



CAN MONITOR



The CAN monitor is a display and operating unit for the freely programmable universal controller UVR1611 and serves simultaneously as a room sensor, the CAN-MT for monitoring room temperature, in the version CAN-MT/F it also serves as a humidity sensor.

It works using the same operating concept as the UVR1611 controller, communication takes place over a CAN bus. Consequently, the construction of a network with other CAN monitors and several UVR1611 controllers is also possible. It is possible for several CAN monitors to access one controller, or also for one CAN monitor to access several controllers within a network.

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System requirements for the UVR1611 Controller

So the CAN monitor can access the UVR1611, it is necessary that:

- the UVR1611 controller has an operating system \geq A2.00 or
- the controller has a boot sector \geq B1.02 and a bootloader to update the UVR1611 controller.

Controllers with a boot sector $<$ B1.02 must be returned to the factory for updating!

Procedure for updating a UVR1611 controller to the latest version:

- 1) Download and install the program Memory Manager \geq V2.07 from the Technische Alternative home page www.ta.co.at.
- 2) From the home page, download the bootloader firmware (BL232 version \geq 2.6 or BL-NET Version \geq 1.28) and use this to update the firmware.
- 3) Download the UVR1611 operating system (version \geq A2.21) from the home page and use to update the controller.

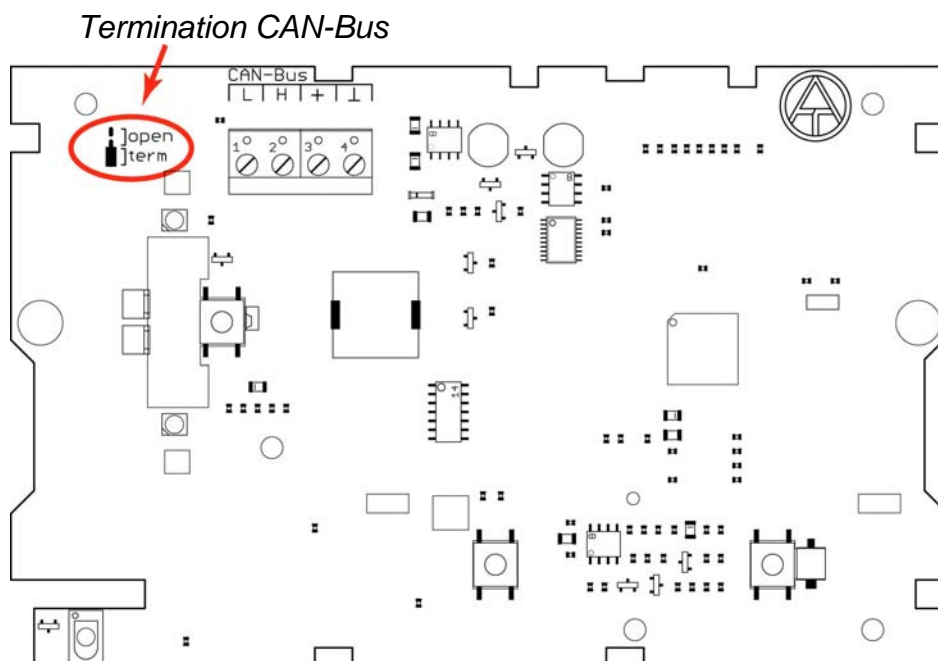
Supply capacity

No more than three devices (CAN monitor, bus-expansion, etc.) can be supplied with each controller (UVR1611).

Cable selection and network topology

The basics of bus cabling are described in detail in the UVR1611 manual, so that it is not described in detail here with the exception of the termination.

Each CAN network is to be provided with an 120 Ohm bus termination at the first and last network member (terminate using a jumper). Hence each CAN network always has two terminating resistances (each at the end). Spur lines or star-shaped CAN topologies are not permitted by the official specification!



Operation

The CAN monitor is a display and operating unit for the freely-programmable UVR1611 universal controller. Reference is made to the UVR1611 operating manual for basic operation using display, buttons and scroll-wheel.

Basic display (start page)

After connecting the CAN monitor with one or more UVR1611 units via the CAN bus, the display shows the following menu:

```
CAN MONITOR Ex.xxEN
-----
Date           time
-----
Rel. Humid.:   36.9 %    only with the CAN-MT/F
Room temp.:    20.5 °C
Out.Temp:      12.3 °C    only if the network input variable is defined
                               and by scrolling downwards:

Load information
Meas.Val.Overview
Set date/time
SERVICE                Main menu
```

Ex.xxEN - Version number of the device software.

Date/time - Shows date and time of the reference node (see menu "*User – ACCESS (user)*").

Error in the network connection:

Instead of the date/time, the following messages can be displayed:

No network Connection	There are no other nodes on the network
Searching for Reference node	No connection could be made to the reference node
Unknown Reference node	Reference node is not a Technische Alternative device
Unsuitable Reference node	Reference node is not a UVR1611

WARNING: Each network device must be allocated a different node number!

Load information - A list is displayed of all available devices (network nodes) in the network which the user is authorised to use. The enabling of individual network nodes for the user, takes place via expert access mode in the menu "*User – ACCESS (user) – Network node*". After selecting a node, the user is taken to the function overview for the corresponding device (UVR1611 or CAN-I/O module).

SELECT NETWORK NODE

Active NODES:

- 1 Info?
- 2 Info?
- 32 Info?

Measured Value Overview (Meas.Val.Overview) - A list is displayed of all available devices (network nodes) in the network which the user is authorised to use. After selecting a node, the measured values overview for the corresponding device (UVR1611 or CAN-I/O) is displayed.

By pressing the right button ("INFO") the function overview of the reference node is loaded, by pressing the left button ("MEAS. VAL."), its measured values overview. The button allocation changes, to permit navigation within the menu, to "START" (go to basic display of the CAN monitor) and "BACK" (one step back).

Set date /time - Date and time of the reference node can be changed from the CAN monitor.

Main menu Service

SERVICE

Version
User
Inputs
Network
Data Administration

MENU Version

Operat.Syst.: Version number of the device software. The latest software (higher version number) is available for download at <http://www.ta.co.at>. It can be transferred with an additional device - the bootloader - into the CAN monitor.

Boot sector: Version number of the boot area. So that the device processor can program itself with the operating system, it requires a basic program in a protected memory area - the boot sector.

MENU User

USER

OPERATING MODE:

Locked

Client

Technician

Expert ✓

and by scrolling downwards:

DISPLAY:

Contrast: 41

Brightness: 10

Illuminat.Off after:
deactivated 00 sec

Automatic switch to
start page:
deactivated 10 Min

MESSAGES:

Acoustic alert: no

Visual alert: no

ACCESS (user):

Reference nodes: 1

User area: A

Network node:

EXPERT CODE

CHANGE TO: 0 0 0 0

OPERATING MODE

- Locked:** Generally no inputs are possible (child-lock).
- Client:** Access to the measured values overview as well as the function overview for all devices which are enabled for the user.
- Technician:** Extended modification authorisations in the function overview of the network nodes. Access only possible using code number (result of 2⁶) possible.
- Expert:** Access to all devices in the network. The expert can call various menus from network nodes for display on the CAN monitor and to change the settings. The code number necessary to do this, is forwarded, only to trained personnel, by E-mail or telephone.

DISPLAY

Contrast: Adaptation of the display contrast to the lighting conditions.

Brightness: The strength of the background lighting is variable and can be switched off after an adjustable time (0 to 150 seconds), during which no operating element is pressed.

The display has background lighting which is integrated into the circuit so that it does not require any additional energy. Thus switching it off does not provide any energy saving.

Automatic switch to start page - After an adjustable time (0 to 15 minutes) during which no buttons are pressed, the CAN monitor display automatically switches from the respective display in to the start page. If setting 0 is selected, this switching back to the start page can also be deactivated.

MESSAGES

Faults in the controllers, which are enabled as network nodes for the user (see `ACCESS (user)`), can be signalled at the CAN monitor, if an appropriate configuration is set up, by an acoustic or visual warning:

!!! CAUTION !!!

Important msg. at

Node 1 ◀ Confirmation with the scroll wheel brings up the function overview of the corresponding node

WARNING: Only errors, faults and warnings are transferred to the CAN monitor. The generation of a message type message at the controller does not cause any display at the CAN monitor!

ACCESS (user)

Reference nodes: Network nodes to which the user has automatic access.

User area: Area (user A, B or C) in the reference node to which the user of the CAN monitor receives access. This is helpful, if several CAN monitors access a UVR1611, e.g.: user A can access the parameters of heating circuit 1 and undertake changes, user B can access heating circuit 2 and undertake changes. Allocation takes place through programming of the function overview in the UVR1611 itself, i.e., entries for users A, B and C can be programmed here.

Network

node: In addition to the reference node, a further 8 devices can be enabled for the user from this menu.

EXPERT CODE CHANGE TO

Change of the factory allocated code number by the expert. Without knowledge of this number, changes to basic settings as well as the transfer of function data is not possible. In normal circumstances, the CAN monitor automatically switches back to user mode two hours after the last button was pressed. If this is not desired, automatic switching back can be blocked with code number 0 0 0 0.

WARNING: Loss of a self-selected code number can only be rectified in the factory, by resetting to the factory setting - with a complete loss of function data.

MENU Inputs

This menu provides the option of correcting the measurements of the sensors integrated in the CAN monitor by a fixed value.

EINGAENGE

ROOM TEMPERATURE:

SENSOR CORR: 0.0 K

ROOM HUMIDITY:

only with the CAN-MT/F

SENSOR CORR: 0.0 %

MENU Network

NETWORK

Node No.:	50	the device has network address 50 (factory setting)
ENABLE:	ON	bus communication enabled
Autooperat.:	yes	
Status:	operat	
OUTPUT VARIABLE:		network - output variables
ANALOG:		
Transm.Conditions:		
INPUT VARIABLE:		network - input variables
ANALOG:		
Timeouts:		
Active NODES:		list of nodes active in the network
1 Info?		all nodes are listed (even those which are not enabled for the user)
2 Info?		
32 Info?		
Node No.:	Each network device must be allocated a different address (node number 1-62)!	
ENABLE:	Without network enable (ON), the device can neither send or receive messages; i.e. it does not participate in communication.	
Autooperat.:	If the network is solely comprised of devices belonging to the UVR1611-family (UVR1611, CAN-Monitor, BL-NET ...) Autooperat. must be set to "yes". If the network has a superordinate device (master or network manager), Autooperat. must be set to "no".	
Status:	With Autooperat. set to "yes", then after controller startup, the status changes automatically, according to the specified process, from <i>init</i> → <i>preop(erational)</i> → <i>operat(ional)</i> . Only then is communication possible. If there is a bus master, then it switches the nodes to <i>operational</i> .	

OUTPUT VARIABLE

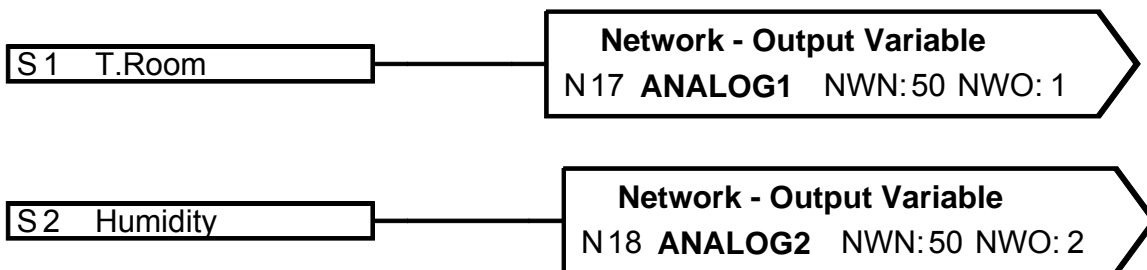
ANAL. NETW. OUTPUT

OUTPUT 1: Room temp.
21.6 °C

OUTPUT 2: Humidity only with the CAN-MT/F
44.8 %

As the CAN monitor only makes two measurements available to the network (room temperature and room humidity), the links between the measurements and the corresponding network output variables are fixed in the CAN monitor. Hence this menu has no setting options.

Measurements CAN-Monitor ⇨ Network outputs



Transmit conditions

TRANSM. NETW.OUTPUT

ANALOG OUTP.: 1..4

On Change > 30

Blocked: 10 Sec

Interval: 5 Min

On Change: > 30 - if the current value changes relative to the last transmitted value by more than 3.0, a new transmission is made (= 30, as numerical values are transmitted without the decimal point).

Blocked: 10 sec - if the value changes by more than 30 within 10 seconds of the last transfer, the value is, nevertheless, only transmitted again after 10 seconds.

Interval: 5 min - The value is transmitted every 5 minutes under all circumstances, even if it has not changed by more than 30 since the last transmission.

Input variables

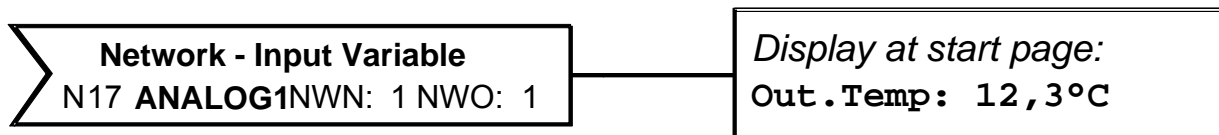
ANAL. NETW. INPUT

INPUT:

NW.Node: 1
Anal.NW.Outp. 1
Value: 123

This menu permits entry of the transmission node and its output variable, via which the value of the external temperature is transmitted. If a network node is defined, then the line "Out. temp." is displayed on the CAN monitor start page with the corresponding value for this analogue network input variable. By contrast, if the set node number equals 0, this display is not applicable.

Network inputs ⇒ CAN monitor display (start page)



The node number of the transmitter device (UVR1611) as well as its network output, via which the external temperature is transmitted, can be freely set.

Timeouts

TIMEOUTS NETW.INP.

ANALOG INPUT: 1..4
Timeout: 60 Min

Timeout - If the external temperature is not received for longer than the set time, then a timeout is generated and the error message "Timeout" is displayed on the start page instead of the external temperature value.

Active Nodes

After selecting a network node from the list "active nodes", information about the selected device is displayed.

```
INFO CAN-Node 1          - selected node number
-----
Vend.ID: 00 00 00 CB
Pr.Code: 00 00 10 0B
Rev.Nr.: 00 01 00 00
Des:      UVR1611
Load Menu
```

Vend.ID: Manufacturer identification number (CB for Technische Alternative GmbH)

Pr.Code: Product code of the selected node (here for a UVR1611)

Rev.Nr.: Revision number

Des: Node product description

These data are fixed values specified by Technische Alternative GmbH and cannot be changed.

Load menu: This is used to access the menu level of the selected network node. The CAN monitor serves as a display for this device.

MENU Data Administration

DATA ADMINISTRATION

Current Funct. Data:

TA_WERKSEINSTELLUNG

Name of the current function data in the CAN monitor

Load Factory Setting

DATA <=> BOOTLOADER:

Upload Data:

CAN MON. => BOOTLD.

Download Data:

BOOTLD. => CAN MON.

OPER.SYSTEM<=BOOTLD.:

Download Oper.System:

BOOTLD. => CAN MON.

Load Factory Setting

Calling up of the factory settings takes place as for the following commands by confirming the safety question YES / NO.

WARNING: This will delete your own function data and replace them with the factory setting.

Function data upload

The function data can be transferred via the CAN bus or the infrared interface into the bootloader to act as a data backup.

DATA SOURCE: CAN MON.

TARGET: Bootld.

Storage Point: 1

Storage location for the function data in the bootloader

UPLOAD DATA

REALLY START? no

Selecting *yes* changes the CAN monitor to transfer mode

CAN IR-Interface

Activate? yes

If the CAN monitor is ready for data transfer, this is carried out by pressing the START button on the bootloader.

Function data download

During a download, the function data stored in the bootloader are transferred to the CAN monitor and in so doing the current configuration is overwritten.

DATA SOURCE: Bootld.

Storage Point: 1 Storage location for the function data in the bootloader

TARGET: CAN MON.

DOWNLOAD DATA

REALLY START? no Selecting *yes* changes the CAN monitor to transfer mode

CAN IR-Interface

Activate? yes

If the CAN monitor is ready for data transfer, this is carried out by pressing the START button on the bootloader.

Operating System Download

Through its flash technology, the device provides the option of replacing its own operating system (device software) with a more up-to-date version (link to the download area of the address <http://www.ta.co.at>) with the aid of the bootloader.

The importing of a new operating system is only advisable, if it contains new, required functions. Updating the operating system always has an associated risk (comparable with flashing a PC bios) and in all cases requires checking of all function data, as compatibility problems are to be expected due to new function components!

As the operating system update takes a long time, it should only be carried out via the cable connection! After a failed data transfer via the infrared interface, the update can only subsequently be carried out via the cable connection.

Installing the device

Press the two left and right clamps and lift the cover. The control electronics are located in the cover.

Securely screw the casing tray to the wall using the supplied fastenings fitted through the two holes in the tray. Optimally mount with the opening arranged over a patress in the wall at approximately eye height (approx. 1.6 m).

Create the network connection, as described in the chapter "Cable selection and network topology", then reinsert the cover in the casing tray.

Maintenance

If treated and used correctly, the device will not require maintenance. To clean use only a cloth dampened with a gentle alcohol (e.g. ethyl alcohol). Do not use aggressive cleaning agents and solvents such as chlorethene or trichloroethylene.

No components relevant to long-term accuracy are subject to loading if the device is used correctly. Consequently long-term drift is extremely low. Therefore the device cannot be adjusted. Thus any compensating is not possible.

During repair, the constructive characteristics of the device must not be changed. Replacement parts must correspond to the original spare parts and must be used in accordance with the fabrication version.

Safety requirements

The device corresponds to the latest state of the art and fulfils all necessary safety regulations. It may only be used or deployed in accordance with the technical data and the safety requirements and regulations listed below. When using the device, the legal and safety regulations apposite to the particular use are also to be observed.

Safe operation is not possible if the device

- ◆ has visible signs of damage,
- ◆ is not functioning,
- ◆ has been stored for a long period under unfavourable storage conditions.

If this is the case, deactivate the device and secure against unintentional use.

