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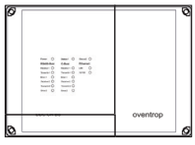

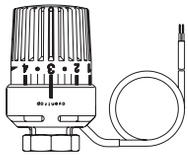

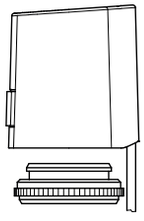

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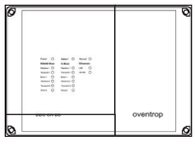

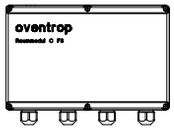

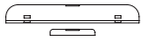

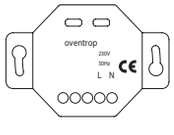

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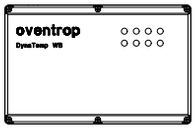

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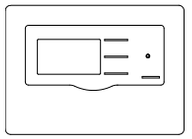

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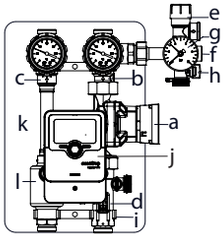

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12.a "DynaTemp" Home and Building automation

Content

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“DynaTemp”

Home and Building Automation

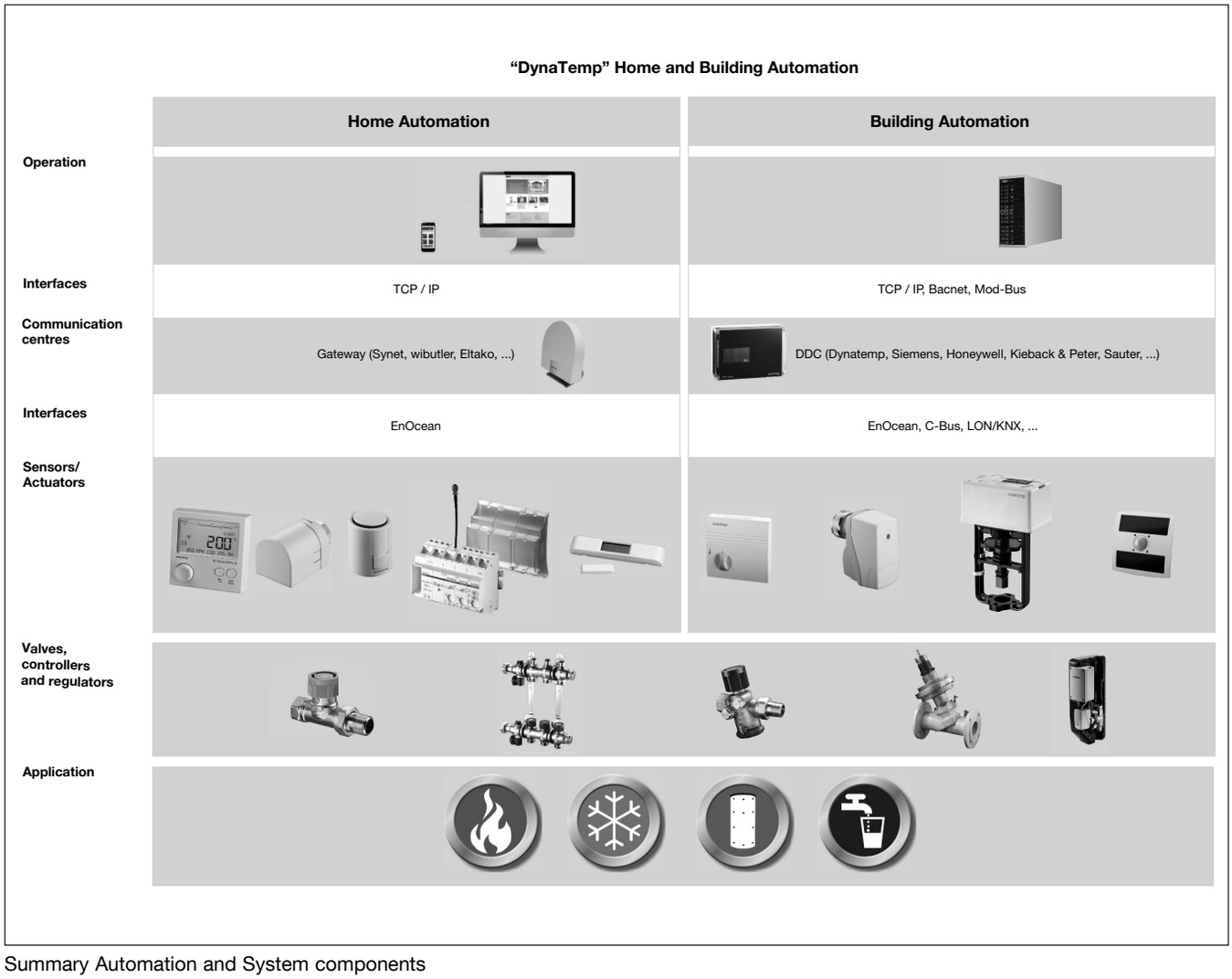
Communication-capable valves, actuators, sensors and controllers become more and more important, not only for new buildings but also for the renovation of existing buildings. Building automation systems with their monitoring, controlling and optimising devices are paramount for comfortable, energy-efficient and cost-saving building management.

The effectiveness of such systems is, however, only guaranteed if the above products are coordinated to the optimum and if they adapt to the different demands during heat transport and transmission.

Oventrop offers systems consisting of actuators, controllers and valves which can be combined for different tasks of building automation. The Oventrop products may also be integrated into the systems of other manufacturers.

The Oventrop systems cover the following areas:

- Individual room temperature control
- Potable water circulation
- Heat generation, storage, distribution and transmission



Summary Automation and System components

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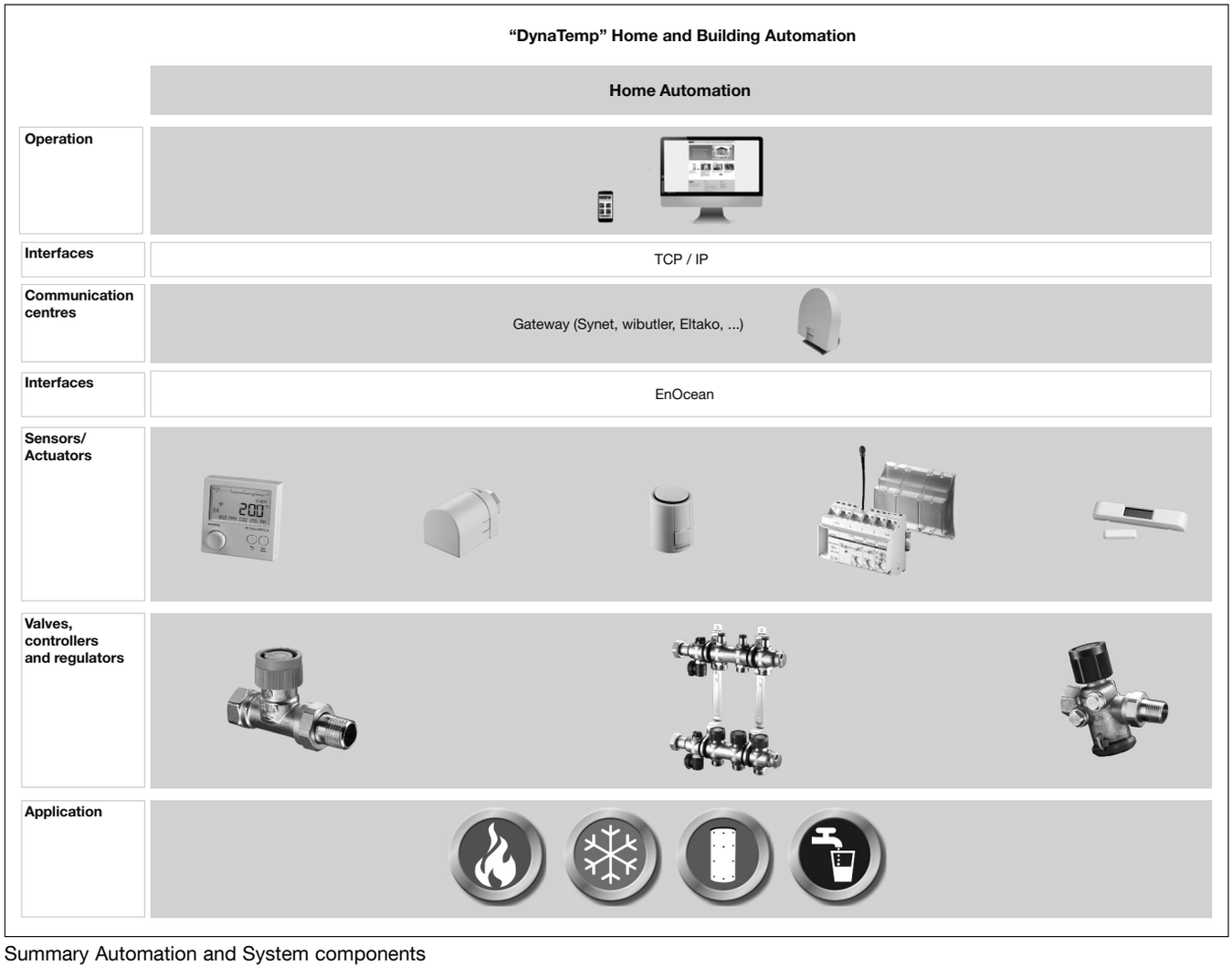
"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications	12.17

“DynaTemp HA” Home Automation

Components communicating with communication centres (gateways) are used in the area of Home Automation (for individual dwellings and detached houses). The gateways communicate with smartphones, tablets and personal computers using the “TCP/IP” protocol. Easy remote access is possible by connecting the gateways to common routers.

With their system “DynaTemp HA”, Oventrop offers gateways and components for room temperature control. Components, such as the wireless actuator “Aktor MH B” (ENOCEAN) or the wireless thermostat “R-Tronic RTB” (ENOCEAN) can communicate with gateways of other manufacturers.



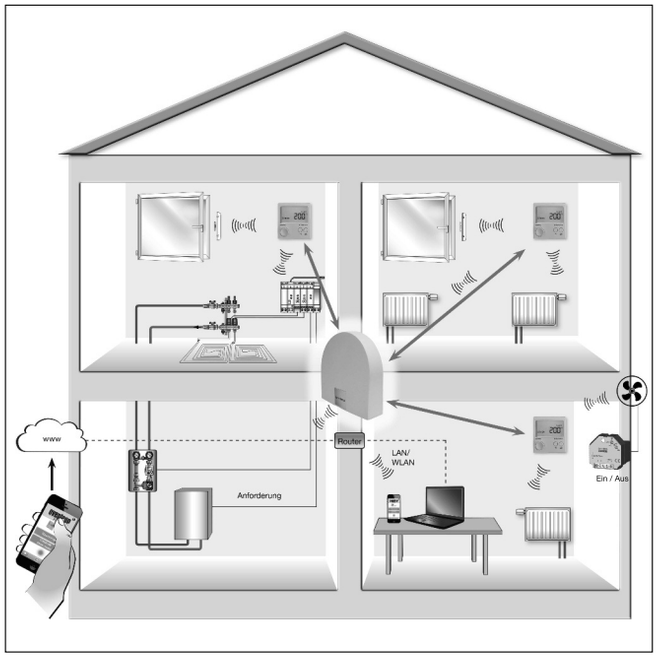
Summary Automation and System components

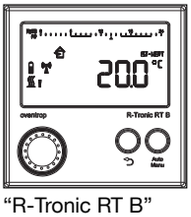
"DynaTemp HA" is a house information system for room temperature control, switching (On/Off) of heat generators and monitoring and modification of the room climate values. The used bi-directional radio technology allows for the data exchange between the individual components.

The system "DynaTemp HA" consists of the following components:

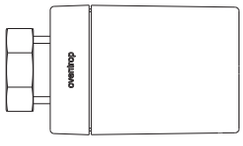
– "Synet CR" Gateway for room temperature control and remote control of appliances via smartphone, tablet etc.
– "R-Tronic" Wireless thermostat (battery operated, optional supply via the network)
– "Aktor MH/MD CON B" Actuator (battery operated)
– "R-Con" Multichannel wireless receiver
– "R-Con 2P" Single-channel wireless receiver

"Synet CR"



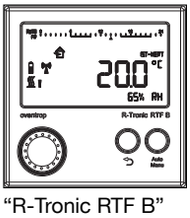


"R-Tronic RT B"

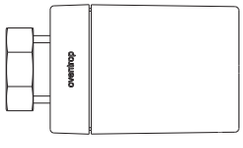


"Aktor MH/MD CON B"

Option 1: **"R-Tronic RT B"**
Wireless thermostat for room temperature control with timer functions (battery operated, flush-mounted power pack or mains adaptor available as accessories)

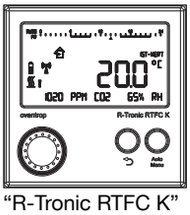


"R-Tronic RTF B"

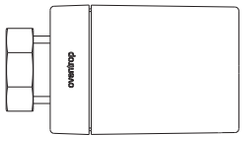


"Aktor MH/MD CON B"

Option 2: **"R-Tronic RTF B"**
As option 1, but with integrated humidity sensor and display of the relative humidity RH in % (battery operated, flush-mounted power pack or mains adaptor available as accessories)

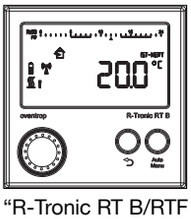


"R-Tronic RTFC K"

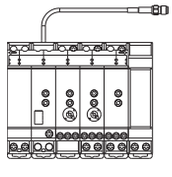


"Aktor MH/MD CON B"

Option 3: **"R-Tronic RTFC K"**
As option 2, but with additional sensor for measurement of the CO_2 content and display of the CO_2 concentration in ppm (no battery operation, power supply via external flush-mounted power pack or mains adaptor).

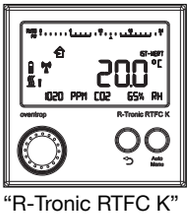


"R-Tronic RT B/RTF B/RTFC K"

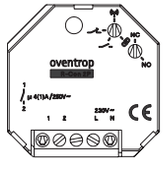


"R-Con"

"R-Con"
Multichannel wireless receiver for surface heating and cooling systems. All three models of the wireless thermostat ("R-Tronic RT B", "R-Tronic RTF B" and "R-Tronic RTFC K") can be connected to the wireless receiver "R-Con".
Combined surface heating ("R-Con") and radiator ("Aktor MH/MD CON B") control, for instance in bathrooms.



"R-Tronic RTFC K"



"R-Con 2P"

"R-Con 2P"
Single-channel wireless receiver for the transmission of a switching signal (On/Off) which is generated by the wireless thermostat "R-Tronic RTFC K" if a CO_2 threshold is exceeded or undercut.

Hydronic balancing with “Synet CR” and valves with “Q-Tech” in detached and semi-detached houses

Automatic presetting with “Synet CR”:

Automatic presetting of thermostatic radiator valves, for instance in detached or semi-detached houses, can be carried out via a smartphone or tablet with the help of the gateway “Synet CR” and the actuators for wireless thermostats “Aktor MH CON B”. Manual presetting at each radiator on the spot is thus not required.

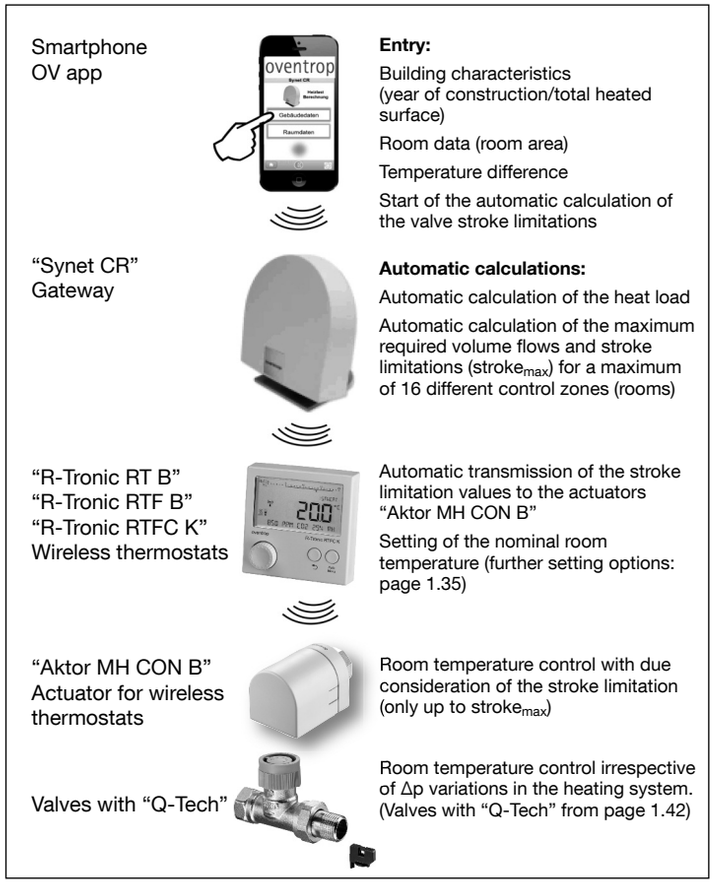
Apart from room temperature control, the gateway “Synet CR” allows for the calculation of the maximum required volume flow for each radiator. The gateway “Synet CR” is preloaded with the calculation procedure (procedure according to “VdZ specialist rules for heating optimisation – procedure A”).

The valve characteristic line of the thermostatic valves with “Q-Tech” which allows for the conversion of the detected volume flows for the stroke limitation of the actuators “Aktor MH CON B” is integrated in the gateway “Synet CR”.

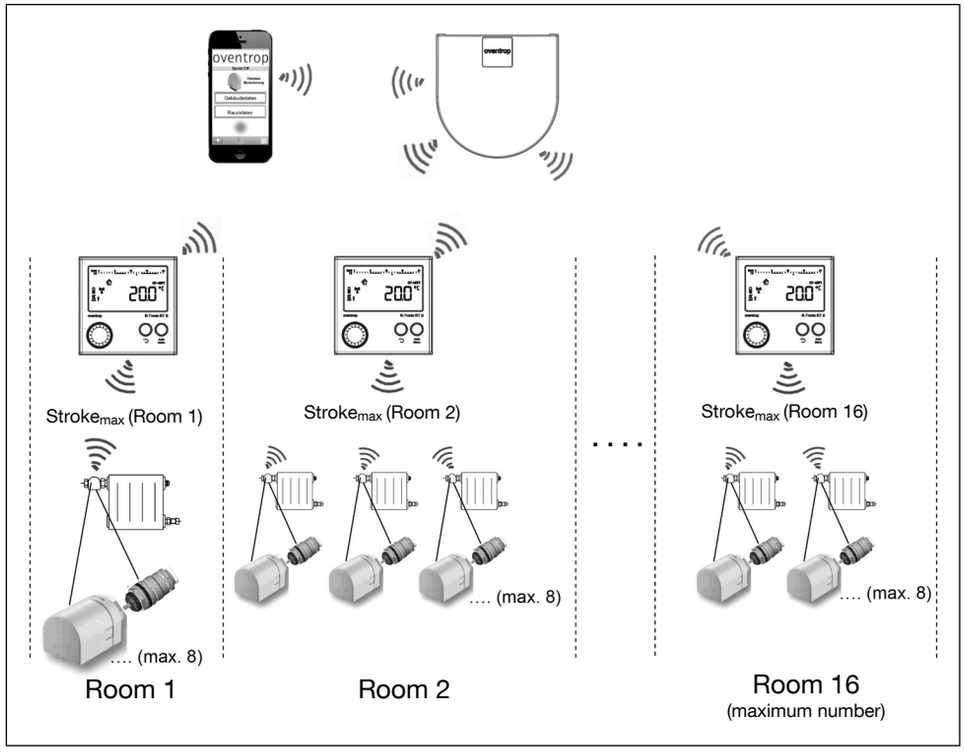
The user may carry out automatic presetting within a few steps via a smartphone or tablet with the help of the setup assistant of the OV app.

Automatic balancing with “Q-Tech”:

Irrespective of differential pressure variations in the heating system, the radiator volume flow required for room temperature control is constantly maintained by the control and regulating valve with “Q-Tech”. After having carried out the automatic presetting described above, the volume flow is limited to a maximum value by the gateway “Synet CR” and the actuator “Aktor MH CON B” mounted onto the thermostatic valve with “Q-Tech”.



Sequence of automatic presetting and balancing with “Synet CR” and valves with “Q-Tech”



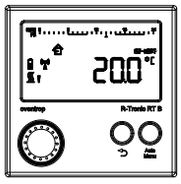
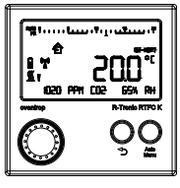
System illustration (example): Hydronic balancing with “Synet CR” and valves with “Q-Tech”

Advantages:

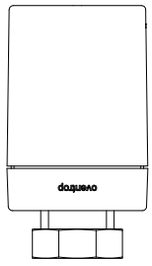
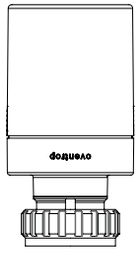
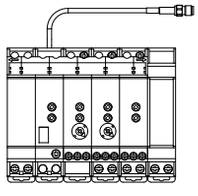
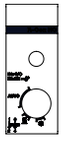
- Automatic calculation of the required volume flow for each radiator and automatic presetting of the thermostatic valves with “Q-Tech” via the actuator “Aktor MH CON B”
- Manual setting of the thermostatic valves at the radiator is not required
- Pipework calculation and regulation of the risers are not required
- Presetting of the valves in the riser is not required
- Hydronically balanced heating system during full and low demand periods
- Long battery life span as the “Aktor MH CON B” only carries out control commands for room temperature control

	Article	Article-No.	Hint
	"Synet CR" Gateway Centre for the connection of up to 16 "R-Tronic" climate display devices/controls and for regulation in combination with "Q-Tech" valves In preparation.	**1150687**	Centre for the simple networking, visualization and parameterization of "R-Tronic" climate display devices/contols. Up to 16 wireless thermostats or rooms can be managed by the centre by transmitting adjustable timed programmes for the individual rooms from the centre to the "R-Tronic" via the bi-directional radio communication. Furthermore, automatic hydronic balancing is supported in combination with the "Q-Tech" valves (see page 1.42). For this purpose, the heat load, the maximum required volume flows for each radiator as well as the required maximum stroke limitations at the actuators "Aktor MH CON B" are calculated by the gateway "Synet CR" after having entered the building and room data. The stroke limitations at the "Q-Tech" valves are carried out automatically. Access options: -Local access in the building -Worldwide mobile remote access via Internet User interfaces: -Integrated web interface -App for iOS and Android terminals Interfaces: -LAN a. Direct PC/laptop connection b. Direct router connection -USB for WLAN stick a. Access Point Mode b. Client mode -868 MHz radio communication with "R-Tronic" display devices/controls -Mains adaptor 5 V Installation options: – Wall attachment with the help of the supplied fixing plate. – Table stand with mains adaptor see accessories, page 1.37.

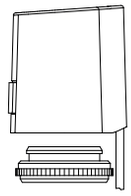
Further information on Page 12.09

	Article	Article-No.	Hint
	**"R-Tronic RT B" Wireless thermostat** Wireless thermostat with bi-directional wireless communication, battery operated, surface mounting traffic white (RAL 9016)	**1150680°** **1150880#**	Electronic wireless thermostat "R-Tronic RT B" for room temperature control according to adjustable timed programmes. The nominal and actual temperature of the room can be displayed. Up to 3 participants (such as actuators for wireless thermostats "Aktor MH/MD CON B" and wireless receivers "R-Con") can be connected during battery operation . A supply via the network is an alternative, see accessories page 1.37. During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.
	"R-Tronic RTF B" Wireless thermostat with humidity display Wireless thermostat with bi-directional wireless communication and integrated humidity sensor, battery operated, surface mounting traffic white (RAL 9016)	**1150681°** **1150881#**	Electronic wireless thermostat "R-Tronic RTF B" for room temperature control according to adjustable timed programmes. The nominal and actual temperature of the room can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in %. The value is displayed in the text line. Up to 3 participants (such as actuators for wireless thermostats "Aktor MH/MD CON B" and wireless receivers "R-Con") can be connected during battery operation . A supply via the network is an alternative, see accessories page 1.37. During mains operation, the number of participants can be increased to 8 which allows, for instance, for an integration of window contacts for room temperature setback.
	**"R-Tronic RTFC K" Wireless thermostat with humidity and CO_2 display** Wireless thermostat with bi-directional wireless communication and integrated humidity and CO_2 sensor traffic white (RAL 9016) Power supply: Flush-mounted power pack (100-240 V ~/ 50-60 Hz) with wall bracket	**1150682°** **1150882#**	Electronic wireless thermostat "R-Tronic RTFC K" for room temperature control according to adjustable timed programmes. The nominal and actual temperature of the room can be displayed. An integrated humidity sensor supplies information on the relative humidity RH in % and an integrated CO_2 sensor on the CO_2 content in ppm in the room air. Both values are displayed in the text line. If preset limits are exceeded, a symbol asking for fresh air supply is displayed. Up to 8 participants (such as actuators for wireless thermostats "Aktor MH/MD CON B", wireless receivers "R-Con" and wireless window contacts for room temperature setback) can be connected to the "R-Tronic RTFC K". Power is supplied by a flush-mounted power pack or a mains adaptor with table stand.
	Power supply: Mains adaptor (100-240 V ~/ 50-60 Hz) with table stand	**1150684°** **1150884#**	**# Compatible with the gateway "Synet CR"**

12

	Article	Article-No.	Hint
	**"Aktor MH CON B" Wireless actuator (M 30 x 1.5)** Connection thread M 30 x 1.5 Electronic actuator for wireless thermostats with bi-directional wireless communication, battery operated traffic white (RAL 9016) Only functions in combination with the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K".	**1150665**	Electronic actuator for wireless thermostats for room temperature control according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K". Heating operation and the positon of the valve (OPEN/CLOSED) of the "Aktor MH/MD CON B" are shown on the display of the wireless thermostat. Operation via the menu-driven wireless thermostat. Awards: ICONIC AWARDS 2016 German Design Award 2016
	**"Aktor MD CON B" Wireless actuator (squeeze connection)** Squeeze connection Electronic actuator for wireless thermostats with bi-directional radio communication, battery operated traffic white (RAL 9016) Only functions in combination with the wireless thermostats "R-Tronic RT B/ RTF B/ RTFC K".	**1150675**	These actuators for wireless thermostats can be fitted without adapter to the integrated distributors and thermostatic radiator valves with squeeze connection of the company Danfoss, series RA.
	**"R-Con" Wireless receiver** 230 V, without plug, wiring on site 4 channels with logic module 4 channels without logic module 8 channels with logic module 8 channels without logic module	**1150770** **1150771** **1150772** **1150773**	Electronic multichannel wireless receiver for room temperature control of up to 8 independent heating zones (surface heating) according to adjustable timed programmes at the wireless thermostats "R-Tronic RT B", "R-Tronic RTF B" and "R-Tronic RTFC K". Operation via the menu-driven wireless thermostat. Additional functions (direct selection via the rotary switches at the wireless receiver): -Pump logic with adjustable lead time and follow-up time (only item no. 1150770/ 72) -Burner logic for heat demand (only item no. 1150770/ 72) -Two point control -PWM control for surface heating Electrothermal actuators "Aktor T 2P" 24 V or 230 V can be connected to the 8 channels (closing contact with 4A/250 V AC each). **An external transformer is required for the power supply of 24 V actuators.**
	**"R-Con HC"** Extension module heating/cooling for wireless receiver "R-Con" In preparation.	**1150774**	The extension module is connected to the wireless receiver "R-Con" and is used for switching between heating and cooling operation via a C/O signal (change-over input). The C/O signal is povided by a reversible heat pump (volt free). Furthermore, the "R-Con HC" module features an input for dew point monitoring which interrupts cooling when the dew point is exceeded.

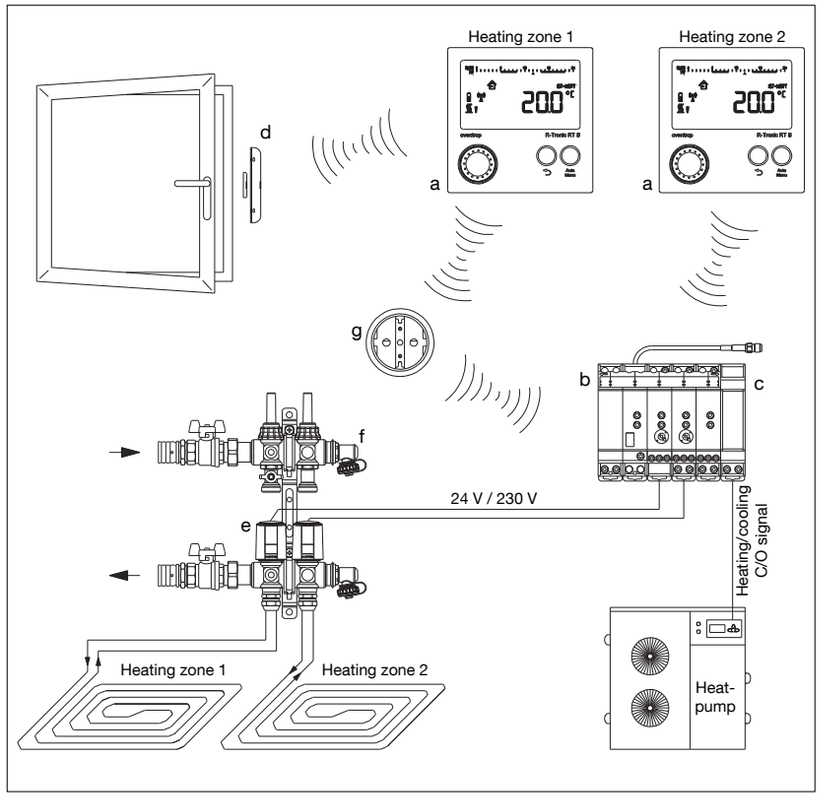
Article	Article-No.	Hint



"Aktor T 2P" Electrothermal actuators (two point)
connection thread M 30 x 1.5

"H NC", closed with current "off", 230 V	**1012415**
"L NC", closed with current "off", 24 V	**1012416**

Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats. Further applications in bivalent heating installations.
For zone and room temperature control.
Connecting cable 1 m.
With "First-Open" function (except for actuators "open with current off") and stroke index.
Simple plug-in connection with valve adapter.
Actuators can be installed in any position.
As for the model with auxiliary switch, a pump can for instance be switched via the integrated volt free contact. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

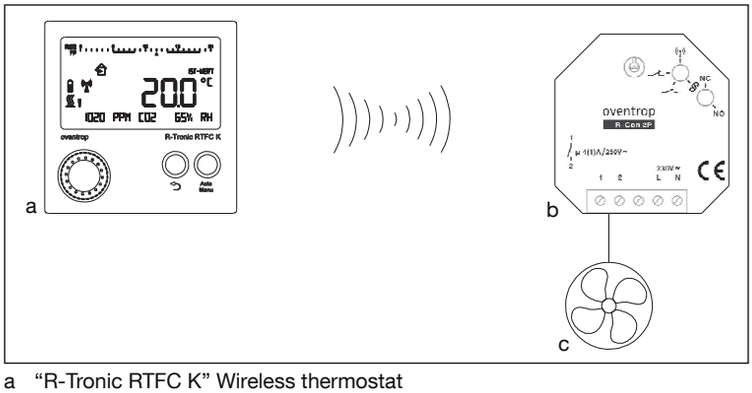


a "R-Tronic RT B" / "R-Tronic RTF B" / "R-Tronic RTFC K" Wireless thermostat
b "R-Con" Wireless receiver
c "R-Con HC" Extension module heating/cooling
d "FK-C F" Wireless window contact
e "Aktor T 2P" (two point) Electrothermal actuator
f "Multidis SF" Stainless steel distributor/collector
g "RP-S F" Wireless repeater

Combination possibilities of valves and actuators: Page 3.08

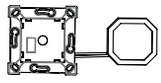
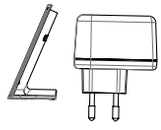
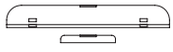
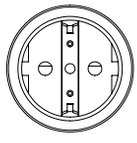
	Article	Article-No.	Hint
	"R-Con 2P" Wireless receiver (1 channel) 230 V, flush mounting, cabling on site Switching output (volt free): "NC" closed with current "off" "NO" open with current "off"	**1150710***	For activation and deactivation of fans and ventilation systems. The switching signal is generated by the wireless thermostat "R-Tronic RTFC K" if a set CO_2 value is exceeded or undercut. Two rotary switches at the "R-Con 2P" allow for 1. the configuration of the switching output "NC" closed with current "off" "NO" open with current "off" 2. a manual setting of the switching output to AUTO, ON, OFF or TEACH IN. Maximum switching capacity of the volt free output: 4(1)A/ 250 V AC

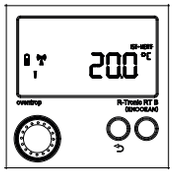
Example: CO_2 dependent fan control



a "R-Tronic RTFC K" Wireless thermostat
b "R-Con 2P" Wireless receiver
c Fan/ventilation system

12

	Article	Article-No.	Hint
	Accessories		For the conversion of battery operated wireless thermostats "R-Tronic RT B/ RTF B" to an external power supply (100-240 V ~/ 50-60 Hz).
	Flush-mounted power pack (100-240 V ~ /50-60 Hz) with wall bracket	**1150692**	
	Mains adaptor (100-240 V ~/ 50-60 Hz) with table stand, white for stationary use, suitable for "i-Tronic TFC" and "R-Tronic RT B/RTF B"	**1150694**	
	**"FK-C F" Wireless window contact**		A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation. Compatible with: -"R-Tronic" Wireless thermostats ("DynaTemp HA") -Wireless room modules ("DynaTemp BA") Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
	solar powered, white (similar to RAL 9003)	**1153070**	
	**"RP-S F" Wireless repeater**		The wireless repeater "RP-S F" serves to amplify the signal between the wireless thermostat "R-Tronic" and the communication centre "Synet CR" as well as the wireless receiver "R-Con"/"R-Con 2P".
	for installation into an earthed plug white (similar to RAL 9003)	**1150699**	

Article	Article-No.	Hint
"Aktor MH CON B" (ENOCEAN) Wireless actuator for Smart Home applications		Electronic actuator for room temperature control. The actuator supports the EnOcean profile A5-20-01 and can be connected to communication centres/gateways or room thermostats of other manufacturers.
	1150765	enocean®
connection thread M 30 x 1.5 Electronic actuator with bi-directional wireless communication, battery operated traffic white (RAL 9016) **Only functions in combination with communication centres/gateways and room thermostats using the EEP (EnOcean Equipment Profile) A5-20-01.**		**The actuator is not compatible with the gateway "Synet CR" and the wireless thermostats "R-Tronic".**
"R-Tronic RT B" (ENOCEAN) Wireless thermostat for Smart Home applications		Electronic wireless thermostat for room temperature control in combination with communication centres/gateways (e.g. with the wibutler smart home solution) supporting the EnOcean Equipement Profile EEP. The nominal and actual temperature of the room are displayed. The wireless thermostat can be connected to communication centres/ gatesways via the menu command. A supply via the network is an alternative, see accessories.
	**1150780***	enocean®
Wireless thermostat with bi-directional wireless communication, battery operated, surface mounting traffic white (RAL 9016)		**The wireless thermostat is not compatible with the gateway "Synet CR" and the actuators "Aktor MH/MD CON B".**

Page

12.c "DynaTemp BA" Building Automation

Content

System summary 12.20

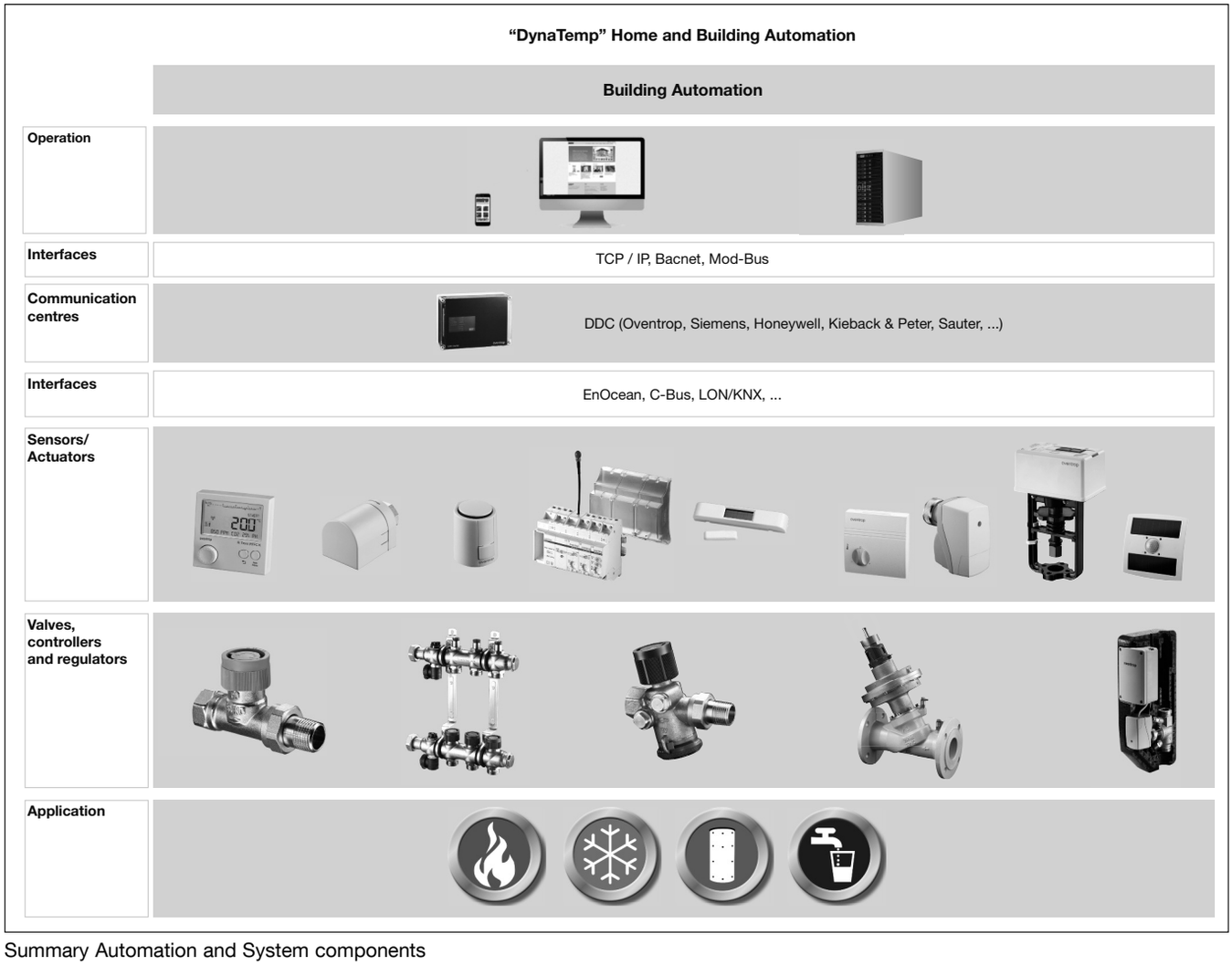
System types 12.21

“DynaTemp BA” Building Automation

The system “DynaTemp BA” allows for the automation of control processes for heat generation, distribution and transmission in larger residential and non-residential buildings.

Compared with the system “DynaTemp HA” (for individual dwellings and detached houses), the “DynaTemp BA” components for control within the building automation system are determined by the type of use, degree of automation and the system technology.

Oventrop control units (DDC) and components, such as room thermostats, actuators and control valves can be integrated into the building automation systems of any manufacturer.



Summary Automation and System components

Models:
“CR-BS” Local individual room temperature control via bus technology
“CR-BX” Central individual room temperature control via bus technology
The temperature control function of these two systems is different. As for the system “CR-BS”, individual room temperature control without using auxiliary energy is carried out at the radiator with classic thermostat sensor technology (liquid sensor) and timed temperature setback is carried out by the control unit. With “CR-BX”, temperature control, control of the setback periods and monitoring are carried out by the control unit. The sensor data is transmitted to the control unit by the field modules via a bus technology (C-bus). The control commands for the actuators, such as the thermostat “Uni LHZ” and the electronic actuators, are transmitted by the control unit to the field modules via the field bus. This way, an energy saving individual room temperature control for each application is guaranteed.

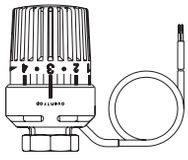
“CW-BS” Automatic thermal balancing and thermal disinfection in potable water circulation systems

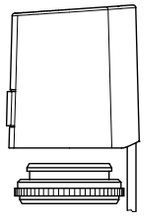
The installation hydronics which is governed by the maintenance of an adequate potable water circulation temperature (according to DVGW 57 °C) is optimised by the control unit. Temperature detection is carried out by the Oventrop valve “Aquastrom DT” for potable water circulation systems. The sensor temperatures are transmitted to the control units via the bus based field module and the control demands for the “Aquastrom DT” are transmitted to the actuators by the “CW” via the field module.
Thermal disinfection is also controlled via the control unit. The latter transmits a starting signal to the boiler control; the potable water temperature is increased and thermal disinfection of the risers of the circulation installation is carried out.
The control unit can be connected to the centralised building control system for monitoring and visualization purposes. Warning messages can be transmitted via LAN or internet.

“CS-BS” Networking of stations for heat generation and distribution

This system allows the linkage of up to 6 bus application controllers of stations for solar heat generation, hot water preparation and different heating circuits via a bus technology. The data from the different controllers is fed into the data logger “CS-BS” in order to store and view the operating status, temperatures, flow rates and energy data over a longer period. New parameter settings for the controllers can be determined with the help of this data and the operation behaviour of the complete installation, including the storage cylinder and the boiler can be improved. Error diagnosis can also be carried out.
The installation data can be viewed via a PC or a standard smartphone. The integrated Web interface allows access to the system via a standard web browser. The connection to the network (LAN) and the internet can be carried out via a standard router. A flexible, even external, access to the installation is thus possible. It is, however, not necessary to integrate the data logger into a network, the direct connection of a PC is also possible.

Page





12.d "DynaTemp BA" Building Automation
Local individual room temperature control via bus system "CR-BS"

Content

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"ABR-55" Cover frame	12.25
"RM-C F8" Room module	12.26
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"FK-C F" Wireless window contact	12.26
"BWM-C F" Movement sensor	12.26
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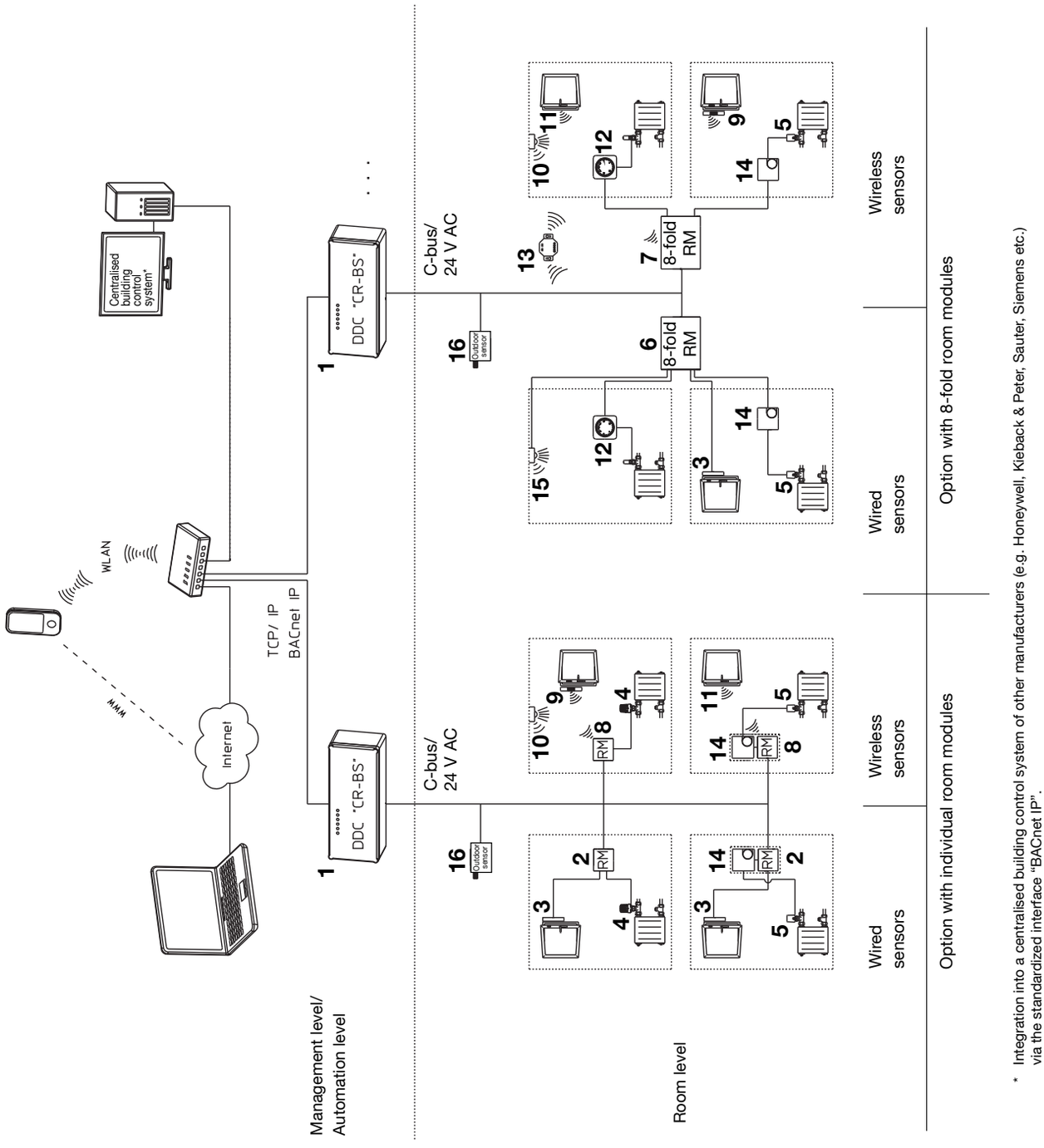
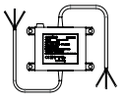
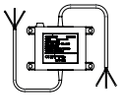
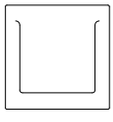
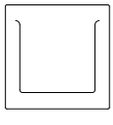
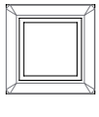
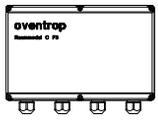
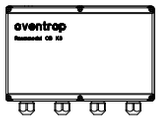
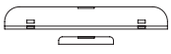
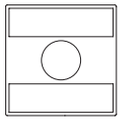
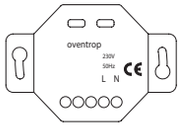
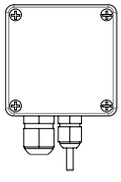
Thermostat "Uni LHZ"	12.27
Thermostat with remote control "Uni FHZ"	12.27
Wall connection set	12.27
"Aktor T 2P" Electrothermal actuators (two point)	12.28
Room thermostat - surface mounting	12.28



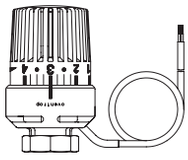
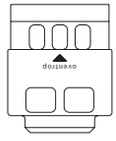
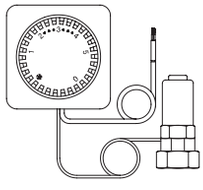
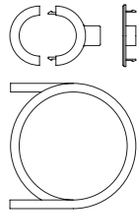
DDC "CR-BS" control unit for central temperature setback with control signal transmission via wireless transmitter (EnOcean) or cable.

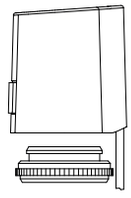
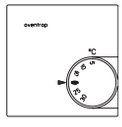
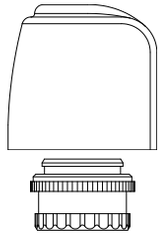
1 DDC "CR-BS" Control unit
2 "RM-C K" Flush-mounted room module, wired, 1-fold
3 Window contact, wired (installation on site)
4 "Uni LHZ" Thermostat
5 "Aktor T 2P"Electrothermal actuator, 24 V, two point
6 "RM-C K8" Surface-mounted room module, wired, 8-fold
7 "RM-C F8" Surface- mounted room module, wireless, 8-fold
8 "RM-C F" Flush-mounted room module, wireless, 1-fold
9 "FK-C F" Solar powered window contact,wireless, 1-fold
10 "BWM-C F" Movement sensor, wireless
11 "SecuSignal" Window handle of the company Hoppe (installation on site)
12 "Uni FHZ" Thermostat with remote control
13 "RP-C F" Flush-mounted repeater, 230 V, wireless
14 Room thermostat with setback entry,24 V
15 Movement sensor, wired (installation on site)
16 "FM-C WS" Outdoor temperature sensor

	Article	Article-No.	Hint
	DDC "CR-BS" Control unit with bus technology, for the connection of 31 C-bus room modules, BACnet IP interface, surface mounting, operating/bus current: 24 V /50 Hz	**1153150**	The control unit DDC "CR-BS" is used for central temperature setback with the help of thermostats with liquid sensor. The thermostats "Uni LHZ" or "Uni FHZ" respectively room thermostats (item no. 1152052/72) are connected to the control unit via the C-bus room modules. The integrated web server allows access to the system via a PC and a standard web browser (e.g. Mozilla Firefox). The parameters (e.g. setback temperature and time profiles) of the system can be set via the menu and the trend data as well as the current status can be queried. The integration of the system into the centralised building control system is possible via "BACnet IP".
	as item no. 1153150, but for 62 C-bus room modules	**1153151**	
	**TR-250 Transformer** primary: 230 V; 50 Hz secondary: 24 V/ 250 VA	**1153055**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	**TR-80 Transformer** primary: 230 V, 50-60 Hz secondary: 24 V / 80 VA	**1153053**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	**"RM-C F" Room module** for one room with EnOcean wireless technology and C-bus communication, flush mounting, 24 V/50 Hz, white (RAL 9010), cover frame to be ordered separately	**1153101**	The "RM-C F" is a bus based wireless room module for the connection of actuators or thermostats "Uni LHZ" or "Uni FHZ" respectively room thermostats (item no. 1152052/72) as well as wireless window contacts and wireless movement sensors with EnOcean wireless technology. Moreover, window contacts or movement sensors installed on site can be evaluated via a volt free contact by use of a cable. Connection module for one room (1-fold). Installation in a standard flush socket with cover plate, but without cover frame.
	**"RM-C K" Room module** for one room without wireless technology, with C-bus communication, wired, flush mounting, 24 V/50 Hz, white (RAL 9010), cover frame to be ordered separately	**1153121**	Comparable to item no. 1153101, but without EnOcean wireless technology. Window contacts or movement sensors installed on site can be evaluated via cable.
	**"ABR-55" Cover frame** white (RAL 9016)	**1153170**	Cover frame for item no. 1153101 and 1153121.

	Article	Packing unit	Article-No.	Hint
	**"RM-C F8" Room module** for 8 rooms with EnOcean wireless technology and C-bus communication, surface mounting, 24 V/50 Hz		**1153118**	The "RM-C F8" is a bus based 8-fold wireless room module for the connection of thermostats "Uni LHZ" or "Uni FHZ" respectively room thermostats (item no. 1152052/72) as well as wireless window contacts "FK-C F" or wireless movement sensors "BWM-C F" with EnOcean wireless technology. Moreover, cabled window contacts or cabled movement sensors installed on site can be evaluated. Connection module for 8 rooms (8-fold), for surface-mounted installation.
	**"RM-C K8" Room module** for 8 rooms without wireless technology, with C-bus communication, wired, surface mounting, 24 V/50 Hz		**1153128**	Comparable to "RM-C F8" but without EnOcean wireless technology. Cabled window contacts or cabled movement sensors installed on site can be evaluated.
	**"FK-C F" Wireless window contact** solar powered, white (similar to RAL 9003)		**1153070**	A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation. Compatible with: -"R-Tronic" Wireless thermostats ("DynaTemp HA") -Wireless room modules ("DynaTemp BA") Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
	**"BWM-C F" Movement sensor** with EnOcean wireless technology surface mounting, solar powered, white (RAL 9010)		**1153180**	The solar powered wireless ceiling sensor serves the presence detection and luminosity measurement. Transmission to the wireless room modules via EnOcean wireless technology. The solar powered energy storage ensures a maintenance-free operation. The device detects movements within a range of 360°.
	**"RP-C F" Wireless repeater** for EnOcean wireless technology, flush mounting, 230 V/ 50 Hz	(50)	**1153060**	The repeater serves to amplify the EnOcean radiograms and is for instance used to increase the radio range between wireless window contacts and the wireless room modules.
	"RS-C F" Wireless temperature sensor with EnOcean wireless technology		**1153195**	The solar powered wireless temperature sensor is used for room temperature monitoring. The temperature values or sequences can be viewed via the control unit DDC "CR-BS".
	**"FM-C WS" Outside temperature sensor** with C-bus communication, surface mouting, IP 65		**1153130**	Outside temperature sensor to use the "DDC" function "variable heating-up time". Power supply via the C-bus.

12

	Article	Packing unit	Article-No.	Hint
	**Thermostat "Uni LHZ"** Connecting cable 1 m long connection thread M 30 x 1.5 marking "DynaTemp" on lower side of the handwheel		**1150300**	In combination with the control unit DDC "CR-BS", the thermostats "Uni LHZ" and "Uni FHZ" allow for a timed temperature setback with the help of an integrated electrically heated liquid sensor. The operation is identical with that of a standard thermostat. If the thermostat is engergized with a voltage of 24 V, it switches to temperature setback. The thermostats "Uni LHZ" and "Uni FHZ" can be activated via the control unit DDC "CR-BS" and the room modules via LAN networks or the Internet.
	Reinforcing cap white for thermostats "Uni LH", "Uni LHZ" and "Uni LA" not lockable lockable	 (10) (10)	 **1011865** **1011866**	The reinforcing caps are delivered with an Allen key.
	**Thermostat with remote control "Uni FHZ"** with liquid sensor connection thread M 30 x 1.5 connecting cable 1 m long capillary 2 m long		 **1152265**	without '0' setting, Temperature range: 7 - 28 °C Graduation on cap: * 1-4 Operating current: 24 V Temperature setback: about 7 K Connecting cable 1 m
	**Wall connection set** for "Uni LHZ"	 	 **1150390**	Is used as additional protection for the wall installation (in a flush box) of the connecting cable of the thermostat "Uni LHZ".

	Article	Packing unit	Article-No.	Hint
	**"Aktor T 2P" Electrothermal actuators (two point)** connection thread M 30 x 1.5 "L NC", closed with current "off", 24 V		**1012416**	Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats. Further applications in bivalent heating installations. For zone and room temperature control. Connecting cable 1 m. With "First-Open" function (except for actuators "open with current off") and stroke index. Simple plug-in connection with valve adapter. Actuators can be installed in any position. As for the model with auxiliary switch, a pump can for instance be switched via the integrated volt free contact. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.
	**Room thermostat - surface mounting** 24 V	(25)	**1152052**	The electric room thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P". Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V).
	**Reinforcing cap** for electrothermal actuators (two point) and (0-10 V)		**1012450**	To protect electrothermal actuators against vandalism. The special valve adapter with connection thread M 30 x 1.5 for fixing of the reinforcing cap is included.

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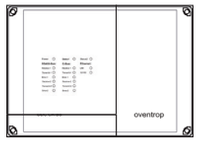
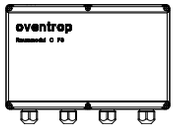
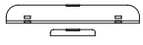
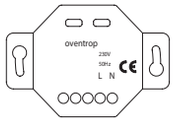
Combination possibilities of valves and actuators: Page 3.08

Page









12.e "DynaTemp BA" Building Automation
Central individual room temperature control via bus system "CR-BX"

Content

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TR-250 Transformer	12.31
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"RM-C F" Room module	12.31
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"RBG-C F" Room controller	12.32
"BWM-C F" Movement sensor	12.32
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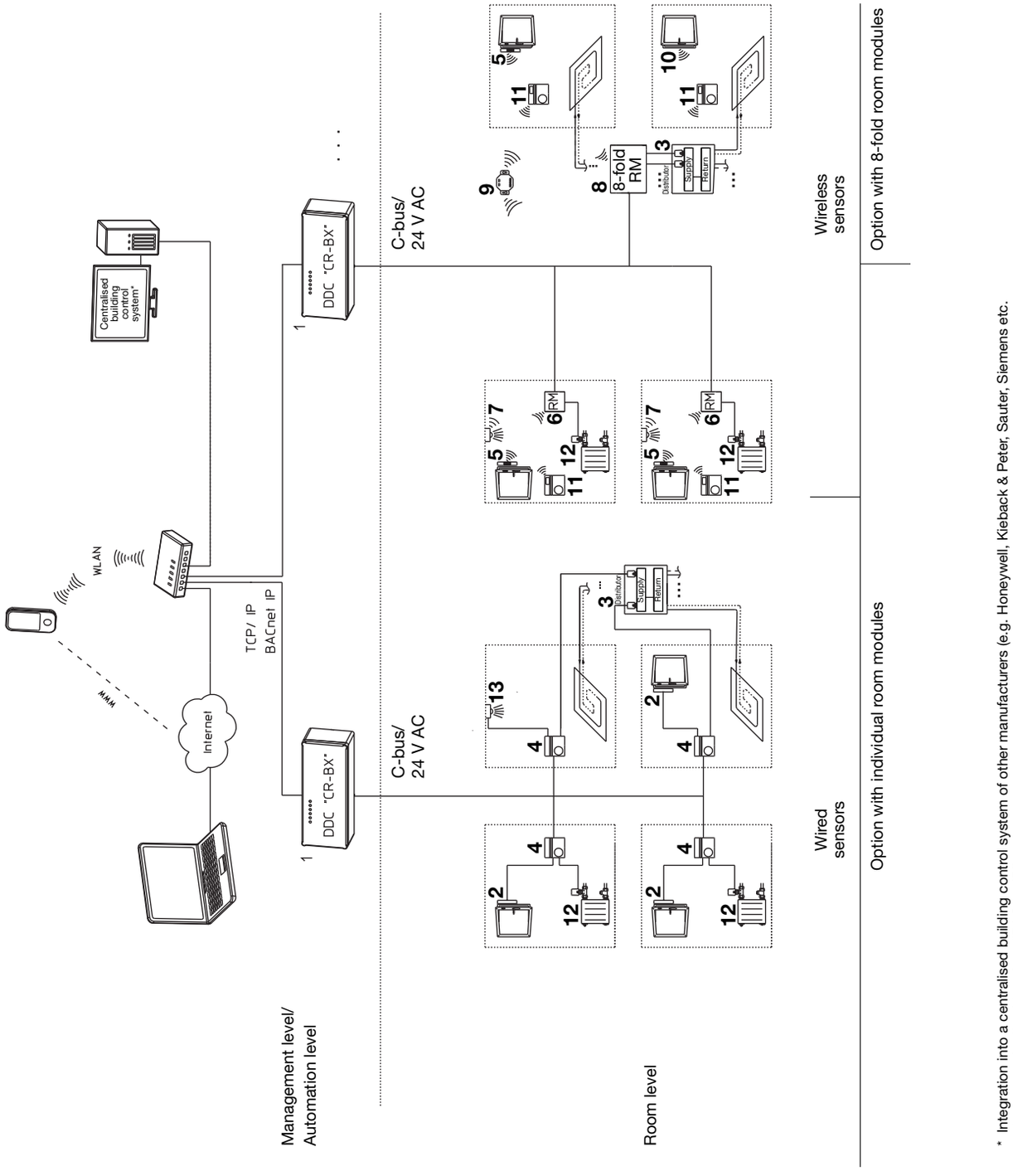
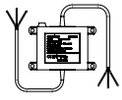
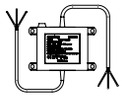
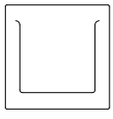
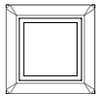
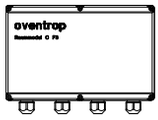
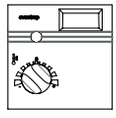
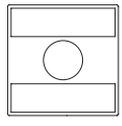
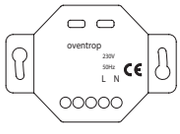
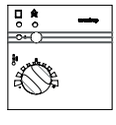
"RBG-C K" Room controller	12.32
"Aktor T 2P" Electrothermal actuators (two point)	12.33
"Aktor T ST" Electrothermal actuators (0-10 V)	12.33

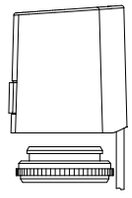
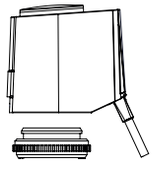


DDC "CR-BX" for individual room temperature control, with control signal transmission via wireless transmitter (EnOcean) or cable

1 DDC "CR-BX" Control unit
2 Window contact, wired (installation on site)
3 "Aktor T 2P" Electrothermal actuator, 24 V, two point
4 "RBG-C K" Surface-mounted room controller, wired
5 "FK-C F" Solar powered window contact, wireless
6 "RM-C F" Flush-mounted room module, wireless, 1-fold
7 "BWM-C F" Movement sensor, wireless
8 "RM-C F8" Surface-mounted room module, wireless, 8-fold
9 "RP-C F" Flush-mounted receiver, 230 V, wireless
10 "Secusignal" Window handle of the company Hoppe (installation on site)
11 "RBG-C F" Solar powered room controller, wireless
12 Electrothermal actuator, 0-10 V or two point
13 Movement sensor, wired (installation on site)

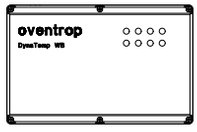
	Article	Article-No.	Hint
	DDC "CR-BX" Control unit with bus technology, for the connection of 31 C-bus room modules, surface mounting, BACnet IP interface, operating/bus current: 24 V/50 Hz	**1153250**	The DDC "CR-BX" is used for central room temperature control. The actuators are connected to the control unit via the C-bus room modules. The integrated web server allows access to the system via a PC and standard web browser (e.g. Mozilla Firefox). The parameters (e.g. nominal temperature and time profiles) of the system can be set via the menu and the trend data as well as the current status can be queried. The integration of the system into the centralised building control system is possible via "BACnet IP".
	as item no. 1153250, but for 62 C-bus room modules	**1153251**	
	**TR-250 Transformer** primary: 230 V; 50 Hz secondary: 24 V/ 250 VA	**1153055**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	**TR-80 Transformer** primary: 230 V, 50-60 Hz secondary: 24 V / 80 VA	**1153053**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	**"RM-C F" Room module** for one room with EnOcean wireless technology and C-bus communication, flush mounting, 24 V/50 Hz, white (RAL 9010), cover frame to be ordered separately	**1153101**	The "RM-C F" is a bus based wireless room module for the connection of actuators or thermostats "Uni LHZ" or "Uni FHZ" respectively room thermostats (item no. 1152052/72) as well as wireless window contacts and wireless movement sensors with EnOcean wireless technology. Moreover, window contacts or movement sensors installed on site can be evaluated via a voltage free contact by use of a cable. Connection module for one room (1-fold). Installation in a standard flush socket with cover plate, but without cover frame.
	**"ABR 55" Cover frame** white (RAL 9016)	**1153170**	Cover frame for item no. 1153101 and 1153121.

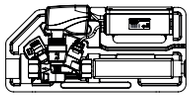
	Article	Packing unit	Article-No.	Hint
	**"RM-C F8" Room module** for 8 rooms with EnOcean wireless technology and C-bus communication, surface mounting, 24 V/50 Hz		**1153118**	The "RM-C F8" is a bus based 8-fold wireless room module for the connection of thermostats "Uni LHZ" or "Uni FHZ" repsectively room thermostats (item no. 1152052/72) as well as wireless window contacts "FK-C F" or wireless presence sensors "BWM-C F" with EnOcean wireless technology. Moreover, cabled window contacts or cabled movement sensors installed on site can be evaluated. Connection module for 8 rooms (8-fold) for surface-mounted installation.
	**"RBG-C F" Room controller** with EnOcean wireless technology, nominal room temperature setting device and presence key button, solar powered, white (RAL 9010)		**1153050**	Solar operated wireless room controller with room temperature sensor, nominal room temperature setting device and presence key button for setback and comfort operation, for surface-mounted installation. The room controller transfers the data to the wireless room modules via EnOcean wireless technology.
	**"BWM-C F" Movement sensor** with EnOcean wireless technology surface mounting, solar powered, white (RAL 9010)		**1153180**	The solar powered wireless ceiling sensor serves the presence detection and luminosity measurement. Transmission to the wireless room modules via EnOcean wireless technology. The solar powered energy storage ensures a maintenance-free operation. The appliance detects movements in a range of 360°.
	"FK-C F" Wireless window contact solar powered, white (similar to RAL 9003)		**1153070**	A radio signal is transmitted when opening or closing the window. The solar powered energy storage ensures a maintenance-free operation. Compatible with: -"R-Tronic" Wireless thermostats ("DynaTemp HA") -Wireless room modules ("DynaTemp BA") Note: The wireless thermostats "R-Tronic" require the software version 01-06-02 or higher and have to be mains-operated.
	**"RP-C F" Wireless repeater** for EnOcean wireless technology, flush mounting, 230 V/ 50 Hz	(50)	**1153060**	The repeater serves to amplify the EnOcean radiograms and is for instance used to increase the radio range between wireless window contacts and the wirless room modules.
	**"RBG-C K" Room controller** with C-bus communication, nominal room temperature setting device and presence key button with LED, wired, surface mounting, 24 V/50 Hz, white (RAL 9010)		**1153271**	The "RBG-C K" is a bus application room controller with room temperature sensor for the connection of actuators as well as window contacts or movement sensors installed on site via cable. Connection module for 1 room (1-fold), for surface-mounted installation. A nominal room temperature setting device and a presence key button with LED display and possiblity to switch from comfort to setback operation are integrated.

Article	Article-No.	Hint
	**"Aktor T 2P" Electrothermal actuators (two point)** connection thread M 30 x 1.5 "L NC", closed with current "off", 24 V **1012416** "L NC", closed with current "off", 24 V **1012442** cable 2 m long	Oventrop electrothermal actuators are used for heating, ventilation and air conditioning. The actuators serve to control the room temperature and can be used e. g. with conventional radiators, radiators with integrated distributor, distributors/collectors for surface heating, radiant ceiling panels, chilled ceiling systems and induction air systems in combination with two point room thermostats. Further applications in bivalent heating installations. For zone and room temperature control. Connecting cable 1 m. With "First-Open" function (except for actuators "open with current off") and stroke index. Simple plug-in connection with valve adapter. Actuators can be installed in any position. As for the model with auxiliary switch, a pump can for instance be switched via the integrated volt free contact. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.
	**"Aktor T ST" Electrothermal actuator (0-10 V)** Proportional actuator connection thread M 30 x 1.5 "L NC", closed with current "off", 24 V **1012953** with automatic recognition of neutral point and valve travel	The actuator (0-10 V) can be used in centralised building control systems in combination with the electronic room thermostat, item no. 1152151/1152153, or with a central controller. Plug-in connecting cable 1 m. With "First-Open" function and stroke index. Easy plug-in connection with valve adapter. Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on neon tubes. A varistor is thus not necessary.

Combination possibilities of valves and actuators: Page 3.08

Page





12.f "DynaTemp BA" Building Automation
Automatic thermal balancing and thermal disinfection in potable water circulation systems "CW-BS"

Content

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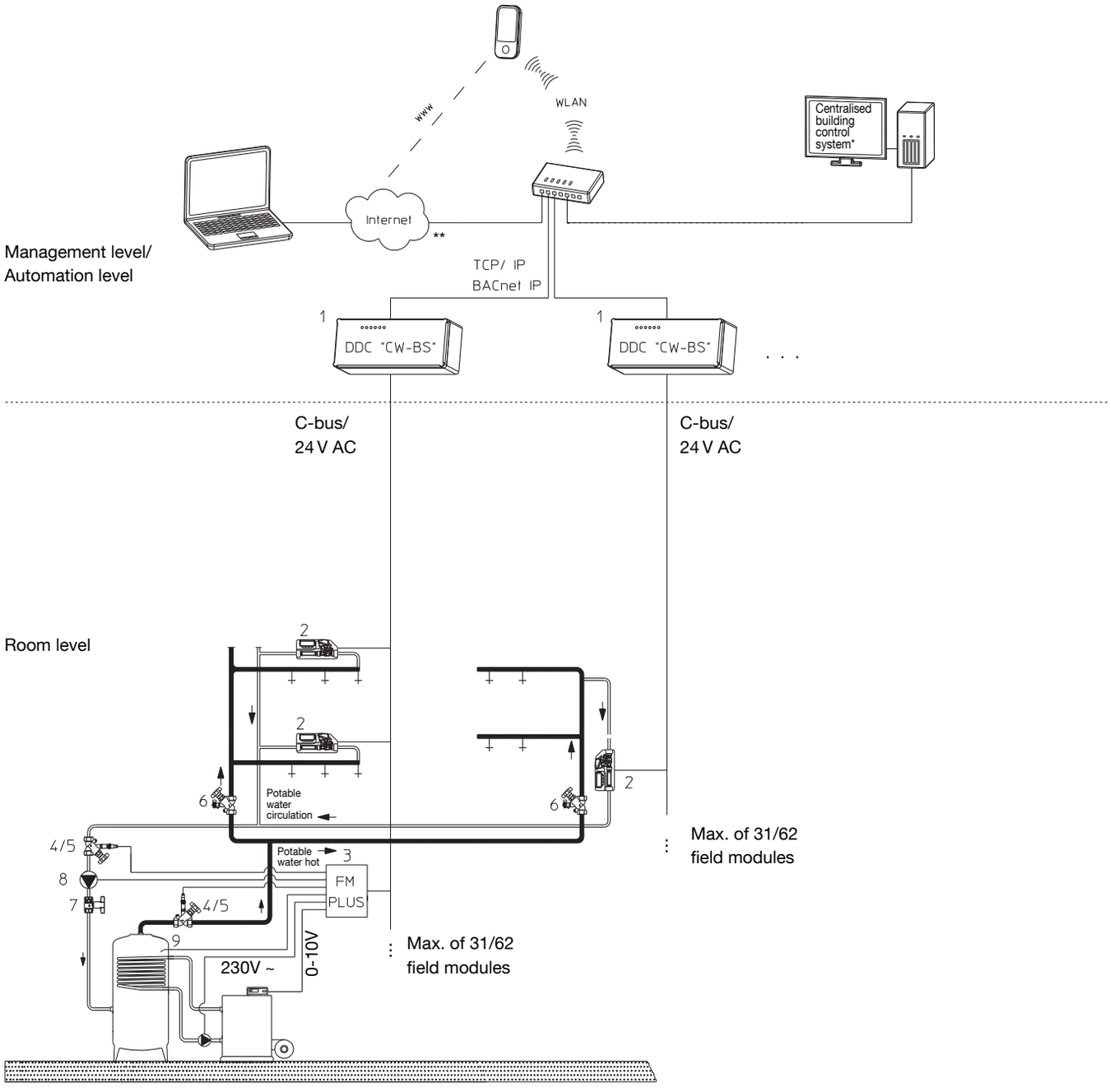
TR-250 Transformer	12.37
TR-80 Transformer	12.37
"Aquastrom DT" Electronic circulation regulating valve	12.37
"FM-CW Plus" Field module	12.38
"REM-CW" Relay module	12.38
"FM-CW K" Field module	12.38

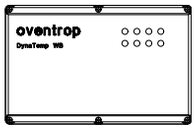
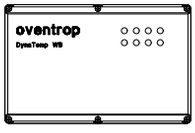
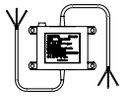
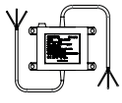
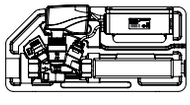
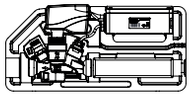


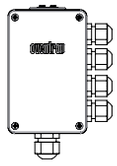
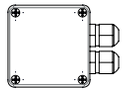
* Integration into a centralised building control system of other manufacturers (e.g. Honeywell, Kieback & Peter, Sauter, Siemens etc.) via the standardized interface “BACnet IP”.

** Router configurations, such as port forwarding, are required to access the DDC.

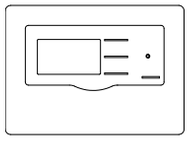
DDC “CW-BS” for automatic thermal balancing and thermal disinfection in potable water circulation systems

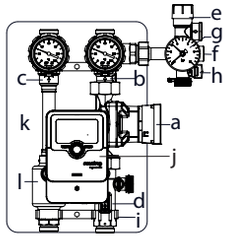
1 DDC “CW-BS” Control unit
2 “Aquastrom DT” Regulating valve including field module with actuator 24 V, 0-10 V and temperature sensor
3 “FM-CW Plus” Field module for the connection of sensors and pumps
4 “Aquastrom FR”
5 Temperature sensor G ¼
6 “Aquastrom KFR”
7 “Optibal TW” Ball valve for potable water
8 Circulation pump
9 Storage cylinder temperature sensor, PT 1000

	Article	Article-No.	Hint
	**DDC "CW-BS" Control unit** with bus technology, for the connection of 31 C-bus field modules, surface mounting, 24/ 50 Hz, bus current: 24 V/50 Hz	**1153350**	The control unit DDC "CW-BS" is used for automatic thermal balancing and thermal disinfection in potable water circulation systems. The control valves "Aquastrom DT" with electromotive actuator are connected to the C-bus via the bus application field modules. The integrated web server allows access to the system via a PC and a standard web browser (e.g. Mozilla Firefox). The parameters (e.g. time profiles) of the system can be set via the menu and the trend data, the current status as well as the disinfection records can be queried. The integration of the system into the centralised building control system is possible via "BACnet IP".
	as item no. 1153350, but for 62 C-bus field modules	**1153351**	
	**TR-250 Transformer** primary: 230 V; 50 Hz secondary: 24 V/ 250 VA	**1153055**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	**TR-80 Transformer** primary: 230 V, 50-60 Hz secondary: 24 V / 80 VA	**1153053**	Transformer for the power supply of the DDC, field modules, thermostats and actuators.
	"Aquastrom DT" Electronic circulation regulating valve Potable water installations PN 10 Max. water temperature: 90 °C		Electromotive circulation valve with field module "FM-CW K" for electronic regulation of the required circulation volume flow in combination with the control unit DDC "CW-BS".
	both ports female thread according to EN 10226-1 DN 15, Rp ½ x Rp ½ DN 20, Rp ¾ x Rp ¾ DN 25, Rp 1 x Rp 1	 **1150004** **1150006** **1150008**	Bronze according to DIN 50930-6, with temperature sensor PT 1000, without dead zone, with isolating facility, draining valve for draining of the riser and insulation shells made of expanded polypropylene according to the German Energy Saving Directive (EnEV), building matieral class B2 according to DIN 4102.
	both ports male thread according to DIN ISO 228, flat sealing DN 15, G ¾ x G ¾ DN 20 , G 1 x G 1 DN 25, G 1¼ x G 1¼	 **1150104** **1150106** **1150108**	
	Accessories		
	"Sensor LW TQ" Sensor element PT 1000 G ¼, bronze body, temperature sensor made of stainless steel, two wire system	 **1150090**	For remote monitoring of the riser temperatures and integration into a centralised building control system.

	Article	Article-No.	Hint
	**"FM-CW Plus" Field module** for the connection of sensors and pumps with C-bus communication, 3 x PT 1000 temperature sensors/inputs, surface mounting, 24 V/50 Hz	**1153321**	The "FM-CW Plus" is a bus based field module for temperature detection, utilising 3 PT 1000 sensors. Two volt free relais can, for instance, be used for the control of the circulation/ storage cylinder pump, a thermostatic mixing valve or the burner demand. Optionally, control of the burner demand can also be carried out via a 0-10 V signal.
	**"REM-CW" Relay module** with analogue outlet (0 - 10 V) Relay contact: closing contact, (max.) 230 V / 5 A, volt free	**1153331**	Volt free contact which is activated via a 0 - 10 V analogue inlet (e.g. of the "FM-CW Plus") and which can be used for boiler control.
	"FM-CW K" Field module only supplied as replacement, already comes with the regulating valve "Aquastrom DT" with C-bus communication, surface mounting, 24 V/50 Hz	**1153301**	The "FM-CW K" is a bus based field module for the connection of the regulating valve "Aquastrom DT" for one riser.

Page





12.g "DynaTemp BA" Building Automation
Network of stations for heat generator/heating circuit and solar thermal energy "CS-BS"

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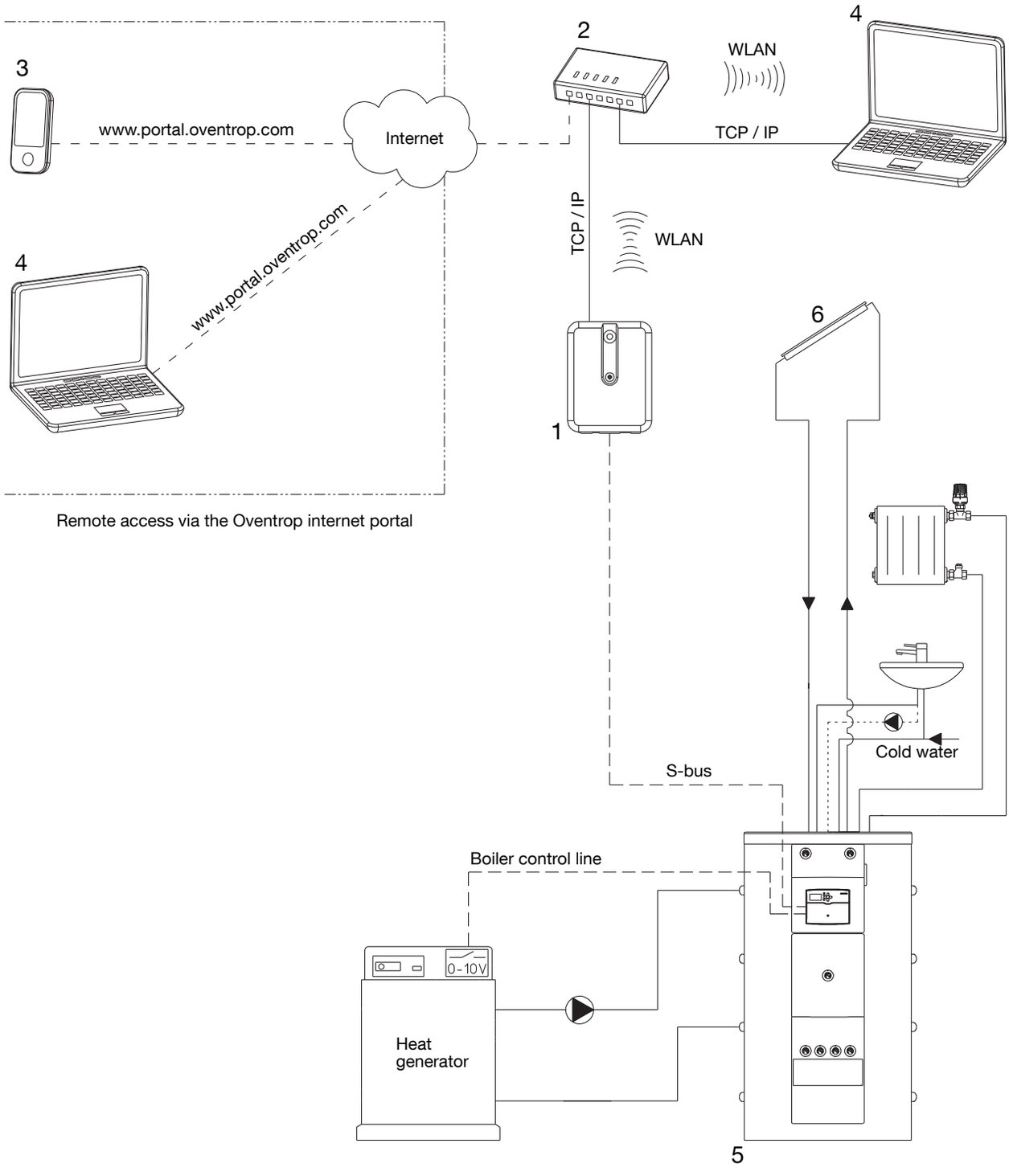
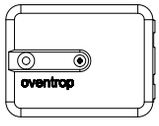
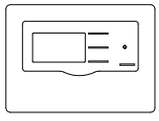
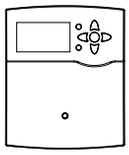


1 Datalog “CS-BS-1” (WLAN)
2 Standard router/switch (e.g. FritzBox)
3 Mobile displays (iPhone, iPod touch, iPad, Blackberry etc.)
4 PC/Laptop
5 “Regucor WHS” with controller “Regtronic RS”
6 “OKF” Flat-plate collector or “OKP” tube collector

	Article	Article-No.	Hint
	Datalog "CS-BS-1" Data logger for data collection and reading of controller data (1 controller) A system visualization is possible via the Oventrop portal. Suitable for wall attachment	**1159096°**	Data logger for an easy networking and visualization of different components/ controllers for solar thermal energy, heating and fresh water technology. The following controllers can be connected to the data logger "CS-BS": "Regtronic RC/RC-P" "Regtronic RX" "Regtronic RQ" "Regtronic RH" "Regtronic RM" "Regtronic RS" (Regucor) Controller data can be read via an integrated web interface. The data can be transmitted to a standard file format and be evaluated via third party software (see CSV file format). Connection to the centralised building control system can be carried out via the Datalog "CS-BS-6". For the preparation of trend data, the sensor and relay states are cyclically transmitted to the Oventrop portal (www.portal.oventrop.com) by the datalogger. The connection is encrypted and supplies the following functions without additional router configurations: -remote access -data/system visualization -backup of history data Interfaces: LAN, WLAN (only item no. 1159097) Inputs: 3 temperature inputs (PT 1000) The data logger can be easily operated via three keys and features a full graphics display for status visualization (only datalog "CS-BS-6"). Power supply via an external mains adaptor. **#Only for use inside the EU.**
	**Datalog "CS-BS-1" (WLAN)** Data logger for data collection and reading of controller data (1 controller) A system visualization is possible via the Oventrop portal. Suitable for wall attachment	**1159097*#**	
	**Datalog "CS-BS-6"** Data logger for data collection and parameterization of up to 6 controllers. Suitable for wall attachment	**1159095**	

Article	Article-No.	Hint



"Regtronic RH" Heating circuit controller

with 1 outdoor sensor and 3 additional sensors (PT 1000) **1152093**

with 1 outdoor sensor, 2 additional sensors (PT 1000) and remote control including room temperature sensor (PT 1000) **1152090**

Weather-guided control of the flow temperature of the heating system by activation of a heat generator and/or a mixing valve (e. g. "Regumat M3" or "Regufloor HW" with three-way mixing valve).
Controller for wall attachment with data bus (S-bus) for connection to the data logger "CS-BS".
Basic functions: 1 variable and 1 constant temperature heating circuit with heat demand.
Extension via "Regtronic EM".

Data can be viewed via a full graphics display.
Interfaces: S-bus for connection to the data logger "CS-BS". SD-card slot for data recording.
Inputs: 8 inputs for sensors (PT1000, KTY, switch or remote control), 2 inputs for electronic flow sensor VFD (volume flow / temperature) and irradiation sensor.
Outputs: 4 solid-state relays (speed controlled), 1 standard relay (volt free),
2 pulse-width modulation (PWM) outputs for the speed controlled activation of high-efficiency pumps. Both pulse-width modulation (PWM) outputs can be switched to 0 - 10 V.

For the connection of high-performance pumps (> 1A) see load relay, page 6.74.

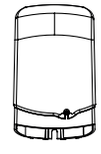
ErP classification heating circuit controllers “Regtronic RH” and “Regtronic EH”

Item no.	Controller	Required accessories	Boiler control modulating (0-10 V)	Boiler control On/Off	ErP %	Class
1152092	“Regtronic EH”	–		X	1.5	III
1152093	“Regtronic RH”	Adapter cable 1152086	X		2.0	II
1152093	“Regtronic RH”	–		X	1.5	III
1152090	“Regtronic RH” incl. remote control with room temperature sensor	Adapter cable 1152086	X		4.0	VI
1152090	“Regtronic RH” incl. remote control with room temperature sensor	–		X	3.5	VII
1152090	“Regtronic RH” incl. remote control with room temperature sensor	2 x room temperature sensor 1152095 Adapter cable 1152086	X		5.0	VIII

Adapter cable

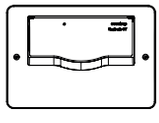
PWM-/ 0-10 V **1152086**

Adapter cable for signal transmission, for instance from the heating circuit controller "Regtronic RH" to a modulating heat generator with 0-10 V interface.
Accessory required for ErP classification II, VI and VIII.



Outside temperature sensor **1152099**

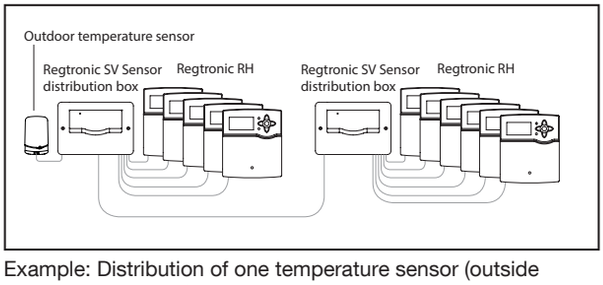
Temperature sensor PT 1000 for connection to the heating circuit controller "Regtronic RH".



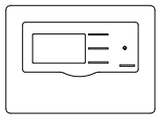
"Regtronic SV" Sensor distributor

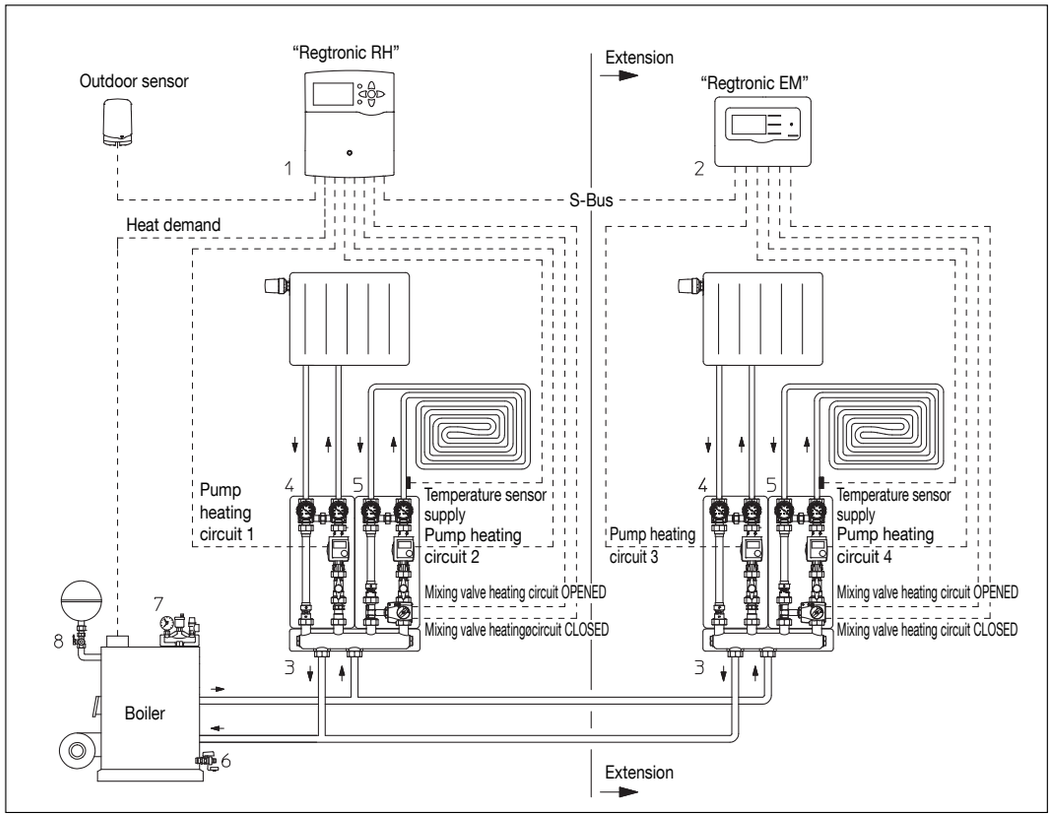
for the distribution of one PT 1000 temperature sensor to up to 6 "Regtronic" controllers **1152088**

The sensor distributor "Regtronic SV" distributes the signal of one PT 1000 outside temperature sensor to 6 outputs.
This allows the transmission of the signal of one sensor to up to 6 controllers (e.g. heating circuit controller "Regtronic RH").



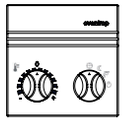
Example: Distribution of one temperature sensor (outside temperature sensor) to 5 respectively 6 heating circuit controllers "Regtronic RH".

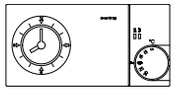
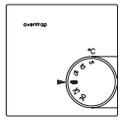
	Article	Article-No.	Hint
	**"Regtronic EM" Extension module** for the connection to the heating circuit controller "Regtronic RH"	**1152098**	"Regtronic EM" for the extension of the heating circuit controller "Regtronic RH" by 6 sensor inputs and 5 relay outputs. This way, further variable or constant temperature heating circuits can be activated. Up to five extension modules can be connected to the heating circuit controller "Regtronic RH". 1 sensor attached to the pipe PT 1000 is included.



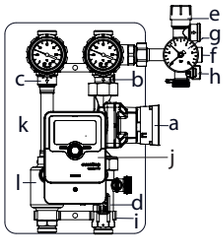
Example: Weather guided control of 2 variable and 2 constant temperature circuits with heat demand (e.g. via a conventional boiler, solid fuel or heat pump) consisting of the heating circuit controller “Regtronic RH” with outdoor sensor and the extension module “Regtronic EM”.

Oventrop products:
1 “Regtronic RH” Heating circuit controller with outdoor sensor
2 “Regtronic EM” Extension module
3 Distributor for “Regumat”
4 “Regumat S”
5 “Regumat M3”
6 “Optiflex” Ball valve
7 “MSM-Block” Boiler safety device
8 “Expa-Con” Valve with lead sealable cap

	Article	Article-No.	Hint
	Accessories		
	Room temperature sensor PT 1000	**1152095**	Room temperature sensor for fixing on level surfaces (surface mounting).
	Remote control with room temperature sensor PT 1000	**1152096**	Remote control with room temperature sensor PT 1000 for the connection to the electronic controllers "Regtronic RH, RM and RS" for a comfortable control of the heating curve of the controller from the living area. When increasing the heating curve, the flow temperature is increased and vice versa. The remote control also features the functions "heating circuit off" and "party position".
	Room controller with operating mode switch, remote control and room temperature sensor PT 1000	**1152087**	Room controller with operating mode switch, remote control and room temperature sensor PT 1000 for the connection to the heating circuit controller "Regtronic RH" for a comfortable setting of the operating mode and heating curve of the controller from the living area. Operating mode switch: Setting of the operating modes "Automatic", "Night setback", "Summer" and "Off". Remote control: An increase of the heating curve provokes an increase of the flow temperature and vice versa. Furthermore, the remote control features the functions "Heating circuit off" and "Party position".

	Article	Packing unit	Article-No.	Hint
	Room thermostat-clock - surface mounting (heating)			The electric room thermostat-clock is required for individual room temperature control of heating systems in combination with the electrothermal actuators (two point) "Aktor T 2P". Output signal pulse-width modulation. Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) “closed with current off”. Central temperature setback is carried out according to a timed programme. Limitation of the control range by using the concealed limiting elements.
	with daily setting			
	230 V	(78)	**1152551**	
	with weekly setting			
	230 V	(78)	**1152552**	
	24 V		**1152554**	
	Room thermostat - surface mounting			The surface- or flush-mounted model of the electric thermostat is used for individual room temperature control in combination with the electrothermal actuators (two point) "Aktor T 2P". Temperature range: 5 °C up to 30 °C Heating: Use electrothermal actuators (two point) "closed with current off". As for item no. 1152051/52/55/71/72, temperature may be set back by use of an external time switch (item no. 1152551/52 for 230 V, item no. 1152554 for 24 V). Cooling: Use electrothermal actuators (two point) "open with current off". Limitation of the control range of item no. 1152051/52/71/72 by using the concealed limiting elements. The isolator terminals of the room thermostat can be connected to the sensor entry of the heating circuit controller "Regtronic RH". The heating circuit controller can for instance activate a 230 V actuator or can switch to reduced heating operation.
	230 V	(25)	**1152051**	
	24 V	(25)	**1152052**	

Article	Article-No.	Hint



"Regusol ELH-130-RC" Station DN 25
with safety group and electronic controller
consisting of:
a) high-efficiency pump
b) ball valve with integrated check valve, thermometer and connection for safety group
c) ball valve with integrated check valve and thermometer
d) flow measuring and regulating device with isolation and lateral fill and drain ball valve
e) safety valve 6 bar
f) outlet G ¾ male thread to expansion tank
g) pressure gauge 10 bar
h) fill and drain ball valve
i) wall mounting device
j) electronic controller
k) insulation
l) deaerator

Control range of the flow measuring and regulating device:
2-15 l/min

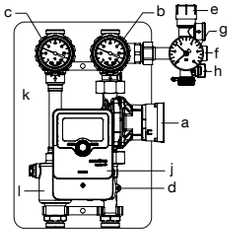
with Wilo-Yonos PARA ST 25/7 PWM 2 1366597
and controller "Regtronic RC"
with data output (S-bus)

Complete, pre-assembled and leak tested unit for the connection to the solar circuit.
With integrated electronic controller for the control and monitoring of a solar thermal plant according to the temperature difference principle. These stations are mainly used for hot potable water preparation.
With G 1 male threaded connection for "Regusol" compression fittings to the solar supply and return pipe.
For copper and precision steel pipes.
Alternatively, compression fittings according to DIN EN 16313 (cone "Euro") of other manufactures may also be used.

With the option to connect an expansion tank to the safety group.
Distance between pipe centres: 100 mm
Pump 130 mm long.
Continuous operating temperature: 120 °C
Short-term max. starting temperature: 160 °C
Suitable for standard solar liquids.

The data output of the "Regtronic RC" can be connected to the data logger "CS-BS".
Inputs: 4 temperature sensors (PT 1000)
Outputs: 3 relays, 1 is a volt free relay

The controller is already cabled with a temperature sensor (PT1000).
Another temperature sensor (PT 1000) for the connection to the collector is included.
Temperature sensors PT 1000 for the registration of additional temperatures are available as accessories.



"Regusol ELH-130-RC-P" Station DN 25 with high-efficiency pump
with safety group and electronic flow sensor

consisting of:

a) high-efficiency pump
b) ball valve with integrated check valve, thermometer and connection for safety group
c) ball valve with integrated check valve and thermometer
d) electronic flow sensor (2-40 l/min.)
e) safety valve 6 bar
f) outlet G ¾ male thread to expansion tank
g) pressure gauge 10 bar
h) fill and drain ball valve
i) wall mounting device
j) electronic controller
k) insulation
l) deaerator

with Wilo-Yonos PARA ST 25/7 PWM 2 1360394
and controller OV-"Regtronic RC-P"
with data output (S-bus)

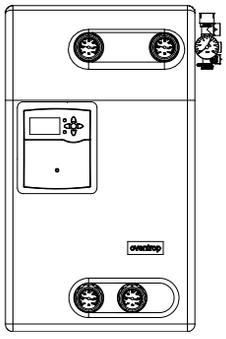
Apart from hot potable water prepration, this station with high-efficiency pump offers additional functions.
The integrated additional controller allows a support of the heating system, a difference control or a circulation function.
Yield measurement is possible via the **electronic flow sensor**.

Flow sensor without lateral fill and drain ball valve, use filling and flushing device "Regusol": page 9.33.

Interfaces: S-bus for connection to the data logger "CS-BS", SD-card slot for data recording
Inputs: 4 temperature sensors (PT 1000),
1 input for electronic flow sensor (volume flow / temperature)
Outputs: 3 relays, 1 is a volt free relay,
2 pulse-width modulation (PWM) outputs for the speed controlled activation of high-efficiency pumps.

For further information see "Technical information":

Article	Article-No.	Hint



"Regusol X-Uno 25" with heat exchanger
Station with heat exchanger
1 solar circuit connection
with electronic controller "Regtronic RX"
with full graphic display and data output (S-bus)

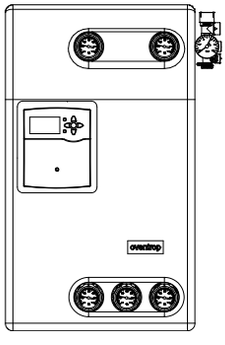
Capacity: 25 kW
Number of heat exchanger plates: 30

Connections:
Primary side: G 1 "Regusol" compression fittings
Secondary side: G 1 flat sealing

kvs = 2.4 m³/h primary side
(with a glycol proportion of 40 % in the solar liquid)
kvs = 3.6 m³/h secondary side

with Wilo Yonos high-efficiency pumps 1361060
Primary side: ST PWM 15/7
Secondary side: RS PWM 15/7

Product assembly with electronic controller, with heat exchanger, with three-way conversion valve for second secondary circuit ("Regusol X-Duo 25" only) for a controlled transmission of the heat of the solar circuit (primary circuit) to a buffer storage cylinder (secondary circuit), for instance for existing storage cylinders without direct solar connection.
The three-way valve integrated in the supply pipe of the secondary circuit ("Regusol X-Duo 25" only) allows the conversion to an additional loading circuit running in parallel, for instance for the loading section by section of the storage cylinder or the thermal loading of another storage cylinder.
Primary circuit: up to PN 10 and 120 °C
Starting temperature: 160 °C
Secondary circuit: up to PN 6 and 120 °C
constant operation



"Regusol X-Duo 25" with heat exchanger
Station with heat exchanger
1 solar circuit connection/
2 loading circuit connections
with electronic controller "Regtronic RX"
with full graphic display and data output (S-bus)

Capacity: 25 kW
Number of heat exchanger plates: 30

Connections:
Primary side: G 1 "Regusol" compression fittings
Secondary side: G 1 flat sealing

kvs = 2.4 m³/h primary side
(with a glycol proportion of 40 % in the solar liquid)
kvs = 3.2 m³/h secondary side

with Wilo Yonos high-efficiency pumps 1361050
Primary side: ST PWM 15/7
Secondary side: RS PWM 15/7

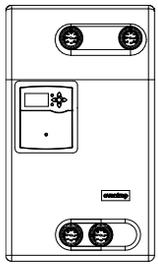
The soldered plate heat exchanger complies with the demands of the European Pressure Equipment Directive (PED). Due to turbulent flow conditions, an excellent self-cleaning effect is produced and a contamination is avoided.
The solar circuit is protected against excess pressure by a safety group integrated in the heat exchanger system. The leak tested components of the heat exchanger system are pre-assembled on a board. The controller is cabled with the internal electric components and has the following connections:
Output for solar circuit pump
Output for loading pump
Output for conversion valve
("Regusol X-Duo 25" only)
Apart from the outputs mentioned above the "Regtronic RX" has a data bus (S-bus) for the connection to the data logger "CS-BS".
Temperature inputs for:
Collector, heat exchanger entry point - primary side, heat exchanger exit point - secondary side, 3 temperature inputs for storage cylinder with loading operation section by section, interfaces for electronic flow sensor.
Plain text is clearly shown on the display of the controller.
The heat exchanger system is completely insulated and can be quickly connected to the primary side using compression fittings and to the secondary circuit using flat seals and be put into operation.
The indicated capacity for the heat transmission applies to a useable solar global radiation of 500 W/m².

The actual heat transmission depends on:

– the reached flow temperature and the volume flow of the primary circuit
– the flow temperature difference between the primary and the secondary circuit
– the required flow temperature and the flow rate of the secondary circuit

For the extension of a "Regusol X" station with high-efficiency pump for the interconnection and regulation of different collector fields (e.g. east/west), see supplementary set "Regusol X": page 9.35

Article	Article-No.	Hint



"Regumaq X-30" - without circulation connection
Station for hot potable water preparation
with electronic controller "Regtronic RQ"
with full graphic display and data output (S-bus)

with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side
Heat exchanger: 30 plates

Discharge capacity: 2 - 45 l/min.
depending on the set potable water temperature
and the existing water temperature inside the buffer storage cylinder

Control range of potable water temperature: 20 °C - 60 °C

Connections: G 1 flat sealing for the connection to the
buffer and potable water circuit

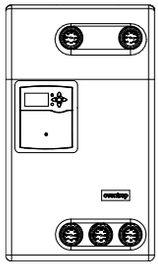
Potable water circuit:
with flow sensor, safety valve 10 bar,
electronic resistance thermometer, 2 fill and drain cocks,
ball valves and thermometer

Buffer circuit: Fill and drain cocks, ball valves with and
without check valve and thermometer, circulation pump

Dimensions (outer dimensions of insulation):
Width: 500 mm
Height: 860 mm
Depth: 260 mm

Model with copper brazed heat exchanger	**1381030**
Model with heat exchanger completely made of stainless steel	**1381032**

Application:
Electronically controlled product assembly with heat exchanger for the hygienic heating of potable water according to the continuous flow principle.
The potable water is only heated at the moment when it is needed, i. e. "just in time".
The stations are expecially suitable for detached and semi-detached houses. They are connected to buffer storage cylinders which are heated up by solar energy, solid fuels, gas or oil.
Depending on the temperature and the volume flow on the potable water side, the circulation pump on the heating side is speed regulated.
The plate heat exchanger complies with the specifications of the European Pressure Equipment Directive (PED).
Due to the turbulent flow, a good self-cleaning effect avoiding a contamination is achieved.
The plate heat exchanger can be flushed using the fill and drain cocks integrated in the primary and secondary circuit.
The potable water circuit is protected by a 10 bar safety valve.
The components of the heat exchanger system have flat sealing connections, are pre-assembled on a mounting board and leak tested.
The controller is wired up with the internal electric components and features a data bus (S-bus) for the connection to the data logger "CS-BS".



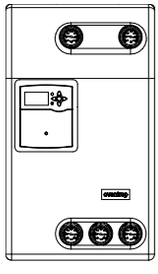
"Regumaq XZ-30" - with circulation connection
Station for hot potable water preparation
with electronic controller "Regtronic RQ"
and connection for potable water circulation systems

with Wilo high-efficiency pump Yonos PARA RS 130 15/7 PWM2
for the buffer side

with Wilo pump ZRS 130 15/4-3KU
for the potable water side (circulation)

Model with copper brazed heat exchanger	**1381035**
Model with heat exchanger completely made of stainless steel	**1381037**

Similar to "Regumaq X-30". The potable water circuit is additionally equipped with a circulation pump for the operation in a circulation system.
With check valve in the circulation circuit.
Control functions individually programmable:
Adjustable circulation return temperature or adjustable time frames and daily programmes.



"Regumaq XZ-30" - with circulation connection and high-efficiency circulation pump
Station for hot potable water preparation
with electronic controller "Regtronic RQ"
and connection for potable water circulation systems

with high-efficiency pump Wilo-Yonos PARA RS 130 15/7 PWM 2
for the buffer side

with high-efficiency pump Wilo-Yonos PARA Z RKC 130 15/7
for the potable water side (circulation)

Model with copper brazed heat exchanger	**1381025**
Model with heat exchanger completely made of stainless steel	**1381027**

Similar to "Regumaq X-30". The potable water circuit is additionally equipped with a high-efficiency circulation pump for the operation in a circulation system.
With check valve in the circulation circuit.
Control functions individually programmable:
Adjustable circulation return temperature or adjustable time frames and daily programmes.

Possible application of copper brazed plate heat exchangers has to be checked. For further information visit www.oventrop.com/to/trinkwasseranforderung.

Tailpipe sets Page 6.66

Page

12.h Actuators, sensors, valves and fittings

Content

System summary 12.50

“Aktor” Actuators

Different types of control and actuators are used for the building automation:

For a complete isolation of the volume flow, the installation of an actuator with two point control (“on”/”off”) on the flow valve is sufficient.

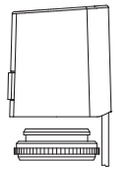
Short and long stroke periods are optional.

When using mixing- or diverting valves, intermediate actuator positions become necessary for the adaptation of two volume flows.

These actuators feature a steady control and any position between fully open and fully closed can be initiated.

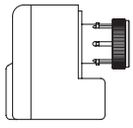
Depending on whether a control voltage is supplied by the building automation permanently or only at the point of adjustment, distinction is made between the 0-10 V and three point control.

As before with the two point actuators, a long or short stroke period is optional.



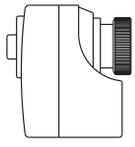
“Aktor T 2P”
Electrothermal actuator (two point)

For room temperature control or as a zone valve.
Page 1.26.



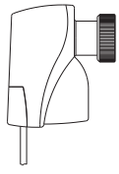
“Aktor M 2P”
Electromotive actuator (two point)
230 V/24 V, two point actuator,
without anti-blocking function

With quick stroke.
Page 1.28.



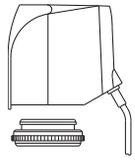
“Aktor M 2P”
Electromotive actuator (two point)
230 V/24 V, two point actuator,
with emergency function

With quick stroke.
Page 1.28.



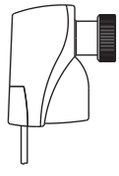
“Aktor M 3P”
Electromotive actuator (three point)
230 V/24 V, three point actuator,
without anti-blocking function

Page 1.28.



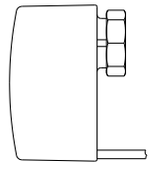
“Aktor T ST L”
Electrothermal actuator (0-10 V)
24 V, steady control

For steady room temperature control.
Page 1.27.



“Aktor M ST L” with adjustable characteristic lines
Electromotive actuator (0-10 V)
24 V, steady control

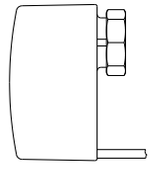
Electromotive actuator with varied adjustable characteristic lines (linear, equal percentage).
Page 1.28.



Actuators with bus interface
“Aktor M ST EIB/KNX”
connection thread M 30 x 1.5

with one binary entry

with two binary entries



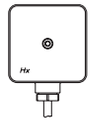
“Aktor M ST LON”
connection thread M 30 x 1.5

with adapter for squeeze connection

Legend:
M: Electromotive actuator
T: Electrothermal actuator
2P: Two point control
3P: Three point control
ST: Steady control
CON: Controller integrated
L: 24 V
H: 230 V
B: Battery
NO: Normal open
NC: Normal closed

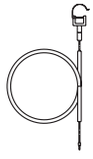
“Sensor” Sensors

Different types of sensors for the detection of temperature, humidity, pressure and other physical values are used in centralised building control systems. Distinction is made between passive sensors (e.g. PT 1000, N 1000) and active sensors (e.g. 0-10 V output signal). Moreover, the sensors are used for different applications (e.g. potable water).



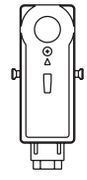
“Sensor GA FD”
Dew point control with alternating contact

Is required in conjunction with room thermostats to protect chilled surfaces against condensation.
Page 2.72.



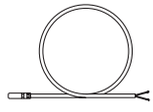
“Sensor LW TH/pipe”
Temperature sensor, PT 1000, cold

Sensor attached to the pipe with clip fixing.
Page 6.105.



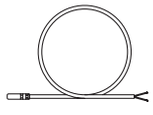
“Sensor LW TH”
Electric sensor attached to pipe, bimetal

For max. limitation of the flow temperature of surface heating systems.
Page 6.96.



“Sensor LW TH”
Temperature sensor, PT 1000
Solar collector
-50 °C up to +180 °C

For electronic detection of the solar collector temperature.
Page 6.74.



“Sensor LW TH”
Temperature sensor, PT 1000
Heating systems
-10 °C up to +105 °C

For electronic temperature detection in storage cylinders or heating systems.
Page 6.74.

“Sensor LW TQ”
Temperature sensor G ¼, PT 1000

For electronic temperature detection in potable water risers.
Page 12.37.

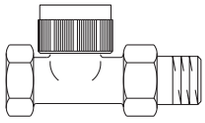
“Sensor LW TQ”
Insertion sensor element, PT 1000

For electronic temperature detection in potable water risers. Suitable for all “Aquastrom” valves with thermometer connection.
Page 8.30.

Legend: L: Liquid, G: Gas; W: Water, O: Oil; A: Air, C: CO_2 content; T: Temperature, F: Humidity; C: Concentration, P: Pressure; Q: Potable water, H: Heating water/ cooling water; D: Dew point, U: Transformer

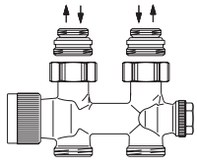
Valves and controls

For heating and cooling system control, the volume flows in the terminal units such as radiators, chilled ceilings, fan coils etc. are balanced by corresponding valves and controls.
At the same time, presetting for hydronic balancing can be carried out at the valves or the volume flow is limited automatically.
The list illustrates a choice of valves and controls for different applications.
The valves and controls can be combined with the preceding actuators.



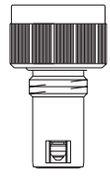
“AQ/AV9” Thermostatic valves
DN 10 – DN 25

Thermostatic valve for room temperature control at radiators with classic valve connection. Can also be used as zone valve for smaller dimensions
Page 1.42/1.50.



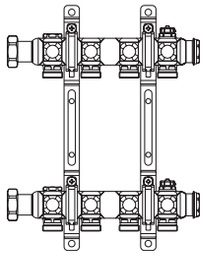
“Multiblock TQ” Two pipe fitting
Straight pattern

Connection fittings “Multiblock T” for the control and isolation of radiators with a lower connection of 50 mm. For two and one pipe heating systems.
Page 1.45.



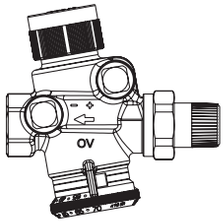
Valve insert (M 30 x 1.5)
for radiators with integrated distributor

Valve insert for radiators with integrated distributor.
Page 1.102.



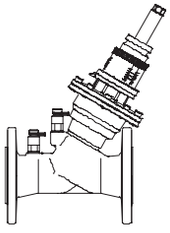
“Multidis SH” Stainless steel distributor/ collector for radiator connection
flat sealing

Stainless steel distributor/ collector “Multidis SH” for radiator connection, surface temperature balance (heating/ cooling). Connection of one actuator for each connected circuit.
Page 1.132.



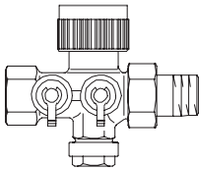
“Cocon QTZ” Pressure independent control valve PN 25

Pressure independent control valve “Cocon QTZ” for central heating and cooling systems with closed circuits.
The valve combination consists of an automatic flow regulator and a regulating valve. It is also used for room temperature control with the help of an actuator or can be used as a zone valve.
Page 3.52.



“Cocon QFC” Pressure independent control valve PN 16

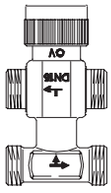
The pressure independent control valve “Cocon QFC” is installed in heating and cooling systems with closed water circuit (e.g. central heating systems, surface heating systems, fan coil units, chilled ceilings and fan convectors) for an automatic flow control (hydronic balancing) and for room temperature control via actuators with a modified flow rate.
Page 3.56.



“Cocon 2TZ” Regulating valve PN 10
“eco” measuring technique

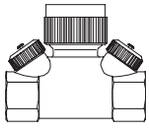
Regulating valve “Cocon 2TZ” for chilled ceiling installations.
The calculated flow rate is set at the regulating valve. It is also used for room temperature control with the help of an actuator or can be used as a zone valve.
Page 3.61.

Hydronic balancing of heating and cooling systems is of major importance for an efficient operation.
This relates for instance to the regulation of radiators, chilled ceiling elements or pipework valves in heating and cooling systems. The status data is processed or monitored by the centralised building control system.
Oventrop offers valves and controls for different applications which are displayed in the below list.
The valves and controls can be combined with the preceding actuators.



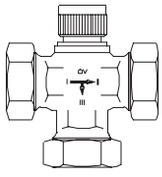
“Tri-M plus TR” Four-way mixing valve with integrated T-piece PN 10

Page 3.78.



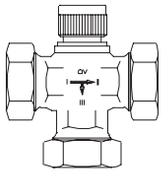
“Hycocon ETZ” Regulating valve PN 16 with infinitely variable presetting “eco” measuring technique

High kv value.
Page 3.14.



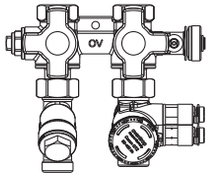
“Tri-D TR” Three-way diverting valve PN 16
DN 20 – DN 40

Page 3.79.



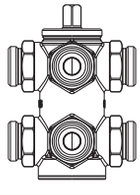
“Tri-M TR” Three-way mixing valve PN 16
DN 20 – DN 40

Page 3.79.



“Flypass” connection sets
DN 15 – DN 20

Consisting of connection fitting, strainer and “Cocon QTZ”.
Page 3.69.



“Optibal W6”
Six-way ball valve
DN 15 – DN 20

Page 3.65.