

TOCOR700 TH/UV – Measurement of Organic Carbon

Monitors condensate, process,
surface and waste water for contamination
caused by organic carbon compounds



TOCOR700

with thermal or UV reactor

AREAS OF APPLICATION

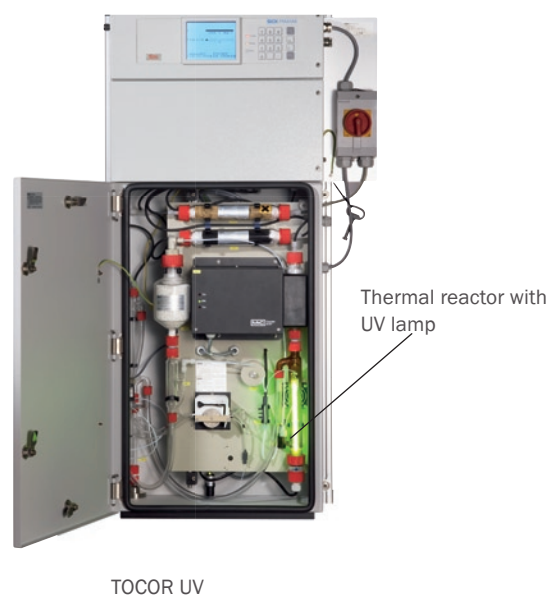
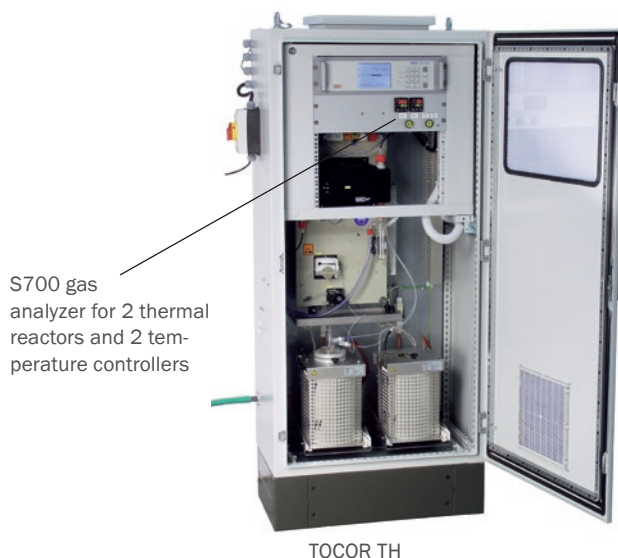
- Chemical industry
 - Process steam analysis (condensate)
 - Surface water
 - Raw sewage
- Petrochemical industry
- Sewage plants

TOCOR700 TH VERSION

- Nonspecific oxidation of nearly all TOC compounds, particularly suitable for unknown water compounds
- For medium salt concentrations <20 g
- Oxidation performance >95 %
- For high requirements on measuring precision
- Continuous operation during maintenance can be ensured with two thermal reactors (optional): Downtime caused by maintenance is reduced from 12 hours to 15 minutes.
- Easy to maintain: High absorption capacity for salts and solids
- ATEX and standard version

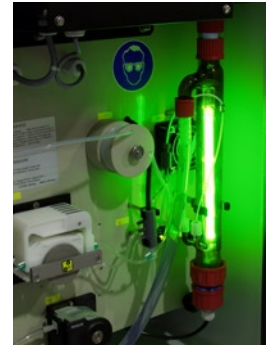
TOCOR700 UV VERSION

- For use with known water compounds
- For high salt concentrations up to 50 g
- For measuring ranges 2 ... 10,000 mg/l
- Limit value monitoring
- Low-maintenance version for most standard applications: >6 months maintenance-free and 30 minutes maintenance time





Thermal reactor



UV reactor

PERFORMANCE FEATURES

- Continuous measuring, extractive water analyzer for cumulative determination of carbon content from carbon compounds or elementary carbon.
- Standard in water measurement technology according to legal specifications.
- Very high measuring precision for small TOC concentrations.
- Conditioned carrier gas is generated to some extent by TOCOR700 itself for concentrations up to 300 ppm CO₂, therefore longer service life of the filters.
- On thermal reactors, the carrier air is routed through the 850 °C hot reactor which acts as a thermal catalyzer and thus conditions the carrier air. The installation of an activated carbon filter for carrier air conditioning is therefore not required.
- Can be equipped with a sampling point selector for up to four sampling points.
- Backflush option for sampling, including the complete voltage supply and control from the device.
- Optional equipment with a 2nd thermal reactor (standby).
- Operation and configuration of the input and output signals of TOCOR are identical with the S700 process gas analyzer series.

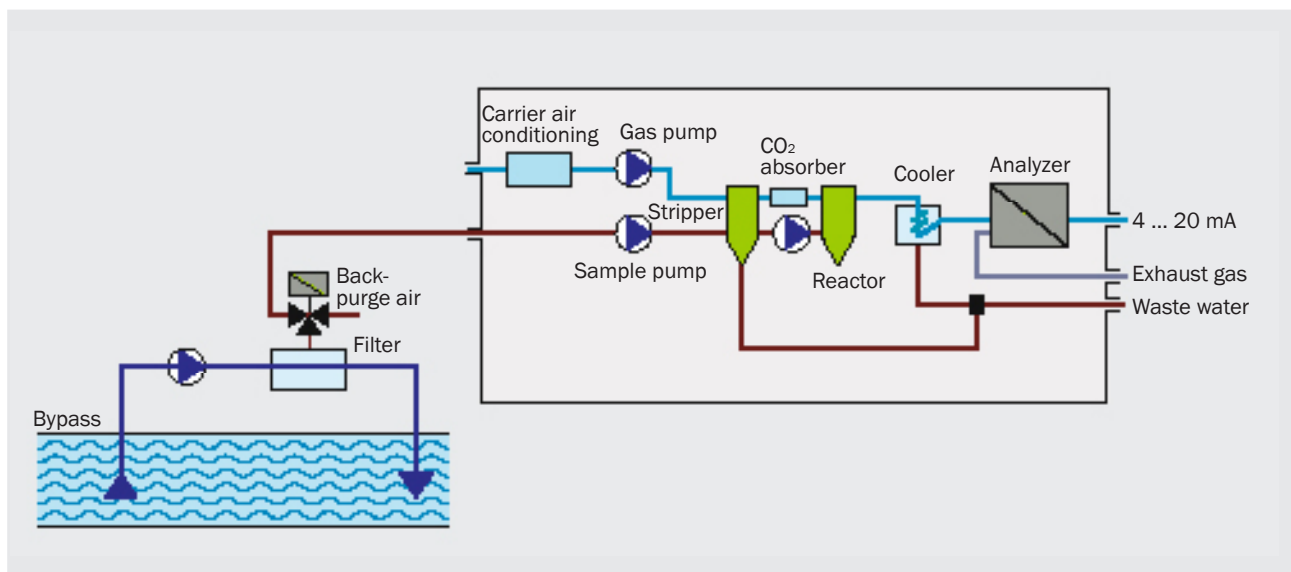
MEASURING PRINCIPLE

Inorganic carbon compounds in the sample are removed in a stripper. The remaining organic carbon compounds are now oxidized to CO₂ in a reactor, either a high-temperature thermal reactor or a UV reactor. The CO₂ generated from the reaction is carried to

the NDIR gas analyzer by means of a constant flow of carbon and CO₂-free carrier gas. The carbon is shown on the display as mg/l concentration after conversion.

Operating concept

The TOCOR controls and monitors the functions of the TOC system. A clear text message menu with a choice of German, English and two other languages is used for operating.



Technical Data TOCOR700	
Measured data	
Measuring range	0 ... 2 mg/l C or higher
Zero drift	≤2 % of measuring range/week ¹⁾
Sensitivity drift	≤2 % week ¹⁾
Detection limit	≤1 % of smallest measuring range
Linearity error	≤1 % ¹⁾
Temperature effect	≤0.2 % / K of measured value
Influence of atmospheric pressure	≤1% per 10 hPa
Mains voltage influence	≤0.5 % within the specified voltage range
Mains frequency influence	≤1 % per 1% change in frequency
Delay time	≤5 min (TC measurement); ≤ 8 min (TOC measurement)
Sample requirements	
Sample volume	200 ... 800 ml/h
Sample temperature	+5 °C ... +45 °C
Sample pressure	900 ... 1100 hPa abs.
Instrument data	
Power supply	115 or 230 VAC (+10 %, -15 %), 40 ... 62 Hz, max. 2000 VA (TH)/500 VA (UV)
Ambient temperature	-10 ... +35 °C, +5 ... +45 °C ²⁾
Storage temperature	-20 ... +55 °C
Relative humidity	Class F (DIN 40 040), ≤75 % annual average, ≤ 95 % occasional, non-condensing
Sample connection	Hose fitting D3
Interfaces and signals	
Analog output	4 ... 20 mA, linear (max. 4 outputs), electrically isolated, max. 500 Ω
Status signals	Relays, potential-free, max. 48 V/0,5 A : malfunction; maintenance request; maintenance; limit value 1 ²⁾ , limit value 2 ¹⁾ , 8 transistor outputs, free parameter settings
Certification	
EMC	EN 50081, EN 50082: Part 1/2
Protection class	I, tested according to VDE 0411, Part 1/IEC 348 ATEX certification for <ul style="list-style-type: none"> • Zone 1 EX II 2G Ex px II T3 • Zone 2 Ex II 3G Ex pz II T3

¹⁾ double value for measuring range < 10 mg/ l C

²⁾ Option