HEATEC TEC-NOTE

Setting Yokogawa UT150 controllers used with Vega PULS 63 radar on Heatec vertical AC tanks

This document provides information for setting Yokogawa UT150-RN-AL/RET controllers (**Figure 1**) used with Vega PULS 63 radar 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 radar unit. Level indications are in feet. A table for converting levels to gallons is provided in Heatec Tec-Note 11-04-148.

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.** 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.

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 1.Yokogawa UT150 controller.

Figure 2. Heatec vertical asphalt tanks.

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.
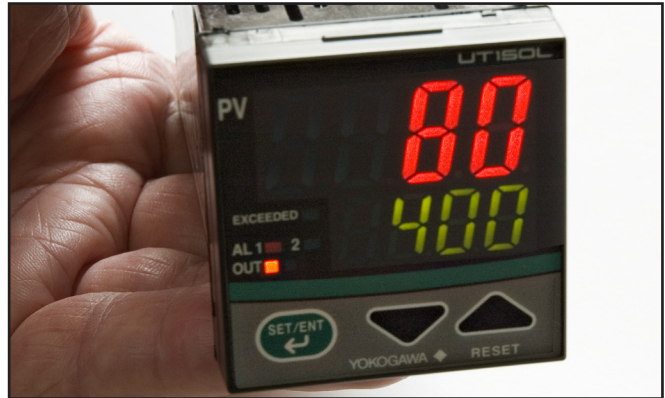
Figure 3. Setting Yokogawa UT150 controller for asphalt tank levels with radar

Setup Parameters

PROMPT		DESCRIPTION (what it does)	SETTINGS (USE UP/DOWN ARROW KEYS) (green characters are actual settings)					
(what you see)	(what it means)		Size of tank (gallons)					
			10,000	15,000	20,000	25,000	30,000	35,000
In	IN	Input type	**22**: 1.00 to 5.00					
dP	DP	Decimal point position	1					
rH	RH	Maximum value of input scale	14.5	22.5	28.5	36.5	42.5	48.5
rL	RL	Minimum value of measured input scale	0.0					
SPH	SPH	Setpoint range maximum value	0.1*					
SPL	SPL	Setpoint range minimum value	0.0*					
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	14.5	22.5	28.5	36.5	42.5	48.5
rtL	RTL	Retransmission minimum value	0.0					
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		DESCRIPTION (what it does)	SETTINGS (USE UP/DOWN ARROW KEYS) (green characters are actual settings)					
(what you see)	(what it means)		Size of tank (gallons)					
			10,000	15,000	20,000	25,000	30,000	35,000
A1	A1	A1 Value	1.0	1.0	1.5	1.5	1.5	1.5
A2	A2	A2 Value	13.7	21.7	27.7	35.7	41.7	47.7
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: 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 for SPH and SPL to prevent attempts to use preset levels.

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