WALLACE & TIERNAN® MULTI SENSOR VALIDATION SYSTEMS

INTRODUCTION

The reliability and provenance of analyser signals has never been so important to the water industry. The residual chlorine or turbidity reading is critical to water quality both within, and leaving the treatment works.

Evoqua has a number of dedicated, proven systems and specifications for dual or triple validation of analyser signals. These can be used for the validation of chlorine residual and turbidity, and give a surety of the sensor reading that is unsurpassed in the UK water market.

FEATURES

Although a single sensor like the DEPOLOX® residual analyser is a precision instrument being both accurate and reliable, there can be grave consequences in delivering out-of-specification water into the distribution network. For water utilities that do not want to compromise on the validity of single measurements, Evoqua has the answer. The use of multiple sensors provides higher reliability and confidence in the validation measurement in the unlikely event of a single sensor malfunction.

The multi validation systems manufactured by Evoqua take two or three analyser signals and compares these to provide a high reliability, high confidence and higher validated measurement.

The multi validation analysers can be fully engineered to a PVC backboard that can then be wall mounted. Careful design and assembly ensures that the sample pressure, line length and flow conditions do not compromise the measurements.

Each monitoring analyser provides an independent output that is passed to the validation monitor. The validation monitor compares each input and determines any deviations from the norm. From the resultant calculations a final validated average measurement is provided along with any active alarms.

Key Benefits

- Improve confidence in water quality
- Minimise chances of out-of-specification water
- Improved security of reading
- Increased validity of reading
- High reliability of reading
- Increased confidence in analysers
- Reduced response priority to problems
- Proof of diligence to regulators

On some versions individual isolated analyser signals can be accessed for further processing or maintenance monitoring.

All systems provide multiple defined relay alarms; each alarm point can be adjusted to meet specific site conditions. These will normally include alarms for validation errors, analyser failures and loss of flow.

Evoqua multi analyser validation systems are available for AC or DC supply voltages. Dedicated instrument arrangements and assemblies are available to meet most water company specifications.

Triple Validation Monitor with DEPOLOX® 5 analyser

TECHNICAL INFORMATION

Technical Specification	Triple Validation Monitor Typical arrangement	Dual Validation Monitor Typical arrangement
Power Supply		
Voltage Range	100-240V AC (auto sensing) 24Vdc as a special option	100-250V AC (auto sensing) 24Vdc as a special option
Frequency Range	50-60Hz	50-60Hz
Power	30 VA	30 VA
Fuse	2A internal (Non replaceable)	2A internal (Non replaceable)
Digital Input	7 x volt free: 24V DC @ 4mA nom. (internal supply) Optical Isolation	2 x volt free: 24V DC @ 4mA nom. (internal supply) Optical Isolation
Digital Output	6 x relay: SPST, volt free 24V @30W dc Max 250V @ 200W ac Max	4 x relay: SPST, volt free 24V @30W dc Max 250V @ 200W ac Max
Watch dog Output	SP NC relay contact	SP NC relay contact
Analogue Input	3 x Scaled range 4-20mA Resolution: 14 bit Unipolar (5µA) Input impedance: 250 Ω Isolation: (see Note 1)	2 x Scaled range 4-20mA Resolution: 14 bit Unipolar (5µA) Input impedance: 250 Ω No Isolation
Analogue Output	2 x Scaled range 4-20 4-20mA Resolution: 14 bit Unipolar (5µA) Max. load impedance: 600 Ω Isolation: (see Note 1)	1 x Scaled range 4-20mA Resolution: 14 bit Unipolar (5µA) Max. load impedance: 600 Ω No Isolation
Re-transmission Output	3 x Scaled range 4-20mA Error < 0.1% of end value Max. load impedance: 600 Ω Isolation: (see Note 1)	
Note 1	All analogue signals to and from the Validation Monitor are isolated using discreet multi-way signal isolators	
Enclosure		
Environmental	IP65 (door closed)	IP65 (door closed)
Operating temperature	0 - 40°C 90% (non-condensing)	0 - 40°C 90% (non-condensing)
Storage temperature	-20 to +70°C	-20 to +70°C
Typical installation	Wall mounted painted steel enclosure	Wall mounted plastic enclosure
Mounting	Landscape	Landscape
Physical		
Dimensions	300 x 400 x 150mm (h x w x d)	260 x 350 x 250mm (h x w x d)
Weight	8kg	5kg

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