INTELLIGENT
BUILDING
TECHNOLOGY

Werteübersicht
Eingänge
Fixwerte
Funktionen
Meldungen

UVR610s

PRODUCTS

TECHNISCHE
ALTERNATIVE

The Technische Alternative was founded in 1989, here in Amaliendorf, Lower Austria. To remain relevant on the market for so long as such a small company, certain unique features are needed.

Clever product development alongside a coherent range of products is just one of many such aspects. Others are reliability, stability, and steadfastness.

These values will continue to live on in us every day.

We develop and produce high quality, universally usable products, that reliably work for a long time. Our tech support and RMA departments are unique and remain a significant part of our strategy.

Here's to a mutually successful 2026!

On behalf of the whole team
The managers of the Technische Alternative RT GmbH

Dipl.-Ing. Andreas Schneider   Jürgen Prazak

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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.

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.

2 INPUTS

» 2x temperature

1 OUTPUT

» 1 Relais output

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

2 INPUTS

» 2x temperature

2 OUTPUTS

» 2 Relais outputs

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	

ESR32

3 INPUTS

2 OUTPUTS
» 1x Relais
» 1x PWM / 0-10 V

SCHNITTSTELLEN
» DL bus

SIMPLE SOLAR CONTROLLER 32   01/ESR32

The ESR32 is our rework of the ESR solar controllers built on a future proof basis. **The ESR32 is a versatile differential controller.** Additional information can be transferred via DL bus. Thus, in parallel to the controller operation (solar system) it is also possible to calculate the yield (thermal energy).

» **10 different programs** available
» Status display for system malfunctions
» Solar start function, frost protection
» Pump blockage during excess solar collector temperatures
» System status control functions
» Heat meter
» Speed control of high-efficiency pumps
» DL bus for connection of sensors and data evaluation
   using our CMI

Dimensions in mm
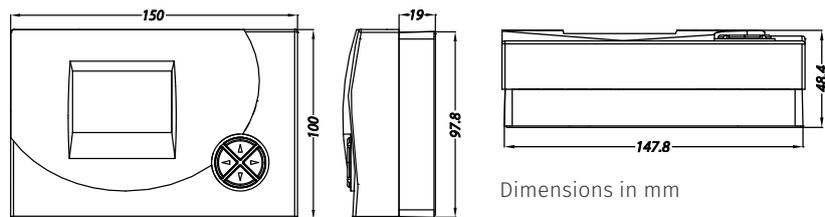
Scope of delivery	01/ESR32	01/ESR32-3	
KFPT1000	1	1	Collector sensor PT1000
BFPT1000	1	2	DHW tank sensor PT1000
TH140	1	2	Immersion sleeve 140 mm
Power cable	1	1	

Sensors compatible with ESR32

A variety of sensors are available for the ESR32. Besides the regular PT1000 and KTY temperature sensors, a VIG, flow switch, radiation sensor, and wind sensor can be used.

Even more possibilities come through the DL bus, to measure humidity, pressure, or differential pressure. For heat metering, our flow meters (FTS-DL, see page 35) or the VIG (page 36) are available.

Volume flow sensor FTS

Flow rate pulse generator

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).

HIREL-STAG

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 28)

» CMI (page 15)

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

The UVR67 is **a universal controller for use in solar systems, heating circuits and room drying**. It features several functionalities encompassing thermostats, differential temperatures, pump speed control and heating circuit control, easy to select via their program numbers. Every program can be further adjusted to the specific use case via several parameters.

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 CMI

» Remote access (CMI, 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	

UVR16x2S   UVR610S   CAN-MTx2 control unit

X2 SERIES | INTRODUCTION

The x2 series gives you the freedom to fulfil almost all requirements for building automation.

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.

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 "CMI".

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 CMI, 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**. It also offers Modbus TCP/IP and a JSON API.

Visualisation

The free PC software **TA-Designer** allows you to freely customise visualisations for different devices. This can include a graphic interface for our mobile app or a text-based overview for the monochrome displays of the UVR610.

Data logging

Several choices are offered for data logging and the creation of trend curves, whereas the **CMI in conjunction with Winsol** has proven to be the most popular. Online data logging using our web portal is another possibility.
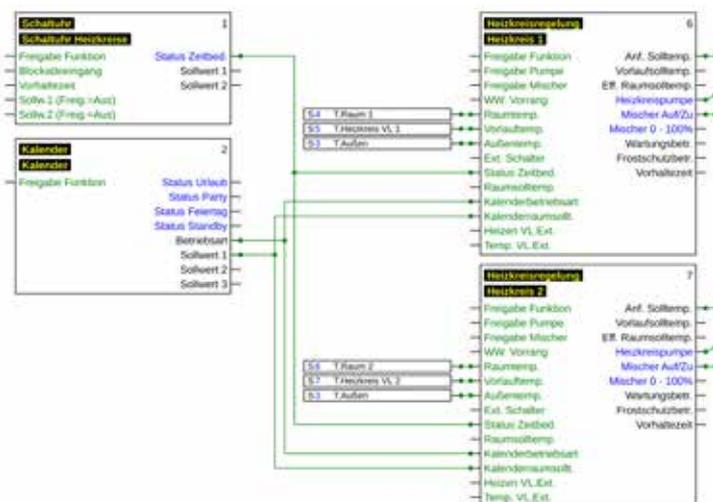
Programming interface (software TAPPS2)

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 wire-
less transmitter RCV-DL inside the
console.

Programming examples
available on our
website.

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)
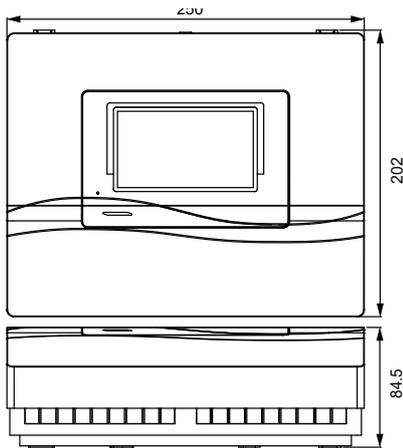
Dimensions UVR16x2K in mm
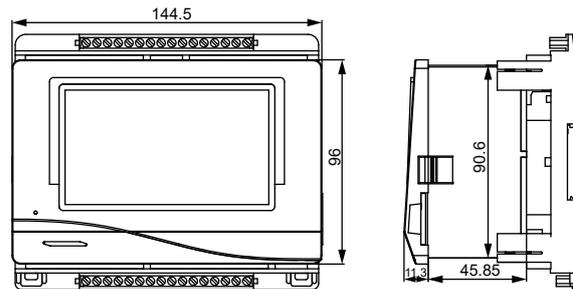
Dimensions
UVR16x2S in mm
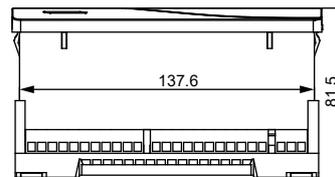
UVR16X2 WITH 24V-DC SUPPLY

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 from 0 - 230 V AC or 0 - 50 V DC 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 11/12).

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
OPTIONAL WITH 2 CURRENT SENSORS

01/UVR16X2E-DE
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.

UVR610S

UVR610S-OD

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

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 from 0 - 230 V AC or 0 - 50 V DC to supply the relays.

All UVR610S variants with display will ship with CORA wireless modules installed. **Attention: the antenna is not included in standard delivery** (article 01/ANT868-WS, see page 13)

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

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

» CORA-F (see notice above)

» DL bus

» Micro SD card

» M-Bus

UVR610S-OD

» no Micro SD card

» Inputs 3, 4, 5, 6: 0-10V

UVR610S-OD-MODB

» no Micro SD card

» Modbus instead of M-Bus

» Inputs 3, 4, 5, 6: 0-10V

UVR610K

UVR610K-OD

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.

The UVR610K without a display is particularly **suitable as an extension.** The function data is transferred to the device via the CAN bus.

The UVR610K with display ships with CORA wireless modules installed.

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

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

» CORA-F (UVR610K with Display only)

» DL bus

» Micro SD card

» M-Bus

UVR610K-OD

» no Micro SD card

» no CORA-F (wireless)
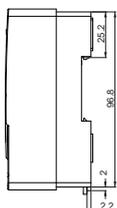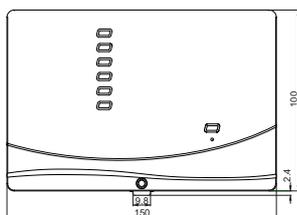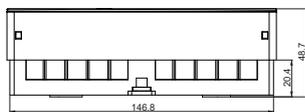
Dimensions in mm
(UVR610K and
UVR610K-OD)

1 controller = 9+ heating circuits

Up to 16 PMG1 can be connected to one controller via CORA wireless, up to 10 via CORA cable.

With a single controller, you can realize, for example, heat pump cascades with several heating circuits.

CONSOLE FOR WALL MOUNTING
01/KONSOLE UVR16X2

Console for wall mounting, contains mounting plate (relay version); for UVR16x2

HOUSING FOR UVR16X2
01/GEHAEUSE-KONSOLE UVR16X2

Housing for UVR16x2 wall console incl. installation equipment.

MOUNTING PLATE UVR16X2
01/KLEMMPLATTE UVR16X2

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

VTGH12L

DISTRIBUTOR ENCLOSURE   01/VTGH12L

Distributor enclosure (IP 56) for **12 division units** with integral top-hat rail and transparent hinged cover can accommodate e.g. two UVR610S.

SKL5x20

FUSE CLAMP   01/SKL5X20

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

01/ANT868-WS

ANTENNA WITH ANGLED PLUG   01/ANT868-WS

CORA wireless antenna for **UVR610S** and **CAN-EZ3**. Installation outside of the switching cabinet. Wire length: 3m.

01/ANT868-GS

ANTENNA WITH STRAIGHT PLUG   01/ANT868-GS

CORA wireless antenna for **AFS216**. Installation outside of the switching cabinet. Wire length: 3m.

PUMP-MIXER ASSEMBLY
01/PMG1

The PMG1 serves to control the flow temperature in heating and cooling circuits.

All information about this device is found on page 39.

Programming examples available on our website.

freely programmable controllers

13

CAN-MTx2-WT

CAN-MTx2-BK

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

FCI

SCHNITTSTELLEN

» CAN-Bus

» Ethernet (RJ45)

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.

FORECAST INTERFACE FCI   01/FCI

The FCI serves to transmit dynamic electricity prices to the CAN bus. Using the configuration tool, a choice of between different electricity price interfaces can be made.

In its standard configuration, the current, lowest, highest, and daily average price are determined and sent to CAN bus outputs.

Additionally, the FCI transmits **status information about whether the system is currently in a cost-effective (or the most effective) time window.** Desired number and duration of time windows is configurable.

The FCI configuration tool can be found at https://fci.ta.co.at

CMI

Dimensions (W x H x D):

135 x 100 x 34 mm

CMI-S

Dimensions (W x H):

26,5 x 91 mm (1,5 division units)

INTERFACES

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

INTERFACES CMI-S

» CAN bus
» Modbus TCP/IP
» Ethernet (RJ45)
» Micro SD card

CONTROL AND MONITORING INTERFACE CMI	01/CMI
CMI INCL. POWER UNIT	01/CMI-NT
CMI FOR SWITCHING CABINETS	01/CMI-S

The CMI is an **interface** for convenient **system monitoring**, remote-control, **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
» Option to connect to Modbus TCP

CMI for switching cabinets

The CMI-S has a shape different to that of the common CMI for wall-mounting, uses a micro SD card and has no DL bus interface. Installation in a switching cabinet via 45mm normed mounting bezel.

Operation / Access

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

| 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 CMI. The CMI-S does not have a connection for this power supply.

| WIRELESS ROUTER | 01/WNA |

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

WNA

Visualisation & Interfaces

CAN-BC2

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

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.

MD-KNX

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 26)

INTERFACES

» CAN bus, DL bus

CAN-EZ3

6 INPUTS

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

1 OUTPUT

» 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   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 01/ANT868-WS (extension available, see page 18)

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 37). Only suitable for use with CAN-EZ3.

ATON
POWER TO HEAT

PLUG & PLAY

EHS-R

CORA CORA

INPUTS (EHS-R)

» 2 sensor inputs PT1000

» 1 PWM input 0-100% if not coupled
  via CORA

» 1 PWM output NEW

» CORA-F and CORA-DL

CAN-EZ3 (ATON+) CORA CORA DL X2

CAN-EZ3A / CAN-EZ3

» CAN bus, DL bus

» CORA-F (wireless), CORA-DL (wired)

» Micro SD card interface

» Modbus RTU **(ATON+)**

» 1 S0-impulses output **(ATON+)**

» 4 analoge inputs **(ATON+)**

» 2 slots for direct connection of
  FTS-sensors or 2 impulse inputs
  (ATON+)

ATON (EHS-R AND CAN-EZ3A)   01/ATON
ATON+ (EHS-R AND CAN-EZ3)   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 buffer cylinders only**

» **Expandable via CAN-Bus**

» **Expandable** up to 12 immersion heaters

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

» **Wireless range** of ~1km in the open

» TAB compliant

Starting this year, the immersion heaters will be supplied without a power plug (see note on page 20).

Set "ATON"

SCOPE OF DELIVERY

» Immersion heater EHS-R

» CAN-EZ3A / CAN-EZ3

» 1 antenna (cable length: 3 meters)

» 3 hinged current sensors 50A

» 1 temperature sensor PT1000

» Micro SD card **(ATON+)**

AERIAL EXTENSION   10/GSM–VERLÄNGERUNG

Extension (2.5 m) for the CAN-EZ3 / CAN-EZ3A antenna as well as the AFS216 and UVR610S variants with CORA-F (see page 13).

SLM-9

EXPECTED TO BE AVAILABLE FROM Q3

SLM-3

CORA   CORA

STRATIFIED CHARGE MODULE
3KW / 9KW POWER

The power-to-heat stratified charge modules feed surplus solar energy into heating systems without output steps. The compact installation group is fitted to a wall or against the storage tank.

Thanks to the **precise target temperature regulation** and stratification into the buffer tank, a near-constant outlet temperature can be maintained across the module's entire output range. This strategy quickly achieves a usable temperature and greatly improves the entire system's utilisation factor. The module is ideal for retrofitting of existing heating installations.

Communication via CORA wireless or CORA DL.
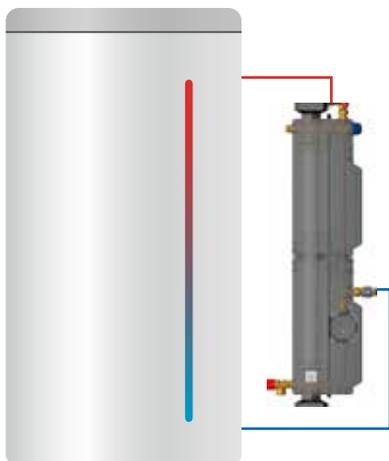
SCOPE OF DELIVERY
» Adjustable immersion heater(s)
» Insulation for module
» Pump and 3-way valve
» Safety relief valve, Venting valve
» Isolation valves

simplified schematic

Dimensions in mm

380,30

SLM-3

SLM-9

166,50   654,20   1135,20

Energy management
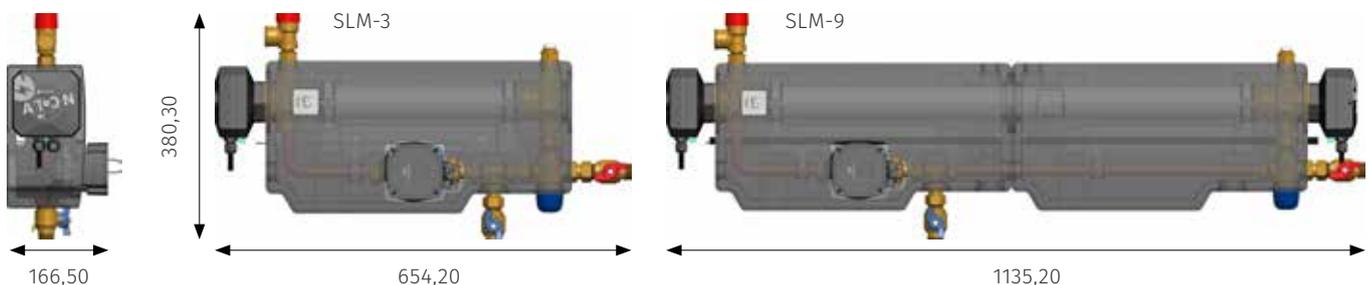
EHS-R

total length of immersion heater:
430 mm; screw thread: 1 1/2"
inactive length: 120 mm

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.

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

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

OUTPUT
» 1 PWM output NEW

EHS

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.

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

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

IMPORTANT NOTICE: From serial numbers EHSR-025920 and EHS-002900, immersion heaters are delivered without power plug.

113

113

SW 65

518

430 $^{+0}_{-10}$

77.6

G 1 1/2"

SW 65

inaktive length =120mm

10

19.5

52.8
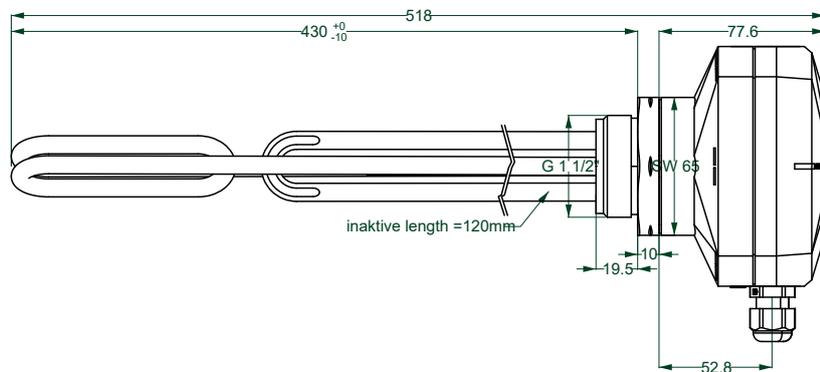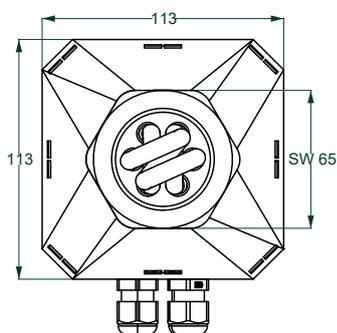
Due to galvanic reactivity, the immersion heaters are not suitable for installation in DHW cylinders. Install in such cylinders at own risk. This requires specific, standardized measures and frequent inspection (e.g., of the sacrificial anode).

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

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

Dimensions housing (W x H):

106 x 91 mm (6 division units)

Programming examples available on our website.

CORA

CORA is our smart home communications protocol, usable wired or wireless. CORA is not a replacement for the CAN bus, but an extension of our x2 series. CORA is supported by most current x2 devices and various extensions.

CORA-HKT

CORA CORA

INTERFACES
» CORA-F, CORA-DL

CORA RADIATOR THERMOSTAT & ACTUATOR   01/CORA-HKT

The CORA-HKT radiator thermostat is used to control the flow rate in radiators or surface heating systems (as an actuator on the distributor). One or more thermostats can be connected wired or wirelessly with an x2 device.

» Connection with a freely programmable x2 device necessary
  » Wired/wireless connection with CAN-EZ3
  » Wireless connection with CAN-MTx2
  » Wired connection with UVR16x2 or UVR610
» Power supply via 2x AA batteries (not included) oder 12 V wired
» Union nut made from glass fibre reinforced polymer
» M30x1,5 and M28x1,5 union nuts included
» Battery life: typically 2 years (can vary based on motor activity and batteries)

Features
» Can detect opening of (nearby) windows through temperature drops
» Measures room temperatures

Full flexibility
You decide, how you want to connect and supply the CORA-HKT:

CORA   CORA wireless
              2x AA batteries

CORA   12V   CORA wireless
              12V cable

CORA   12V   CORA-DL
              12V cable

SPP22

SWITCHABLE POWER PLUG   01/SPP22

The SPP22 serves to switch a power consumer, as well as measuring its power draw and voltage. The SPP22 must be connected to a freely programmable x2 device via CORA wireless.

2 INPUTS

» 2x PT1000 temperature sensors

1 OUTPUT

» 0-10 V / PWM

AFS216

Accessories

Antenna (01/ANT868-GS), when using CORA-F, see page 13.

UNDERFLOOR HEATING ACTUATOR   01/AFS216

The AFS216 switches up to 14 thermal actuating drives for heating or cooling systems. The 14 outputs are rated for continuous currents of up to 30 mA and single pulses (inrush current) of up to 0,5A. Outputs 15 and 16 can be used, for example, to switch between heating and cooling mode.

2 INPUTS

» 2x PT1000 temperature sensors

INTERFACES

» CORA (cable and wireless)

16 OUTPUTS

» 14x Triac outputs

» 2 potential-free switching outputs (potential not isolated between outputs)

CAN-RP

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
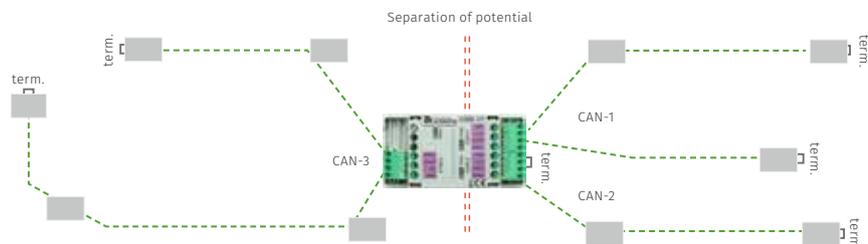
CBV-GP

CAN BUS CONNECTOR, BASIC SET   01/CBV-GP
CAN BUS CONNECTOR, EXTENSION SET   01/CBV-EP

The CAN bus connector easily **connects two CAN bus devices mounted in a switch cabinet** via the included ribbon cable. 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

Programming examples available on our website.

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.

The DL bus is not suitable for normal switching of lighting fixtures. DL bus load: 10% (**12-24V supply voltage necessary**, depending on the LED strips)

SMS14

Programming examples available on our website.

STEPPER MOTOR CONTROL   01/SMS14

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.

PFSC

POTENTIAL-FREE SIGNAL CONVERTER   01/PFSC

The PFSC is used **for electrically isolated control of third-party devices,** whose internal electronics cause signal interference. The PFSC mitigates these interferences.

1 INPUT	2 OUTPUTS
» 1x PWM	» 1x PWM
	» 1x 0-10V

UMV5-DL

UNIVERSAL MEASURING AMPLIFIER   01/UMV5-DL

For measurement of direct current and thermocouples, as well as Redox or pH sensors. For the connection of Redox and pH sensors, the adapter set is required, consisting of two adapter cables with a BNC connector (length: 25 cm). DL bus load: 10%

5 ANALOGUE INPUTS

» 0-30 mV, 0-3 V, 0-30 V

» Input 2: 0-30 mV or 0-300 mV
   or thermocouples Type K

» Inputs 3, 5: Redox/pH Sensors

ACCESSORIES

» Thermocouple (page 30)

» Set of adapter cables for
   Redox/pH sensors

UMV-BNC-ADAPTER

ADAPTER CABLE FOR REDOX/PH SENSORS   01/UMV-BNC-ADAPTER

Two adapter cables with BNC female plugs, length: 25 cm

TDI5-DL

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

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

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)

Programming examples for TDI5, AI5 and AO4 are available on our website.

Extension modules

RM2-DL

DL MODULE WITH 2 RELAY OUTPUTS 01/RM2-DL

The RM2-DL switches 2 potential-free relays (max. 5A switching capacity) via the DL bus. A 12V power supply is required. It is not possible to control an output pair (e.g. mixer) via the DL bus.

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 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 MOD. POTENTIAL-FREE
01/HIREL-PF

RELAY MODULE 22
01/HIREL22

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

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

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

RAS-CT4

housing dimensions:

84 x 84 x 13,1 mm

13,1 mm   22,35 mm

Device installed in a

flush-mounted box.

ROOM SENSOR WITH 4" TOUCH DISPLAY

230V SUPPLY	01/RAS-CT4-NT
12V SUPPLY	01/RAS-CT4-DL

The RAS-CT4 is a room sensor for temperature, relative and absolute humidity, and dew point.

The room sensor offers basic settings for up to three functions of type **heating circuit, cooling circuit and individual room control**, and optionally one **time switch function** assigned to each. The RAS-CT4 is connected to an x2 device via CORA (wired or wireless). Configured via programming of the x2 device in TAPPS2.

An external PT1000 sensor can be connected to the RAS-CT4. It also as a potential-free switching output.

Mounting
Der RAS-CT4 is mounted in a flush-mounted box.

1 INPUT

» 1x PT1000 temperature sensors

1 OUTPUT

» potential-free switching output

INTERFACE RAS-CT4-NT

» CORA-F (wireless)

INTERFACE RAS-CT4-DL

» CORA-DL (wired)

» CORA-F (wireless)

ROOM SENSOR WITH TOUCH DISPLAY AND CO2 SENSOR

230V SUPPLY	01/RAS-CT4-NT-CO2
12V SUPPLY	01/RAS-CT4-DL-CO2

RAS-CT4 with integrated CO_2 sensor for measurement of ambient pressure and air quality.

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

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

WPT1000

Diameter: 38,9 mm

Height: 8,7 mm

MINI ROOM SENSOR FOR WALL-MOUNTING   01/WPT1000

Room temperature sensor for simple and subtle installation. Terminals located inside the electric hose. Double-sided adhesive ring included in delivery scope.

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.

Sensors & Accessories

PT1000 sensors are our standard sensors (Precision class B)

KFPT1000

KFPT10004x35mm

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

KEPT1000

| 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

BFPT1000

| 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.

| 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

KTY sensors (Precision class B)

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 UMV5-DL (page 25). 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)

MSP130

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";

MSL130

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**.

NME5-DL

NS3

Programming examples available on our website.

| 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.

A total of **five fill levels can be detected** with the supplementary set of 3 probes.

DL bus load: 5% (12V supply voltage necessary).

GDS-DL

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%

HUMIDITY SENSOR

RFS-DL

Dimensions (W x H x D):
53,6 x 41 x 23,2 mm

The RFS-DL was developed for control tasks in the air conditioning sector and **measures relative and absolute humidity, temperature and dew point temperature**. Permissible temperature range -10°C to 50°C (up to 110°C in extended accuracy range)

DL bus load: 6 %

MINI HUMIDITY SENSOR FOR WALL-MOUNTING

RFSW-DL

Diameter: 38,9 mm
Height: 8,7 mm

The RFSW-DL is meant for subtle installation and **measures relative and absolute humidity, temperature, and dew point temperature**. Double-sided adhesive ring included in delivery scope.

DL bus load: 6 %

HUMIDITY SENSOR WITH EXTERNAL SENSOR

RFSE-DL

Programming examples available on our website.

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. **It measures relative and absolute humidity, temperature and dew point temperature.**

DL bus load: 6 %

Programming examples for different use cases
Programming examples for different use cases can be found on our website. Among them is an example for control of a sauna using the humidity and temperature sensor RFSE-DL.

ISE-DL with current sensor

CORA

CURRENT AND POWER SENSOR   01/ISE-DL

The ISE-DL was developed into a single-phase energy meter. As before, the effective current (RMS) of any consumer up to 16 A can be measured. Additionally, voltage and output are also measured.

The ISE-DL ships with a 50A snap-on ferrite sensor.

DL bus load: 30 %

GBS01

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.

RES01

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).

WIS01

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.

Programming examples for weather-driven control tasks available on our website.

Sensors & Accessories

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)

SCOPE OF DELIVERY

» DPS23-DL in universal housing
» 1 Pneumatic tube 4x0,75mm
   length: 2 meters
» 1/8" tube fitting

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.

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 %

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 %

PRS0-6

Sensors & Accessories

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

Programmierbeispiel auf unserer Website verfügbar.

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

Pressure loss as a function of flow

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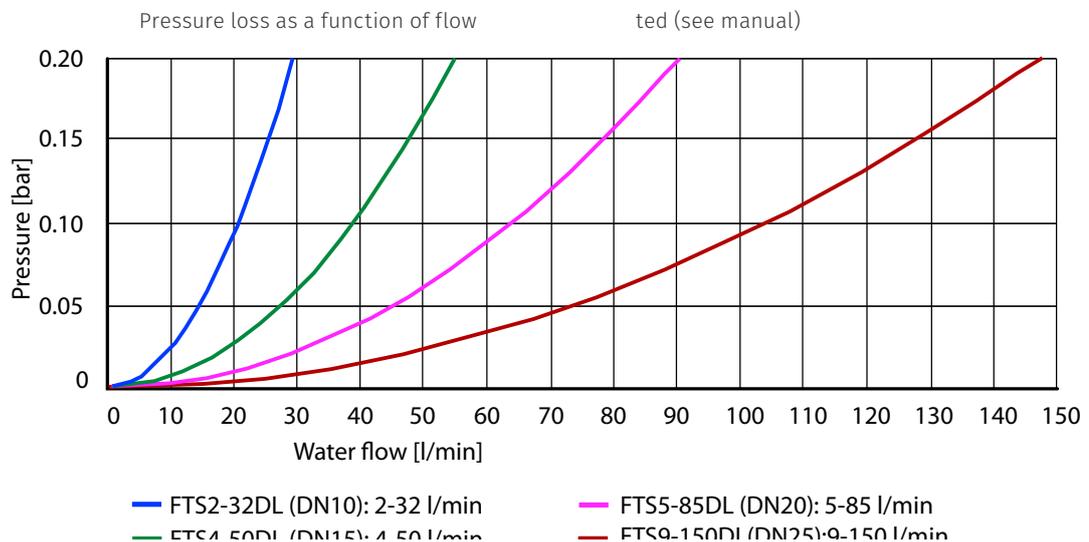
Set for Heat metering

SET FOR HEAT METERING, 1" `01/WMZ-SET-1"`
SET FOR HEAT METERING, 3/4" `01/WMZ-SET-3/4"`

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

STS01DC

FLOW SWITCH DC 3/4" `01/STS01DC-3/4"`
FLOW SWITCH DC 1" `01/STS01DC-1"`
FLOW SWITCH DC 5/4" **NEW** `01/STS01DC-5/4"`

Switches from a volume flow of approx. 1.5 litre/min. **DC version as a signal generator** at the usual controller inputs up to 30 V DC.

MAX. BREAKING CAPACITY
» 30 V=~ / 10 mA

INSTALLATION POSITION
» vertically, in cold water line

STS03AC

FLOW SWITCH AC 3/4" `01/STS03AC-3/4"`
FLOW SWITCH AC 1" `01/STS03AC-1"`
FLOW SWITCH AC 5/4" **NEW** `01/STS03AC-5/4"`

Switches from a volume flow of approx. 1.5 litre/min. **Optimised and cleared for use with high-efficiency pumps**. Asynchronous pumps (up to 110W) have shown functional in the lab. For use with other consumers (relays, valves etc.), explicit permission from the Technische Alternative company must be given.

MAX. BREAKING CAPACITY
» 250 V~ / 0,5 A

INSTALLATION POSITION
» vertically, in cold water line

VIG

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`

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;

UDV-3/4"

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).

Sensors & Accessories

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 (available with plastic or brass cable gland)

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 (40 to 300 mm length, brass or stainless steel) 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.

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

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, **our new TA 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 versions are delivered with a preinstalled insulation cover, ready to be installed.

For tank temperatures above 70 °C, we recommend the VMS pre-mixing set (see page 37).

125 mm

PMG1

The PMG1 **can only be controlled** with CORA-capable devices (UVR16x2, UVR610, CAN-EZ3, CAN-MTx2).

PUMP AND MIXER GROUP 01/PMG1

The pump mixer assembly serves to control the flow temperature of heating and cooling circuits.

Controlled via CORA (wired or wireless) by an x2 controller.

» **All-in-one solution** for a heating or cooling circuit
» No wiring for pump, mixer valve, or sensors required
» Optional inputs of the PMG
  » 1x contact thermostat as HLSC
  » 1x PT1000 or FTS flow sensor
» All values are transmitted via CORA to the UVR controller
» The PMG1 cannot be used autonomously
» Distance flow/return pipes: 125 mm (centre-centre)
» Threading: G1" AG
» Adapter from G1" AG to G1 1/2" included in delivery scope

Thanks to the special insulation and selection of components, the PMG1 is also suitable for use in cooling circuits.

The FTS4-50 is part of the set for heat metering in the PMG1

PMG1 HEAT METERING SET 01/PMG1-FTSSET

The PMG1 has a connection on the controller for an FTS volumetric flow sensor for heat metering. With this set, the FTS4-50 can be installed in the return flow within the PMG1. Expected to be available from Q2 on.

Scope of delivery:
» FTS4-50
» Ribbon cable for connection to PMG1
» Pipes and accessories
» Installation manual

PWM CABLE FOR GRUNDFOS UPM3 01/UPM3-SIGNALKABEL

PWM signal cable for speed control of the Grundfos UPM3.

Discontinued products will only be available while stocks last.

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 tempe- rature, desired deviation** (+/- 5K from the rotary wheel position) plus the operating mode (normal, lowering or automatic mode or frost protection function).

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

GBS-F

| 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.

DL^S

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. DL bus load: 43 %

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.**

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/
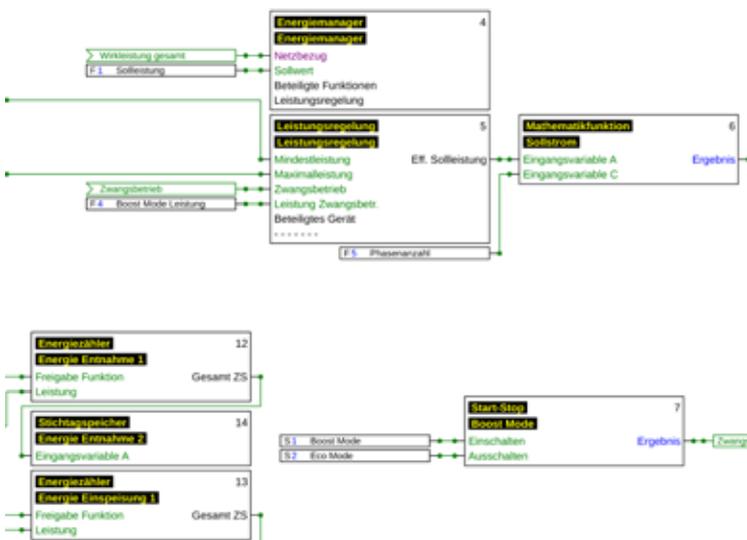
Seminars for technicians

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.**
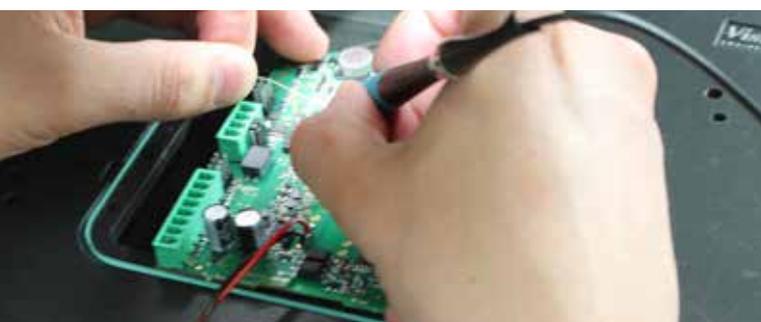
www.ta.co.at/seminare/uebersicht/

In-house repair departement

We offer affordable 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 of the warranty period of 2 years, or if the damage was caused by improper handling (e.g. over-voltage, water damage), charges as stated below apply:

If the error description is insufficient, additional charges for administrative and technical expenses of 30€ may apply, depending on the warranty period.

Labour costs related to inspection and determination of the error will explicitly not be covered by us.

Cost overview:
Base cost: 70€ (includes average labour and processing times and costs of minor replacement parts)

» Surcharge: + € 30,- (for missing or insufficient error description)
» Old device surcharge: + € 30,- (for devices older than 10 years)

Cost for replacement parts: in some cases, larger components (e.g. main board) must be replaced – these will be charged after consultation.

Irreparable devices: these will be disposed of after consultation, returned defective or treated as per individual agreement.

Small devices: products with a listed price below the base repair cost are not economically viable for repair. Should they be sent in regardless, the listed price is charged as a flat rate.

Unjustified claims: € 50,-
If no defect is detected during examination (e.g. operating error or disregard of manual), a flat rate will be charged.

Shipping and packaging costs:
» Within Austria and Germany:
  no shipping costs.
» All other regions: actual shipping costs will be charged.
» Differing delivery address: + € 15,- processing fee.
» Non-prepaid deliveries: + € 15,- processing fee.

Data security:
We are not liable for any loss of data.

Registering your device for repairs
For an efficient handling of your repair contract please begin with our RMA system:
https://www.ta.co.at/reparatur/rma

Device	Fees		
	70 Euro	+ 30 Euro	Original price
Basis costs	x		
Devices older 10 years	x	x	
FRISTAR, EHS, EHS-R	x	x	
Additional costs*		x	
Small devices **			x

* Additional costs due to missing or insufficient error descriptions, such as "defective device" or "doesn't work".
** Small devices are all devices with a listed price below the base cost.

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 €15.

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.

Support

+43 (0)2862 53635-850

support@ta.co.at

Mo - Thu	7 am - 3 pm
Fr	7 am - 1 pm

Sales

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order@ta.co.at

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This catalogue presents our product portfolio as of 1 March 2026. 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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