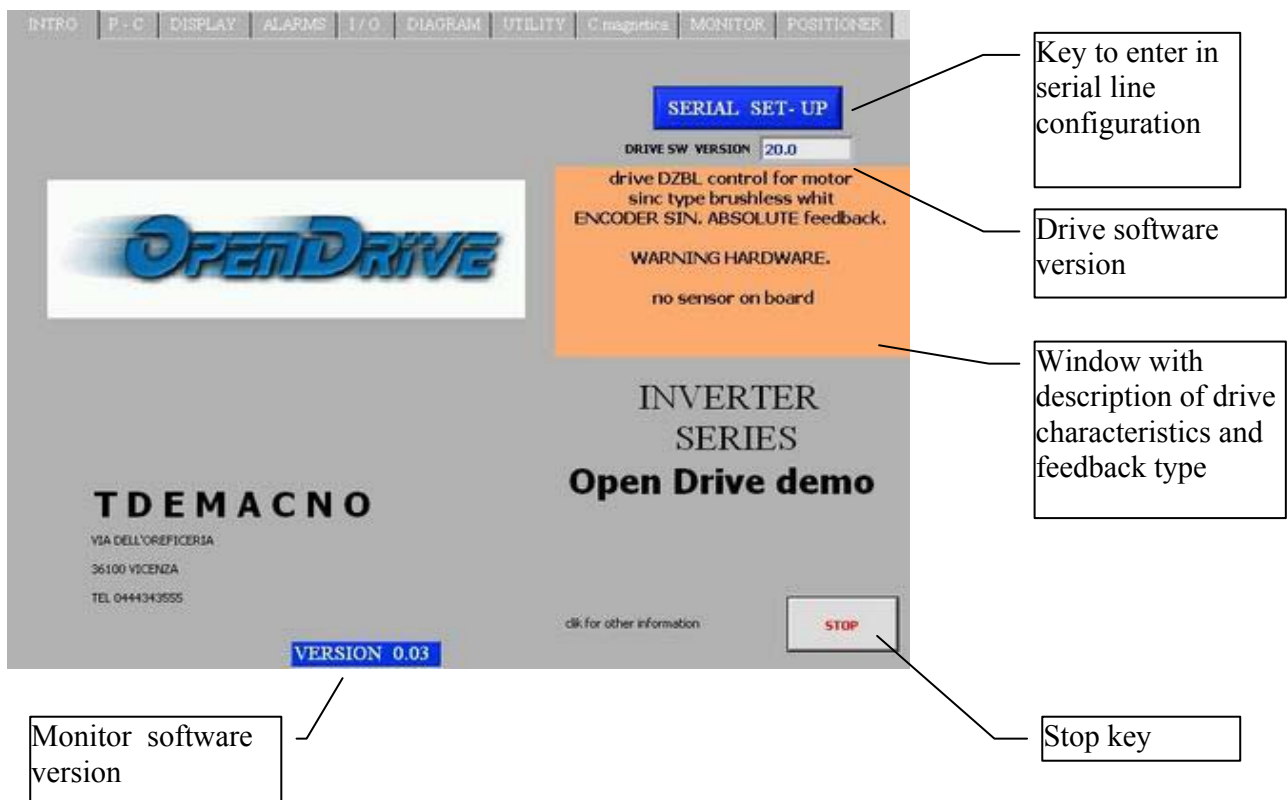
6.2.   P,C

In this page the user can access all the parameters "P" of the drive : the table contains the actual value of the parameter in the RAM of the drive, and then the default value and the limits.
To change the value of one parameter, select it in the table and write the new value in the field above the table, then press enter to confirm.

To enable the access to the protected parameters "r", select the "key" button and set the value equal to 95.
The same is to read and set the connections "c".
To access the direct commands "dcd" press the button below the table, and then select the desired command.

Direct access to P60 (reserved parameters key)

Parameter is changing

Parameter value

Scrol bar parameters

Connection value

Connection is changing

Scrol bar connections

Description up to 9 selected connections

Description up to 9 selected parameters

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6.3. DISPLAY

There are displayed some of the internal variables of the drive. The graph shows the value of the variable versus the time.
The max and min displayable value can be selected with the two controls below the graph. The limits can be increased beyond ±200 overwriting the value of the controls.

Note: the values are updated very slowly, because of the serial communication time. Thus these values can monitor smooth variations but not fast dynamic changes.

Graphic of the selected value

To chose display or reading through RAM

Selected value

Numeric value

Value description in displaying status

Simulation of external keypad

BOX for display setting

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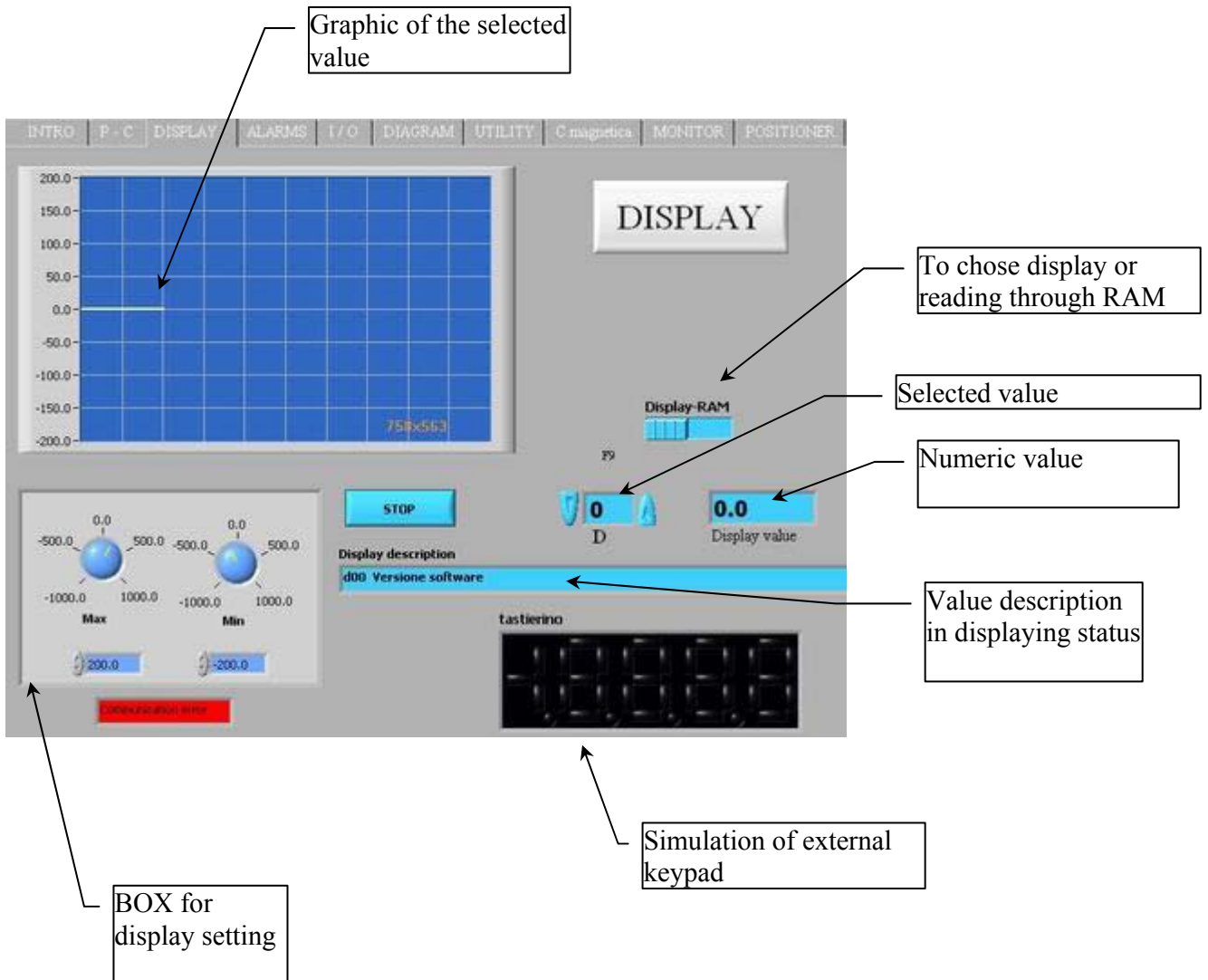
6.4. ALARMS

In this page is displayed the state of the alarms of the drive "Axx".
The alarms can be reset pressing the "Alarms reset" button (command C30=1 in the drive keypad).
Some alarms can be disabled; to do this set the key P60=95 and select the undesired alarms, then press "Send".

See the user manual to read more informations about the alarms and the disabilitations.

6.5. I / O STATE

This page shows the state of the inputs and the outputs of the drive. Some input and outputs are not used (N.U.).

The function "logic configuration" allows the quick configuration of the logic inputs and outputs (note: the change of the configuration is allowed if P50=95 and the drive is in "stop"). In the popup menu are displayed the available functions.

Possibility to directly configure hardware I/O

To select I/O pages

Software input status

Hardware input status

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6.6. DIAGRAM

This page shows a diagram of the drive-motor system: the user can set quickly the main parameters (press the light buttons?????).
If the mouse arrow stops over one of the parameters, a small windows pops up showing its limits and its default value.
To change the value of the parameters, just write the new value and press "enter
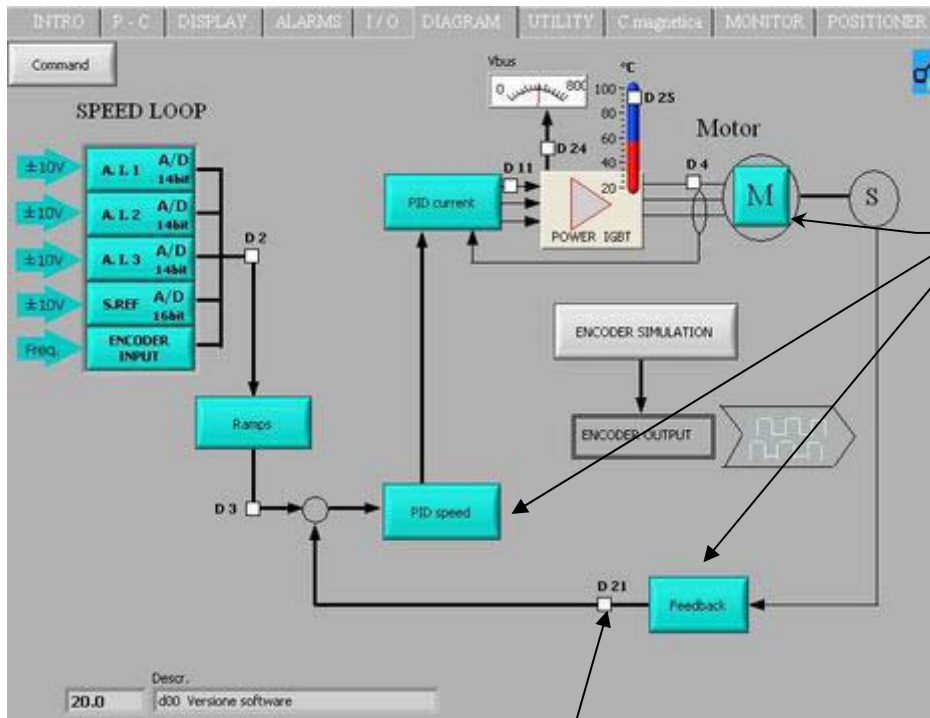
Each box is an interactive page where you can modify parameters

To display the selected value with description by clicking the left key of the mouse

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6.7.   UTILITY

Default data report: creates a report of the default values (parameters P1÷P130 and connections C1÷C80); the format of this file is "html".

RAM data report: creates a report of the RAM values (parameters P1÷P130 and connections C1÷C80); the format of this file is "html".

Alarms report: creates a report of alarms A1÷A15; the format of this file is "html".

Data saving: creates a binary file in which the RAM values (P1÷P130 e C1÷C80) are saved.

Data loading: uploads to the drive the data previously saved in a binary file using the "Data saving" (P1÷P130 e C1÷C80).

Protected parameters and connections are modified on the drive only if P50=95.
If some error occurs, a warning message is displayed to avoid incorrect settings in the drive.

Display data saved: this function displays the contentes of a binary file previously saved using the "Data saving" function. The first 140 parameters and 80 connections are displayed (description and value).
The switch selector and the scroll bar can be used to select "parameter-connection" and to quickly access the desired data.

Possibility to generate .html files and to save DEFAULT data, data in RAM and ALLARM status

Possibility to generate .txt files and to save DEFAULT data, data in RAM and ALLARM

Receipts in dat format are not readable by standard editor progr. To check the data use this tool

First function allows to generate .dat data to customised receipts. The second one download an existing receipt in the drive and check the compatibility with the drive type

6.8. CHARACTERISTIC

This test has the dual purpose of determine the magnetizing current of the motor and his magnetic characteristic (for version DVET)

Using the parameters P71 , P72 , P73 and P74 it is possible to define a three-section working curve by points (so as to be better able to adjust to the desired characteristics).
Points P72 and P74 define the frequency percentage with reference to the maximum working frequency (P68) while points P71 and P73 define the percentage voltage with reference to the maximum working voltage (P69). (for version DFNT)

Utilised parameters to generate the diagram

The generated

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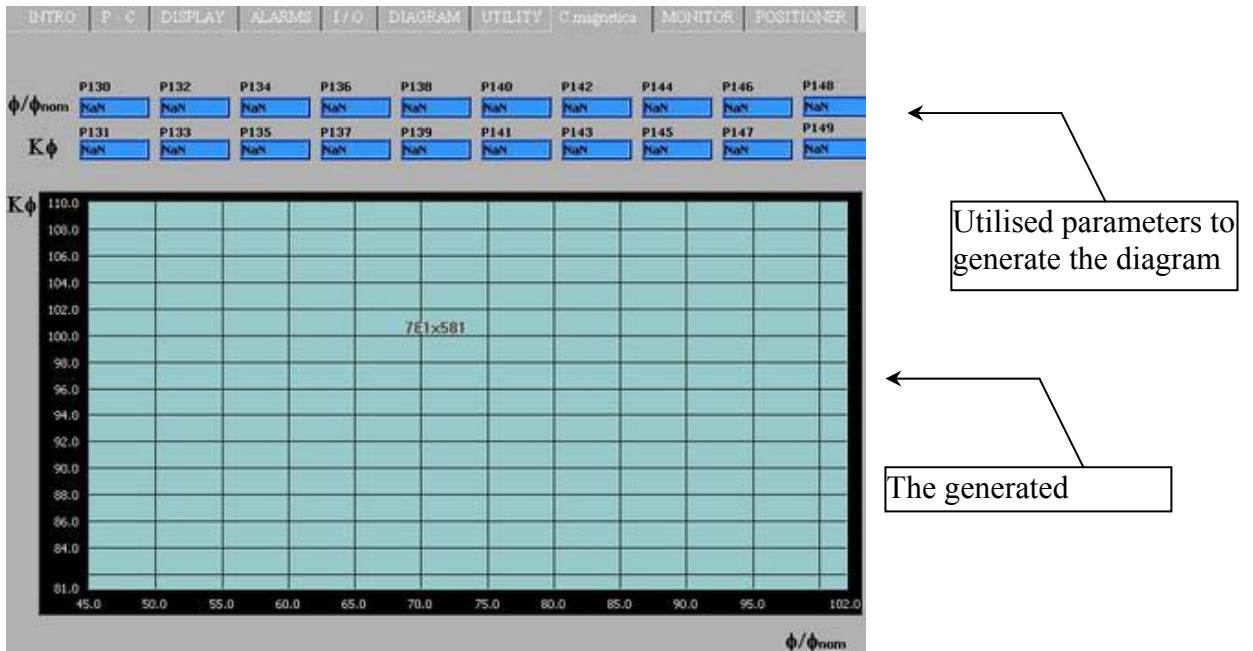
6.9. MONITOR

With the "MONITOR" function the user can manage the real-time acquisition of the drive internal variables.
THe page is divided into three subpages:
- settings
- acqiosition
- analisys and data processing

In the setup subpage can be set the acuisition parameters: the trigger level, the trigger type, the sample time.

Then open the "acquisition" subpage: press the "restart" button and the acquisition begins in the drive, following the settings.
The box near the "restart" button tells the user if the acquisition has already been triggered.
Once triggered, the acquisition keep on until the number of points after trigger is reached (post trigger points). When the value in the box "fine buffer" stops, press te button "Download data".
Now the data are being downloaded from the drive to the PC (2000 samples per channel).

The user can save the obtained waveshape (SAVE) or can load a previously saved waveshape (LOAD), or can even create a report in "xls" format.

Selectiong the function "Options" the user can hide or unhide the trigger line and the trigger level in the graph. Two vertical and horizontal markers can be enabled to measure the time delta and the amplitude delta of the acquired signals.

There are two different possibilities for the zooming of the graph: window zoom and digital zoom.
In the first case select the desired graph area dragging the mouse arrow.
In the second case write in the fields the desired limit values and the graph will change accordingly.
Acquisition example: we suppose to acquire the waveshape of the current in the U and V phases.

First step, set these two variables on the channel one and two (c15, c16).
Then select the trigger type "level of channel 1", set the desired level (P56, "trigger level") to 50%.
Set the "sample time" (P54); remember to multiply this number by 200μsec to obtain the correct time.
Finally set the number of samples to acquire after the trigger (P55).

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Display of the data download by both

Monitor setting menu

Data

Monitor

Buffer staus

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