COMET H5321 Programmable Regulators

Contents [hide]

PRODUCT DESCRIPTION

Programmable regulators with RS232 or RS485 serial interface are designed to measure temperature and relative humidity of air, to measure concentration of CO2 in air, to signal alarms and control of external devices. Regulators can be used in a chemical non-aggressive environment.

The CO2 concentration is measured using the dual wavelength NDIR sensor with the multipoint calibration. This principle compensates aging of the sensing elements and offers maintenance free operation and outstanding long term stability.

The function of two output relays can be set from regulator keyboard (or from computer) and using the jumpers (see „Electrical wiring”).
You can assign one of measured or computed value (dew point temperature, absolute humidity, specific humidity mixing ratio and specific enthalpy) to each relay. Setting of delay, hysteresis, audible alarm is enabled for each relay too. Devices are equipped with four button keyboard and two-line LCD display. The visual indication of the CO2 concentration is provided by three LEDs to the left side of the display.

Regulators support Mod bus RTU protocol and protocol compatible with standard Advantech-ADAM. For setting of all parameters you can use TSensor software (see www.cometsystem.com).

type *	serial interface	measured values	version	mounting	galvanic isolated output
H5321	RS232	CO2	probe on cable	wall	no
H5324	RS232	CO2	ambient air	wall	no
H5421	RS485	CO2	probe on cable	wall	yes
H5424	RS485	CO2	ambient air	wall	yes
H6320	RS232	T + RH + CO2 + CV	ambient air	wall	no
H6321	RS232	T + RH + CO2 + CV	probes on cable	wall	no
H6420	RS485	T + RH + CO2 + CV	ambient air	wall	yes
H6421	RS485	T + RH + CO2 + CV	probes on cable	wall	yes

* models marked HxxxxZ are custom – specified devices
T…temperature, RH…relative humidity, CO2…concentration CO2 in air, CV…computed values

INSTALLATION AND OPERATION

The mounting holes and connection terminals are accessible after unscrewing the four screws in the corners of regulator and removing the lid. Devices have to be mounted on a flat surface to prevent deformation. Pass cables (external diameter 3 to 6.5 mm) through released glands and connect wires. Wire cross-section choose from 0.14 to

1.5mm2 . The communication cables should be shielded. Do not forget to insert attached plugs into unused cable glands. The cables should be located as far as possible from potential interference sources.
Unpack the external CO2 probe and connect it to the device. Pay attention to mounting the device and probes, because incorrect choice of working position or place of measuring could adversely affect accuracy and long-term stability of measured values.
Actual parameters settings of each relay can be displayed by pressing of „ ▲“ key. To change any parameter, press the „Set“ key, enter password (default 0000) and set required value. Then click on „Set“ and pressing „Esc“ key exit setup mode. To change the password and to set all other parameters (acoustic alarm, limits of CO2 indication, response to the error status, choice of communication protocol, select the computed value etc.) is used Extended setting mode (see manual for devices at www.cometsystem.com).
After switching the device starts internal test. During this time (about 20 s) LCD display shows **----** instead of CO2 concentration value.
Devices don´t require special maintenance. We recommend you periodical calibration for validation of measurement accuracy.

COMMUNICATION PROTOCOLS AND ERROR STATES

Description of communication protocols you can download from www.cometsystem.com. Device setting from the manufacturer is Mod Bus RTU, address 1, communication speed 9600 Bd (no parity, 2 stop bits).

Device continuously checks its state during operation and if an error appears, it is displayed relevant code: Err 1 – measured or calculated value (except the concentration of CO2) is over the upper limit, Err 2 – measured or calculated value is below the lower limit or CO2 concentration measurement error occurred, Err 5 and Err 6 – there is problem with assigned value to output relay, Err 9 – inserted password is not valid, Err 0, Err 3 and Err 4 – it is a serious error, please contact distributor of the device (for devices with an external probe CO2G-10 the Err 4 indicates that the probe is not connected).

SAFETY INSTRUCTIONS

- ⚠ Don´t use and don’t store the devices without the cover of the temperature and

humidity sensors.

- Temperature and humidity sensors have not to be exposed to direct contact with water and other liquids.
- It is not recommended to use the humidity regulators for long time under condensation conditions.
- Take care when unscrewing the filter cap as the sensor element could be damaged.
- Don’t connect or disconnect devices while power supply voltage is on.
- Installation, electrical connection and commissioning should be performed by qualified personnel only.
- Devices contain electronic components, it needs to liquidate them according to currently valid conditions.
- To complement the information in this data sheet read the manuals and other documentations that are available in the Download section for a particular device at www.cometsystem.com

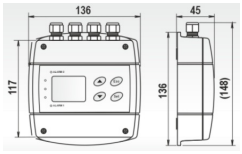
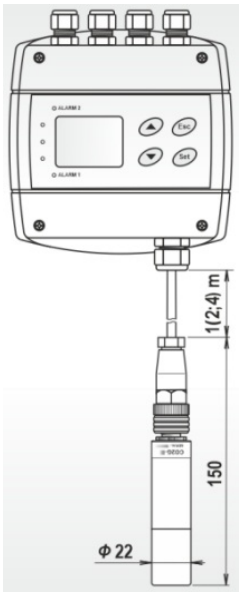
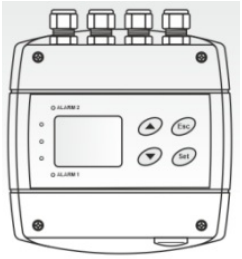
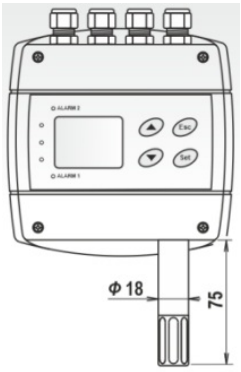
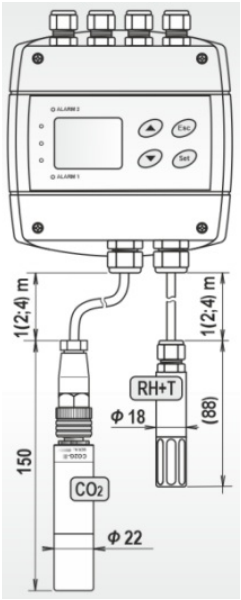
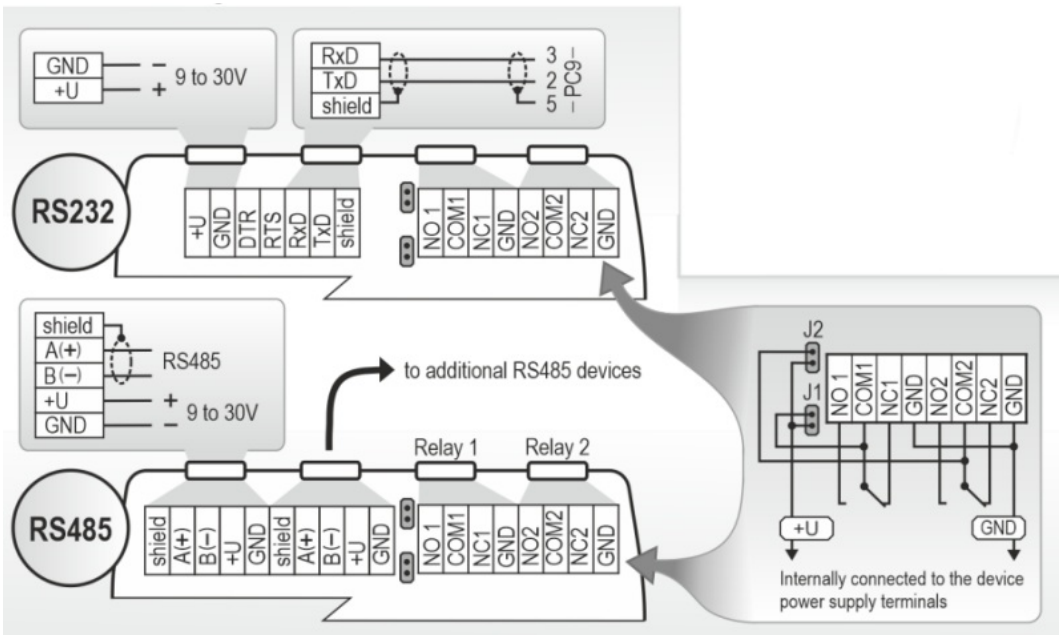
TECHNICAL SPECIFICATIONS

Device types winKOZOZILke4oc sanar imenace	**H5321/H5421**	**H5324/H5424**	**H6320/H6420**	**H6321/H6421**
Supply voltage	9-30Vdc	9-30Vdc	9-30Vdc/ 1W/4W	9-30Vdc/1W/4W
Power consumption of the device during normal operation / max. power consumption of the device (for 50 ms with 15 s period)	1W/4W	9-30Vdc/1W/4W	9 to 30Vdc/1W/4W	9 to 30Vdc/1W/4W

Relay outputs-max, switching voltage/max, switching current/max switching power	50V/2A/60VA	50V/2A/60VA	50V/2A/60VA	50V/2A/60VA
Temperature measuring range/accuracy of temperature measurement	_	_	-30 to +80 °C/ ±0.4°C	-30 to +105°C/ ±0.4°C
Relative humidity (RH) measuring range*	_	_	0 to 100%RH	0 to 100 %RH
Accuracy of humidity measurement from 5 to 95 % RH at 23°C	_	_	± 2.5 %RH	± 2.5%RH
CO2 concentration measuring range**	0 to 10 000 ppm	0 to 5000 ppm	0 to 5000 ppm	0 to 10 000 ppm
Accuracy of CO2 concentration measurement at 25°C and 1013 hPa	+ (100ppm+5% of measured value)	± (50ppm+3% of measured value)	± (50ppm +3% of measured value)	+ (100ppm+5% of measured value)

Other calculated humidity variables – dew point temperature, absolute humidity, specific humidity, ……	_	_	yes	yes
Recommended calibration interval ***	5 years	5 years	1 year	1 year
Protection class – case with electronics / measuring end of stem / CO2 probe/RH+T probe	IP65/-/IP65/-	IP30/-/-/-	IP30/IP40/-/-	IP65/-/IP65/IP40
Temperature operating range of the case with electronics****	-30 to +80°C	-30 to +60°C	-30 to +60°C	-30 to +80°C
Temperature operating range of the measuring end of stem	_	_	-30 to +80°C	_

Temperature operating range of the CO2 external probe (with moving less cable)	-25 to +60°C	–	–	-25 to +60°C
Temperature operating range of the RH + T external probe	–	–	–	-30 to +105°C
Humidity operating range (no condensation)	0 to 100%RH	5 to 95%RH	5 to 95%RH	0 to 100%RH
Atmospheric pressure operating range	850 to 1100 hPa	850 to 1100 hPa	850 to 1100 hPa	850 to 1100 hPa
Mounting position	any position	cable glands upwards	sensor cover downwards	any position
Storage temperature range (5 to 95%RH, no condensation, atmospheric pressure 700 to 1100 hPa)	-40 to +60°C	-40 ta +60°C	-40 to +80°C	-40 to +60°C
Electromagnetic compatibility according to	EN 61326-1 EN 55011	EN 61326-1 EN 55011	EN 61326-1 EN 55011	EN 61326-1 EN 55011

Weight of the device without RS232 communication cable (weight of the cable is 70g)	440 (470, 530) g	340 g	360 g	520 (590, 730) g
Dimensions [mm] 				
Electrical wiring				

* The relative humidity measuring range is limited at temperatures above 85°C, see manuals for devices.

**LED indication (preset by manufacturer): green (0 to 1000 ppm), yellow (1000 to 1200 ppm), red (1200 to 5000/10000 ppm).

*** : concentration CO2-5 years, relative humidity – 1 year, temperature – 2 years

**** It is recommended to switch off the LCD display at ambient temperature above 70°C

CUSTOMER SUPPORT

COMET SYSTEM, s.r.o., Bezrucova 2901
756 61 Roznov pod Radhostem, Czech Republic

Specifications are subject to change without notice.

February 2025 / ie-hgs-n-h5(6)3(4)xx-06

Documents / Resources

	COMET H5321 Programmable Regulators [pdf] User Guide H5321, H5324, H5421, H5424, H6320, H6321, H6420, H6421, H5321 Programmable Regulators, H5321, Programmable Regulators, Regulators

References

- User Manual

COMET

COMET, H5321, H5321 Programmable Regulators, H5324, H5421, H5424, H6320, H6321, H6420, H6421, Programmable Regulators, Regulators

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search