MICROCOM
Simply More

COMMANDS MANUAL

HERMES / NEMOS COMMANDS MANUAL

REV 25.01

Warning

1. This system has been designed to be installed by professionals, not by end users. Please contact our experts for any technical queries you may have.
2. We are continually committed to innovation both in terms of software and hardware. However, errors may result in discrepancies between the product and some of its specifications despite our best efforts to properly document our products. Therefore, please contact us at the following email address should you have any questions or comments: microcom@microcom.es.
3. GSM-based communications are highly reliable. However, we advise against using our device in critical systems unless some form of redundancy has been implemented for the communication network as the service may be interrupted in rare cases.
4. "Life Support": This unit is not designed for use in systems on which human life depends. In other words, in devices where a malfunction could pose a risk to human life.
5. Our liability in relation to the device shall be strictly limited to its repair or replacement in accordance with the terms set forth in the warranty.

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DOCUMENT CONTENT

This manual describes the user manuals available for interacting with the Microcom Hermes and Nemos devices.

Other documents of interest include the MicroConf configuration software manual, used for configuring and diagnosing the Microcom Hermes and Nemos series of devices., as well as the MicroPLC-II manual, which details the automation capabilities of the Hermes line. These manuals can be found in the downloads section of the Microcom website.

A set of video tutorials on device configuration and other videos of interest are available on our YouTube channel.

VERSIONS AND COMPATIBILITY

The information shown in this document corresponds to the version of the MicroConf configuration software and firmware of the Hermes / Nemos indicated below:

Element	Version
MicroConf Software	v.9.3.4
Firmware	v.9.40

INFORMATION TABLES

The following information tables are used throughout the manual:

	Please note: These are used to highlight information of special importance or interest.
	Please note: These are used to describe the conditions, practices or procedures that must be followed for the proper use of hardware or software.
	Example: These are used to show practical examples and therefore help to better understand the text described in the section.

1 - INTRODUCTION

Microcom devices accept a wide variety of commands that allow users to interact with them. Users can use these commands to query the device about the status of its inputs/outputs, modify the status of the outputs, change MODBUS register values, modify configuration parameters, and change system settings.

Commands can be sent by SMS message, the ZEUSWEB platform, the ZEUSMOBILE mobile app, and the MICROCONF configuration software.

- Please note that Microcom devices only respond to SMS messages from phones on their authorised phone number list.
- Unless otherwise specified, updating your device to the latest available firmware version is required to ensure compatibility with the commands described in this document.

We recommend that you read this manual carefully to fully make use of the capabilities of your Hermes/Nemos device.

2 - GENERAL ITEMS

Commands consist of a keyword and optionally an equals sign followed by a list of modifiers separated by commas:

Keyword=Equality Operator,modifier1,modifier2,..,modifier n

Command example: In this example, the keyword is +TLF, where adding an authorised phone number to the list; the equality operator is +34637885326, while the rest are modifiers.

+TLF=+34637885326,PRIO=1,PRV2

Microcom devices are not case-sensitive when it comes to commands.

Commands can be chained, meaning that several commands can be sent consecutively, which must be separated by a semicolon. Uppercase and lowercase letters can be used interchangeably in all commands. Via SMS, the maximum length is defined by the maximum number of characters allowed, which is 160.

Chained command example: In this example, three commands are chained to activate digital outputs 1, 2, and 3.

OUT1=1;OUT2=1;OUT3=1

2.1 SENDING COMMANDS VIA SMS MESSAGE

Sending commands from a mobile phone. Each valid command received by the Hermes/Nemos device is acknowledged by sending a reply message to the sender. An error message will be sent if the command is invalid.

Command	Response
Sending of the valid command INFO?	VBat=11.66 Temperature: 20.90C Moisture: 51.11R.H. Network failure: No - Device: Microcom 03/05/2024 10:31:09
Sending of an invalid command INFO	Invalid command - Device: Microcom

2.2 SENDING COMMANDS FROM ZEUSWEB AND ZEUSMOBILE

Sending commands via web browser and mobile app. This method allows commands to be sent to multiple stations simultaneously, without having to pay the cost of sending SMS messaging. The Hermes/Nemos device must be registered with the ZEUS server and actively transmitting data.

Instructions:

1. Access your ZEUS account through the website or on a mobile app.
2. Go to the “Administration / Settings” screen.
3. Click on the “Send Commands” tab.
4. Select the Hermes/Nemos station(s).
5. Enter the command and click the send button.

   The status of the command transmission is displayed in the right-hand column.

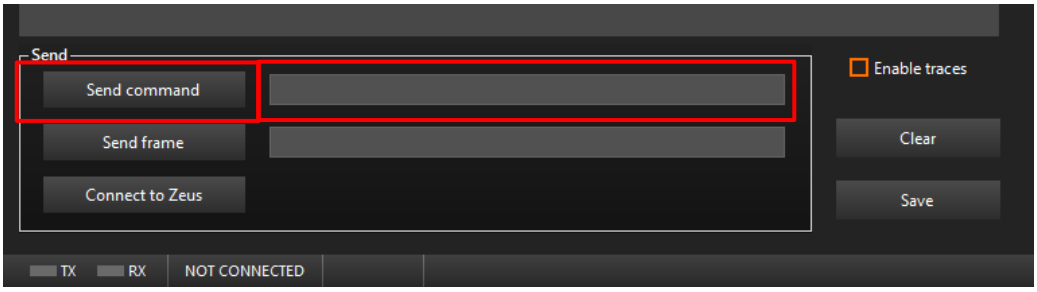
Response	Description
X	Error when sending the command. Check GSM connectivity in the Hermes/Nemos station
V	Error: the command received could not be executed. Please check the keyword and modifiers.
ooo	Command being sent

2.3 SENDING COMMAND FROM MICROCONF

Sending command from configuration software. The Hermes/Nemos device must be connected to the computer with a USB cable or via Bluetooth.

Instructions:

1. Go to the "Terminal" screen. [Menu] > [Diagnostics] > [Terminal]
2. Type the command in the field to the right of the [Send Command] button.
3. Press the [Send Command] button.



The Hermes/Nemos response will be displayed in the upper panel.

Response	Description
#74;PARSE_OK	Command executed successfully.
#64;PARSE_ERROR	Error: the command received could not be executed. Please check the keyword and modifiers.

3 - QUERY COMMANDS (VIA SMS)

Below is a list of query commands that will allow you to read the status of the device's inputs/outputs, as well as its operational parameters.

This list of commands is only compatible with SMS communication.

Command	Description
INFO?	Information request. The device responds with the status of the channels configured to record data: digital inputs, flow rates, analogue inputs, probes, math channels, MODBUS channels, etc. Example: Response SMS: Temperature: 20.90C (Analogue input value) Moisture: 51.11R.H. (Analogue input value) Network failure: No (Digital input status) - Microcom (Device name)
INFO=*Phone Number*	This command triggers the sending of an "INFO?" message to the specified phone number. The main purpose of this command is to create a macro that can be scheduled from a timer, allowing the device to send an informational SMS message to the specified phone number on a periodic basis. Example: INFO=+34637885326

Command	Description
INFOC=*ChannelList* DEST=*PhoneNumber*	This command queries the device for the status of the channels specified in the *ChannelList.* The main purpose of this command is to create a user macro that returns the status of the relevant input/output channels in the system. The DEST parameter is optional and allows you to specify the phone number to which the message should be sent. Appendix A contains the list of channel identifiers. The ChannelList parameter will consist of a variable number of these identifiers, separated by spaces. To request data from channels 4 (totaliser 0), 21 (digital input 0) and 29 (MODBUS channel 0): INFOC=4 21 29 To request data from channels 4 (totaliser 0), 21 (digital input 0) and 29 (MODBUS channel 0) and to have it sent to a phone number: INFOC=4 21 29,DEST=+34666555444
GSM?	Query regarding GSM signal strength and mobile data communication status. Example: Response SMS: Movistar (2G) (Operator and network) RSSI=24 (*RSSI signal strength coverage) GPRS=Yes (Access to internet data) - Microcom (Device name) RSSI: The device returns a numeric value between 1 and 32. The recommended minimum is 8. Conversion equation to dBm: dBm = -113 + N * 2 (where N is the returned value)
LAN?	Returns the IP address for both Ethernet and Wi-Fi connections. If no connection is available, the response will be 0.0.0.0. Example: Response SMS: Ethernet: 192.168.1.151 (IP Ethernet) Wifi: 0.0.0.0 (IP Wifi) - Microcom M103 pump (Device name)

Command	Description
CNT?	Request for status of all totaliser counters. The device responds with an SMS message indicating the value of the totaliser counters for each of its digital inputs.
CNTx?	Request for the status of a specific totaliser counter. The device responds with an SMS message indicating the value of the counter connected to the digital input in the parameter [x].  Example: Request for the total status of digital input 1: CNT1?
OUT?	Returns the status of all the device outputs.
EXPx?	Returns the value of expansion channel x.  This command is only available for devices from the Hermes M100 series.  Example: EXP50?
DEVICE?	Returns the device's technical parameters.  Response SMS example (can take up 2 SMS): VERSION=9.22 (Firmware version) DATE=Feb 5 2024 13:41:39 (Firmware compilation date) CRC=Good (Firmware integrity check) PRODUCT_ID=6 (Model identifier) SERIAL=2208010010 (Serial number) PIC=0 (Secondary processor version) VBAT=11.66 (Supply voltage) RSSI=24 (GSM signal strength) LOG.INDEX=550400 (History register number) CONF_WORD=0 (Configuration word) - Microcom (Device name)

Command	Description
OPER?	Scans the network and returns the field strength of all detected operators.  Response SMS example: Movistar: 31 (operator 1 RSSI) Orange: 24 (operator 2 RSSI) Vodafone ES: 22 (operator 3 RSSI) - Microcom (Device name)
VER?	Returns the device model, firmware version, and the date it was compiled.  Response SMS example: Nemos N200+ v8.81 Feb 17 2022 11:06:28 - Test (Device name)
MODBUS?	Returns the values of the configured MODBUS channels.  Response SMS example: TEMP_MB: 24.40C (Name, measurement and unit) HUM_MB: 53.60% (Name, measurement and unit) - Microcom (Device name)
MODBUS= *PhoneNumber*	This command sends the MODBUS channel values to the specified phone number. The main purpose of this command is to create a macro that can be scheduled from a timer, allowing the device to send an SMS message on a periodic basis.  Example: Sending the values of the configured MODBUS channels to the phone number+34666555444. MODBUS=+34666555444 Response SMS example: TEMP_MB: 24.40C (Name, measurement and unit) HUM_MB: 53.60% (Name, measurement and unit) - Microcom (Device name)

4 - OUTPUT ACTIVATION COMMANDS

The following list shows the commands that allow you to control the device's output.

Command	Description
OUT*x*=*y*, T=*timeSeconds*, TM=*timeMinutes*	Modifies the status of a digital output.  Where: *x*: Output to the modified. *y*: State the output should be in: 0 -> disabled, 1 -> enabled. *timeSeconds:* Time in seconds. After this period has elapsed, the output will return to its previous state. *timeMinutes:* Time in minutes. After this period has elapsed, the output will return to its previous state  The property for setting the start time in minutes is valid from firmware version 8.82 onwards.  Examples: Close relay 0: OUT0=1 Generates a 10-second pulse in relay 0: OUT0=1,T=10 Generates a 2- minute pulse in relay 0: OUT0=1,TM=2  Starting with firmware version 8.45, this command supports comparison expressions for "*y*".  Example: Activates output 0 if the value of analogue input 0 is greater than a constant. Otherwise, the output will remain open. OUT0=AI(0)>3.5

Command	Description
	 Command valid from firmware version 8.82 onwards.
	Digital output port status modification.
OUTP=*y*	 Where: y: This represents the status of the output port in decimal format. In binary representation, the least significant bit corresponds to output OUT0, while the most significant bit corresponds to OUT7. This command allows the status of multiple outputs to be modified simultaneously by adding their decimal values.

Digital output active	*Decimal*	*Binary*
none	0	0000 0000
0	1	0000 0001
1	2	0000 0010
2	4	0000 0100
3	8	0000 1000
4	16	0001 0000
5	32	0010 0000
6	64	0100 0000
7	128	1000 0000

Example:

To activate digital outputs 1 (2 decimal) and 2 (4 decimal).

Binary representation: 0000 0110 OUTP=6

To deactivate all the digital outputs: OUTP=0

Command	Description
EXP*x*=*y*, T=*timeSeconds*, TM=*timeMinutes*	Modifies the status of a digital or analogue output in an expansion channel or changes the value of a totaliser configured on an expansion channel.  This command is only valid for the Hermes M100 series.  Where: *x:* Expansion channel assigned to the digital output you wish to activate. *y:* The value to be set in the totaliser, the value of an analogue output, or the status that a digital output should have. 0 -> output deactivated 1 -> output activated. *timeSeconds:* Time in seconds. After this period has elapsed, the output will return to its previous state *timeMinutes:* Time in minutes. After this period has elapsed, the output will return to its previous state  The property for setting the start time in minutes is valid from firmware version 9.40 onwards.  Examples: - To activate the digital output of expansion module 2: EXP2=1 - To send a value to the expansion 16 analogue output. EXP16=35 - To set the value 123.45 on a totaliser configured in expansion 16: EXP16=123.45 - Activates the expansion 2 output for 30 seconds: EXP2=1,T=30 - Generates a 2- minute pulse in relay 0: OUT0=1,TM=2

Command	Description
CNT*x*=*y*	Modifies the value of a totaliser configured on a digital input.  Where: *x:* Expansion channel assigned to the digital output you wish to activate. *y:* Value to be configured in the totaliser.  Example: To set the value 123.45 in the totaliser associated with digital input 4: CNT4=123.45

5 - MODBUS COMMANDS

The following list shows the commands related to the MODBUS interface.

Command	Description
SETCOIL=*Relay* SLAVE=*Address* *SERVER=server*	Activates a bit (COIL) of a MODBUS device  Where: *Relay:* Relay to activate on the output module. *Address:* MODBUS address for the output module in decimals. *Server:* Server name (only TCP)  Examples: Activates output 0 in the module with address 20 indefinitely: SETCOIL=0,SLAVE=20  MODBUS-TCP is supported from firmware version 9.37 onwards.  TCP examples: Activates output 0 of the server "VARIA" indefinitely: SETCOIL=0,SERVER=VARIA
RESETCOIL=*Relay* SLAVE=*Address* *SERVER=server*	The opposite of SETCOIL, where a bit is deactivated in a MODBUS device.  Where: *Relay*: Relay to activate on the output module. *Address*: MODBUS address for the output module in decimals. *Server:* Server name (only TCP)  Examples: Deactivates output 0 in the module with address 20 indefinitely: RESETCOIL=0,SLAVE=20  MODBUS-TCP is supported from firmware version 9.37 onwards.  TCP examples: Activates output 0 of the server "VARIA" indefinitely: RESETCOIL=0,SERVER=VARIA

Writes in a MODBUS register.

SETREGISTER= *Value*
SLAVE=Address
SERVER= *server*
REGADD= *Register, type*

Where:

Value: Value or signal to be loaded into the register.
Address: MODBUS slave address
Server: Server name (only TCP)
Register: Register address to be written.
Type: Selects the 32-bit value format (optional):

- I32BE: Sending of a 32-bit value as an integer and big endian.
- I32LE: Sending of a 32-bit value as an integer and little endian.
- F32BE: Sending of a 32-bit value as a float and big endian.
- F32LE: Sending of a 32-bit value as a float and little endian.

The value can be a complex expression from firmware version 7.47 onwards.

RTU examples:

Loads the value 100 to the address 40001 of slave 3:

SETREGISTER=100,SLAVE=3,REGADD=40001

Writes the value of analogue input 0:

SETREGISTER=AI(0),SLAVE=3,REGADD=40001

Writes the value of the math register 0 plus one:

SETREGISTER=M(0)+1,SLAVE=3,REGADD=40001

32-bit values can be written from firmware version 8.01 onwards.

Examples 32 bits:

Writes the value 100 in the address 40001 of slave 3, integer data type and big-endian:

SETREGISTER=100,SLAVE=3,REGADD=40001,I32BE

Writes teh value of the analogue input 0, float and big endian type.

SETREGISTER=AI(0),SLAVE=3,REGADD=40001,F32BE

MODBUS-TCP is supported from firmware version 9.14 onwards.

TCP examples:

Writes the value 100 in the 40001 of the "VARIA" server.

SETREGISTER=10,SERVER=VARIA,REGADD=40001

Writes the value of the analogue input 0, float and big endian type:

SETREGISTER=AI0,SERVER=VARIA,REGADD=40001,F32BE

Command	Description
MODBUSTX= *Frame*	Triggers the sending of the specified frame via the MODBUS channel. Where: *Frame:* This is the string to be sent via the MODBUS port in hexadecimal encoded ASCII. Example: Activates a relay output on a device with address 01. The frame format is: ADDRESS | FUNCTION | COIL_ADDRES | DATA | CRC In this case, ADDRESS is 01, FUNCTION is 05 (Force single coil), COIL_ADDRESS is 0001, and DATA is FF00 (to close the relay). **The CRC field should not be added, as it is calculated by the device itself.** The command to force the transmission of this command is: MODBUSTX=01050001FF00

6 - CONFIGURATION COMMANDS

The following shows the configuration command list.

Please note: Send the command with an empty equals sign to delete a parameter.

Example:
Manually delete password APN:
APNPASS=

Command	Description
ID=*Name*	Sets the device name. Example: ID=Microcom
LATITUDE=*latitude*	Geographic coordinates settings. Sets the latitude in decimal degrees format. Example: LATITUDE=43.33648
LONGITUDE=*longitude*	Geographic coordinates settings. Sets the longitude in decimal degrees format. Example: LONGITUDE=-1.81351
CSM=*CentreSMS*	Configures the short message service centre. Example: CSM=+34609090909
PTLF=*TlfnNumber*	Sets the number itself. Example: PTLF=+34637885326
GPRSEN	Enable mobile data usage.

Command	Description
GPRSDIS	Disables mobile data usage.
APNSERVER= *APNserver*	Sets the APN server for GPRS connections.  Example: APNSERVER=movistar.es
APNUSER= *APNuser*	Sets the APN server user for GPRS connections.  Example: APNUSER=movistar
APNPASS= *APNpassword*	Sets the APN server password for GPRS connections.  Example: APNPASS=movistar
APNALCON=0/1	Enables or disables the permanent connection.  Examples: Enables the permanent connection. APNALCON=1 Disables the permanent connection: APNALCON=0
SERVERIP= *AddressIP,TSL*	Sets the IP address for the Zeus server. The IP format is XXX.XXX.XXX.XXX.  The URL can be used from the firmware version 7.47 onwards.  TSL: Is optional. TLS protocol is enabled when this modifier is sent.  Example: SERVERIP= 082.223.197.145 SERVERIP= zeus.microcom.es SERVERIP= zeus.microcom.es,TSL

Command	Description
SERVERPORT=Port	Sets the port for the Zeus server.  Example: SERVERPORT=8080
FTPIP= *FtpDireccionIP,TSL*	Sets the IP address for the FTP server. The IP format is XXX.XXX.XXX.XXX. The default port is 21.  The TLS protocol can be used from the firmware version 9.03 onwards.  TSL: Is optional. TLS protocol is enabled when this modifier is sent.  Examples: FTPIP= 082.223.197.145 FTPIP=082.223.197.145,TSL
FTPUSER=*FtpUser*	Sets the user for the FTP server.  Example: FTPUSER =seh915678
FTPPASS= *FtpPassword*	Sets the password for the FTP server.  Example: FTPPASS =TestFTP
FTPPATH=*FtpPath*	Sets the path for the FTP server.  Example: FTPPATH =/data/test
+TLF=*Phonenumber*, PRIO=*Prioriity*,PRV*x*	Adds a phone number to the authorised list. The international country code with the phone number should be stated (Spain +34).  Where: *Phone number:* Phone number to be added in international format, unless it is a corporate number. *Priority:* Number priority. 0 no priority, 1 highest priority, 8

Command	Description
	lowest priority. *PRVx:* Privilege level PRV0 -> User PRV1 -> Advanced user PRV2 -> Administrator
	Example: Add phone number with priority 1 and advanced user privileges +TLF=+34637885326,PRIO=1,PRV3
-TLF=*Telephonenumber*	Removes a number from the list of authorised numbers. Example: -TLF=+34637885326
CLRTLF	Removes all numbers from the list of authorised numbers.
+TEL	Adds a phone number of the "voice authorised" list. The international country code with the phone number should be stated (Spain +34). Example: +TEL=+34666555444
-TEL	Removes a phone number from the "voice authorised" list. Example: -TEL=+34666555444
CLRTEL	Removes all phone numbers from the "voice authorised" list.
PASSWORD=*password*	Sets the access password for: CSD data calls and local connection options (USB and Bluetooth). The default password is 1234. The password consists of 4 numeric digits. Example: PASSWORD=1234

7 - SYSTEM COMMANDS

The following shows the system command list.

Command	Description
TCPCONNECT	Triggers the immediate connection to the Zeus server via GPRS.
FTPCONNECT	Triggers the immediate connection to the FTP server.
UPDATE	 Command valid from firmware version 8.82 onwards. Updates the firmware via GPRS. When it receives this command, the device downloads the latest firmware version from the Microcom FTP server and installs it. This process does not modify the device's configuration.
LDDEF	Resets the device to its factory settings. Deletes the device settings and any data stored in memory (historical registers).
LOGCLR	 Command valid from firmware version 8.31 onwards. Deletes the data stored in the memory (historical registers).
SNTPSYNC	This process causes the device to synchronise its internal clock with the time from the internet network. This synchronisation procedure requires the device to be correctly configured to access the internet.
ENPOF	Enables “sleep mode” or low-power mode on devices from the Nemos series.
DISPOF	Disables “sleep mode” or low-power mode on devices from the Nemos series.
ALMREC	Acknowledgement of receipt for alarms configured with forwarding enabled. Sending this command will cause the Microcom device to stop forwarding alarm notifications.
REBOOT	Triggers a complete system restart.

8 - MICROPLC-II COMMANDS

The following list shows the commands related to the running of the MicroPLC.

Command	Description
PLCRUN	Starts up the MicroPLC-II. This command needs to be used if the system is going to STOP due to running a script remotely that contains an error.
PLCSTOP	Halts the running of the MicroPLC-II. When the system is in STOP mode, inputs are still being registered, but outputs cannot be activated.
PLCEXE=*command*	Allows MicroPLC-II commands to be run.  Where: Command: Any command available in the MicroPLC-II is valid.  Example: Indicates a value for the analogue output in mA: PLCEXE=EXP16.MA=6.7

9 - COMMANDS FOR SENDING SMS MESSAGES

The following shows the list of commands that trigger the sending of SMS messages.

Command	Description
SMS=*Message* DEST=*Destination*	This feature allows a Microcom device to send an SMS message to a phone number. This is a useful command for retrieving the phone number of the SIM card inserted in the Microcom device.  Where: *Message*: Message text. *Destination*: Phone number in international format.  Example: Sends a message with the text "TEST" to the phone number +34666555444 SMS=TEST,DEST=+34666555444
	 Command valid from firmware version 8.44 onwards.
SMSCOM="*command* DEST=*Destination*	This feature enables communication between Microcom devices via SMS. This command does not generate a response from the receptor. This command is useful for sending commands between different Microcom devices.  Where: *Message*: Command that you wish the remote Hermes/Nemos device to execute. The command must be enclosed in double quotes. *Destination*: Remote Hermes/Nemos phone number in international format.  Example: Enter the number 1 into the math register 0 of the device with the phone number.+34666555444 SMSCOM="M(0)=1",DEST=+34666555444

10 - APPENDIX A: LIST OF CHANNEL IDENTIFIERS

Identifier	Channel
0	Analogue input 0
1	Analogue input 1
2	Analogue input 2
3	Analogue input 3
4	Digital input 0 totaliser counter
5	Digital input 1 totaliser counter
6	Digital input 2 totaliser counter
7	Digital input 3 totaliser counter
8	Digital input 4 totaliser counter
9	Digital input 5 totaliser counter
10	Digital input 6 totaliser counter
11	Digital input 7 totaliser counter
12	Digital input 0 calculated flow rate
13	Digital input 1 calculated flow rate
14	Digital input 2 calculated flow rate
15	Digital input 3 calculated flow rate
16	Digital input 4 calculated flow rate
17	Digital input 5 calculated flow rate
18	Digital input 6 calculated flow rate
19	Digital input 7 calculated flow rate
20	Reserved
21	Digital input 0 logical value
22	Digital input 1 logical value

Identifier	Channel
23	Digital input 2 logical value
24	Digital input 3 logical value
25	Digital input 4 logical value
26	Digital input 5 logical value
27	Digital input 6 logical value
28	Digital input 7 logical value
29	MODBUS/EXPANSION 0 channel
30	MODBUS/EXPANSION 1 channel
31	MODBUS/EXPANSION 2 channel
32	MODBUS/EXPANSION 3 channel
33	MODBUS/EXPANSION 4 channel
34	MODBUS/EXPANSION 5 channel
35	MODBUS/EXPANSION 6 channel
36	MODBUS/EXPANSION 7 channel
37	MODBUS/EXPANSION 8 channel
38	MODBUS/EXPANSION 9 channel
39	MODBUS/EXPANSION 10 channel
40	MODBUS/EXPANSION 11 channel
41	MODBUS/EXPANSION 12 channel
42	MODBUS/EXPANSION 13 channel
43	MODBUS/EXPANSION 14 channel
44	MODBUS/EXPANSION 15 channel
45	MODBUS/EXPANSION 16 channel
46	MODBUS/EXPANSION 17 channel
47	MODBUS/EXPANSION 18 channel

Identifier	Channel
48	MODBUS/EXPANSION 19 channel
49	MODBUS/EXPANSION 20 channel
50	MODBUS/EXPANSION 21 channel
51	MODBUS/EXPANSION 22 channel
52	MODBUS/EXPANSION 23 channel
53	MODBUS/EXPANSION 24 channel
54	MODBUS/EXPANSION 25 channel
55	MODBUS/EXPANSION 26 channel
56	MODBUS/EXPANSION 27 channel
57	MODBUS/EXPANSION 28 channel
58	MODBUS/EXPANSION 29 channel
59	MODBUS/EXPANSION 30 channel
60	MODBUS/EXPANSION 31 channel
61	Flag 0
62	Flag 1
63	Flag 2
64	Flag 3
65	Flag 4
66	Flag 5
67	Flag 6
68	Flag 7
69	Flag 8
70	Flag 9
71	Flag 10
72	Flag 11

Identifier	Channel
73	Flag 12
74	Flag 13
75	Flag 14
76	Flag 15
77	Digital output 0
78	Digital output 1
79	Digital output 2
80	Digital output 3
81	Digital output 4
82	Digital output 5
83	Digital output 6
84	Digital output 7
93	Math Channel 0
94	Math Channel 1
95	Math Channel 2
96	Math Channel 3
97	Digital input 8 logical value
98	Digital input 9 logical value
99	Digital input 10 logical value
100	Digital input 11 logical value
101	Digital input 12 logical value
102	Digital input 13 logical value
103	Digital input 14 logical value
104	Digital input 15 logical value
105	Moisture or temperature probe 0

Identifier	Channel
106	Moisture or temperature probe 1
107	Moisture or temperature probe 2
108	Moisture or temperature probe 3
109	Moisture or temperature probe 4
110	Moisture or temperature probe 5
111	Moisture or temperature probe 6
112	Moisture or temperature probe 7
113	Math Channel 4
114	Math Channel 5
115	Math Channel 6
116	Math Channel 7
117	MODBUS/EXPANSION 32 channel
118	MODBUS/EXPANSION 33 channel
119	MODBUS/EXPANSION 34 channel
120	MODBUS/EXPANSION 35 channel
121	MODBUS/EXPANSION 36 channel
122	MODBUS/EXPANSION 37 channel
123	MODBUS/EXPANSION 38 channel
124	MODBUS/EXPANSION 39 channel
125	MODBUS/EXPANSION 40 channel
126	MODBUS/EXPANSION 41 channel
127	MODBUS/EXPANSION 42 channel
128	MODBUS/EXPANSION 43 channel
129	MODBUS/EXPANSION 44 channel
130	MODBUS/EXPANSION 45 channel

Identifier	Channel
131	MODBUS/EXPANSION 46 channel
132	MODBUS/EXPANSION 47 channel
133	MODBUS/EXPANSION 48 channel
134	MODBUS/EXPANSION 49 channel
135	MODBUS/EXPANSION 50 channel
136	MODBUS/EXPANSION 51 channel
137	MODBUS/EXPANSION 52 channel
138	MODBUS/EXPANSION 53 channel
139	MODBUS/EXPANSION 54 channel
140	MODBUS/EXPANSION 55 channel
141	MODBUS/EXPANSION 56 channel
142	MODBUS/EXPANSION 57 channel
143	MODBUS/EXPANSION 58 channel
144	MODBUS/EXPANSION 59 channel
145	MODBUS/EXPANSION 60 channel
146	MODBUS/EXPANSION 61 channel
147	MODBUS/EXPANSION 62 channel
148	MODBUS/EXPANSION 63 channel
149	MODBUS/EXPANSION 64 channel
150	MODBUS/EXPANSION 65 channel
151	MODBUS/EXPANSION 66 channel
152	MODBUS/EXPANSION 67 channel
153	MODBUS/EXPANSION 68 channel
154	MODBUS/EXPANSION 69 channel
155	MODBUS/EXPANSION 70 channel

Identifier	Channel
156	MODBUS/EXPANSION 71 channel
157	MODBUS/EXPANSION 72 channel
158	MODBUS/EXPANSION 73 channel
159	MODBUS/EXPANSION 74 channel
160	MODBUS/EXPANSION 75 channel
161	MODBUS/EXPANSION 76 channel
162	MODBUS/EXPANSION 77 channel
163	MODBUS/EXPANSION 78 channel
164	MODBUS/EXPANSION 79 channel
165	MODBUS/EXPANSION 80 channel
166	MODBUS/EXPANSION 81 channel
167	MODBUS/EXPANSION 82 channel
168	MODBUS/EXPANSION 83 channel
169	MODBUS/EXPANSION 84 channel
170	MODBUS/EXPANSION 85 channel
171	MODBUS/EXPANSION 86 channel
172	MODBUS/EXPANSION 87 channel
173	MODBUS/EXPANSION 88 channel
174	MODBUS/EXPANSION 89 channel
175	MODBUS/EXPANSION 90 channel
176	MODBUS/EXPANSION 91 channel
177	MODBUS/EXPANSION 92 channel
178	MODBUS/EXPANSION 93 channel
179	MODBUS/EXPANSION 94 channel
180	MODBUS/EXPANSION 95 channel

Identifier	Channel
181	MODBUS/EXPANSION 96 channel
182	MODBUS/EXPANSION 97 channel
183	MODBUS/EXPANSION 98 channel
184	MODBUS/EXPANSION 99 channel
185	MODBUS/EXPANSION 100 channel
186	MODBUS/EXPANSION 101 channel
187	MODBUS/EXPANSION 102 channel
188	MODBUS/EXPANSION 103 channel
189	MODBUS/EXPANSION 104 channel
190	MODBUS/EXPANSION 105 channel
191	MODBUS/EXPANSION 106 channel
192	MODBUS/EXPANSION 107 channel
193	MODBUS/EXPANSION 108 channel
194	MODBUS/EXPANSION 109 channel
195	MODBUS/EXPANSION 110 channel
196	MODBUS/EXPANSION 111 channel
197	MODBUS/EXPANSION 112 channel
198	MODBUS/EXPANSION 113 channel
199	MODBUS/EXPANSION 114 channel
200	MODBUS/EXPANSION 115 channel
201	MODBUS/EXPANSION 116 channel
202	MODBUS/EXPANSION 117 channel
203	MODBUS/EXPANSION 118 channel
204	MODBUS/EXPANSION 119 channel
205	MODBUS/EXPANSION 120 channel

Identifier	Channel
206	MODBUS/EXPANSION 121 channel
207	MODBUS/EXPANSION 122 channel
208	MODBUS/EXPANSION 123 channel
209	MODBUS/EXPANSION 124 channel
210	MODBUS/EXPANSION 125 channel
211	MODBUS/EXPANSION 126 channel
212	MODBUS/EXPANSION 127 channel
213	Math Channel 8
214	Math Channel 9
215	Math Channel 10
216	Math Channel 11
217	Math Channel 12
218	Math Channel 13
219	Math Channel 14
220	Math Channel 15
221	Math Channel 16
222	Math Channel 17
223	Math Channel 18
224	Math Channel 19
225	Math Channel 20
226	Math Channel 21
227	Math Channel 22
228	Math Channel 23
229	Math Channel 24
230	Math Channel 25

Identifier	Channel
231	Math Channel 26
232	Math Channel 27
233	Math Channel 28
234	Math Channel 29
235	Math Channel 30
236	Math Channel 31