2022
PRODUCTS

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Dear customers, valued partners!

We've all made it through two trying years, with bustling business on the one hand and battling shortages of key components on the other. The result was increased prices, surcharges and some construction sites even coming to a standstill.

In these chaotic times, **we still want to offer you the highest measure of reliability**. Our i**n-house production with high manufacturing depth** was an enormous help, reducing our reliance to the minimum.

That being said, we wish you, your colleagues and your employees all the best! Let's hope the state of things relaxes sooner than later.

Best wishes in the name of the "TA" from

Ing. Kurt Fichtenbauer   DI Andreas Schneider

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For the currently valid prices, please refer to our PDF price list (www.ta.co.at).

Please mind the price groups of individual articles. Different conditions apply to price groups PG1, PG2 and PG3.

TABLE OF CONTENTS

x2-tech is an operating system developed for the UVR16x2. Having an in-house OS offers us **enormous advantages** regarding independence and flexibility in the (further) development of our devices.

The **DL bus** is a bidirectional bus system developed by us. Every DL bus system consists of a DL master (e.g., UVR16x2) and several DL slaves (e.g., different sensors).

CORA is our smart home communications protocol, available for wired or wireless transmission. **CORA is not a replacement for the CAN bus**, but an extension for our x2 series.

Standard controllers

Standard controller is what we call any device with **fixed programming**, equipped for a certain number of hydraulic systems.

Universal controllers

…are controllers, that are not limited to specific systems (heating circuit, solar panels, pools, …), but **cover a range of use cases**. But universal controllers aren't necessarily freely programmable, such as the UVR67, which offers over 800 programs.

Freely programmable

As opposed to standard controllers, freely programmable devices aren't limited to certain kinds of systems. The **programming needed for any specific case can be created** using the software TAPPS2 and the function data can be transmitted to the device.

Function data

The programming created with **TAPPS2** is saved as a *.tdw file. The data for the controller is exported from a TAPPS2 project to the *.dat file format.

Functions / function blocks

TAPPS2 has a **graphical interface for** programming, using preset function blocks. These blocks can be connected with one another or with inputs/outputs/fixed values.
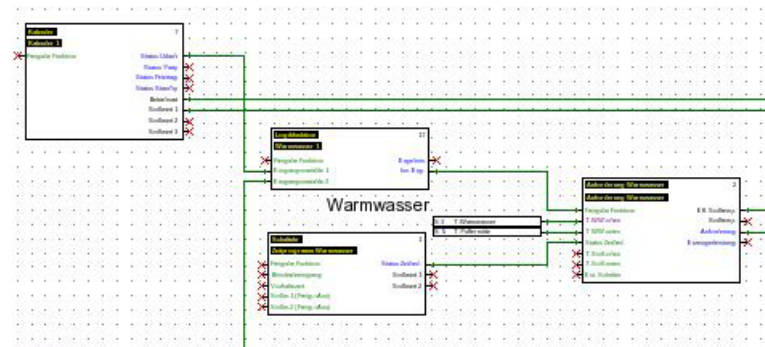
Function overview / online schematic

We use both of these terms for the "**visualisation**" of systems. The function overview is loaded into a UVR16x2 or a CAN-MTx2. The "online schematic" is created for the C.M.I. and can be accessed via browser or mobile app. Both are created using our software **TA-Designer**.

Data logging

Selected values can be saved in a defined interval and later interpreted using either our web portal or the software **Winsol**. If you'd like to use this feature, please read up on available possibilities beforehand.

STANDARD CONTROLLERS

X2 SERIES (MORE ON PAGE 9)

Simple regulation of
» Solar systems, charging pumps
» Heating of swimming pools
» DHW preparation

The UVR67 offers
» over 800 programs to choose from, featuring: heating circuit control, differential controlling, thermostats and speed regulation
» Drying of buildings
» max. 1 mixed heating circuit

Regulation of entire building's technologies
» With over 40 different function modules, a controlling strategy, fully customized to suit individual systems' needs, can be created.
» Programming is created via PC, using the program TAPPS2.
» Typical applications:
  » Heating and cooling circuits, enabling and modulation of heat generators
  » Load and energy management
  » Regulating ventilation systems and blinds

EXPANDABILITY

Not expandable
Standard controllers are functionally limited and cannot be expanded from a control aspect.

Highly expandable
» Using the CAN bus, up to 62 devices can be linked together to exchange values, statuses and more, or to modify such values..

VISUALISATION AND DATA LOGGING

Limited visualisation
Controllers without a CAN bus interface can have their values visualised in a browser or the mobile app. Remote control (like with x2 devices) is only possible for the UVR67. Data logging is possible for all standard controllers using the C.M.I.

Customizable visualisation
» Visualisations of systems, displayed directly on the controller, operating units, tablets, smartphone or on PC.
» Data logging of all controllers and DL bus devices, using the C.M.I. – or directly on the controller, if an SD card is provided

INTERFACES

No interfaces to foreign busses

Interfaces to foreign busses:
» KNX
» Modbus RTU, Modbus TCP
» M-Bus

ANS21

ANS21-L

SINGLE CIRCUIT SOLAR CONTROLLER   01/ANS21
CHARGING PUMP CONTROLLER   01/ANS21-L

The ANS21 or ANS21-L unit is a solar controller which has been kept deliberately simple when it comes to installation and operation. Both, the collector and the tank temperature, are indicated using light bars.

» Adjustable differential temperature
» Overtemperature protection for the tank or minimum threshold for boiler
» Separate display for generator and tank temperature
» Collector overtemperature switch-off
» Sensor short circuit and open circuit detection
» Switching between solar and load pump function is possible regardless of the front diagram.

INPUTS

» 2x temperature

OUTPUTS

» 1 Relais output

INTERFACES

» no interfaces

SBR22

Dimensions in mm (W x H x D):
126,8 x 76,5 x 45,5

SWIMMING POOL CONTROLLER   01/SBR22

Controller SBR22 is a differential controller for the solar charging of swimming pools. The two outputs allow controlling a changeover valve and the swimming pool pump.

» Adjustable differential temperature
» Separate display for generator and pool temperature
» Collector overtemperature switch-off
» Sensor short circuit and open circuit detection

INPUTS

» 2x temperature

OUTPUTS

» 2 Relais outputs

INTERFACES

» no interfaces

Scope of delivery	01/ANS21	01/ANS21-L	01/SBR22	
KFPT1000	1		2	Collector sensor PT1000
KEPT1000		1		Boiler sensor PT1000
BFPT1000	1	1		DHW tank sensor PT1000
TH140	1	1		Immersion sleeve 140 mm
TH60NIRO			2	Immersion sleeve nickel plated 60 mm
Power cable	1	1	1	
Install. equipment	1	1	1	

ESR21

ESR31
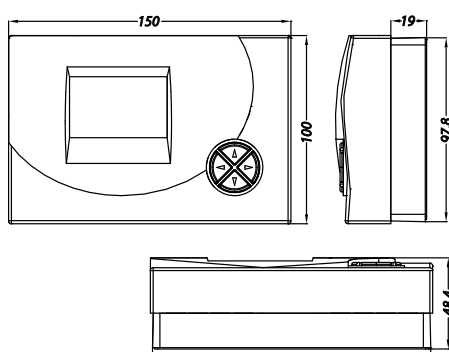
Dimensions in mm

SIMPLE SOLAR CONTROLLER
ESR WITH GRAPHICAL DISPLAY

01/ESR21
01/ESR31

The ESR21 or ESR31 unit is a **multi-purpose differential controller**. The graphical display of ESR31 simplifies program selection and shows the position of the sensors in the hydraulic diagram. Additional information can be read in via the DL bus. Thus, in parallel to the controller operation (solar system) it is also possible to calculate the yield (thermal energy).

The range of use extends from **the single circuit solar system through to sanitary water treatment** by way of pump speed control.

- » **17 different programs** can be set
- » Clear display with hydraulic diagrams (ESR31)
- » Status display for system malfunctions
- » Solar start function, frost protection function
- » Pump blocking if a collector overtemperature exists
- » System function control
- » Heat meters
- » DL bus for data evaluation via C.M.I. and for connection of external sensors
- » Speed control of high efficiency pumps via control output PWM / 0-10 V
- » Speed control of standard pumps: ESR21-D, ESR31-D

3 INPUTS	2 OUTPUTS	INTERFACES
	» 1x relay or triac output	» DL bus
	» 1x PWM / 0-10 V	

RELAY MODULE STAG

01/HIREL-STAG

Relay module to connect to a 0-10V control output for special applications (e.g. error message, burner requirement).

Scope of delivery	01/ESR21-R	01/ESR21-R3	01/ESR21-D	01/ESR21-D3	01/ESR31-R	01/ESR31-R3	01/ESR31-D	01/ESR31-D3	
KFPT1000	1	1	1	1	1	1	1	1	Collector sensor PT1000
BFPT1000	1	2	1	2	1	2	1	2	DHW tank sensor PT1000
TH140	1	2	1	2	1	2	1	2	Immersion sleeve 140 mm
Power cable	1	1	1	1	1	1	1	1	
Install. equipment	1	1	1	1	1	1	1	1	

Standard controllers

UVR67

Dimensions housing in mm
(W x H x D): 150 x 100 x 48,7

6 INPUTS

» PT1000, KTY(2kΩ), Room sensor, radiation sensor
» Input 6: additional pulse input for flow rate transducer (pulses max. 20 Hz) and wind sensor

7 OUTPUTS

» 5 relay outputs
» 2 multi-function outputs: PWM / 0-10V

INTERFACES

» CAN bus
» DL bus
» Micro SD card

ACCESSORIES

» Room sensors (page 29)
» C.M.I. (page 18)

UNIVERSAL CONTROLLER WITH 800 PROGRAMS 01/UVR67
UVR67 HEATING CONTROLLER 01/UVR67-H, 01/UVR67-HU
UVR67 FOR DRYING OF BUILDINGS 01/UVR67-GT

Universal controller with **more than 800 adjustable programs**. The UVR67 universal controller features various thermostatic, differential temperature, speed control and heating circuit control functions **for use in solar thermal and heating systems, as well as building drying**.

Functions

» 5 freely programmable time programs
» Status display for system malfunctions
» Pasteurisation function, pump anti-seizing protection
» Collector cooling function
» Collector overtemperature limitation
» Checking system functions
» 3 heat meters
» DL bus for connection of external sensors
» Datalogging via Micro SD card
» Speed control of high efficiency pumps via 2 control outputs PWM / 0-10 V
» Output 3 can be configured as potential-free

Possibilities with the CAN bus

» Datalogging with the C.M.I.
» Remote access (C.M.I., CAN-MTx2, ...)
» Custom visualisation (has to be created with our software TA-Designer)

Scope of delivery	01/UVR67	01/UVR67-3	01/UVR67-4	01/UVR67-H	01/UVR67-HU	01/UVR67-GT	
KFPT1000		1	1				Collector sensor
BFPT1000		2	3	1	3		DHW tank sensor
KEPT1000				1	1		Boiler sensor
RAS+DL				1	1		Room sensor
AUSPT				1	1		Outdoor sensor
RFS-DL						2	Humidity sensor
TH140		2	3		2		Immersion sleeve 140mm
RF				1	1		Roll spring
Power cable	1	1	1	1	1	1	
install. equipment	1	1	1	1	1	1	

Standard controllers

UVR16x2S

UVR610S

CAN-MTx2 control unit

X2 SERIES | INTRODUCTION

The x2 series gives you the freedom to fulfil any requirements of a controller.

You aren't limited to preset programs for fixed schematics, instead you can entirely define the specific programming yourself. Every **x2 universal controller** is also expandable, either with extension modules or further x2 devices via the CAN bus.

Programming

Programming of devices is done using **TAPPS2**. With more than 40 different function modules, combinable however needed, the optimal control strategy for any system can be made.

By connecting up to 128 such function modules per device, programming is almost limitless.

Programming in TAPPS2

Programming interface (software TAPPS2)

The transmission of the programming ("function data") is done via SD card or the CAN bus. Devices without an SD card slot receive programming from an operating device or controller with a display or via "C.M.I.".

CAN bus

The CAN bus connects up to 62 devices and allows for remote access to devices and CAN extension modules. Every CAN device with a display can be used to access all other devices in the bus.

Internet and LAN

The C.M.I., another CAN extension, is our ethernet port. **Accessed via browser or mobile app**, it allows for data logging, visualisation, **operations in the system or for monitoring**. Also offers Modbus TCP/IP and a JSON API.

Visualisation

Using the free PC software **TA-Designer**, visualisations can be created for the UVR16x2, touch control units and the C.M.I.

Data logging

Several choices are offered for data logging and the creation of trend curves, whereas the **C.M.I. in conjunction with Winsol** has proven to be the most popular. Online data logging using our web portal is another possibility.

UVR16x2S for for control panel
or DIN rail assembly

UVR16x2K with console for wall
mounting

There is a total of 6 available slots
for auxiliary relays or the PCB of the
wireless transmitter RCV-DL inside
the console.

FREELY PROGRAMMABLE UNIVERSAL CONTROLLER UVR16X2

for control panel / DIN rail assembly	01/UVR16X2S
with console for wall mounting	01/UVR16X2K

The UVR16x2 is **our flagship x2 device**. With 16 inputs and outputs, and a 4.3" touch display, it is ideal for a variety of control and regulation tasks in building automation or energy management. Like all x2 devices, it is expandable via the CAN bus, in case more inputs, outputs or interfaces to LAN, KNX, Modbus or M-Bus are needed.

Scope of application:
» Heating and cooling control
» Solar thermal systems
» Request, output control and cascading of heat generators
» DHW preparation
» Ventilation control
» Control of blinds and slats
» And many more...

The inputs can process different analogue digital signals. Among those are several temperature sensors (PT1000, KTY, NTC, ...), but also pulses, voltage or analogue signals like 0-10V or 4-20mA.

Several versions
The UVR16x2 comes in many versions, among those several PCB versions or one with 24V-DC power input.

16 INPUTS
» PT1000, KTY(1kΩ, 2kΩ), PT100, PT500, Ni1000TK5000, Ni1000, NTC, room sensor, radiation sensor, humidity sensor, rain sensor
» Max. pulse 10 Hz, Voltage up to 3,3V, Resistance 1-100kΩ, digital
» Inputs 7, 8: 2 x 0-10V, 1 x 4-20mA
» Inputs 15, 16: 2 x Impuls max. 20Hz

16 OUTPUTS
» 11 Relay outputs
» 5 Multi-function outputs
» optionally 0-10V, PWM, relay (with HIREL-230V, HIREL-PF or HIREL22 relay module)
» 24 V output (e.g. for actuators)

INTERFACES
» CAN bus
» CORA-DL
» DL bus
» SD card
  (UVR16x2E-NP: Micro SD card)
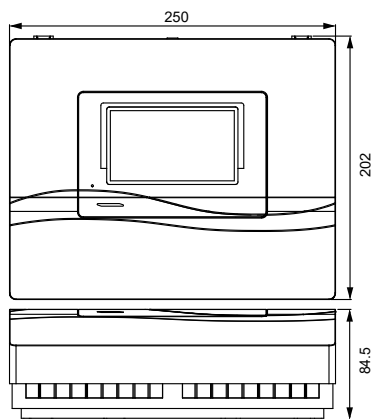
Dimensions UVR16x2K in mm
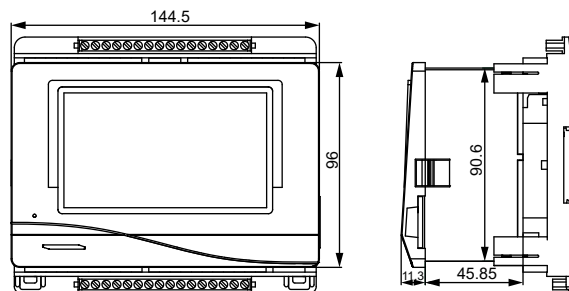
Dimensions
UVR16x2S in mm
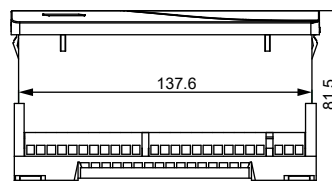
UVR16X2 WITH 24V-DC SUPPLY

for control panel / DIN rail   01/UVR16X2S-DC

with console for wall mounting   01/UVR16X2K-DC

Instead of the 24 V output, **there is an input here for a 24 V DC supply**. The original mains voltage input can accommodate any potential between 0 and 230 V AC to supply the relays.

UVR16X2 TRIAC

DIN rail   01/UVR16X2S-D

wall mounting   01/UVR16X2K-D

Versions with triac outputs, useable for e.g. speed control of older asynchronous pumps.

SENSOR PACKAGES

Prefabricated basic as well as complementary sensor packages. GP3PT corresponds to the sample program "Factory settings". GP4PT is optimized for UVR610-controllers. (Pages 14/15).

Scope of delivery	01/GP1PT	01/GP2PT	01/GP3PT	01/GP4PT	01/EP1PT	
KFPT1000	1	1	1			Collector sensor PT1000
KEPT1000	1	1	1			Boiler sensor PT1000
BFPT1000	6	5	8	3	4	DHW tank sensor PT1000
TH140	6	4	4	1	2	Immersion sleeve 140mm
TH90			2			Immersion sleeve 90 mm
RASPT		1	2	1	1	Room sensor PT1000
AUSPT		1	1	1	1	Outdoor sensor PT1000
RF		1	2	2	1	Roll spring
Power cable	1	1	1			

freely programmable controllers

UVR16x2S-DE

UVR16X2 WITH EXTERNALIZED CONTROL UNIT 01/UVR16X2S-DE

The controller sits on the DIN rail in the control panel. Operation is convenient using the control unit built into the control panel door, connected with the controller via 700 mm ribbon cable.

Circuit board UVR16x2E-DE

Control unit UVR16x2E-DE
Dimensions (W x H x D):
144,5 x 96 x 26,1 mm

INTERFACES
» Same as UVR16x2
» SD card in the control unit

Dimensions (W x H):
250 x 125 mm

UVR16X2 CIRCUIT BOARD WITH CONTROL UNIT 01/UVR16X2E-DE
OPTIONAL WITH 2 CURRENT SENSORS 01/UVR16X2E-DE-I

Like UVR16x2K, but **board version with separate control unit** for switch cabinet installation. Operating system, operation, function data and data transfer via SD card are also compatible with UVR16x2. The included 700 mm ribbon cable is provided for the connection board and control unit.

» Separate fuse for outputs 12 - 14
» 3 multi-function outputs with integrated relay
   (switchable by jumper)
» 24V power supply for **industrial sensors** and
   actuators (max. 6W)
» Connection and recognition of a safety temperature limiter
» Inputs and outputs have separate connections
» Different plug systems prevent plugging errors between mains
   and low voltage protector

Circuit board UVR16x2E-NP

INTERFACES
» Same as UVR16x2
» **Micro** SD card slot
   on processor module

UVR16X2 CIRCUIT BOARD WITH PROCESSOR MODULE

without control unit 01/UVR16X2E-NP
without control unit, with 2 current sensors 01/UVR16X2E-NP-I

Similar to the UVR16x2E-DE, with identical performance characteristics but with an **integrated processor module** without control unit. Operated from a controller with display, the CAN-MTx2 or via C.M.I. over the CAN bus.

Console UVR16x2

CONSOLE FOR WALL MOUNTING UVR16X2 `01/KONSOLE UVR16X2`

Console for wall mounting UVR16X2, comprising terminal mounting plate (relay version) and housing. Both parts can also be ordered separately.

Housing for UVR16x2 wall console

HOUSING FOR UVR16X2 CONSOLE `01/GEHAEUSE-KONSOLE UVR16X2`

Housing for UVR16x2 wall console incl. installation equipment.

Mounting plate UVR16x2

MOUNTING PLATE UVR16X2 `01/KLEMMPLATTE UVR16X2`

For installation in the wall console, only suitable for relay version.

EWS16x2

DEVELOPMENT SET UVR16X2 `01/EWS16X2`

Controller UVR16x2 with development environment SIM-BOARD16x2 for the testing of function data, simulation of 16 PT1000 sensors as well as digital signals on inputs 15 and 16 directly on the console. Rear connection option for CAN and DL bus. CAN bus cable enclosed.

To install the control unit you need:
» Wall mounting with `01/KONSOLE UVR16X2`
» Mounting on DIN rail with `01/KLEMMPLATTE UVR16X2`

SIM-BOARD16x2

SIMULATION BOARD UVR16X2 `01/SIM-BOARD16X2`

In combination with a UVR16x2 controller for simulating the generated program.

Please note: Simulation is also possible with our software TAPPS2 or x2-simulator.

freely programmable controllers

UVR610S

UVR610S-OD

Dimensions housing
(WxH): 106 x 91 mm
(6 division units)

VTGH12

SKL5X20

FREELY PROGRAMMABLE UNIVERSAL CONTROLLER UVR610S

with display	01/UVR610S
without display	01/UVR610S-OD

The UVR610S is a universal controller with 6 inputs and 10 outputs, ideal for tasks in **building automation and energy management**. A 24V output and/or the M-Bus interface can be activated by jumpers. The UVR610S is designed for DIN rail mounting and is suitable for 45 mm standard installation bezel.

The UVR610S without a display is particularly **suitable as an extension and offers four 0-10V inputs instead of two**. The function data are transferred via the CAN bus.

UVR610S MODBUS WITH DISPLAY   01/UVR610S-MODB
UVR610S MODBUS WITHOUT DISPLAY   01/UVR610S-OD-MODB

Same functionality as the UVR610S. Instead of the switchable M-Bus interface, this device has a **Modbus RTU** interface.

UVR610S WITH 24V-DC SUPPLY   01/UVR610S-DC

Instead of the 24 V output, there is an **input here for a 24 V DC supply**. The original mains voltage input can accommodate any potential between 0 and 230 V AC to supply the relays.

DISTRIBUTOR ENCLOSURE   SELL OFF   01/VTGH12

Distributor enclosure (IP 55) for **13 division units** with integral top-hat rail and transparent hinged cover can accommodate e.g. a CAN-EZ3, a UVR610S and an MCB.

FUSE CLAMP   01/SKL5X20

Clamp with an exchangeable fuse, measuring 5x20mm, fast-acting, 6,3A. For optional external fuse protection of a UVR610.

UVR610K

FREELY PROGRAMMABLE UNIVERSAL CONTROLLER UVR610K

| with display | 01/UVR610K |
| without display | 01/UVR610K-OD |

The UVR610K is a universal controller with 6 inputs and 10 outputs, ideal for tasks in **building automation and energy management**. A 24V output and/or the M-Bus interface can be activated by jumpers. The UVR610K comes in a console housing for wall mounting.

UVR610K-OD

The UVR610K without a display is particularly **suitable as an extension** and is the successor to the RSM610, whose functional data can be used for the UVR610. The function data are transferred via the CAN bus.

Valid for UVR610S and UVR610K

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6 INPUTS

» PT1000, KTY(1kΩ, 2kΩ), PT100, PT500, Ni1000TK5000, Ni1000, NTC, room sensor, radiation sensor, humidity sensor, rain sensor;

» Max Pulse 10 Hz

» Voltage up to 3,3V; Resistance 1-100kΩ, digital

» Inputs 5, 6: 0-10V

UVR610S-OD(-MODB)

» Inputs 3, 4, 5, 6: 0-10V

10 OUTPUTS

» 6 relay outputs, one of which can be potential-free changeover contact

» 4 multi-function outputs, optionally 0-10V, PWM, relay (e.g. with HIREL22)

INTERFACES

» CAN bus, CORA-DL, DL bus

» Micro SD card

» M-Bus

UVR610S-OD(-MODB)
UVR610K-OD

» no Micro SD card

UVR610S-OD-MODB

» Modbus instead of M-Bus

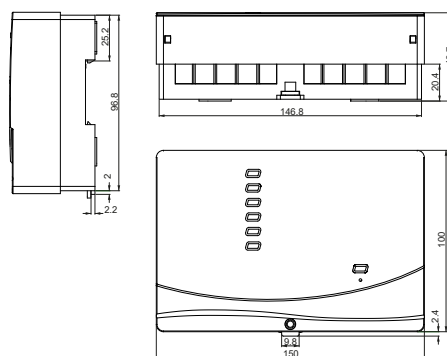---

SK-RSM

SK-RSM CONSOLE

01/SK-RSM

Console with 230 V and CAN bus connections for transfer of function data to UVR610K-OD (or RSM610).

Dimensions in mm
(UVR610K and UVR610K-OD)

CAN-MTx2-WT

Dimensions (W x H x D):

144,5 x 96 x 26,1 mm

INTERFACES

» CAN bus

» CORA-F (wireless)

» SD card

Special version for

Cabinet door

| TOUCH MONITOR X2 WHITE 4,3" | 01/CAN-MTX2-WT |
| TOUCH MONITOR X2 BLACK 4,3" | 01/CAN-MTX2-BK |

The **CAN-MTx2** with its **4.3" touchscreen** serves as an operating unit for **CAN bus networks**, though it can also work with its own function data, created using TAPPS2. The program **TA-Designer** can be used to create a customized graphical user interface, where individual pages can be locked for certain users. Additionally, the CAN-MTx2 allows for **full access to other controllers in the network**. The monitor features internal sensory equipment for room temperature and humidity.

| TOUCH MONITOR X2 WHITE 4,3" CO2 | 01/CAN-MTX2-CO2-WT |
| TOUCH MONITOR X2 BLACK 4,3" CO2 | 01/CAN-MTX2-CO2-BK |

CAN-MTx2 with integral CO2 sensor to capture the indoor air quality.

| TOUCH MONITOR X2 WHITE, CABINET DOOR | 01/CAN-MTX2-ST-WT |
| TOUCH MONITOR X2 BLACK, CABINET DOOR | 01/CAN-MTX2-ST-BK |

Special version of CAN-MTx2 for mounting in cabinet door.

CAN-TOUCH-BK

Dimensions (W x H x D):

233 x 190 x 37 mm

INTERFACES

» CAN bus

» SD card

CT-TFS

| TOUCH MONITOR BLACK 9,7" | 01/CAN-TOUCH-BK |
| TOUCH MONITOR SILVER 9,7" | 01/CAN-TOUCH-SI |

The **CAN-TOUCH** is a **9.7" LCD touch screen**. The software TA-Designer **can be used to create a personalized graphical interface**, transferrable to the device via SD card. Individual pages can be protected with PIN codes.

| TOUCH MONITOR BLACK 9,7" INCL. CT-TFS | 01/CAN-TOUCH/TFS-BK |
| TOUCH MONITOR SILVER 9,7" INCL. CT-TFS | 01/CAN-TOUCH/TFS-SI |

CAN-TOUCH incl. sensor module 01/CT-TFS for temperature and humidity.

| SENSOR MODULE TEMPERATURE & HUMIDITY | 01/CT-TFS |

Sensor module for measuring room temperature, room humidity and the dew point for retrospective fitting to the CAN-Touch.

CAN-BC2

Dimensions (W x H x D):
126,8 x 76,5 x 45,5 mm

MD-KNX

CAN BUS CONVERTER   01/CAN-BC2

The CAN bus converter makes additional interfaces available for all CAN bus devices. It is programmed using TAPPS2 software. The CAN-BC2 can be operated via x2 controllers with display, via CAN-MTx2 or via the C.M.I. interface.

INTERFACES

» 2 isolated CAN bus interfaces
» 1 DL bus interface for reading in DL sensors
» 1 M-Bus interface for reading out four M-Bus meters, each with 32 values

FURTHER INTERFACES

» are available via the additional modules MD-KNX and MD-MODB
» For each bus converter max. one additional module possible.

KNX MODULE   01/MD-KNX

Connection to KNX with the option of issuing 64 values to the KNX and reading in 64 values from the KNX.

MODBUS/M-BUS MODULE   01/MD-MODB

» One **Modbus RTU interface** which can be configured either as a master or slave, with the option of issuing **64 values to the Modbus and reading in 64 values from the Modbus**
» One M-Bus interface for reading out further **four M-Bus meters, each with 32 values**

CAN-I/O45

Dimensions (W x H x D):
126,8 x 76,5 x 45,5 mm

CAN EXTENSION MODULE   01/CAN-I/O45

The CAN-I/O module provides **additional inputs and outputs** for the freely programmable universal controllers UVR16x2 and UVR610. This extension can process up to 44 functions, has no clock function and no own power supply.

4 INPUTS

» PT1000, KTY(1kΩ, 2kΩ), PT100, PT500, Ni1000TK5000, Ni1000, NTC, room sensor, radiation sensor, humidity sensor, rain sensor
» Max. pulse 10 Hz; Voltage up to 3,3V; Resistance 1-100kΩ, digital
» Inputs 3, 4: 0-10V

5 OUTPUTS

» 3 Relay outputs
» 2 multi-function outputs optionally 0-10V, PWM, relay (e.g. with HIREL22, see page 28)

INTERFACES

» CAN bus, DL bus

C.M.I.

INTERFACES

» CAN bus, 2x data link inputs
» Modbus TCP/IP
» Ethernet (RJ45)
» SD card
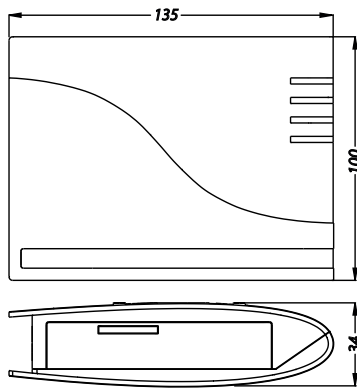
Dimensions in mm

CONTROL AND MONITORING INTERFACE C.M.I.	01/CMI
C.M.I. INCL. POWER UNIT	01/CMI-NT
C.M.I. INCL. POWER UNIT AND GSM MODULE	01/CMI-GSM

The C.M.I. is an **interface** for convenient **system monitoring**, remotecontrol, **data logging and visualisation** of all controllers with DL or CAN bus.

» Remote maintenance of CAN bus devices
» Function data administration for CAN bus devices
» Operating system management for CAN bus devices
» System visualisation via PC, smart phone or tablet
» Revision of parameters of CAN bus devices
» Data logging via CAN bus or DL bus
» Event-controlled notification via e-mail
» DIN rail or wall mount
» Slot for GSM module MDC-GSM
» Option to connect to Modbus TCP

Operation / Access
» Directly via LAN network
» and/or via our free web portal https://cmi.ta.co.at
» C.M.I. App for Google Android™ and Apple iOS™

| GSM MODULE | 01/MDC-GSM |
| GSM AERIAL EXTENSION | 10/GSM-VERLÄNGERUNG |

Extension module for the C.M.I. to receive notifications, send orders or inquire values via SMS.

| POWER SUPPLY 12V | 10/NETZTEIL-12V |

The power supply unit is required if additional CAN bus modules are connected to one controller along with the C.M.I., the C.M.I. is operated exclusively via DL bus or a GSM module MDC-GSM is used.

| WIRELESS ROUTER | 01/WNA |

This router is an expansion to the C.M.I.. It comes with an individual power supply unit and can forward the Ethernet connection or an Internet connection to the C.M.I. via Wi-fi or UMTS stick (not part of the delivery scope).

WNA

Remote access to all x2 devices in the CAN bus network

Devices can be operated using the web portal over at https://cmi.ta.co.at as though you're right in front of the device. Updating firmware, changing programming or parameters are possible without having to drive out to the customer's house.

The interface of the controller through the web portal is identical to the device itself.

WINSOL

Visualisations for customers, e.g. on their smartphone
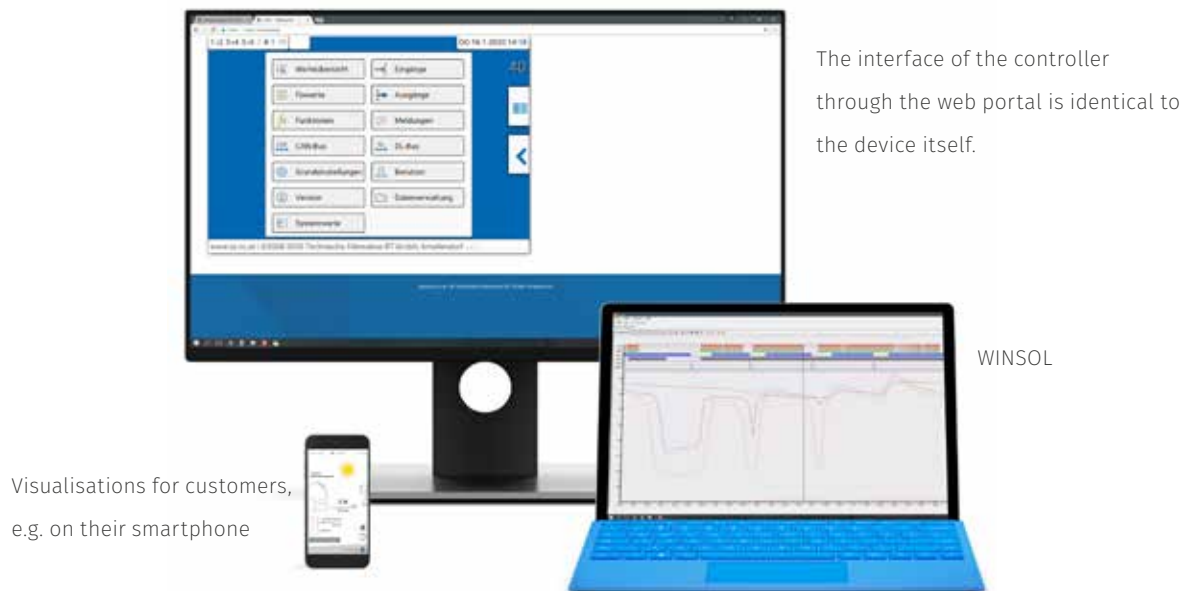
Visualisations for customers / end users

End users want clearly arranged and intuitive interfaces without access to the Technician or Expert level menus.

The customizable interface can be accessed via browser or app for Android and iOS.

Data logging

The C.M.I. can log all available values to its SD card as needed. Our free software tool WINSOL reads data and depicts it trend curves and diagrams, which can be filtered and even exported.

Connectivity

Thanks to Modbus TCP, the C.M.I. offers a popular interface to foreign devices. Inverted rectifiers, power storages or heat pumps – many manufacturers count on this reliable bus system.

Connect the C.M.I. with your LAN Network and optionally to the Internet respectively our web portal at https://cmi.ta.co.at

Notifications

Receive notifications according to defined events (values going beyond critical thresholds, certain switching conditions, …) via e-mail (several recipients possible) or SMS (with GSM-module on page 18).

CAN-EZ3

INPUTS

» 4 analogue inputs
» 2 slots for direct connection of FTS-sensors or 2 impulse inputs

OUTPUTS

» 1 S0 pulse

INTERFACES

» CORA-F (wireless)
» CORA-DL (wired)
» CAN bus, DL bus
» Micro SD card
» Modbus RTU

Dimensions housing (W x H):
106 x 91 mm (6 division units)

Current sensor KCT

CAN ENERGY METER 3   01/CAN-EZ3-OZ

The CAN energy meter **records electrical and thermal energy flows**. It is programmed using TAPPS2 software.

» Mounting kit in control cabinet for 45 mm standard installation bezel
» External clip-on current sensors (not included) allow quick change of the measured conductor. Voltage measurement inputs are integrated for all three phases. Connecting the first phase only is sufficient for a less precise measurement.

Possibilities

» Comprehensive energy management to optimise on-site consumption from a photovoltaic system
» Load management (e.g. to reduce load peaks in a commercial setting)
» Integration of various consumers such as immersion heaters, infrared panels, air condition and ventilation units

Scope of delivery

» **without current sensors**
» 1 Micro SD card
» Antenna

CURRENT SENSORS FOR CAN-EZ3, 50A   01/STROMSENSOR50
CURRENT SENSORS FOR CAN-EZ3, 100A   01/STROMSENSOR100
CURRENT SENSORS FOR CAN-EZ3, 400A   01/STROMSENSOR400

This pack consists of **three hinged ferrite sensors** for currents of up to 50, 100 or 400 Ampere AC. Current spikes of twice the nominal current are permissible for a few seconds, but can't be interpreted by the energy meter's measuring unit.

SENSOR PACKAGE FOR HEAT METERING WITH FTS4-50   01/EZ4-50
SENSOR PACKAGE FOR HEAT METERING WITH FTS5-85   01/EZ5-85

Consisting of a **flow rate sensor FTS** (4-50 l/min or 5-85 l/min) with integral temperature sensor **and a fast immersion sensor** (MSP60) including sealing gland. For professional applications, we recommend the use of our ball valve (page 38). Only suitable for use with CAN-EZ3 (and its predecessor CAN-EZ2).

EHS-R

CORA CORA

total length of immersion
heater: 410 mm
screw thread: 1 1/2"
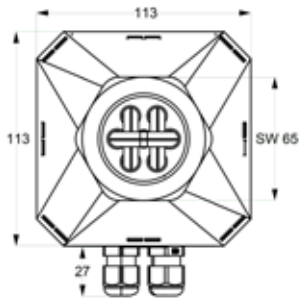
IMMERSION HEATER - 3000 W VARIABLE CONTROL   01/EHS-R

The immersion heater EHS-R features **stepless output control from 50 to 3000 W**. The energy meter CAN-EZ3 can serve as a controller for it (CORA wireless or wired), as can any other controller with CORA-DL. Output control via PWM is also available. **Thanks to the Teflon coating**, it is suitable for enameled DHW cylinders and buffer tanks.

INPUTS
» 2 sensor inputs PT1000
» 1 PWM input 0-100% if not CORA controlled

INTERFACES
» CORA-F (wireless)
» CORA-DL (wired)

EHS

CORA CORA
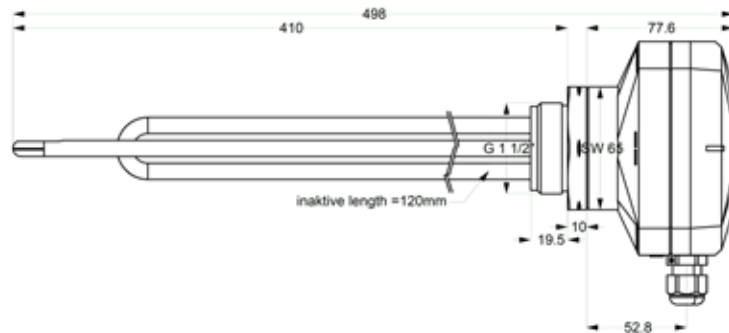
IMMERSION HEATER - 3000 W   01/EHS

The EHS immersion heater **switches the heating output in 750 W stages**. In conjunction with the controlled EHS-R immersion heater or ATON, it is possible to arrange cascades economically. In the process, the EHS-R always performs the fine adjustment, which enables variable control of the output to be achieved. **Thanks to the Teflon coating**, it is suitable for enameled DHW cylinders and buffer tanks.

INPUTS
» 2 sensor inputs PT1000
» 1 PWM input (in steps of 25%) if not CORA controlled

INTERFACES
» CORA-F (wireless)
» CORA-DL (wired)

Both immersion heaters received **approval for drinking water installations** and are **suitable for installation in enameled DHW cylinders**, thanks to their new Teflon coating (starting serial No. EHS-001146 and EHSR-002956). We do not recommend the usage in stainless steel cylinders.

ATON

POWER TO HEAT

CAN-EZ3A

EHS-R

INTERFACES CAN-EZ3A

» CAN bus, DL bus

» CORA-F (wireless)

» CORA-DL (wired)

» Micro SD card

INPUTS (EHS-R)

» 2 sensor inputs PT1000

» 1 PWM input 0-100% if not
   CORA controlled

INTERFACES (EHS-R)

» CORA-F (wireless)

» CORA-DL (wired)

SCOPE OF DELIVERY (ATON)

» Immersion heater EHS-R

» CAN-EZ3A

» 1 antenna (cable length: 3 meters)

» 3 hinged current sensors 50A

» 1 temperature sensor PT1000

ATON   01/ATON

ATON is a **set for usage of excess PV energy**. The immersion heater features **stepless control from 50 W to 3 kW**, useful for DHW preparation or to support heating.

The set also features an energy meter that detects if and how much excess power is available and tells the immersion heater **how much power it should use**. Communication via CORA (wired or wireless).

Properties

» Programmed and coupled ex works

» Suitable **for enamelled DHW or buffer cylinders**

» **Expandable** for CAN bus (controller, input/output expansi-
   on, C.M.I. for remote access and visualisation) and DL bus (e.g.,
   output controller)

» **Freely programmable** (using free software TAPPS2)

» **Wireless range** of ~1km in the open / through 2 reinforced
   steel floors or walls

» TAB compliant

» **Expandable** up to 12 immersion heaters

Functionalities

» Adjustable (de)activation threshold (factory settings: 200 W)

» Adjustable forced operation at certain times, independent of
   excess power (**minimum temperatures** for DHW)

» **Data logging** to micro-SD card (not included) or via C.M.I. (CAN
   bus extension module)

» **Visualisation** for browser or mobile app available for C.M.I.
   (CAN bus extension module)

The intelligent ATON immersion heater has a sinusoiadl power intake, which helps prevent phase shifts and grid feedback to comply with the TAB standard many grid operators employ.

ATON+

POWER TO HEAT

CAN-EZ3

EHS-R

ATON+ **NEW** 01/ATON+

ATON+ comes with the same functionalities as the standard version of "ATON", although its energy meter features an **additional Modbus RTU interface, S0 pulse output** and four sensory inputs.

This **enables communication with foreign devices** (e.g., power inverter) without additional modules, as long as the CAN-EZ3 is **programmed accordingly**, using our programming software TAPPS2.

Example: dynamic output control
Certain grid operators limit the amount of power that can be fed into their grids. This maximum amount can be a hard limit set in the power inverter, or it can also be a soft limit, set **dynamically by an intelligent controller**, under consideration of own consumption.

The CAN-EZ3 energy meter can cover the **dynamic power control of compatible solar inverters** without additional hardware.

INPUTS CAN-EZ3
» 4 analogue inputs
» 2 slots for direct connection of FTS-sensors or 2 impulse inputs

OUTPUTS CAN-EZ3
» 1 S0-impulses

INTERFACES CAN-EZ3
» CORA-F (wireless)
» CORA-DL (wired)
» CAN bus, DL bus
» Micro SD card
» Modbus RTU

SCOPE OF DELIVERY (ATON+)
» Immersion heater EHS-R
» CAN-EZ3
» 1 antenna (cable length: 3 meters)
» 3 hinged current sensors 50A
» 1 temperature sensor PT1000
» Micro SD card

Set "ATON"

Energy management

LST2x2D-DL

Dimensions (W x H x D):
126,8 x 76,5 x 45,5 mm

DIMMABLE POWER CONTROLLER - 2X 400 W   01/LST2X2D-DL

The energy to be controlled can be specified separately from 0 to 100 % at 1 % intervals for each channel via the DL bus from an overriding controller. DL busload: 10% (12V supply voltage necessary)

Application areas

» Infrared panels (e.g. in a bathroom or sauna area)
» Heating elements (immersion heater, electric space heating)
» Blowers/fans (single phase asynchronous capacitor motors)
» Energy and load management in conjunction with CAN-EZ3 or ATON

LST3x13-DL

Dimensions (W x H x D):
126,8 x 76,5 x 45,5 mm

POWER CONTROLLER - 3X 3000 W   01/LST3X13-DL

All three channels can be switched separately or together via the DL bus. Unlike a standard switching element (contactor), the LST3x13 contains **special technology which is very quiet and durable**. DL busload: 10% (12V supply voltage necessary)

Application areas

» Energy and load management in conjunction with CAN-EZ3 and ATON
» Heating elements (immersion heater, electric space heating)
» Three heating assemblies for a sauna heater (max. 9 kW)

LST6x13-DL

Dimensions housing (W x H):
106 x 91 mm (6 division units)

POWER CONTROLLER - 6X 3000 W   01/LST6X13-DL

Power controller for **switching of up to 6 consumers** with max 3 kW AC each. Outputs 4 through 6 have **a shared soft start functionality** of up to 5 seconds. This can be used, for example, when softly starting three-phase asynchronous motors (pumps, ventilators) with up to 1.5 kW. DL busload: 10% (12V supply voltage necessary)

Application areas

» Energy and load management

CAN-RP

Dimensions housing (W x H x D):

126,8 x 76,5 x 45,5 mm

INTERFACES

» CAN bus

CAN REPEATER   01/CAN-RP

With the CAN repeater, branch cables are also possible in the serial CAN bus topology, whereby the CAN-RP does not have to be positioned at the end (see graphic). The CAN-3 terminal is electrically isolated from CAN-1 and CAN-2. Ensure that the devices are terminated correctly. A total of 62 subscribers are possible. Isolation: 3 kV
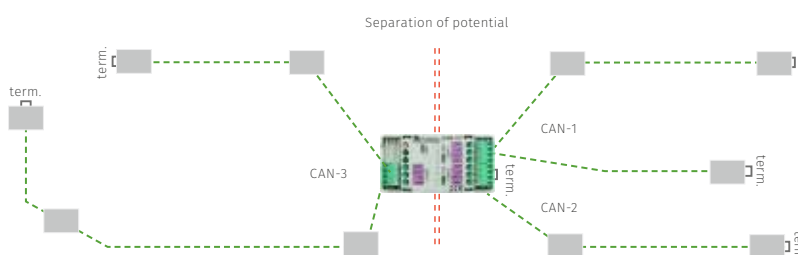
CAN BUS CONNECTOR, BASIC SET   01/CBV-GP
CAN BUS CONNECTOR, EXTENSION SET   01/CBV-EP

CBV-GP

The CAN bus connector easily **connects two CAN bus devices mounted in a switch cabinet** (UVR610, CAN-EZ3) via the included ribbon cable. Available as basic set including 2 connectors and extension set with 1 connector. Ribbon cable length: ca. 123 mm

CAN-UES2

CAN-UES

SURGE PROTECTION FOR CAN BUS   01/CAN-UES
SURGE PROTECTION FOR CAN BUS WITH HOUSING   01/CAN-UES2

Sturdy **surge protection for CAN bus** with two protection levels. Generally it can be used on every other CAN node. CAN-UES is suitable especially for direct installation in the mounting base of the UVR16x2 and the C.M.I. The CAN-UES2 can be mounted on a DIN rail.

LDIM5-DL

5-CHANNEL LED-DIMMER   01/LDIM5-DL

Brightness control of LED strips (common anode) from a power supply unit with a maximum channel current of 3.5 A. The total current must not exceed 12 A. **With five channels** for RGB, warm white and cool white.

Data transfer via the DL bus can take between 1 and 5 seconds, depending on the number of additional bus slaves. The module is therefore more suitable for slow lighting/colour effects than for normal lighting control. DL bus load: 10% (**12-24V supply voltage necessary**, depending on the LED strips)

SMS14-U

STEPPER MOTOR CONTROL

for unipolar expansion valve motors	01/SMS14-U
for bipolar expansion valve motors	01/SMS14-B

For controlling electronic (expansion) valves such as those used in air conditioning systems and heat pumps. Compatible with unipolar and bipolar motors with 500 or 1000 steps.

Control takes place using PWM via one of our controllers, as does the 12 V supply. As a safety device, three supercapacitors (5 F/5 V) can be connected to guarantee that the valve will close if there is a power failure.

PFSC

POTENTIAL-FREE SIGNAL CONVERTER   01/PFSC

The PFSC is used **for electrically isolated control of third-party devices**. A PWM signal is optically isolated and passed on both as a PWM signal and as a 0-10 V signal. The internal electronics of some modern boilers cause retroactive signal interference on 0-10 V inputs for burner demand and output modulation. The PFSC negates such interferences.

1 INPUT

» 1x PWM

2 OUTPUTS

» 1x PWM

» 1x 0-10V

UMV4-DL · DL⁵

Dimensions housing (W x H x D):
126,8 x 76,5 x 45,5 mm
for wall mounting or DIN rail

UNIVERSAL MEASURING AMPLIFIER · 01/UMV4-DL

For **measuring DC voltages and thermocouples**. Depending on the input, the UMV4-DL measures thermocouples or voltages from 30 mV to 30 V and translates them into a digital value between 0 and 30000. The maximum tolerance is one percent. DL bus load: 25 %

4 ANALOGUE INPUTS

» 0-30 mV, 0-3 V, 0-30 V
» 0-30 or 0-300 mV resp. thermocouples (Resolution x10 oder x100)

ACCESSORIES

» Thermocouple (page 32)

TDI5-DL · DL⁵

DL-EXTENSION FOR 5 INPUTS · 01/TDI5-DL

The module processes **PT1000 temperature values and digital signals**, and outputs them to corresponding indices on the DL bus. Due to the low transfer rates, the DL bus is not suitable for switching light. DL bus load: 30 %

AI5-DL · DL⁵

DL-EXTENSION FOR 5 ANALOGUE INPUTS · 01/AI5-DL

The module **enables an additional 5 analogue inputs** (0-10V) for devices with x2 technology. DL bus load: 11 %

AO4-DL · DL⁵

DL-EXTENSION FOR 4 ANALOGUE OUTPUTS · 01/AO4-DL

The module enables **4 analogue outputs for devices with x2 technology**. Communication with the controller takes place via the DL bus. Selecting an index allows you to choose 0-10 V or PWM mode for each individual output. DL bus load: 5 % (12V supply voltage necessary)

ACON34

ANALOGUE SIGNAL CONVERTER 01/ACON34

This device is **suitable for converting signals between UVR controllers and third party devices or industrial sensors**. Signal conversion from 0-10 V => 0-20 mA and from 0-10 V => 0-24 V, two adjustable amplifiers with voltage output: 0-10 V or 0-20 mA signal with amplification of 1-5 and damping 1-5. PWM signals can also be converted into analogue values thanks to input filters.

APC

ANALOGUE-PWM-CONVERTER NEW 01/APC

The APC **converts 0-10V control signals into PWM signals** (PWM1 = 100-0%). Suitable if, for example, a 0-10 V pump is to be replaced by a PWM pump and the existing controller cannot output a PWM signal. Supply with 8-28 V DC or 230 V AC.

IK22

Dimensions housing (W x H x D):
80 x 40,5 x 22,5 mm
for wall mounting or DIN rail

PULSE CONVERTER 01/IK22

The IK22 converter converts and **splits pulses from third party devices** and sensors with an adjustable division rate of between 0.1 and 1023. A signal input captures the pulses from a potential-free contact or open collector output (NPN transistor). A second input captures the 100 Hz half waves from 230 V~ signals. One sensor input in the controller is sufficient for the signal transfer and supply. Usable as AC/DC detector.

RELAY MODULE 230V
01/HIREL-230V

Relay module 230V with current distributors for expansion of the UVR16x2K to include **two 230 V fused relay outputs,** mounted inside the casing.

RELAY MOD. POTENTIAL-FREE
01/HIREL-PF

Relay module for expansion of the UVR16x2 with **2 potential-free relay outputs**, mounted on the mounting plate.

RELAY MODULE 22
01/HIREL22

Expansion of the UVR16x2, RSM610 and CAN-I/O45 universal controllers to include **2 potential-free relay outputs**.

RASPT

Dimensions (W x H x D):

81,5 x 81,5 x 18 mm

ROOM SENSOR PT1000   01/RASPT
ROOM SENSOR KTY   01/RASKTY

The room sensor **provides the possibility of changing the measured room temperature** in heating mode by approximately +/- 4K and select one of the individual operating modes (normal, lowered or automatic mode or frost protection).

» Permissible temperature range: 0°C to 40°C

RAS+DL

DL⁵

Dimensions (W x H x D):

81,5 x 81,5 x 18 mm

ROOM SENSOR WITH REMOTE DISPLAY, WHITE   01/RAS+DL
ROOM SENSOR WITH REMOTE DISPLAY, BLACK   01/RAS+DL-BK

The RAS+DL transfers the value of the room temperature, the room humidity, the dew point, absolute humidity, the operating mode and the correction value to the nominal value (+/- 4K) via the DL bus. It also functions as a remote display for the sensor values, output statuses, heat meters and network inputs received from the controller via the DL bus.

» DL bus load without 12V supply: 20 %
» DL bus load with 12V supply: 10%
» **Sensor for air pressure**: cancelled due to change of components

AUSPT

Dimensions (W x H x D):

53,6 x 41 x 23,2 mm

OUTDOOR TEMPERATURE SENSOR PT1000   01/AUSPT
OUTDOOR TEMPERATURE SENSOR KTY   01/AUSKTY

Air temperature sensor with integrated overvoltage protection, as external sensor for heating controllers.

» Permissible temperature range -30°C to 50°C.

Wireless system
868 MHz

Using the 868 MHz wireless system up to 8 wireless sensors can be coupled to the wireless receiver RCV-DL. In the open air the range extends to 1000 m while in buildings at least 2 steel-reinforced concrete ceilings/walls can be transmitted through. **Not compatible with CORA.**

RAS-F
Dimensions (W x H x D):
81,5 x 81,5 x 18 mm

WIRELESS ROOM SENSOR   01/RAS-F
WIRELESS ROOM SENSOR WITH HUMIDITY SENSOR   01/RAS-F/F

The wireless room sensor transmits the following data: **room temperature, desired deviation** (+/- 5K from the rotary wheel position) plus the operating mode (normal, lowering or automatic mode or frost protection function).

By use of jumpers, the room sensor is converted to a pure remote control with a fixed value of 20 °C instead of the room temperature. A CR2032 battery supplies the sensor.

Wireless room sensor with humidity sensor
The RAS-F/F transmits additionally measurement of the room humidity and calculation of the dew point.

GBS-F

Dimensions (W x H x D):
98 x 59 x 36 mm

WIRELESS RADIATION SENSOR   01/GBS-F
GBS-F WITH COLLECTOR SENSOR PT1000   01/GBS-F+KFPT

For **measuring the solar radiation [W/m²]**. The sensor simplifies system startup or makes possible more precise „switching up" in the priority consumers with multi-circuit solar systems. The sensor is supplied from a small solar panel.

Set with collector sensor
A PT1000 collector sensor (included in set GBS-F+KFPT) can be connected to the GBS-F, the measurement value of which is likewise transmitted to the receiver.

RCV-DL

Dimensions (W x H x D):
98 x 59 x 36 mm

WIRELESS RECEIVER   01/RCV-DL

The receiver forwards the signal via the DL bus to the controller. During startup, the transmitters to the receiver are allocated unique DL bus addresses.

» DL bus load: 43 %

PT1000 sensors are our standard sensors (Precision class B)

KFPT1000

COLLECTOR SENSOR, 2M CABLE	01/KFPT1000
COLLECTOR SENSOR, 4M CABLE	01/KFPT1000 4M
KFPT1000 WITH SENSOR CAP 4X35MM	01/KFPT1000 4X35MM

Temperature resistant sensor with PT1000 characteristics, with 2 or 4 m silicone cable for collector, supplied with connection box and overvoltage protection.

» Permissible temperature range -50°C to 240°C
  KFPT1000 4x35mm: -20°C to 240 °C
» Briefly loadable up to 260 °C
» Temperature resistant cable
» Sensor cap 6 x 27 mm

KFPT10004x35mm

| BOILER SENSOR | 01/KEPT1000 |

Temperature resistant sensor with 2 m silicone cable for the boiler area with PT1000 characteristics, permissible temperature range 0°C to 160°C (briefly loadable up to 180°C).

» Temperature resistant cable
» Sensor cap 6 x 20 mm

KEPT1000

| DHW TANK SENSOR , SENSOR CAP 6X20 MM | 01/BFPT1000 |

Temperature sensor with 2 m cable for the tank area with PT1000 characteristics, permissible temperature range 0°C to 90°C, briefly loadable up to 100°C.

| DHW TANK SENSOR, SENSOR CAP 4X35 MM | 10/BFPT1000 4X35MM |

Temperature sensor with 2 m cable for the tank area with PT1000 characteristics, permissible temperature range -20°C to 240°C.

BFPT1000

| DHW TANK SENSOR, SENSOR CAP 5X60 MM | 01/BFPT1000 5X60MM |

Temperature sensor with 2 m cable for the tank area with PT1000 characteristics, permissible temperature range 0°C to 90°C. Suitable for installation in ball valve.

SENSOR PACKAGES

For information on available sensor packages, see page 11.

Temperature °C	R (PT1000) Ω	R (KTY81) Ω
-20	922	1367
-10	961	1495
0	1000	1630
10	1039	1772
20	1078	1922
25	1097	2000
40	1155	2245
50	1194	2417
60	1232	2597
80	1309	2980
100	1385	3392

KFKTY

COLLECTOR SENSOR   01/KFKTY

- » **KTY** Semiconductor characteristic 2000 Ω / 25°C
- » Permissible temperature range -20 °C to 160 °C
- » Briefly up to 180 °C
- » Sensor cap 6 x 20 mm

KEKTY

BOILER SENSOR   01/KEKTY

- » **KTY** Semiconductor characteristic 2000 Ω / 25°C
- » Permissible temperature range 0 °C to 160 °C
- » Briefly up to 180 °C
- » Sensor cap 6 x 20 mm

BFKTY

DHW TANK SENSOR   01/BFKTY

- » KTY Semiconductor characteristic 2000 Ω / 25°C
- » Permissible temperature range 0 °C to 90 °C
- » Briefly up to 100 °C
- » Sensor cap 6 x 20 mm

THEL

THERMOCOUPLE TYPE K-GLS, 1630 MM   10/THEL–1,63M
THERMOCOUPLE TYPE K-GLS, 2500 MM   10/THEL–2,50M

For measuring high temperatures up to 600 °C in conjunction with the universal measuring amplifier UMV4-DL (page 27). These sensors are available in lengths of 1630 mm and 2500 mm.

RF

ROLL SPRING   10/RF

Simple fitting of the sensor as a clip-on sensor, large range of use (15-45 mm pipe diameter)

Sensors & Accessories

MOUNTING KIT ULTRA-FAST SENSOR PT1000

Sensor cap 5 x 60 mm, Precision class B	01/MSP60
Sensor cap 5 x 130 mm, Precision class B	01/MSP130

Brass mounting kit with ultra-fast sensor for sanitary **hot water preparation** MSP130 or **heat metering** MSP60. Cable length: 2 m; Fitting: 1/2";

MSP130

MOUNTING KIT VENTILATION WITH SENSOR PT1000

Sensor cap 5 x 60 mm, Precision class B	01/MSL60
Sensor cap 5 x 130 mm, Precision class B	01/MSL130

Mounting kit with **temperature sensor** with stainless steel fitting for **installation in the air ducts**.

MSL130

LEVEL MEASURING UNIT   01/NME5-DL
LEVEL PROBES (SET OF 3)   01/NS3

This unit measures **how full cylinders, cisterns, etc. are** using the current flow between an emitter and up to 5 probes, which are electrically isolated from the controller. The standard pack contains three probes for detecting two fill levels. DL bus load: 5% (12V supply voltage necessary). A total of **five fill levels can be detected** with the supplementary set of 3 probes.

NME5-DL

NS3

SENSOR MODULE FOR GRUNDFOS DIRECT SENSORS   01/GDS-DL

With this extension module, up to **two Grundfos Direct Sensors can be detected** and transferred to the controller via the DL bus. DL bus load: 10%

GDS-DL

CURRENT SENSOR   01/IS-DL

With this sensor, the **true effective current (RMS) can be measured for any consumer** up to 16 A. The resolution is 10 mA and a pulse load of up to 100 A (e.g. starting current) is permissible. DL bus load: 19 %

IS-DL

RFS-DL

Dimensions (W x H x D):

53,6 x 41 x 23,2 mm

RFSE-DL

GBS01

RES01

WIS01

| HUMIDITY SENSOR | 01/RFS-DL |
| HUMIDITY SENSOR WITH EXTERNAL SENSOR | 01/RFSE-DL |

The RFS-DL was developed for control tasks in the air conditioning sector and **measures relative and absolute humidity, temperature and dew point temperature**. The RFSE-DL has an external humidity sensor sitting on an 65 mm extension of the circuit board. Suitable for installation (for example) through a sauna's roof. Instructions on prolonging the extension can be found in the manual.

» Permissible temperature range -10°C to 50°C
» DL bus load: 8 %

RADIATION SENSOR   01/GBS01

GBS01 was developed for **measurement of the solar radiation [W/m2]** when used in conjunction with our controllers. Using this sensor system startup is simplified or a more accurate "Switch-up" to the priority consumer is possible when used with multi-circuit solar systems. If two sensors are used it is possible to configure a collector tracking system. Its measurement accuracy is +/- 10 %. Consequently it can also be used for pure measurement purposes.

RAIN SENSOR   01/RES01

Using he outside circuit board, the humidity is detected via the resistance value. The sensor is suitable for our controllers and extensions as well as for other (see the manual). RES01 was developed **for weather-guided control tasks** (e.g. opening and closing of winter garden windows).

WIND SENSOR   01/WIS01

The wind sensor WIS01 is suitable for **measurement of wind velocity up to 140 km/h** with a maximum error of 5 % in conjunction with our controllers.

» Signal: pulse output of 1 Hz per 20 km/h
» Mounting diameter 30 mm
» Warning: without integrated heater, therefore only has limited suitability for winter measurements

Sensors & Accessories

DPS23-DL

DL⁵

SCOPE OF DELIVERY

» DPS23-DL in universal housing

» 1 Pneumatic tube 4x0,75mm
  length: 2 meters

» 1/8" tube fitting

DIFFERENTIAL PRESSURE SENSOR

+/- 2,5 mbar	01/DPS23-2MB-DL
+/- 10 mbar	01/DPS23-10MB-DL
+100 / -10 mbar	01/DPS23-100MB-DL
+1 / -0,1 bar	01/DPS23-1B-DL
+10 / -1 bar	01/DPS23-10B-DL

The differential pressure sensor has two ports: one **for non-corrosive liquids** (+ port, positive pressure) and the other **for gases** (- port, negative pressure). In addition, three inputs are available for PT1000 sensors or digital on/off signals. DL bus load: 39% (15 %, if inputs S1-S3 are not used)

ADAPTER, ACCESSORIES FOR DPS23-DL

Adapter 3/8" brass	13/FA3/8"MS
Adapter 1/2" brass	13/FA1/2"MS
Adapter 3/4" brass	13/FA3/4"MS
Adapter conical, stainless steel	13/FA8MM-KONISCH-NIRO

Adapter with external thread for connection to the 1/8" tube fitting of the DPS23-DL.

PRS0-6DL

DL⁵

PRESSURE SENSOR DL   01/PRS0-6DL

Electronic pressure sensor for system monitoring.

» **Measurement of system pressure between 0 and 6 bar**

» Maximum permissible pressure (burst pressure) 12 bar

» Measurement principle insensitive to medium properties

» Temperature range +2° to +90°C

» Connection thread G 3/8"

» With adapter board for direct connection to the DL bus

» DL bus load: 13 %

PRS0-6

PRESSURE SENSOR FOR FTS-DL   01/PRS0-6

With 0.7 m special **cable to connect to the adapter electronics** of a volume flow sensor **of the FTS series**. The measured value is transmitted to the control with the FTS signals. Additional DL bus load: 5 %

Sensors & Accessories

FTS-DL

CORA DL⁵

VOLUME FLOW SENSOR

Measurement range 2 to 32 l/min	01/FTS2-32DL
Measurement range 4 to 50 l/min	01/FTS4-50DL
Measurement range 5 to 85 l/min	01/FTS5-85DL
Measurement range 5 to 85 l/min	01/FTS5-85DL-1"
Measurement range 9 to 150 l/min	01/FTS9-150DL
Measurement range 14 to 240 l/min	01/FTS14-240DL

The measurement principle of the FTS electronic volume flow sensor is based on Karman vortex streets. An obstructing body projecting into the flow generates eddies. These are detected by a piezoelectric paddle and evaluated by the integrated electronics. A microprocessor converts the analogue measurement values into a serial digital signal suitable for the DL bus.

CONNECTION THREAD

» 01/FTS2-32DL	1/2"
» 01/FTS4-50DL	3/4"
» 01/FTS5-85DL	3/4"
» 01/FTS5-85DL-1"	1"
» 01/FTS9-150DL	1 1/4"
» 01/FTS14-240DL	1 1/2"

» **Measurement of flow rates**
» Measurement of **media temperature** (PT1000 sensor)
» Connection option for an additional PT1000 sensor
» Connection option for a pressure sensor PRS0-6
» No moving parts in the flow channel
» **Freely selectable fitting position**
» Measurement principle insensitive to contamination and medium properties
» Drinking water approvals: KTW and DVGW process sheet W270, WRAS
» **FTS14-240DL**: only suitable for controllers with x2 technology
» DL bus load: 25 %

OVERALL LENGTH

» 01/FTS2-32DL	118 mm
» 01/FTS4-50DL	130 mm
» 01/FTS5-85DL	151 mm
» 01/FTS5-85DL-1"	151 mm
» 01/FTS9-150DL	120 mm
» 01/FTS14-240DL	134 mm

Pressure loss as a function of flow

Pressure loss for FTS14-240DL can be calculated (see manual)

FTS2-32DL (DN10): 2-32 l/min
FTS4-50DL (DN15): 4-50 l/min
FTS5-85DL (DN20): 5-85 l/min
FTS9-150DL(DN25):9-150 l/min

Sensors & Accessories
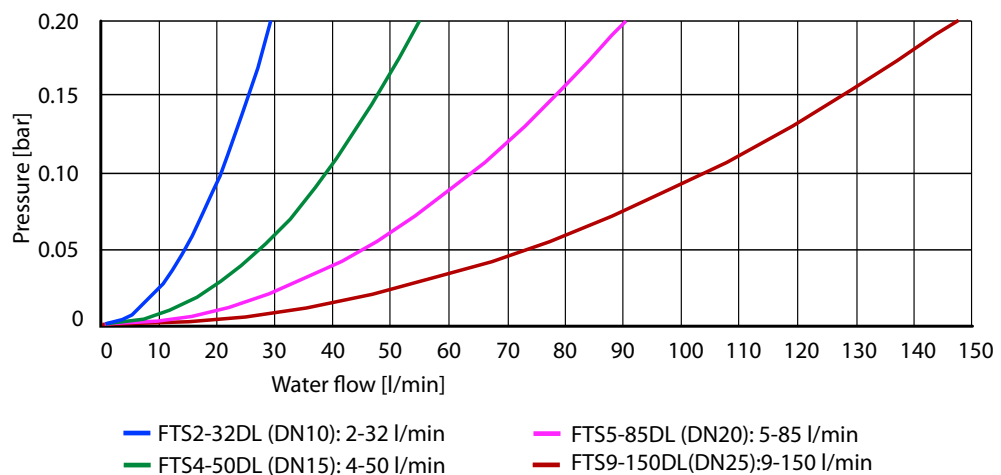
SET FOR HEAT METERING, 1"   01/WMZ-SET-1"
SET FOR HEAT METERING, 3/4"   01/WMZ-SET-3/4"

Set for Heat metering

This set consists of an FTS-DL, two ball valves and a fast-acting temperature sensor PT1000 for mounting inside a ball valve.

FLOW SWITCH AC   01/STS02AC-1"
FLOW SWITCH AC   01/STS02AC-3/4"
FLOW SWITCH DC   01/STS01DC-1"
FLOW SWITCH DC   01/STS01DC-3/4"

STS02AC   STS01DC

Switches from a volume flow of approx. 1.5 litre/min. Installation: vertical with flow from bottom to top. External thread and conical face union.

» Permissible temperature range 0°C to +80 °C.
» **Warning**: Not suitable for use with asynchronous pumps or in combination with after-running or time relays of any type or model.
» STS02AC: AC version only for direct switching of high-efficieny pumps connected to the 230 V AC mains up to 1.5 A
» STS01DC: DC version as a signal generator at the usual controller inputs up to 30 V DC/AC max. 10mA

FLOW RATE PULSE GENERATOR 0,3 TO 40 L/MIN   01/VIG0,3-40
FLOW RATE PULSE GENERATOR 0,5 TO 65 L/MIN   01/VIG0,5-65
FLOW RATE PULSE GENERATOR 0,3 TO 160 L/MIN   01/VIG0,3-160

VIG

Impeller meter for precise measurement of the volume flow. Temperature range up to 90 °C; Impulsausgang potentialfrei - Pulse output potential-free: max. load 10 mA; Measurement: 0.5 litres/pulse (VIG0,3-160: 1 litre/pulse);

UNIVERSAL 3-WAY VALVE   01/UDV-3/4"

Ball valve 3/4" up to 100°C with T-bore and valve setting display. All materials in the hydraulic area have drinking water approval. But it is not DVGW certified as a unit. Internal coding and random positioning of the motor allows free selection of the hydraulic paths (left-right, straight-left, straight-right).

UDV-3/4"

LAMBDA-DL

Dimensions housing (B x H x T):
126,8 x 76,5 x 45,5 mm

LAMBDA PROBE   01/LAMBDA-DL

The lambda probe is used **to control the residual quantity of oxygen in boilers**. For this we use a professional probe of the kind often installed in biomass boilers. DL bus load: 10%

» Sensor heating consumes just 8 W
» can be switched via DL bus
» the switching power supply unit has
   a standby consumption of just 0.2 W
» Additional input for thermocouple type K up to 1200 °C
   (thermocouple is not included)
» can be used as flue gas sensor (see manual)

KH 3/4"

BALL VALVE 1"   01/KH-1"
BALL VALVE 3/4"   01/KH-3/4"

The ball valve has a M10 x 1 fitting opposite the lever for **insertion of the temperature sensor** 01/BFPT1000 5x60MM for a heat meter arrangement. The ball also has a hole at that location. This places the sensor in the flow channel at the centre of the ball. When the valve is shut off, the sensor is sealed off as well, allowing it to be removed easily (e.g. for calibration).

Immersion sleeves

IMMERSION SLEEVES   SEE PRICE LIST FOR ARTICLE NUMBERS

Precisely manufactured brass ensures effective heat transfer to the sensor. 6 mm internal diameter, 1/2" external thread, 22 mm AF, internal thread PG7 for the also supplied strain relief device.

All versions (length, material) with article numbers in the price list, further lengths on request.

THV (set of 5)

EXTENSION FOR IMMERSION SLEEVES, 80MM (SET OF 5)   01/THV

Brass extension for sensor wells, for easier and more precise installation of the temperature sensors in cylinders where the insulation is thicker than the connectors are long.

Sensors & Accessories

FRISTAR3

Dimensions (W x H x D):
366 x 573 x 160 mm

FRISTAR3WP

Dimensions (W x H x D):
366 x 810 x 160 mm

FRESH WATER STATION 3   01/FRISTAR3
FRESH WATER STATION 3 FOR HEAT PUMPS   01/FRISTAR3WP

Optimal matching of the control behaviour to the high efficiency pump, the valve and the heat exchanger guarantees **perfect stabilisation of the outlet temperature regardless of flow changes.** Uniform and interchangeable G3/4" connections reduce the assembly effort.

A heat exchanger with twice the heated length has been integrated **for systems with low flow temperatures. The FRISTAR3WP** therefore achieves the **specified draw-off rate of 30 litres/minute** at half the temperature differential between the cylinder flow and DHW outlet (compared to FRISTAR3).

» Easy operation and installation
» No unwanted circulations possible
» LED status indicators
» Integral heat and water meter
» Data output via DL bus
» Connection for circulation pump in pulse mode
» High efficiency pump
» Stainless steel plate heat exchanger, copper soldered
» Interchangeable connections (left/right)
» 4 stopcocks
» Cascading of several modules possible
» Draw performance:
  FRISTAR3: .... max. 30 l/min (65 °C / 45 °C)
  FRISTAR3WP: .... max. 30 l/min (55 °C / 45 °C)

Both verisons are delivered with a preinstalled insulation cover, ready to be installed.

VMS

PRE-MIXING SET   01/VMS

» Setting range: 30 °C to 70 °C
» Must be used if the tank is operated with a temperature 70 °C

Seminars for technicians

We offer multi-day seminars for technicians, in which we teach the **basics for beginners** but also **enhance skills of advanced users**. Using practical examples, programming and visualisation are taught. **Seminars offered in German only.**
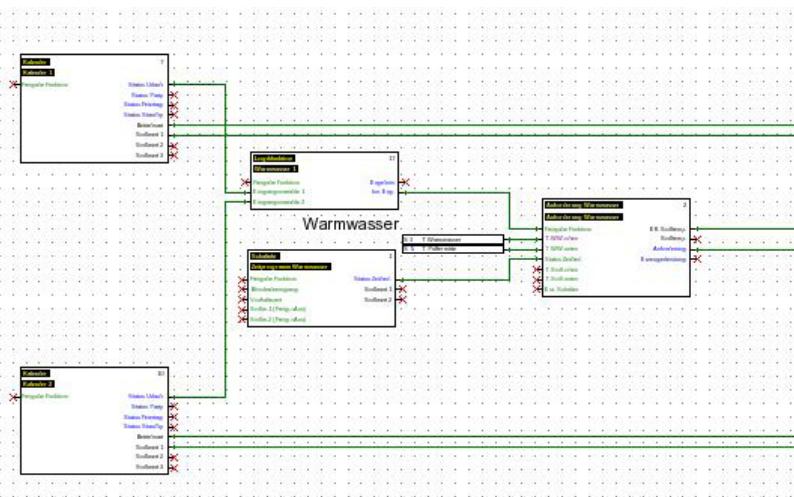
www.ta.co.at/seminare/uebersicht/

Tech support

Our **experienced technicians** are available for technical questions regarding our products.

Business hours are from Mon to Thu, 7am to 3pm and Fri, 7am to 1pm.
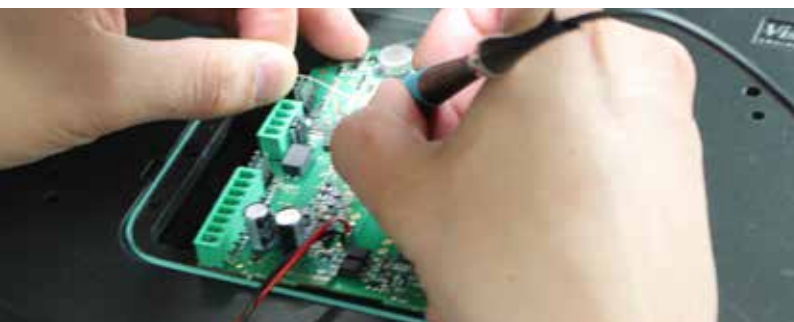
https://www.ta.co.at/support/

Programming service for related industries

Our support department offers the individual programming of x2 devices, if needed.

Prerequisites: full schematic of the system, devices bought from us and customer must be from related industries.

https://www.ta.co.at/programmier-service/

In-house repair departement

We offer affordable flat rates for the repairs of each of our products to ensure economically sensible repairs.

https://www.ta.co.at/reparatur/

If the device is outside the two-year warranty period or damage has been caused through incorrect handling (voltage surge or similar), the costs will be charged according to the price overview below.

You will be notified if repair is no longer possible. If the fault description is not sufficient, there is a charge of €30 for the extra administrative and technical work involved, irrespective of the warranty period. Expressly, we shall not bear labour costs associated with replacing the goods or expenses to determine the defect.

Repair with replacement device

A replacement device must generally be arranged with a member of the support team of Technische Alternative RT GmbH and is a voluntary service on our part. The faulty device must be returned in its entirety to us within one month of receipt of the replacement device, along with the enclosed delivery note and replacement notification form. Furthermore, by requesting a replacement device, the customer accepts the following conditions:

» A handling fee of €45 (€65 for a UVR1611 with a serial number < 96269) will be charged to replace any device that is outside its warranty period

» It is not possible to replace a UVR1611 with a serial number below 50000.
» No handling fee will be charged for devices within the warranty period. Exceptions are devices damaged through incorrect handling.
» A fixed repair fee may also be incurred.
» If it is no longer possible or economically worthwhile to repair the device, the price of the replacement device will be charged.

Unfounded complaint

If, after inspection, no defect in the device is found (operating error, instruction manual not followed), the device shall be returned against payment of an inspection charge of €30.

Packing and shipping costs

We do not charge any shipping costs for shipments within the EU. For non-EU countries, the actual costs will be invoiced. Unpaid postage back to us will subsequently be charged to the customer.

Data backup

We assume no liability for data loss.

Device	Repair flat rate (incl. software update)			Update (Hard- and/or Software)	
	35 Euro	45 Euro	65 Euro	30 Euro	65 Euro
UVR1611		x		x	
UVR1611 serial < 50.000			x		x
UVR16x2, UVR610, CAN-EZ3		x		x	
other x2 devices	x			x	
C.M.I.	x			x	
UVR64 / UVR65 / UVR67		x		x	
UVR61 / UVR63	x			x	
ESR21 / ESR31	x			x	
ANS21	x			x	
other devices	x			x	
Devices older 10 years			x		
FRISTAR, EHS, EHS-R	Price on request				

The supplies, services and offers of Technische Alternative RT GmbH, hereinafter called TA, are subject to these terms and conditions. These terms and conditions apply to the whole of Europe and are based on a recommendation of the Association of the Austrian Electrical and Electronics Industries.

1. GENERAL

These terms and conditions form an integral part of any offer and associated legal transaction with TA. Deviating agreements, especially contradicting verbal agreements are only legally valid if they are confirmed by TA in writing. Conditions of the customer which are contrary to these terms and conditions or deviate from them are not recognized by TA. Technical documents as well as samples, catalogues, brochures, images, etc., remain the intellectual property of TA at all times. Any use, reproduction, distribution, publication or presentation requires the express agreement of TA.

2. CONCLUSION OF THE CONTRACT

A contract offer or an order of the customer requires an order confirmation by TA. If the order confirmation forwarded by TA is not contradicted by the customer immediately upon receipt, then the legal transaction is concluded through implicit acceptance. Offers are valid for 1 month from date of issue or until the expiration date stated in the offer.

3. PRICES

Prices are ex works and for domestic deliveries excluding any statutory sales taxes (VAT). Deliveries within the EU internal market will only be exempt from VAT for orders where the valid sales tax identification number (VAT registration number) of the recipient is specified. Our terms of delivery and payment apply. The prices within a list are valid until a new pricelist is published. Errors excepted. When shipping to a third party address (e.g. end customer), TA applies a handling fee of €10.

4. DELIVERIES AND SERVICES

Delivery is at the cost and risk of the customer. Partial deliveries are possible. Upon transfer of the goods to the carrier, the risk of damage and loss – even when delivered "free to destination" or "freight prepaid" – is transferred to the customer. The place of performance for delivery and payment is TA's registered office. TA is free to choose the type of dispatch of the goods and the means of transport. The delivery address is generally the customer's address. Delivery periods are subject to TA's suppliers making correct and timely delivery. If a fixed delivery date has not

been expressly agreed, the delivery periods are always non-binding. Unless otherwise agreed, the specified delivery dates are given ex place of dispatch (ex works). Force majeure and other such events which are unforeseeable by TA or over which TA does not have any influence, such as labour disputes, sovereign action, traffic disruption, disruption of energy supplies and the like, and traffic accidents for which TA or its suppliers are not responsible, exempt TA, for the duration of the impact, from the duty to deliver, even if they involve the suppliers or their sub-suppliers; however in any case only insofar as TA proves to the customer that these events are the cause of the impairment of performance. If, due to the aforementioned events, delivery is impossible, TA's duty of delivery also lapses subject to the same conditions. Replacement of goods is generally only possible within 14 days from the date of delivery, provided the goods remain in their original packaging (undamaged seal), unused and the return does not incur any costs for TA.

5. TRANSPORT DAMAGE

TA goods are packed in accordance with industry practice. Transport losses caused by force majeure or other risks excluded from the liability insurance of the carrier shall be borne by the customer. In general, the goods will only be insured by written request and at the cost of the customer against damage or loss during transport.

6. SHIPPING COSTS

Deliveries in Austria and Germany are free of charge from a net invoice amount of € 300, below this amount, in Austria a shipping charge of € 5 applies and in Germany € 10. In the rest of the internal EU market and in third countries, we deliver EXW Amaliendorf. The INCO-TERMS in force on the date of conclusion of the contract apply.

7. CLAIMS AND WARRANTY

The recipient of the goods is obliged to immediately inspect them upon delivery and to report in writing any detected defect to TA without delay. TA must be notified of hidden and thus not immediately identifiable defects in writing no later than seven days after delivery. If the above terms and conditions for reporting claims or transport damage are not adhered to, loss of warranty applies to the customer, provided that the transaction concerned is not a consumer transaction. If a defect becomes apparent at a later date, but before expiry of the statutory or agreed warranty period, the customer must report it immediately in writing to TA. In the event that timely notification does not occur, the goods are classed as

approved, provided that the transaction concerned is not a consumer transaction. Within the scope of product liability, TA is not liable for damage due to incorrect installation that is not in line with the operating and installation instructions, incorrect commissioning or storage, as well as mechanical factors. TA accepts no liability for consequential losses. The fulfilment of the warranty claim is, at the discretion of TA, either by repair or replacement of the defective goods, unless a repair or replacement is impossible. Replaced parts and products become our property. Labour costs associated with the replacement to rectify the defect are accepted by TA subject to the following rules up to a maximum of the value of a replacement delivery: if a TA product is suspected of having a material defect, it must be demonstrated that the matter has been raised with our support team. Only standard professional rates for statutory normal working time will be accepted. In the event of excessive and repeated trips, TA reserves the right to appoint a trusted service provider to perform troubleshooting and replacement.

8. RETURN OF GOODS

When returning faulty goods, please note the "Repair and service conditions". Please ensure that sufficient postage is paid for returns. Unpaid postage will subsequently be charged to the customer. A return of supplied, defect-free goods is only possible in exceptional cases and only after prior written agreement has been given. Furthermore, a credit note is only possible if the goods are unused and in their original packaging, the latest engineering standards are met, we do not incur any costs for the return shipment and our invoice number is stated. Binding information about acceptance of returned goods can only be given following an assessment at our factory. A credit note will be issued for returned and accepted articles, from which 15 % of the list price (at least €5 per device) will be deducted. Special designs or custom orders cannot be returned.

9. TERMS OF PAYMENT

Unless otherwise agreed, all invoices must be prepaid. Bank transfers must be free of charge. Payments with debt-discharging effect can only be made to the account given in the order confirmation and invoice. An indicated VAT amount of the total price shall be paid in full according to the invoice. Incoming payments shall be credited to the oldest demand. In the event that the due date for payment is exceeded, late interest of 12 % shall be charged by TA.

10. RETENTION OF TITLE

All delivered, installed or otherwise transferred goods remain the property of TA until complete payment of the purchase price. For running accounts, the retention of property acts as security for all open balance demands.

11. PLACE OF PERFORMANCE JURISDICTION

The place of performance for both contracting parties is TA's registered office. The contracting parties agree on Austrian domestic jurisdiction. For all legal disputes arising between the contracting parties, the court of law responsible from a professional and geographical viewpoint, for TA's registered office is agreed upon, provided the transaction concerned is not a consumer transaction.

12. APPLICABLE LAW

Austrian law applies. The applicability of the UN Convention on Contracts for the International Sale of Goods (CISG) is explicitly excluded. The contract language is German.

13. DATA STORAGE

The customer agrees that TA shall save their personal data within an IT system insofar as necessary for the purposes of business and in conformance with data protection legislation. The customer is obliged to inform TA of changes to their personal or business addresses insofar as the legal transaction is not fully completed by both parties. In the event of failure to do so, declarations shall be considered delivered if they are sent to the last known address.

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support@ta.co.at

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| Fr | 7 am - 13 pm |

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order@ta.co.at

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This catalogue presents our product portfolio as of 1 March 2022. Our products are subject to constant technical progress and further development. We therefore reserve the right to make changes or discontinue products without separate notification. Typesetting and printing errors reserved.

The currently valid price list can be found on our website or is available on request.

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AUSTRIA