

Engineering Specifications

Dual conductivity/pH calculated transmitter Polymetron 9123

General

The transmitter shall measure conductivity on two channels with selectable units for conductivity and/or resistivity.

The transmitter shall deliver the pH through the measurement of two conductivity probes placed before and after an external cationic resin bed.

The transmitter menu should allow for the choice of the water chemistry being used: NaOH, NH₃ or ethanolamine

Enclosure

The 9123 transmitter shall have a NEMA4X, IP65 certified enclosure in aluminum and be supplied with a universal mounting kit for surface, panel and pipe mounting.

The transmitter shall be ISO 9001-2000 manufactured, be provided with a certificate of calibration and comply with CE and UL compliances.

Display

The analyzer shall have a graphical dot matrix LCD display with 80 x 64 pixels and LED backlighting. The main display shall be 34 x 67.4 mm (1.3 x 2.7 in) with 5 lines of 13 characters.

Display information

The display shall show the calculated pH alone or combined with conductivity of channel 1 and channel 2.

Simultaneously main displayed information shall contain measure, temperature and 4 relay alarms status. Auxiliary displayed information shall be available without measurement interruption through a "one button" operation and provide the complete view of the analyzer status (alarm assignments, analog output setup and parameters, electrodes polarization information).

User interface

The analyzer shall have screens for transmitter operation in six languages (English, French, German, Spanish, Dutch and Italian).

Calibration modes

The 9123 shall have two main calibration methods: Electric in two point with a reference resistor and air, 1 point with external standard (slope only) and 2 point with external standard + air.

Calibration data

The analyzer shall have a calibration logbook, recording data of the last two calibrations (date, value, zero).

Security

The analyzer shall have three password protected access levels for transmitter calibration, programming and servicing.

Alarms

The analyzer shall have 4 alarm relays and settings for 3 main parameters:

- limits (cond, pH calc, °C) including delay, hysteresis and normal relay status
- system alarm
- choice between a cond limit or a time (min)

Engineering Specifications

Outputs

The analyzer shall have two sets of isolated analog outputs. Each set shall be configured in 0 or 4-20 mA. Each output set can be assigned to the channel 1, channel 2 or calculated pH with averaging possibility.

The user shall be able to configure any data scaling in linear, or bi-linear mode within the measuring range. Each output shall be configurable to report event such as calibration, manual maintenance, system alarms within the three possibilities of "live" (signal tracking), "last" (on hold to the latest value measured) or "preset " (set output on any user-configured-value between 0 and 21mA).

The transmitter shall have both possibilities of adjustment and simulation of the analog output value.

The Profibus DP shall be available as an optional feature.

Diagnostic / service tools

The transmitter shall have following diagnostic functions:

- system alarm with external relay activated when open or short circuit with the PT100, the measured cond is above or below the measuring range, when the electrode polarization is too high.
- default values download
- a resin management function giving the resin autonomy depending on flow, resin exchange capacity, volume and water chemistry conditioning concentration.

Conductivity electrodes

The electrode constant shall be determined to suite the requirements of ISO7888 and ASTM D5391 regulations.

Ultra pure water specific electrode shall be made in electro polished 316 L stainless steel, have a rugosity $Ra < 0.4\mu m$ including a quality certificate.

A built-in temperature sensor (Pt100, grade A) shall be integrated in the electrode for accurate temperature compensation.

Model identification

The transmitter shall be Polymetron model 9123 transmitter.