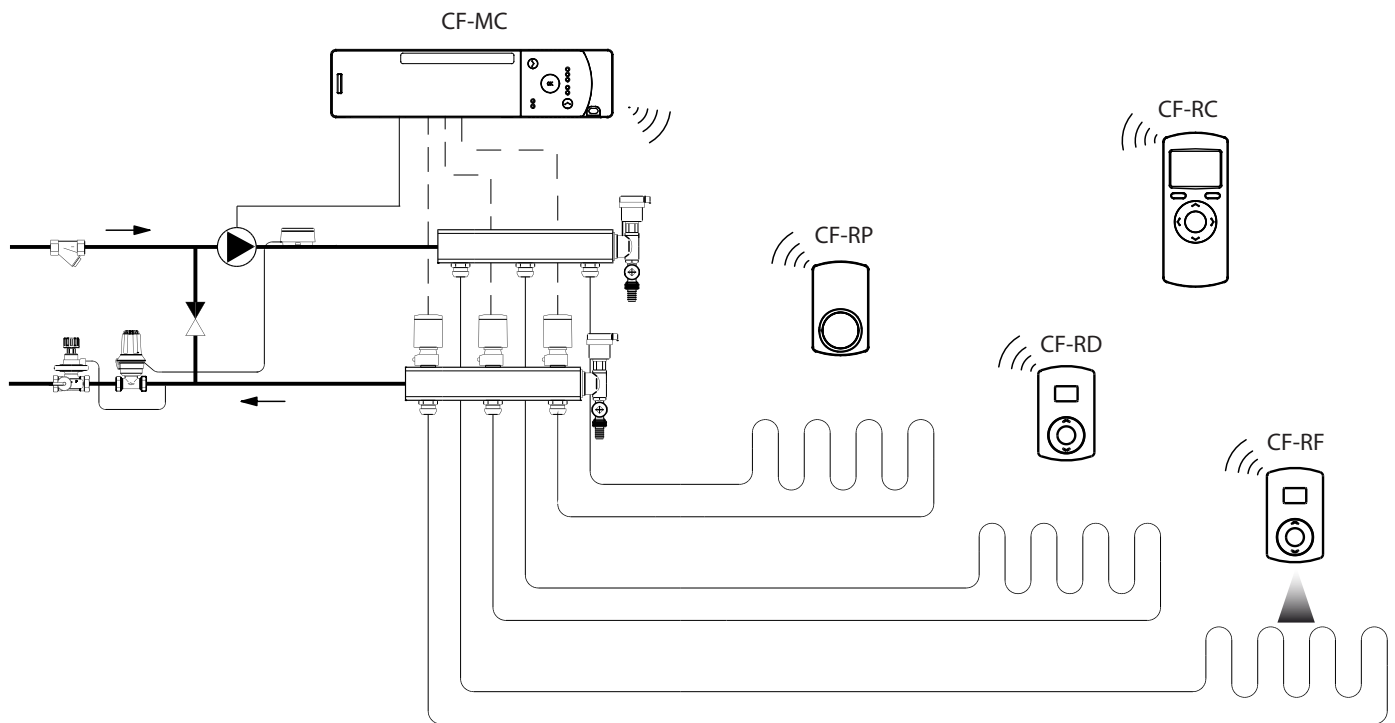
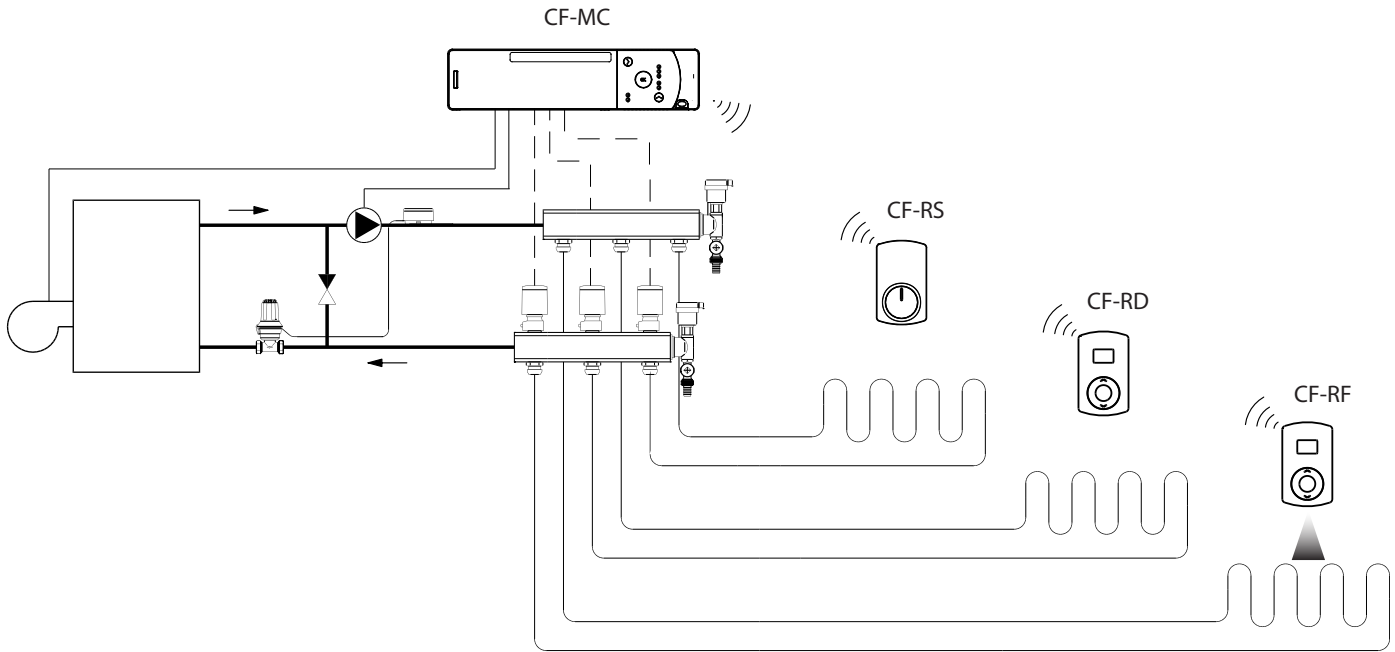


# CF2 Wireless Floor Heating Control System

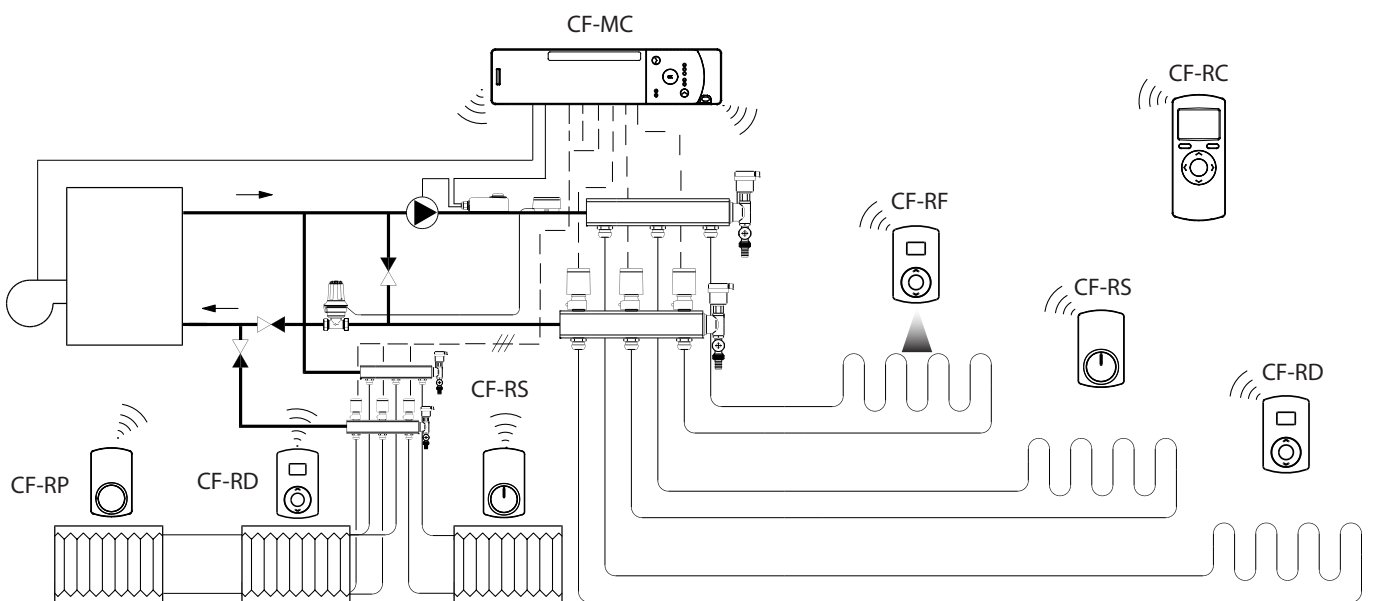
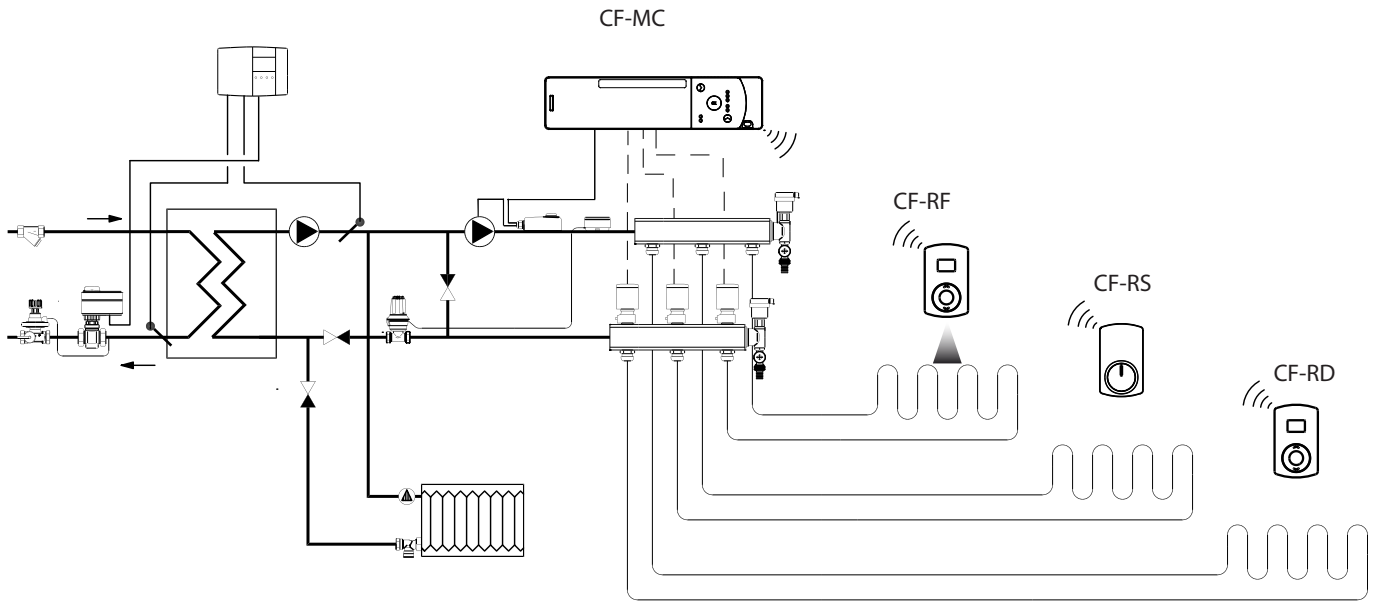
DATA SHEET

# Application Examples

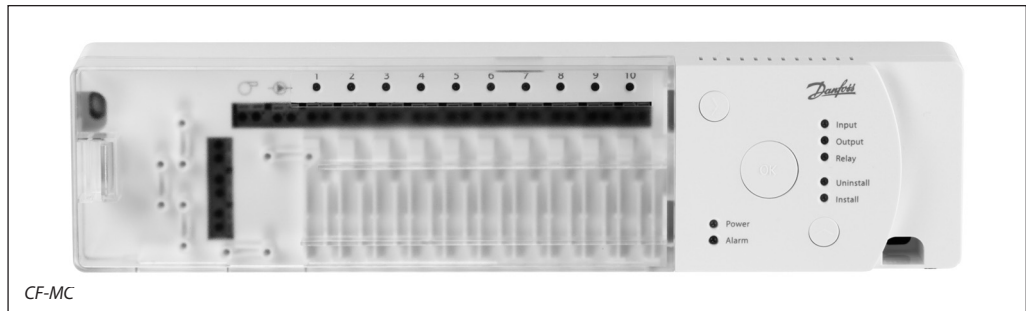
## Single floor heating systems



Combined floor and radiator heating systems



# Master Controller: CF-MC



CF-MC

## Application

CF-MC is the Master Controller for the new trend-setting wireless floor heating control system from Danfoss. This system offers a large range of extended functionality for optimal comfort and energy saving with individual room temperature control. The Master Controller includes new features like: 2-way wireless transmission, up to 10 short-circuit protected outputs for 24V NC or NO actuators, relays for both pump and boiler control, self diagnosing program, global standby, heating/cooling function, regulation by ON/OFF or pulse width modulation principles (PWM) etc.

The new system can consist of up to 3 Master Controllers offering a possibility of up to 30 outputs for even larger systems. The Master Controller has easy connection directly to 230V power supply without the need for further transforming, supplying all actuator outputs with 24V. Systems of up to 3 Master Controllers can be ac-

cessed by just one wireless Remote Controller, CF-RC. The Remote Controller gives access to even more functionality and features like individual settings for each Master Controller output, override and locking of local room temperature settings, setback and period programming, system status etc.

2-way wireless communication between the Master Controller and all the wireless system components ensures a very high level of transmission security. Furthermore it makes it possible to test the wireless signal to and from the Master Controller (Link test) and give a quick and direct indication of "signal ok" on the Room Thermostats or Repeater Unit etc. The Room Thermostats are available in 4 versions: standard, public (tamperproof), display and display with InfraRed floor sensor covering most application and functional demands.

## Functions

2-way wireless transmission at 868.42MHz, for higher transmission certainty and direct link test option on each system component like Room Thermostats, Remote Controller etc.

Wireless assignment of room thermostats and other system components.

5 or 10 short-circuit protected outputs with LED indication.

Outputs for 24V NC or NO actuators.

Valve motion for all outputs for approx. 12 min. every 14th day with no heat demand.

Regulation by ON/OFF or PWM (Pulse Width Modulation) principle.

Input (On/Off) for heating / cooling.

Dew-point control products available as accessories; working independently of the Master Controller.

Input (On/Off) for global standby. When On, each room thermostat is set for 8°C.

Relay for pump control with automatic pump motion every 3rd day for 1 min. to avoid damage during stand by periods.

Relay for boiler control, activated only at heat demand.

Easy cable fixing at each actuator output for several cable types (squared or circular).

Automatic self diagnosis providing indication of several error possibilities like missing wireless connection or missing/non-functional actuator on output, etc.

## Ordering

Product	Type	Supply voltage	Output voltage	Order no.
Master Controller with 5 outputs	CF-MC	230V a.c.	24V d.c.	088U0205
Master Controller with 10 outputs	CF-MC	230V a.c.	24V d.c.	088U0200

## Data Sheet CF2 Wireless Floor Heating Control System

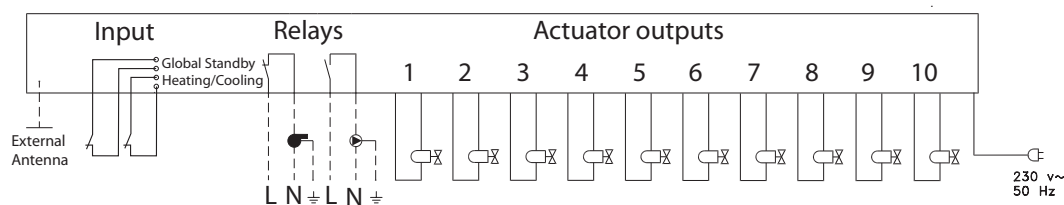
### Accessories

Product	Type	Order no.
Master Controller, outputs		
TWA-A 24V NC	24V-NC actuator for Danfoss manifold valves	088H3110
Dew-point control products		
RA-C 20	Valve for chilling and heating circuits ( $K_{vs} = 3.30$ )	013G3096
EDA-S	Sensor for electronic dew-point alarm	088H3011
EDA-24	Electronic dew-point alarm, 24V a.c.	088H3001
TWA-A 24V NO	24V-NO actuator for Danfoss RA 2000 valves	088H3111
EDA-230	Electronic dew-point alarm, 230V a.c.	088H3002
TWA-A 230V NO	230V-NO actuator for Danfoss RA 2000 valves	088H3113

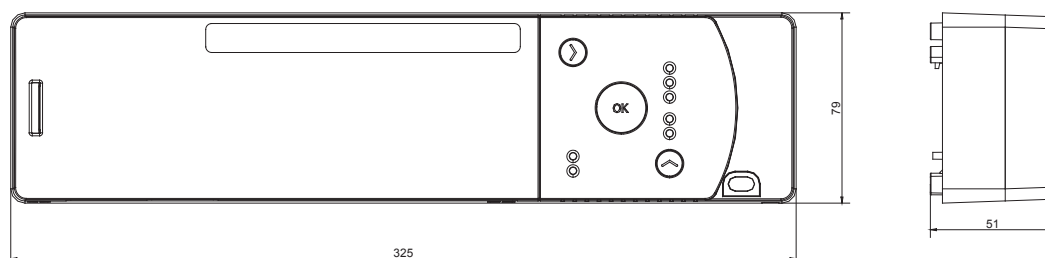
### Data

Supply voltage	230V a.c.
Number of outputs and voltage	5 - 10 / 24V d.c.
Transmission frequency	868.42MHz
Transmission range (up to)	30m (in normal buildings)
Transmission power	< 1mW
Max. running load of actuator output	35VA in total for all outputs
Max. load for pump relay	230V and 8A / 2A (inductive)
Max. load for boiler relay	230V and 8A / 2A (inductive)
Approvals	CE
Standard	EN60730
Directives	R&TTE, LVD and EMC
Protection class	IP 30
Mains cable	1.5m
Weight	700g

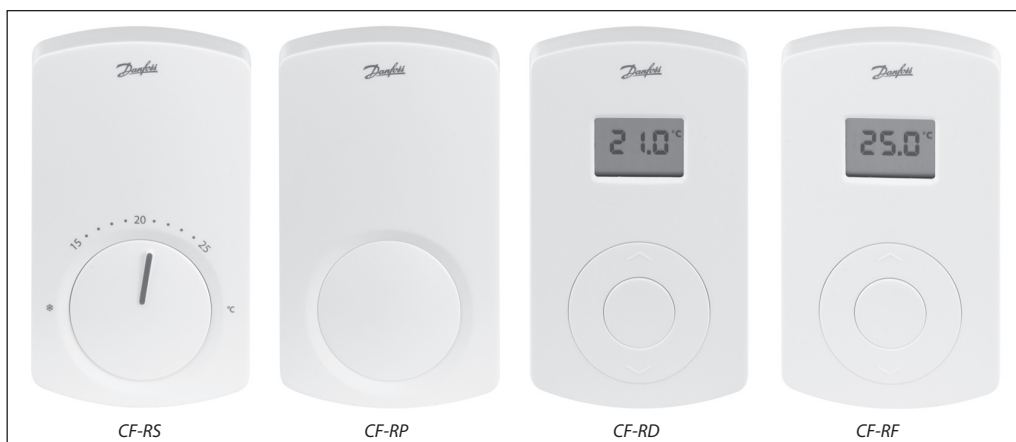
### Wiring



### Dimensions



# Room Thermostats CF-RS, CF-RP, CF-RD, CF-RF



## Application

The Room Thermostats for the new wireless floor heating control system from Danfoss, offer a new design and several new features, suitable for a wide range of applications and personal demands. Common to all the Room Thermostats is however, the simple but very effective "Link test" function which is a result of the new 2-way wireless transmission technology implemented in this new wireless system. The 2-way wireless technology enables a "Link test" on each type of Room Thermostat, indicating the status of the wireless communication between each Room

Thermostat and the Master Controller CF-MC, directly on the Room Thermostat. This offers a valid and simple indication of the wireless signal status for the Room Thermostat before mounting it on the wall in a room. Also the LED indicating low battery is a common feature.

The Room Thermostats are available in 4 new versions: standard, public (tamperproof), display and display with InfraRed floor sensor covering most application and functionality demands.

## Functions

2-way wireless transmission at 868.42MHz, for higher transmission certainty and link test possibility on each Room Thermostat.

Easy wireless assignment to Master Controller CF-MC.

Min. and max. limitation of temperature settings.

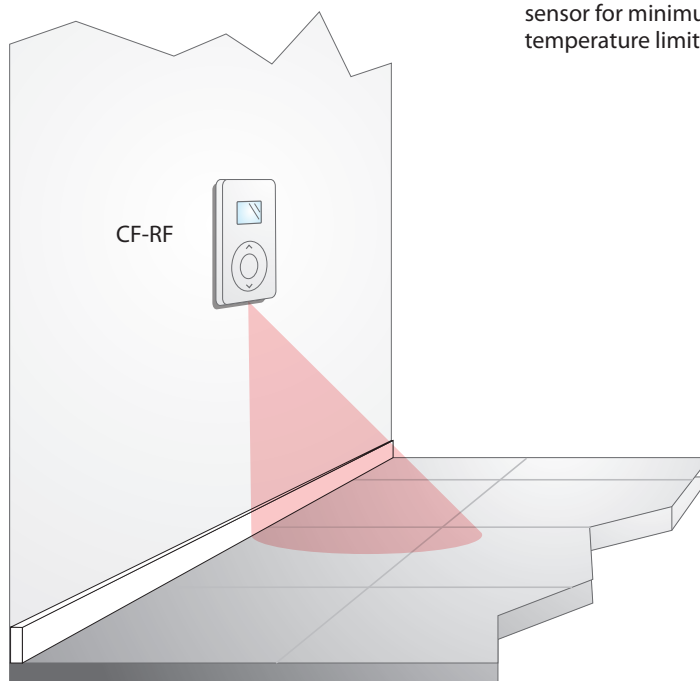
Powered by 2 x AA Alkaline 1.5V batteries.

LED indication for low battery.

Public (tamperproof) version with hidden set point adjustment for use in childrens rooms, schools and office buildings etc.

Digital display version showing actual or set room temperature, having easy menu and icons for system status.

Digital display version with wireless InfraRed floor sensor for minimum and maximum floor surface temperature limitation.

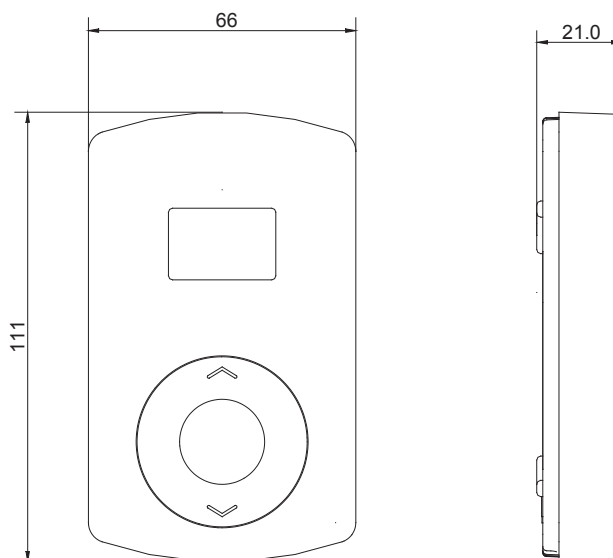


**Data Sheet CF2 Wireless Floor Heating Control System**
**Ordering**

Product	Type	Order no.
Wireless Room Thermostat, standard	CF-RS	088U0210
Wireless Room Thermostat, public (tamperproof)	CF-RP	088U0211
Wireless Room Thermostat, display	CF-RD	088U0212
Wireless Room Thermostat, display and InfraRed floor sensor	CF-RF	088U0213

**Data**

Supply voltage	2 x 1.5V Alkaline batteries AA
Battery life	CF-RS/P: 3 – 4 years. CF-RD/F: 1 - 3 years
Transmission frequency	868.42MHz
Transmission range (up to)	30m (in normal buildings)
Transmission power	< 1mW
Temperature setting range	5 - 35°C
Approvals	CE
Standard	EN60730
Directives	R&TTE and EMC
Protection class	IP 21
Weight	120g

**Dimensions**


# Remote Controller: CF-RC



## Application

The optional wireless Remote Controller, CF-RC, offers a wide range of extended functionality and application features. This includes access to: individual settings for each Master Controller output for floor heating or radiator heating, temperature setback program for zone control, period program for holiday temperature setback, "lock" and override of temperature settings on local Room Thermostats, system surveillance for error identification and alarm logging etc.

One system accessed wireless by the Remote Controller can consist of up to 3 Master Controllers, (CF-MC), which is equal to 30 outputs in one system.

This to be able to cover also larger applications for floor heating or even combined systems with e.g. radiators as the other heating supply system.

All Remote Controller options and functions are available through the large display and centrally placed push buttons. The menu structure is self-guiding with clear identifications, making the system access through the Remote Controller quite easy. The display also has a backlight that initiates as soon as a push button is activated.

## Functions

Wall mounting (in docking station) with 230V supply. If temporarily carried around powered by 2 x 1.5V Alkaline AA batteries.

Low battery indication via icon in display.

2-way wireless transmission at 868.42MHz, for higher transmission certainty and link test possibility.

Easy wireless assignment to Master Controller CF-MC.

Remote control of up to 3 Master Controllers CF-MC and associated Room Thermostats.

Access to individual setting of each Master Controller output for regulation of either floor heating or e.g. radiators by ON/OFF or PWM regulation principles.

Optional central adjustment, locking and override of local Room Thermostat temperature settings. Error identification and alarm logging.

Period program with calendar function for room temperature setback during holidays.

Setback program for room temperature reduction in zones with different time schedules.



## Data Sheet CF2 Wireless Floor Heating Control System

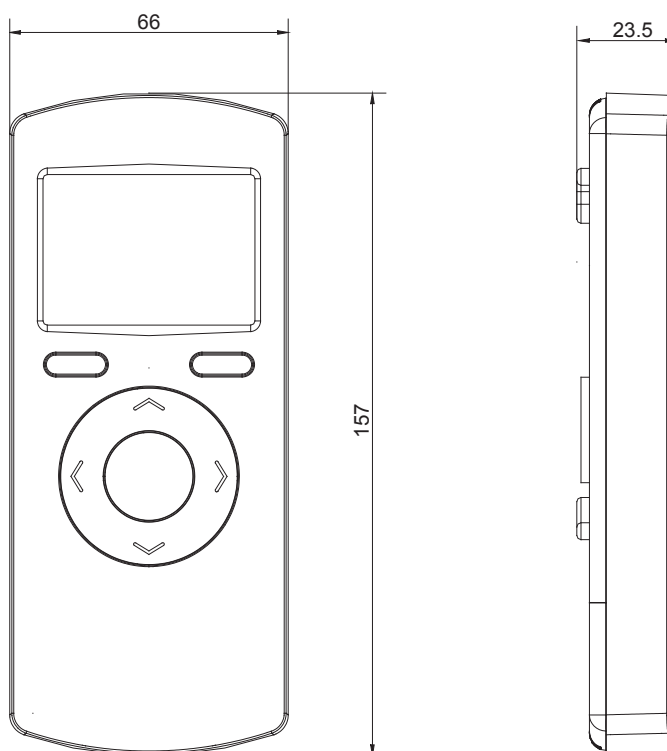
### Ordering

Product	Type	Order no.
Wireless Remote Controller	CF-RC	088U0220

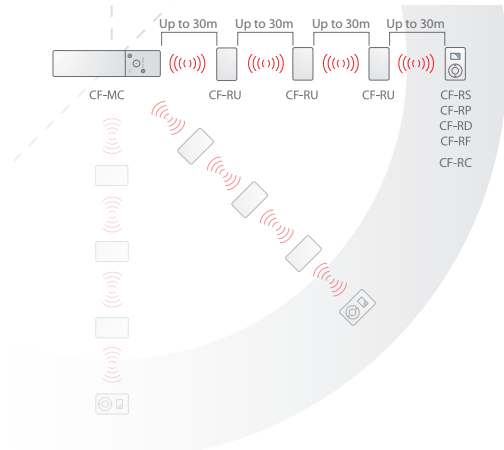
### Data

Supply voltage	230V a.c. and 2 x 1.5V Alkaline AA batteries
Transmission frequency	868.42MHz
Transmission range (up to)	30m (in normal buildings)
Transmission power	< 1mW
Approvals	CE
Standard	EN60730
Directives	R&TTE, LVD and EMC
Protection class	IP 21
Mains cable	1.8m
Weight	200g

### Dimensions



# Repeater Unit: CF-RU



## Application

The Repeater Unit CF-RU extends the transmission range between Master Controller, room Thermostats, and other connected components by 2-way wireless communication. The Repeater Unit is particularly useful where distance or physical objects may impede any wireless connection. If the link test reveals a missing wireless connection to the Master Controller, simply install the Repeater Unit and reactivate the link test.

This is particularly useful in larger installations where physical distance between components may prevent proper wireless connection. The Repeater Unit may also be used in places where radio transmission barriers occur; i.e. where radio signals may be obstructed by heavy walls, metal objects, etc.

The Repeater Unit forwards the signals between Room Thermostats and Remote Controller (optional) to the Master Controller.

The Master Controller supports up to 3 Repeater Units installed in a chain between the relevant Room Thermostat and the Master Controller. More parallel chains of Repeater Units from a Master Controller are possible.

## Functions

2-way wireless transmission at 868.42MHz for higher transmission certainty and link test.

Up to 3 Repeater Units installed in a chain between the relevant Room Thermostat and the Master Controller.

Easy wireless assignment to Master Controller CF-MC.

More parallel chains of Repeater Units from a Master Controller are possible.

Supplied by 230V.

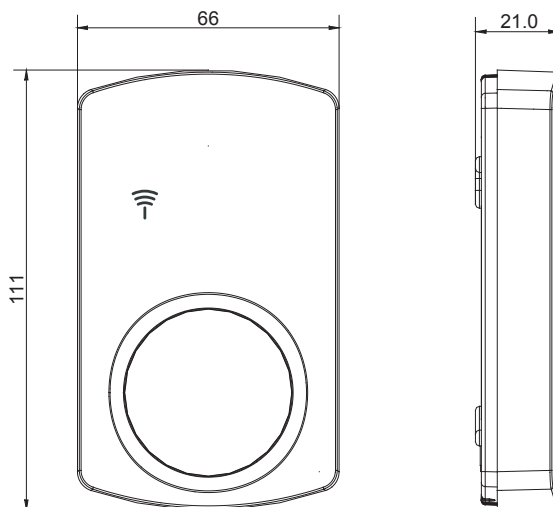
## Ordering

Product	Type	Order no.
Repeater Unit	CF-RU	088U0230

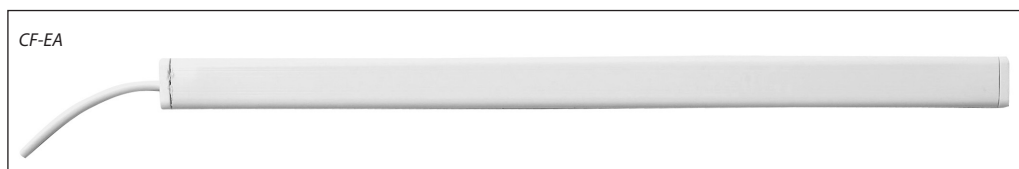
## Data

Supply voltage	230V a.c.
Transmission frequency	868.42MHz
Transmission range (up to)	30m (in normal buildings)
Transmission power	< 1mW
Approvals	CE
Standard	EN60730
Directives	R&TTE, LVD and EMC
Protection class	IP 21
Mains cable	3.0m
Weight	100g

**Dimensions**



**External Antenna: CF-EA**



**Application**

If the Master Controller CF-MC is mounted in a metal cabinet or other place that totally prevents any radio contact with other system components at all, this new wireless system also includes an External Antenna.

This is connected directly to the Master Controller by cable and placed on the outside of the metal cabinet or other obstacle so as to pick up the wireless signals coming from the other system components.

**Ordering**

Product	Type	Order no.
External Antenna with 2m cable	CF-EA	088U0250

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