



The Urban Waste Water Treatment Directive

and instrumentation from ABB

The government's statutory deadline for the completion of the "appropriate" treatment of secondary discharges is 2005. Which in effect gives the industry just four years to complete its programme.

The targets that have been set are stringent and there is the additional burden that the government has stated that it wishes the management of the programme to be more transparent than hitherto. The Urban Waste Water Directive aims to protect surface inland waters and coastal waters by regulating collection and treatment of urban waste water and of certain biodegradable industrial waste waters. Depending on the sensitivity of receiving waters, the Directive requires secondary biological treatment prior to discharge. Although some emissions may require tertiary treatment for discharges to water bodies are or are likely to become, eutrophic.

In broad terms, ministers expect that chemical analytical technology will be the main method to

be deployed to analyse and monitor levels of nominated chemicals such as phosphorous, nitrogen and nitrates. They also expect water companies to make a significant investment in this technology.

In addition DEFRA through the Environment Agency, has issued guidelines on the issue of measuring and monitoring effluent flows at sewage treatment works.

Although the Environment Agency will audit the performance of water companies in these areas, the government will abide by the principle of self-monitoring. This puts the onus on the water companies to ensure that the instrumentation they use is both competent and cost-effective.

As the largest and most experienced analytical and flow measurement partner to the UK water industry, ABB is well placed to advise on the most efficient and cost-effective solutions and to install, commission and configure the most appropriate products.

- Advise™
- Analyze™
- Field™
- Measure™
- Operate™
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instrumentation

COMMANDER™

PC Configuration Software - CD-ROM
An easy-to-use package that demonstrates how the **COMMANDER PC** Configuration Windows™ - based software allows speedy configuration of all **COMMANDER** controllers and recorders via a PC. This CD also provides full specification details on the **COMMANDER** and **DATUM** ranges.

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New Updated Flow Utilities - CD-ROM

Everything you need to know about ABB's flow capabilities in one handy new package. A comprehensive and valuable review of products and applications, the CD-ROM allows you to select the right ABB flow product for your application. New special features include, an installation guide, pressure drop tables as well as steam and corrosion tables.

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Instrumentation Solutions

The quarterly magazine from the Instrumentation and Analytical Groups of ABB

A larger product portfolio, wider application expertise, increased engineering capability, new technology and that is just the start. Every quarter Instrumentation Solutions will be highlighting new developments and innovative application solutions. Keep up to date. Stay informed.

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Flowmeter Installation Wall Chart

Essentially, an at-a-glance guide to flowmeter installation. This comprehensive guide covers all major flow measurement techniques and includes generic information on key factors such as minimum pipe length, piping connections, meter orientation and ancillary equipment requirements.

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Flowmeter Selection Wall Chart

Your immediate guide to flow measurement techniques and applications. This easy-to-use wall-chart explains thirteen flow measurement techniques covering virtually all applications areas. It matches the right flowmeter to an application and in an unbiased analysis details the advantages and limitations of each flow measurement technique.

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Product Literature

Literature is available on all the products featured in this publication. To receive the literature appropriate to your needs simply tick the relevant box on the reply-paid card.

New literature is available covering ABB's entire ranges of:

- **Recorders and Controllers**
- **Field Instrumentation**
- **Total Flow Capability**
- **Water and Industrial Analysis**



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Operate[®]

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ABB adding even more power to its range of solutions for the **water** industry. ABB remaining constantly alert for new ways of delivering the solution you need. ABB – always on your side, always at your side.

Innovative solutions – unparalleled knowledge of your industry and your needs – total support.

AquaMaster™

Single Solution for the Water Industry

Advanced ABB technology in a revolutionary single instrument providing a total water management solution for revenue generation, district metering, water distribution, customer billing, leakage control and treatment works. Now, thanks to AquaMaster even the lowest of low flows – including low night-time flows – can be measured, increasing revenues.

- Improved revenue recovery – conforming to class B meter applications
- Low end accuracy for low night flow measurement – 1000:1 dynamic range
- Integrated flow and pressure logging
- Reduced installation costs - battery powered
- Fully programmable inbuilt tariff facility

Flowmeters Indisputably the Greatest Choice.

Including MagMaster™ the water industry standard and incorporating the AquaProbe range, ABB offers the widest choice of efficient and effective flowmetering solutions for applications in the water industry.

MagMaster™ Flowmeters

Robust design with a multitude of features developed for the water industry.

- A metering range of 1500:1 means minimal flow down to virtual zero rates to be measured with an accuracy of ±0.15%.
- Lower maintenance costs with new software package for remote monitoring diagnostics
- Two accredited, certifiable UK flow rigs

AquaProbe II

Insertion Flowmeter

A battery powered, electro-magnetic insertion flowmeter offering an economical alternative to in-line flowmetering. The "hot tap" capability enables installation without interrupting the normal water supply.

- No major excavation or disruption during installation
- Suitable for permanent or temporary applications (as a survey meter)
- Minimal maintenance

Sensyflow VTS

For direct mass flow measurement of gases with no additional pressure and temperature correction. Sensyflow has a high degree of accuracy with a large measuring range and minimal pressure loss. Ideal for measuring vitalsisation air and Bio gas production

- Fast response - T63 response times down to 200 milliseconds, typically 5 times faster than any other flowmeter of its type
- No plant control oscillation
- Up to 1.5m insertion length
- Zone 0 approval



PARTI-MAG II

The Waste Water Specialist

The unique ABB PARTI-MAG II measures the flow in full as well as partially full pipelines. Used in free surface flow pipelines for metering the rate of waste and mixed water, flow rate measurements in clarifier systems, waste water treatment systems, landfills and canal network management.

- Low cost of ownership – maintenance free
- Long operating life – no moving parts
- No flow restrictions means continuous operation



CalMaster In Situ

Calibration Verification system

Enables water engineers to carry out easy and cost-effective performance checks – without interrupting the continuity of supply or the removal of the meter from the line.

- Requires no direct access to the flowmeter sensor – underground flowmeters can be tested from the surface
- Provides a health check on the entire flowmeter system including, sensor, transmitter and cabling
- An approved method for verifying permanently installed flowmeters



8232 On-line Ammonia monitor

The 8232 system is designed for use in a wide range of applications including potable water, compliance monitoring of final effluent, for river intake protection and environmental monitoring.

- Low operational costs – long life pump tubing and minimal reagent consumption keep maintenance costs to an absolute minimum
- Automatic two-point calibration – validates the correct operation without the need for manual intervention
- On-line diagnostics – automatic confirmation of integrity of performance



8242 On-line Phosphate Monitor

The ideal system for compliance protection of waste water and monitoring the efficiency of dephosphatisation.

- Simple to operate, the on-line diagnostics provide advanced warning of loss of sample or reagents
- Automatic colour compensation – accurate performance in demanding applications
- Multi-stream switching option – enables up to six streams to be monitored on one analyser giving a significant saving in capital expenditure



7320 Series

Organics Analyser

The 7320 Series Nitrate Analyser has made rapid inroads into a number of applications within the water industry. It has provided huge operational cost savings by providing reliable feed forward control on coagulation control and improving water quality at the same time. This new approach enables operational cost savings to be maximised by reducing chemical consumption, minimising sludge disposal costs and reducing the risk of cryptosporidium. This same technology is being used for precursor THM development on final drinking water and as a surrogate colour measurement on river intakes.

- Automatic Turbidity Compensation – eliminates the need for expensive and maintenance prone filter systems

- Environmentally friendly with low running costs – no chemical reagents required and reduced running costs

- Significant coagulant chemical savings as much as £80,000 pa
- Improved water quality



7330 Nitrate Analyser

Designed for potable water, river water and waste-water applications. A rugged maintenance free analyser.

- Reagentless operation – significant operational costs reduction
- Automatic turbidity/organics compensation – reduced maintenance and installation costs – lower capital costs
- Automatic cleaning – additional maintenance cost savings



4670 Turbidity

Monitoring Systems

For turbidity monitoring in raw water, potable water, sewage and effluent discharge. The 4670 combines the latest photodiode technology with the power and reliability of the 4600 Series transmitter.

- Eliminates the need for hazardous chemical standards and provides dry calibration for BOTH span and zero
- Prevents fouling - automatic cleaning fitted to all units
- Lower costs – inlet, outlet and drain valves are fitted as standard



Multi Parameter

Water Quality Stations

- For continuous online measurement – essential for intake protection to provide advanced warning of pollution incidents
- Data acquisition – either local logging or transmission to a central control room providing up-to-the-minute information where it is needed
- Custom-built to each user's requirements – for waste water discharge, river intake and river quality monitoring

4600 Series

Dissolved Oxygen, Conductivity and pH/Redox Analysis

High specification analysers – unrivalled performance in a compact, cost-effective package. Rugged, reliable and safe in harsh environments.

- Economical operation – easy to install and use
- In-house sensor design – total sensing capability providing solutions for virtually any application
- Improves operational costs – reduced power consumption – protects plant life – minimises chemical dosing needs



Ultrasonic

Level Measurement

A major breakthrough in ultrasonic level measurement and pump control that meets the diverse needs of the water industry. This complete family is suitable for liquids, slurries and solids and any vessel shape.

- Datum U100 standard pump controller for emptying or filling liquids and slurries with in-built strategies to vary pump duty and stand-by cycles
- Datum U120 level measurement system suitable for liquids, slurries and solids and can control up to five pumps with advanced capability to vary pump duty and stand-by cycles
- Datum U160 is dedicated to open channel flow for weir, flumes and non-standard channels that includes five pump routines and instantaneous flow calculation to BS3680



ASL 800

Level Transmitter

Combines a proven, mature technology with trend setting microprocessor controlled electronics. With a high accuracy and virtually complete compensation for ambient influences, the ASL 800 is an efficient, intelligent element providing high levels of functionality.

- Suitable for a wide range of liquids
- High overload capability
- High turndown ratio 30:1



Differential Pressure – Level - Gauge and Absolute Pressure Transmitters

600T EN Series – Differential Pressure and Level

- Your choice of accuracy – 0.075% or 0.15%

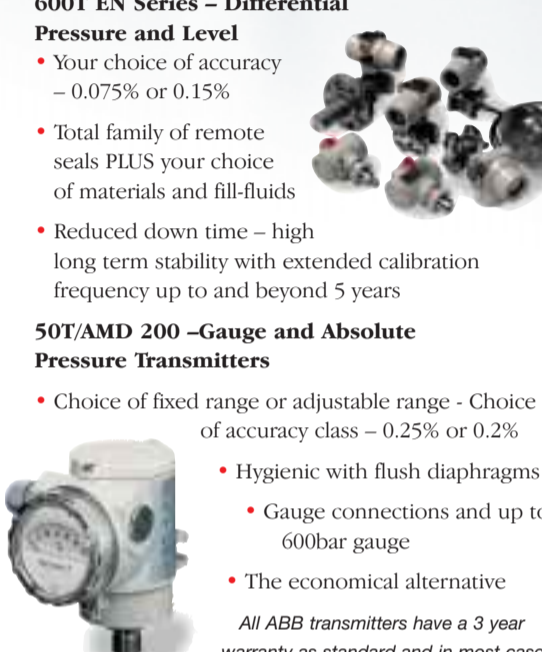
- Total family of remote seals PLUS your choice of materials and fill-fluids
- Reduced down time – high long term stability with extended calibration frequency up to and beyond 5 years

50T/AMD 200 – Gauge and Absolute Pressure Transmitters

- Choice of fixed range or adjustable range - Choice of accuracy class – 0.25% or 0.2%

- Hygienic with flush diaphragms
- Gauge connections and up to 600bar gauge
- The economical alternative

All ABB transmitters have a 3 year warranty as standard and in most cases can be delivered within 24 hours.



TZID

Control Valve Positioners

Over 750,000 ABB smart positioners have been supplied world-wide. These intelligent positioners automatically adjust the valve position to allow for wear in the valve.

- Intelligent valve positioners with approximately 3 minutes from calibration and set-up time – fast auto-tune facility allows quick set-up on any valve.
- Makes any valve high accuracy and hysteresis free
- Both TZID & TZID-C have user freely configurable characteristic curve of 20 reference points
- Unrivalled vibration immunity of up to 10g at 20 to 80 Hz due to patented conversion principle
- Hart "smart" communications

Temperature Sensors and Transmitters

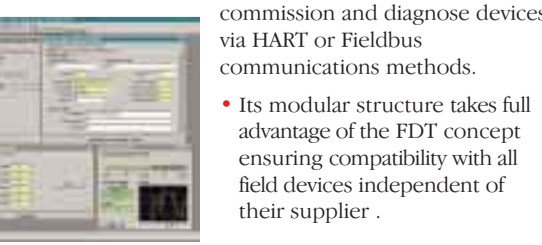
A comprehensive range of sensors and transmitters from ABB – for all applications in water. Over 25 million units installed world-wide – the industry standard

- Backed by detailed applications knowledge of your industry
- HART, PROFIBUS and FOUNDATION Fieldbus versions available
- UK manufacture means fast response to your needs and virtually instant availability

SmartVision

SMART VISION is your central tool to the management of all intelligent instrumentation and provides engineering, commissioning and maintenance functions independent of communications protocol or manufacturer.

- This single tool will allow you to set up, calibrate, commission and diagnose devices via HART or Fieldbus communications methods.
- Its modular structure takes full advantage of the FDT concept ensuring compatibility with all field devices independent of their supplier.



COMMANDER™ 360

¼ DIN Multi-Recipe Profile Controller

Ideal for abstraction control applications, the COMMANDER 360 is ideal for use in even the harshest environments – with a NEMA 4X/IP65 front face

- 20 profiles and up to 99 segments
- More functionality "per pound" than any other comparable controller
- Guaranteed ramp/soak with a dedicated ramp/soak display

COMMANDER™ 1900

Circular Chart Recorder

The COMMANDER 1900 is a fully programmable circular chart recorder with up to 4 process variables.

- Straightforward operator controls and robust construction make it ideal for applications in the water industry
- Advanced functionality is complemented by a powerful range of options
- Modular architecture gives a wide choice of hardware options – built to meet your needs



ScreenMaster™ 1000

Videographic Recorder

Building on the success of the revolutionary ScreenMaster 2000, this instrument offers simplicity without compromise and easy-to-use technology that is ideally suited for less demanding applications.

- NEMA 4X/IP66 front panel protection
- Windows™-based controls and dialogues and state-of-the-art flash internal memory
- 12 recording channels which will do the work of two similarly priced 6 channel instruments

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