HEATEC TEC-NOTE

Setting Yokogawa UT150 controllers used with Siemens pressure transmitters on Heatec vertical AC tanks

This document provides information for setting Yokogawa UT150-RN-AL/RET controllers (**Figure 1**) used with Siemens pressure transmitters on Heatec vertical tanks (**Figure 2**) that store asphalt cement. 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 is www.yokogawa.com/.

The controller displays the level of liquid asphalt stored in the tank using signals from the Siemens pressure transmitter. Level indications are in inches. A table for converting inch-levels to gallons is provided in Heatec TecNote 10-06-180, which also provides instructions for setting the Siemens pressure transmitter.

The controller also uses its Alarm 1 setting to turn off heat to the tank if the asphalt level is too low to cover the heating coils. Its Alarm 2 is set to trigger a high level alarm and shut off the unloading pump to prevent overfilling the tank.

Setting up the controller

To set up a new controller, you must first make the settings shown in **Figure 3.** *Note: four of the settings depend on the sensor height, which is either 11 inches or 2.5 inches.*

These settings are normally made at Heatec before the tank is shipped. However, if a new controller is installed in the field, these settings must be made first.

How to navigate the controller menus

The controller has two menus for the settings shown in **Figure 3: Setup Parameters** and **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 **22.** 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 **A1**. 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.

Figure 1.Yokogawa UT150 controller.

Figure 2. Heatec vertical asphalt tanks.

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 **A1**. 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 UT150 controller for asphalt tank levels

Setup Parameters (for all tank sizes)

PROMPT (what you see)	(what it means)	DESCRIPTION (what it does)	SETTINGS (USE UP/DOWN ARROW KEYS) (green characters are actual settings)
In	IN	Input type	22: 1.00 to 5.00
dP	DP	Decimal point position	1
rH	RH	Maximum value of input scale	600
rL	RL	Minimum value of measured input scale	Either 11 or 2.5 (see note below)
SPH	SPH	Setpoint range maximum value	Either 11.1 or 2.6 (see note below)
SPL	SPL	Setpoint range minimum value	Either 11 or 2.5 (see note below)
UPr	UPR	Setpoint ramp-up rate	OFF
dnr	DNR	Setpoint ramp-down rate	OFF
tmU	TMU	Setpoint ramp-rate time unit	0
rtH	RTH	Retransmission maximum value	600
rtL	RTL	Retransmission minimum value	Either 11 or 2.5 (see note below)
AL1	AL1	Alarm 1 type	10: De-energized on PV Low Limit
AL2	AL2	Alarm 2 type	9: De-energized on PV High Limit
HY1	HY1	Alarm 1 hysteresis	0
HY2	HY2	Alarm 2 hysteresis	0
dr	DR	Direct / reverse action	0: Reverse action

Operating Parameters

PROMPT (what you see)	(what it means)	DESCRIPTION (what it does)	Size of tank (gallons)					
			10,000	15,000	20,000	25,000	30,000	35,000
A1	A1	A1 Value	12.0	12.0	18.0	18.0	18.0	18.0
A2	A2	A2 Value	153.0	249.0	321.0	417.0	489.0	561.0
CtL	CTL	Control mode	onF					
HYS	HYS	Hysteresis	0.0					
FL	FL	PV input filter	OFF					
bS	BS	PV input bias	0.0					
LoC	LOC	Key lock	0: No key lock					

NOTE: Where two settings are shown use the one that closely matches the height of the sensor. Control output terminals 14 and 15 are not used for this application. Therefore, you cannot set the controller to shutoff the unloading pump at a predetermined level. The setpoint values for this function are fixed to the settings shown here to prevent attempts to use preset levels.

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