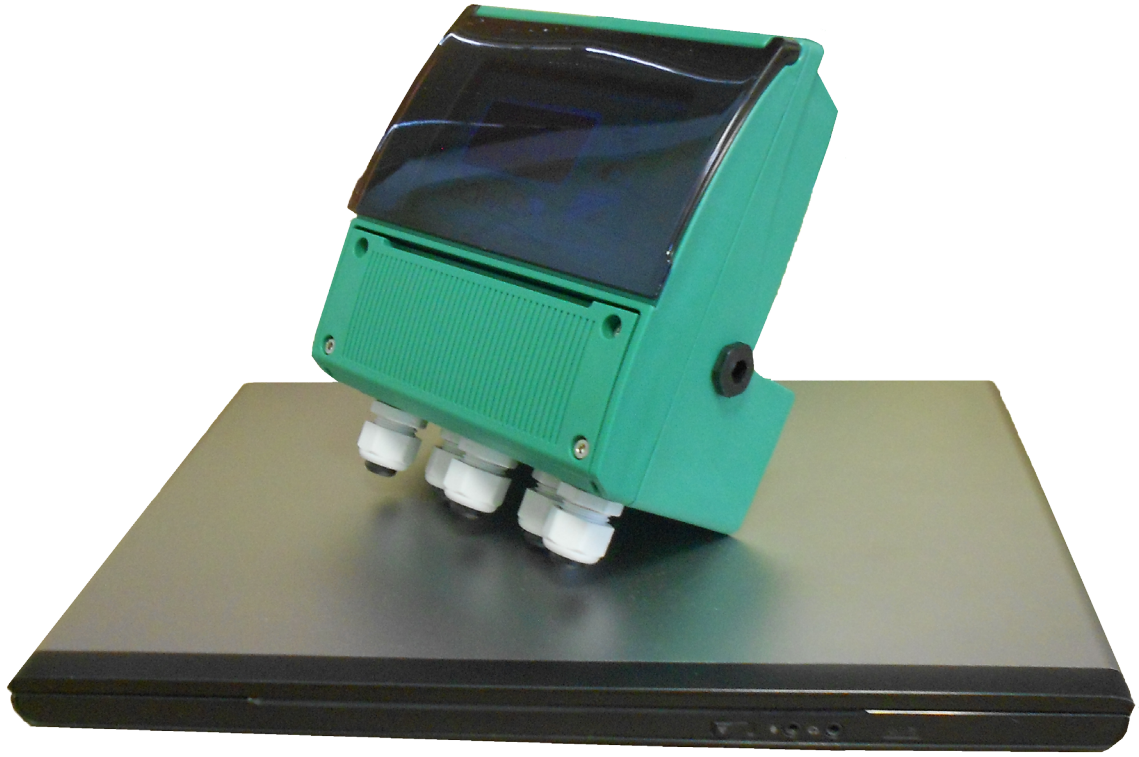
ISOMAG®

The friendly magmeter

OPERATING AND INSTALLATION MANUAL SOFTWARE

MCP

MNEMONIC COMMAND PROTOCOL



CE

ISOIL INDUSTRIA

Release number: **Manuale MCP** - The characters of file name in bolt type indicate the software version which the manual refers to; it is visualized at the instrument start up, or by specific function on DIAGNOSTIC menu.

INDICE

INTRODUCTION

MCP (mnemonic command protocol) is an application that works in real time with the connected device and is designed to control program and manage a converter MV series.
Saved data can be managed and / or downloaded directly through the MCP interface.
If a converter is equipped with a GPRS or Wifi module and if you want to extract the sensor test data you must enable in the converter necessary options for data transfer.

The most important functionalities of MCP interface are:

- ❑ Analysis and sensor data collection
- ❑ Managing of function to enable / disable in the converter
- ❑ Set, read and execute all functions by an alphanumeric string (MCP command)
- ❑ Simulation of instrument display
- ❑ Color processing of the converter display
- ❑ Instrument data logger downloading
- ❑ View downloaded data

The physical connection between the PC and converter is connected with a USB cable type b, read the manual for details.

All converter is configurable in two ways:
- ❑ the keyboard of the converter (see the converter operating manual)
- ❑ by MCP interface

	MCP INTERFACE	CONVERTER	NOTE
SETTING THE DATA CONVERT	√	√	It is recommended for a more convenient data entry, use the MCP interface.
SETTING OF ALL FUNCTIONS	√	NOT POSSIBLE	All functions are not available in the converter. (The available functions depend on the model of the converter and the user access level).
SHOW THE MCP COMMAND AND DISPLAY FUNCTION	√	Only functions on a physical display	---

SAFETY CONVENTION

 WARNING	 PRECAUTIONS

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Good data processing procedure dictates that any program be thoroughly tested with non-critical data before relying on the program. The user must assume the entire risk of using the program. ANY LIABILITY OF THE SELLER WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT.

INSTALLATION

REQUIREMENTS

- ❑ PC with processor Intel® Atom™ Pentium™ da 1.5GHz .
- ❑ Operating system Microsoft Windows XP®, Windows Vista®, Windows 7® e Windows 10®.
- ❑ 512 MB RAM.
- ❑ Hard disk with at least 10 MB free space
- ❑ USB output from the PC type A
- ❑ Download the program from the website :https://www....
- ❑ In a Microsoft operating systems, run the installation as a system administrator.

INSTALLATION

The MCP program is to be installed by the installer is downloaded files only from authorized sites. You must first install the program on your hard disk and run the following program from this unit.

If on the system a previous version of the software is present, it is recommended to uninstall it before install the new version.

Prima di collegare il convertitore al computer installare il software MCP come da procedura di seguito descritta.

PER INSTALLARE IL PROGRAMMA:

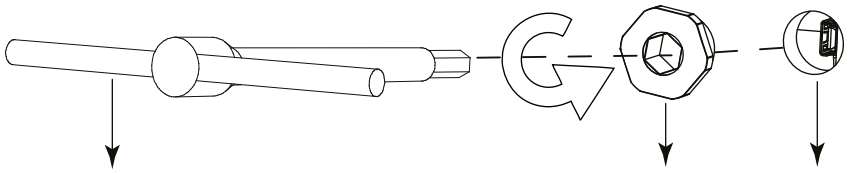
- ❑ Chiudere tutte le applicazioni aperte
- ❑ Fare doppio clic sull'icona del programma MCP INSTALLER
- ❑ in attesa della schermata di installazione interfaccia MCP
- ❑
- ❑
- ❑
- ❑
- ❑ Fare doppio clic sull'icona del programma MCP creata nel desktop per avviare il programma. (Verificare se da fare)

If the converter driver is not installed after the installation phase of the MCP software follow the driver installation procedure on see page 8.

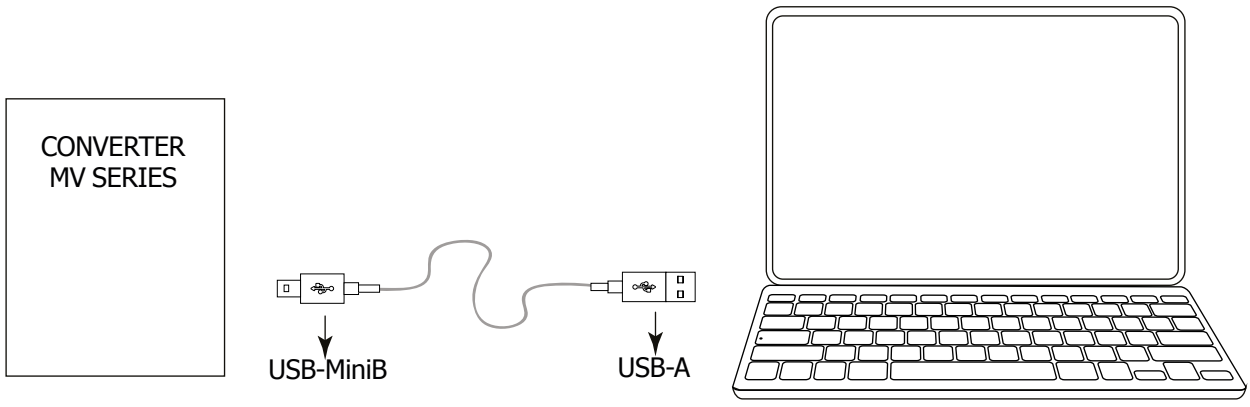
CONNECTING ISOCON AND PC

The following are the different types of MV series converters can be connected to the PC via USB cable.

Connect your computer to remove the PG9 cap as follows



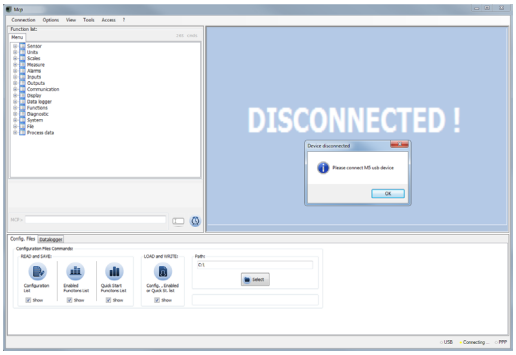
Connection to the computer via USB cable



The USB-B cable and related equipment (hex key) for the management of the converter connected to a computer, are not provided by the manufacturer of the converter MV series.
Executed the connection start the MCP program clicking on this button  MCP.exe

INTRODUCTION MCP INTERFACE

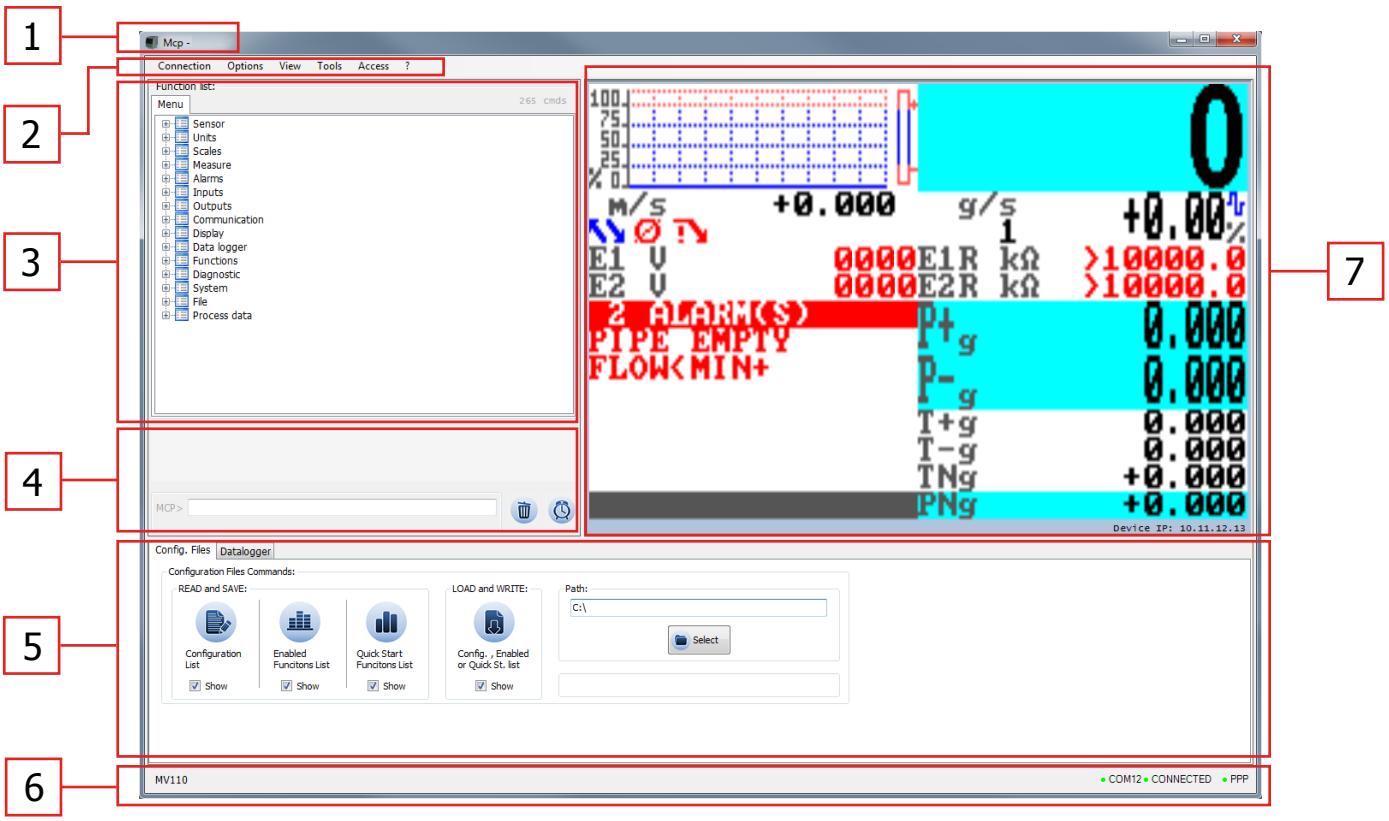
The following is description of the various sections and the MCP software functions. Descriptions relating to specific functions of the various converters will be reported in the operating manual of the converter.



This screen indicates that the MCP is not connected to any devices, and waits for a connection with a converter.

ATTENTION: Before startup interface MCP be sure that the converter is connected to power supply as per the data plate.

SECTION OF SOFTWARE



- ❑ 1 Information on MCP software version.
- ❑ 2 MCP Management menu.
- ❑ 3 Converter function list
- ❑ 4 MCP console; Command text editor.
- ❑ 5 File and configuration settings tabs for download datalogger.
- ❑ 6 General information about the converter has been connections.
- ❑ 7 Virtual screen for displaying data.

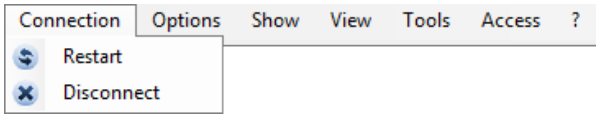
SECTION 1

This section is shown the MCP software version installed on the computer.

SECTION 2

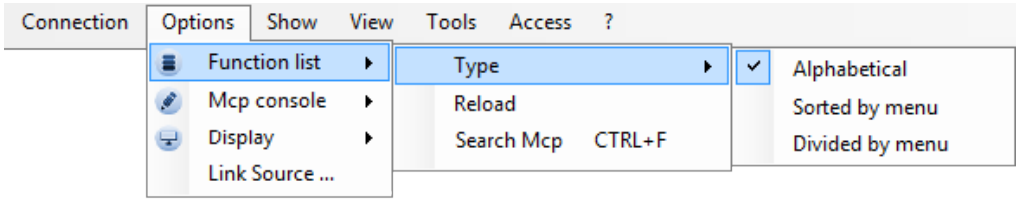
In questa sezione sono presenti 6 menu di gestione del software MCP.
Connection / Option / View / Tools / Access / ? . They are described below in order.

CONECTION



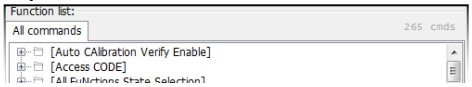
- ❑ **RESTART**: Start and Restart the connection between converter and computer.
- ❑ **DISCONNECT** : Break the connection between converter and computer.

OPTIONS



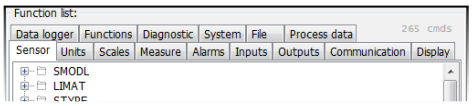
- ❑ **FUNCTION LIST** : It contains options for managing the functions of the connected converter.
  - **TYPE** : Upload the display options of the function list converter.

- Alphabetical: View on the function list (Section 3) the list of all the functions in alphabetical order.



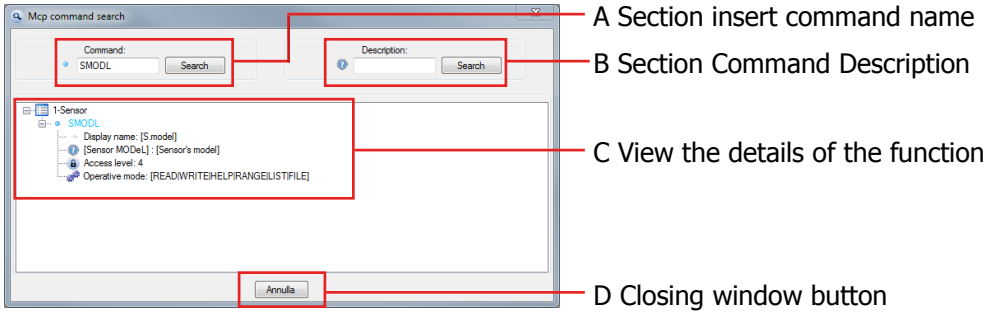
- Sorted by menu : See the function list (Section 3) the list of functions divided by menu.

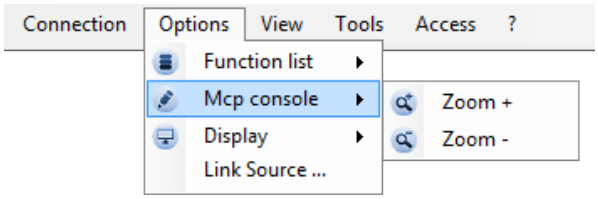
- Divided by menu : See the function list (Section 3) the list of functions divided by divided in tabs menu



  - **RELOAD** : Reload functions in the function list aligned with those activated in the converter.

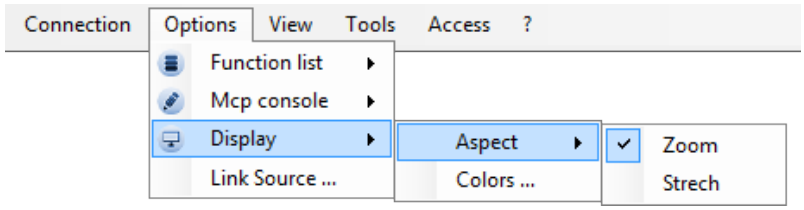
  - **SEARCH MCP** : Activates a form for quick search of the MCP controls the functions according to function name and type of the function description.





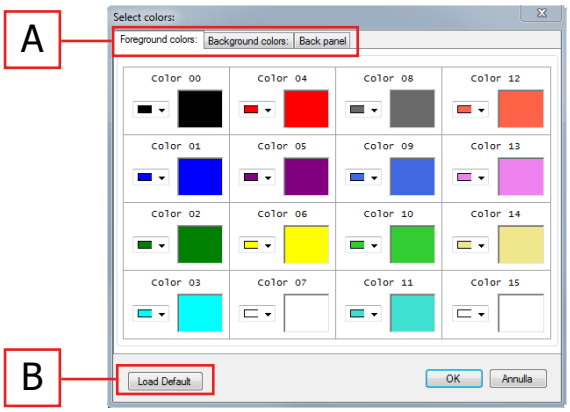
❑ **MCP Console** : Contains options for zoom of the commands included in section 4 MCP console.

- **Zoom+** : Selecting repeatedly you increase the display of commands entered in Section 4.
- **Zoom-** : Repeatedly selecting reduces the display of commands inserted in Section 4



❑ **Display** : This command contains options for managing the interface virtual display MCP. (Section 7)

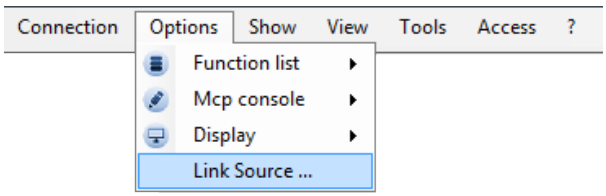
- **Aspect** : It manages the aspect of the interface virtual display by two options.
- **Zoom** : In section 7 is managed the display depending on the size of the program window Mcp.
- **Strech** : In section 7 enlarges the virtual display filling up the available area of the display.
- **Colors...** : Setting the color of the virtual display.

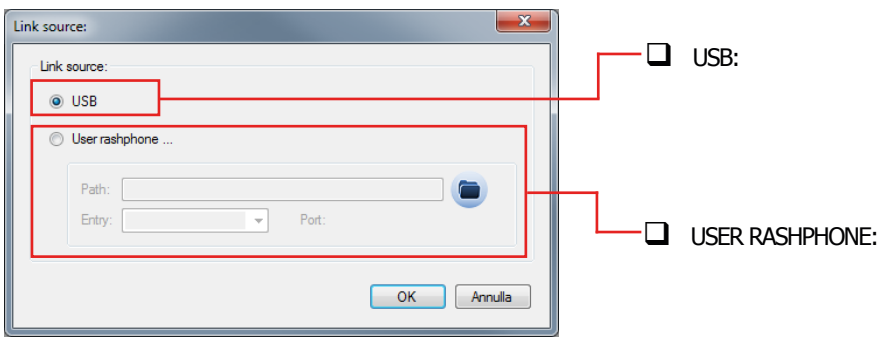


A Color setting
Foreground colors: foreground colors
Background colors: background colors
Back panel: colors of the back panel

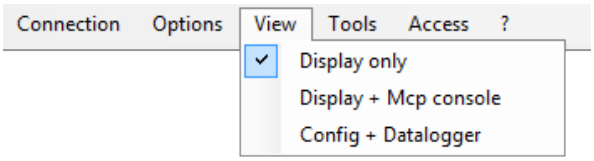
B Load Default command to restoring color to factory conditions

❑ **LINK SOURCE** : It manages the connection between converter and computer.



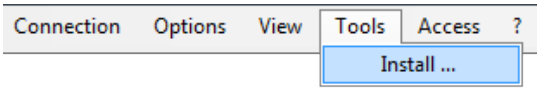


VIEW

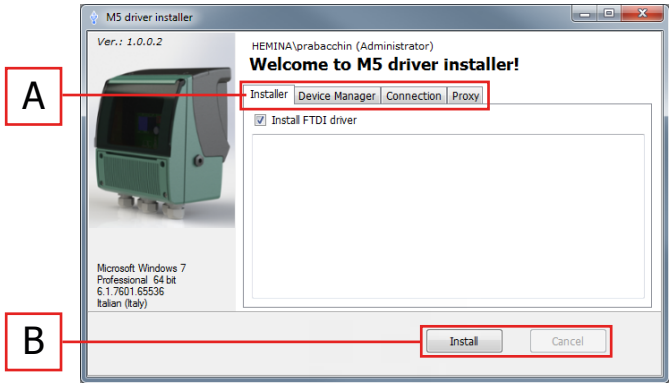


- **Display Only** : View only the virtual display entire in the Mcp software screen.
- **Display + Mcp Console**: View in the software screen Mcp the virtual display and the screen containing the list of the functions the converter (section 3) and the command text editor or mcp console (section 4).
- **Config. + Datalogger** : View in the software screen Mcp the virtual display and the screen containing the list of the functions the converter (section 3) and the command text editor or mcp console (section 4) and windows configuration file with the settings for the download datalogger.

TOOLS



- **Install...** : Opens the window to installing the drivers for the converter connection MV series. This tool is used at a time when the installation process has not properly installed the device communication driver on the computer.



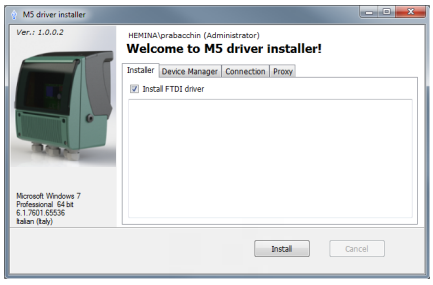
A Tab list installation

Installer: Start the driver installation procedure
Device Manager: Management of the communication ports
Connection: it manages and creates a connection ras
Proxy: View the proxy used

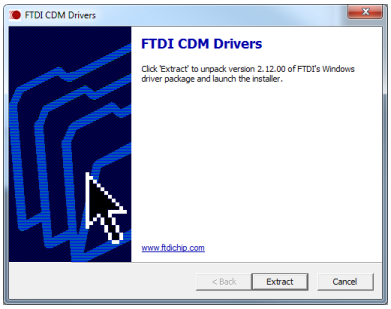
B Starting Installer

Button to start the installation of device drivers

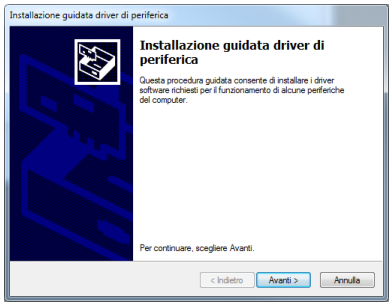
- **INSTALLER**



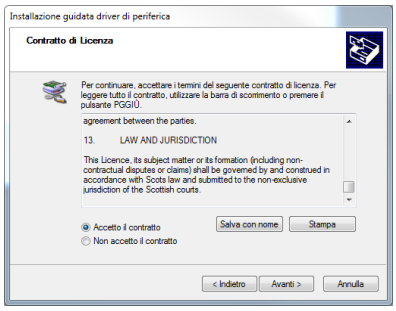
Installation FTDI driver. Before proceeding with the installation click "Install FTDI drivers"



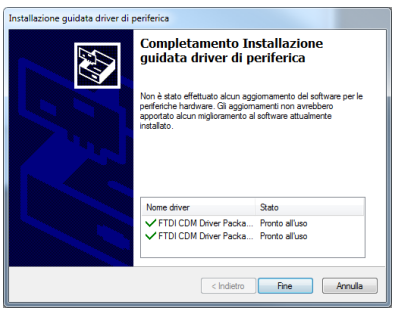
Click on the "Extract" button.



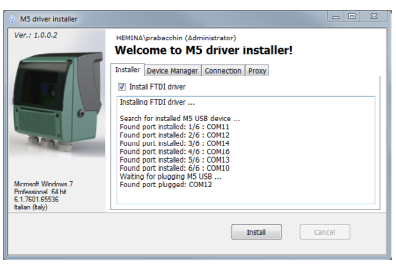
Start the driver installation.



After reading the license agreement, click "accept to the contract" to continue with the installation procedure.

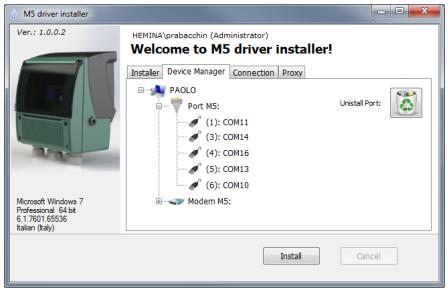


Once completed click "finish" to close the procedure.

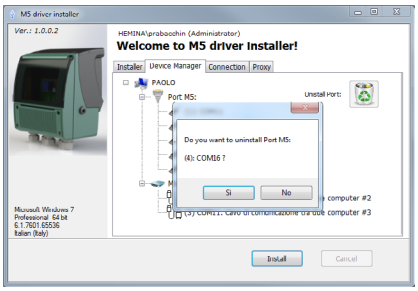


Viewed is a summary with the installed drivers and related communication ports.

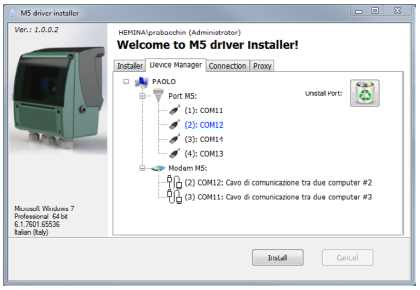
- **DEVICE MANAGER**



The management of individual ports and system communication modem. To remove a port or modem from the list of installed click on the port to delete and press the "Uninstall Port" button or "Uninstall Modem".

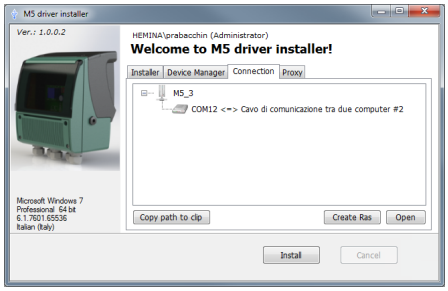


Press "YES" to continue with the installation procedure.

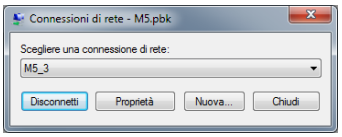


Repeat the process if you want to remove another port or modem.

- **CONNECTION**



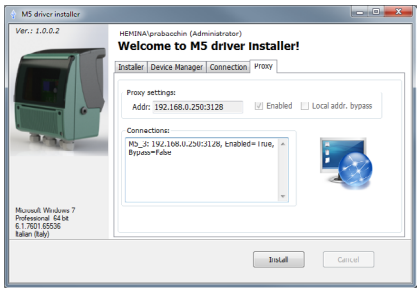
The network is displayed where the converter is connected.



Clicking on "Open" opens the following window for managing connections

- ❑ DISCONNECT : Logs off the converter with your computer.
- ❑ PROPERTY : Start managing properties about the connection between converter and computer.
- ❑ NEW : Starts the procedure for installing / creating a new connection.
- ❑ CLOSE: Closes the "Network Connections" window.

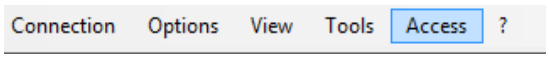
- **PROXY**

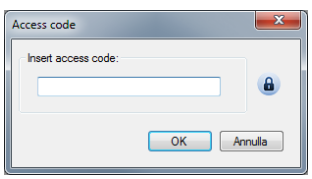


It displays the proxy address of the device connections to the system, describing if they are or are not active.

Close the window completed the installation of various items in the Install process.

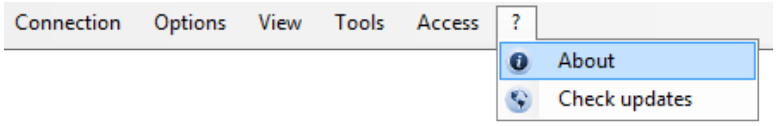
ACCESS



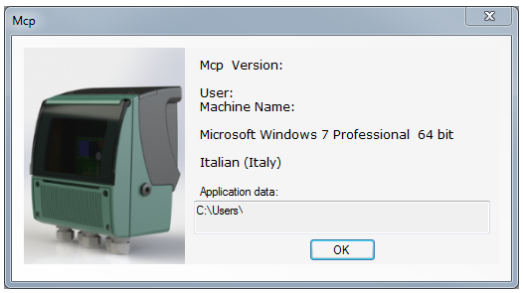


❑ **Access** : Opens the window where you can enter the access code provided by the manufacturer that allows you to activate the various functions the converter. Access code or code of level rule therefore the presence or absence (from access level 2 and above) of a specified number of functions in the function list. To launch this window quickly click command Ctrl + A.

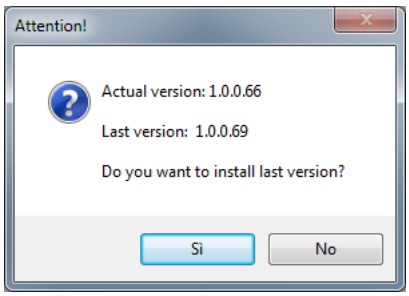
? (SYSTEM)

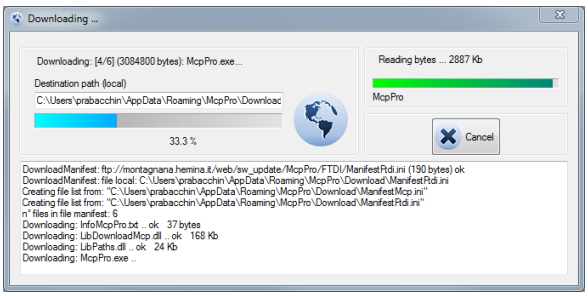


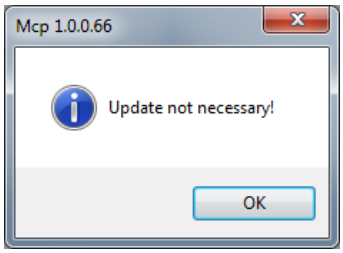
- **About** : This opens a window where you see the Mcp software version, user type, operating system name computers, language used and the location where the MCP program installed.



- **Check Update** : Check if updates are available; if they were the message to perform the software update. Upgraded the program will automatically restart.



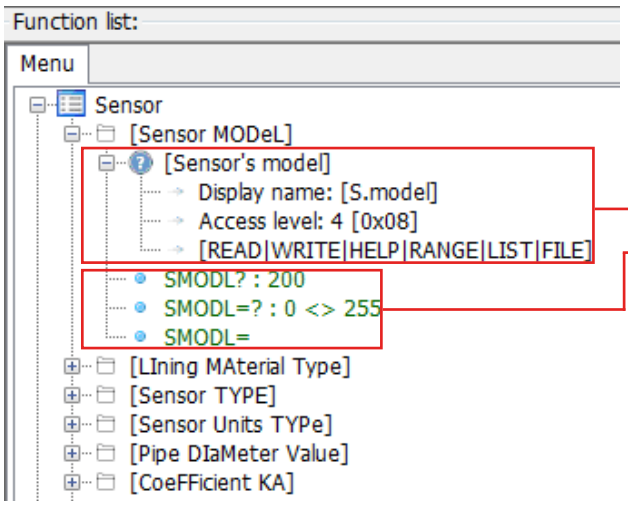




The following window appears when you do not need the update because the software is upgraded to the latest version.

SECTION 3

The MCP in Section 3 shows the list of functions available for the connected converter. This list shows a tree structure in which there are different content for each function. The following image explains that structure.



INFORMATION COMAND

- ❑ Display Name : Name appears in the display function
- ❑ Access level: Number in the access level
- ❑ [__]: Description of interactions that the command can have

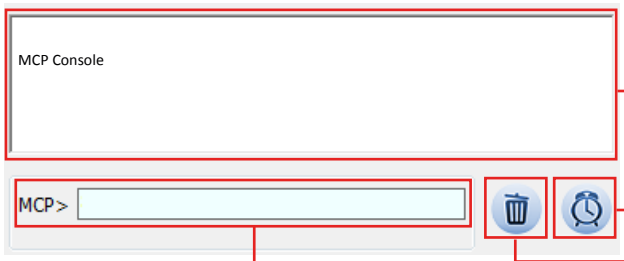
COMMAND OPTION FOR FUNCTION

Syntax of MCP associated commands to device functions and ENABLE in accordance with the level of access that you possess the system.

- ❑ **[COMMAND MCP] ?** :MCP command followed by "?" Asks the same of the command (read status of the command).
- ❑ **[COMMAND MCP] =?** : MCP command followed by "=?" Shows the range of values in which a command can be set. (Help command).
- ❑ **[COMMAND MCP] =** : MCP command followed by the "=" requires the entry of a value from the allowable value in the command itself. (Command set).

SECTION 4

The editor for entering commands MCP consists of the following elements:



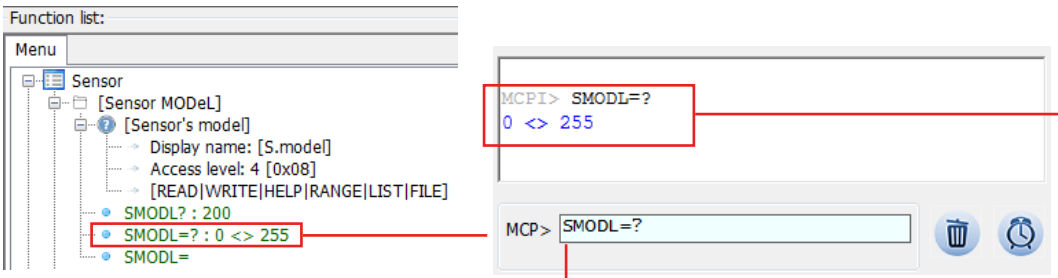
MCP CONSOLE COMMAND VIEW
Area dedicated to the visualization and results of commands entered.

BUTTON FOR SETTING DATE AND TIME OF THE SYSTEM
Tasto che regola e aggiorna la data e l'ora con quella del sistema operativo nel quale il programma MCP è stato installato.

BUTTON TO CLEAR THE CONTENTS INSERTED
Eliminate what has been written in the INSERTED MCP Console commands.

COMMAND TEXT EDITOR
Section in which are inserted MCP controls the functions.

EXAMPLE START OF A MCP COMMAND BY MEANS TEXT EDITOR

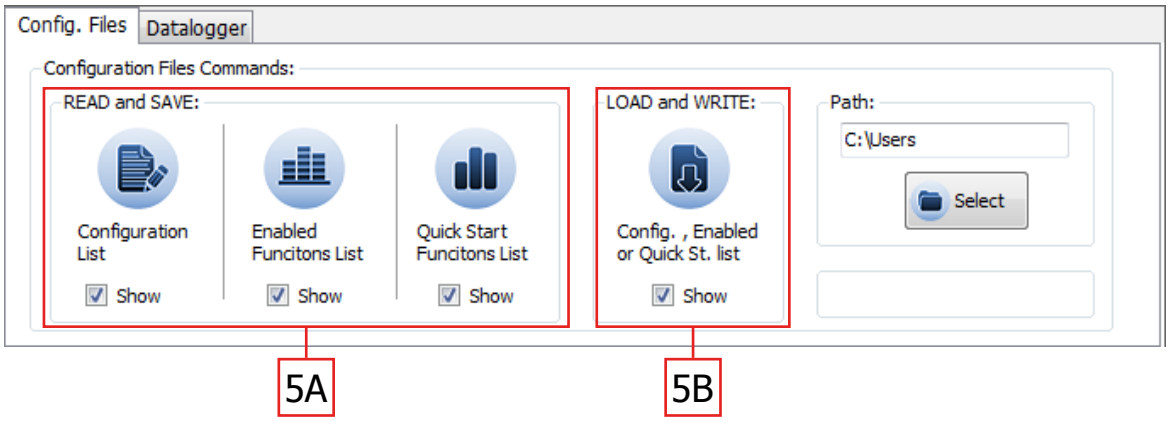


- ❑ After the start command the result is displayed or state or range of values depending on what was required.
- ❑ The command can be inserted by typing the keyboard or by double-clicking on the name of the command you want from the function list.
- ❑ If you press ENTER from the keyboard the command is executed.

SECTION 5

In this section are present the keys to activate, manage and visualize the converter functions and their management of the collection of the converter operating data (data logger).

CONFIGURATION FILE



ATTENTION: Before you execute commands you may want to select the folder where are saved the functions of configuration files by clicking on "Select".

5A CONFIGURATION FILE COMMANDS

❑ CONFIGURATION LIST

A file (.txt) is saved that shows the status of the active functions on the connected drive. The file will open automatically after saving if flagged to "show".

❑ ENABLED FUNCTION

Save a file (.txt) that contains information (descriptions, menus etc ..) of the active functions of the converter. Will be displayed, if present the flag to show, a window that shows the active functions of the converter by reading the data from the .txt files saved.

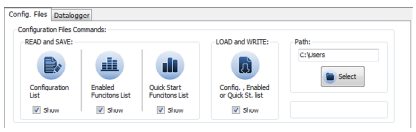
❑ QUICK START FUNCTION LIST

Save a file (.txt) that contains information (descriptions, menus etc ..) of the active functions that are displayed and not displayed in the quick start menu. Will be displayed, if present the flag to show, a window that shows the active functions of the converter by reading the data from the .txt file saved.

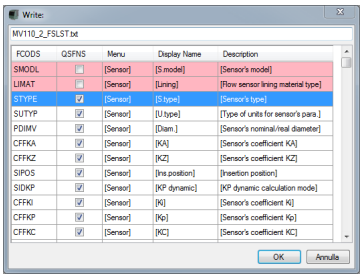
5B LOAD AND WRITE

❑ CONFIGURATION ENABLED OR QUICK START LIST

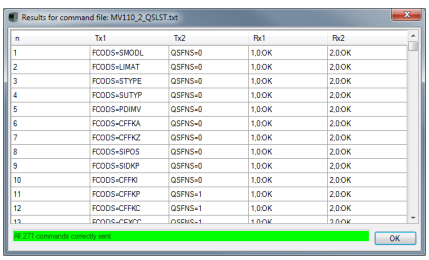
This button allows you to load the configuration files previously saved commands (see section 5A). To load a configuration file follow these steps:



Preme il tasto "Config. Enable.." e selezionare il file .txt precedentemente salvato (vedi sezione 5a) relativo alla configurazione che si vuole caricare.



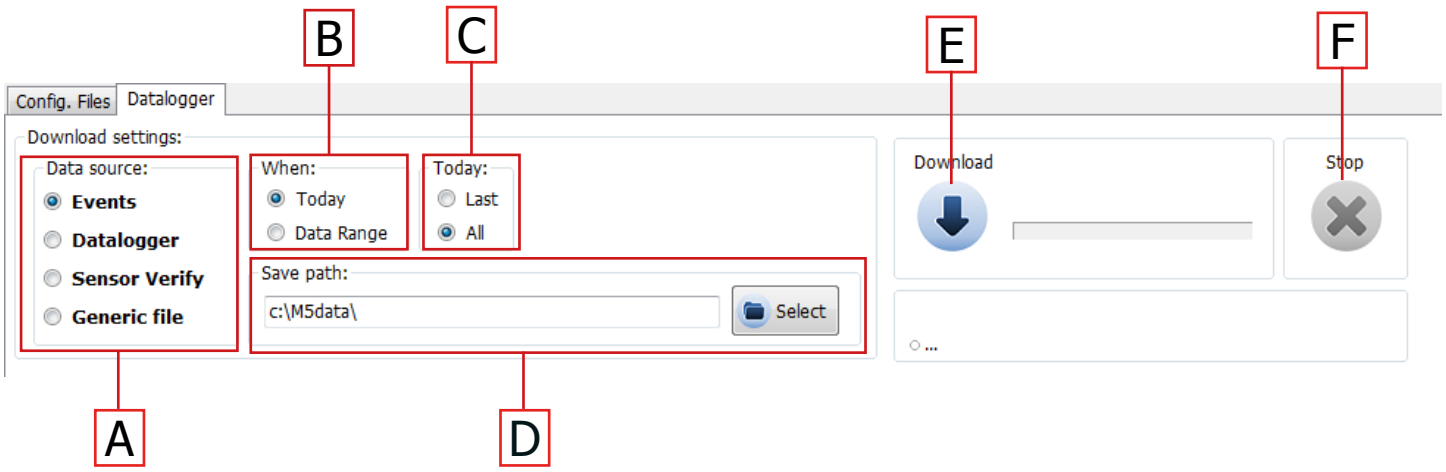
Select the functions you want to remove and / or delete from the drive by clicking on the flag at the side of the function name. Press "OK" to start the loading configurations.



Screen that warns the completion of the loading functions.

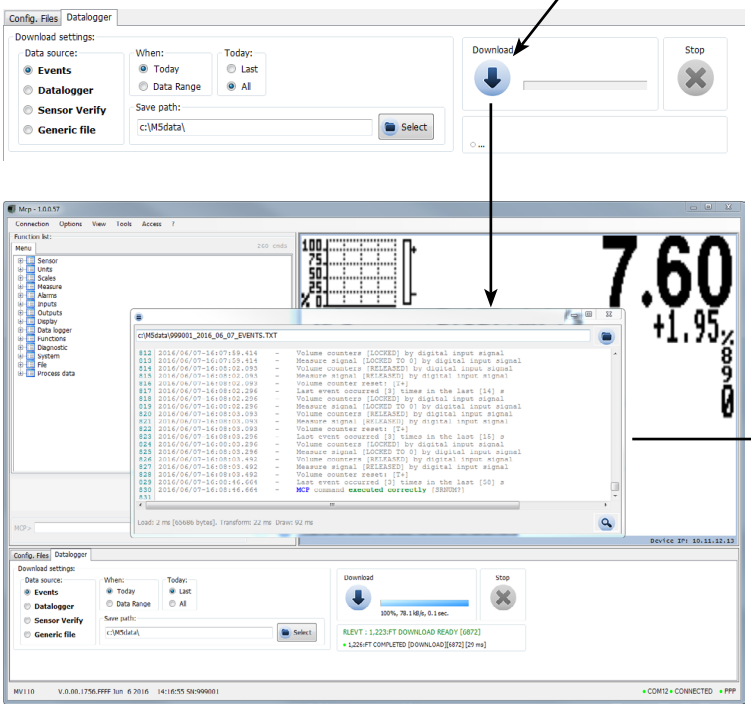
DATA LOGGER SET

In this section you run and set the values for downloading logger activated in the converter.



- **A Data source**
  Events: Save the events of the file system (Example F-RAM data hardware [WORKING AREA] [SUCCESSFULLY LOADED])
  Data logger: Save logger enabled in the converter (see the relative converter product manual).
  Sensor Verify: Save the data of the sensor verification activities.
  Generic file: Save a specific file in the SD card.
- **B When** (Indicates the reference period for downloading data)
  Today; Indicates that the file download is made in the present day of download.
  Data range; this option lets you select the period for download.
- **C Today** (Divides the current day in two categories for download)
  Last; this option allows you to download the latest downloaded files of the current day
  All; This option allows the download of all the current day of the file
- **D Save path**
  This option lets you save in desired folder the file to the on PC
- **E Download**
  Button to start the download process
- **F Stop**
  Button to stop the download process

EXAMPLE: EVENT DOWNLOAD

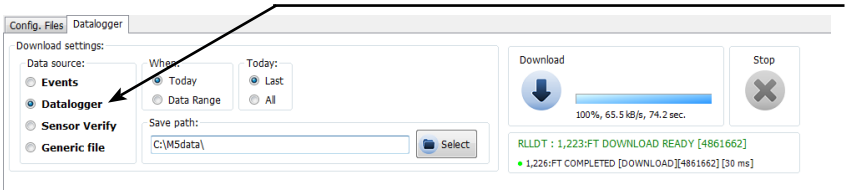


- To download all the events of the current day in a specific folder, set the following parameters:
  Data source: Events
  When: Today
  Today: All
  Save path: C:/.....
  The parameters are set to click the Download button.

- Download is complete, It opens a window containing the list of events today in the download. This file saved in .txt format, will be present in the specified folder for download.

EXAMPLE VALID ONLY FOR MV 110: DOWNLOAD DATA LOGGER

Note: It is recommended the synchronization the date and time between the converter and PC to run the saved data read correctly and downloading of data.



- For downloading all of the current day in a specific folder, set the following parameters:
  Data source: Datalogger
  When: Today
  Today: All
  Save path: C:/.....
  The parameters are set click the Download button.

View downloaded files setting download data logger.
Note: The fields are in a fixed position, regardless if the above fields are active or not. The disabled fields are empty (delimited by the separator but contain no data).

	N	2	1	
				A
N°Record. View progressively the number of registered records.	n°		N.RECORD	
Data. The recording date viewing for each record.	ddmmyy		DATE	B
Hours. Time recording viewing for each record.	00:00:00		HOURS	C
Total positive totalizer value. Form Fields when the send flag is active on the totalizer T+.	dm3	0	U.M. T+	D E
Partial positive totalizer value. Form Fields when the send flag is active on the totalizer P-.	dm3	0	U.M. P+	F G
Total negative totalizer value. Form Fields when the send flag is active on the totalizer T-.	dm3	0	U.M. T-	H I
Partial negative totalizer value. Form Fields when the send flag is active on the totalizer P-.	dm3	0	U.M. P-	J K
Total net totalizer value. Form Fields when the send flag is active on the totalizer TN.	dm3	0	U.M. TN	L M
Partial net totalizer value. Form Fields when the send flag is active on the totalizer PN	dm3	0	U.M. PN	N O
Flow rate. Form Fields present when the send flag is on the flow in units of measurement.	dm3/s	0	U.M. FLOWRATE	P Q
Flow rate %. Form fields present when the flag of alarm sending is active (only N ° of present total alarms)	%	0	U.M. FLOWRATE %	R S
N ° active alarms. Form fields present when the flag of alarm sending is active (only N ° of present total alarms)	AL	0	U.M. N.ACTIVE ALARM	T U
Loss of current measured during insulation test. Available value when sending the sensor test data is active.	mA	0	U.M. CPTI	V W
Time rise A. Available value when sending the sensor test data is active.	ms	0	U.M. TRISE A	X Y
Time rise B. Available value when sending the sensor test data is active.	ms	0	U.M. TRISE B	Z AA
Sensor test error code. Available value when sending the sensor test data is active.	ERR	0	U.M. CETS	AB AC

Visualization of logger download file. Access Level 5 (diagnostic level) in order to download this type of file.

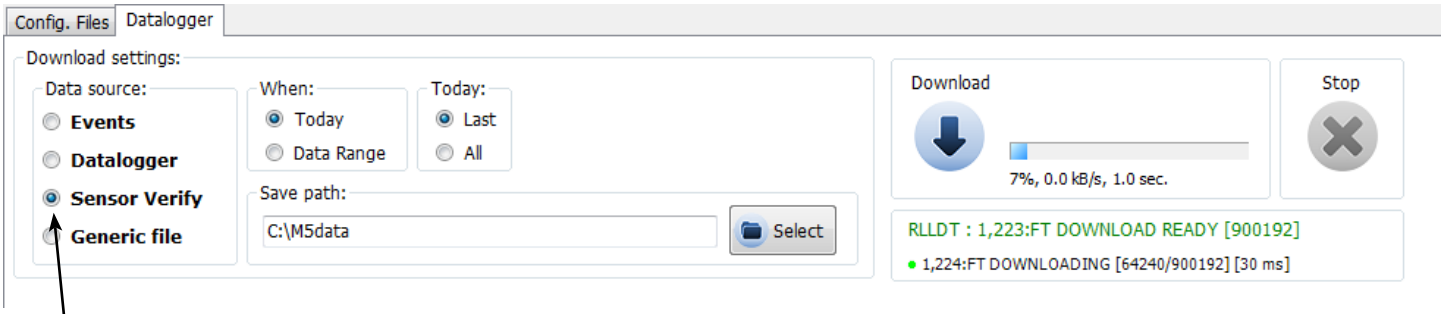
	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
	U.M.	E1 V	U.M.	E2 V	U.M.	VD (E1-E2)	U.M.	VC (E1+E2)/2	U.M.	CM LF NOISE	U.M.	DIF LF NOISE	U.M.	ADC LF NOISE	U.M.	ADC HF NOISE	U.M.	E1 R	U.M.	E2 R	U.M.	EXCITATION CUR	U.M.	R COILS	U.M.	T COILS	U.M.	T1	U.M.	T2	U.M.	T CPU	U.M.	V CPU	U.M.	AVCC+	U.M.	AVCC-	U.M.	BATT V	U.M.	BAT2 V	U.M.	% BATTERY CHARGE
Voltage measured on electrode E1. Form fields when it is on the flag of sending data on the input voltage (diagnostic value).	V	0																																									
Voltage measured on electrode E2. Form fields when it is on the flag of sending data on the input voltage (diagnostic value).			V	-0.023																																						
Differential voltage between the two electrodes. Form Fields when it is on the flag of sending data on the input voltage (diagnostic value)					V	0																																				
Common mode voltage in the electrodes. Form fields when it is on the flag of sending data on the input voltage (diagnostic value).							V	0																																			
Noise at low frequency measured on the electrodes. Form fields when it is on the flag of sending data on the input signal noise levels (diagnostic value).									V	0																																	
Differential low frequency noise measured on the electrodes. Form fields when the flag is active sending of data on the input signal noise levels (diagnostic values).											V	0																															
Low-frequency noise measured input ADC. Form fields when the flag is active sending of data on the input signal noise levels (diagnostic values).													mV	0																													
High frequency noise measured input ADC. Form fields present when the flag is active sending of data on the input signal noise levels (diagnostic values).															mV	0																											
Measured equivalent resistance on the electrode 1. Form fields when it is on the flag of sending data on the electrode resistance measurements (diagnostic values).																	kohm	0																									
Measured equivalent resistance on the electrode 2. Form fields when it is on the flag of sending data on the electrode resistance measurements (diagnostic values).																			kohm	0																							
Coils excitation current. Form fields when it is on the flag of sending data related to the sensor excitation circuit measures (diagnostic value)																					mA	0																					
Measured resistance of the excitation circuit (coil + cable). Form fields when the data transmission flag is active relative to the sensor excitation circuit measures (diagnostic values).																							ohm	0																			
Temperature measured on the sensor coils (indirect measurement). Form fields when the data transmission flag is active relative to the sensor excitation circuit measures (diagnostic values).																									°C	0																	
Temperature T1 (sheet sensor 1). Form fields when the data transmission flag on board the internal temperature measurement is active (diagnostic values).																											°C	0															
Temperature T2 (sheet sensor 2). Form fields when the data transmission flag on board the internal temperature measurement is active (diagnostic values).																													°C	0													
CPU temperature. Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic value).																															°C	0										
Primary power supply of CPU. Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic value).																																	V	0								
Positive supply voltage of analog circuits. Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic values).																																			V	0						
Negative supply voltage of the analog circuits. Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic values).																																					V	0				
Voltage measured on the battery B1 (NOT rechargeable battery). Fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic values).																																										
Voltage measured on the battery B2 (or rechargeable battery). Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic values).																																									V	0	
% Battery charge. Form fields when the data on the card's internal power supply voltage measurements the send flag is ON (diagnostic values).																																										%	0

EXAMPLE: DOWNLOAD SENSOR VERY

For downloading the file "STESTLOG.CSV" must be complied with the following conditions:

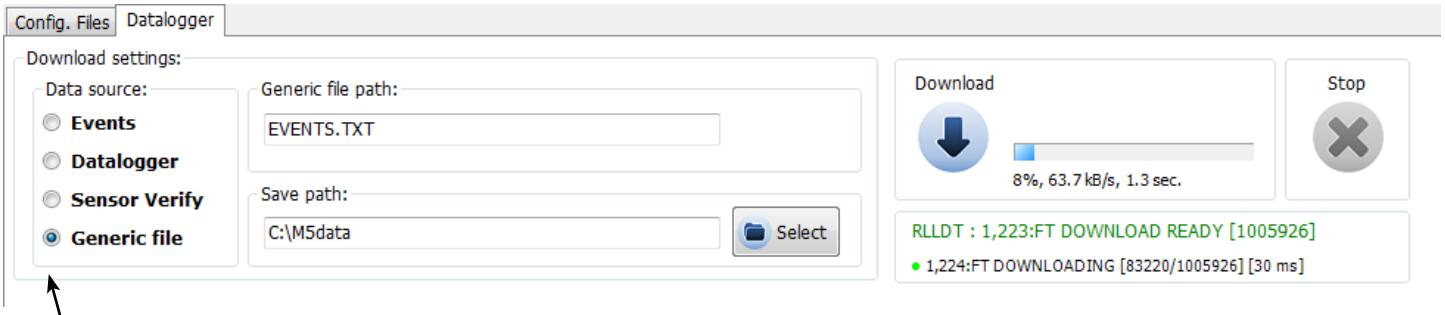
1) Activate the option by the manufacturer SDC/RTC
2) Activate the option by the manufacturer "BIV"
3) Activate the function "Sens. verify" on the menu "Sensor"
4) Connect the drive to to proceed with the download

The converter automatically every hour runs a test of the sensor operation parameters and fill a line of the file "STESTLOG.CSV"; if you want to manually compile a line of the file "STESTLOG.CSV" just enable the command "sens.verify" on the menu "Diagnostic" or through the MCP command "SVERC".



- To download all the days of today's sensor tracking file to a specific folder, set the following parameters as follows:
  Data source: Sensor verfify
  When: Today
  Today: All
  Save path: C:/.....
  The parameters are set click the Download button.

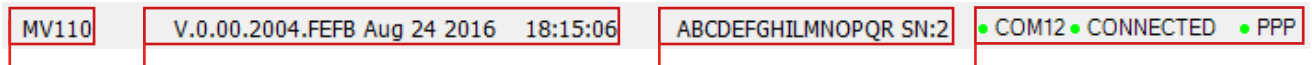
EXAMPLE: DOWNLOAD GENERIC FILE



- This function allows you to select a file in the SD memory of the drive and download it.
  In the "Generic file path" specify the file name contained in the SD and indicate "Save path" where to save the file. Set these values proceeding with the download of the file by clicking the "download".

SECTION 6

This section of the MCP software, the following data are displayed:

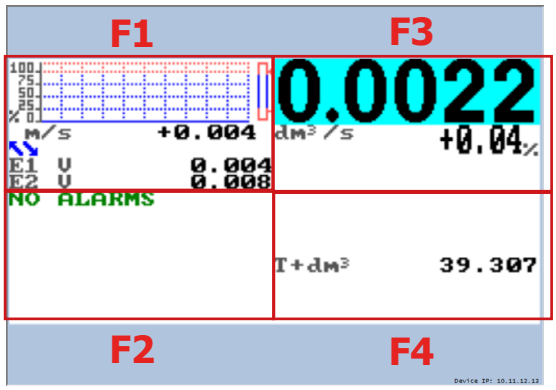


- Model Conv.
- V.0.00.2004 Firmware Version Converter
- FEFB: Converter table data
- Aug..: Date and time of firmware creation
- ABC... Hardware Code
- SN: serial number
- Connection port Com12
- State of connesction
- PPP comunication protocol

SECTION 7

This section of the MCP software is displayed virtual display. For color selection please refer to Section 2 of the display functions.

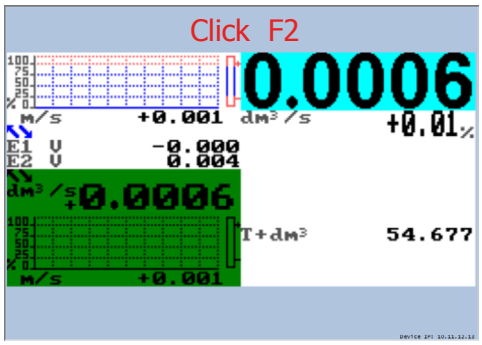
This screen appears when the inverter power supply is absent. We recommend you connect the converter to use for the MCP program.

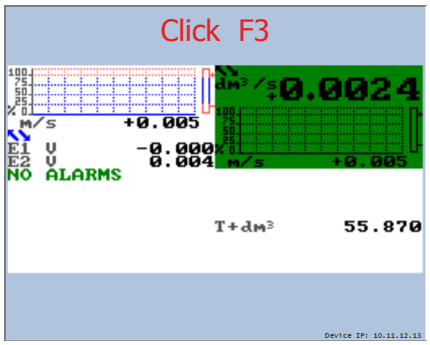


The virtual display is divided into 4 sections. In each of them there are the different parameters set in the converter drive.

- ❑ F1 Show a diagram indicating the change instantaneous flow rate and the related live values in the converter.
- ❑ F2 Show the list alarm in the system if you activate it.
- ❑ F3 indicates the value of the instantaneous flow rate and the unit of measurement associated with it.
- ❑ F4 Show the list of active totalizers in the converter.

Using F1 or F2 or F3 or F4 button will show the actual display in the virtual one. In relation to the key pressed is displayed real display. See example following:





To handle the actual display by the PC keyboard follow the meaning of the buttons shown in the table:

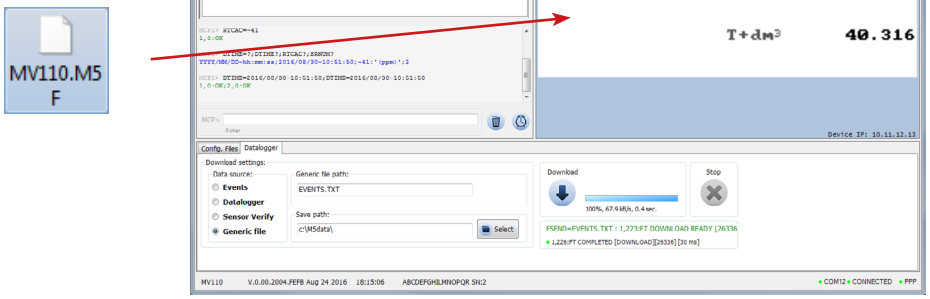
KEYS KEYBOARD PC	KEYS KEYBOARD CONVERTER
ent	ENTER ESC
del esc	ENTER ESC LONG PUSH
↑	↕
→	↔
↓	↕ LONG PUSH
←	↔ LONG PUSH

MANUAL FIRMWARE UPDATE

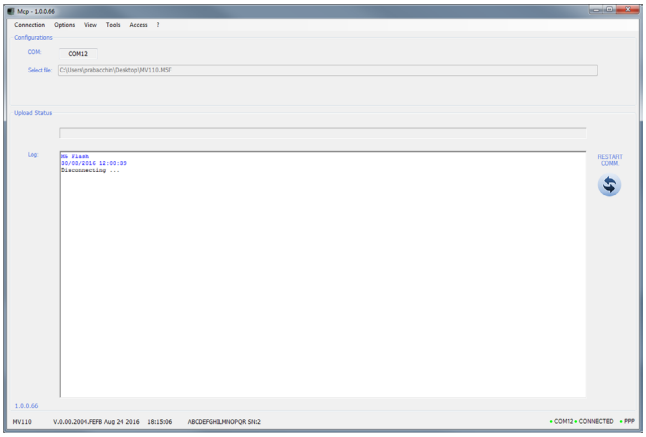
If the firmware update is not successfully started by the automatic procedure (see check update) the following steps to perform a manual update.

- ❑ Download the file .M5F by web site http://www.
- ❑ Move the downloaded file to your desktop.
- ❑ Start the MPC program.
- ❑ Connect the MV series converter with the PC.

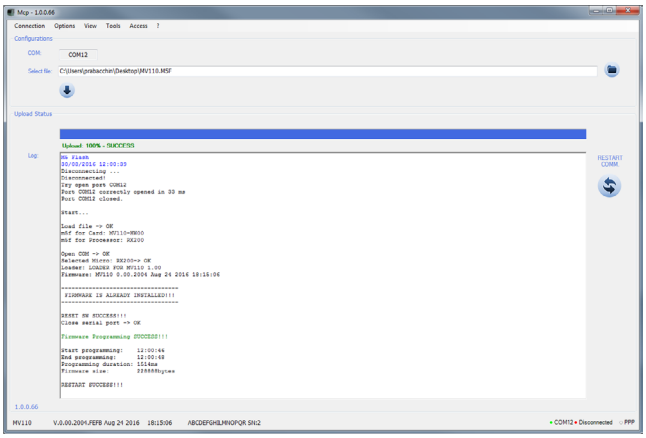
- ❑ Execute a drag-and-drop the firmware file as indicated below:



- ❑ Automatically displays the following firmware update start screen.



- ❑ Completed this procedure press the "restart comm." which restarts the converter and the MCP software.



Check as described in section 6 of the new firmware update just installed

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