

## Technical Data

### Measurement and Sample Preparation

Measuring method:	thermal combustion $\geq 1,200^{\circ}\text{C}$ with oxygen detector
Measuring range:	0 - 200,000 mg/l adjustable to application
Time lag:	1 minute(application dependent)
Reproducibility:	$\pm 3\%$ of full scale or $\pm 10\text{ mg/l}$
Sample preparation:	maintenance-free FlowSampler optional homogenisation of the sample

### Operation and Data Output

Graphic- LCD- screen, high resolution, back lit
Autostart function
Self-explanatory software with integrated help system
Standard data interface to office PC

### Hydraulic and Electrical Connections

Inlet/outlet:	tube ID 30 mm (FlowSampler) thread connection DN 25
Sample water in:	tube 4,8 x 1,6 mm (ID x OD)
Electrical power:	~115 / 230V, 50 / 60 Hz
Analog output:	0/4-20 mA; life-zero funct. possible
Serial interface:	RS 232 for remote control
Status output:	4 relais contacts for limit values
Remote control	via TCP/IP protocol (internet)

### Dimensions and Weight

Cabinet:	steel IP 54
Options:	stainless steel, IP 65, ATEX zone 1 and 2
Dimensions	1,060 x 700 x 520 mm (H x W x D)
Weight:	115 kg

The information and the illustrations in this brochure on appearance, service, measure, weight, consumption, maintenance times and so forth, are not binding and only an approximate description. It does not assure guaranteed qualities. This product description corresponds to the state of printing. Deviations in design, tint, as well as changes of the scope of delivery remain reserved.  
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If you require more information about our products e. g. for on-line TOC, TN<sub>b</sub>, TP, COD, BOD, ammonium or toxicity measurement, please call us.

We are happy to advise you!

The TOC Company

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The clean and precise solution  
for on-line COD determination

## QuickCOD<sup>®</sup>\_o

Continuous short time  
COD measurement system

- Precise COD determination  
in 2-5 minutes without reagents
- For waste water treatment  
and process control
- Accurate, fast, filter free

- **The accurate solution to Online COD determination**

The **QuickCOD\_o** is an on-line measurement system for the determination of the chemical oxygen demand (COD), with thermal combustion, especially in difficult sample matrices, within 2 minutes.

The **QuickCOD\_o** is suitable for nearly all COD measurements in industrial and municipal waste water treatment. Typical on-line applications are influent and effluent monitoring in WWTP, detection of concentration peaks, measurement of production losses, e. g. in chemical, petrochemical, food processing industries and others.

- **High temperature combustion**

In contrast to conventional standard methods where the sample is to be boiled with chromium sulphuric acid, by adding silver and mercury, **QuickCOD\_o** is using the thermal combustion method. Associated with it is a completely clean and fast process that is taking up the initial idea of complete detection of all organic compounds in the sample. Even though this method is well-known in the USA as ASTM standard, it fell almost into oblivion in Germany. The **LAR high temperature measurement method** ( $\geq 1,200^{\circ}\text{C}$ ) optimises other common techniques.

- **No caustic reagents**
- **No harmful user exposure**

This high temperature method works without any dangerous or caustic substances. There is no disposal of analysis residues, cleaning solutions or harmful reagents necessary. The highest operating safety and easiest processing is guaranteed at all times.

- **Fast and accurate results**

The **QuickCOD\_o** is designed as discontinuously working measurement system. It enables a COD determination in 2 minutes. This fast proceeding also guarantees the reliable detection of transient value peaks.

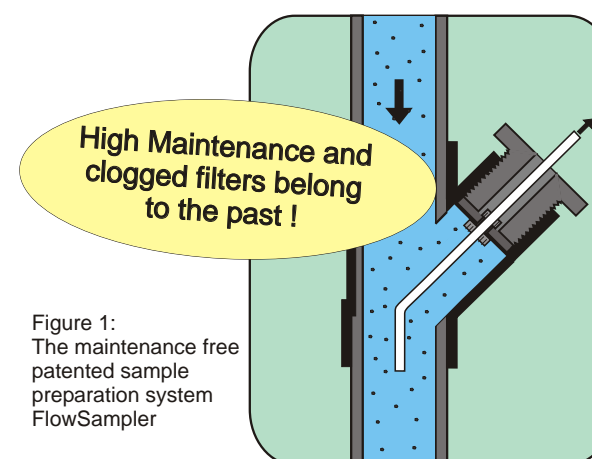
- **Representative Sample preparation**

The sample is taken by using the patented and maintenance-free sampling system **Flow-Sampler**. It works filtration-free and takes the sample in the centre of the sample stream against the direction of the main flow (see figure 1).

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

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

- **Maintenance free sampling system FlowSampler**



- **Accurate determination of COD**

- **Measurement of solid compounds**

- **Difficult applications (high salt concentrations, etc.)**

- **Multi-channel measurement (option)**

- **Easy operation and software**

- **Very low maintenance and operation costs**



- **Reliable thermal oxidation**

- **Works without the aid of an expensive catalyst**

- **Machine availability higher than 98%**

- **Determination of the real COD**

- **TN<sub>b</sub>, TOC and COD in one analyser (option)**



- **Reliable und well-proven measuring principle with cost saving details**

The sample reaches the measurement system through the integrated sample pump or the optional homogeniser. The sample dosing is performed by a septum-free injection system.

Direct injection in the oven prevents highly volatile matters (VOC) of the sample from escaping. The **QuickCOD\_o** is also capable of the exact detection of methanol, ethanol and other highly volatile components.

Using a temperature of more than  $1,200^{\circ}\text{C}$  the **QuickCOD\_o** oxidises all compounds of the sample. The oxygen consumption during the oxidation process is measured by a special detector. **QuickCOD\_o** is measuring the **real COD**, unlike other systems, where the TOC is measured and converted by a correlation factor. This makes the **QuickCOD\_o** very reliable, even for applications with changing sample matrices, where the correlation method fails.

After the combustion all produced combustion gases are cooled down to  $4^{\circ}\text{C}$  inside a gas cooler and then conveyed to the oxygen detector by an absorber system.

Optional the **QuickCOD\_o** can be furnished with an IR detector for TOC detection or a sensor for TN<sub>b</sub> measurement. The **LAR QuickCOD\_o** is the only analyser worldwide that can determine all these important parameters simultaneously online.

The user-friendly software supports each available function comfortably, from adjusting the unit up to the data output. The measured values can easily be transferred to the measuring station via the available interfaces.

All these features establish the **QuickCOD\_o** as an easy to operate and durable measurement system with little maintenance requirements, high reproducibility and fast response time for many years.