

A-4000

On-line TOC Analyzer

The A-4000 TOC Analyzer is a rugged, low-maintenance instrument designed for continuous on-line measurements in...

Semiconductor reclaim and recycle applications

The A-4000 responds to a change in TOC values in less than 3 min. so that operators can make the fastest decision possible for diverting water to recycle or reclaim loops or to acid/base neutralization and finally to waste. Typical install locations would be immediately after the cleaning process and before the initial holding tanks and also throughout the recycle/reclaim loops as the water is being prepared for final UPW processing.

- > The A-4000 TOC Analyzer provides the fastest results for maximum decision-making information. In less than 3 minutes, the A-4000 displays 20% (T20) of the final value of a TOC change or excursion in the water loop... more than enough data to make the required recycle/reclaim decision. Also, the "rate-of-change" data are displayed to provide an even more sensitive indication of a TOC excursion.
- > An advanced calibration utility provides 1 – 10 points to ensure complete bracketing of your TOC sample range and to compensate for any background TOC commonly found in make-up water.
- > The solid-walled PVDF (KYNAR) NDIR detector is the most rugged and trouble free of any available with TOC analyzers. In less than 2 minutes you can remove it, open it, wipe it clean, and reinstall it.
- > In addition to a wide selection of analysis ranges, the A-4000 also can accommodate a wide range of sample type, conductivity, pH, and temperature.
- > An advanced diagnostic system indicates any change in sample or carrier gas flow and general system operation.
- > The A-4000 carries the CE certification, is listed to UL & CSA safety marks by ETL and complies with EPA, ASTM, EN, and DIN measurement methods.
- > The instrument is housed in a spacious IP66 / NEMA 4 rated cold rolled steel epoxy powder coated enclosure. A stainless steel enclosure is available as an option.



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SPECIFICATIONS

Analysis method: UV persulfate oxidation with acid sparging for TIC removal, followed by CO₂ NDIR detector measurement.

Measurement range: 0–2000 µg/l (ppb)
 0–5000 µg/l (ppb)
 0–10000 µg/l (ppb)
 0–25000 µg/l (ppb)
 0–50000 µg/l (ppb)

NOTE: Measured values are displayed in either µg/l or mg/l.

Response time: T90 ≤ 5 minutes * / T20 ≤ 3 minutes *

Accuracy/Repeatability/Linearity:
 ± 4 % or 8 µg/l (whichever is greater) *

Method Detection Limit per EPA Appendix B to Part 136:
 ≤ 5 µg/l at range 0–5000 µg/l *

Signal drift (60 days): < 2 % *

Ambient temperature: 5–40 ° C (41–104 ° F)

* at 25 ° C (77 ° F)

NOTE: Performance specifications established with range configuration 0–5000 µg/l (0–5 mg/l) and determined at measured value.

Weight: 54 kg (120 lb)

User connections: 5 function mapped alarm relays,
 3 A @ 250 VAC / 0.5 A @ 30 VDC
 2 parameter mapped 4–20 mA analog outputs
 1 RS232/RS485 serial port (optional)

Samples: Single stream, fast loop inlet (optional: dual-stream)

Inlet pressure: 0.15–6 bar (2–87 psig)

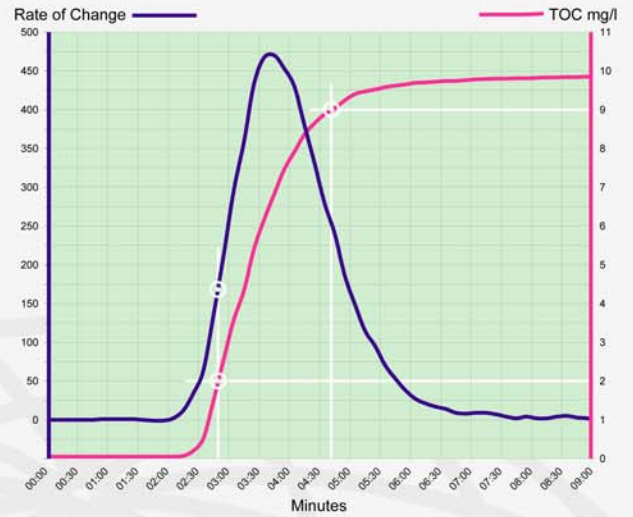
Outlet pressure: ambient

Inlet temperature: 2–70 ° C (36–158 ° F) at a flow rate of 25–200 ml/minute

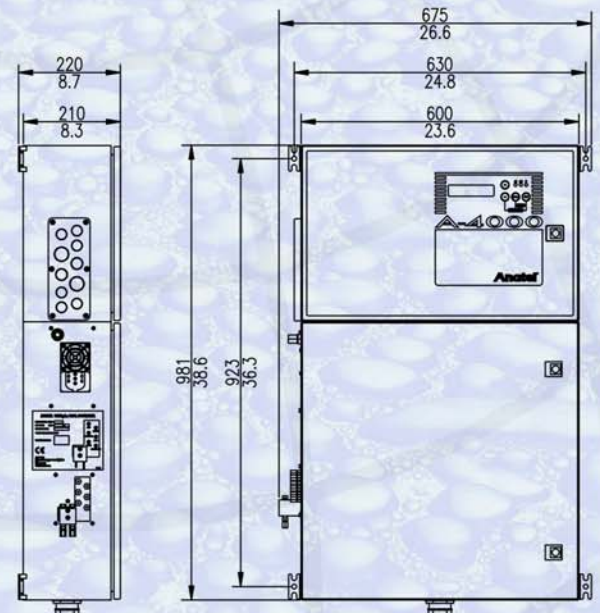
Extended Inlet temperature:
 2–100 ° C (212 ° F) with a 3000 mm (120 in) long, 6 mm (1/4 in) O.D. stainless steel sample inlet tube at a flow rate of 25–60 ml/minute.

Electrical connections: 115 or 230 VAC, 50/60 Hz, 300 VA

Carrier gas: Clean, CO₂ free air or Nitrogen at 2.8–6.2 bar (40–90 psig)



An advanced curve-fitting algorithm indicates, within 3 minutes, 20% (T20) of the final value of the TOC excursion. Also, the A-4000 reports, within the same 3 minutes, a more sensitive rate-of-change of the measurement signal at the same T20 level. These T20 values provide all the data required to make the correct recycle/reclaim decision.



Instrument dimensions in mm and inches.

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