

## AQ301 INDUSTRIAL Single Boiler Water Quality management System



This unit is specially designed to suit automated water quality management for industrial boilers up to 15 bar at an affordable price.

The AQ301 system can be manufactured for a single product chemical regime, with one injection pump, or for a 2 product regime with (max) two pumps.

The unit further comprises pH, conductivity, feed temperature probes and mechanical flowmeter. It comes with a local LCD display and probe calibration can be conducted from the front panel.

The system can be configured for chemicals of a chosen supplier or for designated AQUANET products.

The probes are temperature fail-safe protected and a low product level alarm is provided for the chemical drums.

The unit is stand-alone but can be expanded to full remote monitoring, data logging and display with AQUANET software and PC.

NB. The unit accepts only a single boiler water sample. For dual boilers and/or a feed sample, an AQ300 unit is required!

### Features and Benefits

- Keeps boilers scale and corrosion free = lower operating costs
- Ensures correct chemical levels at all times = no manual control
- Easily reconfigured for new chemical suppliers = free choice
- Unique Windows Software, written for networking = ease of use
- Can be used on an existing control room PC = lower capital cost
- Optional GSM interface allows selectable alarms to be sent to an engineer or control room telephone.

### Specifications

#### Description

The equipment is supplied as a separate instrumentation cabinet and pump rack, both with mounting plates. The instrumentation cabinet is stainless steel with hinged lockable doors. The left hand section holds the integral sample cooler and probes. The right hand section houses the electronics, manual controls and communication interface.

**Dimensions** (W) x (H) x (D) mm  
930 x 1800 x 250

**Weight** - 40 kg

**Colour** - RAL 7-001 (dark grey) Rating - IP66

**Power requirements**  
220/240 Vac 50/60 Hz. 6A

**Max. Operating Temperature**  
50°C max.

**Humidity** 0-95% RH non condensing

#### Probes

**pH**  
Range 0 – 14pH  
Sealed Reference cell  
Resolution 0.5% FSD

**Conductivity**  
Range 0-5000uMhos (other ranges available)  
Automatic temperature compensation  
Resolution 0.5% FSD

**Dissolved Oxygen (OPTION)**  
Range 0 – 2.5 mg/litre  
Automatic temperature compensation  
Resolution 0.5% FSD

**Feed Tank Temperature**  
Stainless steel pocketed probe  
0-110°C scaled as 4-20 mA signal

**Mechanical Flow Meters**  
Flanged DN25 to DN80 PN16  
Maximum operating Temp 130°C

#### Ultrasonic Flow Meters (OPTION)

Non penetrating.  
Clamps onto outside of existing pipe work.  
Transducer maxi operating temperature 200°C

#### Blowdown Valves 0 to 32 bar max

**Diaphragm Pulse Pumps**  
1 litre/hr 17 bar max, polypropylene head.  
Teflon coated diaphragm.

#### GSM Interface (OPTION)

Allows selectable alarms to be sent to an engineers or control room telephone.

#### Communications and Monitoring (OPTION)

PC & comm. Box with AQUANET software compatibility for monitoring, logging and display.  
RS422 differential line drivers CRC protected

Links to other **AQUANET** units

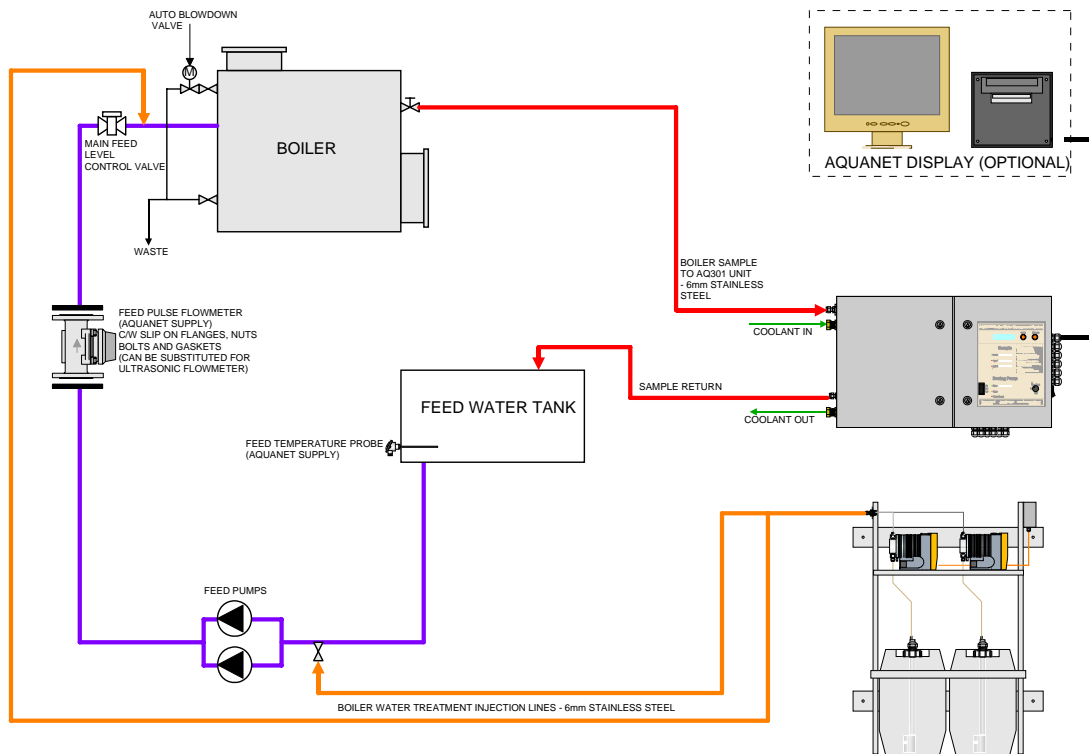
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TYPICAL SCHEMATIC OF AN AQ301 INSTALLATION  
FOR A TWO PRODUCT REGIME



## Description of Operation

The boiler sample and cooling water supply are activated for 5 minutes at a pre-programmed periodicity of 10 minutes to 42 hours. The sample is analysed and the information processed by the electronics, followed by a small upward or downward adjustment of the relevant chemical pumps. The boiler water conductivity controls the optional auto surface blowdown valve, maintaining the conductivity to pre-programmed levels. This accurately maintains the water at the ideal density for maximum chemical performance with minimum chemical and water wastage.

## Flow Management

The system provides a manual scrolling display of the boiler water and temperature readings. When used in conjunction with a PC, the Aquamain software provides the following functions: Continuous display of pH and conductivity readings, Optional dissolved oxygen readings, Feed temperature, Dosing pump strokes per minute, Chemical consumption, Chemical low level alarm, Fuse failure alarm, Main feed flow, Optional auto blowdown operation.

## User Guide

The **AQUANET** Software comes complete with a comprehensive user guide, which contains on-line copies of the operating, maintenance and fault finding manuals. It includes system drawings both mechanical and electrical and educational text describing water treatment practice. Event Alarms Fault and limit alarms are both displayed on the screen and logged. Log Reports Pre-formatted management reports provide a summary of average monthly readings. All reports and data can be viewed and printed for any period requested and are also available in various graphic formats. All data is archived for many years. Auto-Calibrate All probes are easily calibrated with the test kit provided and via easy to follow, on-screen, step-by-step instructions. It takes only minutes to carry out accurately, preventing the use of incorrect parameters.

## Special Features

- Probe calibration easy and quick at unit.
- Probe construction designed for easy mounting and removal.
- Extra pump speed control facility at unit.
- Water sample temperature display, with probe protection cut-out.
- Fuse failure alarms.
- Pumps have special venting arrangements, returning the vented chemical to the drum