Product Instructions

Basic Digital Setpoint Control II

Applications

The Viega Basic Digital Setpoint Control II is a general purpose temperature control with a wide range of applications in the HVAC industry. This control provides two isolated SPDT relay contacts. The two relays are controlled by a watertight sensor, included with the Basic Digital Setpoint Control. This control is commonly used as basic heating and/or cooling system control for commercial and residential slab applications.

Features

- Setpoint Control for Heating and Cooling
- Simple installation and programming
- Large digital LCD display
- Reliable, economical
- Two relay outputs with individual Setpoint capability
- Watertight Sensor included

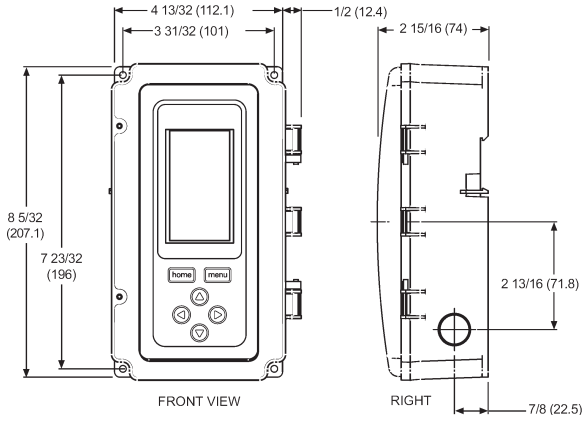
Specifications

Digital Setpoint Control II (17029)
Watertight Sensor (17031)

Digital Setpoint Control II

Input:	24V, 120V, 240V
Output:	2 SPDT dry contacts, ½ hp @ 120 VAC 9.8 FLA, 58.8 LRA
Sensor:	6' Resistor, extendable up 100'
Setpoint:	-40 to 248°F range
Differential:	1 to 150°F range
Accuracy:	+/- 1°F
Environment:	-40 to 140°F, 5 to 95% rH, non-condensing
Power draw:	8 VA
Dimensions:	4.91 x 8.16 x 2.37 in.

Digital Setpoint Control II



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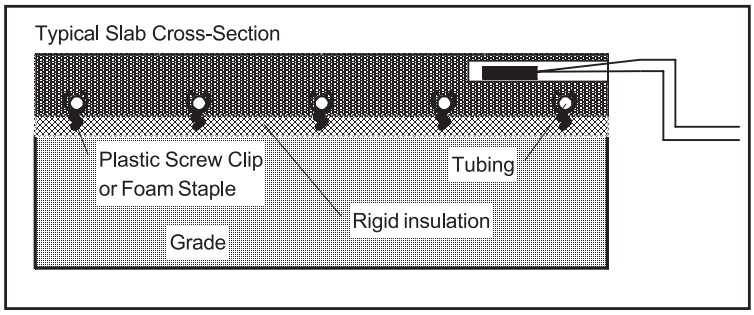
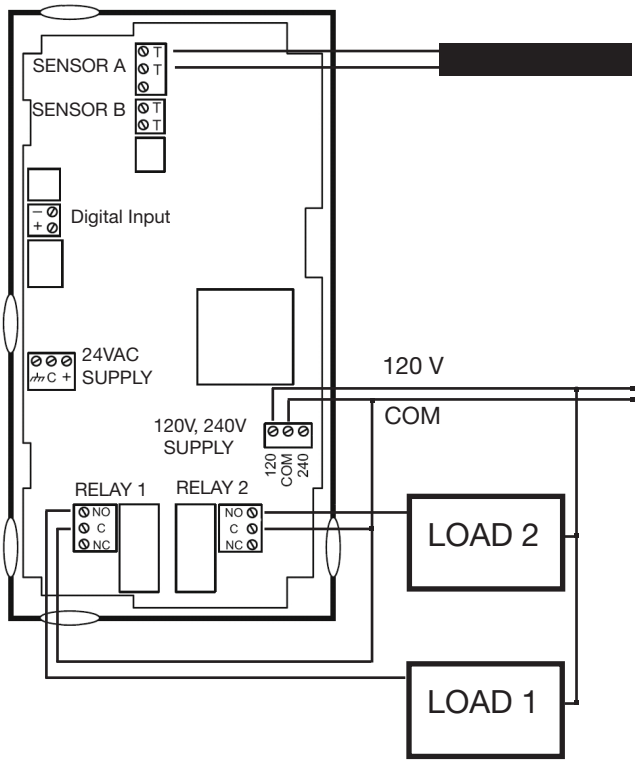
Installation

Digital Setpoint Control II (17029)
Watertight Sensor (17031)

For proper control, the sensor for the setpoint control must be located within the heating and/or cooling slab. The sensor should be placed midway between rows of tubing, and should be placed in conduit which is cast into the slab, so that replacement is possible.





Wiring

Sensor A is triggering the two relays, Relay 1 being boiler circulator pump, and Relay 2 being system circulator pump. In heating mode, when the sensor detects temperature lower than the selected setpoint minus the selected differential both relays will be energized. When the temperature reaches the setpoint the relays will de-energize.

Note:
If using 24V to power the controller, the 24V supply must be connected to terminals that are marked +, C on the left side of the control.

If using 120 or 240V to power the controller the 120 or 240V supply must be connect to corresponding terminals clearly marked on the right side of the control. When connecting the sensor connect both red wires to one terminal and the white wire to the other terminal. Terminals for sensor marked "T".

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Programming

Once the control is powered on press "MENU" button on the control keypad to adjust settings:

At any point during the programming you may press the "HOME" button to return back to the sensor viewing.

1. Press "MENU", then press the right arrow button when the "Program Screen" appears
2. When the "Relay Screen" appears, press right arrow to select "Relay 1"
3. Scroll up or down to select "Setpoint 1" then press the right arrow button
4. Using the up and down arrows to adjust the Setpoint 1 desired setpoint -40 to 248 °F (this is the maximum slab temperature setting of the heating and/or cooling system)
5. Once the setpoint has been adjusted press the right arrow button to accept and to display the "Relay 1" menu
6. Select "Diffrntl" by pressing the right arrow button
7. Using the up and down arrows, adjust the differential, the range is 1 to 150°F, once selected press the right arrow to accept and return to "Relay 1" menu
8. Select "Sensor A or Sensor B" for "Relay 1" using the up and down arrows, then press right arrow button to accept
9. Select "Heat / Cool" option for "Relay 1" then press right arrow button
10. Once you have completed all of the steps either press the "HOME" key or scroll down using the down arrow to "EXIT" and then press the right arrow button
11. Repeat all steps to configure "Relay 2"

Once all programming is complete the configuration can be locked to prevent any unauthorized changes.

To Lock or Unlock the keypad simply press and hold the "MENU" and "HOME" buttons simultaneously for five seconds.

Operation

Heating Mode

In heating mode once the slab temperature reaches the selected setpoint temperature the relay will be de-energized. As the slab temperature decreases below the selected differential the relay will energize.

Example: Slab setpoint is set to 85°F differential is set to 5, once the slab temperature is below 80°F the relay will be energized.

Cooling Mode

In cooling mode, the differential is above the setpoint. So as the temperature rises higher than the selected setpoint plus the differential the relay is energized.

Example: Slab temperature is set to 66°F with a differential of 2. When the slab temperature reaches 68°F the relay will be energized.

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Troubleshooting

If the system is not operating correctly, first check that all electrical connections have been made properly. Check for power to all components (120V and 24V).

If the setpoint configuration is correct disconnect the sensor and check its resistance. Replace the sensor if its resistance value does not match the temperature in the accompanying chart to the right.

Temp °F	Temp °C	Resistance Ohms
-40	-40.0	851
-30	-34.4	872
-20	-28.8	893
-10	-23.3	914
0	-17.7	935
10	-12.2	956
20	-6.6	977
30	-1.1	998
40	4.4	1019
50	10.0	1040
60	15.5	1061
70	21.1	1082
80	26.6	1103
90	32.2	1124
100	37.7	1145
110	43.3	1166
120	48.8	1187
130	54.4	1208
140	60.0	1229
150	65.5	1250
160	71.1	1271
170	76.6	1292
180	82.2	1313
190	87.7	1334
200	93.3	1355
210	98.8	1376
220	104.4	1397
230	110.0	1418
240	115.5	1439
250	121.1	1460

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