

BEST PRACTICE | TREASURY WINES

Treasury Wines creates Australia's largest digital winery

A new modern automation infrastructure system is lowering costs and improving quality and safety at Australia's largest winemaking facility



State-of-the-art winemaking

Treasury Wine Estates (TWE) is one of the world's largest wine companies, selling its wines in more than 70 countries and employing more than 2600 people. The company operates wineries not only in Australia, but also in New Zealand, the USA, France, Italy and China.

In 2022, TWE unveiled¹ its new state-of-the-art winemaking facility in the Barossa Valley, the largest premium winemaking site in the Southern Hemisphere, with the capacity to produce more than 100 million litres of wine every year. It is also its largest bottling operation, packaging up to 216 million bottles per year.

In 2019, when TWE were beginning to design their winery expansion, they were seeking an automation system that would improve on the cumbersome maintenance and inflexibility of the traditional hard-wired valves and sensors that had been used on previous sites. As a completely new greenfield

installation, this was an opportunity to embrace new technology across the whole winemaking operation, improving efficiency and safety for workers.

Bürkert presented TWE with an opportunity to digitally transform their entire network for the new tank farm and bring its infrastructure in line with Industry 4.0 and modern digitalisation trends using IO-Link capabilities. As a result, Bürkert Type 8801 - ELEMENT On/Off Valve Systems were chosen for fermentation, glycol and must delivery (heating and cooling) applications across a tank farm of over 400 tanks. The design of the Type 8801 ELEMENT On/Off Valve System enables the easy integration of automation modules. The fully integrated valve and automation system has a compact and smooth design, integrated pneumatic lines, IP65/67/NEMA 4X protection class and superior chemical resistance – perfect for the high environmental demands of an outside tank farm.



TWE Barossa Winery site
South Australia

Protection through overpressure

Hygienic design

Pilot valve

Integrated pilot air duct

Corrosion-resistant materials

LED status display

Contactless and continuous position detected

Digital communication interface

Filter element compressed air supply

Bürkert ELEMENT
Valve Systems

Digitalisation a must for wineries

Today, digitalisation is the fastest moving automation requirement for food and beverage producers across the world. Ensuring simplicity in installation and management, reducing maintenance and improving environmental footprint are also part of this modern automation infrastructure. By using smart valves and sensors and the right fieldbus technology, wineries can embrace automation for now and into the future while saving on implementation costs.

To this end, Bürkert partners with wineries to find the best automation solution for their needs.

“Working closely within this industry and hand-in-hand with Australian winemakers, we are ensuring that Australian produces are at the forefront of this movement,” said Bürkert Australia’s General Manager, Chris Hoey.

“In the implementation of digitalisation across a winery, we can begin assessing and improving wastage, blending errors, burdensome maintenance, long wait times for upgrades and installations, whilst improving energy efficiency, hitting sustainability targets and reducing bottom line expenditure,” he added.



IO-Link infrastructure providing feedback and diagnostics 24/7

IO-Link lowers cost and increases control

The modern automation infrastructure system proposed by Bürkert offered the opportunity of moving to best practice with smart equipment and connectivity that could improve their overall control and management of the winery.

Bürkert offered valve systems with IO-Link capability, due to IO-Link's seamless integration capabilities as well as its standardisation as an independent fieldbus network. IO-Link was the first standardised I/O technology for communication with sensors and actuators, and is a vendor-independent device bus that can be integrated into any existing fieldbus via a corresponding interface.

Over the next two years, the project got underway and collaboration between TWE's partners, including Chris Hoey and National Engineering Manager, Nelson Chymiak ensured the tank farm was up and ready to go in no time.

"The most noticeable positive impact of this solution was the diagnostic information provided from the network connected field devices," said Harry Robinson, Project Engineer for Treasury Wine Estates.

He also received positive feedback from the electrical contractor that the single cable installation for each device was a welcome change from legacy systems.

Improved safety achieved

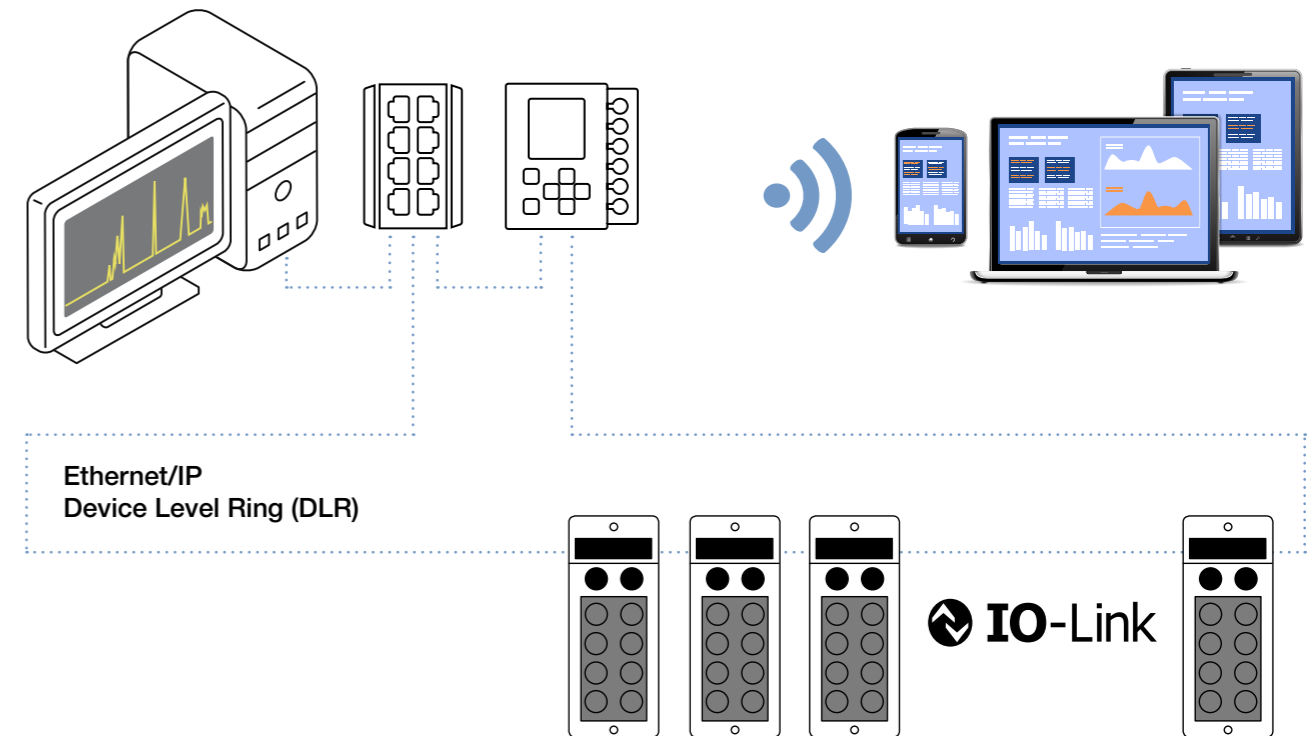
Not only do the new valves supplied by Bürkert enable efficient error-free activation of valves on wine tanks through QR-coded operation, they also improve safety in a number of ways.

Firstly, they can automatically prevent tank collapse by the automated activation of tank vent valves, and remove the need for costly catwalks and access stairways to the tops of tanks. There is also a reduced risk of harm or injury due to operators working at heights or having others working overhead with risk of dropping implements onto staff below.

Centralised management and easy expandability

With traceability and transparency direct from the valves themselves, management and maintenance of the entire site can be controlled from one central hub. Smart valve actions and alerts ensure reduced risk of wastage and faster reaction times if things go wrong and having that peace of mind has made an incredible difference to the team and how the winery undergoes managing the winemaking process.

Although the site itself is still evolving and growing with further installation and upgrades, the bulk of the work is done and the foundations for a future-proof winery are in place. With IO-Link capabilities, flexibility of connectivity across the site means that the sensor and actuator network could be customised to TWE's requirements.



REFERENCE

1. TWE Global 2022, Treasury Wine Estates unveils \$165m new state-of-the-art facility in the heart of the Barossa, Press release, <<<https://www.tweglobal.com/media/news/treasury-wine-estates-today-unveiled-its-new-165-million-state-of-the-art-wine-production-facility-in-the-barossa>>>

We learn from you every day Including when we think outside the box

When it comes to dealing with liquids and gases, Bürkert is a sought-after partner all over the world. Why? Probably because we have been learning for, and from, our customers for more than 70 years. This enables us to always think that crucial step ahead – or even sideways.

We make ideas flow.



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