
ABB MEASUREMENT & ANALYTICS

Wet process analyzer for FPD and solar cell manufacturing for semi-conductors

FTPA2000-SC series



Measurement made easy

The FTPA2000-SC series is a wet process analyzer designed to optimize your bath life without risk of contamination.

Wet process analyzer built on customer demand

01 FTPA 2000-SC series wet process analyzer

02 MB3600 FT-NIR laboratory analyzer and IPA analyzer

Industry leader

With years of experience and thousands of process monitoring installations, ABB is the leading supplier of fiber optic-based spectrometers to the semiconductor industry.

ABB's solution has the long-term stability required for end-of-bath alarms, and for enabling effective closed-loop chemical dosing for trend analysis. The features on our analyzer are exactly what process control engineers across many industries have requested for the last 15 years.

Customers install the ABB solution because it is:

- cost effective for multiple tools and multiple bath compositions;
- tailored to fit end-user needs;
- easy to operate, install and maintain;
- a completely non-intrusive sampling design that prevents bath contamination.

Wet process analyzer

The FTPA2000-SC series wet process analyzer (WPA) measures up to eight baths. The baths can be on single or multiple tools and of the same or different chemistries. It can be mounted anywhere within 100 m (328 ft) of the baths and communicates with the tools using Modbus®, Ethernet or isolated 4 to 20 mA analog outputs. The WPA generates trend charts, predicted properties, bath alarms and health alarms.



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Additional product lines

Laboratory analyzers

The same calibrations used with the WPA may be used on our MB series analyzers for use in the laboratory or in the clean room near the process. In addition to measuring wet chemicals, the MB series' wide range of sampling accessories makes it the perfect tool for measuring wafer surfaces for hydrogen, interstitial oxygen, carbon, organic material and many other surface properties.



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IPA dryer analyzer

The ABB IPA dryer monitor measures IPA in nitrogen dryers. Extremely fast and reliable IPA concentration measurements mean an end to production loss due to residue spots.

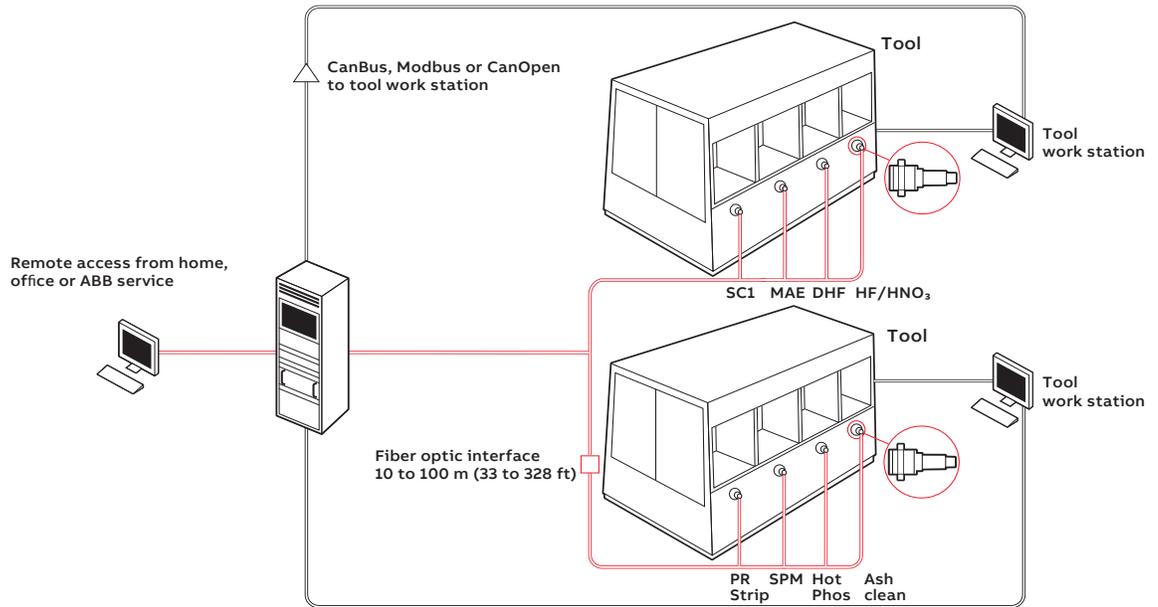
Sampling

The WPA sample interface is a unique cell that has no wetted parts. It is easy to install – just clip it on to an existing ½ or ¾ in (1.27 or 1.91 cm) PVA tube. It is constructed of Teflon® and connected to the WPA via Teflon-protected optical cables. This prevents bath contamination.

01 One WPA for multiple tools and 8 baths per WPA

Baths monitored

Etch	A70, acetic/HF/nitric, BHF (HF+NH ₄ F), BOE, Cyantek CR-7S, Glycol/HF, H ₃ PO ₄ /H ₂ O ₂ , H ₃ PO ₄ /nitric/HF, HCl + FeCl ₃ , HF, Hot Phos, Hot SPM, mixed acids enchants, organic acids, PAD, PAN, sulfuric/HF, sulfuric/H ₃ PO ₄ /nitric/HF, TMAH
Clean	Aqua Regia, BDG, DHF, DMSO/MEA, H ₃ PO ₄ , HCl/HF, Kanto Deer Clean®, Microstrip® 5002, mixed acids, NH ₄ OH/H ₂ O ₂ /H ₂ O, organic acids, SC ₂ , SCI, SPM, ST250™
PR and ash removal	ACT®, Aleg™-310, CLK™-888, DSP, EKC™, H ₂ SO ₄ , H ₃ PO ₂ , Rezi-38®, ST250, TMAH/H ₂ O ₂
Solar	Plating (sulfuric in Ni bath, sulfuric in Cu bath), Texturing (HF/nitric, HF/Phosp/nitric, HCl), Thinning (KOH/IPA, KOH, NaOH)
FPD	BDG, DMSO/MEA, mixed acids



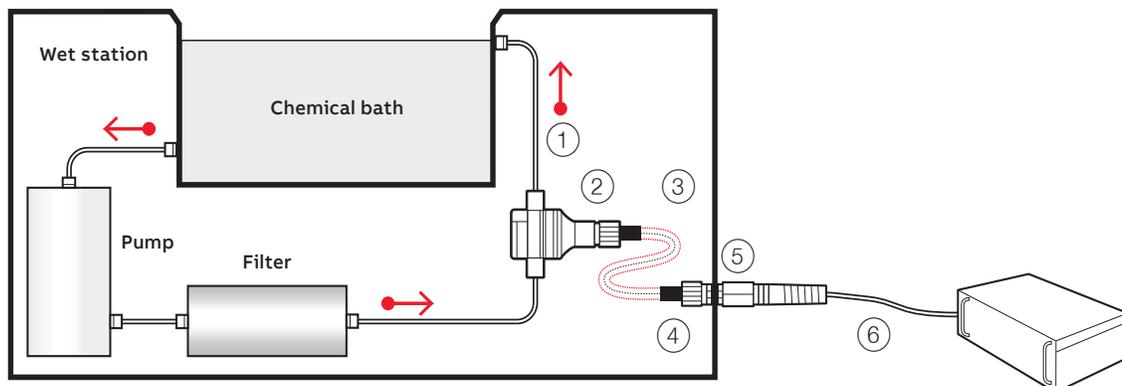


01 Bath monitoring process

Custom calibration models

In addition to the chemical baths mentioned, ABB offers custom calibration development services. The WPA can be used to monitor almost every wet chemical bath used today. Furthermore, end users have the option of creating their own calibration models and ABB offers the appropriate training services to assist our customers.

- ① The ClippiR is designed to be clipped directly around the recirculating line and is self-supporting. However, an optional bracket can be provided.
- ② 15.2 cm (5.98 in) minimum clearance around the ClippiR.
- ③ Teflon tubing protecting fiber optics: 1.5 m (4.92 ft) long.
- ④ 2.5 cm (0.98 in) access hole required.
- ⑤ Standard bulkhead fitting.
- ⑥ Standard 10 to 100 m (32.80 to 328.08 ft) optical cables housed in PVC tubing.



01 FTSW100 console

02 Wet chemical bath analysis

In-line wet process analyzing of chemical baths

Reducing excursion events and chemical usage is best obtained through process control, which requires real-time end-of-bath monitoring and bath spiking. The WPA is based on FT-IR technology – a minimal drift system enabling reliable process control.

ABB's world-renowned wet process analyzer provides guaranteed performance

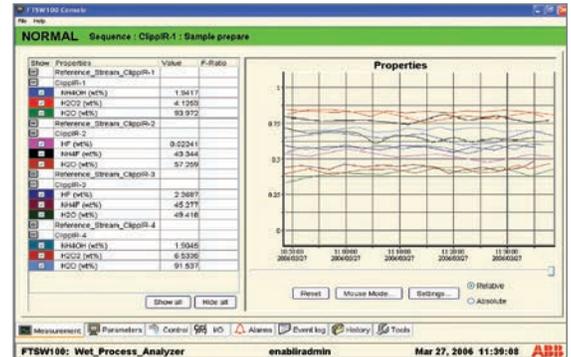
- Extensively field proven. Rugged design and construction combined with superior manufacturing methods guarantee unsurpassed analyzer stability.
- Results obtained in less than one minute, with simultaneous analysis of multiple bath properties. Easy-to-use, operator-friendly, with very low analysis cost.
- Simplified sampling without cutting into tool fluidics means no risk of contamination. Up to eight baths, multiple chemistries, multiple tools and can be mounted up to 100 m (328 ft) from the tool.
- Higher analytical precision (increased repeatability, reproducibility and stability) and full I/O capacity enable advanced process control.
- Very little training required for use by fab personnel in a routine operations environment.
- Real-time and drift-free monitoring of wet chemical baths enable effective end-of-bath alarms and closed-loop dosing routines.

Acknowledgments

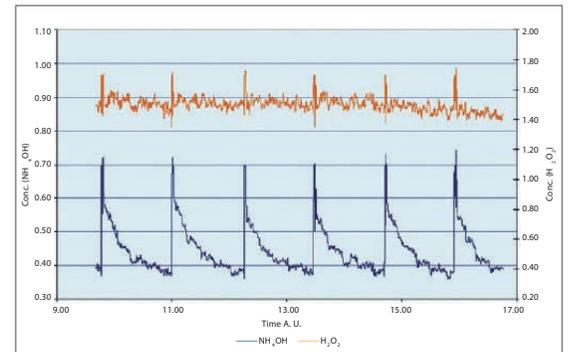
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Aleg™ is a trademark and brand of AVANTOR PERFORMANCE MATERIALS, LLC.



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