Technical data sheet

CRW9-T-VAV10

VAV BACnet (MS/TP) Room Controller

Description

The VAV room controller (CRW9-T-VAV10) is tailored for individual room temperature control in commercial, industrial and residential buildings

The VAV room controller comes with BACnet MS/TP communication to the Building Automation System

The VAV room controller supports cooling or heating mode

The Room Temperature setpoint to the Gruner VAV compact Actuator via 0(2)–10 V signal

The power supply is AC/DC 24 V

Order Code	Application	BMS Communication	Room Unit to VAV Compact Controller	Input
CRW9-T-VAV10	Cooling & Heating	BACnet MS/TP	1x 0(2)–10 V	N/A

Features

- Elegant, extra slim design
- BACnet MS/TP communication to Building Management System
- Communication status indication
- Analogue control output to Gruner Controls VAV Compact Controller
- Room temperature measurement/control
- Temperature setpoint setting
- Temperature controller
- Comfort/economy selection
- Cooling and heating mode
- Configurable user parameters
- Large display
- White backlit LCD
- Protection IP20
- EU installation box mounting

GRUNER Automation Asia Pacific Ltd.
Flat 4, 11/F, Lucida Industrial Building
43 Wang Lung Street, Tsuen Wan, NT, Hong Kong

Phone: +852 3628 3760
info@gruner.com.hk
www.grunerasiapacific.com

Application

The CRW9-T-VAV10 series VAV room controller is used in individual rooms or zones in buildings. It is tailored for the Gruner Compact VAV Damper Actuator. The room temperature control depends on the room temperature and the selected setpoint.
The control signal to the Gruner VAV Compact Controller is 0(2)–10 V.
Depending on the room temperature control signal, the VAV Compact Controller will control the air volume based on the minimum/maximum settings. The controller communicates via BACnet MS/TP (RS485) with any standard DDC system.

Notes of Usage

Please read this data sheet carefully. CRW9-T-VAV10 room controller is designed and manufactured in accordance with the latest technological developments and safety standards. To avoid injury and property damage, safety warnings must be observed.

Caution

Authorized service personnel must perform assembly, maintenance, and repair.
The device's power supply is AC/DC 24 V. Disconnect the device from the power supply before removing the front plate.

Technical Data

Power supply	AC/DC 24 V 50/60 Hz
Communication to BMS	BACnet MS/TP (RS485)
Setpoint to VAV Compact	0(2)–10 V
Power consumption	Max 1 W
Electrical connection	Terminal connection
IP rating	IP20 according to IEC60529
Product safety	Safety class III
Product standard	2014/30/EU Electromagnetic Compatibility (EMC)
CE marking	Automatic electrical controls for household and similar use
Measuring range	0 ℃ to 50 ℃
Typical accuracy	±0.5 ℃
Resolution	0.1 ℃
Comfort temperature setting	0 ℃ to 50 ℃
Economic temperature	Fixed: Cooling mode 28 ℃ / Heating mode 16 ℃
Dimension	86 × 86 × 24 mm
RoHS compliance, in accordance with	Directive 2011/65/EU, as amended by (EU) 2015/863
REACH regulation	Regulation (EC) No. 1907/2006
Operating climatic conditions	IEC 60 721-3-3
Operating mechanical conditions	IEC 60 721-3-2, class 2M2
Transport to climatic conditions	IEC 60 721-3-2
Transport mechanical conditions	IEC 60 721-3-2, class 2M2
Storage climatic conditions	IEC 60 721-3-1
Storage mechanical conditions	IEC 60 721-3-1, class 2M2

Ordering Information

Product Code	Description	Power Supply	Room Unit to VAV Compact
CRW9-T-VAV10	VAV BACnet MS/TP Room Controller	AC/DC 24 V	0(2)–10 V

Mounting Location

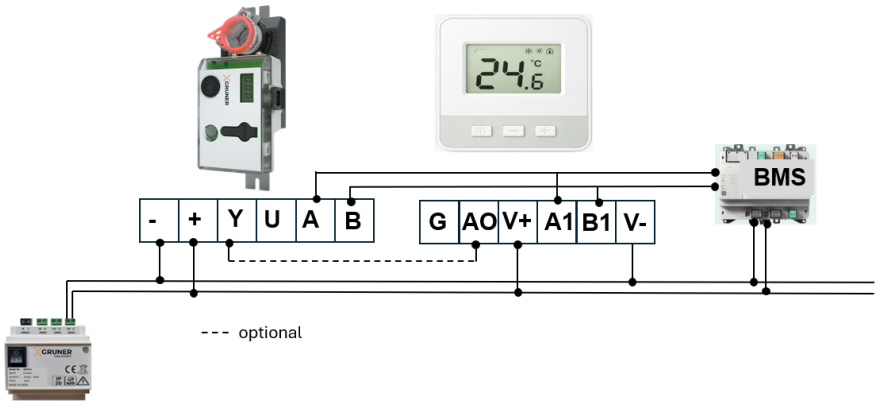
The controller is for indoor use only

Mounting Instructions

Please follow the instructions below:

Step 1: Take the controller out of the package
Step 2: Read the data sheet inside the package
Step 3: Separate the front plate and the back plate, using a screwdriver
Step 4: Fix the back plate onto the electric box with two screws
Step 5: Connect the wires properly according to the wiring diagram below
Step 6: Attach the front plate to the back plate, making sure the pin connectors on each side are properly aligned
Step 7: Compare the installation with the reference images
Step 8: Apply power to the controller

Connection Diagram



Display and Operation

The display shows

- Actual room temperature
- Actual comfort/economy mode
- Actual heating/cooling mode
- Commissioning mode

Operation

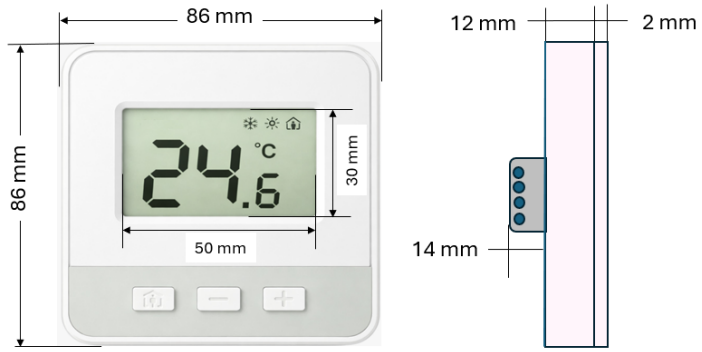
To change between comfort/economy mode, press the home button

To change the control setpoint, press the following buttons:

The **SET** icon will appear, and you can change the setpoint accordingly

The display will return to the original screen after 10 seconds without any changes

Dimensions (mm)



BACnet Address Review

View the actual BACnet address of the controller

Press the  button for <2 seconds ⇒  screen will appear

Press the  button again ⇒  actual BACnet address (001) will appear

After 10 seconds, the display will return to the original screen

BACnet Parameters

MSTP Objects							
Object Type	**Adress**	**Object Name**	Object Description 1	Object Description 2	Attributes	Range	Default
Analog Input	AI0	ai_ZN_temp	Actual Room Temperature	Temperature measured in the room including calibration value	R	12 °C to +35 °C	n.a
Analog Input	AI1	ai_out_ration	Actual control output value	Output signal 0–100%	R	0…100%	n.a
Analog Value	AV0	av_set_temp	Actual Setpoint	Room Temperature Setpoint	R/W	12 °C to +35 °C	22 °C
Analog Value	AV1	av_set_season	Selection of heating or cooling mode	0 = Cooling; 1 = Heating	R/W	0–1	0
Analog Value	AV2	av_ZN_Tocc	Setting of comfort or economy mode	0 = Economy; 1 = Comfort	R/W	0–1	1
Analog Value	AV3	av_offset_temp	Temperature sensor calibration (Reading x 0.1 °C)	Temperature sensor calibration	R/W	-5 °C to +5 °C	0 °C
Analog Value	AV6	av_comm_enabled	Communication Icon on display	0 = Disabled; 1 = Enabled	R/W	0–1	1
Analog Value	AV8	av_station	BACnet address	Selectable 0…127	R/W	1–127	1
Analog Value	AV11	av_actuator_type	Output range	0 = 0–10 V, 1 = 2–10 V	R/W	0–1	1
Analog Value	AV12	av_max_position	Minimum output value	0–10 V (10 = 1 V)	R/W	0–10	0
Analog Value	AV13	av_min_position	Maximum output value	1–10 V (10 = 1 V)	R/W	0–100	100
Analog Value	AV14	av_comm_baud	Baud rate	Baude Rate 4.800…11.520	R/W	4.800 to 115.200	9.600
Analog Value	AV15	av_comm_data_bits	Communication data bits	0 : 8bit, 1 : 9bit	R/W	0-1	0
Analog Value	AV16	av_comm_stop_bits	Communication stop bits	0 : 1 position, 1 : 2 position	R/W	0-1	0
Analog Value	AV17	av_comm_prity_bits	Communication Parity bits	0 : None, 1 : Odd, 2 : Even	R/W	0-2	0
Analog Value	AV18	av_comm_protocol	Communication protocol	0 : Modbus-RTU, 1 : BACnet-MSTP	R/W	0-1	1
Analog Value	AV19	av_PID_P	P-band value	0–10 °C	R/W	0 °C to + 10 °	2
Analog Value	AV20	av_PID_I	Integration time	0–100 Minutes	R/W	0–100 minutes	2
Analog Value	AV21	av_PID_D	Deviation value	0–100	R/W	0–100	0