HEATEC TEC-NOTE

Setting Heatec (Yokogawa) UT150L media high temperature controller on Heatec HC and HCS heaters

This document provides information for setting the Heatec (Yokogawa) UT150L media high temperature controller (**Figure 1**) used on Heatec HC and HCS heaters. The controller is located on the control panel (**Figure 2**). It applies to all sizes of these heater models. Settings are shown in **Figure 3.** (Note: the term *media* in this document means hot oil or thermal fluid.)

This document along with Yokogawa manuals applicable to Yokogawa controllers are furnished with the heaters. If you need help on how to use the buttons on the controller, please refer to the applicable Yokogawa manual. You can call Yokogawa for technical assistance at 1-800-447-9656. Their web site www.yokogawa.com/.

Setpoint

The media high temperature controller limits *maximum* temperature of thermal fluid to a set point (SP) value that you preset into the controller. (Do not confuse the set point of this controller with the set point of the controller used to modulate the burner.)

The media high temperature controller senses fluid temperature from a thermocouple in the outlet side of the helical coil. If the temperature of the thermal fluid exceeds preset limits (SP) the controller de-energizes the media high temperature relay, opening its contacts and shutting off the burner. The controller must be manually reset in order to restart the burner.

The controller cannot be reset until the temperature of the thermal fluid has fallen below the set point value. For more information on how the controller works please see **Limit Control Function** in the Yokogawa manual.

The preset temperature limit (SP) should always be set to a value higher than the modulating range of the burner. Otherwise, normal modulation of the burner may cause the burner to shut off prematurely.

The maximum limit for a single line HCS heater is not the same as the limit for a HC heater with a manifold. On single line heaters set the maximum limit to at least 50 degrees F above setpoint of the modulating controller. On heaters with manifolds set the limit to at least 80 degrees F above the setpoint of the modulating controller.

Figure 1.Media high temperature controller.
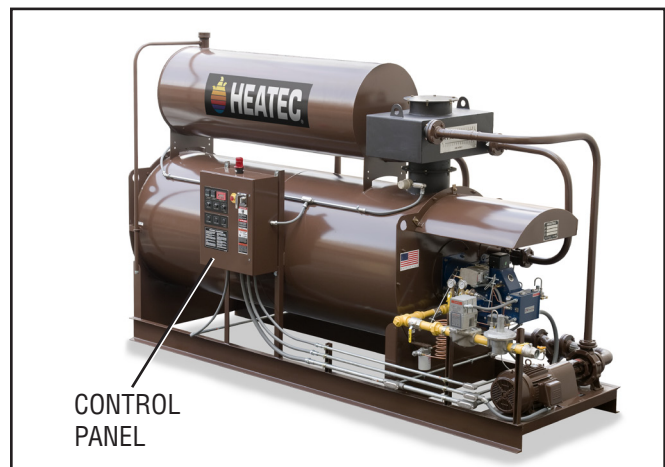

Figure 2. Control panel on Heatec HC heater

Heatec factory settings

Except for setpoint (SP), all settings on controllers installed on new heaters are preset at our factory. In that case, the only setting you need to make at startup is the setpoint (SP).

If you are installing a new controller that was not preset at our factory, you will need to make all the settings shown in **Figure 3.**

How to navigate the controller menus

The controller has two menus for the settings shown in **Figure 3:**

> Setup Parameters
> Operating Parameters

If the controller is new and was not preset at our factory, its display will show that **IN** is set to **OFF** when it is first powered. Press the up arrow key repeatedly to display **35.** Press **SET/ENT** key. Thereafter, you navigate the menus as described in the following paragraphs.

To enter the Setup Parameters menu

Press and hold the **SET/ENT** button for about three seconds until display reads **SP**. Repeatedly press the **SET/ENT** button until display reads **LOC**. Press the down-arrow button to change the value to **–1 (minus 1)**. If **LOC** is already set to **1**, press down arrow button and set **LOC** to **0**. Press **SET/ENT.** Now set **LOC** to **–1** and press **SET/ENT.** You are now in the Setup Parameters menu.

To change data use up/down arrow keys. To accept data press **SET/ENT**. To scroll to the next prompt press the **SET/ENT** button again. When finished, press and hold **SET/ENT** to return to the main display.

To enter the Operating Parameters menu

Press and hold the **SET/ENT** button about three seconds until display reads **SP**. You are now in the Operating Parameters menu. To change data use up/down arrow keys. To accept data press **SET/ENT**.

To scroll to the next prompt press the **SET/ENT** button again. When finished, press and hold **SET/ENT** to return to the main display.

Figure 3. Setting Yokogawa UT150L high media temperature controller used on Heatec HC and HCS heaters

PROMPT		DESCRIPTION (what it does)	SETTINGS (USE UP/DOWN ARROW KEYS) (green characters are actual settings)
(what you see)	(what it means)		
Setup Parameters			
In	IN	Input type	**35**: J –300 to 2100° F
SPH	SPH	Setpoint range maximum value	**500**
SPL	SPL	Setpoint range minimum value	**0**
HI.Lo	HI.LO	Limit control type	**HI**: High limit
oP.SL	OP.SL	Operating display selection	**0**: PV and SP
r.md	R.MD	Restart mode	**1**: Limit output at power ON when PV doesn't exceed SP
Operating Parameters			
SP	SP	Setpoint for limit control	On single-line heaters set at least 50°F above SP of modulating controller. On manifold heaters set at least 80°F above SP of modulating controller.
HYS	HYS	Relay hysteresis for control output	**0**
FL	FL	PV input filter	**OFF**
bS	BS	PV input bias	**0**
LoC	LOC	Key lock	**0**: No key lock