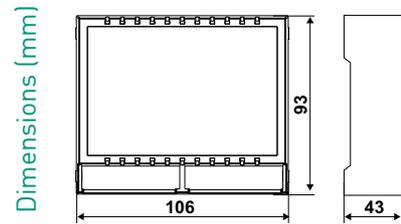
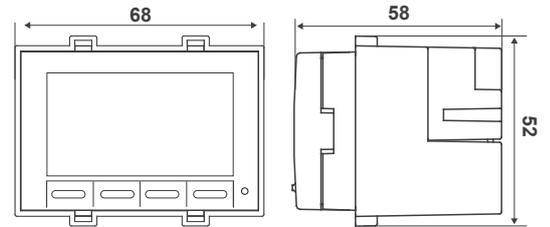


# CH133ARR2

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

CH133ARR2 is a kit formed by thermostat CH133AR2 plus CH176D actuator; connected by 2 wires can control valves -speed motor with relays or 0-10V.

Thermostat detects ambient temperature and operates on valves and motor to obtain best temperature comfort.



## KIT COMPOSITION TABLE

KIT CODE	THERMOSTAT CODE	ACTUATOR CODE	FAN MODE	CONNECTION TYPE			
CH133ARR2	CH133AR2	CH176D	manual + auto	2 wires			
	Mounting	Temperature regulation range	Body admissible temperature	Power supply	Outputs	Input	Protection degree
CH133AR2	Flush-mounting	2 ÷ 40 °C	45 °C	actuator CH176D	-	<ul style="list-style-type: none"> <li>external temp sensor</li> <li>aux input</li> </ul>	IP20
CH176D	6-module DIN rail		45 °C	230V-50Hz	2 + 3 relays 0-10V	<ul style="list-style-type: none"> <li>temp sensors</li> </ul>	IP00



## “MULTIPLATE” KIT

Suitable for all the plates (3 module) thanks to the KIT consisting of: programmable thermostat, coloured covers (white, silver and anthracite), frames and adaptors

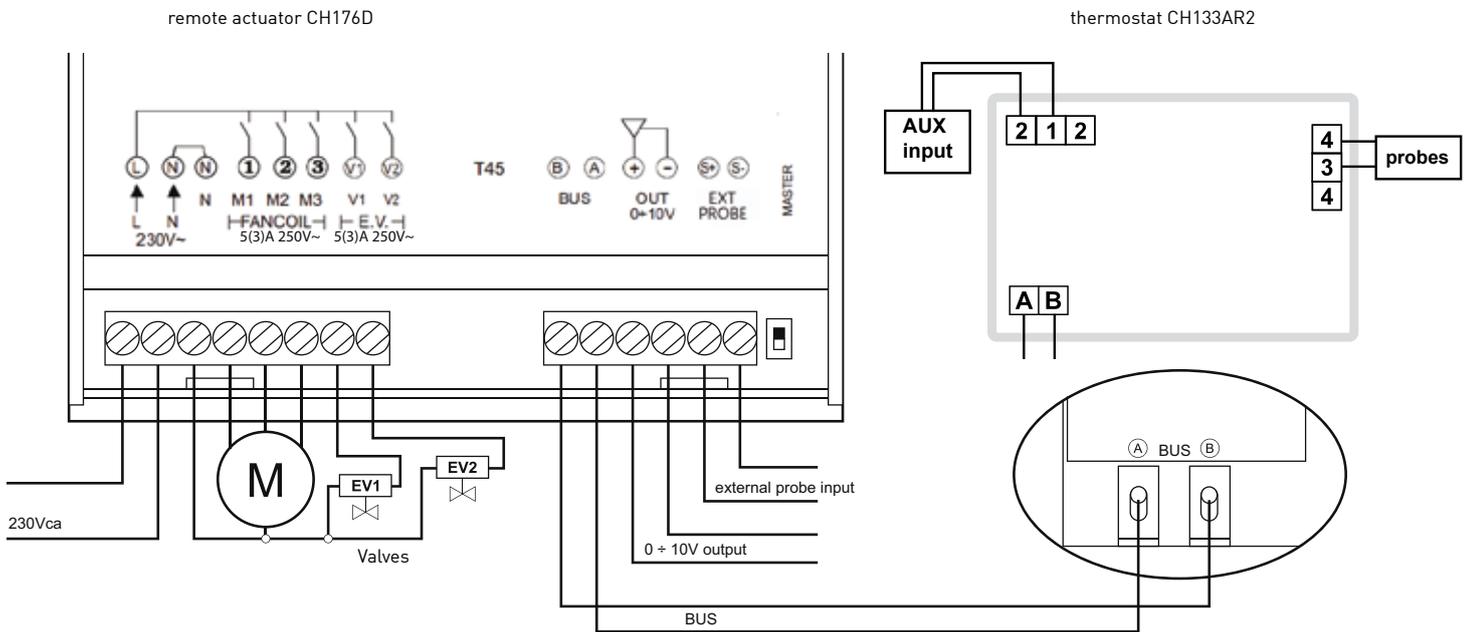
# CH133ARR2 ELECTRICAL FEATURES

Power supply from a remote actuator.

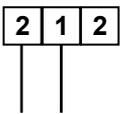
Remote actuator with 5 output relays, 0-10V output + external temp sensor, power supply 230 Vac.

Contacts rating 5(3)A.

## 4-PIPES INSTALLATION

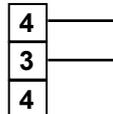


## AUX INPUT CONFIGURATION



Input supplied with 24 Vdc/Vac

- not used
- ON/OFF
- SUMMER/WINTER
- Comfort/Economy
- Temp reduction (Winter -3.0°C; Summer +3.0°C)



- not used
- return probes
- SUMMER/WINTER 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)



# INSTALLATION

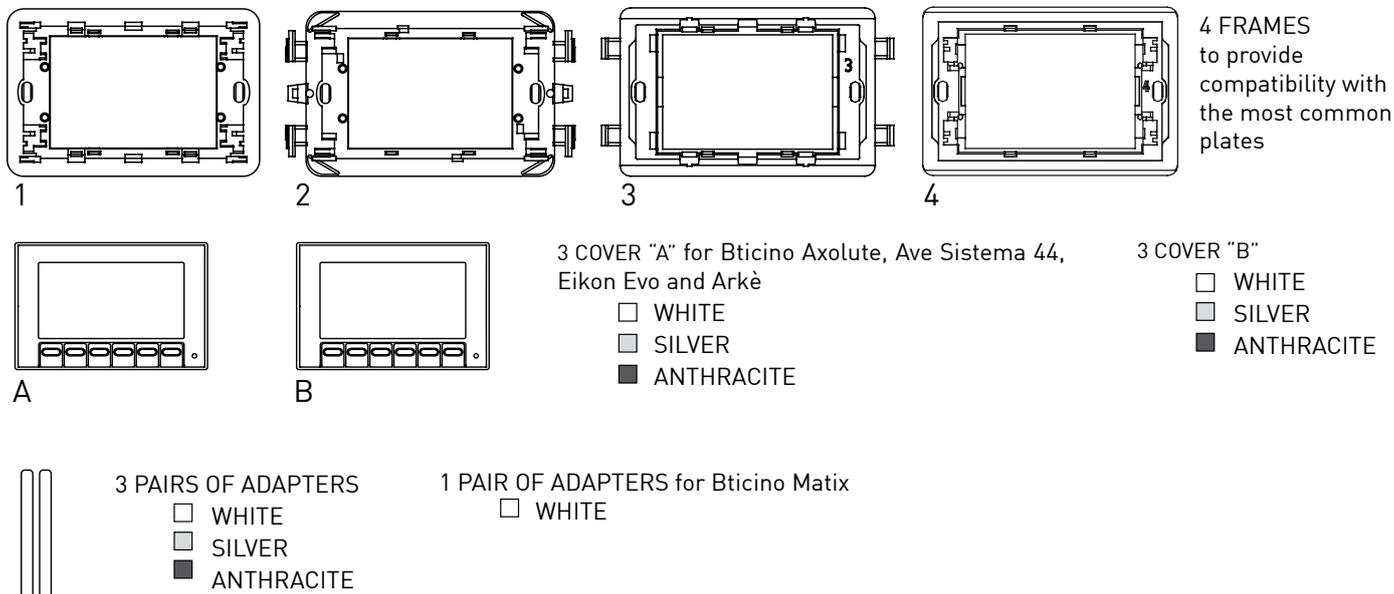
Flush-mounting in 3-module 503 embedded boxes by means of 2 screws (supplied).

Two-wire connection with the user.

Install the thermostat at 1,5 meters above the floor, away from kitchens, heat sources, windows and doors.

Can be applied, without any connection accessory, the following plates:

## INCLUDED IN THE PACKAGE:



## COMPATIBLE PLATES

MODELS	COVER TYPE	FRAME TYPE	ADAPTERS
Bticino Livinglight Air	B	3	NO
Bticino Livinglight quadra and tonda	B	1	NO
Bticino Living Now	B	3	YES (optional)
Bticino Axolute	A	1	NO
Bticino Axolue Air	A	4	NO
Bticino Matix	B	2	YES (included)
Vimar Idea e Rondò	B	2	YES
Vimar Plana e Eikon	B	1	NO
Vimar Eikon Evo	A	3	NO
Vimar Arké	A	3	NO
Gewiss Chorus One, Lux, Art, Geo technopolymer	B	2	NO
Ave sistema 45: Zama, Banquise, Yes, Ral	B	2	YES
Ave sistema 44: Zama, Personal, Technopolymer	A	1	NO
Legrand Cross, Vela quadra and tonda	B	2	NO
ABB Elos	B	4	YES
ABB Mylos	B	4	NO

## OPTIONAL NOT INCLUDED IN THE PACKAGE

1571050	adapters for Bticino Living Now plate (Anthracite)
1571051	adapters for Bticino Living Now plate (White)

# OPERATION

CH133ARR2 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 backlit 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.

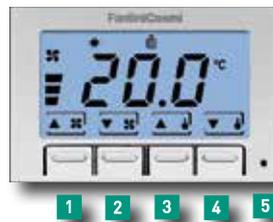
It is possible to connect a single thermostat to several actuators, in order to control more than one fan coil simultaneously with only two cables;

To switch from the "Winter" operation (i.e. heating system) to the "Summer" operation (i.e. cooling system), and vice versa, press the 1+4 button combination. The selected operation mode will be indicated on the display by the "Winter" or "Summer" icons.

- 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 temperatures
- COMFORT symbol
- ECONOMY symbol
- SUMMER symbol
- WINTER symbol
- fan speed symbol



## OPERATING MODES

CH133... 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.

### SUMMER WINTER OPERATION

Allows to control ambient temperature in heating or cooling mode.

## 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.

### CH133AR2 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

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

### REGULATION 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

## CH133AR2

Power supply	via CH176D remote actuator
Output	Property BUS
Auxiliary input	for free contact
Sensor input	NTC 10K0hm (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)	68 x 58 x 52 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

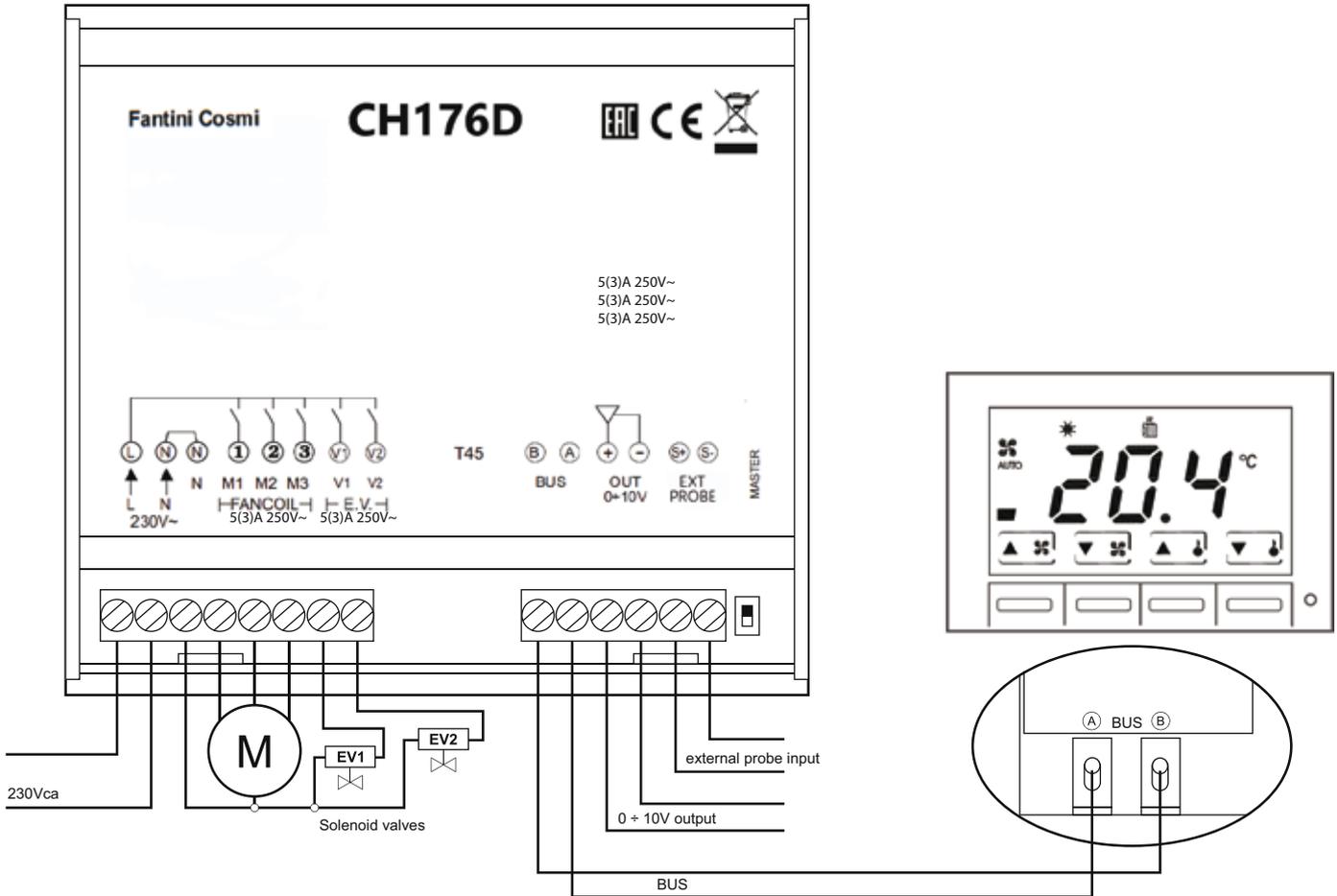
Power supply and consumption	230Vac 50Hz - 2VA
BUS A/B input	Power supply + Thermostat data (factory set: SLAVE)
Relay output features	5(3)A 250V~
Mains voltage switching contacts	2 output for valves (N-V; N-V2)
Mains voltage switching contacts	3 output for motor (M1; M2; M3)
0 ... 10V Output	20 mA - 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 EXAMPLPE

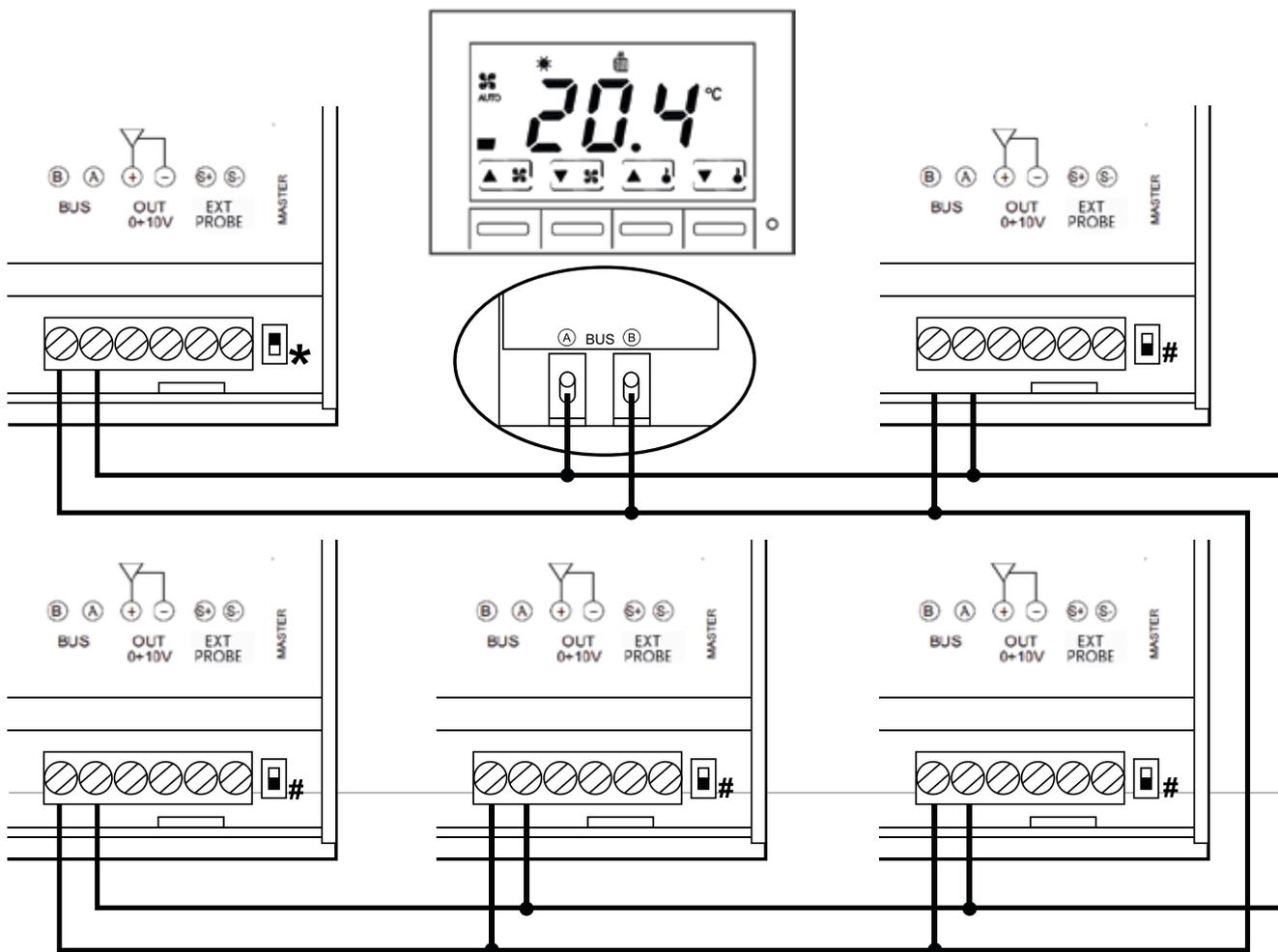
A CH133ARR2 can control up to 5 fan-coil units simultaneously, using only two cables for connecting to the actuators.

In this case just one of CH176D actuators should have BUS selector in "MASTER" position, while all others actuators should have BUS selector in "SLAVE" position

CONNECTION EXAMPLE BETWEEN CH133AR2+CH176D AND A FAN-COIL



CONNECTION EXAMPLE BETWEEN CH133AR2+CH176D AND FEW FAN-COILS (FROM 2 TO 5)



NOTES:

- \*  BUS selector in ON position (MASTER)
- #  BUS selector in OFF position (SLAVE)



The features referring to the units described in this catalog are not binding. Fantini Cosmi S.p.A. reserve the right to make modifications, owing to technological advances and commercial and normative developments, without giving any previous notice or communication, being it understood that the models' main functional features will not change.