Technical Data

Measurement and Sample Preparation

Type of measurement:	Thermal combustion at 1200°C (TN_b)
	UV- Persulfate digestion (TP)
Measuring range:	0 - 50 mg/l (ppm) (TN_b w/o catalyst)
	0 - 200 mg/l (ppm) (TN_b w/ catalyst)
	0 - 20 mg/l (ppm) (TP)
Response time:	2-3 minutes (TN_b)
(application dependent)	10-15 minutes (TP)
Measurement frequency:	1-3 minutes
Reproducibility:	± 2%
Accuracy:	± 2%

Operation and Data Output

Graphic-LCD-screen, high resolution, back-lit
Autostart-function
Self-explanatory software
USB-port
Industry-standard data interface

Connections

Sample water, in:	Prene tube 3.2 x 1.6mm
Sample water, drain:	PVC tube 12 x 2mm
Electrical power:	~115 / 230V, 50 / 60 Hz
Analog output:	0/4 - 20 mA
Serial interface:	RS 232 for remote control
Malfunction alarm, life-zero	
Status output:	4 relais contacts (programmable)

Dimensions and Weights

Cabinet:	steel IP 54
Option:	stainless steel, IP 65
Dimensions:	1060 x 600 x 520 mm (H x W x D)
	ATEX Zone 1 and Zone 2
Weight:	approx. 115 kg (254 lb)

If you require more information about our online products for TOC, COD, BOD or toxicity measurement, please call us.

There´s so much more !

The TOC Company

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TÜV CERT DIN EN ISO 9001:2000 Zertifikat: 01 100 5122

The TOC Company

LAR PROCESS ANALYSERS AG

Fast Solution
for TN_b and TP Measurement

QuickTON$_P$

Rapid Online TN_b and TP Measurement at the Plant's Effluent

- Determines the TN_b and TP within minutes
- Combination with TOC optional
- Accurate, fast and precise
- Lowest maintenance

QuickTON$_P$

TÜV CERT DIN EN ISO 9001:2000 Zertifikat:01 100 5122

•The Accurate Solution to Online TN_b and TP Measurement

The QuickTON$_P$ is an online measuring system for the determination of total nitrogen (TN_b) according to DIN 38409 part 27, ENV 12260 and ISO-TR11905-2 and total phosphorus (TP) according to DIN EN ISO 6878:2004, DIN EN ISO 15681-1:2004 and DIN EN ISO 15681-2:2004.

The *QuickTON$_P$* is suitable for almost every TN_b and TP measurement in process control or sewage and industrial waste water application. Typical online applications are control of the production (e.g. the chemical and petrochemical industries) and monitoring the effluent of both industrial and municipal waste water treatment plants (WWTP).

• Thermal Combustion Technology for TN_b

The *QuickTON$_P$* has been engineered to work without the aid of expensive catalysts by using temperatures of more than 1200°C. Conventional thermal catalytic methods use temperatures between 680° to 1000°C.

• UV/Persulfate Digestion Method for TP

Simultaneously to the TN_b measurement the untreated sample is mixed with the oxidation reagent (sodium persulfate) and then conveyed through the UV reactor.

• Fast and Precise Measuring Results

The*QuickTON$_P$* is designed to operate in a batch mode. Every 1-3 minutes the T_{100} values are measured. This guarantees the precise determination of short and transient peaks throughout the day.

FEATURES AND BENEFITS

- Catalyst-Free Technique up to 50 mg/l TN_b
- Highest CombustionTemperature (1200°C) for TN_b
- Highest Reproducibility
- Lowest Maintenance Efforts
- Lowest Operational Costs
- Self-Explenatory Software
- ECD for TN_b Measurement (CLD optional)
- Photometric Molybdenum Blue Method for TP Measurement
- Measurement Frequency: 2 - 3 Minutes (TN_b); 1- 3 Minutes (TP)
- Response Time: 2 - 3 Minutes (TN_b); 5-10 Minutes (TP)
- Easiest Operation
- Simultaneous TOC Detection (Optional)
- No Filtration Necessary at the Effluent

• Measurement Principle

TN_b

The analytical part for the TN_b measurement is a closed system and consists - apart from the well proved and very reliable combustion unit - of a low-maintenance and simple injection system, a robust NO detector, as well as an industry standard PC with appropriate control and evaluation software. This enables the *QuickTON$_P$* to perform precise measurements in the low mg/l (ppm) range.

A small and well-defined sample is taken and injected into the carrier gas. The stream of carrier gas is continually directed through the high temperature combustion furnace, where all water contained within the stream is vaporised and all nitrogen compounds are safely converted to NO. The carrier gas then transports the NO to an electrochemical detector (ECD) or chemiluminescence detector (CLD), depending on the application.

Various loop volumes are available, with which, together with variable injection frequencies and different injection volumes, the *QuickTON$_P$* can be adjusted to different industrial and municipal effluent conditions.

As an option, the *QuickTON$_P$* can be additionally equipped to purify ambient air for use as carrier gas, in order to cut costs on bottled gas or instrument air, which then will not be needed.

TP

To measure the TP (total phosphorus) content of the sample stream the sample flows continuously into the TP part of the analyser. In the first step the sample is mixed with concentrated persulfate and sulphuric acid.

This mixture is then pumped into the reactor where it is exposed to ultra violet light. The UV radiation together with the concentrated persulfate completely oxidises the phosphorus compounds into phosphate (PO_4^-)

Data Processing

Upon leaving the reactor the sample stream is measured with the molybdenum blue method for phosphate with a batch-type photochemical system.

With the parameters obtained, the built-in personal computer (equipped with a customised and user-friendly software) calculates the actual concentration of TN_b and TP in the sample.

The TOC Company

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