

Data Sheet

# Danfoss Icon™ 24V Master Controller

## Description



Danfoss Icon™ is a modular heating system for individual room control. It can be configured as a wired or wireless system or as a combination, if required.

The center of the system is the Danfoss Icon™ Master Controller 24V, which configures and ties the system together.

Installation and set-up of the Danfoss Icon™ Master Controller 24V is made easy by using the pre-defined application and intuitive touch user interface.

**The system offer following features (some require Expansion Module):**

- Automatic balancing (PWM+), which ensure that the hydraulic balancing of the system is done by the master controller based on the actual room demand.
- Requires no pre-setting on the manifold.
- On/Off control possibility.
- NC/NO actuator functionality.
- Cooling change over (require an Expansion Module).

- Supports 2, 3 or 4 pipe applications in various configurations (please see Expansion Module application guide for all configurations).
- Supply temperature control (require an Expansion Module), can be set to either a fixed temperature or demand based supply temperature control.
- 230V power output with protected earth for circulation pump.
- 230V power output (for e.g. always on).
- Heat demand signal output (for e.g. potential free relay).
- Can be made wireless by adding a Radio Module (required for wireless installations).
- Powerline communication (for 24V wired thermostats).
- Possibility to combine wired and wireless thermostats in same installation.
- APP functionality, for iOS and Android devices (require APP Module).
- Software updatable through App or Zigbee module.
- 3rd party integration with compatible Zigbee solutions through Icon™ Zigbee module.

## Ordering

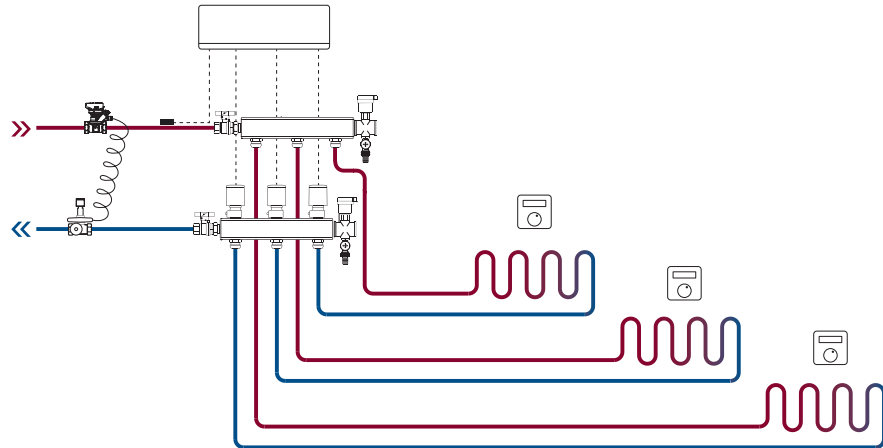
Product	Code number
Danfoss Icon™ Master, 24V, 10 ch., OTA	<b>088U1141</b>
Danfoss Icon™ Master, 24V, 15 ch., OTA	<b>088U1142</b>
Danfoss Icon™ Master, 24V, 10 ch., CH, OTA	<b>088U1144</b>
Danfoss Icon™ Master, 24V, 15 ch., CH, OTA	<b>088U1145</b>
Danfoss Icon™ Master, 24V, 10 ch., NP, OTA	<b>088U1147</b>
Danfoss Icon™ Master, 24V, 15 ch., NP, OTA	<b>088U1148</b>

## Accessories

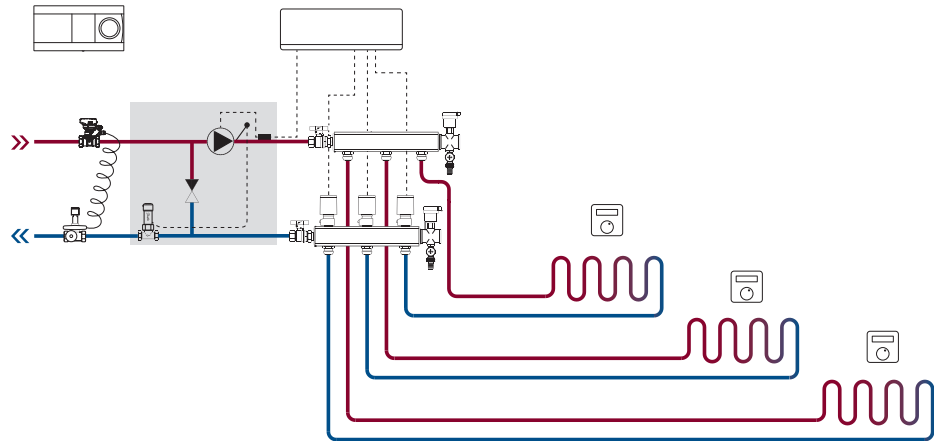
Product	Code number
Danfoss Icon™ Expansion Module	<b>088U1100</b>
Danfoss Icon™ App Module	<b>088U1101</b>
Danfoss Icon™ Repeater	<b>088U1102</b>
Danfoss Icon™ Radio Module	<b>088U1103</b>
Danfoss Icon™ Zigbee module	<b>088U1130</b>
Danfoss Zigbee repeater	<b>088U1131</b>

Application drawings

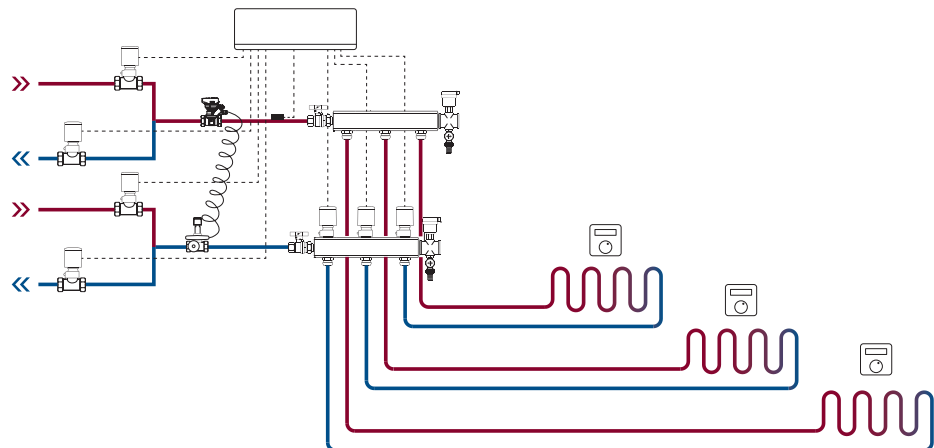
Example 1: 2-pipe system (optional cooling)



Example 2: 2-pipe system with mixing shunt (optional supply temperature control)



Example 3: 4-pipe cooling



**Technical data**

For all applications please see Installation guide for Expansion Module.

 Common characteristics,  
all Danfoss Icon™ products

Temperature for the ball pressure test	75 °C
Control pollution degree	Degree 2, normal household environment
Software class	Class A
Rated impulse voltage	4 kV
Operating time	Permanently connected
Temperature range, storage and transportation	-20 °C to +65 °C
Disposal instructions	The product must be disposed as electronic waste

 Master Controller 24V and  
Expansion Module (optional)

Supply voltage	220-240 VAC
Supply frequency	50/60 Hz
Output voltage, actuators	24 VDC
Max. power consumption per actuator output	2 W
Number of actuator outputs (1 actuator per output terminal)	10 or 15 depending on type of Master Controller
Output voltage, thermostats	24 V DC
Stand-by consumption per thermostat	0,2 W
Max. number of thermostats	10 or 15 depending on type of Master Controller
Max. length of wire from master controller to a 24 V thermostat (depends on cable type used)	If 2 × 2 × 0,6 mm <sup>2</sup> STP/UTP: 100 m If 2 × 0,5 mm <sup>2</sup> : 150 m If > 2 × 0,75 mm <sup>2</sup> : 200 m
Stand-by consumption, Master Controller	< 2 W
Max. power consumption, excluding use of PWR 1 and PWR 2 outputs	< 50 W
Internal protection (fuse, non-replacable)	2,5 A
Output "Relay"	Potential free relay, Max. 2 A load
Actuator outputs, type	Type 1C (Micro interruption)
Output "PWR 1", type and rated max. output	Type 1B (Micro disconnection)
Output "PWR 2", type and rated max. output	Type: Permanent output, 230 V, max. 50 W
Output "PWR 3" (optional, on Expansion Module - used for dew point sensor)	24 V DC, max. 1 W
Input "1" (optional, on Expansion Module - use varies acc. to application chosen)	Ext. switch input (internal 24 V pull-up)
Input "2" (optional, on Expansion Module - use varies acc. to application chosen)	Ext. switch input (internal 24 V pull-up)
Input "3", sensor input (optional, on Expansion Module)	External sensor, PT 1000 (Danfoss ESM 11)
Dimensions	W: 370 mm, H: 100 mm, D: 53 mm
Conformity declared acc. to following directives	LVD, EMC, RoHS and WEEE
Purpose of control	Individual electronic room temperature control
Method of providing earthing	Factory fitted power cord, incl. PE-conductor
Encapsulation (IP Class)	IP 20
Protection class	Class II Construction with earthing terminal
Ambient temperature range, continuous use	0 °C to 50 °C

## Technical data

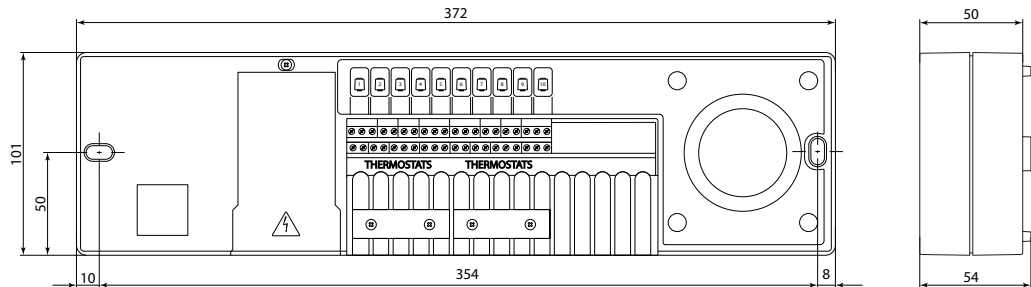
### Radio Module & Repeater

Purpose of control	Transmitting and receiving device
Ambient temperature range, continuous use	0 °C to 40 °C
Frequency	869 MHz
Transmission power	< 2,5 mW
Encapsulation (IP Class)	IP 20
Conformity declared acc. to following directives	RED, RoHS, WEEE
Protection class	Radio: Class III Construction Repeater: Class II Construction
Supply voltage	Radio: 5 V DC Repeater: 230 V AC 50/60 Hz

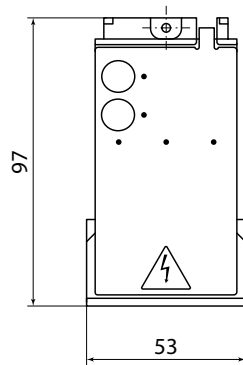
### App Module

Purpose of control	Wi-Fi transmitting and receiving device, incl. Bluetooth
Ambient temperature range, continuous use	0 °C to 40 °C
Frequency	2,4 GHz
Encapsulation (IP Class)	IP 20
Conformity declared acc. to following directives	RED, RoHS, WEEE
Protection class	Radio: Class III
Supply voltage	5 V DC

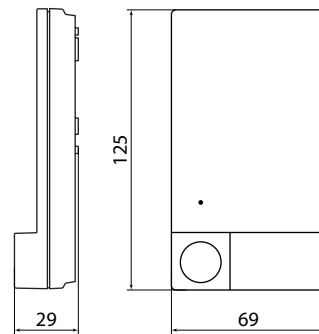
## Drawings



Danfoss Icon™ 24V Master Controller



Danfoss Icon™ Expansion Module



Danfoss Icon™ Radio Module

## Danfoss A/S

Heating Segment • danfoss.com • +45 7488 2222 • E-Mail: heating@danfoss.com

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without consequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and all Danfoss logotypes are trademarks of Danfoss A/S. All rights reserved.