Anatel

A-4000 Online TOC Analyzer

Total Organic Carbon Analysis Systems for Semiconductor Applications

A rugged, low-maintenance TOC analyzer designed for continuous online measurements in Semiconductor reclaim and recycle applications

The A-4000 responds to a change in TOC values in less than 3 minutes 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 installations include: immediately after the cleaning process, before the initial holding tanks, and throughout the recycle/reclaim loops as the water is being prepared for final UPW processing.

The A-4000 TOC Analyzer provides fast results for confident 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. That's 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.

Model A-4000

OTHER KEY PRODUCT FEATURES:

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.

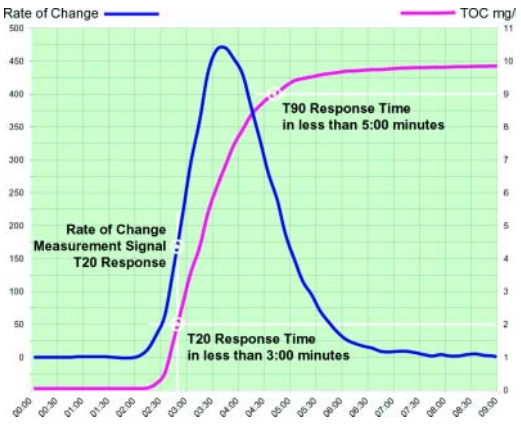
The solid-walled PVDF (KYNAR) NDIR detector is the most rugged and trouble free of any available with TOC analyzers. In less than 2 minutes you can remove, open, wipe clean, and reinstall the detector.

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 a CE certification, is listed to UL and 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.



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.

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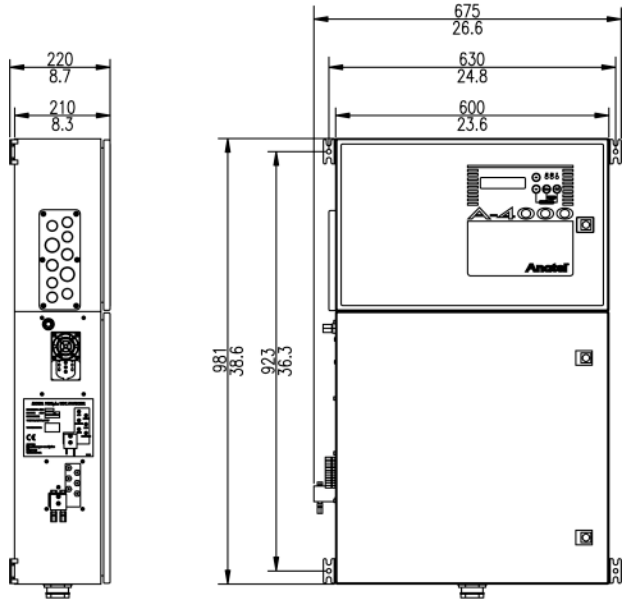
SPECIFICATIONS

Analysis method:	UV persulfate oxidation with acid sparging for TIC removal, followed by CO_2 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, at 25 °C (77 °F)
Accuracy/Repeatability/Linearity:	≤ ± 4 % or 8 µg/l (whichever is greater), at 25 °C (77 °F)
Method Detection Limit:	≤ 5 µg/l at range 0–5000 µg/l, at 25 °C (77 °F); per EPA Appendix B to Part 136
Signal drift (60 days):	< 2 %, at 25 °C (77 °F)
Ambient temperature:	5–40 °C (41–104 °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, 500 VA
Carrier gas:	Clean, CO_2 free air or Nitrogen at 2.8–6.2 bar (40–90 psig)



Instrument dimensions in mm and inches.

HACH ULTRA ANALYTICS

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