

CLIMA: thermostat/thermometer combined module

CLIMA input module allows transmitting and regulate the room temperature through the **CONTATTO** bus system; this module performs both a thermostat and ambient temperature transducer function.

Thermostat function

CLIMA module allows to fix a temperature SET-POINT in a range from 15°C to 30°C; the SET-POINT value will be compared to the room temperature, measured by a sensor housed in the module, and the result controls the less significant bit of the module data field. In detail, the following logic levels will be assigned to bit D0:

$D0 = 1$ if $T_a > SP + 0.5^\circ\text{C}$

$D0 = 0$ if $T_a < SP - 0.5^\circ\text{C}$

where T_a is the room temperature measured by the transducer, SP is the SET-POINT value and 0.5°C is the hysteresis around SP. The 1°C total hysteresis avoids oscillations of bit D0 when the temperature value is very near to SP.

Room temperature transducer

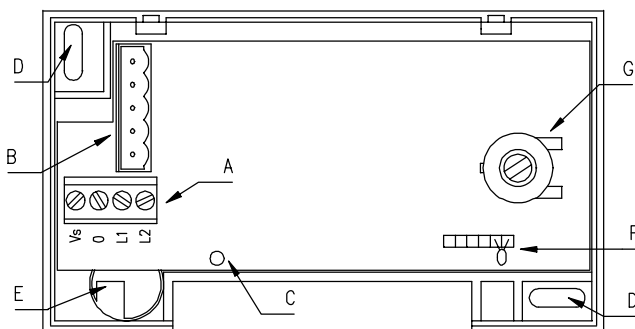
CLIMA module measures the room temperature through an internal sensor and converts this value in a 8 bit binary code; the 7 most significant bits will be packed in the module data field, while the least significant bit will be handled as said in the previous paragraph.

The measurement range of the transducer is 0÷40°C and the resolution is 0.3°C.

CLIMA module features a 4-way terminal block (A) for the connection to the 4 wire communication line and a 5-way connector (B) reserved to the address programmer; a green led (C), not directly visible from the outside of the module, shows the power-on condition.

Address programming

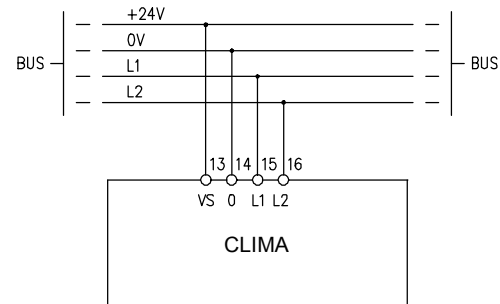
For proper operation, an input address in the range 1 to 127 has to be assigned to CLIMA module using FXPRO programmer. To do this, the housing must be opened as described in the paragraph "Installation".



WARNING: the module address must be set by FXPRO programmer connected to connector (B) **before to connect** the terminal block (A) to the bus.

Wiring diagram

CLIMA module only needs the bus connection (4 wires) for its proper operation; the bus must be connected to the terminal block A as shown in the following diagram.



Installation

To install CLIMA module, the housing has to be opened; to do this, pull out the control knob, lifting it delicately using a screwdriver. Then raise the bottom side of the cover pulling it out.

To fix the module to the wall, use the two holes (D) on the housing and proper screws; the bus connection wires must be carried inside the module housing through the hole (E) placed under the terminal block (A).

During the installation procedure care must be taken in order to avoid permanent damage to the module and particularly to the sensor (F).

After having wall mounted the module and connected it to the bus, place back the cover leaning it on the top side and pushing the bottom side until the click will be reached. Push-in the control knob taking attention that the two flat sides of the pin be aligned to the flat sides of the potentiometer hole (G); make a light pressure until a proper insertion will be reached. **Avoid to forcing the control knob:** if an excessive difficulty will be experienced, this means that it is not properly oriented in the potentiometer hole.

Technical characteristics

Supply voltage	24V \pm 25% SELV
MAX current consumption	20mA
Temperature measurement range	0 ÷ 40 °C
Resolution	0.3 °C
Linearity	\pm 1%
Measurement total error	\pm 2%
Set-Point regulation range	15 ÷ 30 °C
Set-Point hysteresis	\pm 0.5%
Set-Point resolution	Infinite
Operating temperature	-10 ÷ +50 °C
Storage temperature	-30 ÷ +85 °C
Protection degree	IP20

Outline dimensions

