Evolution TH

Pre-programmed controller with display, clock and communication

TH is a pre-programmed temperature controller in the Evolution series for controlling heating and cooling systems in fan-coil units

- Communication via RS485 (Modbus or BACnet)
- Quick and secure settings with the Evolution tool
- Easy installation
- On/Off Control or 0...10 V
- Keycard input, window contact, CO_2 sensor and season change function
- Clock

Evolution

Controllers in the Evolution series are available in a wide range of functions for controlling heating, cooling and air-conditioning plants. Based on application, controllers can have communication feature, a clcok, an on/off or proportional control

TH version

TH is a controller specially designed to control the fan-coil unit in 2 or 4 pipe systems. It comes equipped with rapid access keys for the most common functions (speed control for the fan, season change, on/off, etc.) Models with communication, clock, humidity sensor and a CO_2 sensor input are available.

Applications

Evolution controllers are adapted for use in buildings to optimise energy consumption and comfort, for example, in offices, schools, shopping centres, airports, hotels, hospitals, etc.

Sensors

The controller is equipped with an internal temperature sensor. What's more, up to 3 external NTC10K sensors can be connected. An active sensor can be connected to an input in order to read CO_2 values or the humidity level in that area.

Actuators/fans

TH can control actuators of proportional or on/off type, with a 2 point control Traditional 3-speed fans or electronically controlled (EC fan).

Flexibility with communication

TH can be connected to a BMS system via RS485 (Modbus or BACnet) and set for a particular application using the free Evolution software tool.
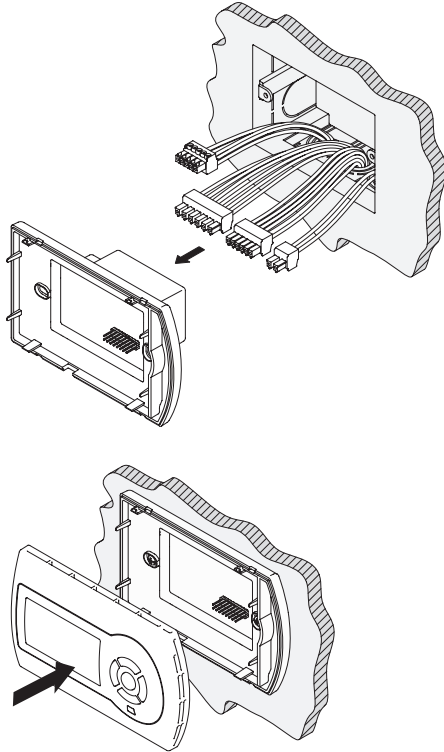
The Evolution tool

The Evolution tool is a PC software that makes it possible to set the controller quickly and easily.
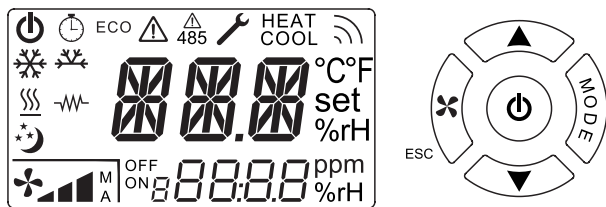
Easy to install

The modular design, with extractable clamps for connections, makes the entire Evolution series easy to install. The base can be installed separately from the electronic components. Assembly in a flush-mounting box.

Display and touch keys

The display has the following indications:

The most common functions can be used at the mere touch of a button. All the other functions are accessed through the menu.

Clock and time spans

The TH controller can be fitted with a clock and set in 4 time spans in the day for normal or reduced (bank-holiday or economy) operations.

The Modbus port

The Modbus port, apart from being used to exchange information in the BMS systems, can be used to make the settings and give a simulation of them, with the Evolution software tool.

USB port

By using the USB port (type mini B) and the Evolution tool, you can both update the firmware and set the controller, without it being powered in.
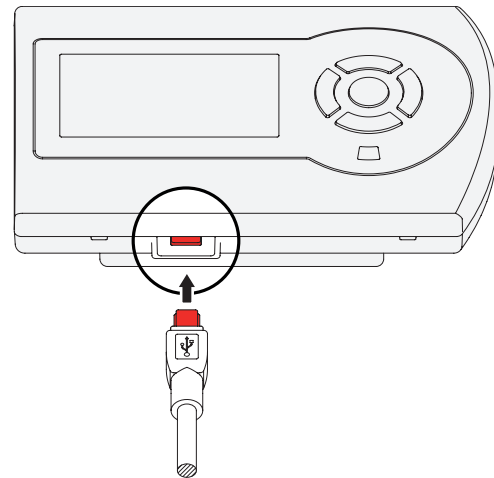

Type of control

TH can be set for different types of control:

- Heating
- Heating/heating (2 stages)
- Heating/cooling with automatic season change (2 pipes)
- Heating/cooling with season change via remote contact (2 pipes)
- Heating/cooling with season change via parameter (2 pipes)
- Heating + electrical resistance/cooling, with automatic season change (2 pipes + electrical resistance)
- Heating + electrical resistance/cooling, with season change via remote contact (2 pipes)
- Heating + electrical resistance/cooling, with season change via parameter (2 pipes)
- Heating/Cooling (4 pipes)
- Heating + electrical resistance/cooling (4 pipes + electrical resistance)
- Cooling
- Cooling/cooling (2 stages)

Examples of applications

TH-4xxST1

Fan coil unit control for 2 pipe device with remote season change. The unit provides for the on/off control of the fan coil valve, the manual or automatic control of the 3 fan speeds and control of an installation pump. In addition, a window contact is managed, as well as a keycard and a minimum level thermostat.
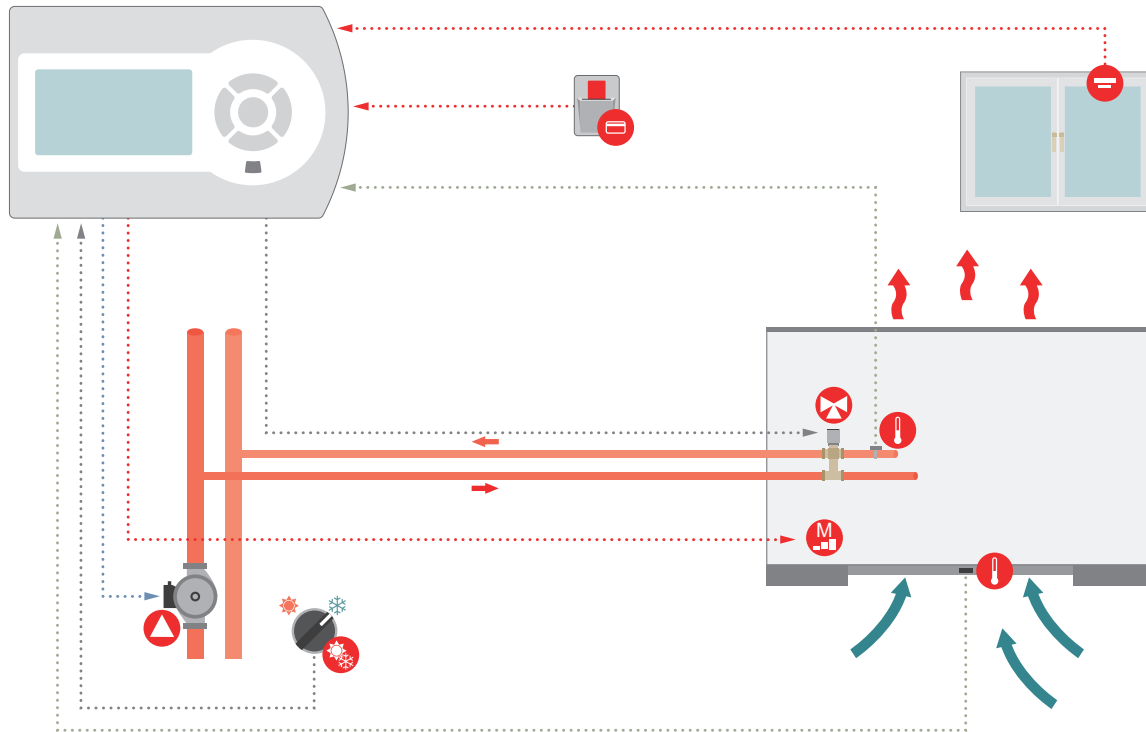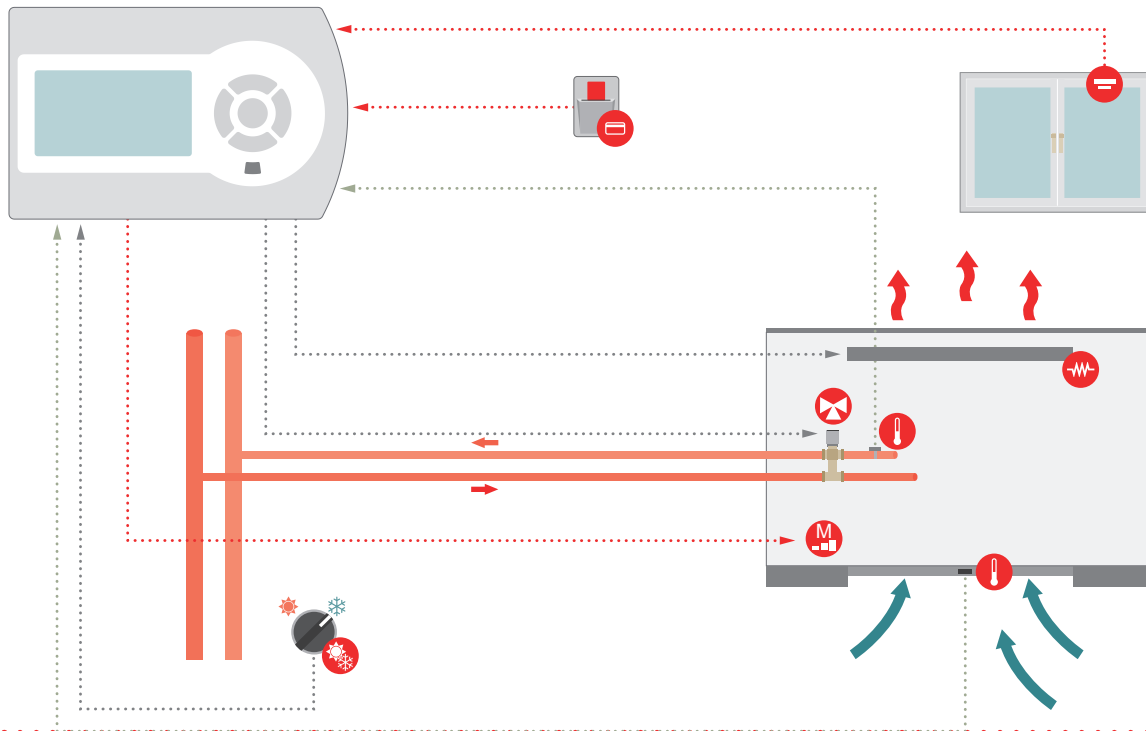

TH-4xxST1

Fan coil unit control for 2 pipe device with remote season change. The unit provides for the on/off control of the fan coil valve, the manual or automatic control of the 3 fan speeds and the control of an integrated electrical resistance. In addition, a window contact is managed, as well as a keycard and a minimum level thermostat.

TH-1xxST1/TH-3xxST1/TH-4xxST1

Fan coil unit control for 4 pipe device with automatic season change. The unit provides for the control of the fan coil valve, the manual or automatic control of the fan speeds. In addition, a window contact is managed, as well as a keycard and a minimum level thermostat. The various models of controller on offer allow you to control actuators and fans with an on/off and/or proportional control.
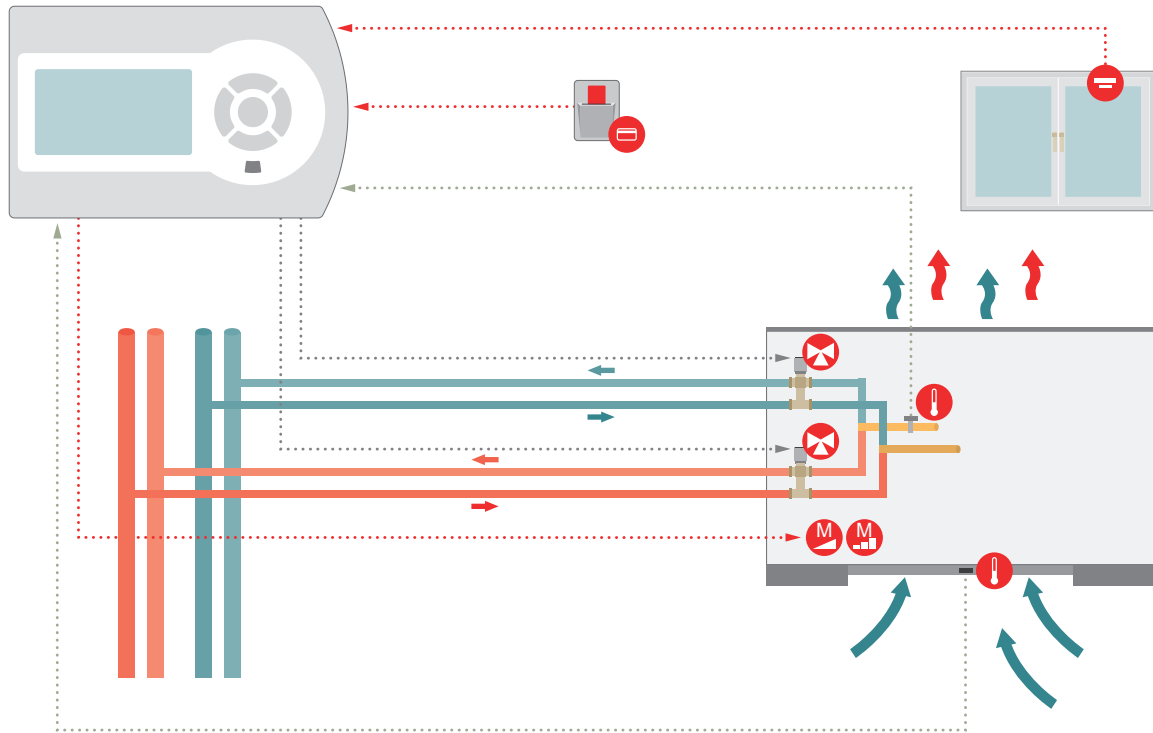
TH-xMxSx1 / TH-xBxSx1

The controllers can be fitted with a communication system that allows you to interface them with BMS management systems. The communication protocols available are Modbus RTU and BACnet .
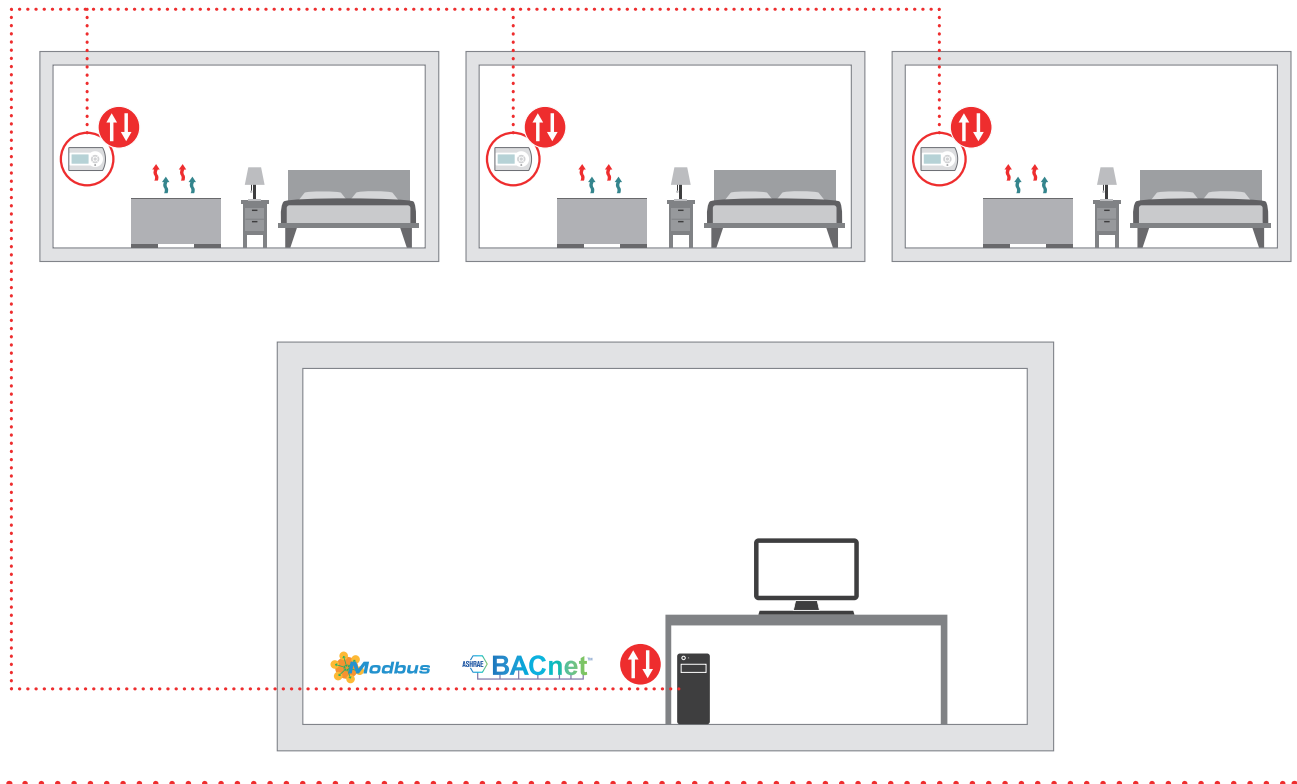
EVOLUTION TH

Technical data

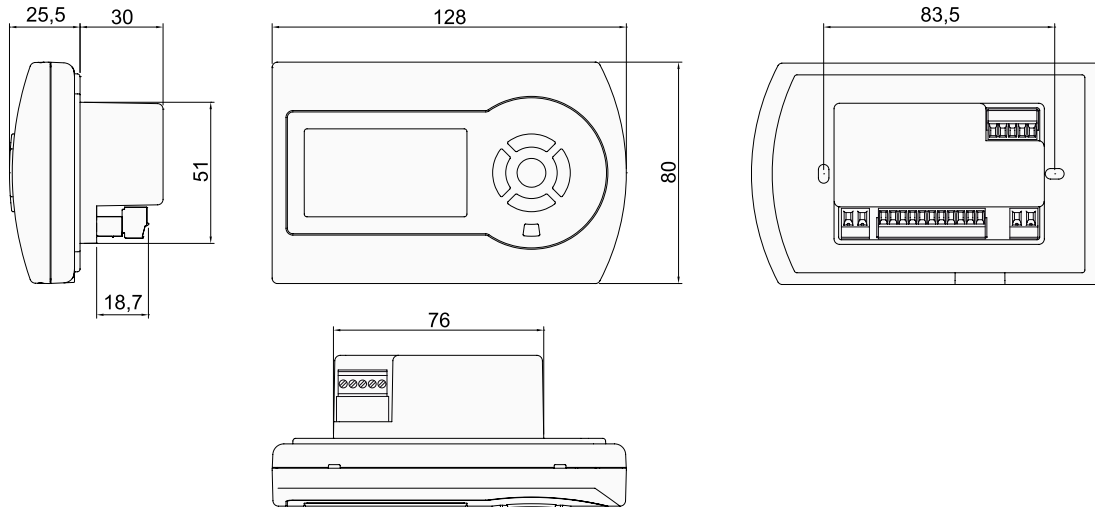|	
SUPPLY VOLTAGE	110...230 V~ ±10%, 50...60 Hz
POWER CONSUMPTION	Max.1.3 W
ROOM TEMPERATURE	0...50°C
STORAGE TEMPERATURE	−20...+70°C
ROOM HUMIDITY	Max. 90 % R.H. non-condensing
CLASS OF PROTECTION	IP30, class II
COMMUNICATION	Modbus RTU or BACnet
DISPLAY	LCD with back-lighting
MATERIAL	PC and ABS
WEIGHT	Max. 230 g
COLOUR	White effect RAL9003
$C \in$	EN 60730-1/A16:2007, EN 61000-6-1:2007, EN 61000-6-3:2007 and EN 60730-2-9:2003 RoHS: this product complies with the EU directive 2011/65/EU of the European Parliament
■**Inputs**	
3 ANALOGUE INPUTS	NTC10-02, 0...50°C.
	SA-NTC10-02, NT0220-NTC10-02, SCC-NTC10-02-BR-J.
	0..10 V⎓ for CO_2 or humidity (visualisation only)
2 DIGITAL INPUTS	Potential-free contacts
■**Outputs**	
3 ANALOGUE OUTPUTS	0...10 V (RL > 10K) depending on the model
5 DIGITAL OUTPUTS	SPST relay, 230 V~, 3A (AC1) depending on the model

Room temperature controller

		TH	-	x	x	x	S	x	1

■**VERSION**									
1 digital output + 3 analogue outputs + 3 analogue inputs				0					
2 digital outputs + 2 analogue outputs + 3 analogue inputs				1					
3 digital outputs + 1 analogue output + 3 analogue inputs				2					
3 digital outputs + 2 analogue outputs + 2 analogue inputs				3					
5 digital outputs + 0 analogue outputs +3 analogue inputs				4					

■**COMMUNICATION**									
Without bus						S			
Modbus						M			
BACnet						B			

■**CLOCK**									
Without clock							S		
With clock							C		

■**INTERNAL PROBE**									
Temperature								T	
Temperature + humidity								H	

EVOLUTION TH

Dimensions (mm)

Electrical diagram

TH-0xxSx1

TH-1xxSx1

TH-2xxSx1

TH-3xxSx1

TH-4xxSx1