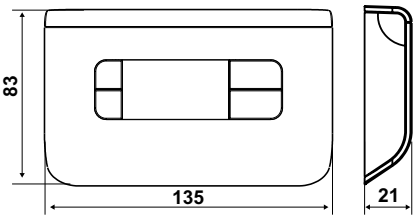
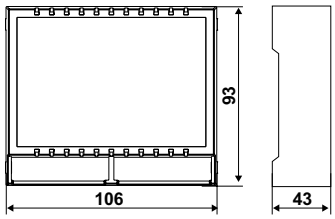
CH130ARR2

Fan-coils thermostat with remote actuator; 3 speeds + automatic control;

CH130ARR2 is a kit formed by thermostat CH130AR2 plus CH176D actuator; connected by 2 wires can control vales -speed motor with relays or 0-10V.
Thermostat detects ambient temperature and operates on valves and motor to obtain best temperature comfort.

Dimensions (mm)





KIT COMPOSITION TABLE

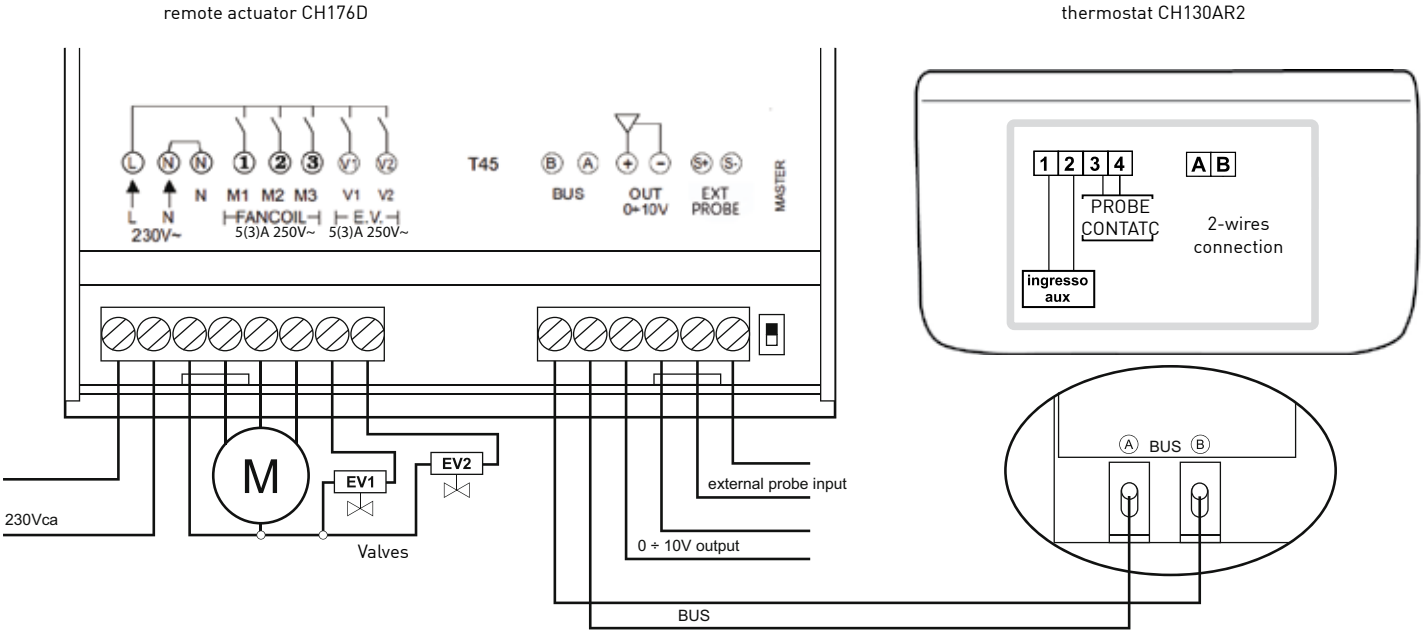
KIT CODE	THERMOSTAT CODE	ACTUATOR CODE	FAN MODE	CONNECTION TYPE
CH130ARR2	CH130AR2	CH176D	manual + auto	2 wires

	Mounting	Temperature regulation range	Body admissible temperature	Power supply	Outputs	Input	Protection degree
CH130AR2	wall mounting	2 ÷ 40 °C	45 °C	actuator CH176D	-	• external temp sensor • aux input	IP20
CH176D	6-module DIN rail		45 °C	230V-50Hz	2 + 3 relays 0-10V	• temp sensors	IP00

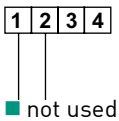
CH130ARR2 ELECTRICAL FEATURES

Power supply from a remote actuator.
Remote actuator with 5 output relays, 0-10V output + external temp sensor, power supply 230 Vac.
Contacts rating 5(3)A.

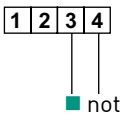
4-PIPES INSTALLATION



AUX INPUT CONFIGURATION



- not used
- ON-OFF
- SUMMER / WINTER
- input supplied with 24 Vdc



- not used
- rerun probes
- SUMMER-WINTER automatic control
- minimum window/thermostat contact
- reverse contact (minimum window/thermostat)

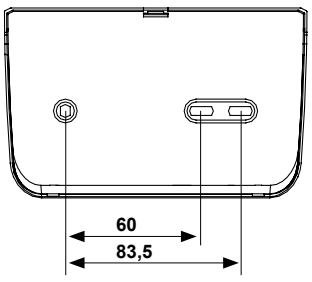
HOMOLOGATION AND STANDARDS

Complies with EN 60730-2-9 and EN 60730-1 standards;
ErP: ErP Class I; 1% (Reg. EU 811/2013 - 813/2013)

CE EAC

INSTALLATION

The thermostat is supplied complete with a base suitable for mounting on the wall, as well in rectangular or round built-in 3-seat boxes.



MOUNTING HOLES, mm

OPERATION

CH130ARR2 is supplied from the actuator and is able to drive two valves and also control a 3-speed fan-coil or a 0-10V motor. The wide display shows the measured temperature, fan speed, the running program and the selected season.
The settings and data are stored in a permanent (nonvolatile) memory capable of keeping them even in the absence of power supply or when the batteries are not inserted (according to the model).
2 wires cable that connect thermostat and actuator has dual function to power the thermostat and bus communication between thermostat and actuator.
It is possible to connect a single thermostat to several actuators, in order to control more than one fan coil simultaneously with only two cables;

SUMMER WINTER OPERATION

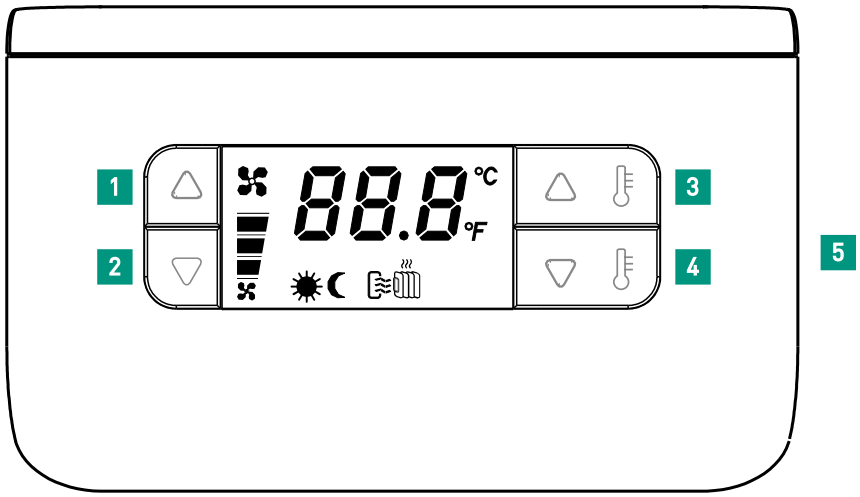
Allows to control ambient temperature in heating or cooling mode
To switch from the "Winter" operation (i.e. heating system) to the "Summer" operation (i.e. cooling system), and vice versa, press the 1+2 button combination. The selected operation mode will be indicated on the display by the "Winter" or "Summer" icons.

BUTTONS COMBINATIONS

- 1 fan speed increase button, at the maximum prescribed speed is configured the "AUTO" operating mode.
- 2 fan speed decrease button, exits the "AUTO" mode and decreases the fan speed.
- 3+4 SUMMER/WINTER switch.
- 3 temperature value increase button for the selected program.
- 1+2 COMFORT/ECONOMY switch.
- 4 temperature value decrease button for the selected program.
- 5 thermostat reset button.

VISUALIZATION (SIGNALS)

- Measured temperature
- COMFORT symbol
- ECONOMY symbol
- SUMMER symbol
- WINTER symbol
- Fan speed symbol



OPERATING MODES

CH130... thermostats have 3 different operating modes:

- With the COMFORT operating mode, the thermostat regulates the heating or cooling installation operation in order to always keep the same prescribed comfort temperature.
- With the ECONOMY operating mode, the thermostat regulates the heating or cooling installation operation in order to always keep the same prescribed economy temperature.
- (OFF) function can be achieved by setting the fan speed to zero. In this case, the thermostat does not perform the regulation. The system will switch OFF completely and on display will appear the message "OFF".

FAN SPEED SELECTION

- MANUAL: fan speed can be set manually to free fixed levels (minimum, medium, maximum).
- AUTO: if the speed is set in Auto, the thermostat sets automatically the appropriate speed according to the difference between the set-point and the ambient temperature.
- CH130A thermostat has available a TECHNICAL MENU for adapting to different system types.

TECHNICAL MENU
SYSTEM TYPE

- 2-tube system: the thermostat will drive only the valve (ON/OFF type) used for heating both during the heating and the cooling; in fact, the valve will control both hot water and cold water.
- 4-tube system: the thermostat will drive one valve (ON/OFF type) used for heating, plus one additional valve (ON/OFF type) used for cooling, based on the needs of the environment.

CH130AR2 EXTERNAL PROBE

- RESUMPTION: instead of the probe incorporated into the thermostat, an external probe can be used to read the ambient temperature and carry out heat regulation. Typically, this probe will be positioned under the fan-coil where air is sucked.
- CHANGEOVER: the external temperature probe can be placed on the fan-coil delivery tube of a 2-tube system to perform automatic changeover between the "Summer" operation and the "Winter" operation.
- MINIMUM WINDOW/THERMOSTAT CONTACT: when the contact is open, the thermostat will carry out heat regulation; when it is closed, the heat regulation will not be carried out.
- INVERTED MINIMUM WINDOW/THERMOSTAT CONTACT: the window contact will operate with an inverted logic with respect to the statements made in previous step 3.
- NONE: the external probe input will not be controlled by the thermostat.

CH176D EXTERNAL PROBE

- ON/OFF
- Manual change-over
- Comfort/Economy
- Temp reduction (winter -3.0°C ; Summer +3.0°C)
- recovery (only if P12 different from 5)
- minimum only winter sensor (see above)
- minimum winter / summer sensor (see above)
- Automatic change-over

DISPLAY VISUALIZATION

- AMBIENT TEMPERATURE: the ambient temperature will be shown on the display.
- SET-POINT: the current set point will be shown on the display.

CENTRAL INPUT CONFIGURATION

- ON/OFF: in the event that several thermostats have been installed, you may decide either to drive all of them in the normal operation condition (ON) or taking advantage of the OFF function by controlling them through a central point. The thermostat will be configured to OFF when the input is powered with 24 V (d.c. with no polarity obligation or a.c.); on the contrary, it will remain active when the input is free from voltage.
- SUMMER/WINTER: as in the previous case, the thermostat will be configured to "Summer" mode when the input is powered with 24 V; on the contrary, it will remain active in the "Winter" mode when the input is free from voltage.
- NONE: the thermostat will not carry out any operation, whatever the input status.
- COMFORT/ECONOMY
- TEMP REDUCTION (winter -3.0°C ; Summer +3.0°C)

TYPE OF INSTALLATIONS (PLANT)

- 2 pipes
- 4 pipes

HOT WATER/ELECTRICAL RESISTANCE SELECTION

- Hot water valve
- Electrical resistance

VENTILATION MODE

- Continuos
- Continuos-stop winter mode
- Continuos-stop summer mode
- Subject to valve status
- Subject-stop winter mode
- Subject-stop summer mode

REGOLATION MODE

- Manual summer- winter mode
- Automatic summer-winter mode

ANTISTRATIFICATION

- Disactivated
- Only summer mode
- Only winter mode

KEY LOCK MODE

- All key locked
- Key lock setpoint + W/S + E/C
- Key lock W/S + E/C

ADJUSTABLE DIFFERENTIAL VALUES IN WINTER MODE

- Std/0,3°C ... 6,0°C (steps 0,1°C)

DEAD ZONE (AUTOMATIC CONTROL)

- 1,0°C ... 6,0°C (step 1°C)

REMOTE ACTUATOR SELECTION

- CH176D
- CH172D

SUMMER VALVE TYPE

- NORMALLY OPEN: in this case, the water flow is normally open and will be closed when the valve is supplied.
- NORMALLY CLOSED: when the valve is energized, it will open the water flow.

WINTER VALVE TYPE

- NORMALLY OPEN: in this case, the water flow is normally open and will be closed when the valve is supplied.
- NORMALLY CLOSED: when the valve is energized, it will open the water flow.

AMBIENT TEMPERATURE CORRECTION

- It can be adjusted from –4.0 to 4.0°C. This parameter is used to correct the acquired ambient temperature. In fact, in some installations, the ambient temperature reading may not be satisfying, due to the probe location (i.e. internal or resumption). With this parameter, a constant value upon reading can be added to or subtracted from.

“WINTER” LOWER LIMIT SET-POINT TEMPERATURE

- It can be adjusted from 2.0 to 40.0°C. It represents the lower limit for all the set-points (Comfort and Economy) in the heating mode.

“WINTER” UPPER LIMIT SET-POINT TEMPERATURE

- It can be adjusted from 2.0 to 40.0°C. It represents the upper limit for all the set-points (Comfort and Economy) in the heating mode.

“SUMMER” LOWER LIMIT SET-POINT TEMPERATURE

- It can be adjusted from 2.0 to 40.0°C. It represents the lower limit for all the set-points (Comfort and Economy) in the cooling mode.

“SUMMER” UPPER LIMIT SET-POINT TEMPERATURE

- It can be adjusted from 2.0 to 40.0°C. It represents the upper limit for all the set-points (Comfort and Economy) in the cooling mode.

CHANGEOVER LOWER THRESHOLD

- It can be adjusted from 0 to 24°C. It defines the changeover function lower threshold. Below this temperature, the thermostat will be set to the cooling mode.

CHANGEOVER UPPER THRESHOLD

- It can be adjusted from 26 to 48°C. It defines the changeover function upper threshold. Above this temperature, the thermostat will be set to the heating mode.

TECHNICAL FEATURES

CH130AR2

Power supply	via CH176D remote actuator
Output	Property BUS
Auxiliary input	for free contact
Sensor input	NTC 10KOhm (Fantini EC15-EC18-EC19-EC20)
Electrical connection	Screw terminals
Protection degree	Ip20
Pollution degree	2
Settings memorization	Non volatile
Software	A Class
Temperature regulation range	2°C ÷ 40°C
Maximum temperature	T45
User interface	LCD display + 4 buttons
Dimensions (L x A x P)	135 x 83 x 21 mm
Thermal gradient	4 K/h
Compliant with directives	2014/35/UE Directives 2014/30/UE Directives
Compliant with standards	EN60730-1 EN60730-2-9
ErP Classification	ErP Class I; 1% [Reg. EU 811/2013 - 813/2013]

CH176D

Power supply and consumption	230Vac 50Hz - 2VA
BUS A/B input	Power supply + Thermostat data (factory set: SLAVE)
Relay output features	5(3)A 250V~
Mains voltage switching contacts	2 output for valves (N-V; N-V2)
Mains voltage switching contacts	3 output for motor (M1; M2; M3)
0 ... 10V Output	20 mA - 470Ω
Sensor input	NTC 10 KΩ (Fantini EC15-EC18-EC19-EC20)
Protection degree	IP00
Software Class	A
Maximum temperature	T45
Pollution degree	2
Compliant with standards	EN60730-1 and second parts
Micro-disconnection	1B
Impulsive voltage	4000V
Mounting type and dimensions	6-module DIN bar
Product not manufactured in Italy	

CONNECTION EXAMLPE

A CH130ARR2 can control up to 5 fan-coil units simultaneously, using only two cables for connecting to the actuators.
In this case, just one actuator should have BUS selector in ON (MASTER position): others in OFF (SLAVE position).

CONNECTION EXAMPLE BETWEEN CH130AR2+CH176D AND A FAN-COIL