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Universal Heater Controller

At a Glance

Process instrumentation for control of vessel temperature and protecton against vessel wall over-temperature

Product Description

The UHC, Universal Heater Controller Series, is a dedicated instrument used to control the heating of a pressure vessel based on a Process Variable monitoring element (thermocouple) and optionally an over-temperature monitoring element which will inhibit power to the heater when a predetermined limit is exceeded.

The UHC series comes in several different configurations:

- Single Phase, up to 8,000 Watts
- Three Phase, up to 50,000 Watts

Features

- The Autotune function allows the operator to quickly and easily optimize controller operation to process conditions.
- Broken thermocouple indication is displayed on the face of the controller
- Controls heaters from 200 watts up to 50,000 watts at applied voltages of 115 VAC, single phase up to 480 VAC, 3 phase
- A simple one step ramp/dwell cycle is included for unattended operation
- The user can change the maximum wall temperature to customize control for each individual process (within vessel limits)
- The UHC (Universal Heater Controller) is designed with circuit breakers instead of fuses so the operator never needs to open the panel-no fuses to stock

Benefits

- The Universal Heater Controller is designed to control the heating of a pressure vessel based on a process thermocouple used as feedback to the PID algorithm in the PLC controller
- An optional over-temperature control uses a vessel wall thermocouple to disable the heater if the wall temperature reaches the ASME temperature limit of the vessel (or other user-determined value)
- Set point ramping allows for less overshoot
- Compact design-simple set-up and operation

Temperature Control

• Option F10

Temperature control is based on an external thermocouple located at the heater/vessel wall interface. The thermocouple is used as feedback to the PID algorithm within the PLC to determine the power required from the heater to meet the desired operator entered setpoint. The heater is normally an electric band heater wrapped around the outside diameter of the vessel. While the vessel is heating, if the external thermocouple reaches the ASME temperature limit, the heater is disabled until the external thermocouple indicates the temperature is within proper operating limits.

• Option F1

Temperature control is based on an internal thermocouple used as the process variable and a second external thermocouple located at the heater/vessel wall interface. The internal thermocouple is used as feedback to the PID algorithm within the PLC to determine the power required from the heater to meet the desired operator entered setpoint. The heater is normally an electric band heater wrapped around the outside diameter of the vessel. While the vessel is heating, if the external thermocouple reaches the ASME temperature limit, the heater is disabled until the external thermocouple indicates the temperature is within proper operating limits.

General Specifications

Specification	Standard UHC
Electric Power Requirements	100/240 VAC, 50/60 Hz, up to 35 amps depending on model
Dimensions	120 VAC/2000 Watts and below and 220 VAC/4000 Watts and below: - 8”H x 8”W x 7”D 120 VAC 2000 to 4000 Watts and 220 VAC 4000 to 8000 Watts: - 12”H x 12”W x 9.5”D

Ordering Information

UHC A B C D E F G H J

Part Number Example: XXXXXXXXX

A, B, C Wattage	
002	200 Watts
005	500 Watts
008	800 Watts
010	1,000 Watts
015	1,500 Watts
020	2,000 Watts
030	3,000 Watts
040	4,000 Watts
For Heaters over 4,000 watts enter actual wattage/100	
D - Voltage	
0	115/120 VAC
1	220/240 VAC
2	230 VAC 3-phase
3	380 VAC 3-phase
4	480 VAC 3-phase
E - Temperature Sensor	
0	Type-K Thermocouple ºC
1	Type-J Thermocouple ºC
2	Type-K Thermocouple ºF
3	Type-J Thermocouple ºF

Note: If the desired wattage is not available, select the next higher wattage.

F - Overtemp Control Action	
0	None
1	Include
G - Special Agency Approvals	
0	None (std)
1	CUL/UL
2	CE
H - Special Configuration	
0	Conforms to Catalog Number
1	Additional requirements beyond Catalog Number
J - Number of Zones	
1	1 Zone
2	2 Zone
3	3 Zone

06-1113SE November2012

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CE

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