

Description

The Vivo® room temperature controller is a KNX S-mode device for the independent temperature regulation of a room or a zone in a building. In combination with one or more KNX actuators, the room temperature controller is able to control the heating and cooling emission of a series of terminal units for the thermal exchange (such as radiators, fan-coils, floor and ceiling radiant panels, etc.). The device is provided with a LC-display with adjustable backlight, sensors for temperature and brightness measuring and two freely configurable inputs for the connection of e.g. window contacts or temperature sensors. The device is equipped with an integrated KNX bus communication module and is designed for wall installation on a flush mounting box. For controlling the room temperature controller functions the integrated 2-fold pushbutton is used. It is provided with four LED for each channel programmable e.g. as status feedback or orientation nightlight. The device is powered by the KNX bus line and does not require any auxiliary power supply.

Equipment	Pavo KNX	Acamar KNX
R.H. sensor	no	yes
Inputs	2 independent configurable as analogic or digital	

The K.ACA.0xR.20x.WO versions are provided with a relative humidity sensor and additional functions that use the physical value measured by the sensor.

Main functional characteristics

The characteristics common to all versions are:

- Temperature and brightness measuring through integrated sensors with possibility of sending the value on the bus
- 2-point (on/off) or proportional (PWM or continuous) room temperature regulation
- Ventilation control with continuous or 3-speed regulation
- Seasonal modes: heating and cooling with possibility of local or via bus seasonal changeover
- Operating modes: comfort, standby, economy and building protection with different setpoint for heating and cooling
- Manual or automatic control of fan-coil units with 2 or 4-pipes hydraulic distribution
- Automatic switching of the operating modes depending on presence or window opening
- Weighted average of two temperature values
- Temperature displaying (measured, setpoint and outdoor values as °C or °F), alarms and errors (with alphanumeric coding)
- Floor temperature limitation and antincondensation (for radiant panels)
- Antistratification function
- Automatic switching between operating modes through card holder contact
- Delayed start of a fan ("hot-start") with time-scheduling or depending on the water temperature measured at the coil for thermal exchange
- Window opening reporting

The K.ACA.0xR.20x.WO versions offer additional functions for:

- Relative humidity measuring through the integrated sensor with possibility of sending the value on the bus
- Humidification and dehumidification control
- Sending on the bus of the condition internal or external with regard to a configurable comfort area
- Calculation of psychrometric values (dew-point temperature and perceived temperature)
- Displaying of perceived temperature, relative humidity (measured and setpoint in %) and CO₂ concentration (in ‰, received from the bus)

Other characteristics

- Plastic casing for wall mounting
- Integrated temperature and brightness sensors
- Integrated relative humidity sensor (Acamar KNX)
- Protection degree IP20 (according to EN 60529)
- Classification climatic 3K5 and mechanical 3M2 (according to EN 50491-2)
- Pollution degree 2 (according to IEC 60664-1)

Technical data

- 30 Vdc power supply through KNX bus
- Current consumption from bus < 13 mA

Environmental conditions

- Operating temperature: - 5 ... + 45°C
- Storage temperature: - 25 ... + 55°C
- Transport temperature: - 25 ... + 70°C

- Relative humidity: 95% not condensing

Accessories

The device has to be completed with a set of 2 square rockers specific for the room temperature controller; depending on the version, a square frame may be necessary. A metallic support, the fixing screws and the terminal for connection of the KNX bus line are delivered with the device.

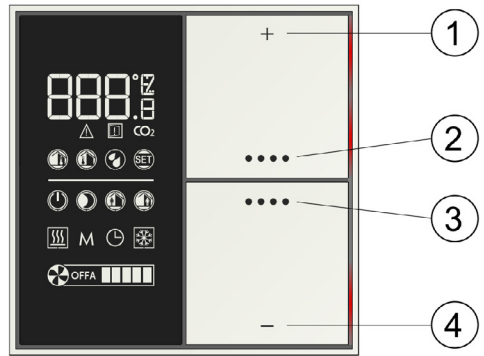
Code	Description
K.ACA.01R.20x.WO	Acamar KNX - Version with frame
K.ACA.02R.20x.WO	Acamar KNX - Versione without frame
K.PAV.01R.20x.WO	Pavo KNX - Versione with frame
K.PAV.02R.20x.WO	Pavo KNX - Versione without frame



Note. Frame and rockers for the completion of the device have to be ordered separately. For further information about materials, colours and finishing available see also the Vivo® product catalog or browse www.vivoknx.com.

Rockers

The symbols on the rockers are predefined and cannot be modified. The areas marked by the symbols + (plus) and - (minus) allow the change of the temperature setpoint or the fan speed, while those marked by the ●●● symbols allow e.g. the displaying of a sequence of information, the change of the operating mode, the ventilation control or the seasonal changeover (heating/cooling).



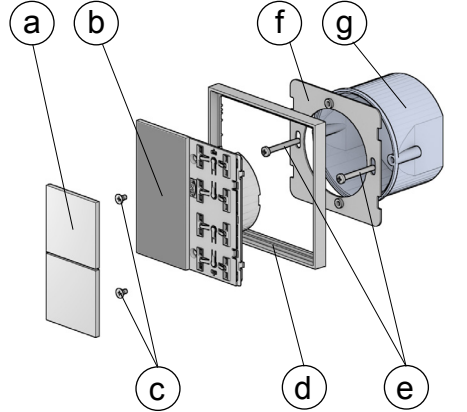
- 1) + (plus): for increasing temperature, fan speed or other parameters
- 2) ●●● (upper rocker): for displaying information (short pressing), setpoint change (long pressing), other functions in combination with +, - or ●●● (lower rocker)
- 3) ●●● (lower rocker): ventilation control, change of operating mode, other functions in combination with +, - or ●●● (upper rocker)
- 4) - (minus): for decreasing temperature, fan speed or other parameters

Mounting

The device has degree of protection IP20, and is therefore suitable for use in dry interior rooms. The installation of the device requires the following steps:

- fix the metallic support (f) with the screws supplied (e) on the wall box (g) provided with suitable fixing holes at a distance of 60 mm;
- if required, snap a square frame (d) inserting it from the rear of the device (b);
- connect the sensors or the contacts required to the 4-poles screw terminal block on the rear of the device;
- insert the terminal for the bus (red/black), previously connected to the bus cable, in its slot on the rear side (see also: "Connection of the KNX bus line". At this point it is recommended to carry out the commissioning of the device (see also "Configuration and commissioning") or at least the download of the physical address;
- install the device (b) on the metallic support (f) through the spring system, tightening then the two screws. Mounting the device follow also the indication TOP (arrow tip pointing up) on the rear side of the device;
- snap the two rockers (a) onto the device for the operation of the room temperature controller.

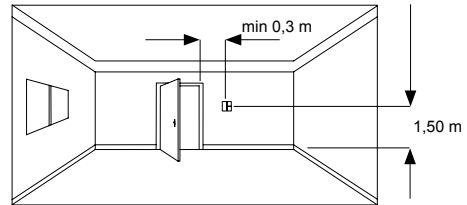
The device can only be mounted on a round or square wall flush mounting box with 60 mm distance between fixing holes. If necessary, the metallic support for mounting on the wall box can also be ordered separately.



- a) Square rockers 40x40 mm (to be ordered separately)
- b) Device
- c) Screws for fixing the device on the support
- d) Frame (to be ordered separately)
- e) Screws for fixing the support on the wall box
- f) Mounting support for wall box
- g) Wall box (not delivered by Vivo)

Mounting position

For optimum regulation the device has to be preferably installed on an internal wall at the height of 1.5 m and at least 0.3 m far from doors. The device cannot be installed close to heat sources such as radiators or domestic appliances or in positions subject to direct sunlight. If necessary, for the regulation may be used a weighted average between two values selected among the following ones: value measured by the internal sensor, value measured by a temperature sensor connected to a device input, value received via bus by another KNX device (e.g. from Vivo pushbuttons).



Switching, display and measuring elements

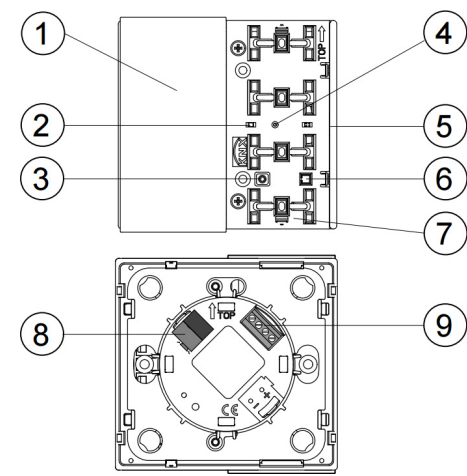
The device is equipped with a programming LED and a programming pushbutton, a LC-display and a 2-fold pushbutton with four LED for each channel.

Switching elements

- Pushbutton (3) for switching between the normal and programming operating mode
- Mechanisms for room temperature control functions to be completed with rockers

Display elements

- Red LED (4) for indication of the active operating mode (on = programming, off = normal operation)
- Backlighted LC-display (1)
- Eight LED with lightguide (8) freely programmable e.g. as status feedback of the controlled loads or as orientation nightlight



- 1) LC-display
- 2) Brightness sensor
- 3) Programming pushbutton
- 4) Programming LED
- 5) Lightguide for LED (rockers)
- 6) Relative humidity sensor (Acamar KNX)
- 7) Temperature sensor
- 8) Terminal block for bus line
- 9) Terminal block for inputs

For measuring purposes the device is provided with:

- a temperature sensor (not visible, positioned behind the passage 7);
- a relative humidity sensor (6, Acamar KNX);
- a brightness sensor (2).



Note. Programming pushbutton and LED are accessible from the front side of the device. The device addressing may be easily carried out after the assembly of the frame, removing the rockers. Once the addressing has been done, the device configuration can be later downloaded without pressing the programming pushbutton.

Connection of the KNX bus line

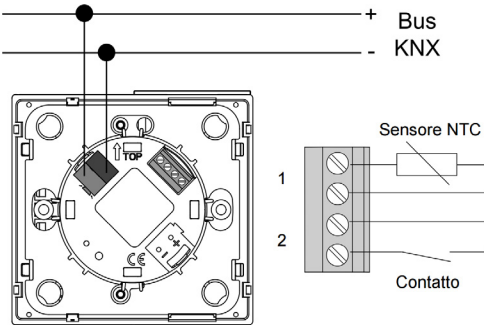
The connection of the KNX bus line is made with the terminal block (red/black) included in delivery and inserted into the slot of the casing.

Characteristics of the KNX terminal block

- spring clamping of conductors
- 4 seats for conductors for each polarity
- terminal suitable for KNX bus cable with single-wire conductors and diameter between 0.6 and 0.8 mm
- recommended wire stripping approx. 5 mm
- color codification: red = + (positive) bus conductor, black = - (negative) bus conductor



Warning! In order to supply the KNX bus lines use only KNX bus power supplies (e.g. Vivo Cursa KNX). The use of other power supplies can compromise the communication and damage the devices connected to the bus.



Connection of the inputs

The connection of the inputs is made with the screw terminals (9) located at the rear side of the device. The maximum cable length is 10 m.

Characteristics of the terminals

- screw clamping of conductors
- maximum cross section of conductor 1 mm² (multi-wire)
- recommended wire stripping approx. 5 mm
- torque max 0.2 Nm



Warning! The connection to an input of a device which does not match the parameter configuration carried out with ETS causes the impossibility to perform the desired function.

Available applications

Input	Applications selectable in ETS
Digital	window sensor
	card holder sensor
	antincondensation sensor
Analogic	coil battery temperature sensor
	room temperature sensor
	antistratification temperature sensor
	floor surface temperature sensor
	outdoor temperature sensor
	generic temperature sensor (NTC type)

If configured as analogic, to an input it is allowed exclusively the connection of NTC temperature sensors with characteristic resistance value of 10 kΩ at 25°C, β = 3435.



Warning! The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.

Configuration and commissioning

Configuration and commissioning of the device require the use of the ETS® (Engineering Tool Software) program V4 or later releases. These activities must be carried out according to the design of the building automation system done by a qualified planner.



Note. The configuration and commissioning of KNX devices require specialized skills. To acquire these skills, you should attend the workshops at KNX certified training centers.

Configuration

For the configuration of the device parameters the corresponding application program or the whole Vivo® product database must be loaded in the ETS program. For detailed information on configuration options, refer to the application manual of the device available on the website www.vivoknx.com.

Commissioning

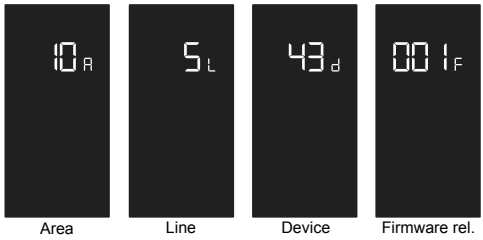
For commissioning the device the following activities are required:

- make the electrical connections as described above;
- turn on the bus power supply;
- switch the device operation to the programming mode by pressing the programming pushbutton located on the front side of the housing. In this mode of operation, the programming LED is turned on;
- download into the device the physical address and the configuration with the ETS® program.

At the end of the download the operation of the device automatically returns to normal mode; in this mode the programming LED is turned off. Now the bus device is programmed and ready for use.

Displaying physical address and firmware release

If enabled for this purpose with ETS, the device can display anytime its physical address and firmware release by the combined pressing of rockers. To display the information, simultaneously press – (minus) and ●●● on the upper rocker for more than 3 s. The display shows in sequence the number of area (A), line (L), device (d) and the firmware release (F). To scroll through the information press ●●● on the upper rocker. The display returns to the default information at the end of the time interval set with ETS or pressing ●●● on the lower rocker.



Marks

- KNX
- CE: the device complies with the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC). Tests carried out according to EN 50491-5-1:2010 and EN 50491-5-2:2010

Maintenance

The device is maintenance-free. To clean it use a dry cloth. It must be avoided the use of solvents or other aggressive substances.

Disposal



At the end of its useful life the product described in this datasheet is classified as waste from electronic equipment in accordance with the European Directive 2002/96/EC (WEEE), and cannot be disposed together with the municipal undifferentiated solid waste.



Warning! Incorrect disposal of this product may cause serious damage to the environment and human health. Please be informed about the correct disposal procedures for waste collecting and processing provided by local authorities.



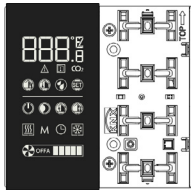
EN

Room Thermostat with LCD Display BS+STP Pavo/Acamar KNX

Codes: K.PAV.0xR.20x.WO
K.ACA.0xR.20x.WO (with humidity s.)



Instructions



its a registered brand of

Vivo Suisse Sagl

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Warnings

- Installation, electrical connection, configuration and commissioning of the device can only be carried out by qualified personnel in compliance with the applicable technical standards and laws of the respective countries
- Opening the housing of the device causes the immediate end of the warranty period
- In case of tampering, the compliance with the essential requirements of the applicable EU directives, for which the device has been certified, is no longer guaranteed
- Vivo® KNX defective devices must be returned to the manufacturer at the following address: Vivo Suisse Sagl, Via Calloni 1, CH 6900 Lugano

Other information

- The instruction sheet must be delivered to the end customer with the project documentation
- For further information on the product, please contact the Vivo® technical support at the e-mail address: customerservice@vivoknx.com or visit the website www.vivoknx.com
- Each Vivo® device has a unique serial number on the label. The serial number can be used by installers or system integrators for documentation purposes and has to be added in each communication addressed to the Vivo technical support in case of malfunctioning of the device
- Vivo® is a registered trademark of Vivo Suisse Sagl.
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