Tech Data

Viega Basic Heating Control

Description

The Viega Basic Heating Control is designed to control the supply water temperature to a hydronic system in order to provide outdoor reset operation. The Basic Heating Control uses a floating action actuator mounted on a diverting or mixing valve to regulate the supply water temperature. The control has a Liquid Crystal Display (LCD) to view system status and operating information.

Functions

- User comfort adjustment to increase or decrease building space temperature
- Advanced settings to fine-tune building requirements
- Optional indoor sensor for room air temperature control (Stock Code 16016)
- Test sequence to ensure proper component operation
- 120V AC power supply
- Powered system circulator pump output
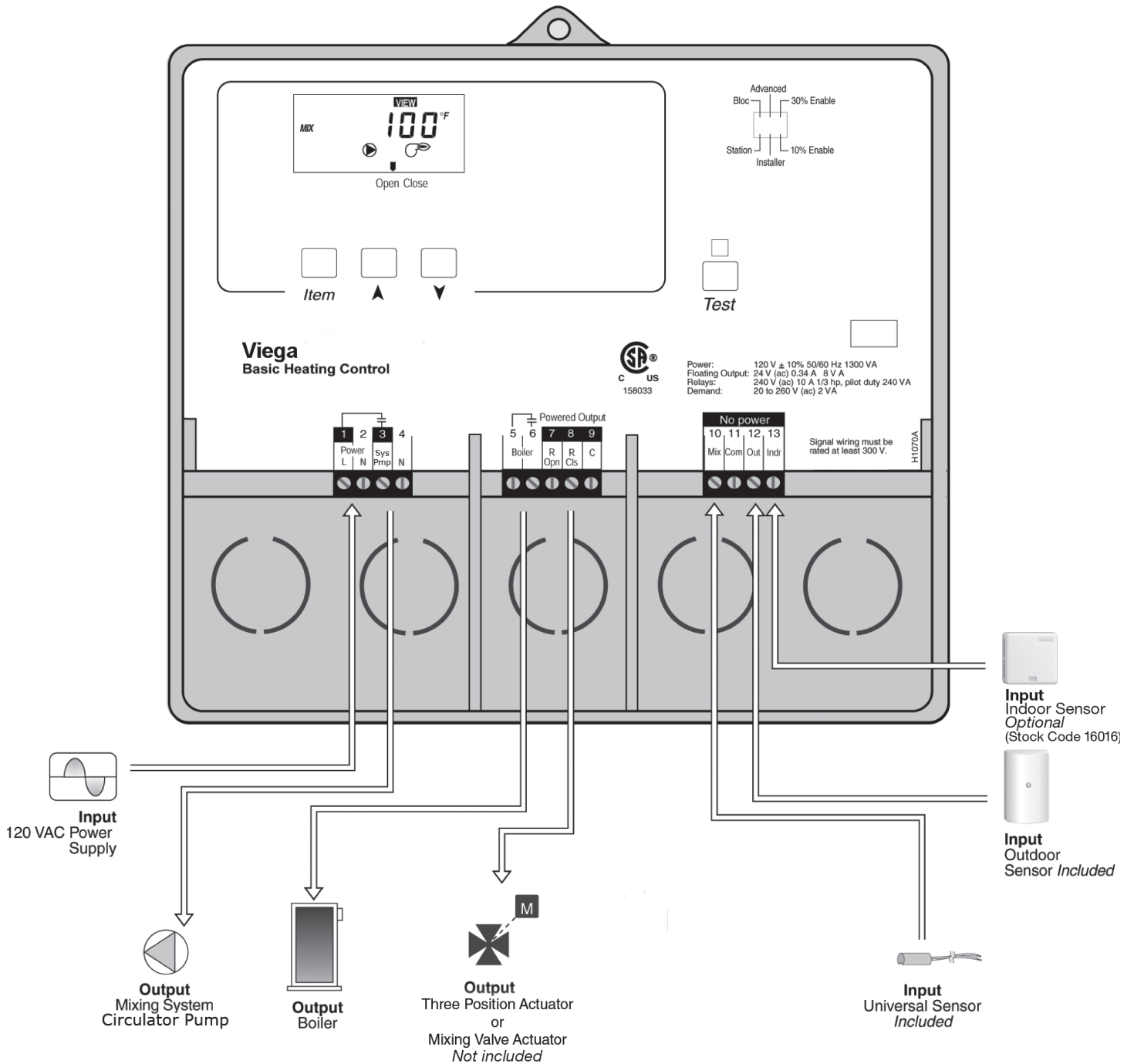- CSA C US certified (approved to applicable UL standards)

> **i** This document is subject to updates. For the most current Viega technical literature please visit www.viega.us.

> **!** Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

Specifications

Control	Microprocessor PID control; this is not a safety (limit) control
Packaged Weight	3.1 lb. (1420 g), enclosure black PVC plastic
Dimensions	6⅝" H x 7⁹⁄₁₆" W x 2¹³⁄₁₆" D (170 x 193 x 72 mm)
Approvals	CSA C US, meets ICES and FCC regulations for EMI/RFI
Ambient Conditions	Indoor use only, 32° to 102° F (0° to 39° C), <90% RH non-condensing
Power Supply	120V AC +/- 10% 50/60 Hz 1300 VA
Floating Output	24V AC 0.34 A 8 VA
Relays	240V AC 10 A ⅓ hp, pilot duty 240 VA
Sensors	NTC thermistor

Viega
Basic Heating Control

Input
120 VAC Power
Supply

Output
Mixing System
Circulator Pump

Output
Boiler

Output
Three Position Actuator
or
Mixing Valve Actuator
Not included

Input
Universal Sensor
Included

Input
Indoor Sensor
Optional
(Stock Code 16016)

Input
Outdoor
Sensor *Included*

Power: 120 V ± 10% 50/60 Hz 1300 VA
Floating Output: 24 V (ac) 0.34 A   8 V A
Relays: 240 V (ac) 10 A 1/3 hp, pilot duty 240 VA
Demand: 20 to 260 V (ac) 2 VA

Signal wiring must be
rated at least 300 V.

Testing the Control

The Basic Heating Control has a built-in test routine that is used to test the main control functions. It continually monitors the sensors and displays an error message whenever a fault is found. See the following pages for a list of the Basic Heating Control's error messages and possible causes. When the Test button is pressed, the test light is turned on. The individual outputs and relays are tested in the following test sequence.

off	not testing
red	testing
⚡red⚡	testing paused
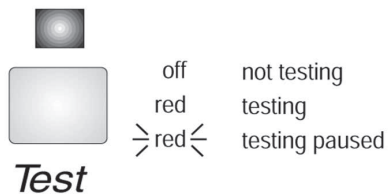
Test

Test Sequence

Each step in the test sequence lasts 10 seconds.

During the test routine, the test sequence may be paused by pressing the Test button. If the Test button is not pressed again for 5 minutes while the test sequence is paused, the control exits the entire test routine. If the test sequence is paused, the Test button can be pressed again to advance to the next step. This can also be used to rapidly advance through the test sequence. To reach the desired step, repeatedly press and release the Test button until the appropriate device and segment in the display turn on.

Testing Sensors

A good quality test meter capable of measuring up to 5,000kΩ (1kΩ = 1000Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with a good quality digital thermometer. If a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared.

First measure the temperature using the thermometer and then measure the resistance of the sensor at the control. The wires from the sensor must not be connected to the control while the test is performed. Using the chart below, estimate the temperature measured by the sensor. The sensor and thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection, or a defective

sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor, or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location.

Example: If outdoor temperature is 70° F the resistance should be 11,883.

Do not apply voltage to a sensor at any time as damage to the sensor may result.

Measured resistance should be within +/- 5% to what is listed below.

Temperature °F	°C	Resistance Ω	Temperature °F	°C	Resistance Ω
-50	-46	490,813	90	32	7,334
-45	-43	405,710	95	35	6,532
-40	-40	336,606	100	38	5,828
-35	-37	280,279	105	41	5,210
-30	-34	234,196	110	43	4,665
-25	-32	196,358	115	46	4,184
-20	-29	165,180	120	49	3,760
-15	-26	139,402	125	52	3,383
-10	-23	118,018	130	54	3,050
-5	-21	100,221	135	57	2,754
0	-18	85,362	140	60	2,490
5	-15	72,918	145	63	2,255
10	-12	62,465	150	66	2,045
15	-9	53,658	155	68	1,857
20	-7	46,218	160	71	1,689
25	-4	39,913	165	74	1,538
30	-1	34,558	170	77	1,403
35	2	29,996	175	79	1,281
40	4	26,099	180	82	1,172
45	7	22,763	185	85	1,073
50	10	19,900	190	88	983
55	13	17,436	195	91	903
60	16	15,311	200	93	829
65	18	13,474	205	96	763
70	21	11,883	210	99	703
75	24	10,501	215	102	648
80	27	9,299	220	104	598
85	29	8,250	225	107	553