



Aquarian 3000Plus

The Aquarian 3000Plus is an accurate, reliable, cost effective means of sensing water level in a wide variety of applications. The Aquarian system consists of three major components: the column with probes, the detection and verification unit (D&V) and the remote display.

The Fossil conductivity probes with zirconium brazed insulators have been used and proven reliable with many years of service. The Swagelok metal-to-metal seal of the Aquarian probe insures leak proof installation in the Aquarian column.

The electronic system in the D&V unit is connected to 8, 10, 12, 14 or more probes on the water column. Probes selected by the customer are installed during the manufacture of the column and spaced to indicate liquid level throughout a desired operating range.

Six Form-C relays are provided for control. They can energize on steam or water. A system fault relay monitors the internal power supply, clock, probe wire continuity and short circuit. Two additional relays are used for setting the low/high trip level points.

Operation of the system is based on measurement of the difference in resistance between water and steam, which is compared with a known reference resistor. The signal output to the probes is a symmetrical source wave ± 5 VDC current which precludes electroplating of the probe. The Aquarian 3000Plus measures the returning signal to indicate 'water' or 'steam'.

An intelligent Processor Module is available as an option. It adds the following features to the 3000Plus Aquarian; Flashing level discrepancy alarm when steam is indicated above water, Flashing High/Low alarms which become active when water is above/below set point and an additional alarm output relay which can be set to activate when a specified water level is detected.

A two wire Analog 4-20mA Interface output option is available for systems where the Processor Module is fitted. The analog output represents the height of the water in the column.

FEATURES AND BENEFITS

- Solid state electronics and two-color display
- Solid state output to drive up to three remote displays
- NEMA 4X (IP65) enclosed detection and verification unit
- 10 amp power relay contact output for each probe to control trips and alarms
- Three way adjustment for water conductivity
- Electronic self-monitoring and indication in the D&V unit; optional probe wire continuity and short circuit monitor, power supply failure, clock (DC detection circuit) failure
- 10 amp power relay contact output for electronic faults and water over steam fault
- Dual AC power source and Redundant Power Supplies



Controlling
the **power**
of **steam**



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SPECIFICATIONS

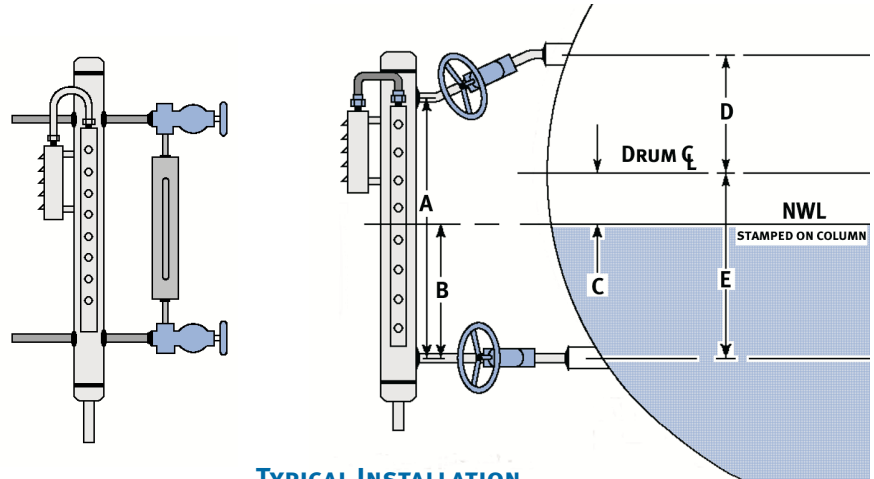
- Power source: Dual and redundant 120 VAC or 240 VAC, Single phase 50-60 Hz, 1/2 Amp – 1/4 Amp
- Relay contact ratings: 10A @ 120 VAC, 8A @ 24 VDC, 1/3 HP @ 120 VAC
- Column ratings: Up to 3000psi maximum and 1200°F maximum
- Column materials: carbon steel, stainless steel and chrome moly
- Enclosure: NEMA 4X (IP65)
- Minimum conductivity capability: 0.5 micromho
- Electronics to column distance:
 - 0.5 to 4 micromho - 65 ft (20m)
 - 4 to 25 micromho - 165ft (50m)
 - Above 25 micromho - 500ft (152m)

OPTIONS

- To customize unit for individual applications:
 - In service test switch and adjustable trip/alarm time delay
 - Additional remote displays
 - Column mounted pre-wired junction box
 - Wire continuity fault detection and short circuit fault detection
 - Column ratings: up to 3000psi maximum and 1200°F maximum
 - Column materials: carbon steel, stainless steel and chrome moly
 - Zener barrier for intrinsically safe probe connections
 - Processor module
 - 4-20mA analog output processor module
 - 16, 20, 24 (and up) probe systems

* American Society of Mechanical Engineers

The manufacturer reserves the right to change the designs and materials of its products without notice.



TYPICAL INSTALLATION

APPLICATIONS

For high and low pressure feedwater heater, and boiler drum level indication.

The 1998 ASME* Boiler and Pressure Code (Section I, Para. PG-60) states: "Two independent remote level indication in the case of power boilers with all drum safety valves set at or above 400 psi. When both remote level indicators are in reliable operation, the remaining gage glass may be shut off, but shall be maintained in serviceable condition".

"When the direct reading of gage glass water level is not readily visible to the operator in the area where immediate control actions are initiated, two dependable indirect indications shall be provided, either by transmission of the gage glass image or by remote level indicators".

The Fossil Aquarian 3000Plus was designed to satisfy the described code requirement. An Aquarian installed as one of two remote indicators along with the required gauge is shown. A duplicate Aquarian can be used as the second remote indicator. The Aquarian column with probes provides remote indication and it also acts as a stabilizer for the gauge.

ORDERING

Request Form # 9340-1204

Water column to be certified in accordance with ASME* Section I.

DISTRIBUTED BY:

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JUNE/03 9340-1104