BRAN+LUEBBE
ANALYTICS

SPX Process Equipment

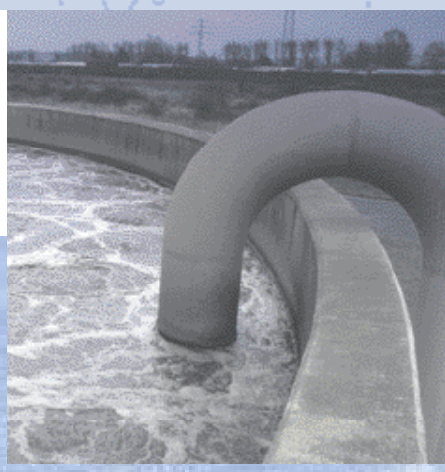
- **Multi-parameter on-line analyzer**
- **For chemical analysis in waste water treatment plants**
- **To optimize the treatment process and to monitor the purity of the final effluent**

DiaMon Resources

Applications

- **Nitrate**
- **Phosphate**
- **Ammonium**
- **SAC and more**

DiaMon analyzers are the pioneers of on-line process monitoring measuring several chemical parameters automatically in a single instrument.

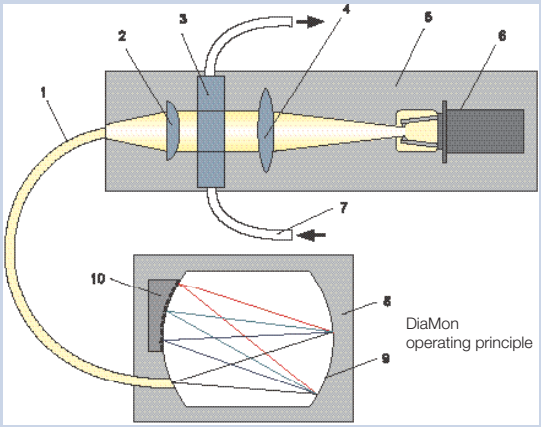


One DiaMon measures several different chemical components in the same instrument.

Easier sample preparation. Ultra-filtration is generally not necessary. Furthermore, DiaMon analyzers can be connected via modem to a central computer for remote diagnosis, control and networking.

Multiple-parameter analysis

DiaMon is the first analyzer of its kind to use a diode-array spectrometer. This measures a complete UV-visible spectrum, which allows a wide range of different analyses to be performed. The parameters usually measured in a DiaMon "Resources" are ammonia, nitrate, phosphate and spectral absorbance coefficient (SAC); however, it is also possible to measure COD, DOC and turbidity in the final discharge.



DiaMon operating principle

1. Optical fibre
2. Focusing lens
3. Flowcell
4. Collimator lens
5. Optics module
6. Xenon discharge lamp
7. Sample tubing
8. Spectrometer
9. Monochromator grating
10. Diode array

Advantages

- One DiaMon replaces several single-parameter analyzers
- Precalibrated for quick and easy installation: needs only a simple on-site adjustment to local sample conditions
- Simple maintenance
- Low reagent consumption
- Long maintenance intervals
- Remote diagnostics and modem control

Operating Principle

DiaMon uses spectrometry to measure the concentration of chemical compounds dissolved in water. White light is passed through the sample, after reagents have been added if necessary for the particular analysis. Absorption and scattering result in wavelength-dependent variations in the light transmission; these are detected by the diode-array spectrometer.

The intensity at each wavelength is compared to a calibration for the parameter being measured using the well-proven SESAME software, which is written and supported by Bran+Luebbe. The result is expressed as a numerical concentration which can be printed, output, stored or shown on a graphical display.

Technical Data

Typical ranges
(user-programmable)

PO_4 0 - 2...0 - 16 mg P/l

NH_4 0 - 4...0 - 25 mg N/l

NO_3 0 - 10...0 - 25 mg N/l

SAC 0 - 50...0 - 200 m^{-1}

Other components and ranges on request.

Measuring cycle
15 minutes per sample stream

Precision
PO_4 ≤ 3 % of full scale
NH_4 ≤ 3 % of full scale
SAC ≤ 2 % of full scale

Standard error of prediction[1)]
NO_3 typ. 3 % of full scale

Drift per 24 h
≤ 0,2 % MBE

1) compared to ion chromatography as reference method

No. of sample streams
up to 4
plus 1 maual sample (optional)

Reagents
Number: typ. 5
Bottle size: 5 litres each
Consumption[2)]: sufficient for ~18 weeks

Calibrants
Number : typ. 2
Bottle size: 5 litres each
Consumption[2)]: sufficient for 4 - 16 weeks

Sample
Pressure:
drucklos bis max. 0,1 bar
Temperature: 0 - 35°C
Volume: min. 2 liter/h
Solids content: max. 30 mg/l

Connection:
Tubing 3.2 x 1.6 mm

1) With standard cycle time (20 min.)

Waste
pressure free
connection: 10 x 2 mm

Environmental temperature
5 - 35°C

Hardware
Processor: 586 DX 133 MHz
Main memory: 4 Mbyte
Soft disk: 16 Mbyte
Hard disk: optional

Modem
optional
(for remote diagnostics)

Printer
optional (PCL3 compatible)

Outputs
digital: min. 3, max. 19
potential-free contact
max. load 50 V AC, 60 V DC, 3 A
analog: (0/4-20 mA): min. 4, max. 16, Bürde 400 Ohm

Inputs
digital 1

Alarms
available for all main instrument functions freely programmable

Interfaces
1 x parallel,
2 x seriell RS 232, or
1 x parallel,
1 x serial RS 232,
1 x serial RS 485

Remote Control
with Windows based Software (optional)

Power supply
115/230 V AC ±10 %
50/60 Hz ± 3 %

Power consumption
max. 150 VA

Protection class
IP 54 (analyzer components)
IP 65 (electronics)

Dimensions (HxWxD)
1680 x 600 x 410 mm

Weight
ca. 112 kg

Bran+Luebbe GmbH· P.O. Box 13 60 · D-22803 Norderstedt
Telefon +49 (040) 522 02-0 · Fax +49 (040) 522 02-444 · E-Mail info.germany@processequipment.spx.com · Internet http://www.bran-luebbe.de

0.1 E 1005
Printed in Germany