Electronic Fan-coil Controllers

AXCU

CE

Model	Description	Supply	Control
AXCU22/W	Electronic controller for 2/4-pipe fan coil	230 V 50/60 Hz	on/off
AXCU22/WMB	Electronic controller for fan-coil with ModBus communication		
AXCU/BA	Bus Adapter	220 V	--

AXCU22/W

AXCU22/WMB

APPLICATION AND USE

AXCU models are electronic controllers for 2-4 pipe fan-coils to control on/off valves and manual control fan (3 speed).

TECHNICAL CHARACTERISTICS

Power voltage	230V~ ±10%
Frequency	50/60 Hz
Maximum input power	12W max
Max. admissible current on contacts	5A. 230V~
Insulation class	II (IEC 950)
Protection grade	IP30
Temperature	
- operating	T55°C (for AXCU22/WMB) T60°C (for AXCU22/W)
- storing	-20T85 °C
Humidity (non-condensing)	
- operating	10÷90%
- storage	10÷90%
Casing	plastic resin PC+ABS
Dimensions mm (Lxlxh)	120x80x40
Installation	wall-mounted using the rear hood as a drilling template

The product complies with EC directives and the following regulations: - 73/23/EEC - Low voltage: EN 60730 - 89/336/EEC - Emissions: EN 50081-1 (EN 55022) - Immunity: EN 50082-1

OPERATION

The operating mode is automatically selected according to the temperature detected by the sensor.

* AXCU22/WMB provides the automatic control of fan speed.

INSTALLATION

Open the equipment by a screwdriver, playing on the slots (A, B, C, D) (see fig.1).
Lean the controller back on the wall for doing the 4 holes to fix it, by the base.
Locate the 2 terminal boards. (fig. 3).

AXCU22/W DIP

AXCU22/W	DIP 6	DIP 5	Heating	Cooling	Electrical heater	ST3 suggested
	ON	OFF	OUT2	OUT1	--	YES
	OFF	ON	--	OUT2	OUT1	

Setting can be changed on field according to Dip Switches Configuration Table (see TAB. 1).

ADJUSTMENT OF THERMOSTAT OPERATING RANGE (fig. 2)

To limit the thermostat operating range remove the front hood of the implement and dislodge the adjustment knob by levering a screwdriver on the grey pin located in the hole on the card, under the knob.
Then move either grey block (A) until the desired differential is obtained. Standard factory adjustment is +5°T35°C.

CONNECTIONS

The equipment is fitted with screw terminal strips for the connection of leads having a maximum cross-section of 1.5 mm^2 (as regards power contacts, use one lead for each terminal). Jobs involving electrical connections must be performed with the device off. Make sure that the available power voltage conforms to the one required by the equipment. Use only the supplied screws.
Do not mount the instrument on metal surfaces. Do not poke anything into the slots on the device (be it on or off).
The sensor requires no installation polarity and can be extended using an ordinary bipolar cable (mind that extending the sensor would influence sensor behaviour as regards electromagnetic compatibility: be careful during wiring procedures). Use only the supplied sensors. Grant a minimum distance of 8mm between the devices components/fittings and the accessible parts (cables, sensors, etc.).

NETWORK

(ModBus protocol - for AXCU22/WMB model only)

Connection with several devices with RS-485 network and NOT stated length. In this case, use shielded and twisted cable with two 0,5 mm^2 section leads + socket (ref. 8762 Belden cable with PVC sheath, 2 leads + socket, 20 AWG) (see fig. 5).
Use only the Bus Adapter (AXCU/BA) and apply the 120 (Ohm) 1/4 W resistances on the terminals +/- of the last equipment and of the interface for each node.

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ISO 9000

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SENSORS

ST1: sensor for ambient air temperature (always built-in)
Sensor included in the card, enabled when DIP1=On
Sensor range: -10C° ÷ 70C°

SENSOR INPUTS

ST2: Input for ambient temperature (remote*) sensor
enabled when DIP1=Off
This sensor is used for air temperature control. It is built in the device but can be connected to a remote sensor positioned on return air (DIP1 = OFF). See diagram (Fig. 4) for wiring connections. Sensor range: -10ºC ÷ 70ºC

ST3: Input for water-cooled heat-exchanger temperature sensor (remote*)
This sensor, which should be installed downstream the water valve, is used for water temperature control. It is involved in qualification and control functions. See diagram (Fig. 4) for wiring connections.
This input can be used for "WINDOW CONTACT", with ENERGY SAVING functions: when the contact is closed the controller changes over to stand-by with the antifreeze function enabled. Sensor range: -10ºC ÷ 70ºC
If the ST3 sensor is not installed, the heating controller, during heat request, controls the heating valve and for 3 minutes stops the fan speed.
The ST3 sensor is not necessary if the electrical resistance operation is chosen.
* not included, SNTC model with ABS cap or SNTC-S model with AISI 304 cap.

NOTE: ALWAYS USE THE SNTC-S SENSOR FOR 2-PIPE APPLICATIONS.

PRECAUTIONS

For safety reasons the device must be operated following manufacturer instructions. Notably, because of the hazards entailed, under ordinary use conditions live and/or heating parts must not be accessed. The device must be protected from water and dust.
Any use other than the allowed ones is forbidden. The relay contacts supplied are functional-type and are consequently liable to faults: any protection equipment as regards obvious safety needs, foreseen by the applicable regulations or suggested by common sense must be carried out outside the device.

AXC22 DIP SWITCHES CONFIGURATION

N° DIP	Description	On	Off
6	Air sensor used	Local	Remote
5	Fan status in cooling	Thermostat demand	Always ON
4	Dead zone value Hysteresis value	5°C 2°C	2°C 1°C
3	Electric heater control	Regulation	Integrated
	Hot start time	*Hot Start* =0 (not delayed)	*Hot Start* (delayed time)*
2	2-pipe or 4-pipe	*4-pipe*	*2-pipe*
1	Electric heater	Yes	No

AXC22/WMB DIP SWITCHES CONFIGURATION

N° DIP	Description	On	Off
1	Installation type	ceiling	floor
2	Fan	continuous (1)	when requested (2)
3	Thermostat control	on valve	on fan
4 and 5	Plant type		
	- 2-pipe no-resistance	--	4,5
	- 2-pipe with heat added	4,5	--
	- 2-pipe with heat control	5	4
	- 4-pipe	4	5

TAB. 1

LED

Led L1: ON /Economy (yellow)
- ON: controller on
- Slow flashing: controller on and Economy function enabled (only for models envisaging this function)
- OFF: controller off

Led L2: cooling (green)
- ON: thermostat under demand with fan, valve and/or heater element enabled.
- Slow flashing: thermostat under cooling demand with valve and fan disabled because water temperature sensor has not given consent.
- Fast flashing: thermostat under cooling demand with valve enabled and fan disabled because water temperature sensor has not given consent.
- OFF: all other cases

Led L3: heating (red)
- ON: thermostat under heating demand, with fan, valve and/or heater enabled.
- Slow flashing: thermostat under heating demand, with valve and fan disabled because the water temperature sensor has not given consent.
- Fast flashing: thermostat under heating demand with valve enabled and fan disabled because the water temperature sensor has not given consent.
- OFF: all other cases

All leds will flash for three seconds when the controller is powered. All leds will continue flashing when a temperature sensor is damaged or when the WINDOW CONTACT function is enabled.

THERMOSTAT OPERATION SET LIMIT

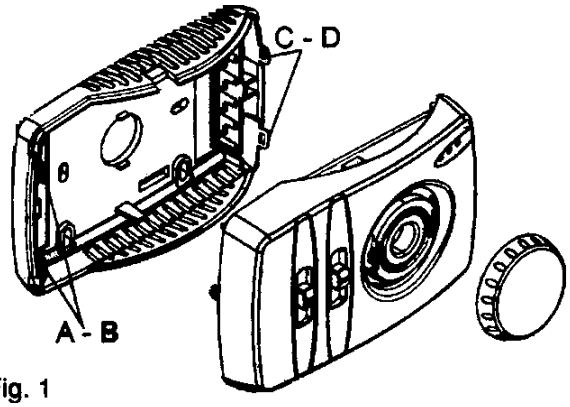


Fig. 1

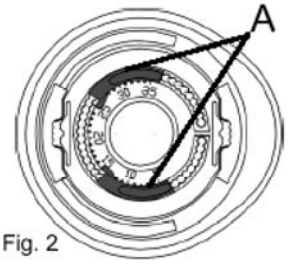


Fig. 2

ELECTRICAL WIRING

AXCU22/W

Fig. 3

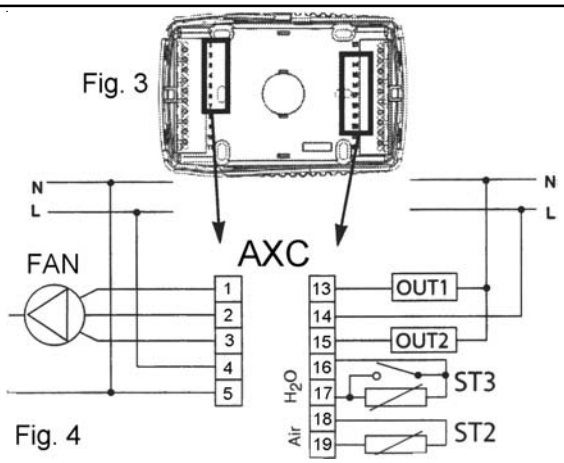
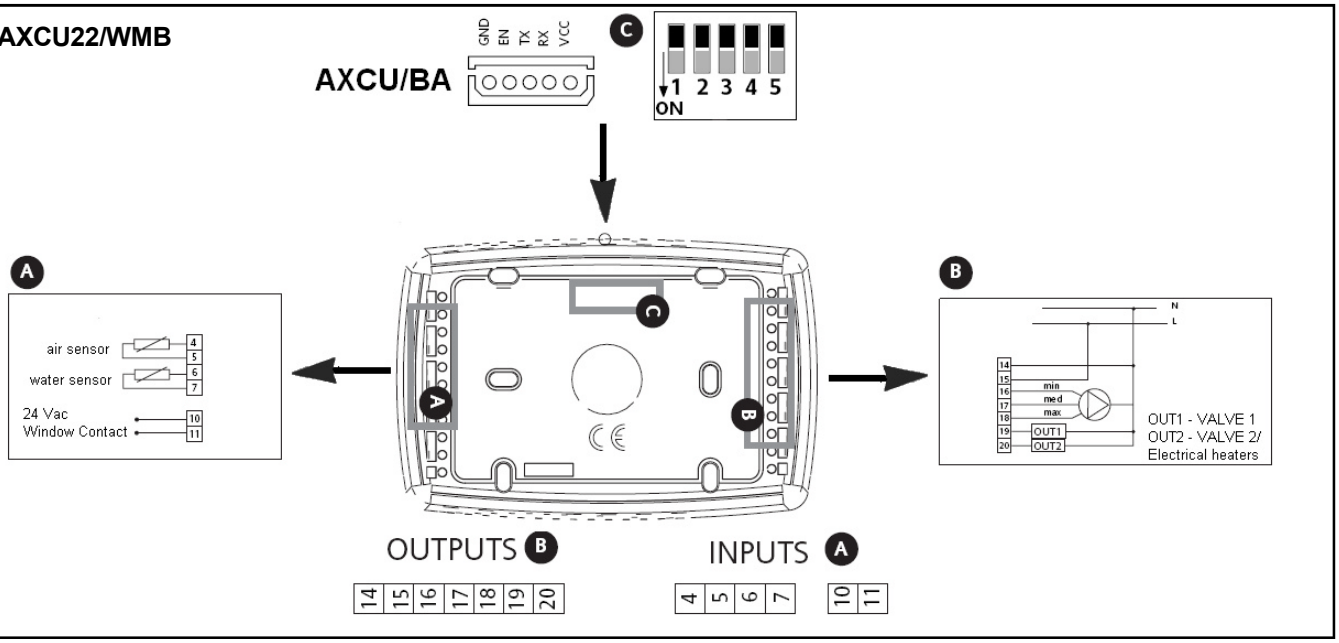
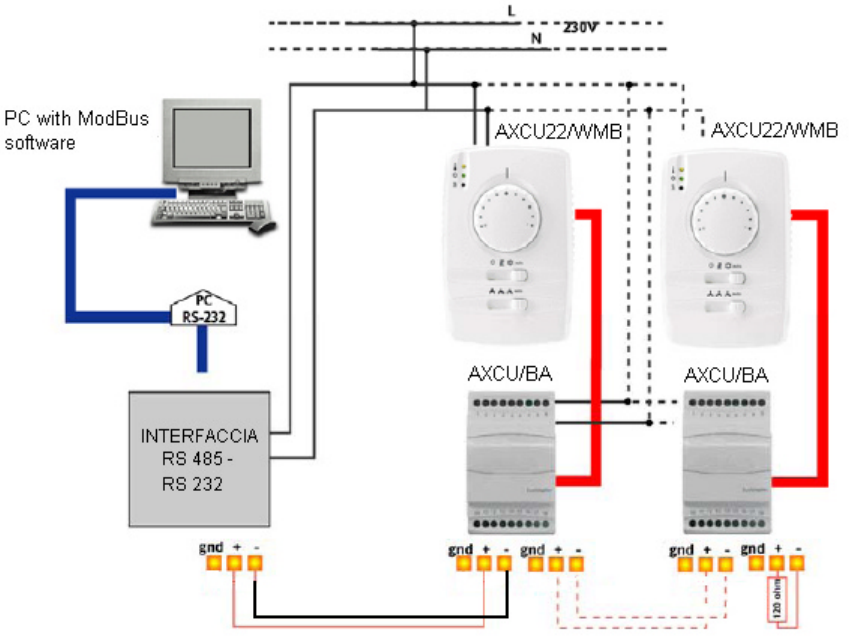


Fig. 4

AXCU22/WMB



MODBUS PROTOCOL



OVERALL DIMENSIONS (mm)

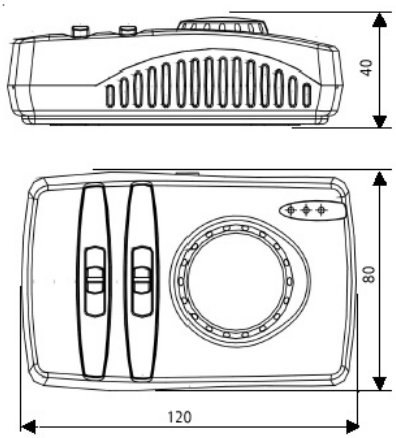


FIG. 5

AXCU/BA = Bus Adapter

The performances stated on this sheet can be modified without any prior notice due to design improvement.