2035 Process Analyzer

Customized online monitoring of industrial processes and wastewater

Metrohm
Process Analytics

The 2035 Process Analyzer at a glance

The 2035 Process Analyzer is the latest of Metrohm Process Analytics' solutions for 24/7 online monitoring of industrial processes as well as water and wastewater. Whether you need to monitor chemical parameters in a single stream or in several streams, the 2035 Process Analyzer is designed to become an integral part of any sophisticated plant automation. As such, it will help you to:

- **safeguard the stability of your process**
- **optimize process efficiency**
- **increase product yield**
- **ultimately improve profitability of your operations**

Three basic configurations

The 2035 Process Analyzer is highly versatile. It comes in three basic configurations for potentiometric, photometric, and thermometric measurements. Any of these can be combined with additional measuring techniques such as pH and/or conductivity measurement.

Straightforward operation

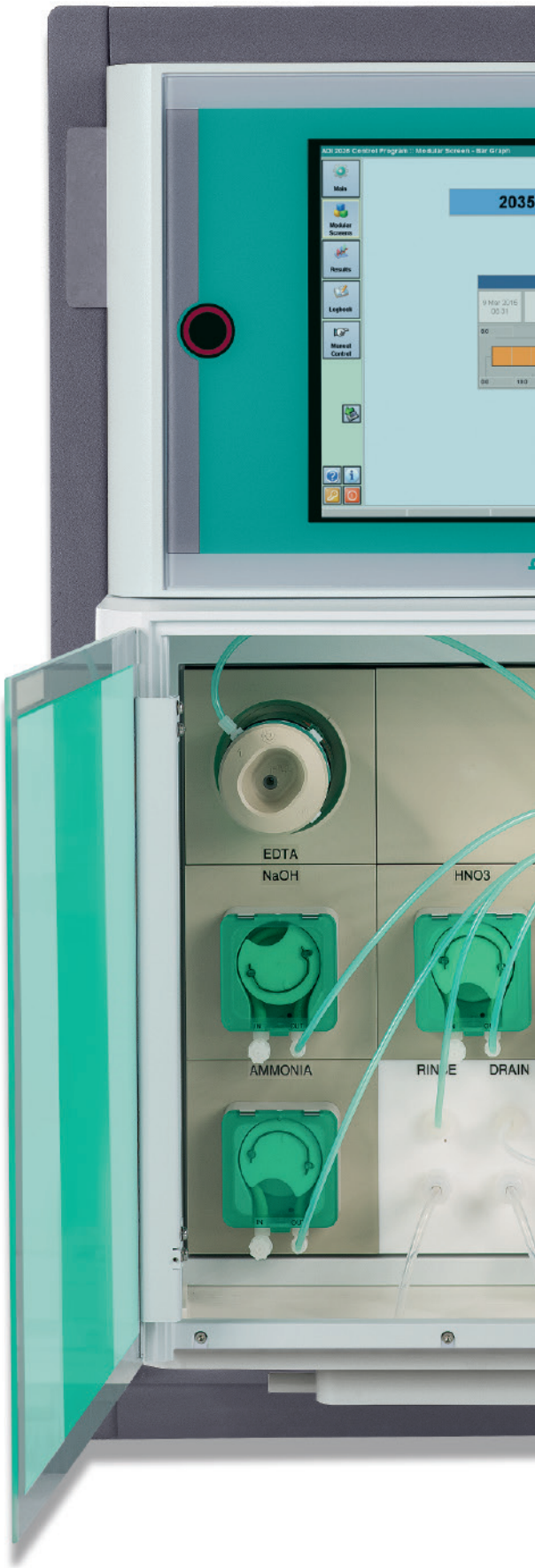
The 2035 Process Analyzer allows for straightforward system operation. To this end, it comes with a customizable graphical user interface with several security levels to meet the specific requirements of your process and staff.

High accuracy

Due to field-proven precision burette dosing technology, the 2035 Process Analyzer provides outstanding accuracy and reduced reagent consumption.

No limitations

The 2035 Analyzer can be automatically calibrated as an option using the proven Metrohm auto-dilution technique: If a sample is outside the calibration range, it is automatically re-analyzed after an appropriate dilution factor is applied. Auto-calibration – specific to your analytical parameters – ensures that your results are always accurate.



Remote control possible

A full color, high-resolution 15" touch screen is the control center to your methods and analysis. The 2035 Analyzer can be controlled remotely to evaluate results, inspect diagnostics from your plant control room, or connect to our online support.

Application flexibility

A wide range of applications is possible due to the modular architecture of the wet part. There is an analyzer configuration for each specific application challenge with our large array of available modules: burettes, pumps, vessels, valves, and more.

Robust design: IP rating 66

The strict separation of the wet part from the electronics part ensures safe operation in harsh environments. The electronics part is housed within non-corrosive epoxy-coated stainless steel. The wet part is housed in polyurethane-coated polystyrene to prevent corrosion.

Virtually unlimited sampling options

In addition to any analyzer, our experts can engineer and provide virtually any sample pre-conditioning system, such as cooling or heating, pressure reduction, degassing, filtration, and much more.

Data communication

Ethernet TCP/IP Network communication and remote operation, web services, MODBUS, analog outputs, digital outputs to transmit results, and alarm status signals. Result export to USB.

And many additional options

Wall mount, table stand, reagent safety cabinet. Shelters and other custom made solutions like preconditioning are designed and delivered based on customer specifications.

2035 Process Analyzer for potentiometric titration and ion-selective measurements

Titration is one of the most widespread absolute chemical methods in use today. The technique is straightforward with no need for calibration. Some titration options available for this configuration:

- **Potentiometric titration**
- **Colorimetric titration with fiber optic technology**
- **Moisture determination based on the Karl Fischer titration method**

Additionally, this version of the 2035 Process Analyzer is also suitable for ion-selective analysis using Metrohm high performance electrodes. This accurate standard addition technique is ideal for more difficult sample matrices.

The potentiometric version of the analyzer offers the most accurate results of all measuring techniques available on the market. With far more than 1000 applications already available, titration is also one of the most used methods for analysis in almost any industry for hundreds of components varying from acid/base analysis to metal concentrations in plating baths.

2035 Process Analyzer for photometric measurements

Photometric analysis is a basic functionality of the 2035 Process Analyzer and is used for many field-proven applications. It is a common, widely-used technique which can determine ions such as ammonia, manganese, and iron in drinking water or even calcium and magnesium in brine solutions. Undesired sample matrix effects such as sample color or turbidity can be removed with differential measurements, taken before and after the addition of a color reagent.

There are two options available for photometric analysis in the 2035 Process Analyzer:

- **Cuvette system**
- **Fiber optic immersion probe**

The cuvette system is compact in order to reduce reagent consumption, yet it offers a long optical path length for high sensitivity. This system is stable over a large concentration range, and is thermostated with stirrer capabilities.

The fiber optic immersion probe broadens the application range substantially. This configuration makes the accurate measurement of high concentration samples simpler through the use of internal sample dilution steps and a smaller light path than the cuvette system.

2035 Process Analyzer for thermometric titration

The 2035 Process Analyzer implements fully automated thermometric titration. At the heart of thermometric titration is a fast-responding, highly sensitive temperature sensor. Instead of the electrochemical potential, the endpoint is determined by enthalpy, i.e., the change in temperature in solution during the titration.

Thermometric titration can be used for a wide variety of titration analyses and is well-suited to handle aggressive sample matrices because of the robust thermometric sensor. The sensor needs no maintenance because fouling and other undesired interactions are minimal, and there are no membrane or diaphragm problems as with other titration methods. Thermometric titration is a problem solver for difficult samples which cannot be titrated potentiometrically, and is also a preferred technique in situations when HF is present in samples.

Thermometric titration is by far the most robust titration method available on the market and is excellent for 24/7 online process applications, such as the monitoring of etching baths. No sensor calibration is necessary, and less cleaning steps are needed. Rapid analysis is possible with this technique; acid mixtures, e.g., can be analyzed in just a few minutes.

The measurement of many new components is now possible, such as the thermometric titration of sulfate in green liquor from the Pulp and Paper industry, and total acid number (TAN) in petroleum products. Other typical applications include the determination of:

- **Hydrogen peroxide**
- **Moisture**
- **Carbonate**
- **Iodine value**
- **Ferrous and ferric ions in mixed acid**
- **And many more**

Applications

Industry > Components	Chemical Petro Chem	Semi conductor	Metal Mining	Metal Surface	Energy	Pulp, Paper, Textile	Food Beverage	Water Waste Water
Acidity	•	•	•	•		•	•	•
Alkalinity	•				•		•	•
Aluminium			•	•	•			•
Ammonia	•	•	•					•
Boric acid	•	•		•	•			•
Bromide	•					•		
Cadmium	•	•	•	•				•
Calcium	•				•	•	•	•
Caustic	•	•		•		•		
Carbonate	•		•		•	•	•	•
Chloride	•			•	•		•	•
Chlorine	•					•		•
Chromium	•		•	•				•
Citric acid							•	
Cobalt	•	•	•					•
COD	•					•		•
Copper	•	•	•	•				•
Cyanide	•		•	•				•
EDTA		•	•	•	•			
FFA	•						•	
Fluoride	•	•						•
Formaldehyde	•			•				
Glucose							•	
Hardness	•			•	•		•	•
Hydrazine				•				
Hydrochloric acid	•	•	•	•	•			
Hydrofluoric acid	•	•		•				•
Hypochlorite	•					•		•
Hypophosphite	•	•		•				•
Hydrogen Sulfide	•							
Iodide							•	
Iron	•	•	•	•	•			
Indigo Dye						•		
Lactic acid							•	
Magnesium	•				•			•
Manganese								•
Mercaptans	•							
Nickel	•	•	•	•				•
Nitrate	•				•	•		•
Nitric acid	•	•		•	•			
Nitrite	•						•	•
Nitrous acid			•					
PAA							•	
P & M					•			•
Peroxide	•	•		•		•		
Persulfate	•	•						
Phenol	•							•
Phosphate	•				•		•	•
Phosphoric acid	•	•		•				
Potassium	•						•	•
Silica	•	•			•			•
Silver			•	•				
Sodium		•			•		•	•
Sulfide	•					•		•
Sulfite	•						•	
Sulfonic acid	•	•		•				
Sulfuric acid	•	•	•	•				
Surfactant	•			•				
TMAH		•						
TP & TN	•							•
Urea	•							
Water	•	•					•	
Zinc	•	•	•					•

Not an exhaustive list. Please contact us for any application questions.

We offer solutions in a variety of markets:

- Chemical/petrochemical
- Chlor-alkali industry
- Power/utility
- Industrial wastewater
- Semiconductor/electronics
- Metal/galvanic
- Mining
- Automotive/aerospace
- Pulp & paper
- Food & beverage

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