

## Fiber Potential Analyzer

# FPA touch!

- *Smaller and lighter than ever before* -
- *Take out, switch on, start measurement* -

Accurate and easy determination of the zeta potential of fiber suspensions



### Advantages:

- **Smaller and significantly lighter** than comparable devices  
 → Comfortable carriage in
  - transport case with carry-on luggage size or
  - one transport case combined with **CAS touch!** Charge Analyzing System
- **Latest state-of-the-art capacitive Touch Screen** with display of results
- **External keyboard** connectable (USB or wireless)
- **Internal memory for measurement data**
- **Bluetooth interface for measurement with the PC**
- **For titration of liquids, titrator can be connected.**
- **Ready to use** without assembly of further components
- **Easy handling, clear and simple-to-understand measuring procedures**
- **Compact and robust construction**

## Features

The new FPA *touch!* Fiber Potential Analyzer combines proven methods of Zeta Potential measurement with the known great simplicity of handling and functioning of the previous FPA versions, but enhanced with new features and an immense reduction in weight and size.

Surface charges of fibers, fillers, particles or colloidal dissolved substances in stock suspension are defined by the Zeta Potential on their surfaces. The charge of the stock suspension can be split into the colloidal and particle charge, measured with the CAS *touch!* Charge Analyzing System, while the fiber and filler charge is measured with the FPA *touch!* Fiber Potential Analyzer. All both charge levels together define the overall Zeta Potential of fiber suspensions.

The knowledge of the fiber charges in the pulp is the key for optimized dosage of chemical aids, which should be adsorbed onto the surface of the fiber. The mostly negatively (anionic) charged fiber is adsorbing the positive (cationic) charged additives in the papermaking process. The optimized dosage of such aids always depends on the Zeta Potential within the pulp.

The FPA *touch!* is designed to determine the Zeta Potential of fibers according to the Helmholtz-Smoluchowski equation by simultaneously measuring conductivity, pressure and the streaming current potential. The measuring principle is based on the streaming current potential measuring method in a fiber plug. That fiber plug is automatically building up on a screen electrode in the measuring cell of the FPA by a vacuum. By periodically changing the vacuum during the measurement the charge clouds absorbed on the fibers are moving with the liquid stream and generating the streaming current potential measured by the screen and ring electrode.

The knowledge of the fiber charge enables a correct and effective dosage of the charged chemical additives. The fiber adsorption of cationic starch, wet strength resin, and many other chemical aids can be easily measured with original samples on-site to optimize the dosage of chemicals in the wet end of the paper manufacturing process.

### NEW:

- Lighter, Smaller: Carry-on luggage size
- 5" Touch Screen Display for data display
- External keyboard and USB flash drive can be connected
- For titration of liquids, titrator can be connected.
- Bluetooth connection to PC for measurement possible
- No external hoses or tubes

### Main features:

- Filtrate removal for CAS *touch!* measurements
- Simple handling, robust design, high accuracy and reproducibility
- Fully automatic measuring and cleaning procedure (menu-controlled), automatic pressure control and removal of the fiber plug after the measurement
- pH measurement optional
- Integrated vacuum pump is water protected: pump cannot be destroyed by filtrate overflow (No big and noisy external vacuum pump)
- No external connection cable for electrodes - thereby prevention of handling errors
- Display of measuring results on touch screen or via high-performance PC Software with display of trends
- Storage of data on internal data memory of the device, USB flash drive or on the PC when connecting PC software
- All components at latest technological standard

### Technical Data

|                              |  |
|------------------------------|--|
| Device weight                | approx. <b>5.9 kg</b> (with transportation case approx. 12 kg) |
| Device dimensions            | 17.0 x 28.5 x 17.0 cm (W x H x D)                              |
| Sample quantity:             | 400-800 ml   |
| Power:                       | 100-240 VAC 50/60 Hz 40W                                       |
| Available screen electrodes: | 30-315 micrometer  |