Glycol Solenoid FV13-TV01

Glycol Solenoid FV13-TV02

Glycol Solenoid FV13-TV03

FV13-TI01 56.1 °F
FV13-TI02 56.1 °F
FV13-TI03 46.4 °F

Capacity: 200 bbl
Filled Volume: 219.2 bbl

Elapsed Stage Hours: 102.3
Total Elapsed Hours: 172.9

Full - Stage 2
High Priority Alarm

Tank Trends | Tank Admin Screen

Previous Stage:	Full - Stage 1	Go to Previous Stage
Current Stage:	Full - Stage 2	Go to Next Stage
Next Stage:	Full - Stage 3	Abort Batch

Elapsed Stage Minutes: 6135
Elapsed Stage Hours: 102.3

Change Elapsed Stage Minutes: 6135.0
Temp. setpoint change between long alarm wait time and short alarm wait time (°F): 10.0
Short Alarm Wait Time: 30
Long Alarm Wait Time: 60

Low Priority Alarm Deviation Setpoint: 2.00
High Priority Alarm Deviation Setpoint: 5.00
Temperature Deadband: 0.50

Close Screen

Manual
Gravity (°P)
pH 0.00
Cell Count 0
Log Manual Entry

{[Cellar_PLC]FV13.TopTempSP}
{[Cellar_PLC]FV13.MiddleTemp} 55 56 °F
{[Cellar_PLC]FV13.MiddleTempSP} 56 56 °F
{[Cellar_PLC]FV13.ConeTemp} 45 46 °F
{[Cellar_PLC]FV13.ConeTempSP} 57 57 °F

Current Recipe | Advance Stage | Hold Temperature | Start Transfer

Stage Number	Stage Description	Total Hours	Top Temp. Setpoint	Middle Temp. Setpoint	Cone Temp. Setpoint	Decision Required to Proceed?	Message / Alert
1	Filling/Primary	96	52.5	52.5	54.0	No	
2	VDK Raise	120	56.0	56.0	57.0	Yes	vdk pass?
3	Maturation	216	40.0	40.0	40.0	Yes	ready to chill?
4	Aging	144					

Stage Number	Stage Description	Total Hours	Top Temp. Setpoint	Middle Temp. Setpoint	Cone Temp. Setpoint	Decision Required to Proceed?	Message / Alert
6		0	0.0	0.0	0.0	No	
7		0	0.0	0.0	0.0	No	
8		0	0.0	0.0	0.0	No	

LSI listens

"Can We Overcome Bottlenecks In Our Brewery And Engineer Our Controls For The Future At The Same Time?"

What Our Client Said

We've reached production capacity with our current fermentation cellar, and we need a plan to expand our operations.

What We Heard

We don't just want to increase our production capabilities, we need to be ready for future improvements and expansion as well.

What We Did

First, LSI listened carefully to the customer and performed an in-depth analysis of the current production infrastructure and controls. Not only was the existing fermentation cellar control system very rudimentary, a good portion of the control relied upon manual input. In addition, batch reporting and quality control was labor intensive and time consuming. LSI developed a new system to control the tanks, automatically adjust setpoints and record pertinent data so operators spend less time fiddling with controls and more time making beer.

LSI provided:

- **Project management**
- **Electrical design**
- **VBA / SQL programming**
- **PLC and HMI programming**
- **Mechanical design**
- **3D modeling**
- **Panel fabrication**

The control system consisted of:

- **CompactLogix controller**
- **Hope industrial touch screen**
- **Intel NUC computer running Factorytalk SE**
- **Remote I/O consists of WAGO Modular I/O (existing fermentation cellar) and 1794 Flex I/O (new fermentation cellar) communicating via ethernet**

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The Results Speak For Themselves

Scalability

- The new control system is easily scalable to include more tanks
- Adding a new tank is as easy as "copy and paste"
- Standardized graphics mean no new screens need to be made for new tanks

Recipes

- The system allows brewers to input multi-stage fermentation recipes that will hold the temperature of different parts of the tank at their setpoint until the stage timer advances, or until an operator acknowledges that a stage is done
- Each recipe can have up to 10 stages, with top, middle and cone temperature setpoints for each stage
- An array of 100 recipes, with the ability to add additional recipes, allows for many different brew types
- Additional recipes are easy to add

Reporting

- Tank temperatures, setpoints, glycol jacket solenoid states and other data points are logged in FactoryTalk
- Brewhouse data is logged on each batch of beer (up to six batches can go into a fermentation vessel)
- Reports are automatically generated at the end of each batch

Alarms / Notifications

- Email alerts are sent if high-priority alarms occur along with a timestamp and short description

Flexibility

- Brewers will be able to remotely access the HMI using VNC on their computers, phones and tablets, as well as troubleshoot the HMI or PLC with VPN access
- This free software allows screen sharing and does not log out the physical user when a remote user connects
- This system allows a brewer to directly query the SQL database on the HMI if custom reports or more advanced data analysis are required

Let LSI listen to your challenges today, and we'll work together to write a success story for you.

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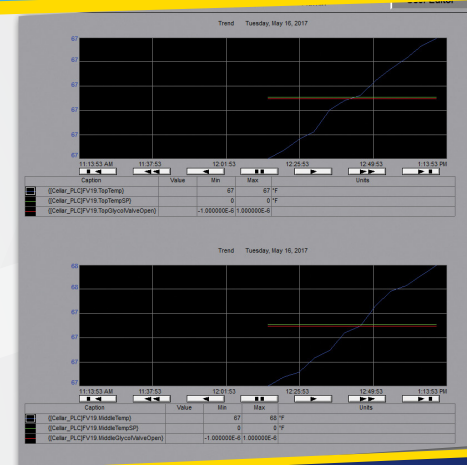
LSI listened, then developed a custom solution by utilizing products and knowledge from the global vendors best suited for the project. Because LSI is independent and not owned by a manufacturer, we were able to put the customer's needs first – selecting the best technology for the job. The scalability and automated reporting provided by these systems has allowed the customer to expand their operation with confidence.

The brewers were excited to implement their new control system and start-up went smoothly. Their capacity nearly doubled, and they already have plans to add more capacity in the future.

Tags: Brewery, scalability, automated reporting, HMI, cellars, fermenters, aging, cellar automation, beer transfer

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