Evolution TH

Pre-configured controller with display, clock and communication

Room controller for thermoregulation applications, equipped with rapid access buttons for the most common functions.

- 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, CO2 sensor and season change function
- Real-time Clock

Evolution

Controllers of the Evolution series are available in a wide range of functions for controlling heating, cooling and air-conditioning installations. The new room controller Evolution TH is well-suited for thermoregulation applications.

TH version

Thanks to a large number of I/Os the unit is fit for control of 3-speed or EC fans in 2-pipe, 2-pipe + electric heater, 4-pipe, 4-pipe + electric heater systems. The outputs for valves can be on/off or modulating type. The large backlit display allows user to easily see temperatures, humidity, parameter settings, time bands and the state of the unit. The device is equipped with rapid access buttons for the most common functions (fan speed control, season change, on/off etc.). The unit also features an RS485 port with Modbus RTU or BACnet MS/TP protocol for external communication and can be built-in wall mounted with a 3-module box. Depending on the model, controllers can have a communication feature, a real-time clock, an on/off or proportional control, humidity sensor and a CO2 sensor input.

Applications

Evolution controllers are used in buildings in order to optimize 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. Moreover, up to 3 external NTC10K sensors can be connected. An active sensor can be connected to an input in order to read CO2 values or the humidity level in that area.

MAIN OFFICE BRESSANONE

I-39042 Bressanone (BZ)
via Julius-Durst-Str. 50
VAT No. IT02748450216

tel: +39 0472 830626
fax: +39 0472 831840
www.industrietechnik.it

Actuators and fans

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

Flexible 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.

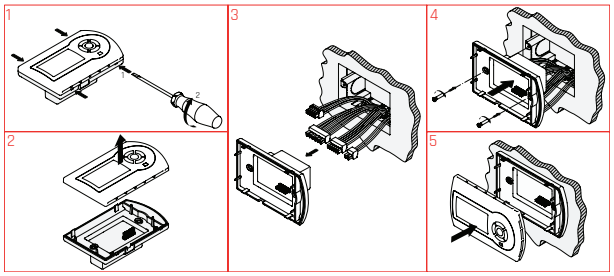
Evolution tool

The Evolution tool is a PC software that enables quick and easy configuration of the controller. The software can be downloaded for free from our homepage www.industrietechnik.it.

Installation

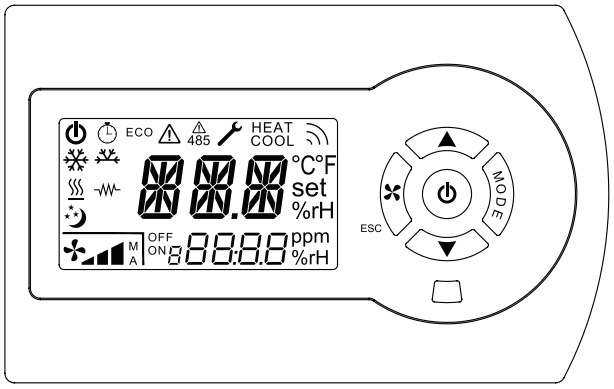
EASY TO INSTALL

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 BUTTONS

The most common functions can be used by the mere touch of a button. All other functions are available via the menu. The display has the following indications:



CLOCK AND TIME SPANS

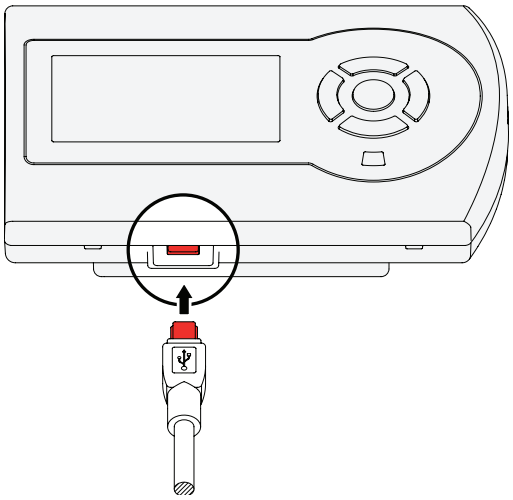
The TH controller can be fitted with a clock and set in 4 time spans in the day for normal or reduced (economy) operation.

COMMUNICATION PORT (RS485)

The communication port, apart from being used to exchange information in the MBS systems, can be used to configure the controller settings and simulate parameters when connected to the Evolution software tool (Modbus RTU mode only).

USB PORT

By using the USB port (type mini B) and the Evolution tool, you can both update the firmware and configure the controller.



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)

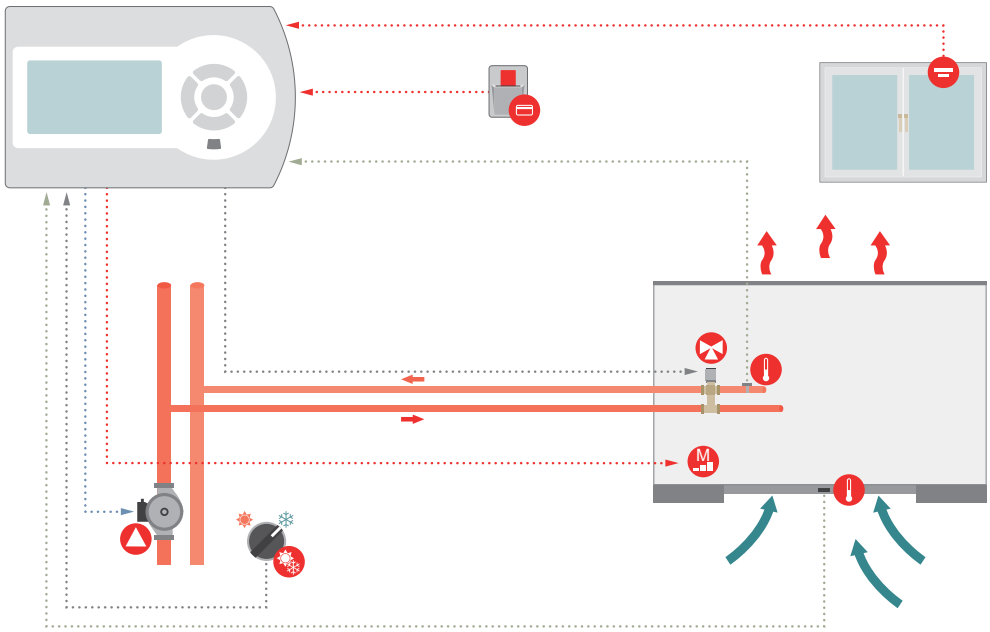
Cooling

Cooling/cooling (2 stages)

Examples of application

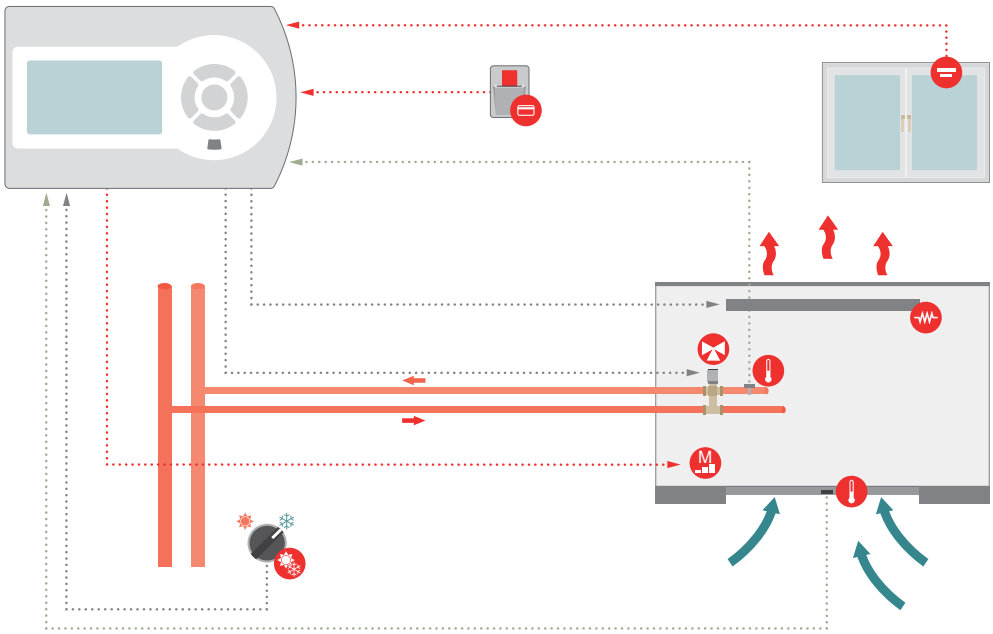
TH-4XXST1

Fan-coil unit control for 2 pipe device with remote season change. The unit provides on/off control of the fan-coil valve, 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 thermostat.



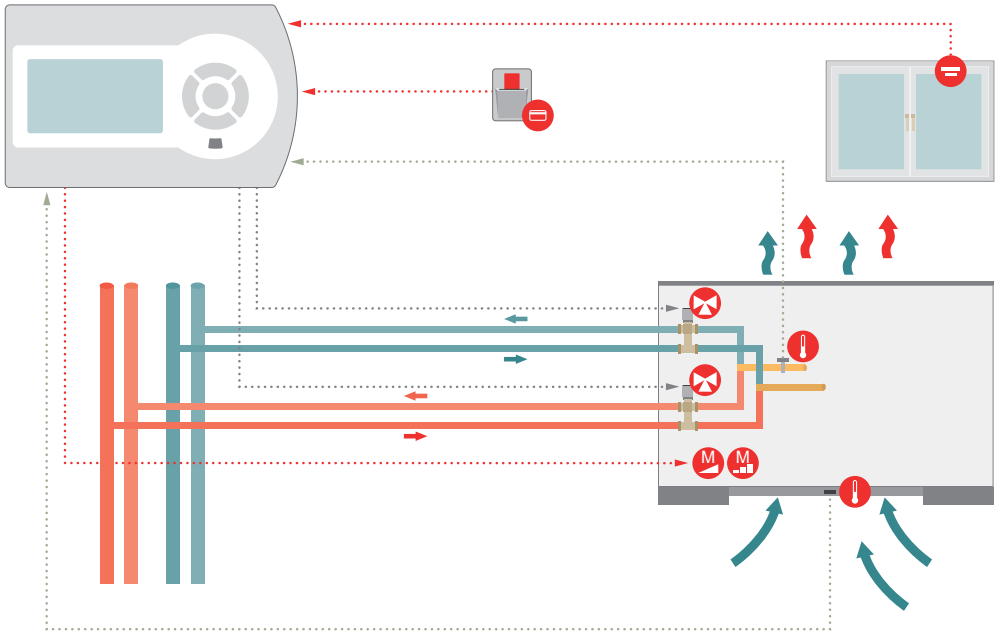
TH-4XXST1

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



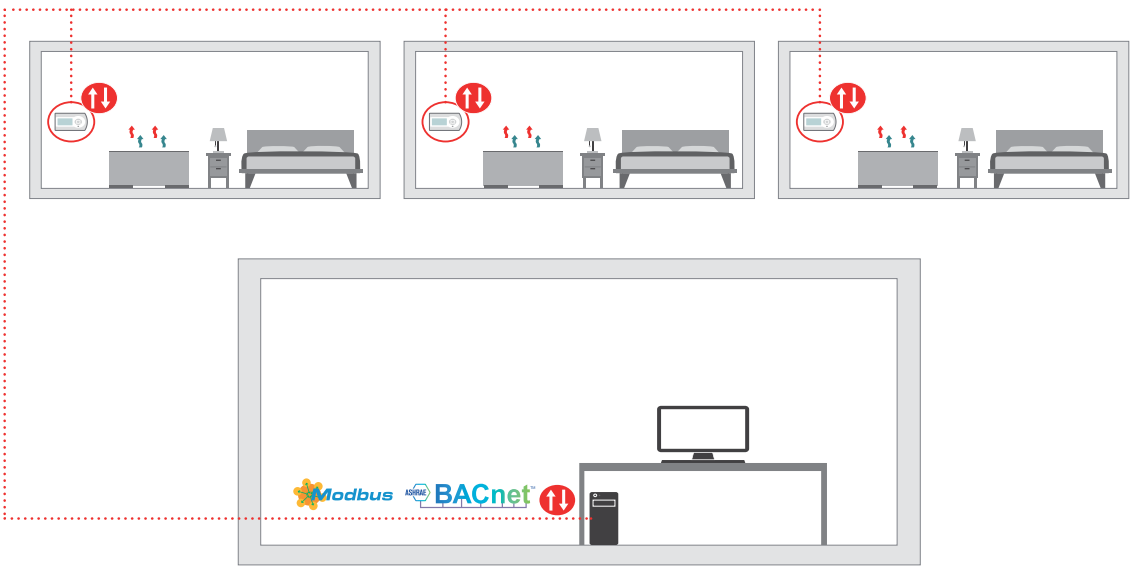
TH-1XXST1/TH-3XXST1/TH-4XXST1

Fan-coil unit control for 4 pipe device with automatic season change. The unit provides control of the fan-coil valve, manual or automatic control of the fan speeds. In addition, a window contact is managed, as well as a keycard and a minimum thermostat. The various controller models 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 MS/TP.



Technical data

Supply voltage	110…230 V AC ± 10%, 50...60 Hz
Inputs	2 digital contacts free of potential / 2 or 3 NTC10-02 sensors / USB port for parameters setting and software update
Outputs	3 analogue outputs 0…10 V (R_L> 10 kOhm) according to model / 5 relays SPST 230 V AC, 3A (AC1) according to model
Power consumption	Max. 1.3 W
Temperature range	0…50 °C
Storage temperature	-20…+70 °C
Ambient humidity	10…90 % RH (non-condensing)
Display	LCD with backlight
Communication	Modbus RTU (slave) or BACnet MS/TP B-ASC
Range of temperature reading	-15...+90 °C
Mounting	3 modules built-in box
Casing	PC + ABS - White effect RAL 9003
Weight	Max. 230 g
Dimensions	128 x 80 x 55.5 mm
Protection class	IP30
Isolation class	Class II
Certification	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

Analogue inputs (AI)	3 NTC10-02, 0...10 V DC for CO2 or humidity (visualisation only), USB port for parameters setting and software update. The adapted ITK sensors are SA-NTC10-02, NT0220-NTC10-02, SCC-NTC10-02-BR-J.
Digital inputs (DI)	2 potential-free contacts

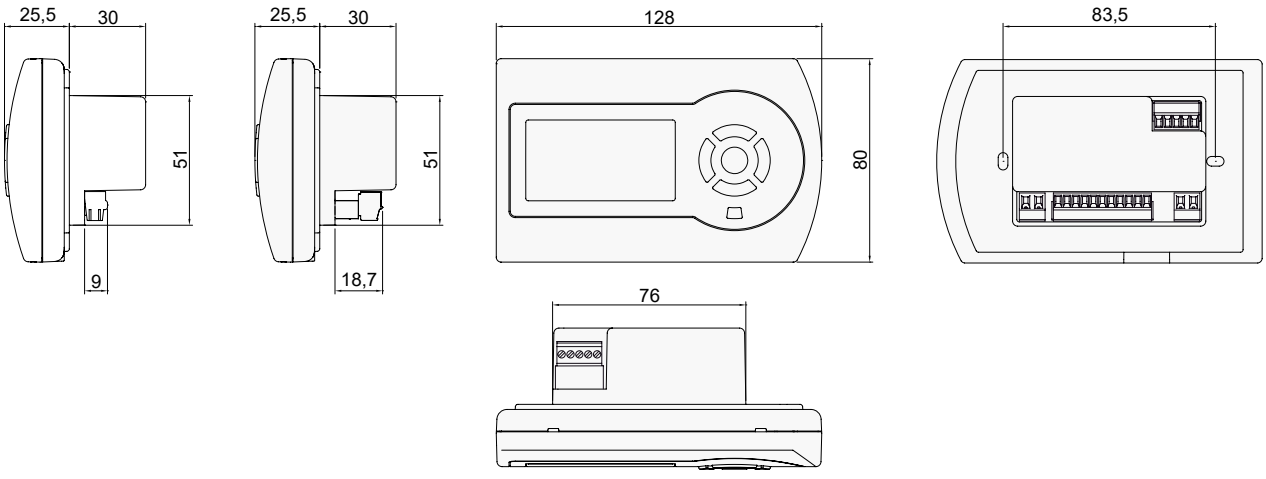
Outputs

Analogue outputs (AO)	3 0...10 V (RL > 10K) depending on the model
Digital outputs (DO)	5 SPST relays, 230 V~, 3A (AC1) depending on the model

Articles

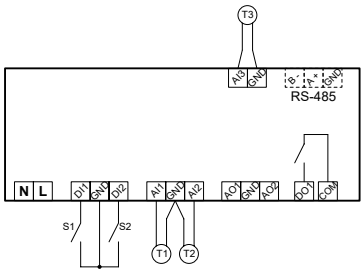
	TH	-	x	x	x	S	x	1
VERSION								
1 digital output + 3 analogue outputs + 3 analogue inputs			0					
2 digital outputs + 2 analogue outputs + 3 analogue inputs			1					
3 digital outputs + 1 analogue output + 3 analogue inputs			2					
3 digital outputs + 2 analogue outputs + 2 analogue inputs			3					
5 digital outputs + 0 analogue outputs +3 analogue inputs			4					
COMMUNICATION								
Without communication				S				
Modbus				M				
BACnet				B				
CLOCK								
Without clock					S			
With clock					C			
INTERNAL PROBE								
Temperature							T	
Temperature + humidity							H	

Dimensions

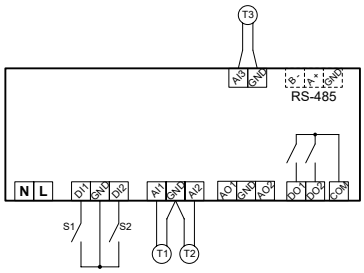


Electrical diagrams

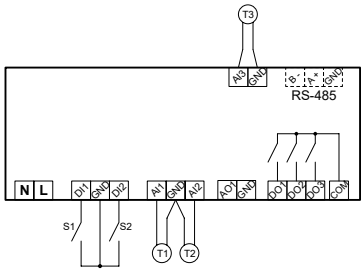
TH-0



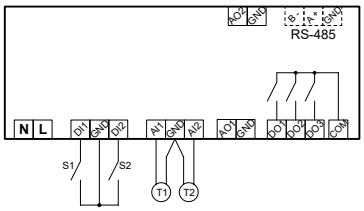
TH-1



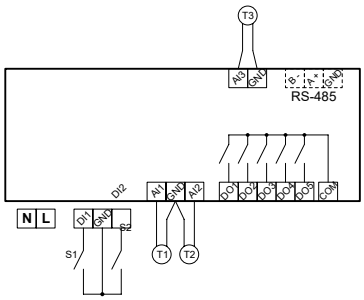
TH-2



TH-3



TH-4



For more details on the settings for the inputs and outputs, please read the user's manual available on our homepage: www.industrietechnik.it.