ProAm Cl^- Chloride Analyser

The ProAm Cl^- is a compact, continuous on-line instrument reporting Chloride (Cl^-), using a recognised ISE methodology. The analyser incorporates a simplified design with particular emphasis on reducing running costs and optimising response time. The low purchase cost and small footprint also reduces the cost of installation.

Typical applications:

- Final effluent discharge to river compliance
- Trade discharge compliance
- Surface water spill detection
- Point source pollution investigation
- Potable water production intake protection
- Continuous / semi-continuous monitoring

Features:

- On-line continuous sample measurement
- Auto-span calibration
- Variable sequence timings to suit application
- User friendly internal layout simplifying maintenance
- Low cost of ownership
- Automated, programmable, cleaning cycle

Outputs:

- Isolated 4-20 mA (max 500 ohms load)
- 2 alarm set points, for threshold alarm levels
- No-sample alarm
- Common utility alarm relay for various conditions
- Optional RS232/485 digital O/P

Operating Options:

- Continuous or periodic sampling. The instrument can be set to measure for a specified time and then enter a “sleep” mode for a set time and then repeats the sequence.
- “Sleep” mode from a triggered signal. The instrument can accept a signal from a PLC to start measurement or from a float switch positioned in a tank / channel, to detect when sample resumes allowing sampling and measurement.

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Measuring Principle

The analyser comprises of an Ion Selective Electrode (ISE), reaction vessel, peristaltic pump unit and microprocessor controlling electronics.

The chloride electrode is combination electrode that measures the free chloride ions in liquids. An Ionic Strength Adjuster (ISA) may be required for low conductivity applications. The ProAm analyser can automatically add the ISA reagent to the sample if required. The electrode potential changes logarithmically according to the level of chloride in the sample.

The ProAm analyser provides an automated system for drawing in a constant sample and ISA reagent with timed two point calibration and system wash cycles. The sample passes through a heater coil, which is held at a constant 45 degrees C and delivered, to the reaction vessel. There is an air chase to ensure thorough mixing and to prevent fouling of the sample line and reaction chamber. The reaction vessel has an overflow port maintaining a constant liquid level. Where the system changes mode the controller will open the bottom drain to allow the vessel to be flushed, combined with regular wash cycles this minimises the build-up of solids or bacteria in the system.

The instrument can be ranged within 0-35,500 mg/L free chloride as required. Calibration takes place at two points, low and high (one decade apart). The high calibration point is equivalent to the upper point of the scale and the low is one decade smaller. For example, a range of 0-100 PPM would have a calibration standard of 10 and 100 PPM. The chloride probe sensitivity will decrease with age and an alarm can be set to indicate a low span calibration.

The instrument is designed to run as an automatic analyser but manual intervention may be initiated from the tactile keypad. The instrument may be configured for continuous or interval measurements. The instrument may also be configured for an automatic acid clean (to remove any lime-scaling or biological fouling).

The sample pressure to the analyser should be less than 3psi (0.2 bar) and a sample temperature less than 40 ^{o}C. The particle size in the sample to be analysed should be less than 50 micron. Appropriate filtration should be employed. A full range of sample filtration, acquisition and bespoke engineered systems including secondary enclosures, are available from PPM to suit various applications.

Specification

- **Measurement range user configured 20 to 35,500 PPM as Cl^-**
- **Resolution 0.01 PPM**
- **Detection Limit 1.80 PPM Cl^-**
- **Response Time T90 from 2 to 3 minutes**
- **Accuracy better than +/- 4% of the instrument range & relative to calibration**
- **Typical ISA consumption (where used & strength dependant) 10L every 36 days**
- **2.5L High/Low standard every month**
- **5.0L Cleaning solution every 4 months**
- **Analyser Dimensions 500(h) x 500(d) x 300(w) mm**
- **Weight 30 Kg**
- **Enclosure protected to IP54**
- **Power Supply 100 to 240 VAC 50/60 Hz <50 Watts**

PPM is committed to continuous product development; the right therefore is reserved to change the specification without notice.

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