EMC News

September 2006

Endress+Hauser and EMC
Your full range instrumentation partner in Water and Wastewater

EMC are delighted to once again be exhibiting at the NZ Water and Wastes Association's Annual Conference and Expo.

The conference this year is being held at the Christchurch Convention Centre, from 11th - 13th October.

Our display stand features a hands-on demonstration of many Endress+Hauser instruments that are particularly suited to the water and wastewater industries.

Endress+Hauser - a full package

E+H are a major supplier worldwide to the water and wastewater industries and, together with EMC, offer a full-basket of instruments from a single source, with the ability to be your Main Instrumentation Vendor.

Their product groups cover the instrumentation requirements for all WTP or WWTP measuring and control points, including flow, analysis, level, pressure, temperature and data aquisition.

Recognised as leaders and innovators, E+H invest heavily in research and development. Recent low maintenance developments for the water and wastewater industries include Turbidity and Memosens pH Systems as well as the new Prosonic S Level Transmitter.

Endress+Hauser has many successful references in NZ and this Newsletter highlights a variety of their products and typical applications.

In addition to E+H, EMC also specialise in Weighing Systems and Unitronics OPLCs. Combining this with EMC's product, application and industry expertise makes us your ideal instrumentation partner.

Turbidity/Suspended Solids Measurement

Transmitter

Liquisys M CUM 223/253 Turbidity and Suspended Solids Transmitter can be adapted to a wide range of needs.

The basic version, which provides simple measuring and alarm signalling functions, can be equipped with additional software and hardware modules to match specific applications. Retrofitting is also possible.

The logically arranged menu structure with plain text and large two-line display, enables easy instrument configuration.

Features include ultrasimple calibration with user samples, alarm signalling for calibration errors and automatic sensor self-recognition with calibration data transfer.

Sensor

TurbiMax W CUS 31/31-W is a process and immersion Sensor for Service Water and Solids Content Measurement with applications in:

- Potable water / filter monitoring
- Filter backwash / load monitoring
- Control of clear rinsing cycles
- Recycling of industrial water

It can be directly installed in pipes and features include commissioning without formazine, factory lifetime calibration, measurement under pressure to avoid degassing and a scratch resistant sapphire measuring windows.

A special flow assembly for the turbidity sensor is also available - *pictured in installation photo above.*

Cleaning Assembly

Turbidity measurement may require regular sensor cleaning.

The CleanFit CUA 451 manually-operated Retractable Assembly permits simple and safe sensor installation and removal, for inspection and cleaning, without interrupting the process.

The assembly is safe up to 10 bar and can be operated manually up to 2 bar.

More information on Turbidity?

Circle Enquiry No:
Liquisys M CUM: 901
Turbimax W: 902
CleanFit: 903

Contact: Mark Armstrong

EMC

The Instrumentation & Weighing People

www.emc.co.nz

pH Measurement

Transmitter - Liquisys M

The Liquisys M CPM223/253 pH/ORP Measurement Transmitter is designed for analogue sensors, digital pH sensors and for ISFET sensors.

The modular design of the Liquisys M allows easy adaption to customer requirements.

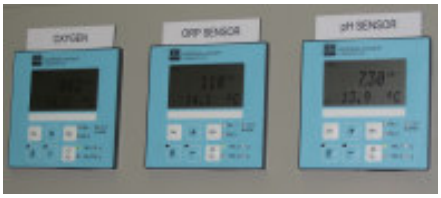
Starting with the basic version for "measurement and alarm generation", the transmitter can be equipped with additional software and hardware modules for special applications. These modules can also be retrofitted.

Liquisys M (left)

Liquiline M (below)

Key features:

- simple to operate: clear menu structure with plain language for easy configuration
- two-line display allows simultaneous display of measured value and temperature
- ultra simple two-point calibration via the CAL key
- sensor check system for pH glass and reference
- live check of the sensor



Recent Liquisys M Installation for Dissolved Oxygen, ORP and Memosens pH

Transmitter - Liquiline M

Liquiline M CM42 is a modular two-wire Transmitter for all areas of process engineering.

It is designed for operation with all types of pH sensors (glass, ISFET, digital sensors) and conductivity sensors.

Key features:

- large high-contrast display & alarm LED
- robust, corrosion-resistant plastic or stainless steel housing with membrane keypad
- user-guided commissioning, graphic display and plain text guidance
- with Memosens technology, a calibration in the plant is not required
- predictive maintenance system detects when a sensor has to be cleaned, calibrated or replaced
- FOUNDATION FIELDBUS, PROFIBUS and HART fieldbus protocols

Memosens digital pH sensors

Endress+Hauser have opened a new era in pH measurement with the Memosens digital pH electrode:

- Integrated memory in the electrode for storage of calibration data
- Contact free sensor connection by inductive coupling
- Error message if electrode disconnected
- Auto sensor recognition

It is now possible to pre-calibrate pH sensors and have them ready for installation when required.

Memosens can be changed in a matter of seconds with minimum down time and calibration data is automatically transferred to the transmitter and used to calculate the current pH value.

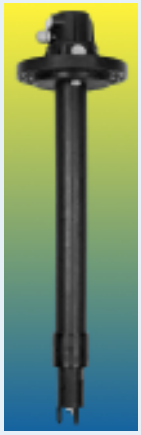
A key feature of Memosens is the non-contact inductive electrical connection between electrode and cable that elimates measurement errors caused by contamination and moisture in traditional systems.

The bayonet coupling and inductive connection system means that replacing a sensor in wet or dirty conditions is no longer an issue.

pH electrodes with Memosens technology

Immersion & process assembly

The immersion and process assembly DipFit W CPA 111 is used for simple installation of sensors in waste water / water treatment as well as process applications.



It is designed for use in open channels, basins and tanks and is suitable for use with elevated pressures of up to 4 bar.

The bayonet mounting method allows electrodes to be removed and installed quickly and conveniently.

The Chemoclean chemical electrode cleaning system is easily integrated.

Automatic Cleaning System

Wherever pH, dissolved oxygen or turbidity are being monitored continuously, the proven Chemoclean CYR 10 / CYR 20 Spray cleaning system guarantees long life and excellent measuring reliability combined with low maintenance overheads.

In order to guarantee measurement reliability in many applications, the maintenance-free Chemoclean system is indispensable.

Chemoclean provides chemical-saving cleaning with user-adjustable programme and "cleanser saving function".

Flow Assembly

The flow assembly FlowFit P CPA 240 is intended for the installation of pH, redox and temperature sensors in pipes.

Benefits at a glance

- simple installation and removal of the electrode holder (e.g. for calibration)
- three mounting positions for sensors and cleaning
- flexible connection to the process by various connectors and installation versions
- suitable for use at high pressures and temperatures (up to 10 bar and 150°C)
- integrated sampling connector

More information on pH?

Circle Enquiry No:
Liquisys M CPM: 904
Liquiline M: 905
Memosens: 906
DipFit W: 907
Chemoclean: 908
Flow Assembly: 909

Contact: Mark Armstrong

Flow Measurement

Proline Promag Magnetic Flowmeters

Endress+Hauser are the world's largest manufacturer of Magnetic Flowmeters and the Proline Promag 50W is specifically designed for bidirectional flow measurement in water and wastewater applications:

- Drinking water
- Wastewater
- Sewage sludge

It economically provides a high degree of accuracy and reliability for a wide range of process conditions .

The Promag 50W has an operable flow range of over 1000:1 and incorporates E+H's easy to use interface with 3 operator push-buttons and LCD text display for programming, flow rate and totaliser.

Other features and benefits

- liquids with min conductivity 5 µS/cm
- pipe sizes from 25-2000mm dia with hard rubber or polyurethane linings
- Current output for displaying flow
- Pulse output for totalising or status alarm. e.g; error messages, empty pipe detection, flow direction, limit values
- Optimum process control based on an accuracy of ±0.5%
- Deployment in potable water systems - lined measuring tubes with approved materials (KTW, NSF, WRC etc)

Proline Promag 50W Flowmeter

- Flange process connections standard
- Deployment in difficult conditions (e.g. in shafts, vibrations or permanently under water) - the IP68 sensor can be installed separate from the transmitter
- Service-friendly - HART, FieldTool and FieldCheck provide support right down to device verification without the need for sensor removal

Prosonic S

Level Measurement and for Flow in Open Channels / Weirs

Designed for heavy duty flow and level measurement applications, Prosonic S incorporates hermetically welded ultrasonic sensors, pre-programmed channel and weir configurations as well as pump control function.

It is perfectly suited for Rake / Pump control in WWTPs or for flow measurement in open channels and manholes, with up to 2 sensors.

Prosonic S: 5 Sensor models and 2 Transmitter housing options

The FMU90 Transmitter is available as top-hat rail mounting or in a robust IP66 field housing. Operation is easy via the menu-guided display or the supplied ToF Tool operating programme.

Commissioning is simple and safe with automatic sensor detection. The on-site Envelope Curve enables easy diagnosis.

Outputs include up to two 4-20mA (HART), Profibus DP and 1, 3 or 6 relays.

Five IP68 rated Sensor models are available with operating ranges up to 25m in liquids and 70m in bulk solids.

T-trend Flow monitor for liquid and gas

Recent T-trend installation

T-trend employs thermal technology as a well established operating principle for the flow monitoring of Liquids and Gases.

It is suitable for nominal pipe diameters DN25 to DN1000, has a wide dynamic range and is available with a wide selection of Process Connections.

As there are no moving parts, maintenance requirements are minimal.

Typical water treatment applications:

- Status indication of valves in water distribution systems
- Chemical dosing
- Monitoring Air to aeration basins

More Flowmeter information?

Circle Enquiry No:
Promag 50W: 910
Prosonic S: 911
T-trend: 912

Contact: Chris Gailer

Typical Level Measurement Applications

Prosonic Ultrasonic System with Foundation Fieldbus

Levelflex Guided Radar in Activated Sludge Reactor

Pump Station Level Measurement with Ultrasonic (in orange pipe)

Dissolved oxygen measurement

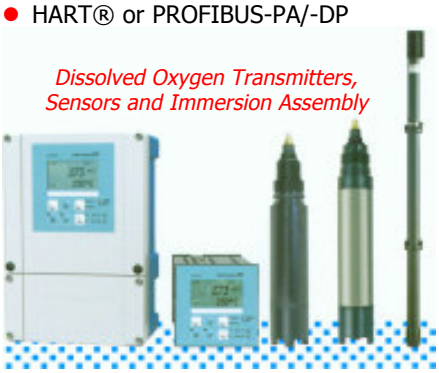
Transmitter

The modular design of the Liquisys M COM223/253 Dissolved Oxygen Measurement Transmitter allows easy adaption to a variety of customer requirements.

Starting with the basic version for "measurement and alarm generation", the transmitter can be equipped with additional software and hardware modules for special applications.

Key features:

- field or panel-mounted housing
- suitable for analogue & digital sensors
- simple handling with a logically arranged menu structure and simple single-point calibration in air, air-saturated water or in the medium
- additional contacts for use as:
  - limit contacts (also temperature)
  - P(ID) controller
  - timer for simple rinse processes
  - cleaning with Chemoclean
- process monitoring & sensor live check
- HART® or PROFIBUS-PA/-DP



Dissolved Oxygen Transmitters, Sensors and Immersion Assembly

Sensor

The Oxymax W COS61 Optical Sensor provides continuous measurement of the concentration of dissolved oxygen in many areas of water management:

- Sewage treatment: regulation in the activated sludge basin for a highly efficient biological cleaning process
- Water monitoring: in rivers, lakes or seas as a water quality indicator
- Water treatment: for status monitoring of drinking water

Key features:

- digital signal processing:
  - calibration data saved in sensor
  - high degree of EMC protection
- measuring range 0 to 20 mg/l
- extended maintenance intervals and long-term stability
- intelligent self-monitoring guarantees reliable measured values
- no flow needed - measurement possible in still water

DO Immersion Assembly

Immersion Assembly

The CYA611 Dipfit immersion assembly is designed for use in open basins and channels.

The assembly ensures that the sensor is protected and only the sensing parts are in contact with the medium.

With a length of 1630mm, various mounting options are possible.

More information on DO?

Circle Enquiry No:
Liquisys M COM: 913
Oxymax Sensor: 914
Immersion Assembly: 915
Contact: Mark Armstrong

Hydrostatic Level Measurement

Waterpilot rope probes are compact devices suitable for level measurement in fresh water, wastewater and saltwater. The small diameter of Waterpilot enables application in deep wells and bores. They feature highly accurate and long-term stable ceramic pressure sensors for reliable and safe measurement.

Waterpilot features substantial mechanical and electrical stability with guaranteed absolute tightness and resistance to climatic conditions. Its small diameter, integrated temperature sensor and drinking water certification makes the FMX167 ideal for applications in fresh and drinking water.

The flush mounted ceramic sensor version ensures safe operation in sludge applications.

More Level Measurement Applications

Prosonic Ultrasonic System on WTP Sodium Hypochlorite Tanks

Commissioning of Micropilot Radar and Prosonic Ultrasonic Systems on WWTP Lime Batching Tank

More information on Level?

Circle Enquiry No:
Hydrostatic: 916
Ultrasonic: 917
Levelflex Guided Radar: 918
Micropilot Radar: 919
Contact: Howard Berry

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