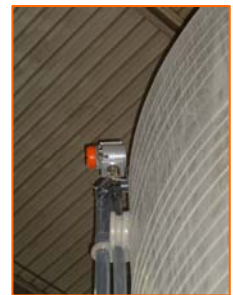


HYCONTROL



Premiere[®]
Products



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Established in 1924, Premiere Products currently employ over 200 people at their seven acre site in Cheltenham and have an annual capacity of 9,500,000 litres of chemical product. Having taken delivery of a new 40,000 litre polypropylene tank for processing and storing detergents, Premiere soon found that the ultrasonic level measuring system included with the tank was struggling to cope with the foamy nature of the detergents, especially when the products were being recirculated, resulting in spurious and inaccurate level readings.



Leading level measuring specialists Hycontrol, who have built up a good working relationship with Premiere, were asked to come up with an alternative and viable solution to overcome these problems. Given the design of the tank and its contents, there initially appeared to be no alternative answers without tank modifications. However, undeterred, Hycontrol engineers came up with a novel way of using their VF7 series TDR* radar level measuring system. Instead of installing the stainless steel waveguide cable inside the tank in the traditional way, they advocated installing it in a plastic tube (see photo opposite) mounted to the outside of the tank! Because polypropylene has a low dielectric, the instrument's microwaves pass straight through the tank wall

and the system operates as if the tank doesn't exist. The level readings from the VF7 are converted to volume and displayed on an HYC3600 digital indicator mounted in an IP65 enclosure adjacent to the tank.



TDR technology is ideal for such applications, offering exceptional long term accuracy of better than ± 3 mm over a ten metre measuring range. As Hycontrol's Area Sales Manager Dave Wadsworth explains:

"Initially Premiere engineers were understandably sceptical about our 'outside looking in' solution, but they soon realised that this offered a highly effective answer and the system works extremely well. We supply the VF7 TDR units pre-calibrated, making installation very easy and in this application there was no disruption to the process. Unlike a number of alternative level measuring technologies, TDR technology has the advantage of not being affected by process factors such as dust, foam, vapour, agitated and boiling surfaces, whilst in parallel, pressure, temperature and density variations also have no effect."

*The VF instruments, which have a maximum measuring range of 35 metres, work on the principle of **Time Domain Reflectometry** commonly known as TDR, originally developed for checking and locating damage along sub-sea telecommunication cables. The device sends low-power electromagnetic pulses along the instrument's wave guide. Upon reaching the surface of the vessel contents, the pulses are reflected back with a signal strength that is dependent on the dielectric constant of the medium being measured. The instrument measures the time between the emission and the reception of the signal, converting this into a 4-20 mA output current proportional to level. Any weak or spurious signals are analysed and ignored by the electronics.



**Premiere
Products**

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Xtreme level measurement