TITRATION HAS NEVER BEEN THIS SIMPLE.

HACH LANGE’s AT1000 Titrator Series delivers accurate results for your drinking water treatment process and is the best alternative to manual titration.

- Alkalinity
- Hardness
- Chloride
- Chlorine Dioxide and Chlorite
AT1000 Titrator Series

Simple, automatic titration is safer and more accurate than manual titration.

Easy to use
• Intuitive user interface with a large coloured display (5.7”)
• Saves time with embedded peristaltic pumps for automatic sample preparation
• Simplified handling with automatic recognition of digital INTELLICAL probes. Plug and play applications – no programming required

Reliable and accurate results
• Pre-programmed and optimised methods for drinking water
• Best accuracy and minimal reagent waste with high resolution burette for precise titration
• Repeatable results with automatic end point detection. Eliminate systematic error introduced by human interpretation of colour end point

Safer than manual titration
• Safe handling due to no direct contact with reagents
• Compact and all-in-one design for fast and secure handling
• Automated routine titration ensures higher reliability of results
Pre-programmed drinking water application examples

Perform pH-measurement, conductivity measurement and alkalinity titration automatically in ONE sample.

**Alkalinity**

To monitor the balance between lime and carbonic acid that prevents scaling and corrosion problems in the drinking water distribution network.

The alkalinity application is based on ISO standard 9963-1:1994 (determination of total and composite alkalinity). This application uses acid titration with a determination of two equivalent points by means of a pH electrode.

**Hardness**

To monitor the concentration of Ca\textsuperscript{2+} and Mg\textsuperscript{2+} ions which can form lime and carbonate precipitates that can attack or block tubes/pipes.

The hardness application is based on ISO standard 6059:1984. This application uses EDTA titration with a potentiometric determination of the equivalent points (Ca\textsuperscript{2+} / Mg\textsuperscript{2+}) by means of a Calcium ion-selective electrode (ISE).

**Chloride**

To comply with local drinking water regulations and prevent corrosion problems in the water distribution network.

The chloride application is based on ISO standard 9297:2000 (Mohr method). This application uses silver nitrate titration in acidic solution, with a potentiometric determination of the equivalent point by means of a Silver electrode.

**Chlorine Dioxide and Chlorite**

To monitor levels of chlorine dioxide in the clear well and into the water distribution network.

Monitoring of chlorine dioxide is regulated by EU norms (European Drinking Water Directive 98/83/EC and Water Supply and Sanitation (WSS) in the EU). It is measured with amperometric titration by means of a double platinum electrode.
Technical Data

<table>
<thead>
<tr>
<th>Titrator types</th>
<th>Potentiometric (zero &amp; imposed current), Amperometric, Colorimetric.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement mode</td>
<td>mV/pH, Conductivity, Temperature (°C or °F)</td>
</tr>
<tr>
<td>Sample stand</td>
<td>Integrated, Magnetic stirring, Beakers up to 250mL</td>
</tr>
<tr>
<td>Supported electrodes</td>
<td>INTELLICAL (“Plug &amp; Play” Digital), Analogue, Photocolorimetric</td>
</tr>
<tr>
<td>Burette motor resolution</td>
<td>20,000 steps with electronic µstepping technology (128 µsteps/step)</td>
</tr>
<tr>
<td>Calibration</td>
<td>Titrant &amp; Electrode (Up to 5 Buffers in mode Auto, Fixed &amp; User defined)</td>
</tr>
<tr>
<td>Internal data storage</td>
<td>Last 100 Samples, QC &amp; Blank analyses, Last 10 Calibrations</td>
</tr>
<tr>
<td>Export result data</td>
<td>On USB Key, CSV type, Excel compatible</td>
</tr>
<tr>
<td>Display type</td>
<td>5.7”; Graphic colour; VGA</td>
</tr>
<tr>
<td>Supported peripherals</td>
<td>Printer, PC Software, Balance, Sample changer, Keyboard, Mouse, Bar code reader, Sampling Pump, Propeller Stirrer</td>
</tr>
<tr>
<td>Traceability features</td>
<td>Date, time, operator IDs, sample IDs</td>
</tr>
<tr>
<td>User maintenance</td>
<td>Yes, user defined period</td>
</tr>
<tr>
<td>Password protection</td>
<td>Yes, user defined</td>
</tr>
<tr>
<td>Communications</td>
<td>Electrode ports (x2), USB (x2), Serial (x1), Ethernet (x1)</td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>22 x 40 x 36 cm (8.7 x 15.7 x 14.2 in.)</td>
</tr>
</tbody>
</table>

Peace of mind with HACH LANGE Service:

- Maximum instrument uptime
- Warranty extension options
- Predictable operating and maintenance costs
- Confidence in regulatory compliance

Get access to value added content for drinking water applications.

We have a dedicated team of industry experts specialising in drinking water and they will provide you with various application notes, interactive tools, videos and webinars!

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