

AIR-SEP® SmartControl-Interface

Interface to AIR-SEP SmartControl

User manual



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Manual-Version 1.07/ 1.27

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1. Delivery scope

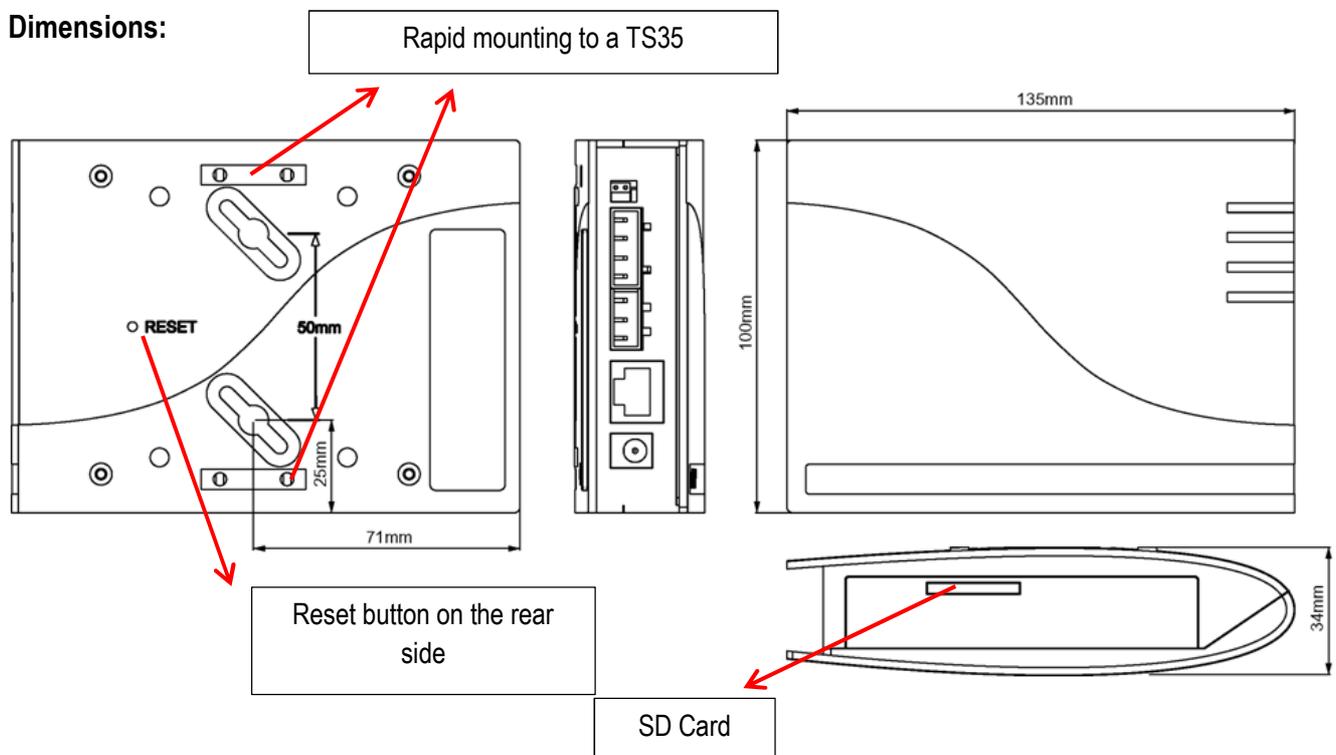
The delivery scope of the device includes the following parts:

- 1 pc. Control and Monitoring Interface C.M.I.
- 1 pc. SD card
- 1 pc. 4-pole plug for the CAN bus
- 1 pc. 3-pole plug for the DL bus
- 1 pc. Brief guide

2. Mounting and connection

The SCI. can be assembled either with 2 screws on an even surface or with the enclosed rapid mounting to a TS35 DIN rail according to the EN 50022 Standard.

Dimensions:



2.1 Connections

Connections are labelled and must not be confused.

The following Figure also shows termination on the left (CAN bus).



Power consumption: typically 1.5 W

2.2 Making the connections

Connections must be made in the following sequence

1. Connection LAN cable
2. Connection CAN bus or DL bus cable
3. Optional: power supply with power unit
(positive pole on the internal conductor, earth outside)



The POWER LED now has to be green permanently.

3. IP-Address

Access requires an IP address.

3.1. Network with DHCP server

The network settings are determined automatically.

3.2. Network without DHCP server

Direct SCI connection – Windows PC

DHCP must be activated on the PC. PC and C.M.I. automatically gets an IP address this way. This process can take more than 1 minute.

3.3. Fixed IP address

1. Create a Text file called fix_ip.txt with the required IP address and UTF-8 encoding in the root directory of the SD card. The content of this file must be only an IP address (example: 192.168.0.10) and "Enter".
2. **Insert** the SD card in the SCI.
3. **During the next start**, the SCI adopts this IP address and deletes the txt file on the SD card.

The network settings must then be configured locally (SCI menu Settings/Ethernet).

The LAN LED now has to **flash green or be green permanently**.

4. Access via browser

4.1 Access via LAN or port forwarding

1. Browser start
2. Entry in the address field of the browser: IP address



Entry IP address (example)

The language in this window depends on the language setting in the PC operating system.

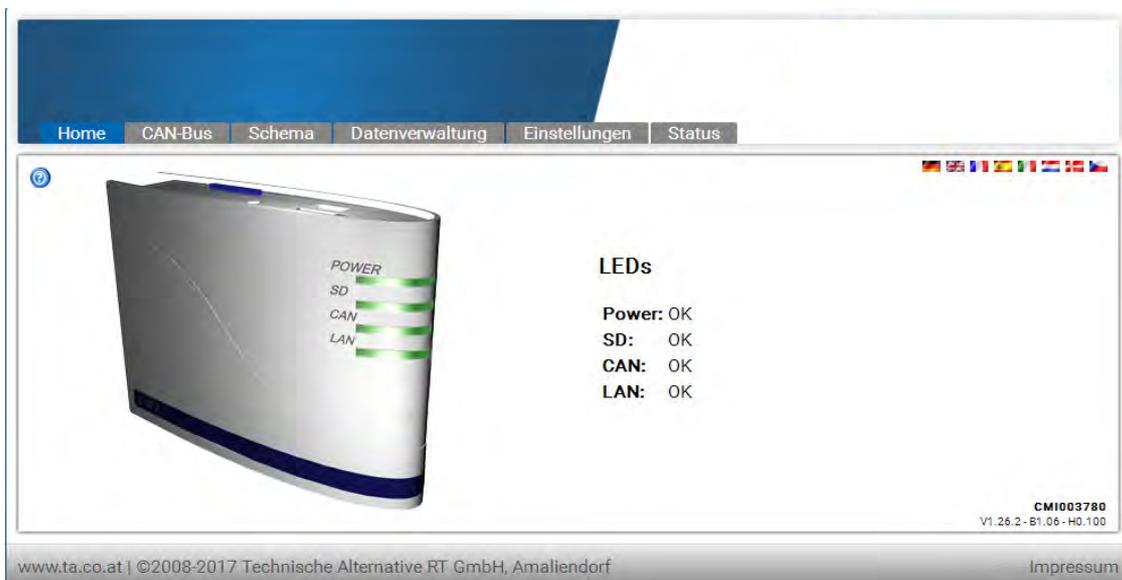
3. **Authentication:** Entry user name and password



The **factory-set** predefined user name is **user**, without password. Confirmation with **"OK"**.

The language in this window depends on the language setting in the PC operating system.

4. Now the **menu** of the SCI appears already.



5. SCI-Menu

Local operation (LAN): Entry into the SCI menu by calling up the browser and entering the IP address of the SCI. Then authentication with username and password (user or guest).

5.1. Menu Settings

The following pages describe the menu options: Ethernet/LAN, CAN, Messages, Contacts, Passwords, Data logging, Time, Inputs and Outputs.

Ethernet (LAN settings)



- Ethernet
- CAN
- Messages
- Contacts
- Passwords
- Data logging
- Time
- Inputs
- Outputs

LAN settings

<i>Host name</i>	
Host name	<input type="text" value="CMI1"/>
<i>IP settings</i>	
DHCP	<input checked="" type="checkbox"/>
IP address	<input type="text" value="192.168.160.151"/>
Subnet mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.160.254"/>
HTTP port	<input type="text" value="80"/>
<i>DNS settings</i>	
Primary DNS	<input type="text" value="192.168.10.100"/>
Secondary DNS	<input type="text" value="0.0.0.0"/>
<i>MAC address</i>	
<input type="text" value="3C-CD-5A-00-0E-C4"/>	
<i>Web portal</i>	
Web portal	<input checked="" type="checkbox"/>

If more than one C.M.I. is used in the same LAN network, then these C.M.I.s must have different host names.

In this example, the host name was changed to "CMI1". The host name can be freely selected and does not require a reference to the word "CMI". The host name may not include an underscore ("_"); a hyphen ("-") is permitted.

The HTTP port can be adjusted. Factory setting: 80

Every C.M.I. has an individual MAC address:

3C-CD-5A-00-XX-XX
 └──┬──┘
 serial number
 (hexadecimal)

After the entry of the new name, first click "**Save**" and then "**Restart**".

Firewall: For access via the web portal and for mail dispatch, any existing firewall must not block outgoing ports 40001 and 40002. For online datalogging (visualisation), outgoing port 40003 must not be blocked.

In order to enable the "Update C.M.I." button to be displayed, outgoing port 80 must not be blocked by any existing firewall.

Direct connection C.M.I. - PC

DHCP is activated in the factory setting. The C.M.I. tries to obtain a valid IP address from the network on its own.

If there is no DHCP server in the network, automatic IP allocation will be started. An IP address between 169.254.0.1 and 169.254.254.255 is allocated. The subnet mask is 255.255.0.0. This process can take more than 1 minute.

The C.M.I. can be selected directly with the host name in Windows in the browser. If the name resolution does not work, you have to proceed as described in chapter "**Connection without DHCP**".

Connection without DHCP

The user can specify the parameters (IP address etc.) manually.

This can be done in the web interface. If access via the web interface is impossible, there is the possibility to define a fixed IP address with a file:

A text file with the name **fix_ip.txt** with the desired IP address is created in the root directory of the SD card. The content of this file may consist only of an IP address (e.g. 192.168.0.10) and "Enter".

During the next start, the C.M.I. will adopt this IP address, deactivate DHCP and reverse (web portal) and delete the txt-file on the SD card.

CAN settings

The CAN node number and the bus rate of the C.M.I. can be changed in this submenu. Every CAN bus participant must have an individual node number in the CAN network.



CAN settings

- Ethernet
- CAN**
- Messages
- Contacts
- Passwords
- Data logging
- Time
- Inputs
- Outputs

Nodes

CAN designation	CMI1
Node number	<input type="text" value="56"/>
Bus rate	<input type="text" value="50k"/> ▼

The C.M.I. has node number 56 with factory settings.

The C.M.I. can get the system time from the Internet.

Because the system time of all other devices will be accepted by node 1 in a CAN network, the C.M.I. could be assigned with node number 1. But it must be ensured that no other device has this node number. That applies especially to networks with several UVR1611.

Bus rate: The bus rate can be set in the CAN settings of controller UVR16x2. This bus rate must match that of the C.M.I. and of all other CAN bus devices.

Messages

The values and conditions for mail and SMS dispatch can be determined in the menu “Messages”.

It is only possible to send text messages with the built-in GSM module.

The values are adopted from the C.M.I. inputs. Up to 32 messages are available.

Example for a message in case of excess collector temperature:

The screenshot shows the 'Messages' configuration screen. On the left is a menu with options: Ethernet, CAN, Messages (selected), Contacts, Passwords, Data logging, Time, Inputs, and Outputs. The main area is titled 'Messages' and contains a list of message slots from 1 to 19. Slot 1 is selected and shows 'Electricity failure', 'Node failure', and 'CMI restart'. Below this, the configuration for slot 1 is shown in a detailed view. It includes: 1. Designation: 'Collector' (circled 1). 2. Input type: 'CAN-Bus' (circled 2). 3. Input number: 'Ca1:Collector' (circled 3). 4. Actual value: '73.6 °C'. 5. Send condition: '>' (circled 4) with a value of '110' (circled 4). 6. Message text: 'Collector excess temperature' (circled 5), 'Collector: \$Ca1' (circled 6), and 'Cylinder: \$Ca2' (circled 6). 7. Contacts for messages: 'john.smith@aon.at' (checked, circled 7), 'gerald.fisher@aon.at' (unchecked), and '+4366312345678' (unchecked). 8. 'Save' button (circled 8) and 'Cancel' button.

1. Message designation

2. Select the input type (CAN bus, Modbus or data link)

3. Selection of analogue or digital and the input number (see chapter "[Inputs](#)")

4. Sending condition: Analogue values: equal =, greater >, greater or equal >=, less <, less or equal <=, digital values: ON or OFF

5. Enter text for email or SMS

6. Optional: Specification of the value to be issued with the text. The value always refers to a **C.M.I. input**.

A **\$ sign** must be placed at the beginning of the definition. See below for the source (input type, analogue or digital) and number of the input: C = CAN bus, M = Modbus, L = data link, S = SMS

Examples: \$Ca1 = value of the analogue CAN bus input 1

\$Md3 = value of the digital M-Bus input 3

7. Select the **contacts** to whom an email or SMS should be sent if the message conditions are met. Sending an SMS is only possible if a GSM module is fitted. The contacts are determined in the menu “[Contacts](#)”.

More precise details regarding sending an SMS and SMS inputs can be found in chapter "[Inputs/SMS](#)" and in the manual for the **MDC-GSM** GSM module.

8. After completing the entry: **Save**.

SMS dispatch and SMS query are described in the manual for the GSM module.

Automatic messages

Electricity failure

In case of electricity failure, an SMS can be sent only via the GSM module (description in the GSM module manual).

Node failure

In the event of a CAN node failure, an email message can be sent, and with an installed GSM module an SMS message can be sent. A CAN node failure is detected only after a time-out of **20 seconds**.

Example:

The screenshot shows a web interface with a sidebar on the left containing menu items: Ethernet, CAN, Messages (highlighted), Contacts, Passwords, Data logging, Time, Inputs, and Outputs. The main content area is titled "Messages" and contains a configuration panel for "Node failure". The panel has a sub-header "Node failure" and a list of recipients: "1: Collector", "2:", "3:", "4:", "5:", "6:", "7:", and "8:". To the right, there is a section for "Node failure" with a text input field containing "Node failure". Below this is a section for "Contacts for messages" with three checkboxes: "john.smith@aon.at" (checked), "gerald.fisher@aon.at", and "+4366412345678". At the bottom are "Save" and "Cancel" buttons.

CMI restart

A restart of the C.M.I. that was caused by e.g. electricity failure or an update can trigger an email message, or an SMS message if a GSM module is installed.

Example:

The screenshot shows the same web interface as above. The main content area is titled "Messages" and contains a configuration panel for "CMI restart". The panel has a sub-header "CMI restart" and a list of recipients: "1: Collector", "2:", "3:", "4:", "5:", "6:", "7:", and "8:". To the right, there is a section for "CMI restart" with a text input field containing "C.M.I. restart". Below this is a section for "Contacts for messages" with three checkboxes: "john.smith@aon.at" (checked), "gerald.fisher@aon.at", and "+4366412345678". At the bottom are "Save" and "Cancel" buttons.

Contacts

E-mail addresses and phone numbers for text messaging are entered in this menu. **It is only possible to send text messages with the built-in GSM module.**



- Ethernet
- CAN
- Messages
- Contacts**
- Passwords
- Data logging
- Time
- Inputs
- Outputs

Contacts

Mail

Subject

Receiver

Receiver1	<input type="text" value="john.smith@aon.at"/> EN <input type="button" value="Test"/>
Receiver2	<input type="text" value="gerald.fisher@aon.at"/> EN <input type="button" value="Test"/>
Receiver3	<input type="text" value="+4366312345678"/> EN <input type="button" value="Test"/>
Receiver4	<input type="text"/> DE <input type="button" value="Test"/>
Receiver5	<input type="text"/> DE <input type="button" value="Test"/>
Receiver6	<input type="text"/> DE <input type="button" value="Test"/>
Receiver7	<input type="text"/> DE <input type="button" value="Test"/>
Receiver8	<input type="text"/> DE <input type="button" value="Test"/>

Up to **8 contacts** can be listed and tested.

The phone numbers must begin with the international area code (e.g. +44 ...or 0044...).

The language setting relates to the correct format for controller values and units which can be sent in a message.

E-mails or text messages can be sent to these contacts if the message condition (see menu "[Messages](#)") applies.

Passwords

User names and passwords for different user levels are defined here. Only the user name and the password for the expert (admin/admin) are pre-set in the factory settings. Password settings can be changed by registered **experts** only.



PW settings

- Ethernet
- CAN
- Messages
- Contacts
- Passwords**
- Data logging
- Time
- Inputs
- Outputs

Expert

User

Change password

Password

Password

User

User

Change password

Password

Password

Guest

User

Change password

Password

Password

Passwords may not include special characters or umlauts ("ä, ü, ö").

Password entry must be repeated as a precaution.

The "**Expert**" has complete access to the C.M.I. without restrictions.

The "**User**" is authorised for access to the interactive **online schematic** and can view values **and**, depending on the programming, **also change them**. Access to other C.M.I. pages is possible but settings cannot be modified there.

Only the online schematic is displayed for a "**Guest**". Guests may view it but are not allowed to modify values.

Direct local access to a C.M.I. page without login can be done by entering the following URL:

http://user:password@cmi/xxxxxx

User: user name for expert, user or guest

Password: password defined for the respective user

cmi: host name or IP address of the C.M.I.

xxxxxx: entry of the required URL

Data logging

The datalogging settings for readout with **Winsol** are found in this menu. You can log either from the DL bus (max. 2 data lines) or from the CAN bus (max. 8 data records).

The data is saved to the SD card.

Example: CAN data logging of data records of node 1 (e.g. UVR16x2), node 3 (UVR1611) and of node 32 (e.g. RSM610)



- Ethernet
- CAN
- Messages
- Contacts
- Passwords
- Data logging**
- Time
- Inputs
- Outputs

Logging

Memory used
SD card 0,05 % **1**

Criterion
minutes 0 **2** Seconds 10 **2**

Frame

#	Source	Data record
1	CAN 1 5	X2-tech
2	CAN 3	1 3
3	CAN 32	X2-tech
4	--	--
5	--	--
6	--	--
7	--	--
8	--	--

4 **6**

7 Save Cancel **8**

1. Display of already used memory in % of available memory space for data logging.

2. The saving criterion defines the time interval for data logging. Entries from 2 seconds up to 60 minutes are possible.

3. Source information (DL bus: DL1, DL2 or CAN bus: entry of node number) and of the data record. Controller UVR1611 and the CAN energy meter CAN-EZ can output 2 data records.

When logging data from devices with X2 technology (UVR16x2, RSM610, CAN-I/O45, CAN-EZ2), please note:

UVR16x2 up to version 1.20, RSM610 up to version 1.07, CAN-I/O module 45 up to version 1.03 and CAN-EZ2 up to version 1.03:

Only 1 data record or 2 data records will be logged, depending on the settings in the controller's menu under **Settings / Datalogging**.

The number of data records depends on the following rule: If at least a higher or equal analogue value is assigned to the number 17, then a 2nd data record is automatically created for this controller. The same applies to digital values greater than or equal to the number 14 or when there are more than 2 heat meters. That is not apparent in the C.M.I. menu. If e.g. 4 UVR16x2 are entered, for which 2 data records each are output, then no additional data records are displayed in **Winsol** even if they could be entered in the above list.

From Winsol 2.06:

UVR16x2 from version 1.21, RSM610 from version 1.08, CAN-I/O module 45 from version 1.04 and CAN-EZ2 from version 1.04:

Up to **64 analogue** values and **64 digital** values can be logged per device (max. 8 devices X2).

Further information about datalogging with **X2 devices** can be found in the programming manuals for the respective devices.

- 4.** Delete the **C.M.I.** internal memory logging values.
- 5.** Delete the logging values **from the SD card**.
- 6.** Manually create daily log files on the SD card, which can be read out with **Winsol**.
- 7.** Completion of entry with "**Save**".
- 8.** Cancellation of entry and resetting to the setting saved last.

If the settings for the source and/or the data record of a source are changed, then we recommend **restarting** the C.M.I. (menu "**Ethernet/Restart**") and **deleting the memory**. After the first logging time, a **set-up** is carried out in **Winsol** and completed with "**Ok**" so that the C.M.I. logs data with the modified settings.

The contents of the internal C.M.I. memory are saved to the SD card as a day log file every day at midnight. When reading out with **Winsol** a log file for the current day is automatically generated and all of the daily log files saved on the SD card are copied over to the Winsol monthly log file. Depending on the setting in **Winsol**, the daily log files are either deleted or saved on the SD card.

With simultaneous data logging with C.M.I. and BL-Net or D-LOGG, this is not possible and will disrupt logging.

Time settings



- Ethernet
- CAN
- Messages
- Contacts
- Passwords
- Data logging
- Time**
- Inputs
- Outputs

Time settings

System time
10:46:56 23.05.2017

Source of supply
Source of supply ▾

Region
Time zone
(GMT+1:00) Vienna, Berlin, Paris ▾
 Automatic summertime

NTP server
NTP server

Source of supply: The C.M.I. accepts the time-stamp either from an adjustable NTP server (default setting: 3.at.pool.ntp.org) or from the CAN network (UVR1611 with node number 1) or via one of the two data lines (DL bus) of the respective connected controllers.

Automatic switch to summer time takes place according to the specifications of the European Union.

The system time is responsible for the time-stamp during data logging and for the time information of other log files.

Because the system time of all other devices will be accepted by node 1 in a CAN network, the C.M.I. could be assigned with node number 1. But it must be ensured that no other device has this node number. That applies especially to networks with several UVR1611.

During the data logging of controllers without individual system time (e.g. UVR64, HZR65), it must be ensured that **“WEB”** is set as source and that there is an Internet connection.

Inputs

All settings for values which can be adopted by the C.M.I. via **CAN bus**, **Modbus/TCP**, **DL bus** or **SMS** can be found in this menu.

These values can then be transferred to C.M.I. outputs or used for messages.

CAN bus

Setting the values which are adopted from the CAN bus. Up to 64 analogue and 64 digital values can be defined.

Example: adoption of the analogue CAN network output 1 of the CAN node 1 in the analogue CAN bus input 1 of the C.M.I.

Inputs

The screenshot shows a software interface for configuring CAN bus inputs. On the left, a vertical list of inputs from 1 to 15 is shown, with '1: Collector' highlighted. The main configuration window is titled 'CAN bus' and contains the following fields:

- Designation: Collector (1)
- Node number: 1 (2)
- Network Output: 1 (3)
- Timeout (min): 5 (4)
- Unit: Temperature (5)
- Value at timeout: User defined (6)
- Output value: 100 (7)
- Actual value: 72.8°C (8)

At the bottom of the configuration window, there are 'Save' and 'Cancel' buttons, with the 'Save' button circled in red and labeled with a '9'.

1. Input designation

2. Select the **CAN node** from which the value is adopted.

3. Select the **CAN network output** of the CAN node from which the value is adopted.

4. **Timeout time:** if no new value is issued by the CAN node **within this time**, either the last output value transmitted or the next value to be subsequently set is adopted. Please note that the **interval time** of the source transmission conditions must **not be longer than the timeout time** of the C.M.I. input.

5. Select the **unit:** "AUTO" means that the source unit is adopted. However, a wide range of alternative units are also available to choose from.

6. **Value for timeout:** "unchanged" means that the timeout of the last transmitted value is retained. If "User defined" is selected, the output value subsequently set is adopted for timeout.

7. User defined **output value** for timeout: depending on the unit, this value is issued with the appropriate number of decimal places (example: "100" is issued if the temperature is "100.0 °C").

8. **Actual value:** this value is currently adopted by the C.M.I., subject to the unit and the timeout settings.

9. After completing the entry: **Save**

Example for issuing a user defined value for **timeout:**

Timeout (min):

Unit:

Value at timeout:

Output value:

Actual value: 100.0°C (timeout!)

Because no new value was issued within 5 minutes, the output value of 100 °C is adopted and timeout is displayed.

Modbus

Setting the values which are read out from the Modbus device. Up to 64 analogue and 64 digital values can be defined.

In this case, the C.M.I. is the **master** and the requested value comes from the **slave**.

Example: analogue temperature value

The screenshot shows the Modbus configuration interface. On the left, there is a sidebar with 'CAN bus' (ANALOG, DIGITAL) and 'Modbus' (ANALOG, 1: Boiler, 2:, 3:, 4:, 5:, 6:, 7:, 8:, 9:, 10:, 11:, 12:, 13:, 14:, 15:, 16:, 17:). The main 'Modbus' section contains the following fields:

- Designation: Boiler (1)
- IP: 192.168.10.206 (2)
- Device: 255 (2)
- Function: 03 (2)
- Address: 5 (2)
- Interval (sec): 120 (3)
- Timeout (min): 10 (4)
- Input value: 0 (5)
- Factor: 1 (6)
- Unit: Temperature (7)
- Value at timeout: User defined (8)
- Output value: 50 (9)
- Actual value: 0,0 °C (10)

At the bottom, there are 'Save' and 'Cancel' buttons (11).

1. Input designation

2. Enter the **IP address** and the **manufacturer-specific** data for the Modbus value which is being read out.

3. Define the **readout interval**.

4. Timeout time: if no new value can be read out from the Modbus device **within this time**, either the **last** requested value or the next output value to be subsequently set is adopted.

5. Input value from the Modbus device

6. Enter the **factor** for the input value for implementation at the value that is to be adopted by the C.M.I. Only **whole numbers** without a unit are adopted from the Modbus. To adjust to the unit and the decimal places with which the value from the C.M.I. should be issued, the correct factor must be selected (see "**Current value**").

7. Select the **unit**: the value is adopted from the Modbus **without a unit**. There are a wide range of units to choose from.

8. Value for timeout: "**unchanged**" means that the timeout of the last transmitted value is retained. If "**user defined**" is selected, the output value subsequently set is adopted for timeout.

9. User defined **output value** for timeout. Depending on the unit, this value is issued with the appropriate number of decimal places (example: "50" is issued if the temperature is "50.0 °C").

10. Actual value: this value is currently adopted by the C.M.I., subject to the factor, the unit and the timeout settings.

11. After completing the entry: **Save**

Example: for issuing a user defined value for timeout:

Timeout (min):	<input type="text" value="5"/>
Input value:	0
Factor:	<input type="text" value="1"/>
Unit:	<input type="text" value="Temperature"/>
Value at timeout:	<input type="text" value="User defined"/>
Output value:	<input type="text" value="50"/>

Actual value: 50,0 °C (timeout!)

Because no new value was able to be read out within 5 minutes, the output value of 50 °C is adopted and the timeout is displayed.

Data link

Setting the values which are adopted from the DL bus. Only values from the DL **data frames** of the devices, which are also used for DL datalogging, can be adopted. Values from DL sensors cannot be read.

Up to 32 analogue and 32 digital values can be defined.

Example: analogue value 1 from DL1

Inputs

1. Input designation

2. Bus: enter the **data link connection** on the C.M.I., via which the value should be read. The second UVR1611 data frame (setting for output 14 with "NETW.INP.=>DL.: yes") is not read.

3. Select the **source** (analogue: input 1...16; digital: output 1...13)

4. Select the **unit**: "AUTO" means that the source unit is adopted. However, a wide range of alternative units are also available to choose from.

5. Actual value: this value is currently adopted by the C.M.I., subject to the unit.

6. After completing the entry: **Save**

DL data frames for the analogue values

C.M.I. source	UVR16x2, UVR1611	ESR21, 31	UVR61-3, 63 B
	UVR61-3, 63, 63-H A		
Input 1	Sensor value 1	Sensor value 1	Sensor value 1
Input 2	Sensor value 2	Sensor value 2	Sensor value 2
Input 3	Sensor value 3	Sensor value 3	Sensor value 3
Input 4	Sensor value 4	Ext. value 1	Sensor value 4
Input 5	Sensor value 5	Ext. value 2	Sensor value 5
Input 6	Sensor value 6	Ext. value 3	Sensor value 6
Input 7	Sensor value 7	Ext. value 4	Ext. value 1
Input 8	Sensor value 8	Ext. value 5	Ext. value 2

Input 9	Sensor value 9	Ext. value 6	Ext. value 3
Input 10	Sensor value 10		Ext. value 4
Input 11	Sensor value 11		Ext. value 5
Input 12	Sensor value 12		Ext. value 6
Input 13	Sensor value 13		Ext. value 7
Input 14	Sensor value 14		Ext. value 8
Input 15	Sensor value 15		Ext. value 9
Input 16	Sensor value 16		

A = UVR61-3 up to version 8.2 / UVR63 up to version 1.4 / UVR63-H – all versions

B = UVR61-3 from version 8.3 / UVR63 from version 1.5

SMS

This function is only possible if a GSM module is fitted.

This menu is used for entering the designations and settings for **SMS commands**.

Up to 16 SMS commands for analogue values and 16 for digital values can be defined.

If an SMS message is transmitted to the GSM module with the **designation** (along with value and call sign), an **SMS input** is generated which can then act as the source for a **CAN output**, for example.

SMS commands always end with a **call sign** according to the designation. It does not matter whether the designations are upper or lower case, but **special characters** must not be used (e.g. ä, ü, ö, á, #, etc.).

Analogue commands

The C.M.I. analogue **SMS inputs**, whose value can be set via SMS command, are configured under **Analogue**. The command must always be completed with a **call sign**.

Example:

SMS with the designation "DHW" for analogue input

Inputs

The screenshot shows the configuration interface for an SMS input. On the left is a sidebar with menu items: CAN bus (ANALOG, DIGITAL), Modbus (ANALOG, DIGITAL), Data link (ANALOG, DIGITAL), and SMS (ANALOG, 1: DHW). The main window is titled 'SMS' and contains the following fields:

- Designation:** A text box containing 'DHW' with a red circled '1' next to it.
- Unit:** A dropdown menu showing 'Temperature' with a red circled '2' next to it.
- Time (min):** A spin box showing '60' with a red circled '3' next to it.
- Alternative value:** A spin box showing '40' with a red circled '4' next to it.
- Actual value:** A text box showing '0,0 °C' with a red circled '5' next to it.

At the bottom of the main window are two buttons: 'Save' and 'Cancel'. A red circled '6' is positioned below the 'Save' button.

1. Input designation (= SMS designation)

2. Select the **unit**: a wide range of units are available to choose from.

3. Time: within the specified time period, the value indicated in the SMS is read as the **current value**. Following this, the **alternative value** is adopted. With a setting of "0", the SMS value remains unchanged until another value is transmitted via SMS.

4. Alternative value: at the end of the set time, the alternative value is adopted as the current value.

5. Actual value: this value is currently adopted by the C.M.I., subject to the time setting.

6. After completing the entry: **Save**

The SMS command **DHW 60!** sets the SMS input value **analogue 1** with the designation "DHW" to the value of 60.0 °C.

After 60 minutes (= "time" setting), the alternative value is adopted (in the example: 40.0 °C).

If the time is set to "0", the SMS value (60 °C) is maintained, providing it is not changed by another SMS command.

Example:

SMS with the designation "heating" for operating mode changeover of a heating circuit

Inputs

CAN bus	
ANALOG	
DIGITAL	
Modbus	
ANALOG	
DIGITAL	
Data link	
ANALOG	
DIGITAL	
SMS	
ANALOG	
1: DHW	
2: Heating	

SMS

Designation:

Unit:

Time (min):

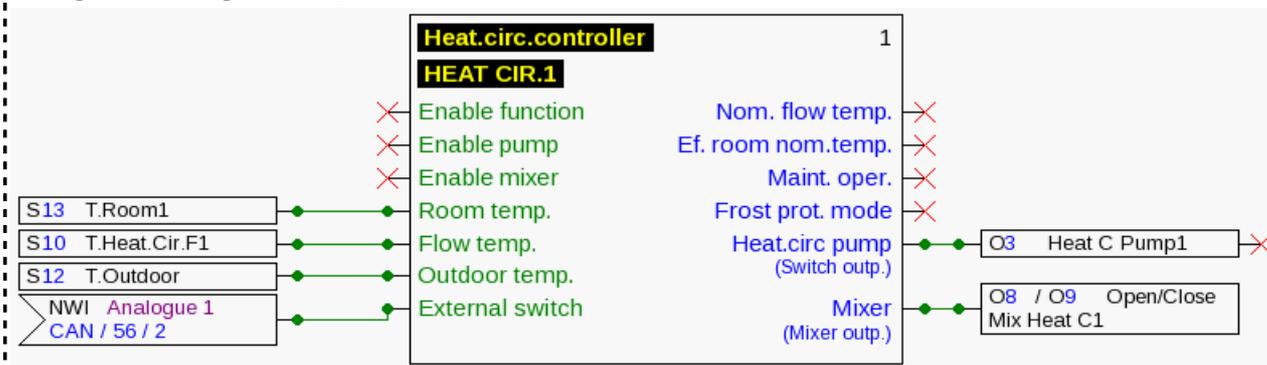
Alternative value:

Actual value: 0

With the additional texts *standby*, *time*, *normal*, *lowered* and *internal*, the operating mode of a heating circuit can be changed via SMS. These commands are adopted by the C.M.I. as **analogue** numbers and can be passed on to the CAN network (CAN output of the C.M.I.).

To do this, the appropriately programmed **analogue** CAN input on the UVR1611 or UVR16x2 must be linked to the "external switch" input of the "heating circuit controller" function (see operating instructions: *Heating circuit controller/external switch function*).

Programming example UVR1611



In the example above, the SMS input "Heating" was assigned to the CAN output **analogue 2** of the C.M.I. (node 56).

With the SMS command *Heating lowered!*, the heating circuit changes to setback mode.

With the SMS command *Heating internal!*, the internal operating status of the controller is reactivated before transmitting SMS commands.

Value transfer with analogue commands using text entry:

Text entry	Value is adopted during the time period	Value at the end of the time
standby	64	Alternative value
time	65	Alternative value

normal	66	Alternative value
lowered	67	Alternative value
internal	127	Alternative value

Note:

Settings **time > 0** and **alternative value 0: at the end of the time**, after the value 64-67 or 127 has been transferred, the C.M.I. issues the alternative value 0.

The **alternative value 0** does not result in any further changes in the heating circuit controller. After this, the operating mode can be changed again manually (at the RAS room sensor, at the CAN monitor, at the CAN-TOUCH, at the controller itself or via the browser).

If no alternative value 0 is transmitted (e.g. for **time = 0**), the operating mode cannot be changed manually.

Digital commands

The C.M.I. **digital SMS inputs**, whose value can be set via SMS command, are configured under **Digital**. An **SMS command** is set with the values **on!** and **off!** or **0!** and **1!** (e.g. **designation on!** or **designation 1!**). The command must always be completed with a **call sign**.

The alternative value "0" corresponds to OFF/No; the value "1" corresponds to ON/Yes.

Example:

SMS with the designation "electric heater"

Inputs

CAN bus	<div style="border: 1px solid gray; padding: 5px;"> <p><i>SMS</i></p> <p>Designation: <input type="text" value="electric heater"/></p> <p>Unit: <input type="text" value="ON/OFF"/></p> <p>Time (min): <input type="text" value="30"/></p> <p>Alternative value: <input type="text" value="0"/></p> <p>Actual value: OFF</p> <p><input type="button" value="Save"/> <input type="button" value="Cancel"/></p> </div>
ANALOG	
DIGITAL	
Modbus	
ANALOG	
DIGITAL	
Data link	
ANALOG	
DIGITAL	
SMS	
ANALOG	
DIGITAL	
1: electric heater	

The SMS command **electric heater on!** sets the SMS input value **digital 1** with the designation "electric heater" to the value **ON**.

At the end of the time (= 30 minutes), the current value is set to the alternative value 0 (= OFF).

Outputs

In this menu, values from C.M.I. inputs can be linked with CAN bus or Modbus outputs of the C.M.I. or transmitted to other C.M.I.s via LAN using "CoE".

CAN bus

Setting the values which are transferred to the CAN bus for use in other CAN bus devices. Up to 32 analogue and 32 digital values can be defined.

Example: adoption of the analogue DL input 1

Outputs

The screenshot shows the configuration window for a CAN bus output. The sidebar on the left lists outputs 1 through 15, with '1: Collector' selected under the 'ANALOG' section. The main configuration area is titled 'CAN bus' and contains the following fields:

- Designation:** Collector (1)
- Input:** Data link (2), 1: Collector (3), Measurement (4)
- Transmission condition:**
 - If change >: 1
 - Blocking time (sec): 10
 - Interval (min): 5
 (5)
- Actual value:** 72,7 °C (6)

At the bottom of the window are 'Save' and 'Cancel' buttons (7).

1. Output designation

2. Select the **input type**: Modbus, Data link or SMS.

3. Select the required **input**.

4. Transfer the **measured value** (currently no other entry possible)

5. **Transmission conditions:** the input value is transferred to the CAN network as a current value under the following conditions.

Transmission conditions for analogue CAN outputs:

If change > 1	If the current value has changed by more than 1 compared to the last transmitted value, a new transmission is made. The unit used by the source is applied to the output value.
Blocking time 10	If the value changes by more than 1 within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).
Interval time 5	The value is transmitted every 5 minutes even if it has not changed by more than 1 since the last transmission (minimum value: 1 minute).

Transmission conditions for digital CAN outputs:

If change yes/no	Transmission of the value if a status change occurs
Blocking time 10	If the value changes within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).

Interval time 5	The value is transmitted every 5 minutes even if it has not changed since the last transmission (minimum value: 1 minute).
------------------------	--

6. Actual value: this value is currently being issued by the C.M.I.

7. After completing the entry: **Save**

Modbus

Setting the values which are transferred to the Modbus for use in Modbus devices.

In this case, the C.M.I. is the **master** and the value is transmitted to the **slave**.

Up to 32 analogue and 32 digital values can be defined.

Example: a CAN input value is transferred to a Modbus device

Outputs

The screenshot shows a configuration window for a Modbus output. On the left is a sidebar with a tree view containing 'CAN bus', 'ANALOG', and 'DIGITAL' under the 'Modbus' section. The '1: Flow temp' item is selected. The main window is titled 'Modbus' and contains the following fields:

- Designation:** Flow temp (1)
- Input:** A dropdown menu showing 'CAN bus' (2), '3: Flow temp' (3), and 'Measurement' (4).
- IP:** 192.168.10.206
- Device:** 255
- Function:** 03
- Address:** 8 (5)
- Factor:** 1 (6)
- Transmission condition:** A dropdown menu showing '3' (7)
- Blocking time (sec):** 10
- Interval (min):** 5
- Actual value:** 465 (8)

At the bottom are 'Save' (9) and 'Cancel' buttons.

1. Output designation

2. Select the **input type**: CAN bus, Modbus, Data link or SMS.

3. Select the required **input**

4. Transfer the **measured value** (currently no other entry possible)

5. Enter the **IP address** and the **manufacturer-specific** data for the Modbus device (= slave) to which the value is transmitted

6. Enter the **factor** for the input value for implementation at the value that is transferred to the Modbus.

7. **Transmission conditions**: the input value is transferred to the Modbus as a current value under the following conditions.

Transmission conditions for analogue Modbus outputs:

If change > 3	If the current value has changed by more than 3 compared to the last transmitted value, a new transmission is made.
Blocking time 10	If the value changes by more than 1 within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).
Interval time 5	The value is transmitted every 5 minutes even if it has not changed by more than 3 since the last transmission (minimum value: 1 minute).

Transmission conditions for digital Modbus outputs:

If change yes/no	Transmission of the value if a status change occurs
Blocking time 10	If the value changes within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).
Interval time 5	The value is transmitted every 5 minutes even if it has not changed since the last transmission (minimum value: 1 minute).

8. Current value: this value is issued to the Modbus. Only **whole numbers** without a unit can be issued to the Modbus. Example: "375" is issued for 37.5 °C. If only "37" is to be issued, a factor of 0.1 should be entered.

9. After completing the entry: **Save**

CoE (= CAN over Ethernet)

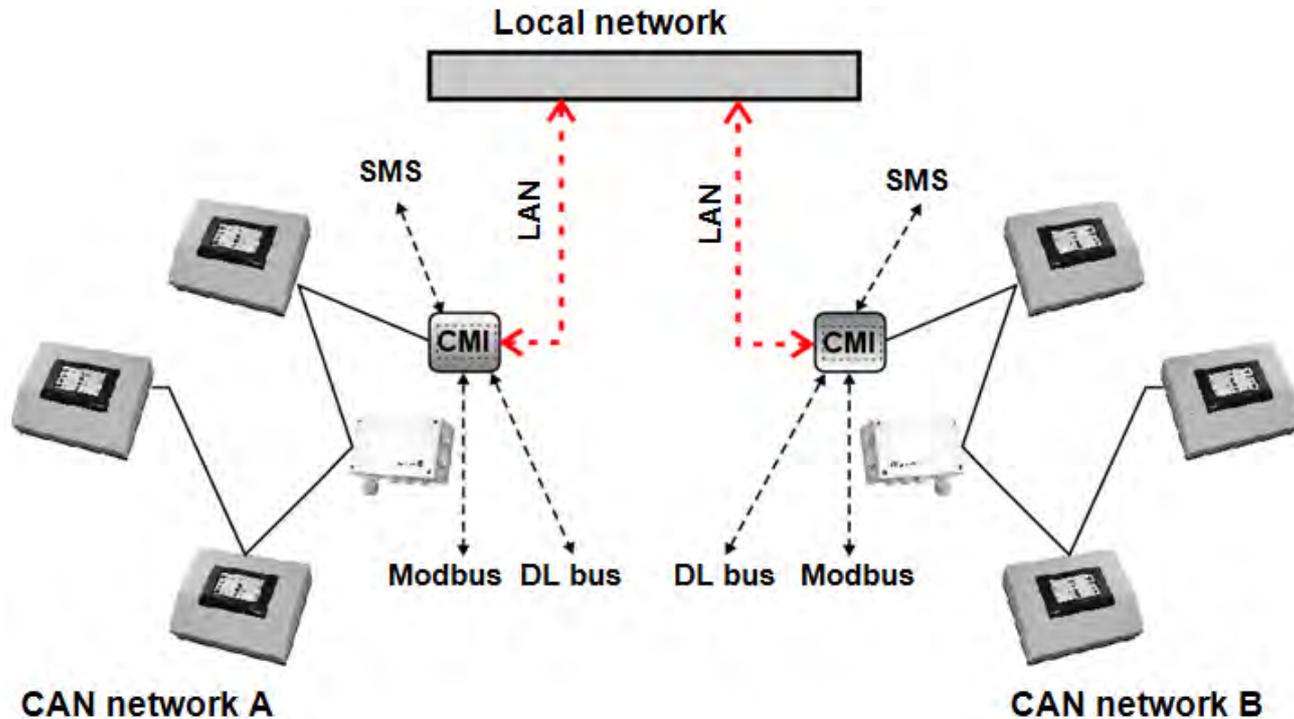
Description of the data transfer method

Using this method, it is possible to transfer the values of analogue and digital C.M.I. inputs to other C.M.I.s via Ethernet (LAN).

This means data can be exchanged between separate CAN networks.

Data transfer using Ethernet takes place via **UDP, port 5441**.

Example:



The **receiving** C.M.I. must have a **fixed** IP address. We recommend firstly installing the C.M.I. **with DHCP** and then **deactivating DHCP** mode in the Settings/Ethernet menu.

LAN settings

Host name

Host name

IP settings

DHCP

IP address ← **Fixed IP address**

If data is transmitted in **both** directions, **both** C.M.I.s must have a **fixed** IP address.

Example: a C.M.I. input is transferred to the C.M.I. via the LAN with IP address 192.168.10.253, and there it is transferred from the C.M.I. into the CAN network as CAN output 1 via CAN node 25.

Outputs

CAN bus

ANALOG

DIGITAL

Modbus

ANALOG

DIGITAL

CoE

ANALOG

1: Collector

2:

3:

4:

5:

6:

7:

8:

9:

10:

11:

12:

CoE

Designation: 1

Input: 2

3

4

IP: 5

Node number: 6

Network Output: 7

Transmission condition:

If change > 8

Blocking time (sec):

Interval (min):

Actual value: 60.1°C 9

10

1. Output designation

2. Select the **input type**: CAN bus, Modbus, Data link or SMS.

3. Select the required **input**

4. Transfer the **measured value** (currently no other entry possible)

5. Enter the **IP address** of the **receiving C.M.I.** to which the value is transmitted

6. Enter the **CAN node number**: the **receiving C.M.I.** also receives this **virtual** node number itself. This virtual node number must **not** already be assigned in the CAN network of the receiving C.M.I. This also applies to the receiving C.M.I. itself. Several virtual node numbers may be assigned for one C.M.I.

7. The transferred value receives this number for the **CAN network output**. Up to 32 analogue values and 32 digital values can be issued for each virtual node.

8. Transmission conditions: the input value is transferred to the LAN as a current value under the following conditions.

Transmission conditions for analogue CoE outputs:

If change > 3	If the current value has changed by more than 3 compared to the last transmitted value, a new transmission is made.
Blocking time 10	If the value changes by more than 1 within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).

Interval time 5	The value is transmitted every 5 minutes even if it has not changed by more than 3 since the last transmission (minimum value: 1 minute).
------------------------	---

Transmission conditions for digital CoE outputs:

If change yes/no	Transmission of the value if a status change occurs
Blocking time 10	If the value changes within 10 seconds of the last transmission, the value is still only retransmitted after 10 seconds (minimum value: 1 second).
Interval time 5	The value is transmitted every 5 minutes even if it has not changed since the last transmission (minimum value: 1 minute).

9. Current value: this value is currently being issued to the LAN from the C.M.I.

10. After completing the entry: **Save**

6. Resetting and loading of factory settings

Briefly pressing the reset key on the rear of the SCI restarts the SCI (reset).

If the reset button is pressed and released while the red LEDs are still illuminated, resets the SCI to factory settings.

Caution: Pressing the reset button until the red LEDs stop being illuminated starts a firmware update with the SCI operation system saved to the SD card. Up to boot sector 1.04, the current firmware in the "UPDATE" folder of the SD card must be called "CMI.BIN". From boot sector 1.05 onwards, it must be called "FIRMWARE.cmi". You can identify whether the boot sector is 1.05 or above by 4 red LEDs, which begin to glow faintly when the device is started.

