



## SWAN ENVIRONMENTAL MONITORING SOLUTIONS



# Water Quality Monitoring Instruments

### OUR GLOBAL PARTNERS





## Total Organic Carbon (TOC) Analyzer

TOC is index of organic pollution in water. Extremely wide range from 4 µg/L to 25,000 mg/L for applications from ultrapure water to highly contaminated water.

The Analysis of TOC is a more rapid method for the determination of Organic load and thus has the potential for better early warning and pollution control management.

TOC Analysis is a practical alternative to COD for plant control Process management and monitoring of inflow and effluent in waste water treatment plants.

### TN Unit with TOC:

Analyze gas and solid samples as well as liquids with measurements over a wide range from 4 µg/L to 4000 mg/L, Simultaneous measurement of Total Organic Carbon & Total Nitrogen.

### SSM with TOC:

Combining the Solid Sample combustion unit with a TOC analyzer permits analysis of many solid samples in addition aqueous samples, including soil, sludge, and sediments.

### Applications:

- Wastewater management in accordance with ISO 14001
- TOC Measurement in Tap Water
- Water quality control in water purification plants and feed water
- Measurement of TOC in boiler water
- TOC measurement in soil, sludge and sediments
- Land fill leachate monitoring in ground water



## BOD System

- Maximum versatility for aerobic (BOD/OECD) and anaerobic degradation, Soil Respiration, Biogas determination
- Ease-of-use, Modular system
- Robust and long-term stable measuring principle – pressure measurement
- Easy switch to Echem parameters.
- Easy data acquisition via PC, With Bluetooth.



## BOD by DO Method

- Self-stirring dissolved oxygen sensor StirrOx® G for the measurement of the biochemical oxygen demand (BOD) according to the dilution method
- Permanent flow for accurate measured values with built-in stirrer
- Accurate results due to minimal use of oxygen
- Perfectly adapted to BOD measurement in Karlsruhe and Winkler bottles



## COD System

- Quick, easy and accurate
- Hg-free reagents also available
- Automatic Data Storage
- IP68 waterproof case
- Digestor with 24 round cells
- 8 stored programs for easy and fast operation
- 8 user-defined programs from room temperature/25-170°C with high temperature digestion



## UV-VIS Spectrophotometer

- photoLab® 7100 VIS: Range 320-1100 nm. Suitable for all routine measurements with test kits, in service labs, industry and R&D, wherever the UV range is not needed.
- photoLab® 7600 UV-VIS: Range 190-1100 nm. Ideal for additional self-control with optical reagent-free methods (OptRF) and UV-VIS procedures for many applications
- Well-proven Routine Analysis with Test Kits
- Pioneering OptRF: Optical reagent-free measurement of COD, NO<sub>3</sub>, NO<sub>2</sub> in UV-range
- Multi-Wavelength + Special Procedures
- Automatic cell & range recognition
- Faster Scans 700 – 2000 nm/minute
- Comprehensive programming options
- Spectral Analysis + Kinetics
- Applications From Water to Wine or From R&D to Production



## Colorimeters

pHotoFlex STD: From Water to Wine

- More than 150 programs for routine analysis
- Test kits for every demand: Vials, Powder Pillows
- Storage with ID number
- Datafilter for easy selection of data sets

pHotoFlex pH, ORP: Aquaculture needing NH<sub>3</sub> and CO<sub>2</sub>

- Electrochemical pH-measurement from pH 0–16.00
- Automatic Temperature Compensation (ATC)
- Redox Measurement
- 1-3 point calibration with calibration interval setting and calibration protocol

pHotoFlex TURB: with drinking water reliable pH+turbidity measurement

- IR light source acc. to DIN 27027/ISO 7027
- Turbidity measurement range from 0.01-1100 NTU/FNU
- Longterm stable AMCO Clear Standards with ±1% manufacturing accuracy
- The most versatile colorimeter for field and lab



## Handheld Meters - Analog

- Up-to-date multi-parameter instruments for analog sensors: pH/mV/ISE, conductivity and dissolved oxygen
- Simultaneous measurement and documentation of up to two parameters
- Robust and waterproof housing. Backlit LCD display
- Memory including 5000 GLP supporting records
- All conventional sensors connectable



## Handheld Meters - Intelligent Digital Sensors (IDS)

- Mobile Multi-Parameter measurement with IDS Sensors
- Up to 10 parameters with one instrument - pH / Oxi / conductivity / turbidity / DO / ORP etc.
- Rugged, dust and waterproof IP67
- Single-piece keypad with embossed keys for secure operation
- Triple, dual or single channel versions for all purposes
- Rechargeable battery operated - economic operation
- Wireless ready wherever cables are not suited
- Memory for large data sampling. USB communication



## Benchtop Meters - Analog

- 2-channel pH/ORP/ISE
- Memory 500 manual/5000 automatic recordings
- pH 1-, 2-, 3-, 4-, 5 point, WTW technical buffer DIN, NIST; + 22 buffer sets
- For direct measurement and incremental methods: known addition, known subtraction, sample addition, sample subtraction, blank value correction
- Pre-set ions: Ag, Br, Ca, Cd, Cl, CN, Cu, F, I, K, Na, NO<sub>3</sub>, Pb, S, NH<sub>3</sub>, NH<sub>4</sub>, CO<sub>2</sub>, ION
- Adjustable AutoRead criteria (low/medium/high)
- Optional built-in printer



## Benchtop Meters - Intelligent Digital Sensors (IDS)

- Multi-Parameter measurement in the lab with IDS Sensors
- Up to 11 parameters : pH / ORP / cond. / DO / ISE / turbidity
- Wireless or tethered – work according your convenience & use future options
- Triple, dual or single channel versions for all purposes
- USB communication for easy data transfer and firmware update
- Large memory for data sampling.
- Suitable for different applications with stand and power supply



## pH/ORP, ISE, Dissolved Oxygen, Conductivity: Sensors

High class sensors for pH/ORP, ISE, dissolved oxygen (D.O.) and conductivity for daily work, in the laboratory or in mobile applications. A variety of sensors support reliable and secure results in different applications.



### pH Electrodes

for all applications – digital and analog: wide options to choose from.



### Oxygen Sensors

From WWTP to beverages – digital and analog: Proven sensors for each application



### Conductivity Cells

Trace measurement, measurement of process samples – digital and analog: The right cell for each application.



### Process Sensors

Measuring sensors for monitoring of wastewater, surface water, drinking water and much more.



## Pocket Testers

- Various models to measure a Single or Multiple parameters.
- Parameters: pH, ORP, EC, DO, Total Chlorine, Fluoride, Salt, TDS, Temp.
- Built in Battery. Optional Memory storage. Large Display
- Reagents also available .



## Trimeter/Turbidity Laboratory Meter

Compact water analysis instrument designed for turbidity, Chlorine and color.

Meets USEPA & ISO design criteria as specified by USEPA method 180.1 & ISO.

It uses a tungsten lamp and meets the specifications of EPA 180.1 Data logging up to 4000 points with a date and time stamp — stored tests can be viewed on the meter or downloaded to a PC.



## Portable Water Analysis Laboratory

- Direct reading pre-programmed (More than 100) Photometer with an automatic set up.
- Quality pre-packed reagents. Longer shelf life. accurate results.
- Parameters: Turbidity, Total Hardness, Alkalinity, Chlorides, Fluoride, Iron, Nitrate, Manganese, Sulfate, Calcium, Magnesium, Res. Free Chlorine, pH, Cond.



## Multi Parameter Field Water Test Kit

- Easy to operate and comes with all necessary accessories and pre-packed reagents.
- Packed in sturdy z-box which can with stand conditions of field testing.
- Parameters: pH, turbidity, total hardness, alkalinity, chloride, DPD, Fluoride, Iron, Nitrate, Calcium, Magnesium.



## Rapid Total Coliform and E.coli Systems

### Rapid Qualification:

USEPA approved Presence /Absence and MPN enzyme substrate test. Provides 16-48 hour total coliform & E.coli determinations. Detects 1 MPN/100ml. Detects both MUG- & MUG+ E.Coli in single test. Uses reliable indole test.

### Rapid Quantification:

Offers high sensitivity, with a detection limit 1-1,600 MPN/100ml. Stand-alone device. The entire procedure involves only a few steps and can be done in less than one minute per sample.



## Rapid Bio Mass Detection System

- Accurately measures true living biomass concentration and health.
- Measures and differentiates between living biomass, dead biomass, and inert solids.
- Complete results within 5 minutes, allowing real-time assessment of bio-reactor efficiency and stability.
- Optimize treatment parameters & thus reduce operating costs.



## ATP+ADP+AMP Rapid Hygiene Monitoring

With ATP bioluminescence. Provides a simple rapid test method for monitoring degree of cleanliness, hygiene and risk and acts as first step to HACCP. One of the quickest and most useful methods of finding and tracking the source of bacteria that can contaminate food.





## Kinematic Viscometer

- 150 % higher throughput compared to manual glass capillary viscometers
- ASTM D7042 / D445 compliant results
- Operating time reduced from 30 min to <5min
- In-place filling, cleaning, and drying makes the instruments easy to use
- Error Free, Digital data handling and storage avoids data loss
- No bath, bath liquid, or counter cooler needed.



## Flash and Fire Point Tester

- Automatic Cleveland open-cup (CoC) flash point tester (ASTM D92, ISO 2592 etc.)
- Measures and describes the properties of a sample in response to heat and a test flame under controlled conditions.
- The flash point measures the tendency to form a flammable mixture with air while the fire point indicates the tendency of sustained burning.
- Suitable for flash & fire point testing of lubricants & bituminous material.
- Safety: automatically lights up the test flame, relights it, and suppresses the gas source at the end of the test



## Viscosity Meters

- Multi Speed Digital Rotational Viscometer.
- LCD screen displays measured parameters.
- Speed: 0.1~100 rpm.
- Equipped with many Pre-sets speeds
- ASTM Standard Spindle kit.
- Auto Range Function to determine the Maximum Viscosity with each Spindle / Speed Combination
- Error Message, Sound Alarm.
- Safety Protection Against Sudden Rises in the Power Supply.
- Applications: Grease, Paints, Food stuff, Paper making, Cosmetics, Chemical, Capsule stickness, Medicines.



## Auto Titrator

- High resolution pH/mV-electrode and temperature inputs for pH, ISE, redox (ORP) or photometric titrations
- Polarizable electrode input for set endpoint titrations ("dead-stop")
- Linear (fixed increment) and dynamic equivalence point titration mode
- Titration to pH/mV and  $\mu$ A-endpoint
- Manual titration mode and routine dosing tasks are also available
- Measurement and calibration with the highest accuracy
- Can store up to 50 user methods.



## Vortex Mixer

- Gentle mixing to re-suspending pellet.
- Variable speed upto 3300 rpm.
- Continuous-run or touch-activated run modes.
- Variable speed for gentle to vigorous mixing.
- Circular orbit. Minimal vibration. Ultra stability.
- Ideal for mixing solutions in test tubes or small flasks with circular, oscillating movement.



## High Quality Water Purification System

- Generates Ultrapure Water (Type I), Purified water (Type II) and Osmotized Water (Type III) independently from tap water.
- Meets USP and ASTM standards.
- Continuous, Volume & Time control modes of water dispensing.
- Automation of Instrument warns about the change of consumables as well as abnormalities such as inlet water cut, or malfunction of the measuring sensors.



## Laboratory Centrifuges

- Unbelievably quiet operation. High performance.
- Spin down function. Storage function.
- Locking mode. CE certified.
- Applications in Plasmid, DNA & RNA work, Proteing work, Cell culture, Cell harvesting, subcellular separations etc.



## Digital Muffle Furnace

- Patented Jog-Dial Control System and Digital LCD with Back-Light Function
- Exposed Heating Elements-type. with Digital PID Control.
- Short Heat-up Time. 4-Side Heating. Ceramic Fiber Plate. CE Certified.
- 3~63 Lit. capacity. Upto 1000°C
- For Ash-Determinations, Enameling, Fusions, Precipitate Drying.



## Hot Air Ovens

- Digital Fuzzy Control System Implementing Superior Temperature Accuracy
- Optimized Air Flow by Gravity Convection Mechanism
- Jog-Dial Control System. CE Certified
- Suitable for Drying, Baking, Conditioning, Curing, Pre-Heating and Aging
- The Best Temp. Uniformity & Accuracy by High Performance Heating Mechanism : 3-Side Heating.



## BOD Incubator

- Forced air flow. Patented Jog-Dial Control System
- CFC-free (R-404A) Refrigeration System
- Internet Connectivity with Wi-Fi
- Remotely controls the experimental equipment by building Smart-Lab™ System through WiRe™ App & web Service
- Compressor overload protection.
- Over Temperature & Over Current Protection, Sensor Error Detection and Leakage Breaking
- Applications: Animal/Plant Cell Culture, Constant Temp. Germination Test, BOD Test, etc.



## Homogenizers

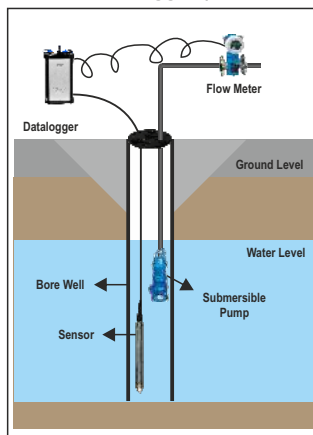
- Designed for Liquid and Tissue Samples, for All Dispersing and Homogenizing Applications
- High Efficiency Dispersing Tool made of Stainless-steel and PTFE
- Speed Range :27,000 rpm. Working Range 1 ~ 2,500ml
- Dispersing tools and Rotars available for different Volumes depending on the application.



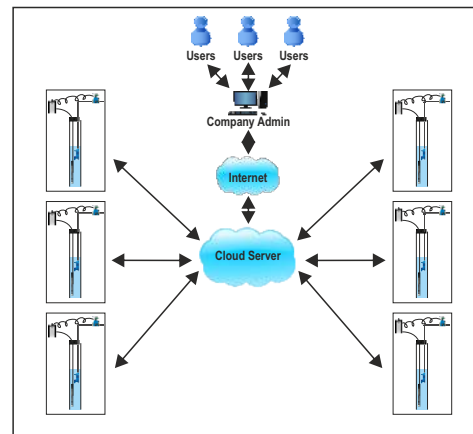
## Real Time Water Level Monitoring System



DWLR with Datalogger (Sample Setup)



Data Acquisition (Sample Set Up)



Digital Water Level Recorder (DWLR) is used to measure the level of ground water and surface water continuously on a real-time basis. Widely used in Ground water resources monitoring in Mines, Industries, Institutes, city flood control and city water supply and drainage, etc. for water resource estimation. Model SLL99 was designed and developed by Swan under Make In India (MII) program. We are the leading suppliers of DWLRs in India with over 14,000+ No.s Installations and have supplied under NHP & ABHY projects as well. SLL99 measures with high accuracy, stability and durability.

### Sensor Features:

- Titanium / other Construction. Good automatic control
- Fully sealed, submersible level transmitter with high accuracy.
- Uses highly reliable & stable pressure sensor, intelligent processing circuit, precise digital temp. compensation & linearity correction tech. .
- The water-proof cable connects with sealed housing.
- Integrated construction and standard output signal
- Compact size, light weight and easy installation and operation.

### Datalogger and Telemetry Features:

- With Inbuilt Telemetry Module for seamless data transfer
- For remote data acquisition through GPRS or GSM protocol.
- Data sent to a centralized data collection website.
- Capture data in digital (RS485 MODBUS, RS 232) format.
- Successfully deployed for varied applications such as Ground water level meters, weather data, river flow sensors, pollution data etc.



## Water Level Indicator

- Quick response circuit design, high detection speed, high sensitivity.
- Adapts to various environmental and regional water quality.
- Low power consumption. Battery-powered, Battery life 2 years.
- Cable has a ruler scale to measure the water level directly.
- Electrode oxidation rust prevention for long-term sensitivity.



## Flow Meter

- For volume flux measurement. Can be used for measuring forward flux and reverse flux.
- Good linearity, Good Sensitivity, High accuracy, low power consumption & Good low flow characteristics.
- Suitable for measurement of liquid-solid two-phase fluids such as sewage, slurry, pulp, coal slurry, pulp etc.
- Lining and electrodes can be chosen for corrosion resistance and abrasive resistance.
- EEPROM can protect parameter setting and cumulative values in case of sudden power outages.
- Dot matrix LCD display



## Open Channel Flow Velocity & Level Meter

- Has high-precision radar and ultrasound technologies.
- Contactless measurement of both the surface flow velocity and the fluid level.
- Integrated tilt sensor and Automatic tilt compensation allow simple mounting and ad-hoc use without requiring special calibration.
- Wide velocity range from 0.02m/s to 15m/s.
- Distance measurement range : 0.5, to 10m.
- Long range operation: up to 10m above water level.



## Continuous Water Level Monitoring Radar

- Universally implementable radar sensor for continuous level measurement of liquids under difficult conditions.
- Suitable for level measurement in storage containers, reactors and process vessels, even under difficult process conditions.
- Exact measuring results independent of pressure, temperature, gas and steam
- Maintenance-free operation through non-contact measuring principle





## River Water Quality Monitoring System : UV Fluorescence Technology



- Award-winning multi-parameter, real-time sensor platform (portable or permanent) that accurately and reliably measures various parameters like BOD, COD, faecal coliforms with UV Fluorescence Technology etc. in open channels for permanent and temporary applications.
- It is the world's first scientifically proven real-time sensor for measuring BOD in a wide range of applications.
- TLF (Tryptophan-like fluorescence): Optical signal associated with free amino acid/proteins and amino acids bound in microbial cells.
- A multiprobe that measures your choice of parameter, all in one package, that can deliver data in the toughest field conditions.
- It has been designed for its ease of use, reliable data and economical operation.
- Supplied with an integral wiper which cleans all of its sensors before every measurement cycle.
- Can be effortlessly integrated with telemetry/SCADA systems and other datalogging devices with external RS232 / Modbus / SDI12
- System is fully serviceable in the field, almost no maintenance
- Power Options : Internal lithium battery pack, external power source (mains or solar).
- Field-Proven Methods to Minimize Fouling
- A Data Display for Every Application and Budget

### Applications

- BOD Loading to Wastewater Treatment Works (WWTWs)
- Combined Sewage Overflow (CSO) event monitoring
- Point Source Pollution monitoring
- Faecal Coliform monitoring
- Efficiencies of Wastewater Treatment Works
- Diffuse Pollution Monitoring
- Groundwater Water Quality Monitoring
- Survey tool combined with Bluetooth®

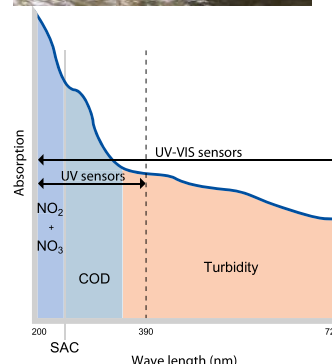
### Parameters:

- BOD/COD
- CDOM, TOC
- DO
- Pressure
- Chloride
- pH
- Temperature
- Optical Brighteners
- Nitrate
- Faecal Coliforms
- ORP / Redox
- Tryptophan
- Refined Oils
- Ammonium
- EC / Salinity / TDS
- Turbidity
- Crude Oils CDOM

## River Water Quality Monitoring System : UV-VIS Technology



- Measurement directly in the water body or with flow-through armature
- Measurable Parameters: Color, TOC/COD/BOD, NO<sub>3</sub>, NO<sub>2</sub>, TSS
- Reagent-free measurement
- Reliable and high accuracy by turbidity compensation
- Continuous, Digital, Compliant
- Multi-functional slide and shock-absorption-rings
- Robust materials such as Titanium and Peek
- Integrated ultrasonic cleaning minimal maintenance
- Spectral Range : 200-720nm for UV-VIS Sensors ; 200-390nm for UV Sensors



The spectral procedure has an additional advantage: the turbidity of the test sample, which affects optical measurements, is optimally compensated over a wide wavelength range. Moreover, the spectral measurement provides an optimal compensation of the influence of existing nitrate and nitrite for the COD measurement.

## Effluent Quality Monitoring System (EQMS)

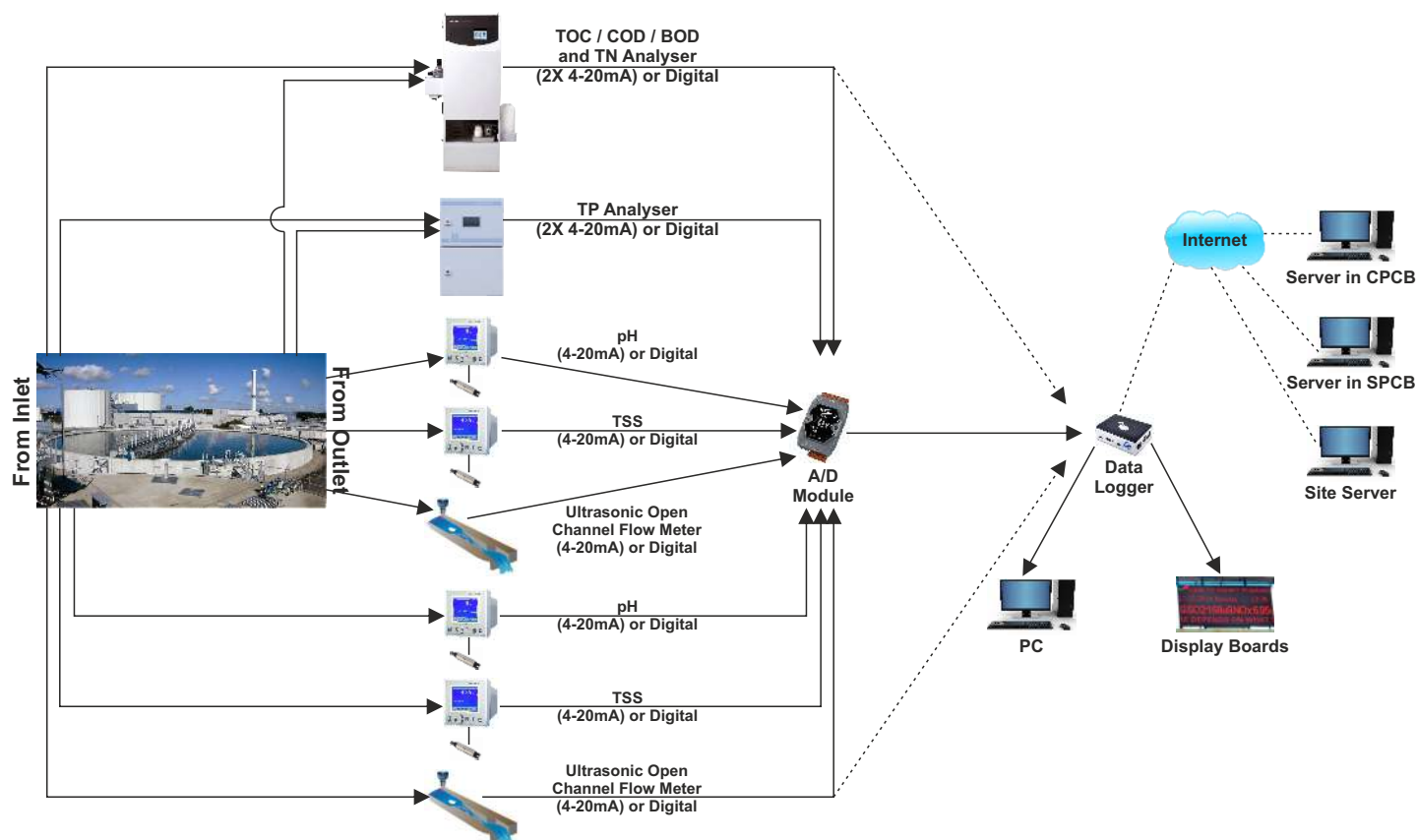
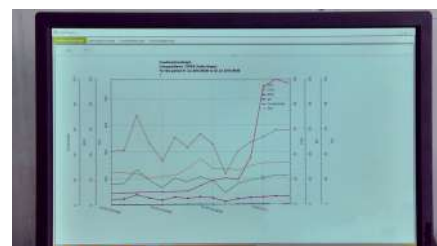
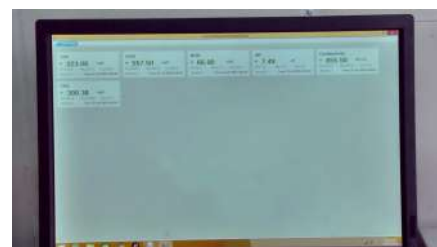
Effluent Quality Monitoring System (EQMS) is integrated with multi channel analysers which accepts sensors like pH, TSS, DO, Temperature, Flow etc., & analyzers like TOC, TP etc. with all options connected to data logging system and PC/client server.

### Turnkey Solutions:

- SWAN offers turnkey solutions for EQMS that span from design and detailed engineering, system integration, supply to installations, commissioning and uploading of data to PCB and company corporate servers.
- SWAN offers entire range of associated products as part of EQMS solution that include prefabricated shelter, UPS, PC, Display Boards, Networking Components, Wi-Fi units, Gateways, A/D converters etc.
- Requirements are thoroughly studied to identify the items needed & engineering carried out to bring out most economical and sustaining customized solutions.
- Dedicated trained and experienced service team for after sales support across India.

### Features:

- COD/BOD Monitoring using MCERTS Certified TOC Analyser (680°C Catalytic Combustion) which is in compliance with the regulatory methods specified in USEPA 415.1, ASTM 5310B, EN 1484 and CPCB.
- Uploading of data to CPCB, SPCBs, PCC and company Corporate Servers.
- Cloud server facility.
- Remote calibration facility.
- Monitor efficiency of ETP.





## Online TOC / BOD / COD / TN Analyzer

- Rapid method for determination of organic load and thus early warning and pollution control management.
- High performance on-line Total Organic Carbon (TOC) analyzer using the established 680°C Catalytic Combustion and Non-Dispersive Infrared (NDIR) method.
- Total Nitrogen (TN) measurement by 720°C Thermal decomposition / Chemiluminescence detection : as per EN 12260 & ASTM D-8083

### Applications:

- Practical alternative to COD/BOD for plant control, process management and monitoring of influent and effluent water in wastewater treatment plant
- Management of various plant waters. (i.e.: Washing, Rinsing, Cooling, Circulating, Boiler, Condensate, and other plant liquids)
- Monitoring of Surface Water (Rivers, Lakes and Streams)
- Water Quality Monitoring for regulatory reporting
- TOC/COD control for pharma effluent feeding to MEE (Multiple Effect Evaporators)



## Online pH, TSS / MLSS, Conductivity Analysers



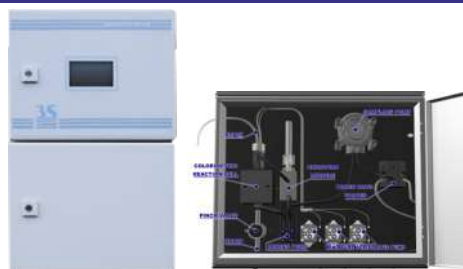
- Continuously measure pH, TSS / MLSS, Conductivity parameters
- Microprocessor based digital program controller.
- Automatic Cleaning Control (Air jet, Water jet) Function
- Isolated DC (4-20/0-20/0-24mA) output transmission
- Built-in backlight graphical LCD
- Manual/Auto calibration
- Temperature compensation
- Real Time Trend Analyzer Function
- CE Mark Accredited

## Online Ion Analyzer (Hardness, Chloride, Sulfide, Ammonium etc.)

- Replaceable Electrode Cartridges: Application Specific Solution
- Replaceable Electrode Cartridges: Low cost of Ownership
- Temperature range: 0° – 80°C solid state style, 0° – 40°C PVC membrane style
- 4-20 mA output with MODBUS RTU and Alarm Relays
- HART Communication



## Online Colorimetric Analyzer



- Measures Total Phosphorous (TP), Cyanide, Phenol, Cr-VI, NH<sub>3</sub>, Phosphate, Chlorine
- Based on Photometric principle
- Low reagent level alarm
- Automatic calibration / Validation / Cleaning
- Separate waste line for sample containing reagents
- Long autonomy, low maintenance & operating cost
- Dual stream, Easy installation, Robust
- Color touchscreen interface

## Optical Dissolved Oxygen Sensor



- Based on luminescent optical technology. Body in Stainless steel (316 L) or Titanium
- Measures accurately even under very low oxygen concentrations. No drift, Reduced maintenance.
- "Smart" sensor stores calibration and history data within the sensor. This allows you a "plug and play" system without re-calibration.
- Digital technology for optimized measures. Modbus RS-485. Can be connected to all devices commonly used (Datalogger, Controller, Automat, Remote System...).

## Contact SWAN ENVIRONMENTAL PVT. LTD.

Plot No: 922 & 935, Swami Ayyappa Co-op Society, Madhapur, Hyderabad, TS - 500081

(040) 40216184/85

[info@swanenviron.com](mailto:info@swanenviron.com)

[www.swanenviron.com](http://www.swanenviron.com)