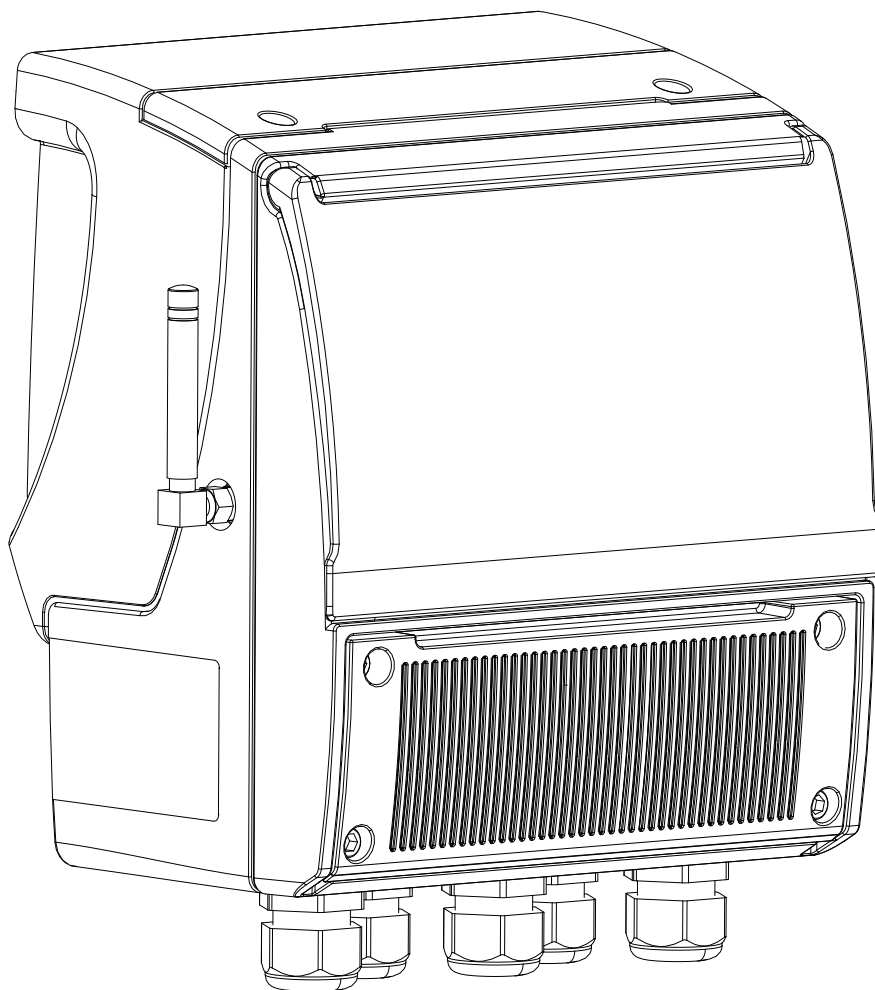




ISOMAG 

The friendly magmeter

OPERATING AND MAINTENANCE MANUAL



3G-4G-MV

CE

ISOIL 
I N D U S T R I A



Release number: MAN_MV255_3G-4G_IT_EN_IS_R01_1.05.XXXX

The characters of file name in bold 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.



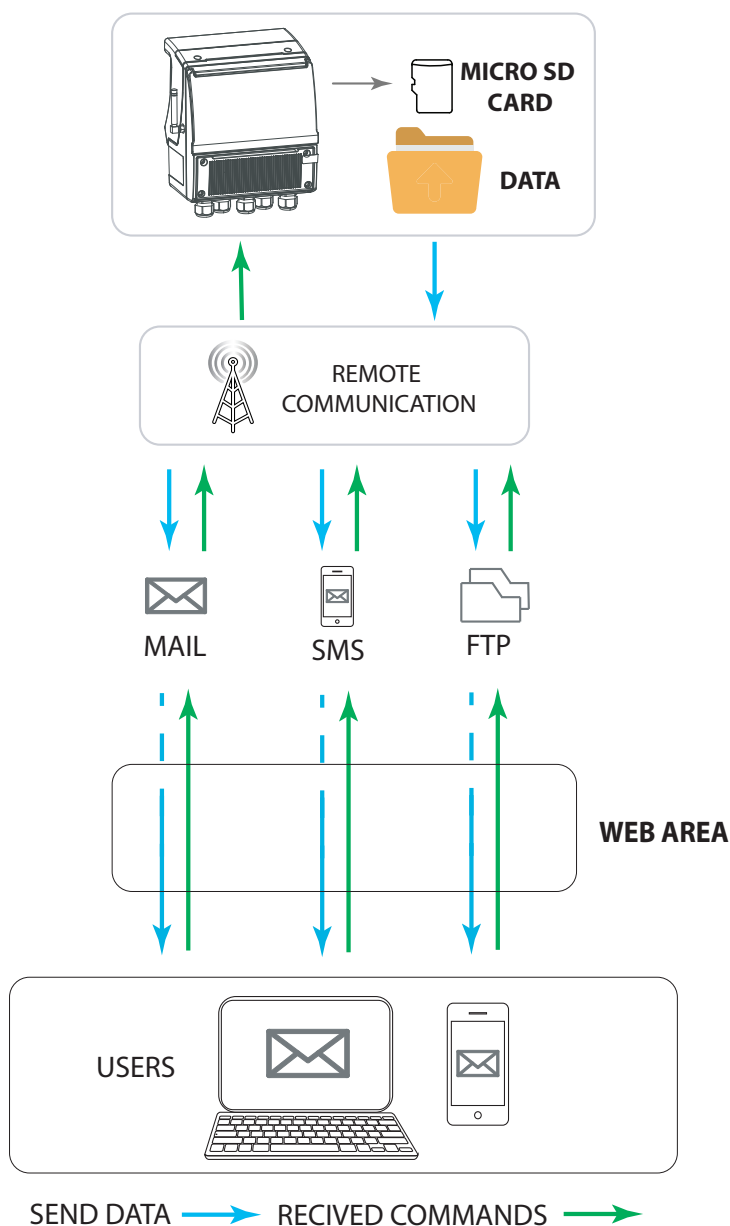


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SENDING DATA AND EVENTS WITH A WIRELESS CONNECTION

MV255 allows to receive commands and send data and events via wireless connection. It is equipped with a micro SD memory to record data (measurements) and events, which are stored in directories. The diagram below shows the exchange of commands and data on the MV255.



Data and events can be sent as files via wireless communications. The following diagrams show some examples of different possibilities for manually downloading data and events. MV255 daily stores events and data loggers in a tree structure mode.

NOTES: When the logger is set with a data collection interval lower than the measurement cycle, it is automatically set to the same interval set in the recorder.

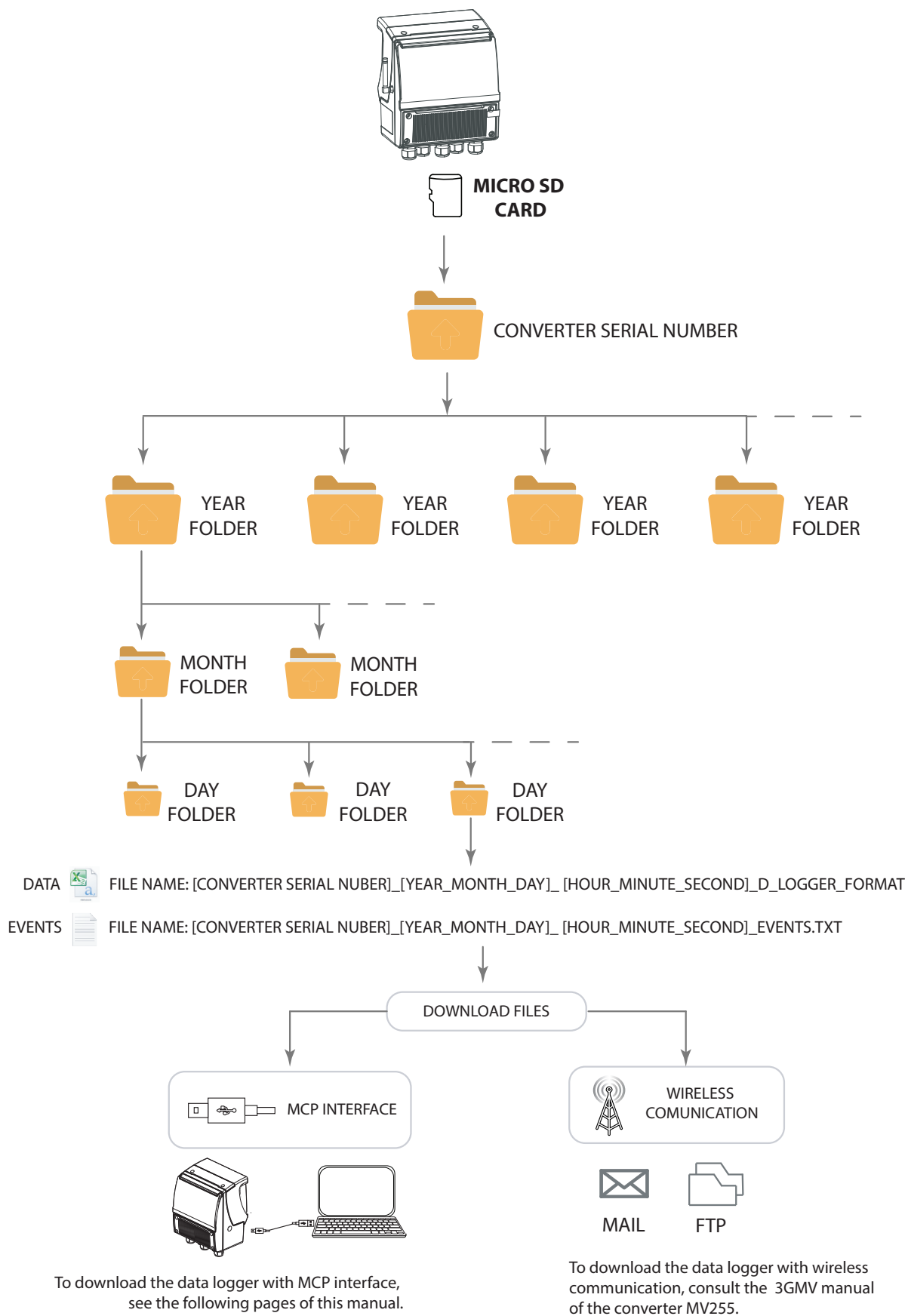
This is particularly useful in the case of a double data logger collection interval, since the measurement can automatically vary the interval as needed and return to the initial value when the logger switches.

The following pages explain how the structure of the data folders, the data management and the settings for the wireless communication of the MV 255 converter are organized.

DATA MANAGEMENT MEASURES AND EVENTS

The data collected by the data logger are stored on a micro SD card. Their organization is based on a tree structure and the system saves day by day, in two separate files, events and data loggers. Data can be downloaded via the MCP interface or via mail and / or FTP protocol.

Note: The number of processed data depends on the sampling interval set and the number of variables enabled for registration.



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Note: The fields are at a fixed position, regardless of whether the previous fields are active or not. Inactive fields are empty (delimited by the separator but do not contain data).

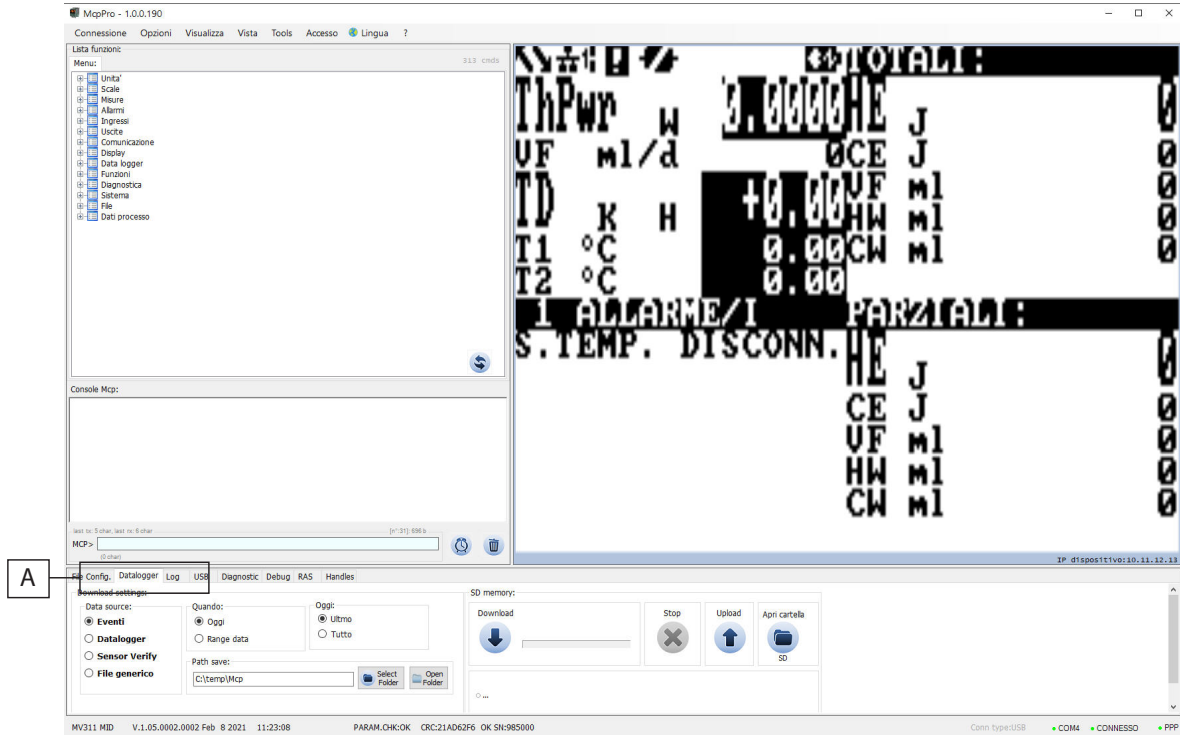
S	PORTATA %	0 0 0 0 0 0 0	FLOW_R%: value of the flow expressed in percent of the full scale. Fields present when the percentage flow send flag is active.
R	UM %	% % % % % %	U=xxx: unit of measurement used for the value of Flow%. Fields present when the flow rate sending flag is active in units of measurement.
Q	PORTATA	0 0 0 0 0 0 0	FLOW_R: value of the flow rate expressed in the chosen unit of measurement. Fields present when the flow rate sending flag in units of measurement is active.
P	UM dm ³ /s	dm ³ /s dm ³ /s dm ³ /s dm ³ /s dm ³ /s dm ³ /s	U=xxx: unit of measurement used for the flow rate value. Fields present when the flow rate sending flag in units of measurement is active.
O	NP	0 0 0 0 0 0 0	TOT_NP: partial net totalizer value. Fields present when the sending flag of the NP totalizer is active.
N	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unit of measurement used for the partial net totalizer value. Fields present when the sending flag of the NP totalizer is active.
M	TN	0 0 0 0 0 0 0	TOT_NT: total net totalizer value. Fields present when the NT totaliser sending flag is active.
L	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unit of measurement used for the total net totalizer value. Fields present when the NT totaliser sending flag is active.
K	P-	0 0 0 0 0 0 0	TOT_P-: negative partial totalizer value. Fields present when the sending flag of the totalizer P- is active.
J	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unità di misura usata per il totalizzatore parziale negativo. Campi presenti quando è attivo il flag di invio del totalizzatore P-
I	T-	0 0 0 0 0 0 0	TOT_T-: total negative totalizer value. Fields present when the totaliser sending flag is active T-.
H	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unit of measurement used for total negative totalizer. Fields present when the totaliser sending flag is active T-.
G	P+	0 0 0 0 0 0 0	TOT_P+: positive partial totalizer value. Fields present when the P + totalizer sending flag is active.
F	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unit of measurement used for the positive partial totalizer. Fields present when the P + totalizer sending flag is active
E	T+	0 0 0 0 0 0 0	TOT_T+: total positive totalizer value. Fields present when the T + totalizer sending flag is active.
D	UM dm ³	dm ³ dm ³ dm ³ dm ³ dm ³ dm ³ dm ³	U=xxx: unit of measurement used for the total positive totalizer. Fields present when the T + totalizer sending flag is active.
C	ORA 00:00:00	00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00	TIME: Displaying the recording time for each record.
B	DATA dd/mm/yy	dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy	DATE: Display of the recording date for each record.
A	N° RECORD	n° n° n° n° n° n° n°	N°NUM: record number. Display progressively the number of records recorded.

AM	CMLF NOISE	0 0 0 0 0 0	LFN_COM: common mode low frequency noise value on the electrodes. Fields present when the flag to send data on the input signal noise levels is active (diagnostic values).
AL	UM	> > > > > >	
AK	$VC(E1-E2)/2$	0 0 0 0 0 0	ECOM: value of the common mode voltage measured on the electrodes E1, E2. Common mode voltage on the electrodes. Fields present when the flag for sending data on input voltages (diagnostic values) is active.
AJ	UM	> > > > > >	
AI	$VD(E1+E2)/2$	0 0 0 0 0 0	EDIF: value of the differential voltage measured on the electrodes E1, E2. Fields present when the flag for sending data on input voltages is active (diagnostic values).
AH	UM	> > > > > >	
AG	E2V	0 0 0 0 0 0	E2_V: value of the measured voltage of the E2 electrode. Fields present when the flag for sending data on input voltages (diagnostic values) is active.
AF	UM	> > > > > >	U=xxx: unit of measurement used for the value of the voltage measured on the E2 electrode. Fields present when the flag of the measured voltage value on the E2 electrode is active.
AE	E1V	0 0 0 0 0 0	E1_V: value of the measured voltage of the E1 electrode. Fields present when the flag for sending data on input voltages (diagnostic values) is active..
AD	UM	> > > > > >	U=xxx: unit of measurement used for the value of the voltage measured on the E1 electrode. Fields present when the flag of the measured voltage value on the E1 electrode is active.
AC	CETS	0 0 0 0 0 0	ST_CODE: value of the error code generated during the sensor test. Value present when sending sensor test data is active.
AB	UM ERR	ERR ERR ERR ERR ERR ERR	
AA	T. SALITA B	0 0 0 0 0 0	COILS_TB: value of the rise time of the excitation current for phase B.
Z	UM mA	mA mA mA mA mA mA	U=xxx: unit of measurement used for the value of the excitation current rise time for phase B. Fields present when the flag of the value of the upward current of the excitation current is active. For phase B.
Y	T. SALITA A	0 0 0 0 0 0	COILS_TA: value of the rise time of the excitation current for phase A. Value present when the sending of sensor test data for phase A is active.
X	UM mA	mA mA mA mA mA mA	U=xxx: unit of measurement used for the value of the excitation current rise time for phase A. Fields present when the flag of the time value of the excitation current is active. For phase A.
W	CPTI	0 0 0 0 0 0	COILS_LK_I: value of the current measured during the coil insulation test. Current loss measured during insulation test. Value present when sending sensor test data is active.
V	UM mA	mA mA mA mA mA mA	U=xxx: unit of measurement used for measured current value. Fields present when the flag of the current value measured during the coil test is active.
U	N° ALLARMI	0 0 0 0 0 0	ALARMS: value of the number of active alarms. Fields present when the alarm sending flag is active (only N. of total alarms present).
T	UM AL	AL AL AL AL AL AL	

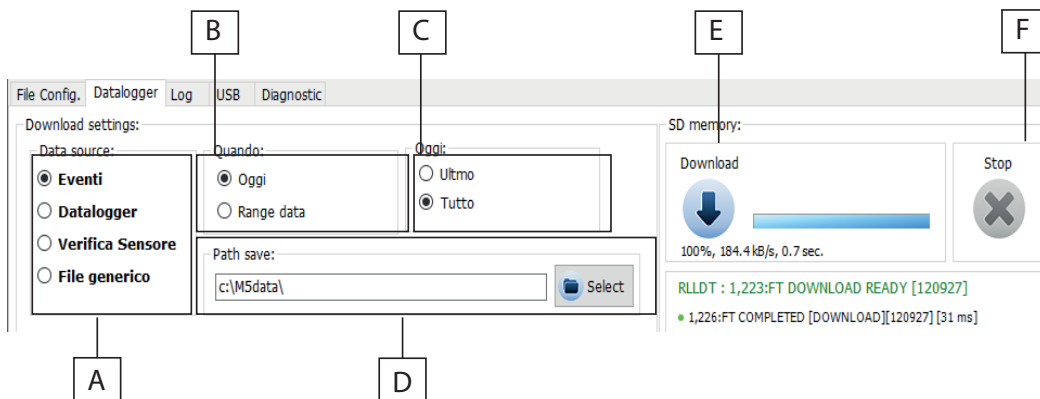
BX	hex		Checksum
BW	BATT2V	0 0 0 0 0 0	Residual battery capacity (ONLY FOR RECHARGEABLE BATTERY VERSION)
BV	UM	% % % % % %	Unit of measure (%) (ONLY FOR RECHARGEABLE BATTERY VERSION)
BU	BATT1V	0 0 0 0 0 0	Batteries voltage
BT	UM	> > > > > >	Unit of measure (Volt)
BS	/		/
BR	/		/
BQ	/		/
BP	/		/
BO	V. CPU	0 0 0 0 0 0	- Volt CPU power supply
BN	UM	> > > > > >	Unit of measure (Volt)

Download files data ed events via MCP interface

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Select the "data logger" tab as shown below to access the file download interface.



A=Data source

- Events: Download system events (Sample Line 2016/09 / 14-01: 00: 00.000 -W0216- [1] ALARMS still active)
- Data logger: Download and save the recorded data through the data logger function.
- Sensor Verify: Download sensor verification data (if BIV is active).
- Generic file: Download a specific file contained in the SD card.

B=When

Indicates the reference period to download the data.

- Today: current day file download
- Data range: selection of the download period.

C=Today

(divides today's day into different download frames)

- Last: download only the latest data collected AFTER the last data download
- All: download the data of the whole current day of the file

D=Save path:

- This option allows you to save the files in the desired folder on your PC

E=Download:

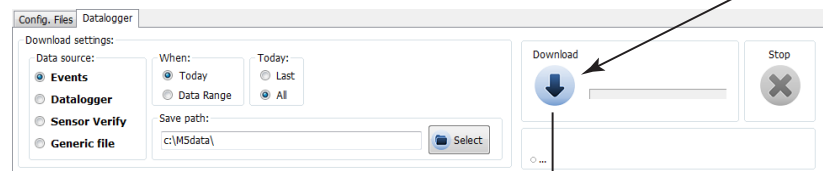
- Button to start the download process

F=Stop:

- Button to stop the download process

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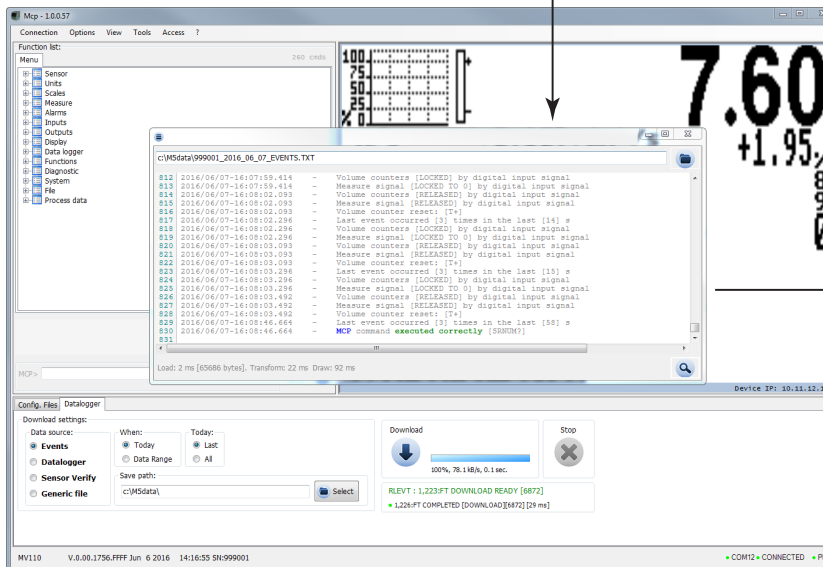
Example: Download Events



To download all the events of the current day in a specific folder, set the below parameters as follows:

- Data source:** Events
- When:** Today
- Today:** All
- Save path:** C: /

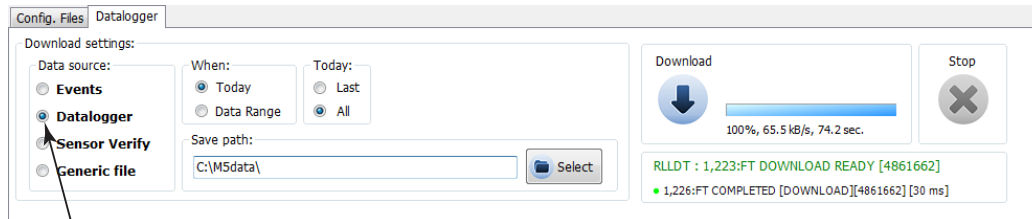
The parameters are set then click the Download button.



Once the download is completed, a window containing the list of today's events appears. The file is saved in the specified folder in .txt format.

Example: Download Data Logger

Note: it is recommended the date synchronization between converter and PC to perform correctly the events and logger reading operations.



To download all the data of the current day in a specific folder, set the below parameters as follows:

Data source: DATALOGGER

When: Today

Today: All

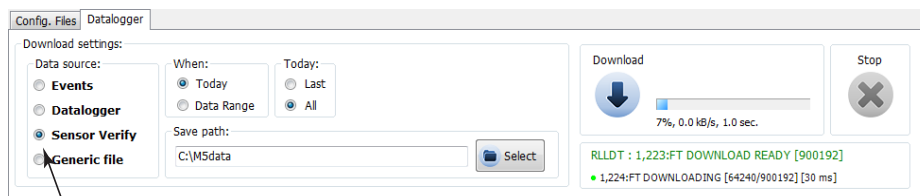
Save path: C: /

The parameters are set then click the Download button.

The following is the formatting of the files data downloaded from the download data logger setting in a file in .CSV format. The access level to download this type of file is the 5th diagnostic level..

Example: Sensor Verify

To make the control measures of the sensor state and the related automatic verification files is necessary that the BIV function (Built-In-Vericator) is turned on (optional). If the BIV is enabled, the instrument automatically tests the sensor operating parameters every hour and records the data on the "STESTLOG.CSV" file; it is possible to do a manual check using the "sens.verify" command on the "Diagnostic" menu or through the MCP "SVERC" command



To download all the sensor measure for the current day in a specific folder, set the below parameters as follows:

Data source: Sensor Verify

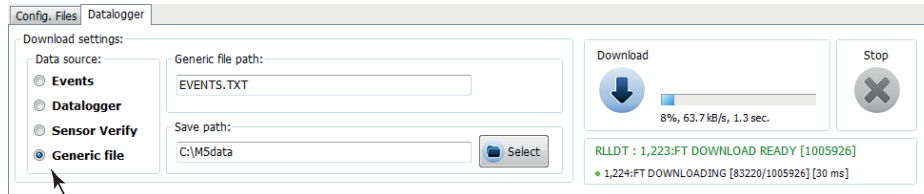
When: Today

Today: All

Save path: C: /

The parameters are set then click the Download button.

Example: download generic file



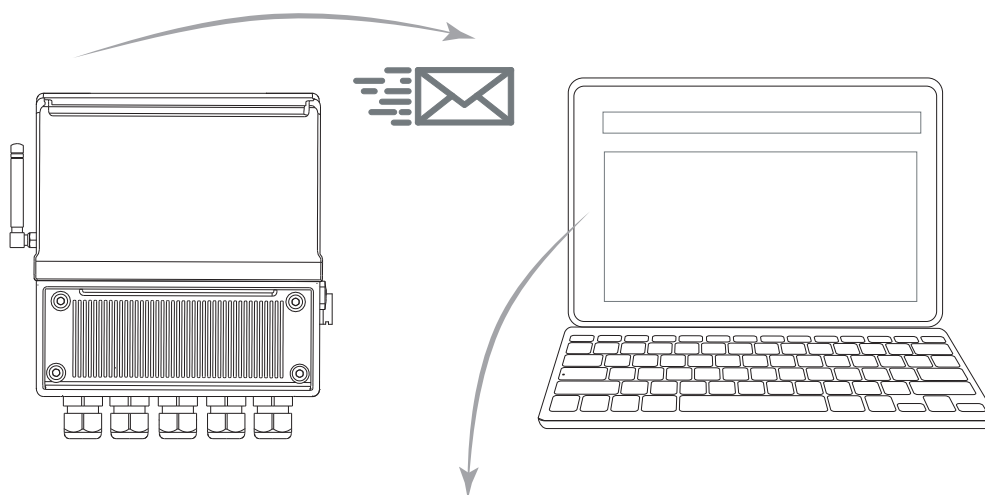
This function allows to select a file in the SD memory and download it. In the "Generic file path" specify the file name contained in the SD and indicate "Save path" where to save the file. Set these values to proceed with the download by clicking the "download".

Download files data and events via mail


Below there are the functions that allow sending files via mail.

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
SDLFF	Send data Log fields Format	/	Send data logger fields format pag. 49
SSTFF	Send sens. test data Fiel. Form.	/	Send sensor test data Fields Form. pag. 16
SIPRD	Send Inst. Process Data	/	Send instantaneous process data pag. 49
SLEVT	Send Last Events	/	Send last system logged events pag. 49
SLLOG	Send last logged process data	/	Send last logged process data pag. 49

Layout format of the mail messages sent data by mv255



SUBJECT: 05- Data logger records file

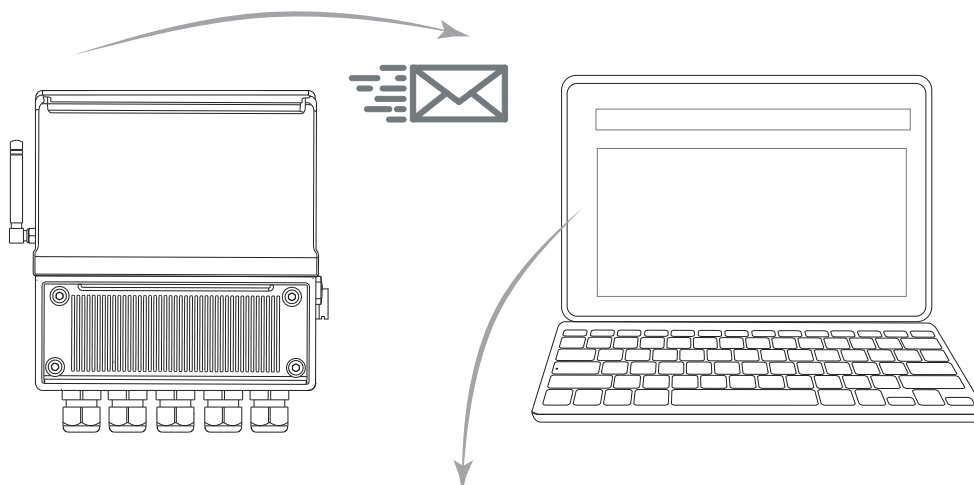
 000000_20190101000041_2019_01_01_DATA_LOG.CSV

Instrument ID: MV-255test
 Serial Number: 000000
 SIM card ID: 8939994320041205973
 Firmware version: MV255 V.1.00.0000.0000 Gen 01 2019 12:00:00
 SD Card status: Size: 3972.0 MB,Free: 3958.9 MB,Cluster: 32 KB ,3662:04:01:04
 Status of batteries: B1:--,B2:--,B3:OK
 Power supply: Main: OFF,
 Usb: OFF
 Modem status: Voltage: OK,Signal: 40%
 IP address: 00.00.000.00
 Active alarms: 0
 MD5 digest of attached file: 000A000A00A00000000AAAA0A0A0A

The format data logger file see Data registration table: csv file structure pag. 6

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Layout format of the mail messages sent events by MV255



OGGETTO: 07- File evento sistema

000000_20190101000041_2019_01_01_EVENTS.TXT

ID strumento: MV-255test
 Numero Seriale: 000000
 SIM card ID: 8939994320041205973
 Firmware version: MV255 V.1.00.0000.0000 Gen 01 2019 12:00:00
 Stato della SD Card: Size: 3972.0 MB,Free: 3958.9 MB,Cluster: 32 KB ,3662:04:01:04
 Status of batteries: B1:--,B2:--,B3:OK
 Power supply: Main: OFF,
 Usb: OFF
 Modem status: Voltage: OK,Signal: 40%
 IP address: 00.00.000.00
 Active alarms: 0
 MD5 digest of attached file: 000A000A00A00000000AAAA0A0A0A

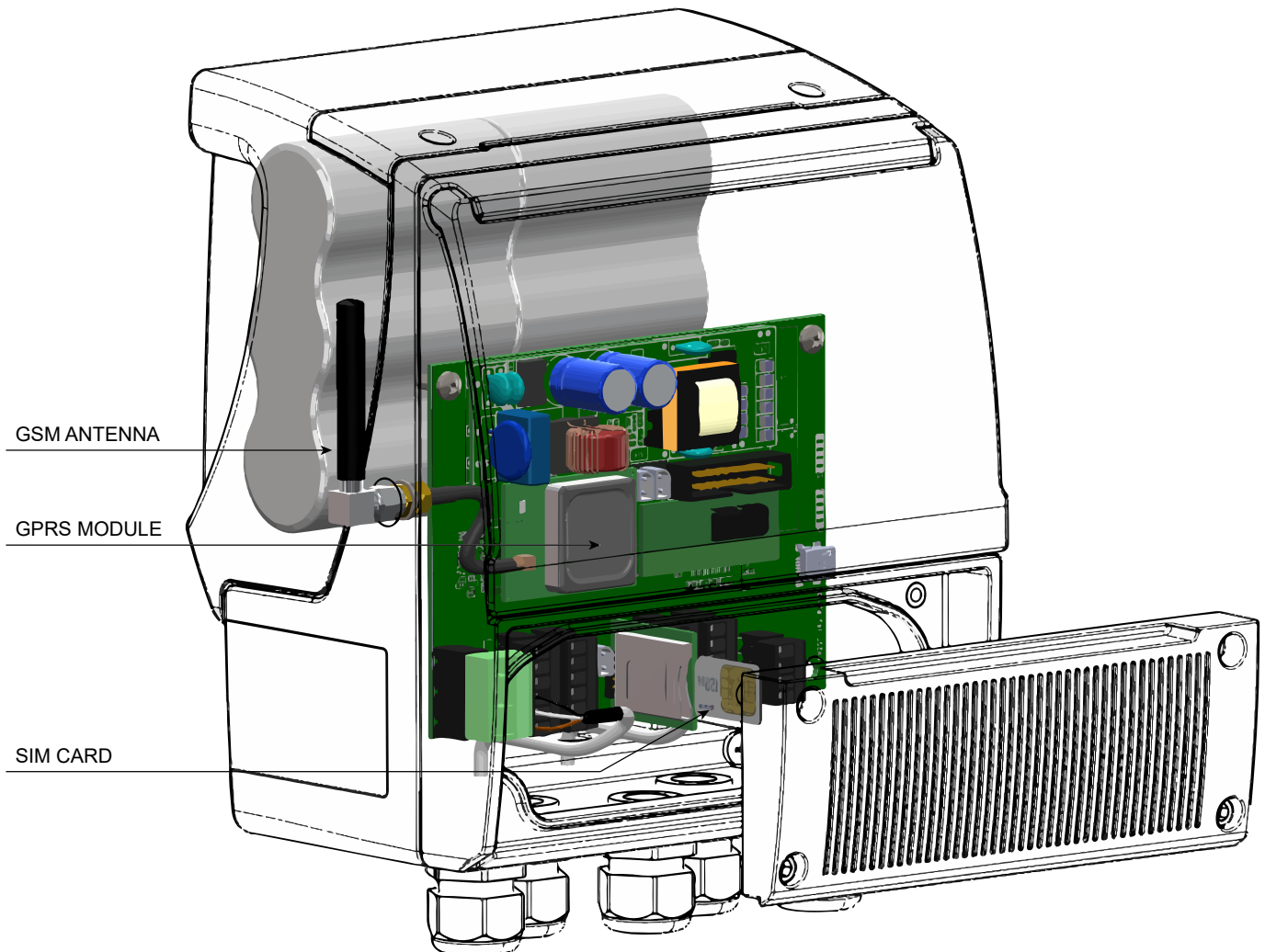
FORMAT OF MAIL EVENTS DATA

MP 2019/07/22-00:00:00.359 - ===== TIME MARK =====
 MP 2019/07/22-00:00:00.367 - SYSTEM clock synchronized with RTC. Time difference: [0.000] s
 CP 2019/07/22-00:00:00.000 - ===== TIME MARK =====
 CP 2019/07/22-00:00:00.007 - SYSTEM clock synchronized with RTC. Time difference: [0.000] s
 MP 2019/07/22-01:00:00.031 - ===== TIME MARK =====
 MP 2019/07/22-01:00:00.039 - SYSTEM clock synchronized with RTC. Time difference: [0.000] s
 CP 2019/07/22-00:00:00.171 - SYSTEM communication request: [LOGGER DATA SEND]
 CP 2019/07/22-00:00:12.023 - MODEM setup: initialization: [SUCCESSFUL]

- MP: Measure processor
- CP: Configuration process

INTRODUCTION TO THE MV255 WIRELESS FUNCTIONALITY

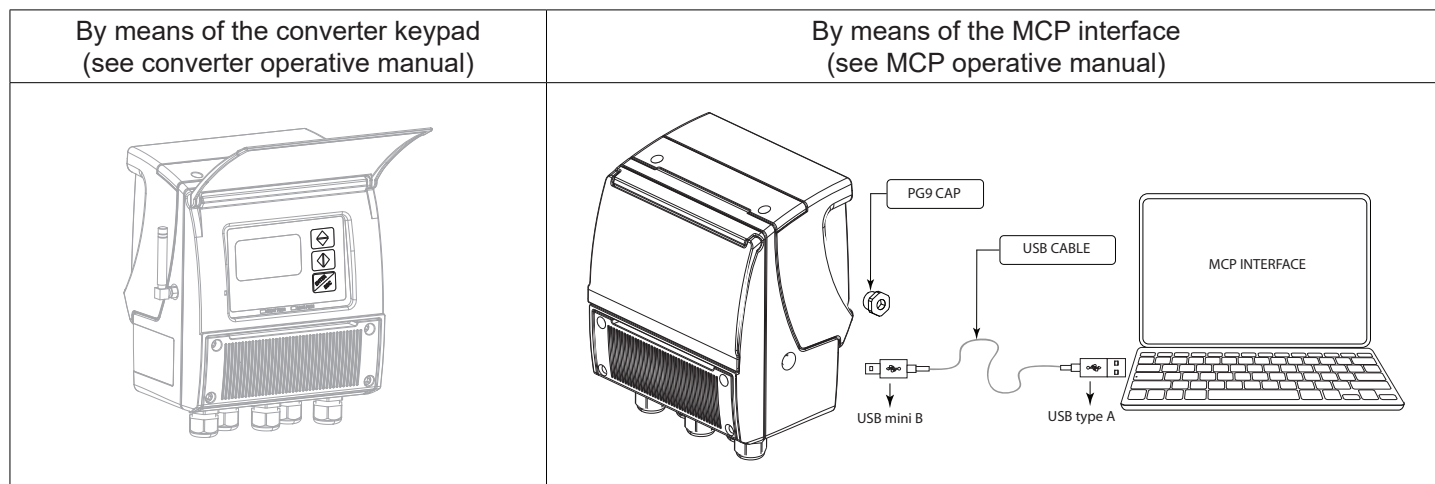
This manual aims to assist the user of the MV255 in setting up, configuring, and executing wireless functions of the converter. It is a guide to implement wireless communication between the MV255 converter and the base station. This manual is an addition to the standard MV255 manual which gives guidance on how to set up the converter and program parameters without the use of wireless module. This manual doesn't aim to replicate informations found in the MV255 manual, like details of functions and their setting, but only to give guidance about how those functions can be utilized through the wireless module.



The MV255 GPRS wireless module is a module that not only sends data, but also allows the converter to be programmed remotely. The converter functions can be programmed through wireless communication, (pc via email or cellular phone) or by cable utilizing MCP software. Wireless or wired configuration is by command in MCP protocol. The MCP protocol allows the converter to receive command messages and translate them into converter operations.

This manual aims to give the user a progressively deeper understanding and it's structured in the following way: firstly it explain how the converter hardware is set up, then it show the programming principles of the converter's MCP software, and finally there is a description of programmable functions. The manual starts with some basic safety informations. Please read and understand that first before progressing further.

The MV255 is configurable by a physical link in two ways:



Controlling how and when the converter interacts with the network

As explained briefly, the MV255 is capable of the following abilities:

- Receive commands from incoming SMS and email messages;
- Answer to commands by sending its own SMS to the network;
- Send data and events stored in its memory by e-mail, either using scheduled time event or upon received command;
- Send the complete parameters configuration list by e-mail on demand;
- Synchronize its internal clock to the timer provided by the configured server.

Controlling the general converter operations and settings through the MCP interface

The System is developed to enable the following basic operations:

- Perform the measure of the flow rate, pressure, temperature or the other measures coming from the external analogue input;
- Integrate the flow rate measure to obtain up to four internal counters for the calculated volumes;
- Store and accumulates the flow rate value, the external measure value, two of the four counters and all recognized events;
- Wake-up the wireless module at preset time and checks for incoming commands contained in SMS;
- Eventually respond to the commands received by sending the answer in a SMS.

SIM CARD PRELIMINARY OPERATIONS

For the wireless communications system to work correctly the SIM card must be set-up correctly. To do this the SIM will need to be checked and may be modified if required:

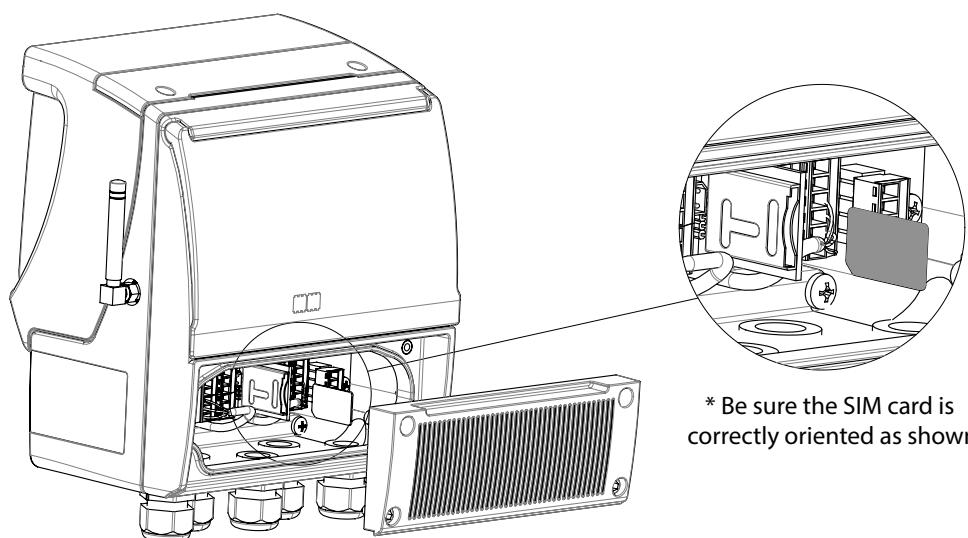
- ❑ If the SIM has a block pin on it, this **MUST BE DEACTIVATED**
- ❑ Check the number set of the SMS MESSAGE CENTER, that allows the sending of SMS messages, is the number provided by the network operator and corresponds to the number on the SIM card.

SIM CARD INSTALLATION

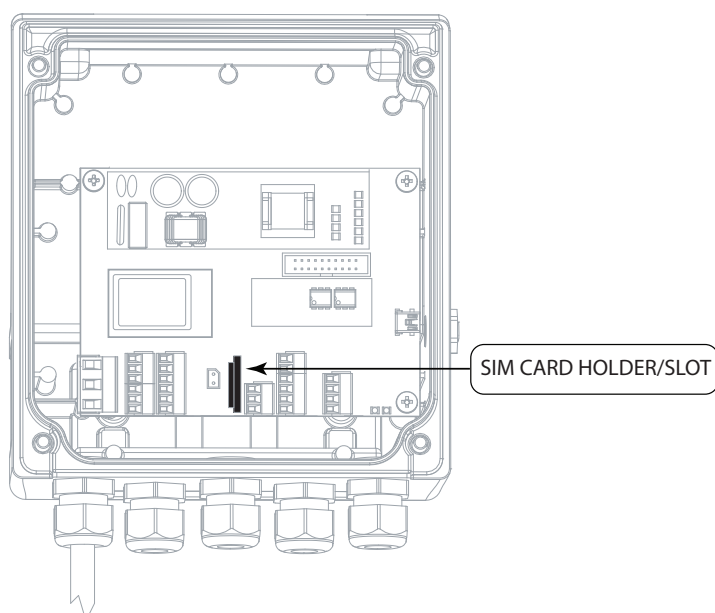
Install the SIM card on the proper socket.



ATTENTION! The SIM-CARD must be inserted in the device with the instrument not powered.

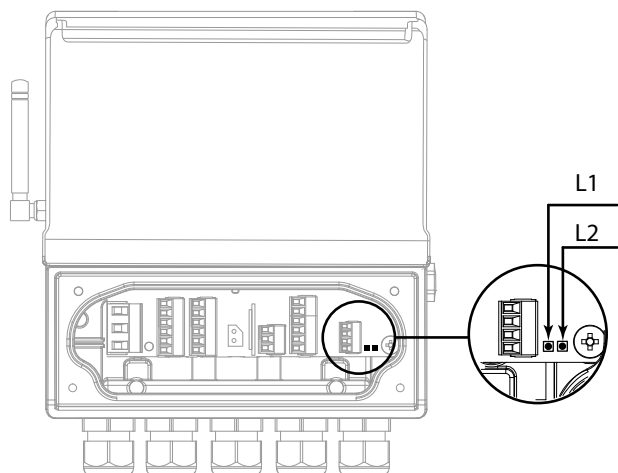


Open the terminal block cover of the converter, insert the SIM card in the socket as shown above: the SIM card should “click” when located in proper position.





ATTENTION! Be sure that all the cables, structures and equipment are firmly attached and stable. This is important especially for the antenna cable, it must not be pinched, scorched, or torn. It must be firmly connected on both sides.



LED 1: communication CPU




LED 2: measures CPU

Red LED: Alarm signal

Blue LED: Communication activated

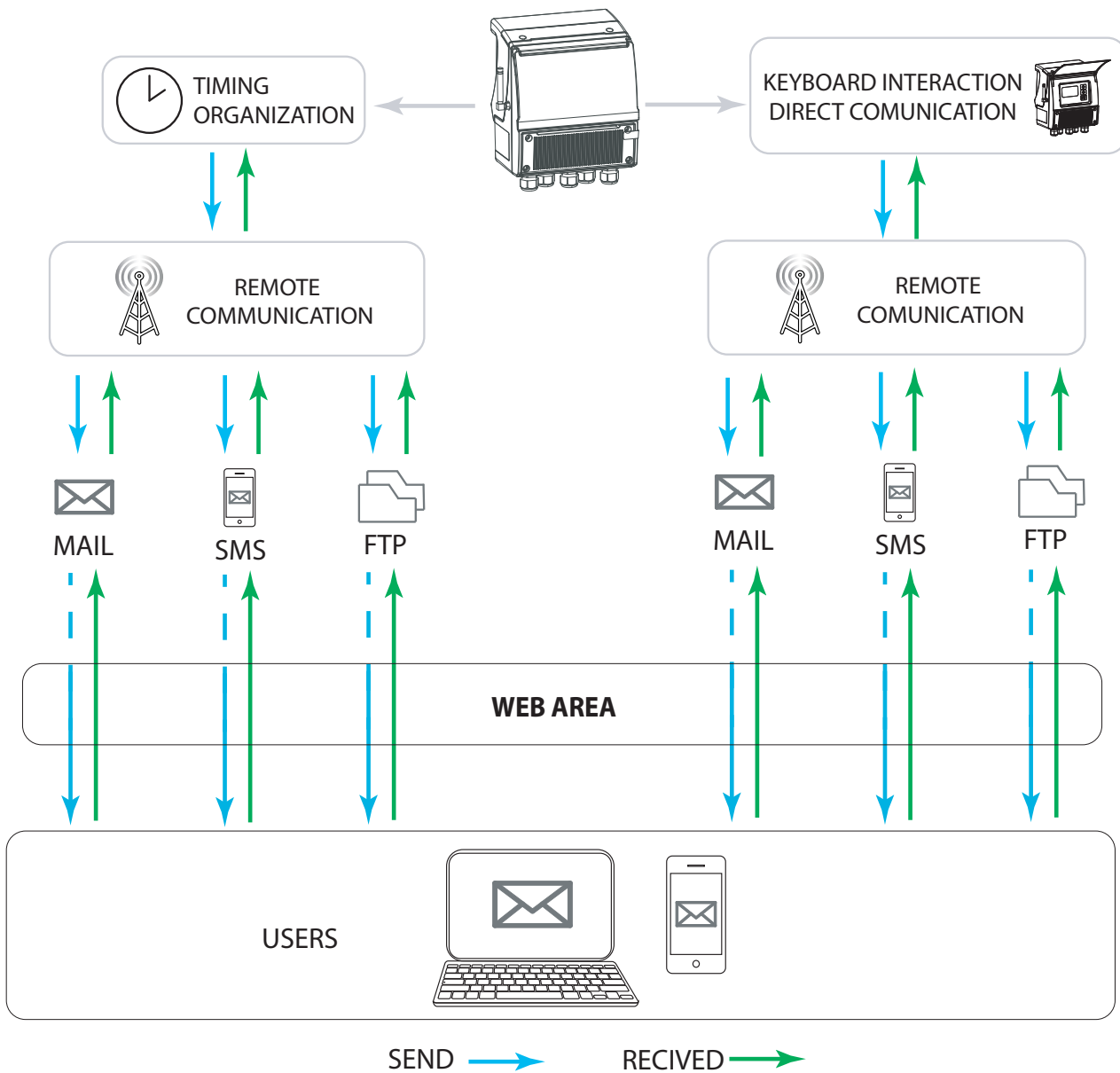
Green LED: System working correctly

Meaning of flags






FLAG	DESCRIPTION
	2G NETWORK CONNECTION
	3G/4G NETWORK CONNECTION
	MODEM IN NETWORK SEARCH / TOTAL ABSENCE OF SIGNAL

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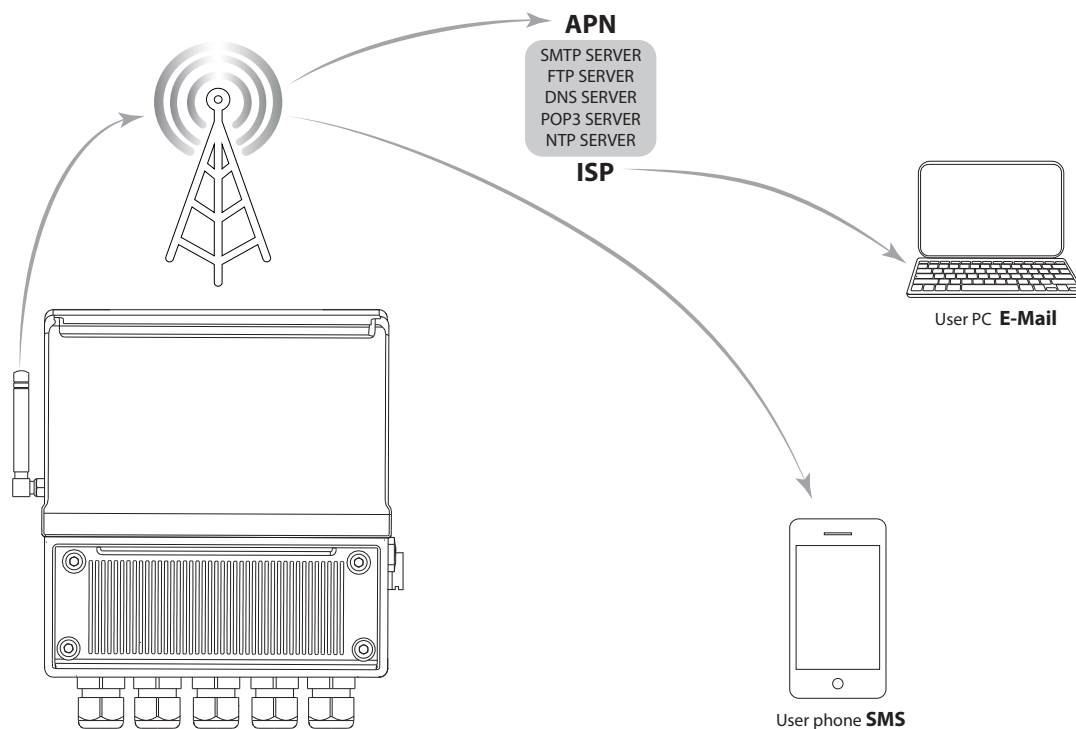
GENERAL WORKING DIAGRAM



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-  REMOTE COMMUNICATION: see [UMTS SETTING pag. 23](#)
-  MAIL: see [MAIL function pag. 27](#)
-  FTP: see [FTP PROTOCOL pag. 37](#)
-  SMS: [see SMS pag. 41](#)
-  TIMING ORGANIZATION: see [TIMING ORGANIZATION pag. 44](#)

MODEM START AND NETWORK REGISTRATION



The MV255 converter can send processed and stored data to different devices via SMS and / or email. Communication takes place via UMTS / GPRS technology, using data packets conveyed through various layers of protocols and hardware devices, as described below:

Data -> Compression (ZIP) -> SMTP/POP3/FTP -> SSL -> TCP/IP -> PPP -> UMTS/GPRS -> RADIO LINK

Data compression allows the volume to be reduced to values close to 1% compared to the original size (1000kb can be reduced to 10kb). Compressed files can be read by any operating system without any additional software.

- ❑ **SMTP** and **POP3** are protocols for transferring data via email between a client and a server
- ❑ **FTP** is a protocol for the direct transfer of files between a client (meter) and a server
- ❑ **SSL** is an intermediate layer dedicated to security that deals with encrypting and authenticating the flow of data so as to make it uneditable and unreadable by a third part who may be listening.
- ❑ **TCP / IP** is a protocol that guarantees the transport of data with algorithms that control its flow, error control and integrity.
- ❑ **PPP** is a protocol that allows the transfer of data packets between two points connected with a serial line, guaranteeing their integrity and correct timing.
- ❑ **UMTS / GPRS** is a technology that allows the exchange of serious data in a multi-user wireless network
- ❑ **RADIO LINK** is a hardware data transport system based on wireless transmission and reception

UMTS SETTING

The below parameters are required to get the connection with the UMTS network; be careful to set the values in proper way .

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
APNAM	Access Point Name used for to access the GPRS network (must be set accordingly to network provider)	MAX 32 CHR STRING	Access point name pag. 49
APAUT	Authentication type used to access the GPRS network. For most network providers this value must be =0	0:OFF 1:PAP 2:CHAP	Access point authentication type pag. 49
APUSR	USER NAME for the authentication in the GPRS network. For most network providers this field must be leaved blank	MAX 32 CHR STRING	Access point user name pag. 49
APPSW	PASSWORD for the authentication in the GPRS network. For most network providers this field must be leaved blank	MAX 16 CHR STRING	Access point password pag. 49
MASLE	Minimum Antenna Signal necessary to start a communication session with the modem	0:OFF 1:ON	Min.antenna signal threshold pag. 49

To verify parameters UMTS, perform the time synchronization test [RRTCS]. Before performing this verification test, configure the functions as indicated below.

COMMUNICATIONS	
RTC SYNC. REQ	OFF
Mail send=	OFF
Mail rec.=	OFF
FTP upload	OFF
FTP download	OFF
File compr.=	OFF
Access p. name	APN .PROVIDER
Auth.type=	OFF
User name	XXXXXXXXXXXXXX
User password	XXXXXXXXXXXXXX
Min.sig.thr=	ON
Primary DNS=	000.000.000.000
Secondary DNS=	000.000.000.000
Retries=	2
NTP server=	NTP PRIDER
Alarm time=	OFF
SMS f.en=	OFF







Request a RTC synchronization [RRTCS]

Access Point Name used for to access the GPRS network [APNAM]
 Access point authentication type [APAUT]
 Access point user name [APUSR]
 Access point password [APPSW]
 Min. antenna signal threshold [MASLE]

The status of the modem connection and operating errors are displayed on the alarm display page.

ALARM VISUALIZATION PAGE	DESCRIPTION STATUS
	PHY: MODEM SETUP Activation of communication with the GPRS parameters set in the modem
	PHY: COMPLETED GPRS communication completed successfully

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ALARM VISUALIZATION PAGE	DESCRIPTION STATUS
	<p>PHY: COMPLETED FAILED Server communication not performed. Check if the SIM card is inserted correctly.</p>
	<p>PHY: COMPLETED: NO SIG Insufficient signal to establish a correct data communication. Check UMTS network coverage</p>
	<p>PPP: OPENING INTERFACE</p>
	<p>PPP: INTERFACE READY</p>
	<p>SMTP: STARTING TLS/SSL</p>
	<p>SMTP: CONNECTED Connection to the SMTP server completed</p>

To check the parameters entered and the operations performed for the UMST connection, see paragraph: Control via MCP interface of the converter communication data pag. 60

MODEM GENERAL SETTING

The general parameters used for the auxiliary settings of the UMTS communication system are shown below.

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
CNTSE	Connection test enable	ON/OFF	Connection test enable pag. 49
SCSCC	Secure connection server certify check	ON/OFF	Server identity certif.check pag. 49
TMSRV	NTP server	MAX 32 CHR STRING	NTP time server name pag. 49
SERFL	Send expressly requested File [MCP ONLY]		.pag. 59
FB2GE	Fallback 2G enable [MCP ONLY]	ON/OFF	

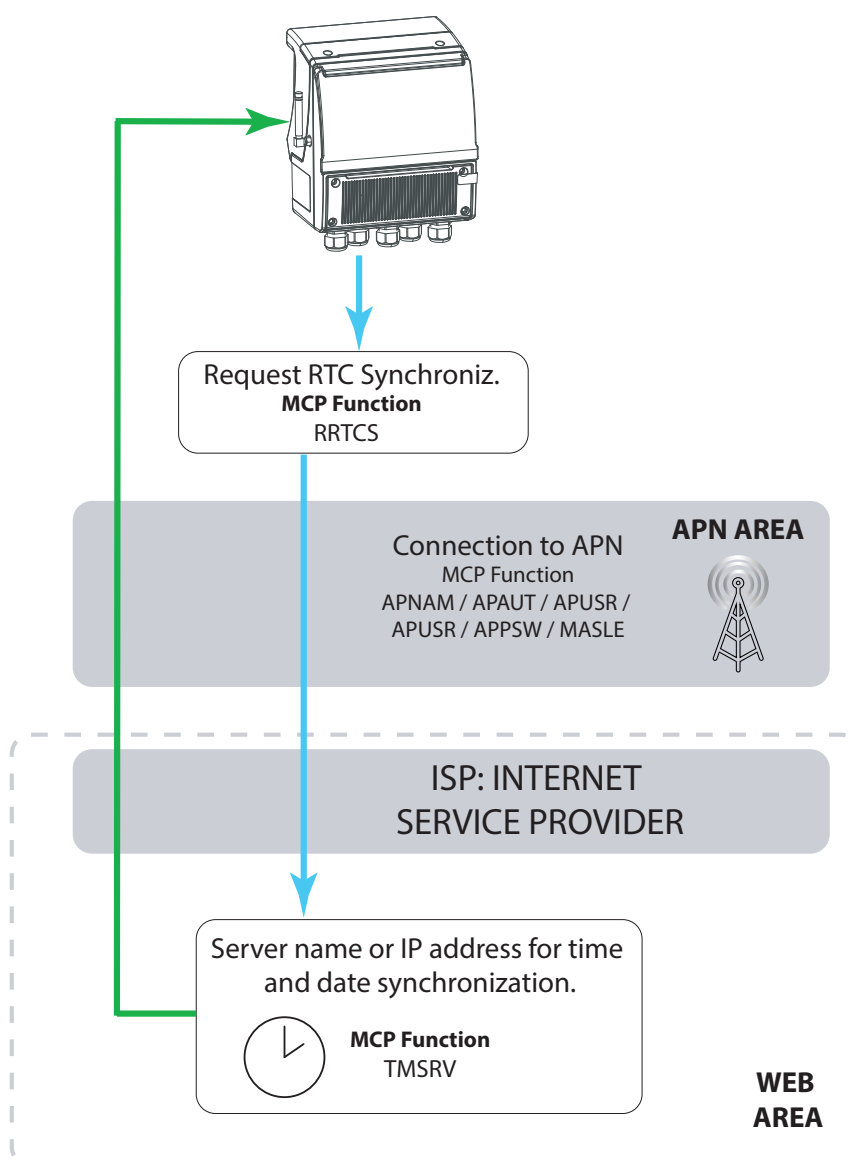
For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

CLOCK SYNCHRONIZATION

All The MCP functions visualized reside internally to the converter. The below scheme show where the functions act. Synchronization takes place simultaneously and simultaneously with the sending of data logger process data and uses the standard NTP protocol on UDP port 123. Configure this service correctly using one of the many free national and international providers. For greater accuracy, use the geographically closest server or the one that provides the fastest service.

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
TMSRV	Time server name	MAX 32 CHR STRING	NTP time server name pag. 49
RRTCS	Request RTC Synchroniz.	/	Request a RTC synchronization pag. 49

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To check the parameters entered and the operations performed for clock synchronization, see paragraph: Control via MCP interface of the converter communication data pag. 60

MAIL FUNCTION

The following parameters are necessary for the configuration of sending email; be careful to set the values correctly.

MAIL SEND

Main parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
MSNDE	General enabling of e-mail sending functions.	ON	Mail send function enable pag. 49
SUNAM	User name for SMTP service	MAX 32 CHR STRING	User name for SMTP service pag. 49
SUPSW	Password for SMTP e-mail service	MAX 32 CHR STRING	Password for SMTP email service pag. 49
PDNSS	Primary DNS Server	Set DNS	Primary Domain Name Server pag. 49
SDNSS	Secondary DNS Server	Set DNS	Secondary Domain Name Server pag. 49
MAXRT	MAX number of Retries	Set 0 to 9	Max.number of session retries pag. 49
HELOS	Helo String	test@test.com	HELO identification string pag. 49
EMSND	E-mail Sender address	MAX 48 CHR STRING	Email address of sender pag. 49
EMRE1	E-mail receiver address 1	MAX 48 CHR STRING	Email address of receiver 1 pag. 49
EMRE2	E-mail receiver address 2	MAX 48 CHR STRING	Email address of receiver 2 pag. 49
EMSVN	SMTP E-Mail Server name or IP Address	MAX 48 CHR STRING	SMTP mail send server name pag. 49
SSCMD	Smtplib secure connection mode	0:OFF 1:IF AVAIL 2: SSL/TLS	SMTP secure connection layer pag. 49
EMSVP	SMTP mail send server port number	MAX 5 CHR STRING	SMTP mail send server port num. pag. 49

Secondary parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
INIDS	Instrument identification string	MAX 32 CHR STRING	Instrument identifier string pag. 49

To check the parameters set, start the function SMTCP connection test in the diagnostic menu

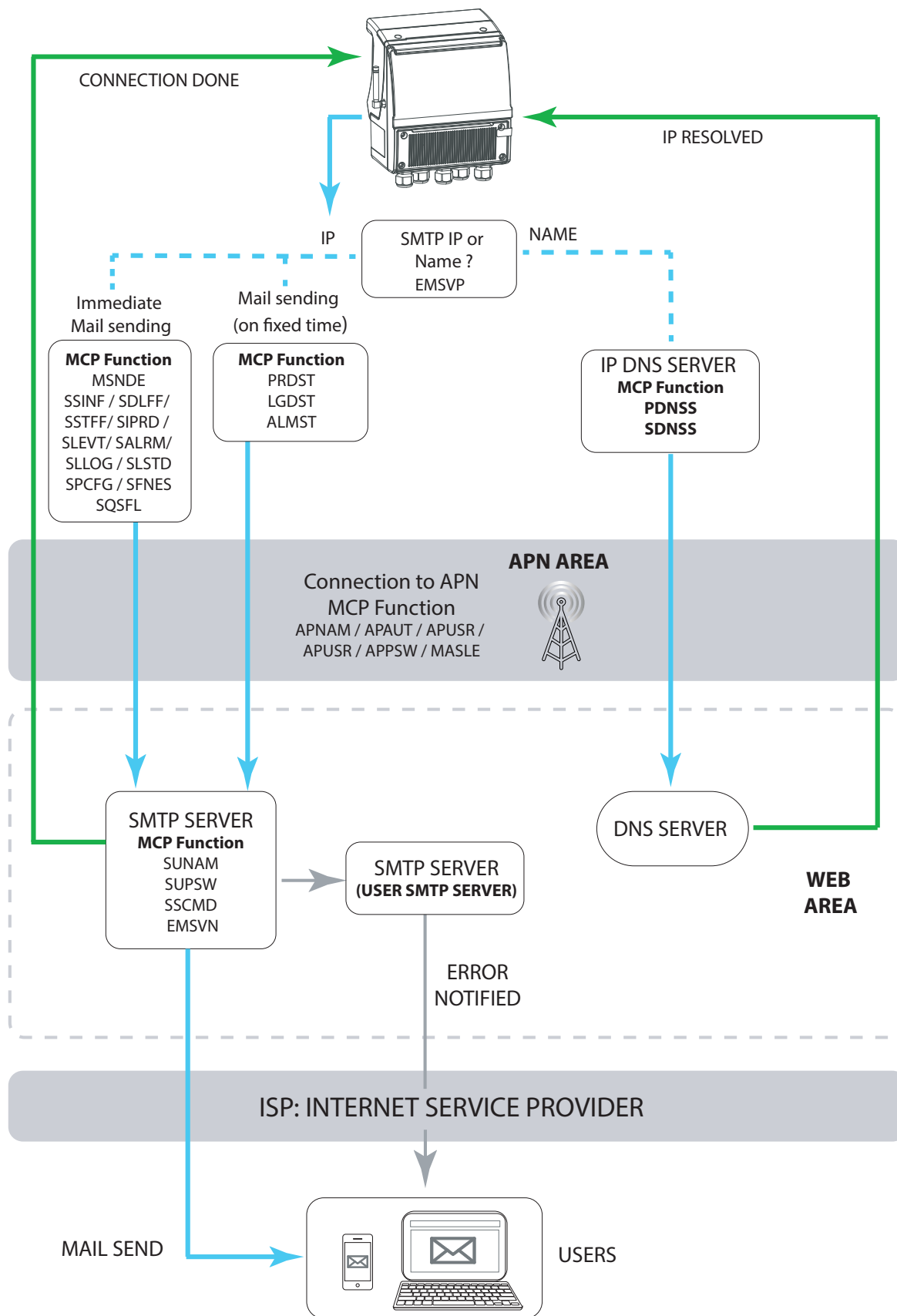
DIAGNOSTIC
SMTCP conn test

SMTP connection test (MCP SMPCT). With this function it is possible to make a test connection to the SMTP server used for sending e-mail. The test does not send any message and merely verifies that the server, port, user name and password set are all correct. To check the parameters entered and the operations performed for sending mail, see paragraph: Control via MCP interface of the converter communication data pag. 60

For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

OVERVIEW OF STRUCTURE OF E-MAIL SENDING

The below scheme show where the functions act



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TEXT FORMAT MAIL

- ❑ Mail sender address: tes@test.com
- ❑ Mail address receiver 1: test1@test.com
- ❑ Subject: Information in the "object" field, used to identify the presence and type of file attached.

Example: 00 - Status Information

Subject code	DESCRIPTION
00	Status Information message, no file attached.
01	Data logger fields format, format data logger fields for process data.
02	Sensor test fields format, format data logger fields for sensor test data.
03	Instantaneous process data, instant process data.
04	Alarms status file, status of the alarms.
05	Data logger records file, process data of the data logger.
06	Sensor test records file, sensor test data of the data logger.
07	System events file, system events.
08	System configuration file, list of configuration parameters.
09	Functions enable configuration file, status of enabling functions.
10	Quick start functions configuration file, list of functions included in the quick start.
11	Requested file, file explicitly requested by the user.
12	Commands file processing result, result of processing a list of commands.
13	Compressed archive file, compressed archive containing one or more files.
14	Compressed data logger records file, compressed data file process data logger.
15	Compressed sensor test records file, compressed data file sensor test data logger.
16	Compressed system events file, compressed file of system events.
17	Compressed system configuration file, compressed file of configuration parameters.
18	Compressed functions enable configuration file, compressed status file enable functions.
19	Compressed quick start functions configuration file, file compressed function. Quick start.
20	Compressed requested file, compressed file explicitly requested by the user.
21	Compressed commands file processing result, compressed result processing command list.

The text of the mail contains the following fields:

Instrument ID: instrument identification string, complete with serial number.

Serial Number: instrument serial number.

SIM card ID: SIM card serial number.

Firmware version: firmware version.

SD Card status: SD card usage information and time remaining before full filling.

Status of batteries: battery condition.

Power supply: power supply status.

Modem status: modem status, power supply voltage and antenna signal strength.

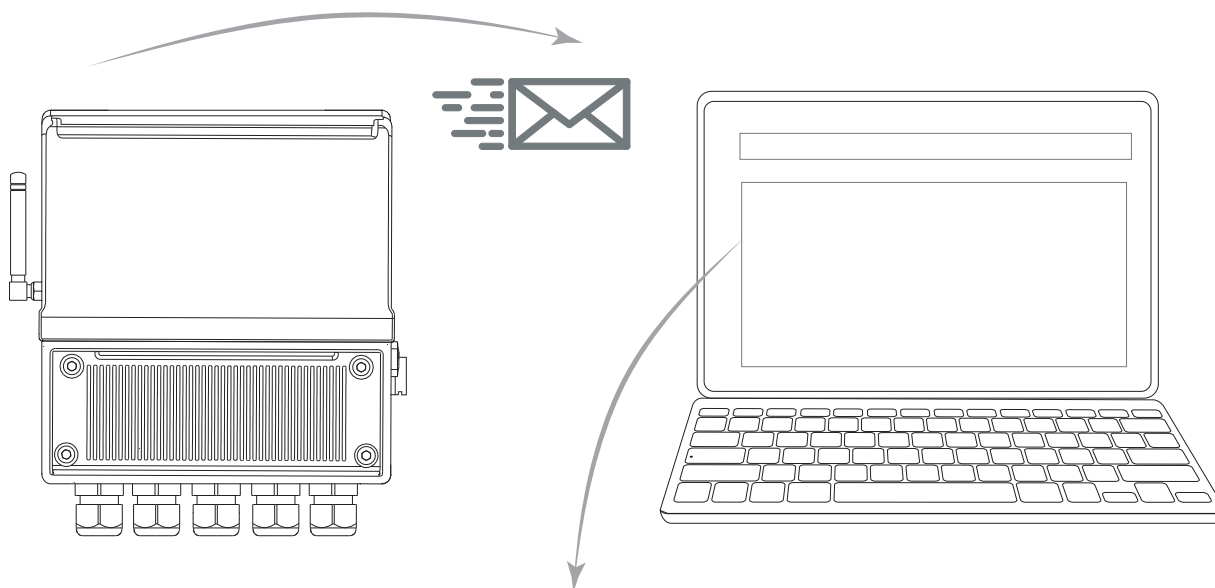
IP address: IP address of the meter at the time of transmission.

Active alarms: number of alarms active at the time of transmission and relative description.

MD5 digest of attached file: fingerprint of the attached file, if present.

The MD5 digest of the attached file is used to ensure that the received file has not been manipulated or error during the transmission. For this purpose there are special tools in each operating system that can immediately calculate MD5 digest of the received files.

Example text format mail



SUBJECT: 00- STATUS INFORMATION

Instrument ID: MV255_LITHIUM_BATTERY_TEST_SETUP_999005
Serial Number: 999005
SIM card ID: 8939994320041205973
Firmware version: MV255 V.0.00.1882.FFFF Jun 06 2018 17:52:34
SD Card status: Size: 3972.0 MB,Free: 437.6 MB,Cluster: 32 KB
Status of batteries: B1:OK,B2:LOW,B3:OK
Power supply: Main: OFF,Usb: OFF
Modem status: Voltage: OK,Signal: 80%
IP address: 10.212.252.228
Active alarms: 1
21 [BATTERY 2 LOW]
MD5 digest of attached file: C526FBCEBD54D24718C4032E3D967C8A

MAIL RECEIVE

MV255 is not a reception server that is always active and visible on the network, but behaves like a client that connects to a mail server like any user would. The mail received by the meter is therefore not in the latter's memory but is located at a server to which the meter must connect. The connection cost is linked to the chosen provider. For battery operation, it is recommended to use mail reception with a set reading frequency of 24 hours. It is also advisable to set a different mailbox for receiving messages and not to use the one that the meter normally uses as a destination for sending. However, if this is not possible, the meter is still able to handle this situation, although with less efficiency. The meter allows you to set a different user name and password for the mailbox used to receive data.

Main parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
MRECE	Mail Receive Enable	ON	Mail receive function enable pag. 49
PUNAM	Pop3 service User name	MAX 32 CHR STRING	User name for POP3 service pag. 49
PUPSW	Pop3 service user Pass.	MAX 32 CHR STRING	Password for POP3 email service pag. 49
P3SRV	POP3 server name	MAX 32 CHR STRING	POP3 mail receive server name pag. 49
PSCMD	Pop3 secure conn. mode	SSL/TLS IF AVAIL OFF	POP3 Secure connection layer pag. 49
P3SPN	POP3 server port numb.	MAX 5 CHR STRING	POP3 mail receive serv.port num. pag. 49

Secondary parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
MSCKT	Messages check time	HH:MM:SS	Incoming message check time pag. 49

To check the parameters set, start the function POP3 connection test in the diagnostic menu

DIAGNOSTIC
POP3 conn.test

POP3 connection test (MCP POPCT). With this function it is possible to check whether the parameters entered as server name, server port, user name and password are correct. The test does not send any message from the POP3 server. To check the parameters entered and the operations performed for sending mail, see paragraph: Control via MCP interface of the converter communication data pag. 60.

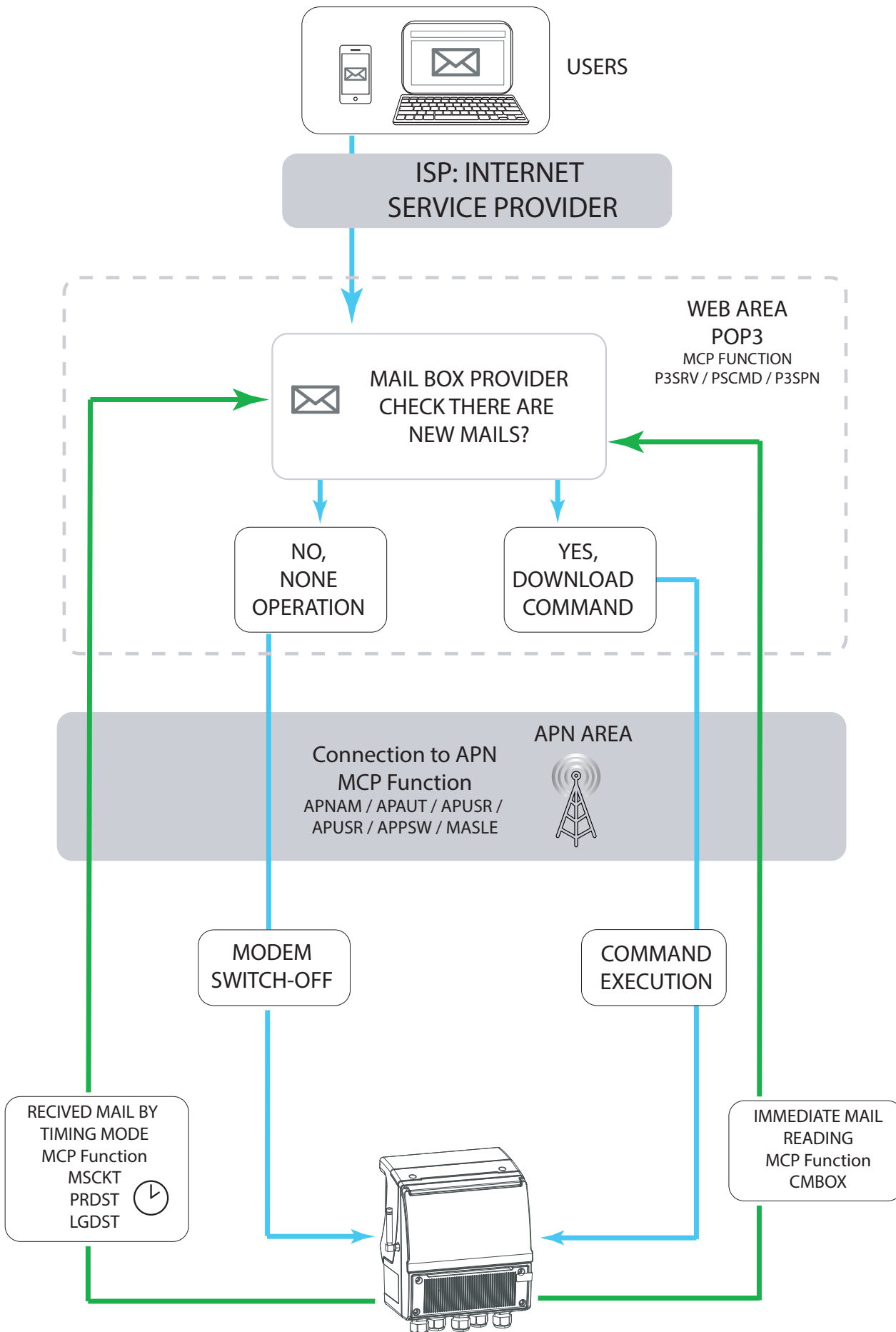
For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

NOTE:

- When the data transmission intervals coincide with the reception ones, the system gives priority to the reception, then sends the data. This allows the management of the same mailbox for both functions.
- After downloading and reading the e-mail, it will be deleted if the serial number of the converter is present in the subject of the e-mail.

OVERVIEW OF STRUCTURE OF E-MAIL RECEIVED

The below scheme show where the functions act:



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ONE MAIL BOX FOR MORE MV255

MV255 will download the e-mail based on Subject text:

IF ON THE SUBJECT IS WRITTEN:

- The board serial number (six numerical characters)
- No text (blank)
- Any other text

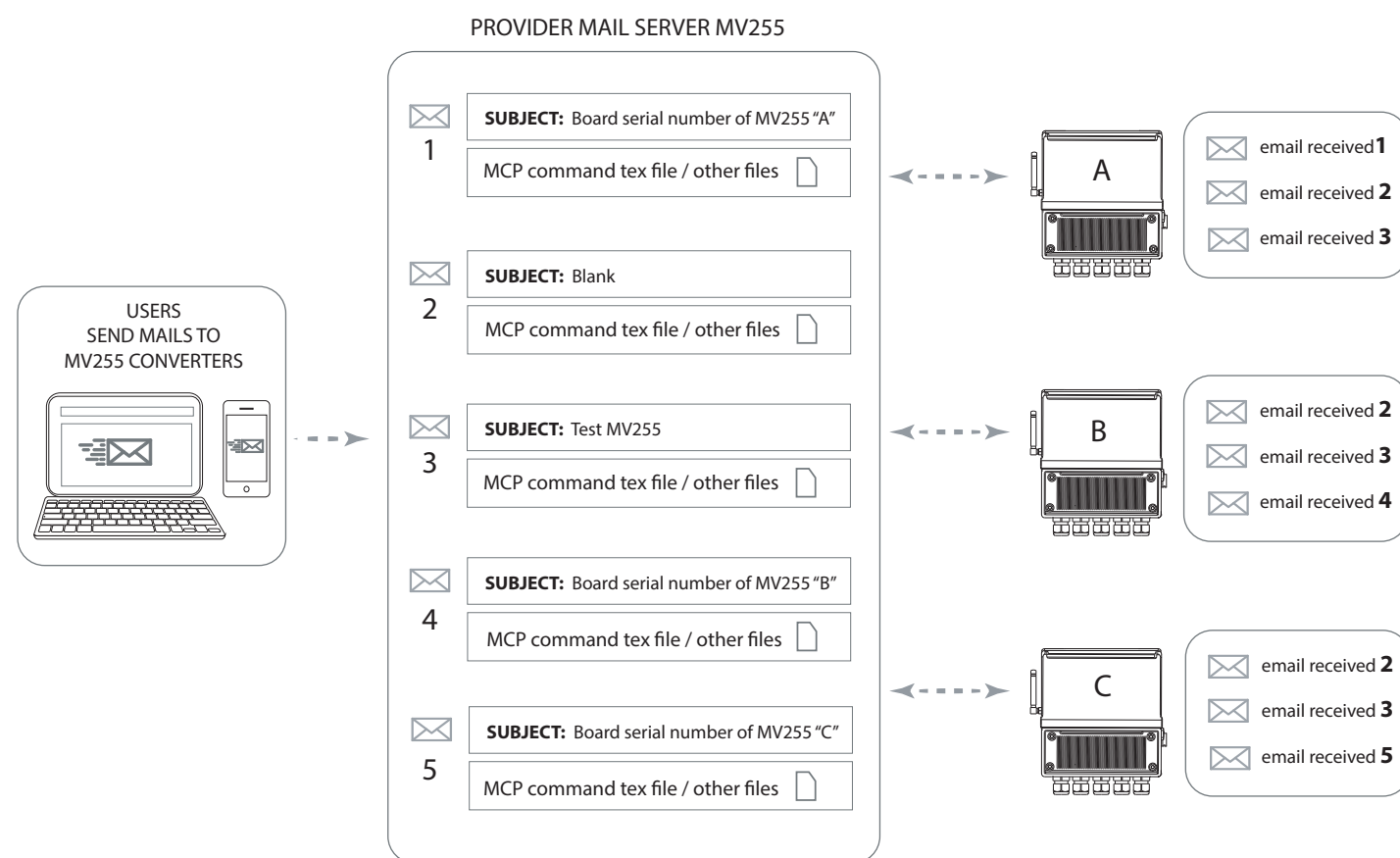
It will download consequently all the e-mail send;

IF ON THE SUBJECT IS WRITTEN

- The board serial number of other converters (six numerical characters); recognizes that the mail is not addressed to it and don't download it.

Here below a scheme that show the download behavior based on the subject text:

ATTENTION: when a converter accesses to the server for downloading, the server mail box is busy and it prevents the download request from other converters

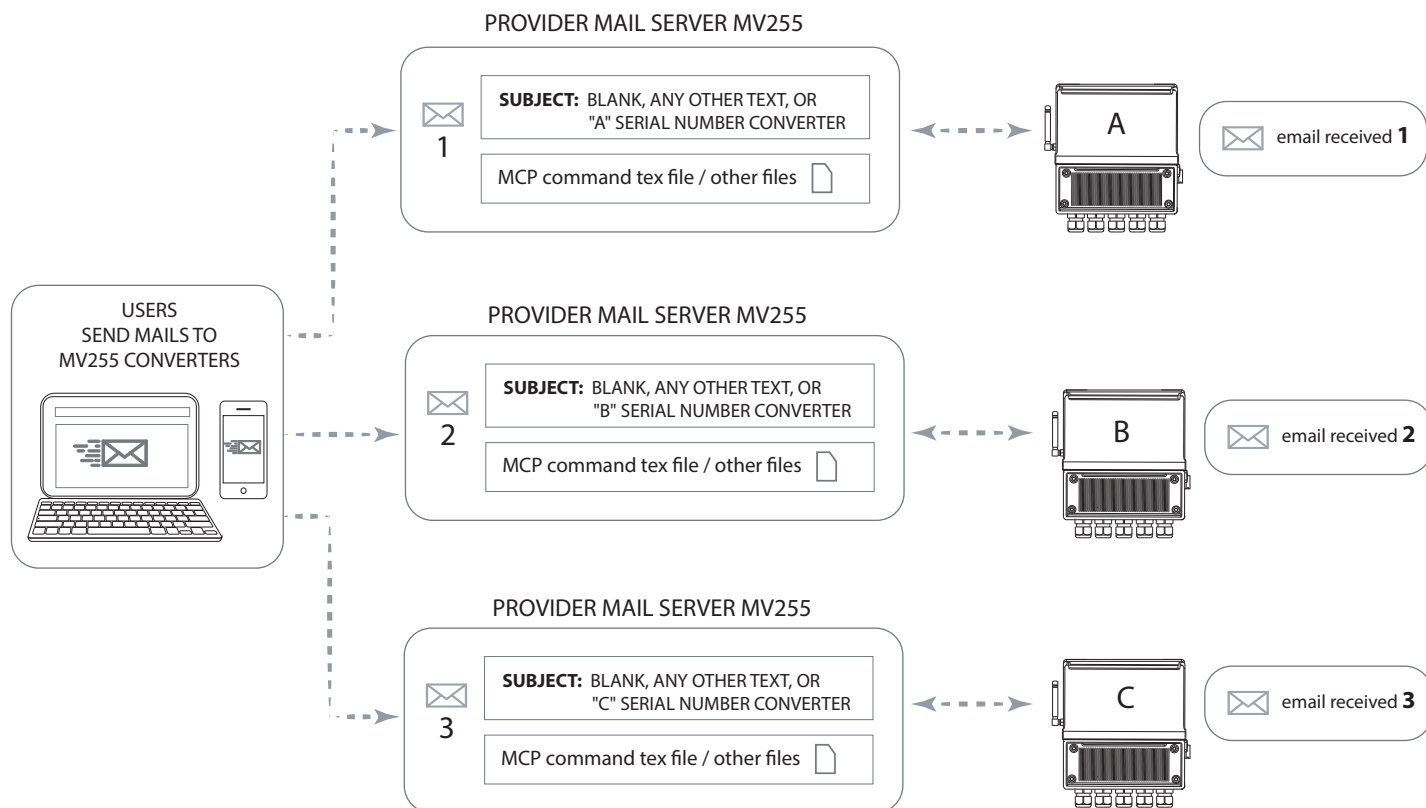


Therefore, if a common mail box is used without specifying the serial number of the MV255 converter board, it is possible that the message can also be read several times by the same instrument, with potentially unexpected consequences (for example the firmware update).

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MORE MV255 WITH DIFFERENT MAIL BOXES

Each converter has a different mail address, so the request for download of each converter does not interfere with the download request of the other converters



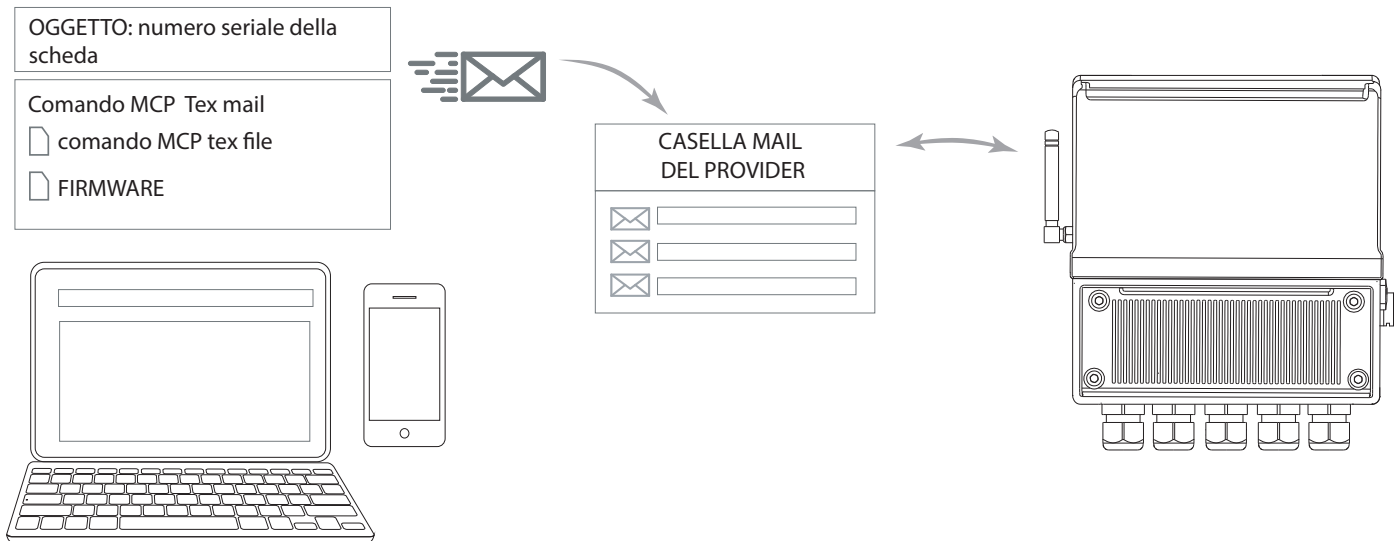
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TEXT FORMAT RECEIVED MAIL

Mail messages sent to the meter can be of 3 types:

- List of MCP commands in the email text
- List of MCP commands in an attached file
- New firmware version of the converter

ATTENTION: The list of MCP commands sent to the converter must be preceded by the [ACODE] command followed by the access code. If the command [RSARE = ON] is enabled, only the access code commands entered will be executable. (for more details on the function, consult the MV255 product manual).



If there is only one mailbox that will be read by more than one instrument, the message to be sent to the meter must contain the serial number of the card in the object. When the serial number of the meter is present in the object, the message will be deleted once read.

ATTENTION: if the serial number of the card is NOT set in the object, the message can be read by all the meters they have access to the mailbox and will not be deleted. It is therefore possible that the message can also be read several times by the same instrument, with potentially unexpected consequences (for example the updating of the firmware).

Example of sending mail in text format

- Request to send device status:

Subject: Board serial number (See the MV255 product manual diagnostic menu)

Email text: ACODE=30000000;SSINF (no space between characters)

- Request to send device status and send configuration parameters:

Subject: Board serial number (See the MV255 product manual diagnostic menu)

Email text: ACODE=30000000;SSINF;SPCFG (no space between characters)

Using command Remote operation access level [RMTAC]

Remote operating level access. The predisposition functions or the commands present in the body of the e-mail or in the attached files will be executed with the access level specified by the parameter MCP RMTAC. If RMTAC = 0 all the commands can be executed, only remotely sent, with access level from 1 to 6. (Remote operations access level pag. 49)

[RMTAC] configuration setting at access level 6.

Validate server identity [MCP= SCSCC].

When this parameter is active, in the case of a secure connection, the meter checks that the identity provided by the server corresponds to that described in the certificate received. It is advisable to always leave this parameter active, as it is a guarantee that the server you are contacting is really what is expected. (Server identity certif.check pag. 49)

Order to read the received data

After receiving the e-mail message, the system processes it according to the following priorities, as appropriate:

- a) Mail containing only MCP commands in the body of the message: immediate execution of the commands.
- b) Mail containing MCP commands in the body of the message and an attachment with MCP command list: the commands received in the body of the message are executed first and then those present in the attached list.
- c) Mail containing MCP commands in the body of the message, a list of MCP commands attached and an attached firmware: the MCP commands found in the message body are first executed, then the firmware is updated and then upon restarting the list of MCP commands is executed attached

FTP PROTOCOL

The FTP protocol allows the direct connection of the instrument to a server for sending or receiving files. The files sent can basically be of two types: data or events. The files received are essentially configuration commands or files containing firmware updates. The connection with the FTP protocol may have some variations. Those supported by the tool are: PASSIVE mode and protected connection IMPLICIT (FTP / S). PASSIVE mode implies that connections are always established by the client to the server and never vice versa, ie the server always opens LISTENING connections. Instead, the IMPLICIT protected connection indicates that the client negotiates a secure connection with the server after the initial connection (login with user name and password takes place after the secure layer negotiation).

Main parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
FTPUP	FTP Upload enable	ON/OFF	FTP upload function enable pag. 49
FTPDN	FTP Download enable	ON/OFF	FTP download function enable pag. 49
FTPSN	FTP server name	MAX 32 CHR STRING	FTP server name or address pag. 49
FUNAM	Ftp service User name	MAX 32 CHR STRING	User name for FTP service pag. 49
FUPSW	Ftp service User Passw.	MAX 16 CHR STRING	Password for FTP service pag. 49
MAXRT	MAX number of Retries	Set 0 to 9	Max.number of session retries pag. 49
FTPSP	FTP server port number	/	FTP server port number pag. 49
FTPSP	FTP server secure connection enable	/	FTP secure connection enable pag. 49
FTUPP	FTP upload path (MV DATA)	MAX 16 CHR STRING	FTP root directory for data pag. 49
FTUPE	FTP upload events path (MV EVENTS)	MAX 16 CHR STRING	FTP root directory for events pag. 49
FTDNP	FTP download path (MV COMMANDS)	MAX 16 CHR STRING	FTP root directory for commands pag. 49

Secondary parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
FCMPE	File Compression Enable	ON/OFF	File compression enable status pag. 49
CFPSW	Compr. File Password	MAX 16 CHR STRING	Compressed archive password pag. 49

To check the parameters set, start the function FTP connection test in the diagnostic menu

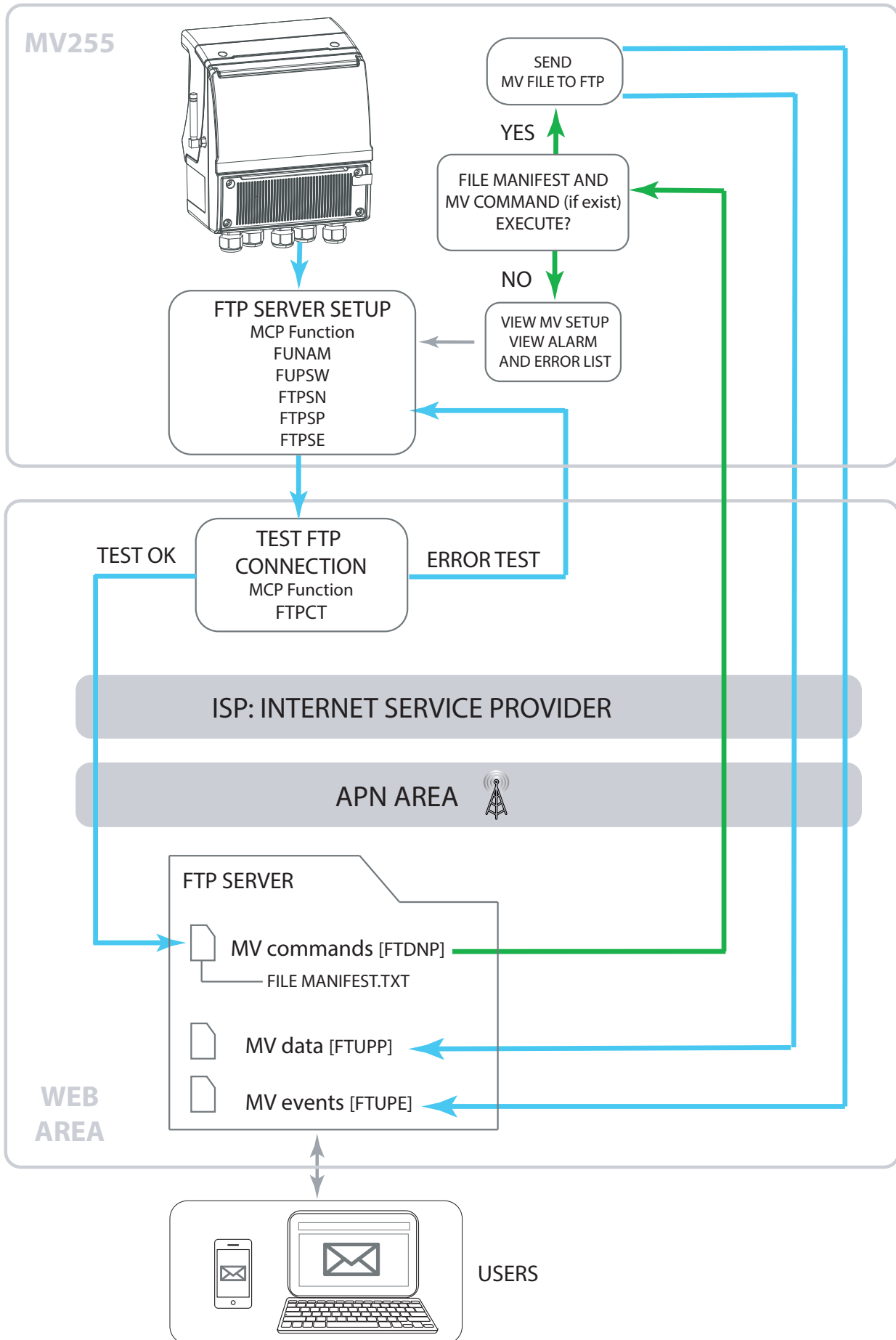
DIAGNOSTIC
FTP conn.test

FTP connection test (MCP FTPCT). With this function it is possible to check whether the parameters entered as server name, server port, user name and password are correct. The test does not send any message. To check the parameters entered and the operations performed for sending FTP, see paragraph: Control via MCP interface of the converter communication data pag. 60

For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

OVERVIEW OF STRUCTURE OF FTP

The below scheme show where the functions act



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FTP Server Directory

The directories created in the root path of the FTP server can have names different from those suggested (data, events, commands). However the directories have 3 specific features as shown below:

- ❑ FTP ROOT DIRECTORY FOR COMMANDS [FTP root directory for commands pag. 49]: Directory used to send MV255 converter commands present in MANIFEST.TXT file, firmware update and reading of other files containing various commands.
- ❑ FTP ROOT DIRECTORY FOR EVENTS [FTP root directory for events pag. 49]: Directory used to send to the FTP server the general informations of the converter such as having, alarms, various configuration files.
- ❑ FTP ROOT DIRECTORY FOR DATA [FTP root directory for data pag. 49]: Directory used to send to the FTP server the process data, data logger and sensor test data.

Attention the names of the directories present in the FTP server must not contain spaces or characters that are not accepted (see function options). The names reported later in the converter must exactly match those reported in the FTP server, including upper and lower case characters.

NOTE: If you delete the files in the directories on the FTP server, there is no conflict in the converter.

File Manifest.txt

After establishing the connection with the FTP server, the MV255 converter searches for the

“MANIFEST.TXT” file in the Commands directory (FTP root directory for commands pag. 49).

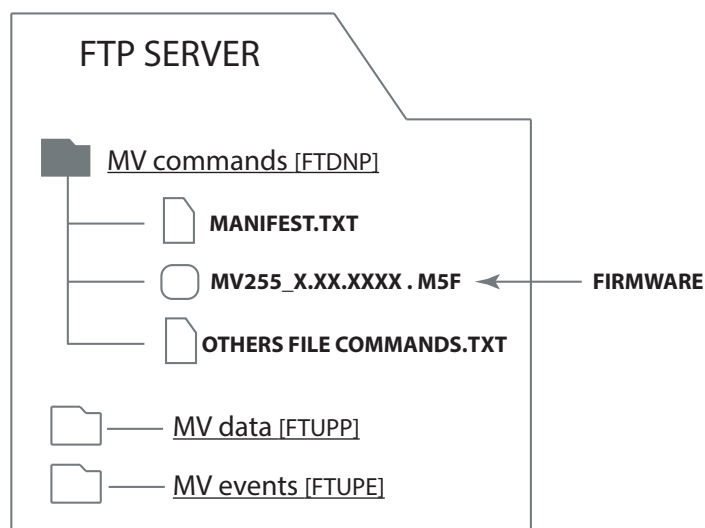
The “MANIFEST.TXT” file can contain directly executable commands or the indication to download additional command files or the firmware update file. To execute command files or to perform firmware updates it is necessary to use the command MCP FTDNL=filename.txt. This command is not present in the commands available in the menu but is executed only if present in the MANIFEST.TXT file.

Example of compiling the MANIFEST.TXT file for executing commands, updating firmware and executing another file containing other commands.

EXAMPLE

MANIFEST.TXT : MCP COMMANDS;FTDNL=MV255_X_XX.XXXX.M5F;FTDNL=ADDITIONAL FILE.TXT

Location of the files in the commands directory in the FTP server:

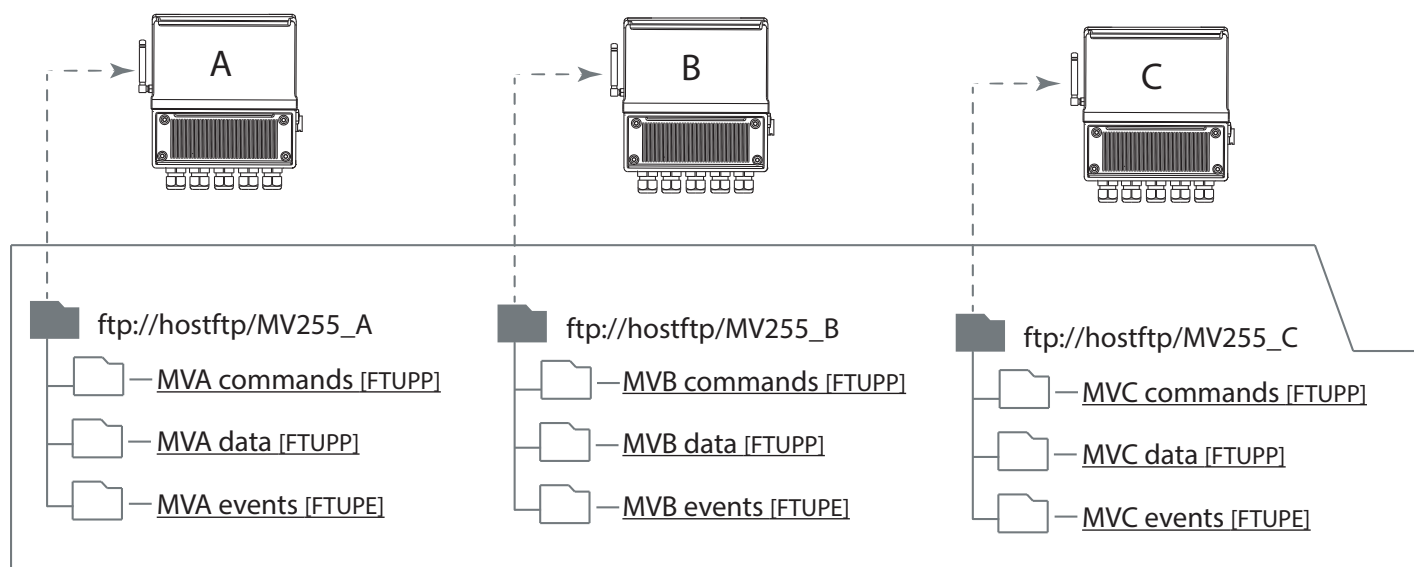


General notes for the manifest.txt file

- ❑ The files that the FTPDNP command executes must always be present in the Commands folder where the MANIFEST.TXT file is also present.
- ❑ In FTP server NOT MICROSOFT the file names are lowercase and uppercase, so FILENAME.TXT will be DIFFERENT from filename.txt. So be careful to write the file name exactly as it is written in the server directory.
- ❑ The order of execution of the data present in the MANIFEST.TXT file are:
 - 1 Execution of the commands contained in the MANIFEST.TXT file (MCP Commands); the commands will be executed in the same sequence in which they are read.
 - 2 Loading of new firmware (FTDNL=MV255_X_XX.XXXX.M5F).
 - 3 Execution of the commands contained in the additional files (FTDNL=ADDITIONAL FILE.TXT).
- ❑ Separator character between the commands is ;
- ❑ The maximum length of a command line is 1000 character.
- ❑ The MANIFEST.TXT file is not deleted after being read. If the file is not modified, it will never be executed again. If any change is detected, it will be considered a new file and then executed.

NOTE: it is also possible to specify the level of access to which the commands will be executed using the MCP RMTAC command (see Using command Remote operation access level [RMTAC] pag. 36).

FTP server connection with multiple MV255 converters



FTP SERVER : ftp://hostftp

For a more correct use of the FTP server, it would be better to specify, at the time of configuration, a different root path for each tool, so that it can deposit or retrieve commands from separate directories. However, it is also possible to use the same path and the same directories for all the tools, bearing in mind that the commands stored in the "commands" folder will not be specific for each instrument in this case but will be executed by all of them. Registered in common directories will never be overwritten because the file name always includes the serial number which is different for each tool.

SMS

SMS receive and send operations: If the “check SMS” function is set, at the interval specified for this function, the MV255 wakes-up and performs the initialization of the modem, ensuring that it is properly registered to the wireless network. Then it waits for new incoming SMS. The waiting time is configurable. If no SMS are received in this time, the modem and the MV255 return to standby mode. If one or more SMS are received, the MV255 elaborates the commands and sends the answer to the network using the same SMS support. The system sends an answer for each command that can be correctly interpreted.

Commands not recognized are not answered. The event logger of the MV255 records each SMS event, even if the SMS contains no commands or not recognizable ones. For security purposes, a check function can be enabled in the MV255 that verifies the sender ID number of the SMS, accepting commands only from that number. The event logger, records all the SMS ID's, the authorized and also non-authorized ID; for authorized number, it will record the whole message.

Main parameters:

MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
SMSFE	SMS Functions Enable	ON/OFF	SMS functions global enable pag. 49
AINPN	Authorized Incoming Phone Number	number phone	Authorized incoming phone number pag. 49
SMSD1	Short messages. send destination 1	number phone	Short messages receiver 1 pag. 49
SMSD2	Short messages. send destination 2	number phone	Short messages receiver 2 pag. 49
SMSD3	Short messages. send destination 3	number phone	Short messages receiver 3 pag. 49
MAXRT	MAX number of Retries	Set 0 to 9	Max.number of session retries pag. 49

To check the parameters set, start the function SMS test in the diagnostic menu:

DIAGNOSTIC
SMS test

To check the parameters entered and the operations performed for sending SMS, see paragraph: Control via MCP interface of the converter communication data pag. 60. **SMS TEST:** it sends to the assigned recipients a test message containing the model and software version installed on the device.

NOTE:

1) The search for possible SMS messages takes place in the following ways:

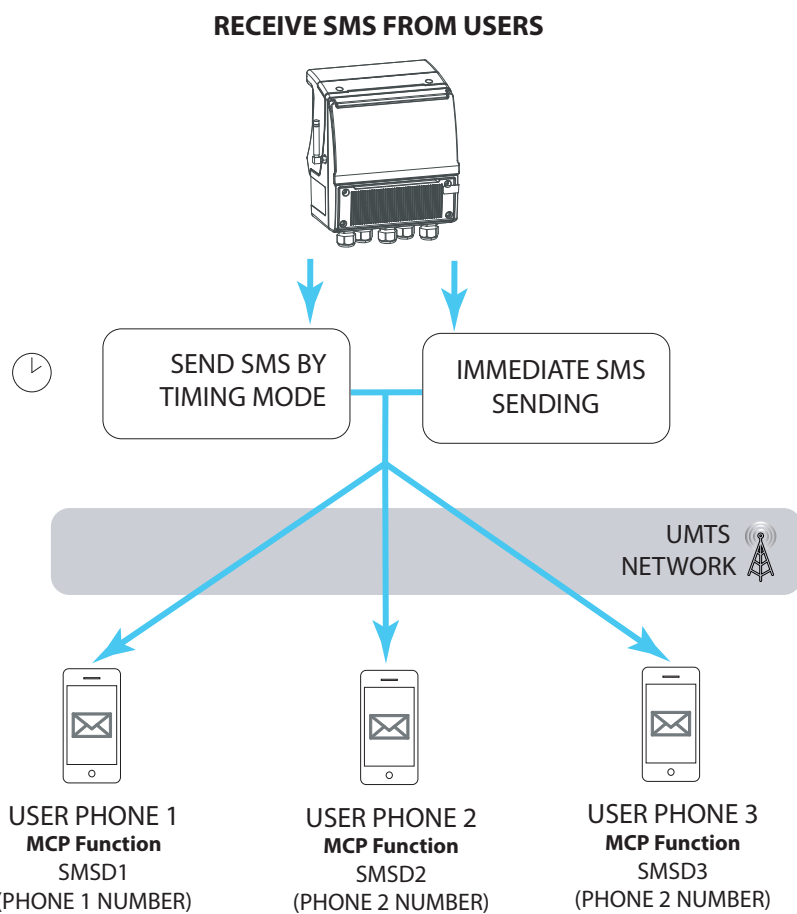
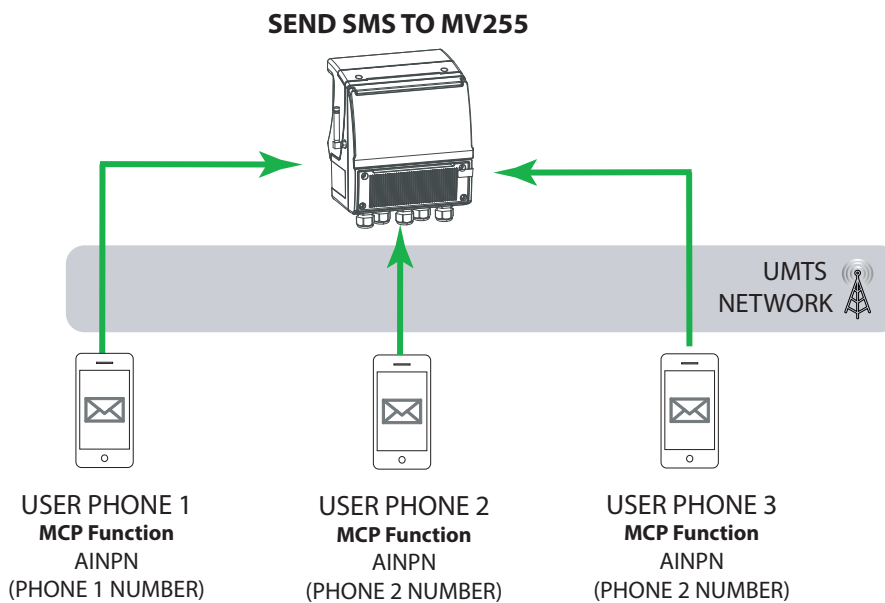
- Power supply from batteries, SMART measurement cycle: search at the intervals specified by configuration parameter see Incoming message check time pag. pag. 31
- Rechargeable battery supply, CONTINUOUS measurement cycle: search for new messages every 60 seconds.
- Power from the network or USB: search for new messages every 4 seconds.

2) MV255 can receive SMS messages whose sender number is recognized by the MCP AINPN command and also by all numbers set as destination 1, 2 and 3.

3) For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

OVERVIEW OF STRUCTURE OF SMS

The below scheme show where the functions act



For the management and setting of the timing mode see chapter TIMING ORGANIZATION pag. 44

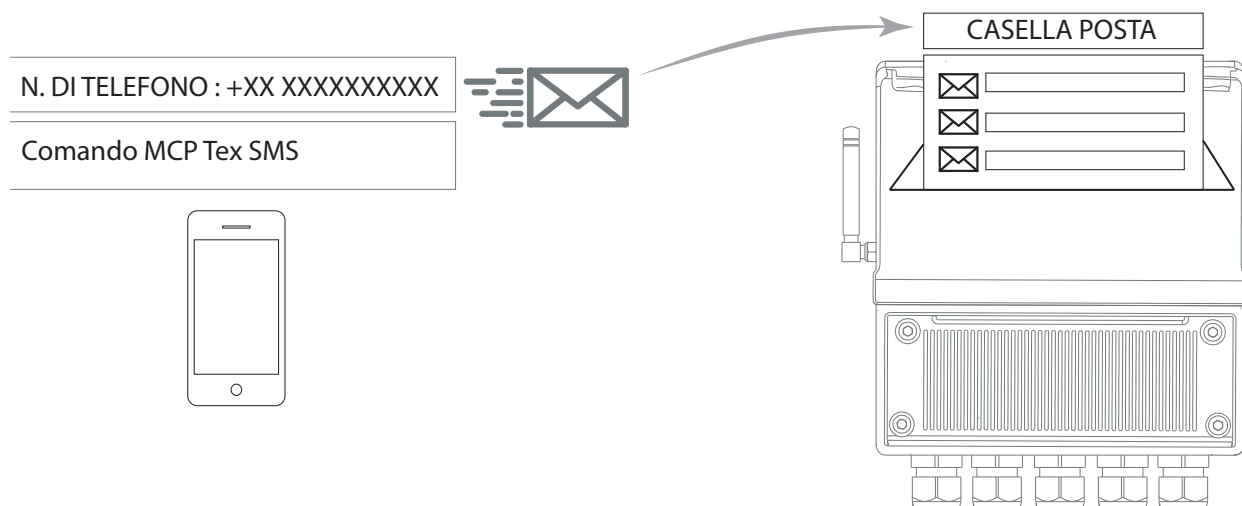
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TEXT FORMAT SMS

SMS messages sent to the meter:

- List of MCP commands in the SMS text
- The maximum length of a command line is 160 character.

ATTENTION: The list of MCP commands sent to the converter has the same rules for sending and setting up FTP and email protocols (for more details on the function, consult the MV255 product manual).



NOTE: There are no specific commands that can be sent only via SMS.

Example of sending sms in text format

- Request to send device status:

SMS text: SSINF (no space between characters)

- Request to send device status and send configuration parameters:

SMS text: SSINF;SPCFG (no space between characters)

- Instant request to alarm status:

SMS text: ALARM? (no space between characters)

Example of received sms in text format

- Alarm status received:

SMS text:

<Data and time><number of recorded alarms><alarm recording 1><alarm recording 2>...

Meaning alarm recording: <alarm code>, <alarm status:1=active, 0= disable>, < alarm repeater contactor>, <alarm description>.

TIMING ORGANIZATION

Many of the available functions of the UMTS system are managed using a time based system of configuration.

The sending and receiving commands and data by mails and SMS can be timed. If the search and sending intervals for text messages and mails link the execution order to the following:

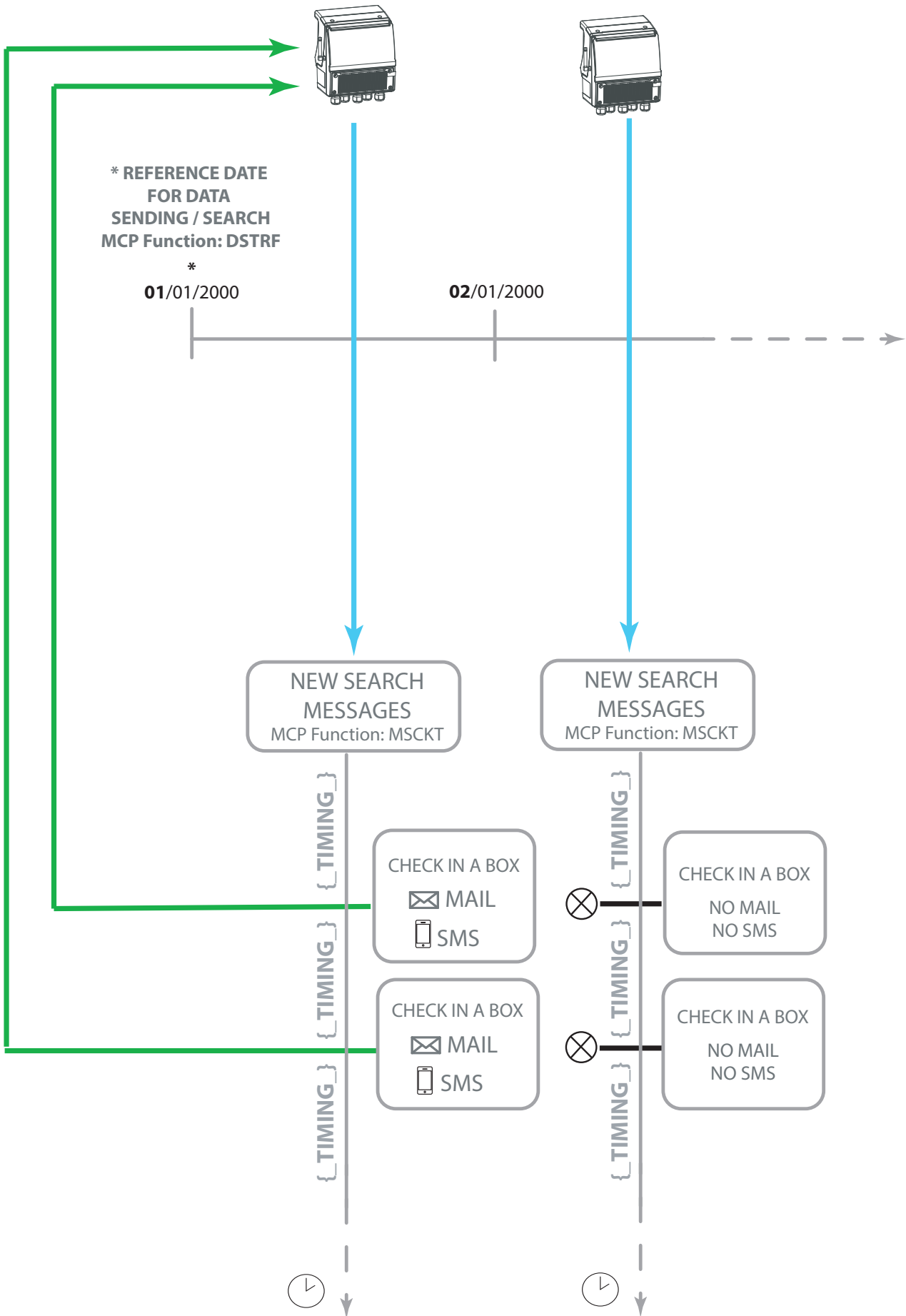
- 1) Search mail
- 2) Sending mail
- 3) Sending FTP
- 4) Search FTP
- 5) Search SMS

Main parameters:

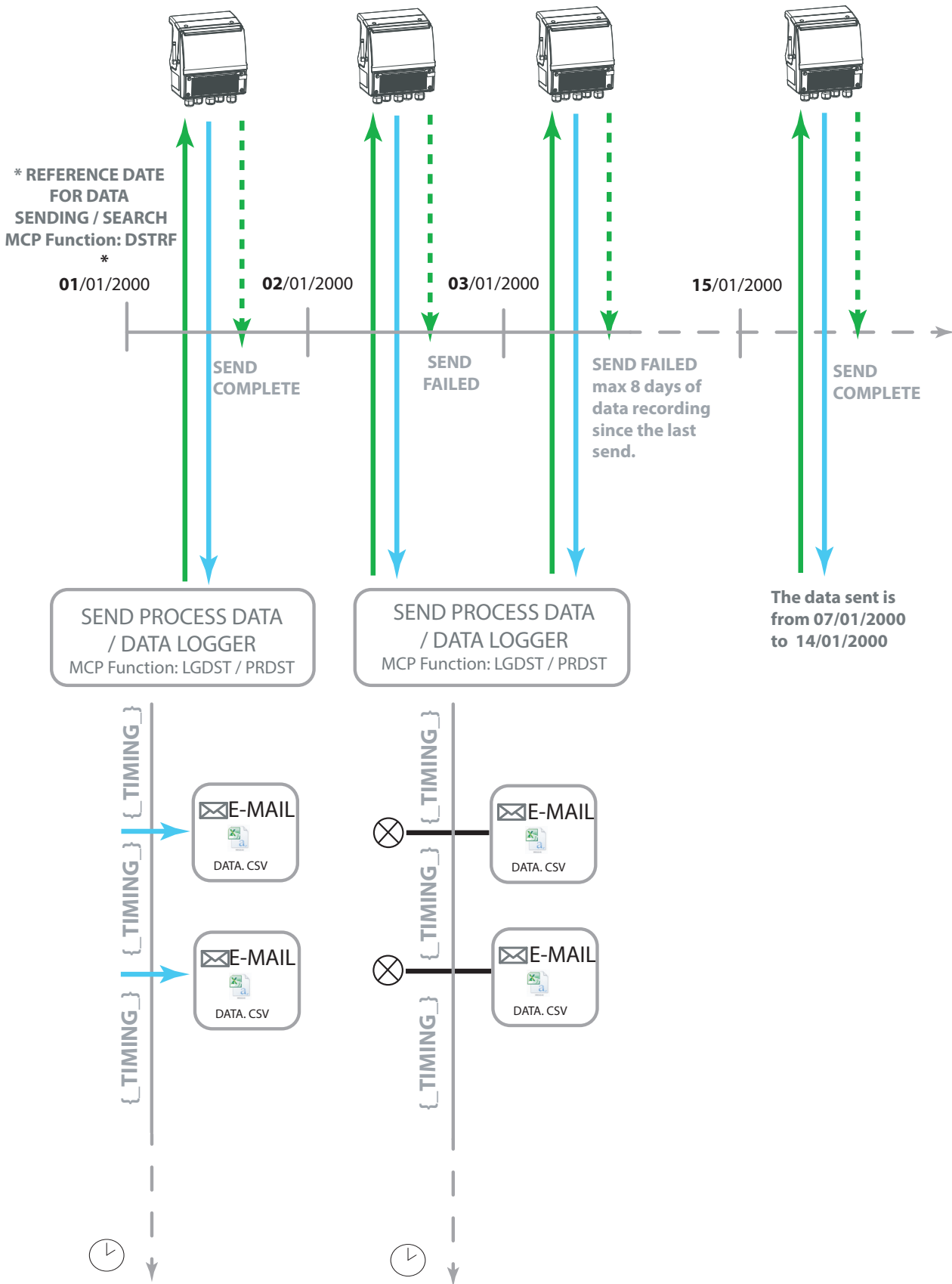
MCP COMMAND	DESCRIPTION	RANGE	REFERENCE
DSTRF	Data send time reference	gg /mm/aa	Data send time reference pag. 49
MSCKT	Messages check time	Minutes; hours	Incoming message check time pag. 49
PRDST	Process data send Time	Minutes; hours	Process data send time pag. 49
LGDST	Logger data send time	Minutes; hours	Logger data send time pag. 49
DLSCF	Data Log. send Complete File	ON / OFF	Send only complete file pag. 49
ALMST	Alarm Minimum Send Time	ON / OFF	Alarm minimum send time interval pag. 49

MESSAGES CHECK TIME

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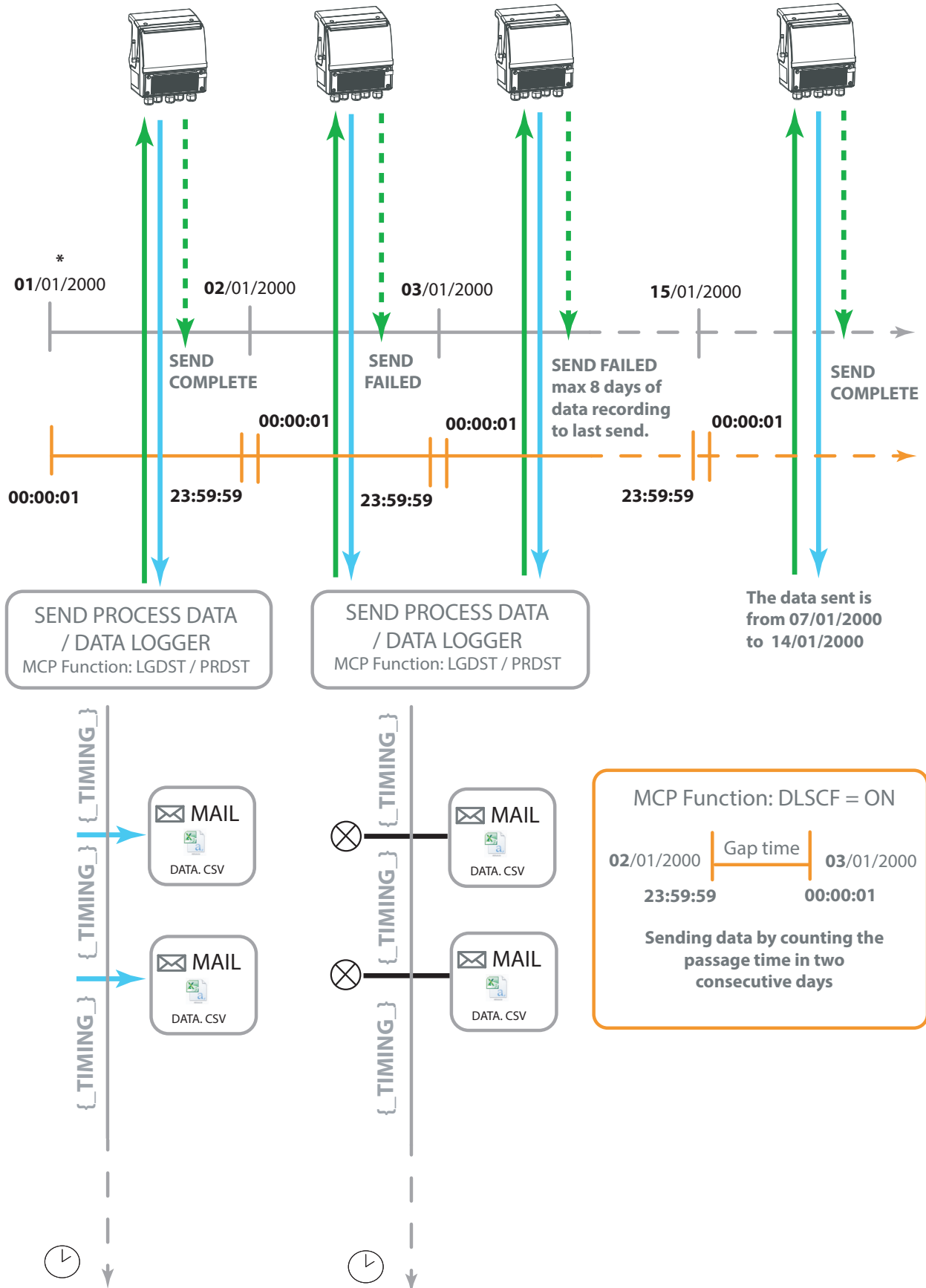
PROCESS DATA / DATA LOGGER SEND TIME



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SEND COMPLETE FILE

* REFERENCE DATE FOR DATA SENDING / SEARCH
Funzione MCP : DSTRF



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MENU 8 COMMUNICATIONS

MAIN MENU	
1	Sensor
2	Units
3	Scales
4	Measure
5	Alarms
6	Inputs
7	Outputs
8	Communication
9	Display
10	Data logger
11	Functions
12	Diagnostic
13	System

COMMUNICATIONS

Comm.proc.abort	
Send status	
Send DL Format	
Send ST Format	
Send proc.data	
Send events	
Send alarms	
Send l.data	
Send s.test	
Send config.	
Send Fn.enable	
Send qs.list	
RTC sync.req.	
Check m.box	
FTP download	ON
Mail send	ON
Mail rec.	ON
FTP upload	ON
FTP download	ON
Rmt.op.acl	1
File compr.	ON
ZIP password	XXXXXXXXXX
Conn.test	ON
Auto Ev.snd	ON
Access p.name	XXXXXXXXXX
Auth.type	OFF
User name	XXXXXXXXXX
User password	XXXXXXXXXX
SMTP User	XXXXXXXXXX
SMTP psw.	XXXXXXXXXX
POP3 User	XXXXXXXXXX
POP3 psw.	XXXXXXXXXX
FTP User	XXXXXXXXXX
FTP password	XXXXXXXXXX
Min.sig.thr	ON
Primary DNS	000.000.000
Secondary DNS	000.000.000
Retries	3
Instr.ID	XXXXXXXXXX
HELO string	XXXXXXXXXX
Sender addr.	XXXXXXXXXX
Receiver 1	XXXXXXXXXX
Receiver 2	XXXXXXXXXX
SMTP server	XXXXXXXXXX
SMTP sl	OFF
SMTP port	25
POP3 server	XXXXXXXXXX
POP3 sl	SSL/TLS
POP3 port	995
FTP server	XXXXXXXXXX
FTP port	21
FTP secure	ON
FTP data	XXXXXXXXXXXXXX
FTP events	XXXXXXXXXXXXXX
FTP commands	XXXXXXXXXXXXXX
Cert.check	ON
NTP server	XXXXXXXXXXXXXX
Tref	YYYY/MM/DD
InMsTm	0:00
ProcST	0:00
LogDST	0:00
S.Compl.File	ON
Alarm time	0:00
SMS F.en	ON
Auth.number	1234
Mess.recv.1	1234
Mess.recv.2	1234
Mess.recv.3	1234

8.1	Communication process abort
8.2	Send device status information
8.3	Send data logger fields format
8.4	Send s.test data fields format]
8.5	Send instantaneous process data
8.6	Send last system logged events
8.7	Send system alarms information
8.8	Send last logged process data
8.9	Send last sensor test data
8.10	Send parameters config.data
8.11	Send functions enable status
8.12	Send quick start func.list]
8.13	Request a RTC synchronization
8.14	Check mail box for new mails
8.15	FTP download execute command
8.16	Mail send function enable
8.17	Mail receive function enable
8.18	FTP upload function enable
8.19	FTP download function enable
8.20	Remote operations access level
8.21	File compression enable status
8.22	Compressed archive password
8.23	Connection test enable
8.24	Automatic events send on alarms
8.25	Access point name
8.26	Access point authentication type
8.27	Access point user name
8.28	Access point password
8.29	User name for SMTP service
8.30	Password for SMTP email service
8.31	User name for POP3 service
8.32	Password for POP3 email service
8.33	User name for FTP service
8.34	Password for FTP service
8.35	Min.antenna signal threshold
8.36	Primary Domain Name Server
8.37	Secondary Domain Name Server
8.38	Max.number of session retries
8.39	Instrument identifier string
8.40	HELO identification string
8.41	Email address of sender
8.42	Email address of receiver 1
8.43	Email address of receiver 2
8.44	SMTP mail send server name
8.45	SMTP secure connection layer
8.46	SMTP mail send server port num.
8.47	POP3 mail receive server name
8.48	POP3 Secure connection layer
8.49	POP3 mail receive serv.port num.
8.50	FTP server name or address
8.51	FTP server port number
8.52	FTP secure connection enable
8.53	FTP root directory for data
8.54	FTP root directory for events
8.55	FTP root directory for commands
8.56	Server identity certif.check
8.57	NTP time server name
8.58	Data send time reference
8.59	Incoming message check time
8.60	Process data send time
8.61	Logger data send time
8.62	Send only complete file
8.63	Alarm minimum send time interval
8.64	SMS functions global enable
8.65	Authorized incoming phone number
8.66	Short messages receiver 1
8.67	Short messages receiver 2
8.68	Short messages receiver 3

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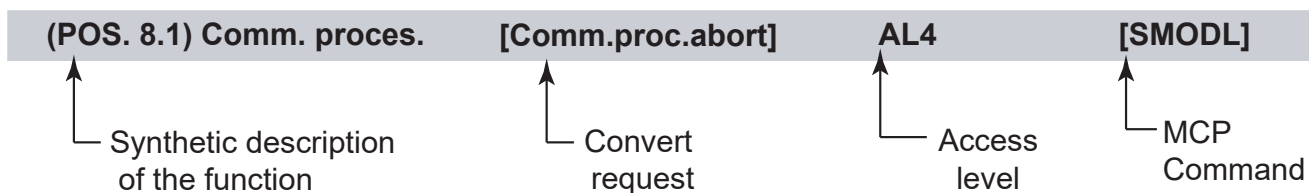
FUNCTIONS DESCRIPTION



Here below the explanation on how the rows of menu are described:

Menu visualized on the converter (from 1 to 13)

MENU 8 - COMUNICATION



The following picture describes where to find the name of the MCP functions in MCP-software. More info see MCP manual.

The screenshot shows the McpPro software interface. On the left, a 'Function list' window displays a tree view of menu items including 'Sensor', 'Units', 'Scales', and various flow rate and output pulse value settings. A specific item, '[Channel 1 pulse volume value]', is highlighted. Below this, a 'MCP>' line editor shows the command 'OP1PV=' with a cursor. An arrow points from this line editor to a larger, magnified view of the same line editor on the right, which shows the command 'MCP> OP1PV=' and a '6 char' indicator. A text box at the bottom left explains: 'Line editor for the insertion and execution of MCP commands.'

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(POS. 8.1) Comm. process ABORT	[Comm.proc.abort]	AL3	[ABORT]
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Immediate termination of the ongoing communication operation.

(POS. 8.2) Send Status INformation	[Send status]	AL3	[SSINF]
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Sending information on the status of the device: with this command an e-mail message is sent (or sent via FTP) to the e-mail address set containing the system status not as an attached file but as an e-mail text.

(POS. 8.3) Send data Log fields Format	[Send DL format]	AL3	[SDLFF]
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Sending format of process data fields collected in the data logger. With this command an e-mail message is sent (or sent via FTP) containing as attachment a CSV file whose fields represent the format with which the process data collected in the data logger will be formatted. Each field can consist of a mnemonic code, the equal symbol and an identifier that expresses the format of the numeric field.

Examples:

- RNUM = 5.0: number of records, data format = 5 integers
- DATE = yyyy / mm / dd: date expressed in year / month / day
- TIME = hh: mm: ss: time expressed in hours: minutes: seconds
- U = <measurement unit>: unit of measurement used
- TOT_T + = 9.x: total positive totalizer value expressed with numeric field up to 9 digits, of which x decimals

For more details for mnemonic code see Data registration table : csv file structure pag. 6

(POS. 8.4) Send sens. test data Fiel. Form.	[Send ST format]	AL3	[SSTFF]
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Sending format fields of sensor analysis data collected in the data logger. This command sends an e-mail message (or sent via FTP) containing a CSV file as an attachment whose fields represent the format in which the analysis data relating to the sensor test system (BIV) collected in the date will be formatted logger. Each field can consist of a mnemonic code, the equal symbol and an identifier that expresses the format of the numeric field.

Examples:

- RNUM = 5.0: number of records, data format = 5 integers
- DATE = yyyy / mm / dd: date expressed in year / month / day
- TIME = hh: mm: ss: time expressed in hours: minutes: seconds
- U = <measurement unit>: unit of measurement used
- ST_CODE = x4.0: code of the sensor test result, in hexadecimal format, without decimals (x in front of the number indicates hexadecimal format, 0 after the point indicates the number of decimal places, in this case zero)

For more details for mnemonic code see Data registration table : csv file structure pag. 6

(POS. 8.5) Send Inst. Process Data [Send proc.data] AL3 [SIPRD]

Send instant process data. With this command an e-mail message is sent (or sent via FTP) containing a CSV file with the process data measured as the message is sent as an attachment. The format of the data and the fields are the same as those used for the data logger.

(POS. 8.6) Send Last Events [Send events] AL3 [SLEVT]

Sending last system events (MCP = SLEVT): with this command an e-mail message is sent (or sent via FTP) containing a text file (.TXT) with the list of system events as an attachment.

(POS. 8.7) Send alarms status [Send ALARMs] AL3 [SALRM]

Sending alarm status (MCP = SALRM): with this command an e-mail message is sent (or sent via FTP) containing the alarm status as an attachment. The file format is described in the following example:

2018/06 / 06-18: 12: 00 ALARMS STATUS INTERVAL = 10m REL.TIME = 00: 10: 00

[AL.N.] [DESCRIPTION] [STATUS] [COUNT]

21 BATTERY 2 LOW OFF 1

In the first field there is the date and time. INTERVAL = xx specifies the time interval in which the system processes and examines the alarm situation. REL.TIME = hh: mm: ss indicates the time relative to the alarm analysis interval (this time goes from zero to the maximum value of the interval).

[AL.N.] indicates the alarm number

[DESCRIPTION] indicates a brief description of the alarm

[STATUS] indicates the current status of the alarm

[COUNT] indicates how many times that specific alarm has been activated and then deactivated in the alarm analysis time interval

(POS. 8.8) Send last log. proc. data [Send l.data] AL3 [SLLOG]

Send the process data present in the data logger. With this command an e-mail message is sent (or sent via FTP) containing as an attachment the last data collected by the data logger from the last request to send or from the start of the day (from 00:00:00).

(POS. 8.9) Send Last Sen. Test Data [Send s.test] AL3 [SLSTD]

Sending of sensor test analysis data (BIV). With this command an e-mail message is sent (or sent via FTP) containing as attachment the latest sensor test analysis data (BIV) from the last request to send or from the start of the day (from 00:00: 00).

(POS. 8.10) Send Param. Config. [Send config.] AL3 [SPCFG]

Sending configuration parameters. This command sends an e-mail message containing the list of instrument configuration parameters as an attachment.

(POS. 8.11) Send Func. Enab. Status [Send fn.enable] AL3 [SFNES]

Sending of the list of functions and of the relative enabling status for each of them. With this command an e-mail message is sent containing the list of instrument configuration functions and the enabling status of each of them as an attachment, or sent via FTP.

(POS. 8.12) Send Quick Start Func. List	[Send qs.list]	AL3	[SQSFL]
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Sending the list of functions entered in the “quick start” menu. This command sends an e-mail message containing the list of functions included in the “quick start” menu as an attachment.

(POS. 8.13) Request RTC Synchroniz.	[RTC sync.req.]	AL3	[RRTCS]
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Clock synchronization request. With this command MV 255 synchronizes its internal clock by connecting to the set time reference server.

(POS. 8.14) Check Mail BOX	[Check m.box]	AL3	[CMBOX]
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Request to read new e-mail. With this command MV255 proceeds to search for new emails in the configured box.

(POS. 8.15) FTP Down. Command	[FTP download]	AL3	[FTDLC]
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FTP Download command. Request to read command file from the FTP server. This command makes a connection to the configured FTP server and the reading of the “MANIFEST.TXT” file.

(POS. 8.16) Mail Send Enable	[Mail send]	AL3	[MSNDE]
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General enabling of e-mail sending functions.

(POS. 8.17) Mail Receive Enable	[Mail rec.]	AL3	[MRECE]
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General enabling of email reception. This command enables the functions of receiving email.

(POS. 8.18) FTP Upload enable	[FTP upload]	AL3	[FTPUP]
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Enabling of the data sending functions. This enables the sending of data (process, logger, events, etc.) from the client to the server.

(POS. 8.19) FTP Download enable	[FTP download]	AL3	[FTPDN]
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Enabling of data reception functions. This enables the reception of any commands or data files from the server to the client.

(POS. 8.20) RemoTe oper. Access level	[Rmt.op.acl]	AL6	[RMTAC]
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Remote operating level access. The predisposition functions or the commands present in the body of the emails or in the attached files will be executed with the access level specified by the parameter MCP RMTAC. By default, the access level is 4. It is always possible to raise the access level for a command that you want to execute with greater relevance, or a group of commands, putting ACODE = xxxxxxxx before the command you want to execute through the MCP interface .

(POS. 8.21) File Compression Enable	[File compr.]	AL3	[FCMPE]
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Compression of attached files. This function allows the compression of all the attachments to be sent by e-mail, reducing dimensions and transmission times up to 1% of the original, or using a hundredth of the time and volume of the original data. Moreover this system allows the sending of several files within the same compressed archive, saving further connection time. The format used for compression has the extension “.ZIP”.

(POS. 8.22) Compr. File Password	[ZIP password]	AL3	[CFPSW]
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Password protection for files sent in compressed format. When using compressed files, the archive created can be protected with a password. The same password must be entered when the archive is opened. In this way a further layer of data protection is realized.

(POS. 8.23) Connection test enable	[Conn.test]	AL3	[CNTSE]
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Connection test. By activating this function, MV255 performs a test of the connection created to determine if all the necessary conditions are in place to guarantee the correct transit of the data. This function allows a considerable saving of time, energy and traffic as if the connection is not suitable, it is terminated and recreated within a few seconds, instead of starting transmission over an unstable connection that would result in long timeouts and retransmissions. In any case, this function does not guarantee the successful completion of all operations, but considerably reduces the possibility of connection failure.

(POS. 8.24) Auto. even. send enable	[Auto Ev.snd]	AL3	[AEVSE]
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Automatic sending of events file in case of alarms. Activating this function, if during the process data sending interval of the data logger alarms or system errors have occurred, MV255 will automatically send the event file together with the data logger data.

(POS. 8.25) Access point name	[Access p.name]	AL3	[APNAM]
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Access Point Name, name of the access point on the network. It must be provided by the connection service provider.

(POS. 8.26) Access point authent. type	[Auth.type]	AL3	[APAUT]
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Type of network access authentication: none, PAP or CHAP. It must comply with the requirements of the connection service provider.

(POS. 8.27) Access Point USER	[User name]	AL3	[APUSR]
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User name for network access: to be used if requested by the provider.

(POS. 8.28) Access Point Password	[User password]	AL3	[APPSW]
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Password for network access: to be used if requested by the provider

(POS. 8.29) Smtp service User name	[SMTP User]	AL3	[SUNAM]
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User name for authentication on remote server. This parameter is not necessary if MV255 is itself the mail server (direct sending to the recipient, not recommended).

(POS. 8.30) Smtp servi. user Pass.	[SMTP psw.]	AL3	[SUPSW]
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Password for authentication on remote server. This parameter is not necessary if MV255 is itself the mail server (direct sending to the recipient, not recommended).

(POS. 8.31) Pop3 service User name	[POP3 User]	AL3	[PUNAM]
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User name for authentication on the remote server.

(POS. 8.32) Pop3 service user Pass.	[POP3 psw.]	AL3	[PUPSW]
--	--------------------	------------	----------------

Password for authentication on the remote server.

(POS. 8.33) Ftp service User name	[FTP User]	AL3	[FUNAM]
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User name for connection with FTP protocol.

(POS. 8.34) Ftp service User Passw.	[FTP password]	AL3	[FUPSW]
--	-----------------------	------------	----------------

Password for connection with FTP protocol.

(POS. 8.35) Min.Ant.Signal Level thresh.Enable	[Min.sig.thr]	AL3	[MASLE]
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Antenna signal level test. By setting this function to "ON", the instrument will start communication only if the signal received at the antenna is the minimum possible to guarantee a reliable connection. The level considered acceptable is the result of an elaboration that takes into account several parameters and network conditions, therefore this condition is of the ON / OFF type and cannot be modulated with a numerical value.

(POS. 8.36) Primary DNS Server	[Primary DNS]	AL3	[PDNSS]
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IP address of the primary DNS server. If it is not specified (000.000.000.000) the system will use the one provided by the provider, otherwise it will use the one specified.

(POS. 8.37) Secondary DNS Server	[Secondary DNS]	AL3	[SDNSS]
---	------------------------	------------	----------------

IP address of the secondary DNS server. If it is not specified (000.000.000.000) the system will use the one provided by the provider, otherwise it will use the one specified.

(POS. 8.38) MAX number of Retries	[Retries]	AL3	[MAXRT]
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Maximum number of attempts for data transmission. Expected attempts from 1 to 9.

(POS. 8.39) Instr. Ident. String	[Instr.ID]	AL3	[INIDS]
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Instrument identification string. This string appears along with the sender's name in the e-mail message and allows easy identification of the instrument that sent the message. The string is completed by the serial number of the card and is also shown in the body of the mail message with the item "Instrument ID:".

(POS. 8.40) Helo String	[HELO string]	AL3	[HELOS]
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Client domain name (HELO string, MCP = HELOS). This parameter is necessary to specify the name of the domain to be submitted to the e-mail server during the connection. The name should be FQDN (fully qualified domain name), although it can almost never coincide with the real IP address because this is usually dynamically assigned for wireless networks. Maximum number of characters that can be entered is 32 including numbers and symbols.

(POS. 8.41) EMail SeNDER address	[Sender addr.]	AL3	[EMSND]
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Sender email address. Maximum number of characters that can be entered is 48 including numbers and symbols.

(POS. 8.42) EMail receiver address 1	[Receiver 1]	AL3	[EMRE1]
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Recipient address 1 is mandatory and the maximum number of characters that can be entered is 48 including numbers and symbols.

(POS. 8.43) EMail receiver address 2	[Receiver 2]	AL3	[EMRE2]
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Recipient address 2 is not mandatory and can be omitted or if set, it allows to send mail to a second recipient other than the recipient 1. The use of this second address for example can be to perform data back-up or control functions . The secondary address can only be set if a remote SMTP server is used and not if MV255 is the server itself. Maximum number of characters that can be entered is 48 including numbers and symbols.

(POS. 8.44) Email Server name	[SMTP server]	AL3	[EMSVN]
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Name or address of the SMTP server that will send the mail. If you specify a FQDN (fully qualified domain name) in this field, MV255 will request the resolution of the name in IP address to the DNS servers set. If instead you set an IP address directly, you will avoid this step, but at the cost of less flexibility and adaptability of the system. For public servers like Google or Yahoo, the direct IP address is strongly discouraged and often doesn't work at all. If the server name or address is not set, MV255 will switch to stand-alone server mode, sending the mail directly to the recipient. Maximum number of characters that can be entered is 32 including numbers and symbols. The connection to the SMTP server must be checked and set according to the provider used.

(POS. 8.45) Smt secure conn. mode	[SMTP sl]	AL3	[SSCMD]
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Secure connection protocol SMTP (Simple Mail Transfer Protocol). This parameter must be set as required by the remote server. There are 3 possible ways: "OFF", unsecured connection (strongly discouraged); "IF AVAILABLE", (if available) if the remote server supports secure connection, this will be used, otherwise not (option mostly used, also by Google); "SSL / TLS", mandatory use of secure connection, if the remote server does not support it, the connection cannot be established.

(POS. 8.46) Email serv. port numb.	[SMTP port]	AL3	[EMSVP]
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Communication port. This parameter is mandatory and specifies the port number to be used for the connection. For unprotected connections or connections that can be protected at the server's discretion, the standard ports are 25 and 587 (rarely used). For connections that are protected at source (SSCMD = "SSL / TLS"), the standard port is 465. The system automatically sets the most correct port according to the type of connection desired, however it is always possible to change its value in case of different conditions.

(POS. 8.47) POP3 server name	[POP3 server]	AL3	[P3SRV]
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Server name or address. You can specify a fully qualified domain name (FQDN) or directly an IP address. Specifying an IP address directly saves a few hundred milliseconds of connection for the effective resolution of the name in the address, to the detriment of the flexibility of the system and with the risk of unstable or otherwise unsecured operation if public service providers were to be used. Maximum number of characters that can be entered is 32 including numbers and symbols.

(POS. 8.48) Pop3 secure conn. mode	[POP3 sl]	AL3	[PSCMD]
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Secure connection protocol for POP3. Three types of values can be specified: "OFF" (unprotected protocol, not recommended and now almost abandoned); "IF AVAILABLE", secure connection used if available; "SSL / TLS", mandatory secure connection (most common protocol, also used by Google).

(POS. 8.49) POP3 server port numb.	[POP3 port]	AL3	[P3SPN]
---	--------------------	------------	----------------

Connection port for receiving mail. The connection port is set automatically when you choose the secure connection method, however you can then change it if necessary. The standard values are "110" for unsafe connections and safe ones if available, while it is "995" for secure "SSL / TLS" connections.

(POS. 8.50) FTP server name	[FTP server]	AL3	[FTPSN]
------------------------------------	---------------------	------------	----------------

IP address or name of the FTP server. Maximum number of characters that can be entered is 32 including numbers and symbols.

(POS. 8.51) FTP server port number	[FTP port]	AL3	[FTPSP]
---	-------------------	------------	----------------

Server port number. The standard value is 21 but can be changed for greater security if you have complete control of the server.

(POS. 8.52) FTP server secure conn. enable	[FTP sl]	AL3	[FTPSE]
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Use of a secure connection using SSL. With this option the client will negotiate a secure connection with the server.

(POS. 8.53) FTP upload path	[FTP data]	AL3	[FTUPP]
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Root directory of the FTP server where the data sent to the server will be stored. With this function it is possible to specify the name of the directory where the data sent by the meter will be stored.

(POS. 8.54) FTP upload events path	[FTP events]	AL3	[FTUPE]
---	---------------------	------------	----------------

FTP server root directory where events and alarms generated by the meter will be stored.

(POS. 8.55) FTP download path	[FTP commands]	AL3	[FTDNP]
--------------------------------------	-----------------------	------------	----------------

Root directory of the FTP server where the commands and firmware update files will be read.

(POS. 8.56) Secure conn. server certifi. check	[Cert.check]	AL3	[SCSCC]
---	---------------------	------------	----------------

Validate server certificate identity. When this parameter is active, in the case of a protected connection the meter checks that the identity provided by the server corresponds to that described in the certificate received. It is advisable to always leave this parameter active, as it is a guarantee that the server you are contacting is really the one requested.

(POS. 8.57) Time server name	[NTP server]	AL3	[TMSRV]
-------------------------------------	---------------------	------------	----------------

Server name or IP address for time and date synchronization. In this field you can specify the FQDN or IP address used to synchronize the time and date of the meter. For this parameter the same rules apply as for the servers related to sending and receiving electronic mail.

Notes on date and time synchronization:

Synchronization occurs simultaneously and simultaneously with the sending of the data logger process data and uses the standard NTP protocol on UDP port 123. Configure this service correctly using one of the many available providers.

(POS. 8.58) Data send time ref.	[T.ref]	AL3	[DSTRF]
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Time reference for sending the process data collected in the data logger. This function allows the insertion of a date to be used as a time reference for sending data. The system will send all the data present in the data logger starting from the date entered. The date is updated each time the data is sent when the operation is successful (confirmation of receipt of the mail message by the server). If the transmission cannot take place after all the transmission attempts envisaged have been exhausted, the system abandons the session and tries again at the next scheduled time interval. The maximum time interval between the current date and the start date for sending data cannot exceed 8 days. Therefore, in the event of communications being restored following an interruption, it will be possible to receive the data of the last 8 days at the most.

(POS. 8.59) Messages check time	[InMsTm]	AL3	[MSCKT]
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Search interval for new messages. Specify the search interval for new messages with this function. When the specified time is reached, MV255 has left the rest state and will search for new messages. If e-mail is received, the latter will also be searched in addition to text messages. Similarly, for the FTP protocol the search for the new file is regulated by this function.

If the management of the SMS and the reception of the messages of e-mails are disabled, this function is no longer available as a menu.

(POS. 8.60) Process data send Time	[ProcST]	AL3	[PRDST]
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Interval for sending instant process data. Specify the interval for sending process data via e-mail with this function.

(POS. 8.61) Logger data send time	[LogDST]	AL3	[LGDST]
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Interval for sending process data collected by the data logger. Specify the interval for sending the process data collected by the data logger via e-mail with this function.

(POS. 8.62)Data Log. send Complete File	[S.Compl.file]	AL3	[DLSCF]
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Sending complete data logger files. By activating this function and preparing the sending of data every 24 hours, the data present in the data logger will only be sent completely on a daily basis (data collected from 00.00 to 23.59), regardless of the time chosen for sending . Obviously if there are still no complete data at the time of sending, this will not take place. Example: sending time 03.00: all the data collected the previous day will be sent from 00.00 to 23.59.

(POS. 8.63) Alarm Min. Send Time	[Alarm time]	AL3	[ALMST]
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Analysis interval and minimum time for sending alarms. This function specifies the time interval for analyzing the alarms and also the minimum time for sending. MV255 analyzes the status of the alarms in real time but to reduce the number of messages in the event of a very frequent repetitive situation, the messages are grouped and sent with a minimum guaranteed timing. When the first alarm occurs, MV255 will immediately send a signaling message. Subsequently, even if further alarms should occur, MV255 will analyze the situation but will not send further messages until the end of the specified minimum time interval. A new message will then be sent only if the alarm situation has changed during the analysis time interval.

(POS. 8.64) SMS Functions Enable	[SMS f.en]	AL3	[SMSFE]
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Global SMS management enablement. Enable this function to receive or send SMS.

(POS. 8.65) Authorized Incoming Phone Num.	[N.autor.]	AL3	[AINPN]
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Number authorized to receive SMS. Set a number to be used as a filter key for SMS reception. The sender's number is compared with the key entered and consequently the receipt of the message can be authorized or refused. For example:

- AINPN = + 39: all numbers with the international prefix "+39" will be enabled for reception
- AINPN = + 39348: all numbers with the international prefix "+39" and the telephone prefix "348" will be enabled for reception
- AINPN = + 39348123: all numbers with the international prefix "+39", telephone operator prefix "348" starting with "123" will be enabled for reception.
- AINPN = + 393481234567: only one specific telephone number will be enabled for reception.
- AINPN =: all numbers are enabled for reception

(POS. 8.66) Short mes. send destination 1	[Mess.rcv.1]	AL3	[SMSD1]
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Destination of messages 1. Destination 1 receives any message generated by the system. Maximum number of characters that can be entered is 20 including numbers and symbols.

(POS. 8.67) Short Message Send Destination 2	[Mess.rcv.2]	AL3	[SMSD2]
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Destination of messages 2. The destination 2 receives only the alarm relating to the flooding of the installation (it is activated if enabled, see the alarm menu). Maximum number of characters that can be entered is 20 including numbers and symbols.

(POS. 8.68) Short Message Send Destination 3	[Mess.rcv.3]	AL3	[SMSD3]
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Destination of messages 3. Destination 3 only receives the alarm relating to tampering with the installation (it is activated if enabled, see alarm menu). Maximum number of characters that can be entered is 20 including numbers and symbols.

MENU 8 - COMMUNICATION: ONLY MCP FUNCTIONS

Send expressly requested File	[MCP ONLY]	AL3	[SERFL]
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Sending a specific file. With this function it is possible to specify a file that you want to receive from MV255. This file will be sent as an e-mail attachment or sent via FTP.

Usage: SERFL = <file name>. The file name must be indicated complete with the path, as in the following example:
SERFL yyyy = / MM / gg / EVENTS.TXT

Fallback 2G enable	[MCP ONLY]	AL4	[FB2GE]
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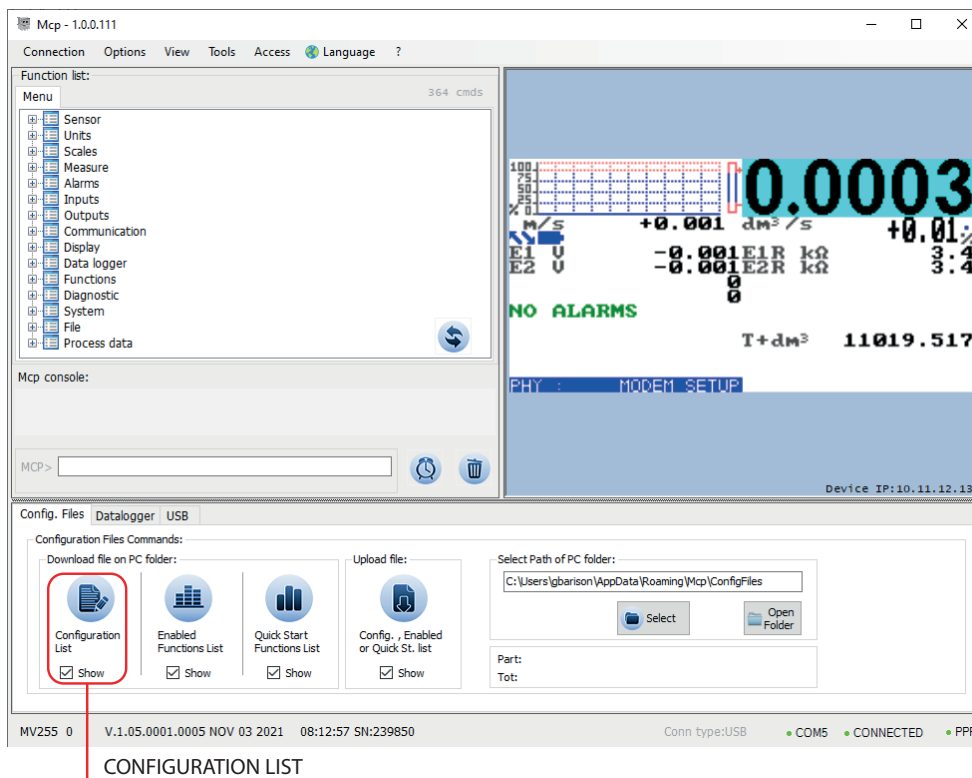
The FB2GE (FallBack to 2G Enable) function is used to enable the 2G band on the 3G/4G-4G modem when the 3G/4G-4G signal is not available. By default the 2G band is deactivated on the 3G/4G modem. Switching to the 2G network is to be understood as a last resort in case of poor or no connection and where 3G/4G is not available.

ATTENTION: the 2G radio band can consume up to 5 TIMES the energy needed for 3G/4G, furthermore, given the limited transmission capacity, the time required to send data can be considerably increased, with additional energy consumption.

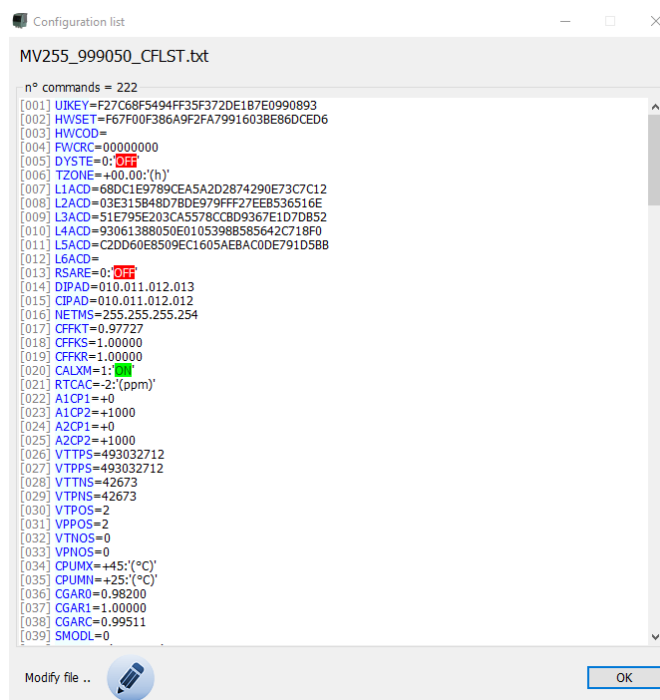
CONTROL VIA MCP INTERFACE OF THE CONVERTER COMMUNICATION DATA

Check configuration list

Selecting the configuration list displays all the parameters set in the converter including those of the communication. For more details consult the MCP manual for a specific use.



Display of the list of values assigned to the converter functions.



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Check the events recorded by the converter

This command allows you to check the status of all the events that the converter records. With this function it is possible to identify, if present, malfunctions relating to the communication and operation connections of the converter with the relative error codes.

The screenshot shows the 'Datalogger' software interface. The 'Download settings' panel is active, with 'Data source' set to 'Events', 'When' set to 'Today', and 'Today' set to 'All'. The 'Save path' is 'c:\MSdata\'. A 'Download' button is highlighted with an arrow. Below the settings, a progress bar shows the download is 100% complete. A separate window displays the contents of the downloaded file 'c:\MSdata\999001_2016_06_07_EVENTS.TXT', which lists various events such as 'Volume counters [LOCKED]', 'Measure signal [RELEASED]', and 'MCP command executed correctly'.

To download all the events of the current day in a specific folder, set the below parameters as follows:

- Data source:** Events
- When:** Today
- Today:** All
- Save path:** C /

The parameters are set then click the Download button.

Once the download is completed, a window containing the list of today's events appears. The file is saved in the specified folder in .txt format .

The following pages show the list of error messages and their identification code.

ERROR MESSAGE

There are two different types of errors as indicated below:

- Permanent errors, a condition that cannot be recovered regardless of the number of recovery attempts.
- Temporary errors, recoverable condition.

Permanent errors are mainly due to hardware causes and result in a permanent failure of operations. The system cyclically tries to restore the situation, but in case of failure it does not make any further recovery attempts.

The errors of the second group are mainly due to causes external to the device, such as problems on the communication network, poor signal in the antenna, unavailability of the servers to which you are trying to connect. In this case the system retries the scheduled operation three times in a row. In the event of bankruptcy, the session will be concluded and undertaken again at the end of the next scheduled time interval.

All operations are recorded in the data logger, so in case of errors or malfunctions it is necessary to download and read the event log file see Check configuration list pag. 60.

N° MESSAGE	DESCRIPTION
2	ERROR_INVALID_PARAMETER
3	ERROR_PARAMETER_OUT_OF_RANGE
4	ERROR_BAD_CRC
5	ERROR_BAD_BLOCK
6	ERROR_INVALID_RECIPIENT
7	ERROR_INVALID_INTERFACE
8	ERROR_INVALID_ENDPOINT
9	ERROR_INVALID_ALT_SETTING
10	ERROR_UNSUPPORTED_REQUEST
11	ERROR_UNSUPPORTED_CONFIGURATION
12	ERROR_UNSUPPORTED_FEATURE
13	ERROR_ENDPOINT_BUSY
14	ERROR_USB_RESET
15	ERROR_ABORTED
100	ERROR_OUT_OF_MEMORY
101	ERROR_OUT_OF_RESOURCES
102	ERROR_INVALID_REQUEST
103	ERROR_NOT_IMPLEMENTED
104	ERROR_VERSION_NOT_SUPPORTED
105	ERROR_INVALID_SYNTAX
106	ERROR_AUTHENTICATION_FAILED
107	ERROR_UNEXPECTED_RESPONSE
108	ERROR_UNEXPECTED_VALUE
200	ERROR_OPEN_FAILED
201	ERROR_CONNECTION_FAILED
202	ERROR_CONNECTION_REFUSED
203	ERROR_CONNECTION_CLOSING
204	ERROR_CONNECTION_RESET
205	ERROR_NOT_CONNECTED
206	ERROR_ALREADY_CLOSED
207	ERROR_ALREADY_CONNECTED
208	ERROR_INVALID_SOCKET
209	ERROR_PROTOCOL_UNREACHABLE
210	ERROR_PORT_UNREACHABLE
211	ERROR_INVALID_FRAME
212	ERROR_INVALID_HEADER
213	ERROR_WRONG_CHECKSUM
214	ERROR_WRONG_IDENTIFIER
215	ERROR_WRONG_CLIENT_ID
216	ERROR_WRONG_SERVER_ID
217	ERROR_NO_RESPONSE
218	ERROR_RECEIVE_QUEUE_FULL
219	ERROR_TIMEOUT

N° MESSAGE	DESCRIPTION
220	ERROR_WOULD_BLOCK,
221	ERROR_INVALID_NAME
222	ERROR_INVALID_OPTION
223	ERROR_UNEXPECTED_STATE
224	ERROR_INVALID_PROTOCOL
225	ERROR_INVALID_STATUS
226	ERROR_INVALID_ADDRESS
227	ERROR_INVALID_MESSAGE
228	ERROR_INVALID_KEY
229	ERROR_INVALID_KEY_LENGTH
230	ERROR_INVALID_CHARACTER
231	ERROR_INVALID_LENGTH
232	ERROR_INVALID_PADDING
233	ERROR_INVALID_MAC
234	ERROR_INVALID_TAG
235	ERROR_INVALID_TYPE
236	ERROR_INVALID_VALUE
237	ERROR_INVALID_CLASS
238	ERROR_INVALID_VERSION
239	ERROR_INVALID_PIN_CODE
240	ERROR_WRONG_LENGTH
241	ERROR_WRONG_TYPE
242	ERROR_WRONG_ENCODING
243	ERROR_WRONG_VALUE
244	ERROR_UNSUPPORTED_TYPE
245	ERROR_UNSUPPORTED_CIPHER_SUITE
246	ERROR_UNSUPPORTED_CIPHER_MODE
247	ERROR_UNSUPPORTED_CIPHER_ALGO
248	ERROR_UNSUPPORTED_KEY_EXCH_METHOD
249	ERROR_UNSUPPORTED_SIGNATURE_ALGO
236	ERROR_INVALID_VALUE
237	ERROR_INVALID_CLASS
238	ERROR_INVALID_VERSION
239	ERROR_INVALID_PIN_CODE
240	ERROR_WRONG_LENGTH
241	ERROR_WRONG_TYPE
242	ERROR_WRONG_ENCODING
243	ERROR_WRONG_VALUE
244	ERROR_UNSUPPORTED_TYPE
245	ERROR_UNSUPPORTED_CIPHER_SUITE
246	ERROR_UNSUPPORTED_CIPHER_MODE
247	ERROR_UNSUPPORTED_CIPHER_ALGO
248	ERROR_UNSUPPORTED_KEY_EXCH_METHOD
249	ERROR_UNSUPPORTED_SIGNATURE_ALGO
250	ERROR_INVALID_SIGNATURE_ALGO

N° MESSAGE	DESCRIPTION
251	ERROR_CERTIFICATE_REQUIRED
252	ERROR_MESSAGE_TOO_LONG
253	ERROR_OUT_OF_RANGE
254	ERROR_MESSAGE_DISCARDED
255	ERROR_INVALID_PACKET
256	ERROR_BUFFER_EMPTY
257	ERROR_BUFFER_OVERFLOW
260	ERROR_INVALID_RESOURCE
261	ERROR_INVALID_PATH
262	ERROR_NOT_FOUND
263	ERROR_ACCESS_DENIED
264	ERROR_NOT_WRITABLE
265	ERROR_AUTH_REQUIRED
266	ERROR_TRANSMITTER_BUSY
267	ERROR_NO_RUNNING
500	ERROR_UNEXPECTED_MESSAGE
501	ERROR_URL_TOO_LONG
502	ERROR_QUERY_STRING_TOO_LONG
503	ERROR_NO_ADDRESS
504	ERROR_NO_BINDING
505	ERROR_NOT_ON_LINK
506	ERROR_USE_MULTICAST
507	ERROR_NAK_RECEIVED
508	ERROR_NO_CARRIER
509	ERROR_INVALID_LEVEL
510	ERROR_WRONG_STATE
511	ERROR_END_OF_STREAM
512	ERROR_LINK_DOWN
513	ERROR_INVALID_OPTION_LENGTH
514	ERROR_IN_PROGRESS
515	ERROR_NO_ACK
516	ERROR_INVALID_METADATA
517	ERROR_NOT_CONFIGURED
518	ERROR_NAME_RESOLUTION_FAILED
519	ERROR_NO_ROUTE
520	ERROR_WRITE_FAILED
521	ERROR_READ_FAILED
523	ERROR_UPLOAD_FAILED
524	ERROR_INVALID_SIGNATURE
525	ERROR_BAD_RECORD_MAC
526	ERROR_RECORD_OVERFLOW
527	ERROR_HANDSHAKE_FAILED
528	ERROR_NO_CERTIFICATE
529	ERROR_BAD_CERTIFICATE

N° MESSAGE	DESCRIPTION
530	ERROR_UNSUPPORTED_CERTIFICATE
531	ERROR_CERTIFICATE_EXPIRED
532	ERROR_UNKNOWN_CA
533	ERROR_DECODING_FAILED
534	ERROR_DECRYPTION_FAILED
535	ERROR_ILLEGAL_PARAMETER
536	ERROR_UNSUPPORTED_EXTENSION
537	ERROR_MORE_DATA_REQUIRED
538	ERROR_TLS_NOT_SUPPORTED
539	ERROR_PRNG_NOT_READY
540	ERROR_SERVICE_CLOSING
541	ERROR_INVALID_TIMESTAMP,
542	ERROR_NO_DNS_SERVER
543	ERROR_OBJECT_NOT_FOUND
544	ERROR_INSTANCE_NOT_FOUND
545	ERROR_ADDRESS_NOT_FOUND
546	ERROR_UNKNOWN_ENGINE_ID
547	ERROR_UNKNOWN_USER_NAME
548	ERROR_UNSUPPORTED_SECURITY_LEVEL
549	ERROR_NOT_IN_TIME_WINDOW
550	ERROR_NO_MATCH
551	ERROR_PARTIAL_MATCH
552	ERROR_PROCESS_ABORTED

At the end of its lifetime, this product shall be disposed of in full compliance with the environmental regulations of the state in which it is located.

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MANUAL REVIEWS

REVIEW	DATE	DESCRIPTION
3GMV_IT_EN_IS_R0_0.00.0X	29/07/2019	First edition
MAN_MV3G-4G_IT_EN_IS_R01_1.05.XXXX	24/01/2022	Firmware update

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