Technical Data

Measurement and Sample Preparation

Type of measurement :	thermal combustion
Measurement range :	0 - 200 mg/l N
Response time :	3 minutes
Sample preparation :	maintenance-free particle separator, optional Ultra-Turrax for continuous homogenisation of the sample

Operation and Data Output

Graphic-LCD-screen, high resolution, back-lit
Autostart-function
Self-explanatory software including maintenance checklists and support
Industry-standard data interface

Connections

Waste water, drain :	tube 30 mm ID or threaded 32 mm OD or as specified
Electrical power :	230 / 115 V~ , 50 / 60 Hz
Analog output :	0/4 - 20 mA

Serial interface (RS 232) for remote control
Malfunction alarm, life-zero

Status output :	4 relay contacts

Dimensions and Weight

Cabinet :	Steel IP 54 (NEMA 13)
Optional :	NEMA 4X (Class I Div 2) Zone 1, Zone 2
Dimensions :	1020 x 700 x 520 mm (W x H x D) 40.2 x 27.6 x 20.5 inches (WxHxD)
Weight :	115 kg (254 lb)

If you require more information about our products (e. g. for on-line TOC, TN_b, COD, BOD or toxicity measurement), please call us.

... there´s so much more !

PROCESS ANALYSERS AG

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

PROCESS ANALYSERS AG

The Reagent Free Solution to On-line TN_b-Measurement !

QuickTON$_b$®

Continuous Short-Time TN_b Measuring System

- **Determines the real TN_b in minutes**
- **for waste water treatment and process control**
- **accurate, fast, filterless**

QuickTON$_b$

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

• The accurate solution to on-line TN_b measurement

The **QuickTON$_b$**® is an on-line measuring system for the determination of total nitrogen (TN_b) according to DIN 38409 part 27, ENV 12260 and ISO - TR11905-2.

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

• High temperature combustion

The current state of the art engineering for thermal catalytic oxydation uses temperatures between 680° and 1000°C. The **QuickTON$_b$** has been engineered to work by using temperatures of more than 1200°C. Therefore, all nitrogen compounds are oxidized effectively and rapidly, regardless of their composition.

• Fast and precise measuring results

The **QuickTON$_b$** is designed to operate in a batch mode. The TN_b is analysed in 3 minutes. This guarantees the determination of fast and transient peaks throughout the day.

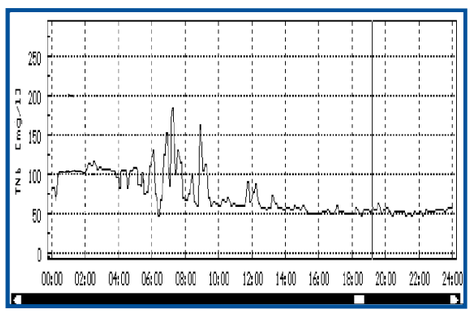

Figure 1: Daily survey measured with QuickTON$_b$ of the effluent from a chemical plant

• Representative sample preparation

The sample is taken using the patented and maintenance-free sampling system **FlowSampler**. **FlowSampler** works filtration-free and takes the sample in the centre of the sample stream against the direction of the main flow (see figure 2).

Even solid particles are sampled by the **FlowSampler** and reduced in size by a homogenizer. The sample is then pumped by the homogenizer through a flow through sample cell.

In the sample cell the sample is continuously stirred to keep it in a homogenized, representative state.

- **Accurate measurement of TN_b**
- **Oxidation with a temperature of more than 1200°C**
- **Fast response time of 3 minutes**
- **Multi channel measurement (Option)**
- **Easy operation and software**

• Maintenance-free sampling system FlowSampler

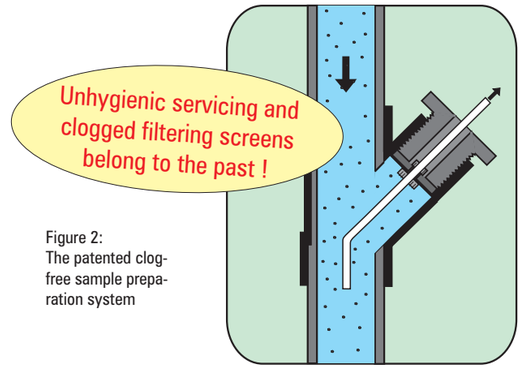

Figure 2:
The patented clog-free sample preparation system

- **Reliable thermal oxidation without reagents**
- **Excellent percentage recovery for ammonia and nitrate nitrogen**
- **Up times greater than 95%**
- **Service time of less than 1 hour per week**
- **Very low maintenance and operation costs**

• Reliable and proven operating principle with reduced costs

The sample injection volume is controlled by a xy-syringe sampling system. The sample aloquote is then injected into the septumless injection port of the reactor.

By using a temperature of more than 1200°C the **QuickTON$_b$** obtains complete combustion of the nitrogen components in the sample. An important advantage compared with wetchemical methods is the complete detection of particle bounded nitrogen. At this high combustion temperature the analyzer´s percentage recovery for ammonia and nitrate nitrogen is excellent.

A main advantage of the high temperature combustion method used in the **QuickTON$_b$** is that no reagents are necessary for the operation of the system. This feature provides outstandingly low service and operation costs, even in continuous mode.

The combustion gas from the reactor flows through a 2 stage gas-cooler which is maintained at 4°C, to an absorption column before flowing into the chemiluminescence detector (CLD).

The CLD detects the nitrogen monoxide (NO) with excellent linearity and the highest possible accuracy. The NO-signal is converted to a peak profile that is calculated by the internal data processor to the TN_b value.

Alternative an electrochemical detector (ECD) is available. The ECD shows also excellent results in the range of 0-200mg/l N.

The software supports every available function from controlling the **QuickTON$_b$** to further processing of the measured values. An uncomplicated data transfer through serial or parallel interfaces to a monitoring station is a matter of course.

All these features result in an easy to operate analyser with low maintenance requirements, high reproducibility and fast measuring results for many years - the **QuickTON$_b$** by LAR.