



Trace Analyzer for water

Powered by German Hardware

GreenMon Online-Analyser

The GreenMon is a fully automatic,
wet-chemical multichannel online analyser.

It detects trace concentrations in fluids.

The operating interface is especially user-friendly.

Features:

- New photometer technology with high stability allows trustworthy measurements at low trace levels
- Many functions are included in the standard version, eg. Cyclical self-calibration and dilution processes
- RS-232/RS-485, LAN, CAN-bus
- Intelligent event handling via SMS, Fax or E-Mail
- Communication via TCP/IP over LAN, (optional W-LAN, GSM, GPRS and UMTS)
- Comprehensive software products are offered for archiving (SQL database), programming, visualization and real-time representation
- Administration of operation and analysis data in a MYSQL databank with data interface for integration, interrogation and further analysis of the data
- Use of wet chemical methods (Ionometry, Colorimetry, ...)
- Fully automatic operation with self-monitoring
- Compact user-friendly construction with minimal maintenance expenditure
- Actuation and control (PID) of metering pumps, metering units, valves, analog and digital, PLC functionality
- Implementation of PCS functions e.g. connection of external sensors and control via external actuators and calculation of complex parameters
- SCADA option with Remote Display and Operation from a PC via cable, Intranet, Internet, GPRS or UMTS
- Easy maintenance due clear and easy setup and easy reachable parts.
- Color TFT touch Display with good readability

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GreenMon Total Phosphorous

GreenMon Colorimeter Total Phosphorous

Full automatic online analyzer for measuring medium concentration in water according to wet chemical methods.

The Colorimeter Total Phosphorous version of the GreenMon system comprises the following equipment:

Analyzer unit, control and measurement electronics in metal cabinet.

Number of probe channels: 1 (optional up to 6 channels on request)

Procedure : Total Phosphorous

Range: 0 – 2 ppm TP to 0 – 18 ppm TP (other ranges on request)

This automated procedure follows the US EPA recommended method for the determination of soluble substances containing Phosphate. In natural waters Phosphates are present as orthophosphates, pyro-, meta- and other polyphosphates and organically bound phosphates. As only ortho phosphate reacts with the colorimetric reagents, it has become the standard to have a digestion step to transfer all phosphates into orthophosphates before the colorimetric reaction.

The digestion is performed by the hard UV radiation enhanced high temperature acid digestion of a sample containing Phosphate to orthophosphate. Afterwards the orthophosphate reacts with a heptamolybdate reagent and is measured either in low range after a reduction as molybdate blue or in high concentrations with the vanadate method..

Different Phosphate compounds may have different oxidation rates due to the different recovery rates. Therefore the accuracy depends very on the sample matrix. A variation of the digestion time and calculation factor and offset might be necessary.

Typical performance data using aqueous standards:

Test conditions:	0 – 10 ppm
Typical measuring time	30 min
Interferences:	not complete digested compounds
Measuring accuracy:	±3 – 5 % of range typically

System description GreenMon:

- Optimal dilution rate programmable
- Integrated PC with Linux-based operating system
- Graphical user interface with interactive touch screen operation
- Full network capability via direct LAN connection
- All standard communications interfaces are supported CAN-Bus, LAN, Modem and RS232 or RS485
- Protocols Modbus TCP and Modbus serial, other on request
- (Profibus DP optional)
- Connection of additional sensors (e.g. pH, conductivity, O₂, Turbidity, ISA spectrometer or other) is optional via the CAN-Bus §

Modem: The following modem types are optional available: UMTS, ISDN or Analog modem.

Technical Details:

Power 110/220 VAC or 24V DC
Protection classification: IP 54 (optional IP65)
Dimensions (HxWxD): Analyzer cabinet: 800 x 600 x 350 mm
Optional: Reagent cabinet 350 x 600 x 400 mm
Cabinet material: SS 316
Sample pressure: 0 bar (max 0.05 bar overpressure)
Sample temperature: 10 ... 35°C
Sample flow rate: 2... 10 l/h, no suspended solids
Environmental temperature: 15 ... 35°C
Operating system: Embedded Linux
Power consumption (average): 45W

Measurement, control inputs and digital outputs, Interfaces:

1x Ethernet (incl. MOD Bus)
1x RS232 or RS485 (incl. MOD Bus)
1x CAN bus (for connecting further GreenMon system modules for sensors and actuators)
1x modem slot for UMTS, ISDN or analog modem (modem optional)

Actuators:

2x current output 4 - 20mA alternatively 0 - 10V
2x relays for alarm function

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