

**System description:**

The bus system “CR-BS” with the control unit **DDC “CR-BS”** offers a system solution for central temperature setback via thermostats with liquid sensor and setback function or room thermostats with setback resistance.

Temperature control is carried out with the help of the **thermostats “Uni LHZ”** or **“Uni FHZ”** or the 24 V room thermostats (item no. 1152052) which are connected to the control unit **DDC “CR-BS”** via the C-bus room modules for setback activation.

The integrated web server allows for access to the system via a PC and a standard web browser (e.g. Mozilla Firefox). The parameters (e.g. time profiles with setback values, user profiles, etc.) can be set via the menu and the trend data as well as the current status can be queried.

The room can be heated and the temperature can be set back according to requirements with the help of a movement sensor **or** a presence key button (wired, connected to the digital input (DI) of the room module) installed on site. This way and by recognizing an open window with the help of a window contact (wired **or** wireless), **energy can be saved without loss of comfort.**

The **24 V AC power supply** of the complete system is ensured by a transformer supplying the control unit DDC “CR-BS” as well as the room modules and the connected terminal units with energy. The electrical requirements of the individual components (see technical data sheets) must be observed. The installation of additional separate transformers for the room modules and the room thermostats with setback input (two point actuators) may become necessary, for instance in case of unfavourable cabling, high loading of the room modules (many actuators) or other installation conditions. In this case, the 24 V circuits have to be separated from one another! Different room and field modules can be connected to the C-bus.

The **“RM-C F”** is a universal bus based wireless room module for the connection of actuators or thermostats “Uni LHZ” or “Uni FHZ” respectively room thermostats or wireless window contacts “FK-C F” as well as wireless movement sensors “BWM-C F” with EnOcean wireless technology. Moreover, window contacts **or** wired movement sensors **or** presence key buttons installed on site can be evaluated via a digital input (DI). The module for one room is installed in a standard flush socket.

The **“RM-C K”** is comparable to the module “RM-C F”, but it is without EnOcean wireless technology. Wired window contacts **or** movement sensors/presence key buttons can be connected to the “RM-C K” module.

The **“RM-C F8”** in a surface mounted casing is a universal bus based 8-fold wireless room module for the connection of thermostats “Uni LHZ” or “Uni FHZ” as well as wireless window contacts “FK-C F” or wireless movement sensors “BWM-C F” with EnOcean wireless technology. Moreover, window contacts **or** wired movement sensors **or** presence key buttons installed on site can be evaluated via a digital input (DI).

The room module **“RM-C K8”** is comparable to the module “RM-C F8”, but it is without EnOcean wireless technology. Wired window contacts **or** movement sensors/presence key buttons can be connected to the “RM-C K8” module.

The room modules feature **one** digital input (DI) per channel for the connection of wired window contacts **or** movement sensors **or** presence key buttons.

The data is transmitted by the radio based devices to the 1- or 8-fold wireless room modules via radio technology.

The solar powered wireless movement sensor **“BWM-C F”**

detects movements within a range of 360°. The wireless window contact **“FK-C F”** transmits a radio signal to the wireless room modules when opening or closing a window. The solar powered energy storage of both devices ensures a maintenance-free operation.

The solar powered wireless temperature sensor **“RS-C F”** is used for room temperature monitoring. The temperature values **or** sequences can be viewed via the control unit DDC “CR-BS”.

The wireless repeater **“RP-C F”** 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.

**Application:**

The system “DynaTemp CR-BS” is used in combination with the thermostats **“Uni LHZ”** or **“Uni FHZ”** respectively room thermostats (setback input) and two point actuators in heating systems, especially in office building, authorities, schools and universities.

**Installation:**

A 24 V transformer with a sufficient capacity (item no. 1153050 or 1153053) which is supplied via a 230 V earthed socket at a central location in the wiring network is used for the power supply of the **DDC “CR-BS”** and room modules including setback function.

Two point actuators often call for a separate power supply for their control via 24 V room thermostats with setback input (item no. 1152052). In this case, the 24 V circuits have to be separated from one another!

The 24 V supply voltage for the room modules should be laid parallel to the C-bus from the DCC connection box to the room modules [e.g. JY(ST)Y] in a shielded, 2 x 2-core, twisted pair data line with a minimum wire cross-section of 0.5 mm<sup>2</sup>.

The cabling from the room modules to the room thermostats, wired window contacts, movement sensors or presence key buttons can be carried out with standard wires with a sufficient cross-section.

A sufficient distance to power cables (230/400 V) must be kept during laying.

The control unit (DDC “CR-BS”) can be integrated into an existing computer network via a network cable (on delivery: IP 192.168.135.1). The user interface is called up via the PC by entering the IP address in the command line of the web browser. As the “DDC” features a web browser, additional software is not required.

Existing network structures (cable channels, computer networks) can be used for installation and wiring of the “CR-BS” system. Installation must be carried out in accordance with the relevant provisions and the enclosed operating instructions.

**Tender specification:**

**Control unit DDC “CR-BS”**

The DDC “CR-BS” offers a system solution for central temperature setback via thermostats with liquid sensor and setback function. The thermostats “Uni LHZ” or “Uni FHZ” respectively room thermostats (item no. 1152052) are connected to the control unit via the C-bus room modules. The integrated web server allows for 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.

- Item no.:** 1153150 (up to 31 participants/rooms)
- Item no.:** 1153151 (up to 62 participants/rooms)

**Technical data:**

**Operating conditions:**

- Temperature: 0 ...+50 °C
- Humidity: 10 ...95 % RH, not condensing

**Storage conditions:**

- Temperature: -20 ...+70 °C
- Humidity: 10 ...95 % RH, not condensing

**Casing complete appliance:**

- Dimensions**  
(without couplings): 250 × 175 × 100  
L × W × H (installation depth) in mm
- Weight:** about 1500 g
- Material:** Plastic ABS
- Colour:** Rear: light grey (RAL 7035)  
Cover: transparent, imprint similar to anthracite (RAL 7021)
- Protection:** IP 30
- Protective system:** III - Protective low voltage
- Installation:** Surface mounting
- Cable insertion:** 4× graduated spigot M 20

**Casing DDC:**

- Dimensions:** 125 × 108,5 × 77,  
L x W x H in mm
- Weight:** about 585 g
- Material/Colour:** Aluminium, black (RAL 9005)
- Protection:** IP 20
- Protective system:** III - Protective low voltage
- Installation:** Solid metal casing  
Industrial design for top hat rail installation

**Electrical connection DDC:**

- Power supply (X1): AC 24 V ± 10%, 50 ...60 Hz
- Power consumption **DDC:**
- DDC with 32 C-bus addresses: 24 VA
- DDC with 64 C-bus addresses: 35 VA

**Communication DDC:**

- USB (X2): 1× type B, USB socket standard B
- TCP/IP (X3): 1× RJ45 Ethernet socket 10/100 MBit/s
- RS485-1 (X4): Not in use
- RS232-1 (X7): Not in use
- C-bus line (X9): twisted, shielded data line  
0,5 mm<sup>2</sup> ...2,5 mm<sup>2</sup>  
Max. cable length in the complete C-bus network : 1000 m

**Memory DDC:**

- SD-RAM: 32 MB main memory
- NVRAM: 2 MB data memory for data points, buffered by a battery (CR 1632) which is accessible from outside

**FLASH**

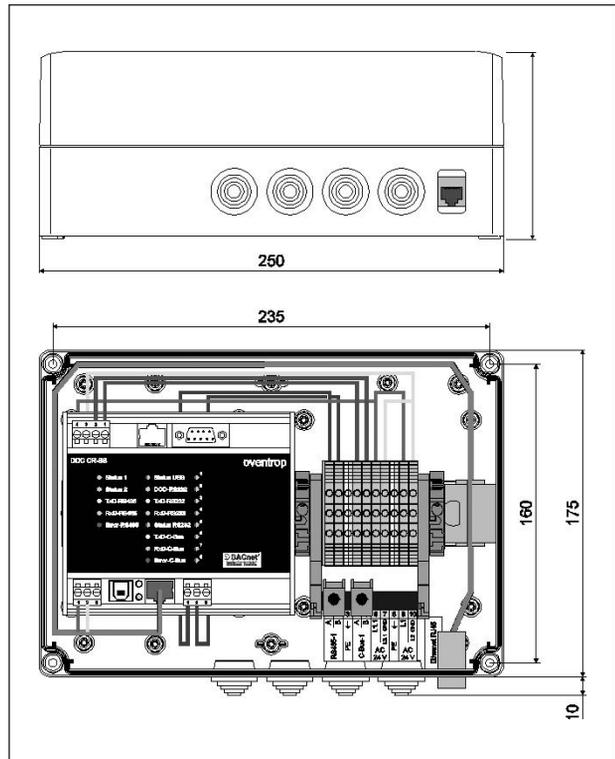
- SD card: 1 GB for programme and configuration data

**Others:**

- Real time clock (RTC), automatic summer/winter time, buffered by a battery (CR 1632)

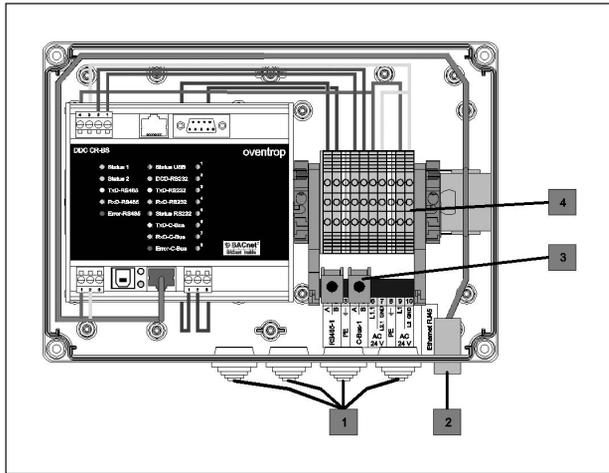


Control unit DDC “CR-BS” (casing of complete appliance)



Dimensions

“DynaTemp BA” Building Automation “CR-BS” Individual room temperature control



Pin assignment

Position	Designation	Description
1		4 x graduated spigot M20
2	Ethernet RJ45	Ethernet socket (RJ45) for communication and parameterisation via TCP/IP
3		2 x shield terminal for C-bus and RS485-1 - only fix after connection of the wires to the terminal block
4	Terminal blocks	Permissible cable cross-sections 0.5 mm <sup>2</sup> ...2.5 mm <sup>2</sup>

Terminal	Designation	Description
1	A	RS485-1, bus interface, not in use
2	B	
3		PE, earth conductor
4	A	C-bus 1, bus interface
5	B	
6	L 1.1	AC 24 V, power supply room and field modules, <b>only connect</b> if power supply of the modules is not carried out by a separate transformer
7	L2.1 GND	GDN
8		PE, earth conductor
9	L1	AC 24 V, electricity feed-in DDC casing
10	L2 GND	GND

**Note:**

For accessing the control unit for the first time and for **downloading the operating manual**, the device only has to be connected to the 24 V AC power supply and the Ethernet connection has to be established (patch cable) (see grey table fields).

**Tender specifications:**

**Transformer TR-250**

Transformer for the power supply of the wired components.

primary: 230 V; 50-60 Hz  
secondary: 24 V / 250 W

Item no.: 1153055



Transformer TR-250

**Transformer TR-80**

Transformer for the power supply of the wired components.

primary: 230 V; 50-60 Hz  
secondary: 24 V / 80 W

Item no.: 1153053



Transformer TR-80

**Tender specifications:**

**Room module “RM-C F” for one room, with EnOcean wireless technology and C-bus communication, flush mounting, 24 V**

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), wireless window contacts “FK-C F”, wireless movement sensors “BWM-C F” and the wireless temperature sensor “RS-C F” with EnOcean wireless technology.

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), for flush mounting installation.

Installation in a standard flush socket, supplied with white cover plate, but without cover frame (to be ordered separately).

**Item no.:** 1153101

**Room module “RM-C K” for one room, without wireless technology, with C-bus communication, flush mounting, 24 V**

The “RM-C K” is a bus based room module for the connection of actuators or thermostats “Uni LHZ” or “Uni FHZ” respectively room thermostats (item no. 1152052).

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), for flush mounting installation.

Installation in a standard flush socket, supplied with white cover plate, but without cover frame (to be ordered separately).

**Item no.:** 1153121

**Technical data:**

**Electrical connection:**

Power supply: AC 24 V ± 10 %, 50 ...60 Hz

Power consumption

(without actuators): < 3 VA

Bus load: < 6 mA

**Note!**

The power consumption of the connected actuators (observe start up loads) must be taken into consideration when selecting the transformer, conductor cross section and cable paths.

**Communication:**

C-bus: twisted, shielded data line (two cores with at least 0.5 mm<sup>2</sup>)

**Radio**

(only “RM-C F”): 868.3 MHz, EnOcean wireless technology

**Inputs:**

Digital: for the connection of a volt free contact (e.g. wired window contact or movement sensor)

**Outputs:**

Analogue: 1× AO, DC 0 ...10 V, max. 10 mA (for steady actuators)

Digital: 1× DO / PWM, Triac AC 24 V, max. 1.2 A  
**(DO:** for 2 point actuators for “DynaTemp CR-BX”)  
**(PWM:** for thermostats with setback function for “DynaTemp CR-BS”)

Power supply via the electrical connection, terminal 1 and terminal 2 (AC 24 V)

**Operating conditions:**

Temperature: 0 ...+50 °C

Humidity: 10 ...95 % RH, not condensing

**Storage conditions:**

Temperature: -20 ...+70 °C

Humidity: 10...95 % RH, not condensing

**Casing:**

Dimensions: 70,8 × 70,8 × 40 (L x W x H in mm)

Weight: about 60 g

Installation: Flush mounting, in a deep flush socket or a deep cavity socket screw fastening Ø 60 mm, min. inner depth 61 mm

**Cover:**

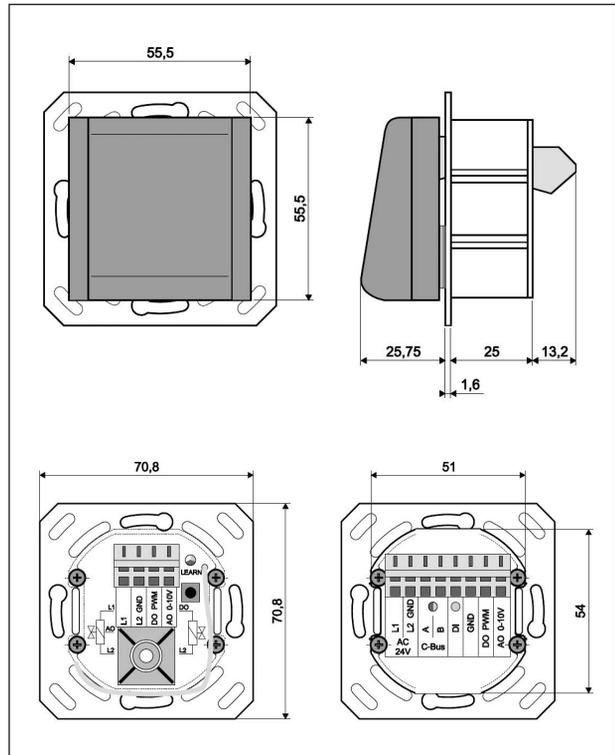
Material/Colour: Plastic PA6FG30, pure white (RAL 9010)

Protective system: III - Protective low voltage

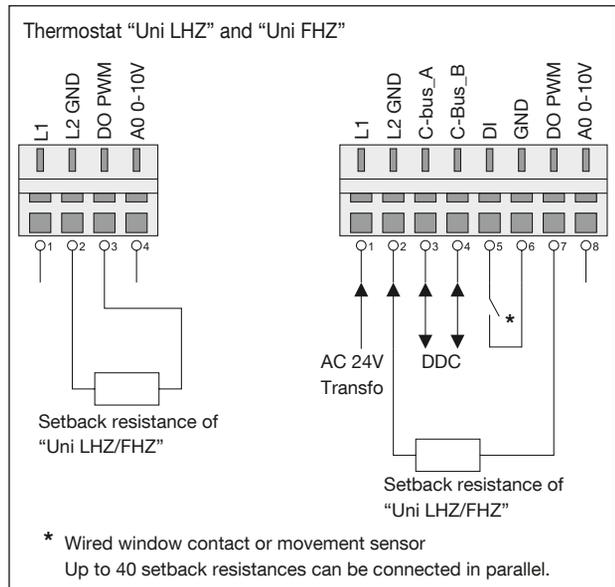
Protection: IP 20



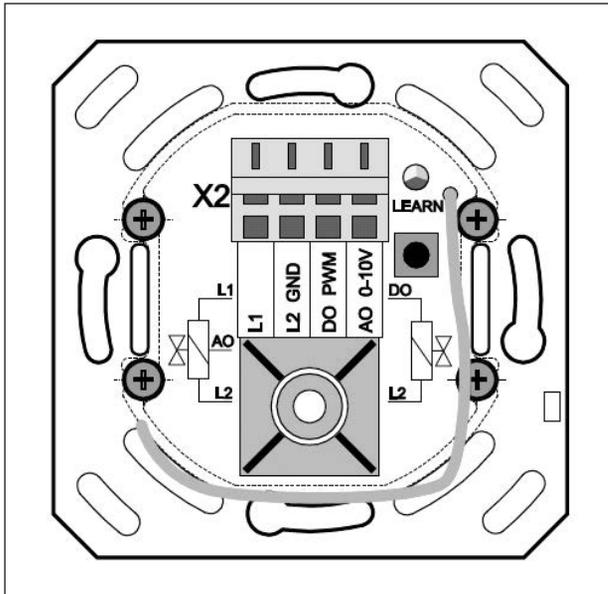
Room module “RM-C F”



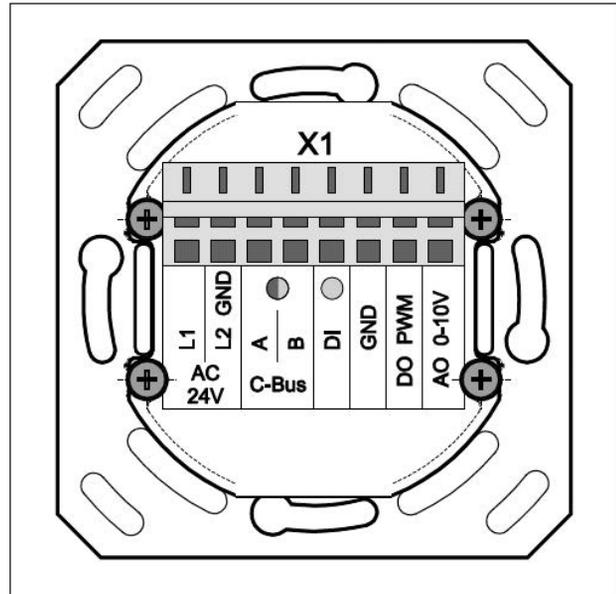
Dimensions



Connection example room modules “RM-C F” and “RM-C K”



Pin assignment: Front side connections  
(cable antenna only for wireless model “RM-C F”)



Pin assignment: Reverse side connections

Terminal X 2	Designation	Description
1	L1	AC 24 V output
2	L2 GND	GND output
3	DO PWM	Digital or PWM output (24 V AC)
4	AO 0-10V	Analogue output 0 ...10 V

Permissible cable cross-sections 0.5 mm<sup>2</sup> ...1.5 mm<sup>2</sup>

- L1:** Voltage output for actuators or thermostats with setback function
- L2 GND:** Ground connection for outputs
- DO:** Digital output for two point actuators (“DynaTemp CR-BX”)
- PWM:** PWM output for thermostats (“Uni-LHZ”, “Uni-FHZ”) and room thermostats (“DynaTemp CR-BS”)
- AO:** Analogue outputs for steady actuators (“DynaTemp CR-BX”)

Terminal X1	Designation	Description
1	L1	AC 24 V, electricity feed-in
2	L2 GND	GND ground connection
3	A	C-bus, bus interface
4	B	
5	DI	DI and GDD: Digital input for wired window contact or movement sensor
6	GND	
7	DO PWM	Digital or PWM output (24 V AC)
8	AO 0-10V	Analogue output 0 ...10 V

Permissible cable cross-sections 0.5 mm<sup>2</sup> ...1.5 mm<sup>2</sup>

**Accessories for room modules for one room:**

**Cover frame “ABR-55”, white**

Cover frame for item no. 1153101 and 1153121.

Colour: white (RAL 9010)

Item no: 1153170



Cover frame “ABR-55”

**Tender specifications:**

**Room module “RM-C F8” for 8 rooms with EnOcean wireless technology and C-bus communication, surface mounting, 24 V**

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) and wireless window contacts “FK-C F”, wireless movements sensors “BWM-C F” and the wireless temperature sensor “RS-C F” with EnOcean wireless technology. Window contacts or movement sensors installed on site can be evaluated via a volt free contact by use of a cable. Connection module for 8 rooms (8-fold), for surface mounting installation.

**Item no.:** 1153118

**Room module “RM-C K8” for 8 rooms, without wireless technology, surface mounting, 24 V**

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). Window contacts or movement sensors installed on site can be evaluated via a volt free contact by use of a cable.

Connection module for 8 rooms (8-fold), for surface mounting installation.

**Item no.:** 1153128

**Technical data:**

**Electrical connection:**

Power supply: AC 24 V ± 10 %, 50 ...60 Hz  
 Power consumption (without actuators): < 18 VA  
 Bus load: < 6 mA

**Note!**

The power consumption of the connected actuators (observe start up loads) must be taken into consideration when selecting the transformer, conductor cross section and cable paths.

**Communication:**

C-bus: twisted, shielded data line (two cores with at least 0.5 mm<sup>2</sup>)

Wireless (only RM-C F8): 868.3 MHz, EnOcean wireless technology

**Inputs:**

Digital: 8× DI, for the connection of a volt free contact (e.g. wired window contact or movement sensor)

**Outputs:**

Analogue: 8× AO; DC 0 ...10 V, 10 mA (for steady actuators)  
 Digital: 8× DO / PWM, Triac; AC 24 V, 1.2 A max. per channel  
**(DO:** for two point actuators for “DynaTemp CR-BX”),  
**(PWM:** for thermostats with setback function for “DynaTemp CR-BS”)

Power supply via the electrical connection, terminal 1 and terminal 2 (AC 24 V)

**Operating conditions:**

Temperature: 0 ...+50 °C  
 Humidity: 10 ...95 % RH, not condensing

**Storage conditions:**

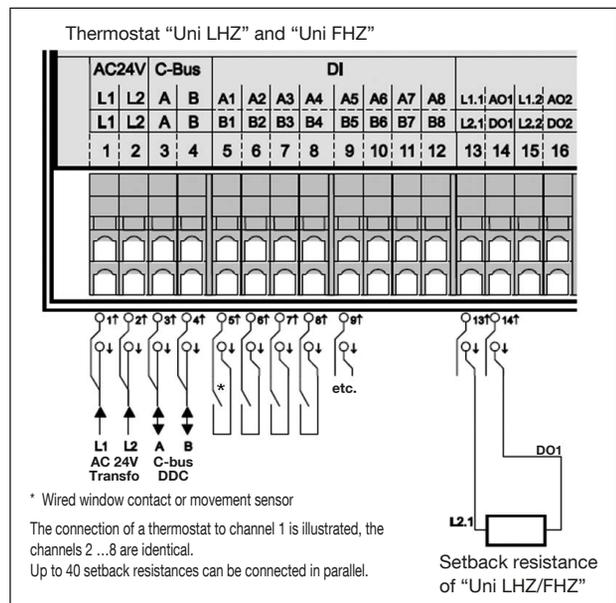
Temperature: -20 ...+70 °C  
 Humidity: 10 ...95 % RH, not condensing

**Casing:**

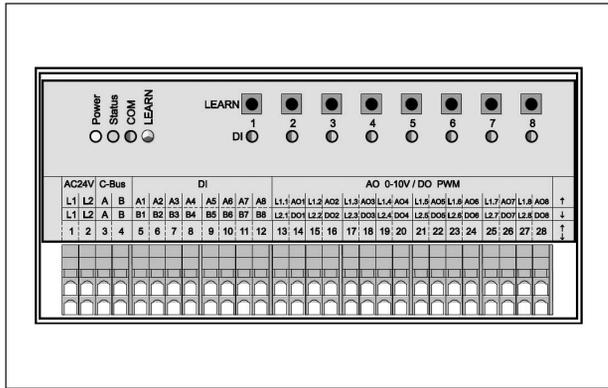
Dimensions: 200 × 120 × 86 ( L × W × H in mm)  
 Weight: “RM-C K8”: about 1050 g,  
 “RM-C F8”: about 1100 g  
 Installation: Surface mounting  
 Material / Colour: Plastic ABS; light grey (RAL 7035)  
 Protective system: III - Protective low voltage  
 Protection: “RM-C K8”: IP 54, “RM-C F8”: IP 20  
 Cable conduit: 1× KEL-DP 24/50  
 33× max. Ø 5.3 mm, 9× max. Ø 6.4 mm, 8× max. Ø 8.3 mm



Room module “RM-C K8/F8”



Connection example “DynaTemp CR-BS” “RM-C K8/F8”

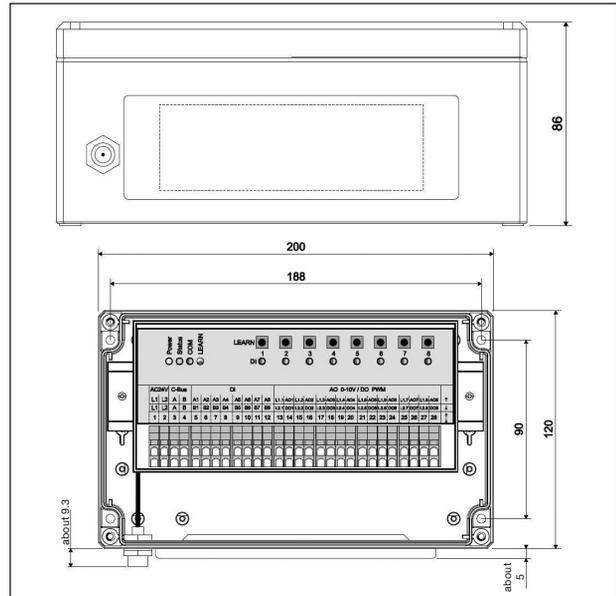


Terminal	Designation	Description
	↑ upper terminal ↓ lower terminal	Permissible cable cross-sections 0.5...2.5 mm <sup>2</sup>
1	↑ L1	AC 24 V
	↓ L1	AC 24 V
2	↑ L2	GND
	↓ L2	GND
3	↑ A	C-bus
	↓ A	
4	↑ B	C-bus
	↓ B	
5	↑ A1	DI 1
	↓ B1	
6	↑ A2	DI 2
	↓ B2	
7	↑ A3	DI 3
	↓ B3	
8	↑ A4	DI 4
	↓ B4	
9	↑ A5	DI 5
	↓ B5	
10	↑ A6	DI 6
	↓ B6	
11	↑ A7	DI 7
	↓ B7	
12	↑ A8	DI 8
	↓ B8	

**L1:** Electricity feed-in **AC 24 V** for room module and outputs

**L2:** Ground connection **GND** for room module and outputs

**A1-8, B1-8:** Digital inputs **DI 1-8** for wired window contacts and movement sensors



Dimensions

Terminal	Designation	Description
13	↑ L1.1	AC 24 V
	↓ L2.1	GND
14	↑ AO1	Output 0..10 V
	↓ DO1	DO PWM
15	↑ L1.2	AC 24 V
	↓ L2.2	GND
16	↑ AO2	Output 0..10 V
	↓ DO2	DO PWM
17	↑ L1.3	AC 24 V
	↓ L2.3	GND
18	↑ AO3	Output 0..10 V
	↓ DO3	DO PWM
19	↑ L1.4	AC 24 V
	↓ L2.4	GND
20	↑ AO4	Output 0..10 V
	↓ DO4	DO PWM
21	↑ L1.5	AC 24 V
	↓ L2.5	GND
22	↑ AO5	Output 0..10 V
	↓ DO5	DO PWM
23	↑ L1.6	AC 24 V
	↓ L2.6	GND
24	↑ AO6	Output 0..10 V
	↓ DO6	DO PWM
25	↑ L1.7	AC 24 V
	↓ L2.7	GND
26	↑ AO7	Output 0..10 V
	↓ DO7	DO PWM
27	↑ L1.8	AC 24 V
	↓ L2.8	GND
28	↑ AO8	Output 0..10 V
	↓ DO8	DO PWM

**L1.1 - L1.8:** Voltage output for actuators or thermostats

**L2.1 - L2.8:** Ground connection for outputs

**AO 1-8:** Analogue outputs for steady actuators (CR-BX).

**DO 1-8 /PWM:** Digital outputs for two point actuators (CR-BX) or PWM outputs for thermostats (Uni-LHZ, Uni-FHZ) and for room thermostats (item no 1152051) (CR-BS)

**Tender specifications:**

**Window contact “FK-C F”  
with wireless technology, solar powered**

A radio signal is transmitted when opening or closing a window. The solar powered energy storage ensures a maintenance-free operation.

Colour: white (RAL 9010)

Item no.: 1153070



Wireless window contact “FK-C F”

**Movement sensor “BWM-C F”  
with EnOcean wireless technology, solar powered, surface mounting**

The solar powered wireless ceiling sensor serves the presence detection. 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°.

Colour: white (RAL 9010)

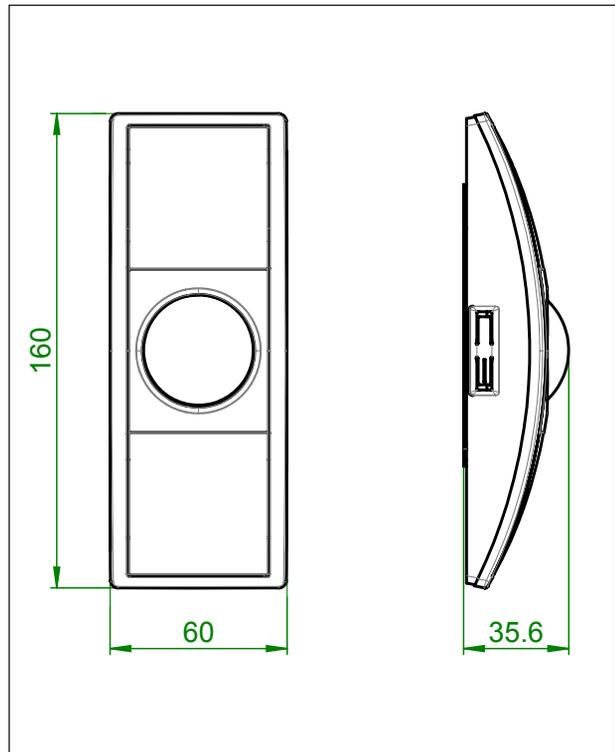
Item no.: 1153280

**Technical data:**

Transmission frequency: 868.3 MHz  
 Radio range: about 25 m  
 Presence detection: PIR  
 Supported EEP: A5-07-01  
 Transmission interval: 10/30 minutes  
 Min. illumination level: 50 Lux  
 Presence detection range: 5 m radius  
 Installation height: 2-3 m  
 Ambient temperature: -10 ...+50 °C  
 Storage temperature: -10 ...+65 °C, max. 70 % RH, not condensing



Wireless movement sensor “BWM-C F”



Dimensions

**Tender specifications:**

**Wireless repeater “RP-C F”  
for EnOcean wireless technology, flush mounting, 230 V**

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.

**Item no.:** 1153060



Wireless repeater “RP-C F”

**Temperature sensor “RS-C F”  
with EnOcean wireless technology**

The solar powered wireless temperature sensor “RS-C F” is used for room temperature monitoring. The temperature values and sequences can be viewed via the control unit **DDC “CR-BS”**.

**Item no.:** 1153195

**Technical data:**

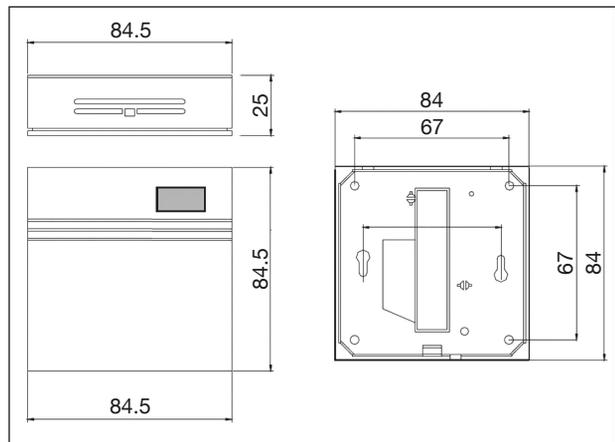
Transmission frequency: 868.3 MHz  
 Radio range: Building: about 30 m  
 Free field: about 300 m  
 Temperature sensor: Range 0 °C...+40 °C  
 Resolution 0.15 K  
 Abs. accuracy typ. +/-0.4 K

Measured value detection: Every 100 seconds  
 Transmission interval: every 100 seconds and in case of modifications > 0,8 K or every 1000 seconds in case of modifications < 0,8 K

Energy generator: Solar cell, internal goldcap, maintenance-free  
 Casing: white similar to RAL 9010  
 Protection: IP 30 according to EN60529  
 Ambient temperature: -25...+65 °C  
 Weight: 50 g



Temperature sensor “RS-C F”



Dimensions

**Tender specification:**

**Outside temperature sensor “FM-C WS” with C-bus communication, surface mounting, IP 65**

The outside temperature sensor “FM-C WS” serves to use the DDC function “variable heating-up time”.

Power supply via the C-bus.

**Item no.:** 1153130

**Technical data:**

**Electrical connection:**

Power supply: via C-bus

Bus load: < 16 mA

**Communication:** C-bus, twisted, shielded two-wire cable

**Measuring element:**

Temperature: PT 1000 1/3 DIN B

Measuring range: -35 ...+70 °C

Resolution: 0,1° / 0.01 °K

Tolerance: ± 0.5 K

**Operation conditions:**

Temperature: -35 ...+70 °C

Humidity: 10 ...95 % RH not condensing

**Storage conditions:**

Temperature: -40 ...+70 °C

Humidity: 10 ...95 % RH not condensing

**Casing:**

Dimensions (without couplings): 67 × 67 × 43,5 (L × W × H in mm)

Weight: about 95 g

Material / Colour: Plastic ASA, light grey (RAL 7035)

Coupling: 1 × M16

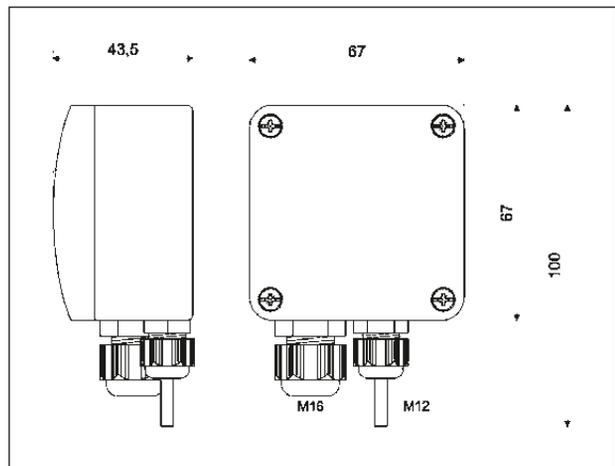
Installation: Surface mounting

Protective system: III - Protective low voltage

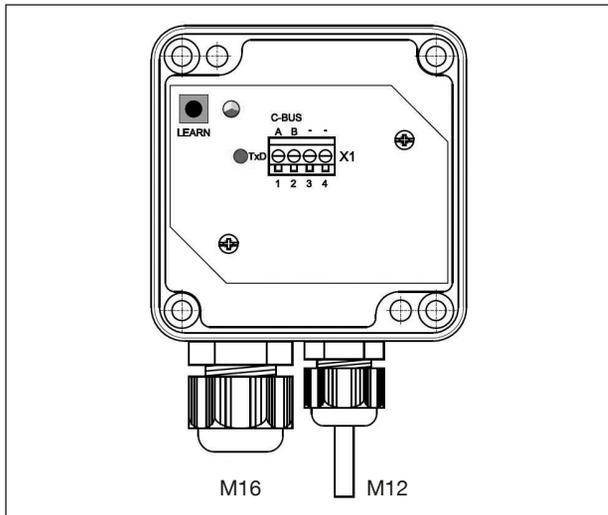
Protection: IP 65



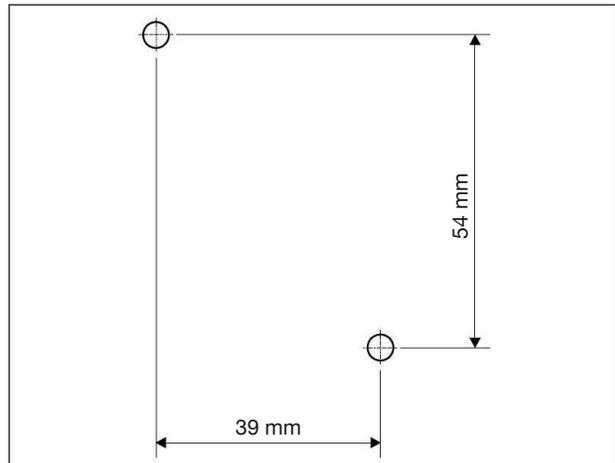
Outside temperature sensor “FM-C WS”



Dimensions



Pin assignment



Dimensions for bore holes

Terminal X1	Designation	Description
1	A	C-bus, bus interface
2	B	
3	–	–
4	–	–

Permissible cable cross sections 0.2 mm<sup>2</sup> ...1.5 mm<sup>2</sup>

**Tender specifications:**

**Thermostats “Uni LHZ” and “Uni FHZ”**

In combination with the “DynaTemp CR-BS” system, the thermostats “Uni LHZ” and “Uni FHZ” allow for a timed temperature setback with the help of an integrated electrically heated liquid sensor (setback resistance).

The operation is identical with that of a standard thermostat. If the thermostat is energized 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 via the Internet.

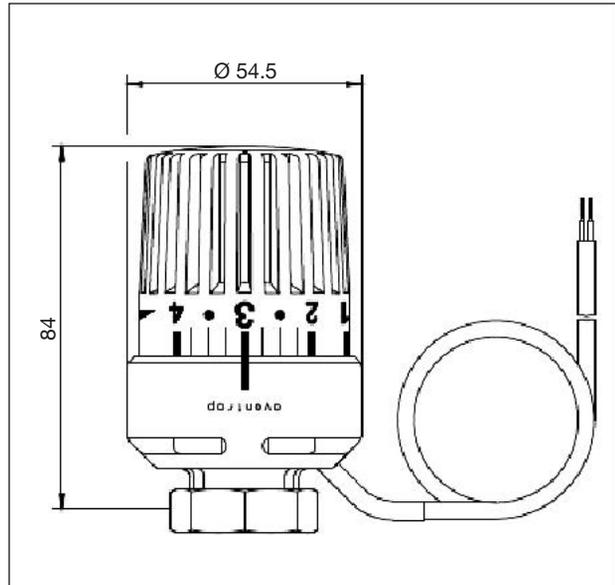
- Without ‘0’ setting
- Temperature range: 7-28 °C
- Graduation on cap: \* 1-4
- Operating current: 24 V
- Temperature setback: about 7 K
- Length of connecting cable: 1 m
- Connection thread: M 30 x 1.5

**Thermostat “Uni LHZ”**

**Item no.:** 1150300

**Thermostat with remote control “Uni FHZ”  
connecting cable 1 m long, capillary 2 m long**

**Item no.:** 1152265



Thermostat “Uni LHZ”



Thermostat “Uni FHZ”

**Accessory:**

**Reinforcing cap**

for thermostat “Uni LHZ”  
white

not lockable

**Item no.:** 1011865

lockable

**Item no.:** 1011866



Reinforcing cap

**Room thermostat, 24 V, surface mounting**

The electric surface mounting 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”.  
 Temperature setback via the digital room module output (DO PWM).

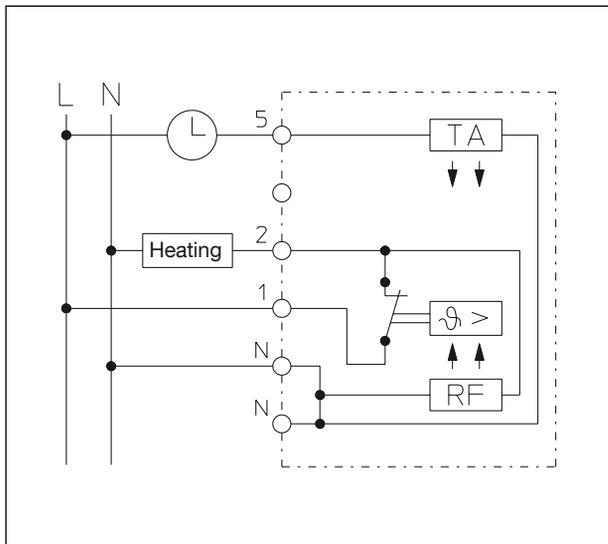
**Tender specification:**

**Room thermostat 24 V**

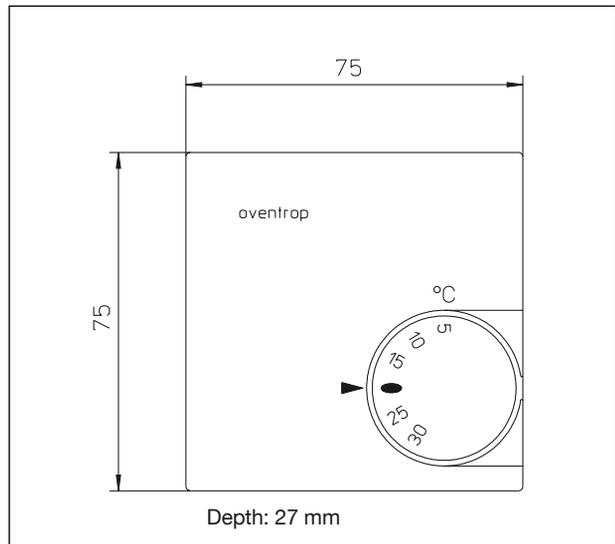
**Item no.:** 1152052



Room thermostat 24 V



Connection diagram



Dimensions room thermostat 24 V

**Tender specifications:**

**Electrothermal actuator “Aktor T 2P”, 24 V closed with current “off”**

The actuators are used for heating, ventilation and air conditioning. They serve to control the room temperature and can, for instance, be used with conventional radiators, radiators with integrated distributor, 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

With “First-Open” function and stroke index.  
Simple plug-in connection with valve adapter.  
Actuators can be installed in any position.

Due to their construction, the electrothermal actuators are secured against overvoltage which could occur when switching on fluorescent tubes. A varistor is thus not necessary.

Connection thread: M 30 x 1.5

**Item no.:** 1012416 (connecting cable 1 m)  
1012442 (connecting cable 2 m)

**Performance data:**

Operating voltage: 24 V AC/DC, +20...-10 %, 0...60 Hz

Start up load: 250 mA for a maximum of 2 min.

Continuous current: 75 mA

Closing/opening time: about 4.5 min.

Piston stroke: 4.5 mm

Operating power: > 90 N

Protection: IP 54 in any position

Protective system: III according to EN 60730

Fluid temperature: 0... +100 °C

Ambient temperature: 0... +60 °C

Storage temperature: -25... +60 °C

Connecting cable: 2 x 0.75 mm<sup>2</sup>, length 1 or 2 m

**Accessories:**

**Reinforcing cap**

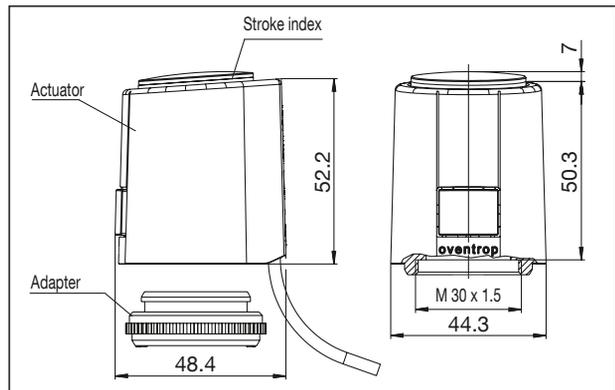
To protect the electrothermal actuators against vandalism. The special valve adapter with connection thread M 30 x 1.5 for fixing of the reinforcing cap is included.

Connection thread: M 30 x 1.5

**Item no.:** 1012450



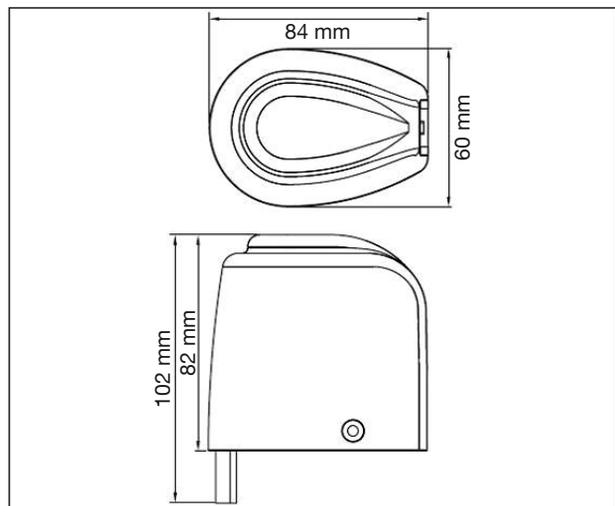
Actuator “Aktor T 2P” with connection thread M 30 x 1.5



Dimensions



Reinforcing cap



Dimensions

Subject to technical modifications without notice.

Product range 12  
ti 304-EN/10/MW  
Edition 2018