As a 240 volt, single phase meter or a reactive meter with service validation, PQM, load profile, and communications—ALPHA Plus means powerful metering.

Elster’s ALPHA Plus meter is a powerful meter that builds on the patented ALPHA® metering technology. The ALPHA Plus meter can be a single phase, 240 volt, one-rate demand meter or a polyphase, wide voltage supply, multi-rate, real/reactive meter that validates meter service connections automatically, performs power quality monitoring, and provides load profile reading with remote communication.

**Load profile and event logs**
The main circuit board has 28 KB of memory available to record load profile and data logs. A sample of the quantity of load profile with 15-minute intervals:

<table>
<thead>
<tr>
<th>Channels</th>
<th>Max. days stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 channel</td>
<td>141 days*</td>
</tr>
<tr>
<td>4 channels</td>
<td>36 days*</td>
</tr>
</tbody>
</table>

*Number of days may be fewer depending on the number of event log entries.

Load profile data is stored in nonvolatile memory. When load profile is enabled, the ALPHA Plus meter records date and time stamps for power failures, test mode entries, time changes, and demand resets. With power quality monitoring enabled, the meter also includes date and time stamps of PQM events (including voltage sags).

**Power quality monitoring**
With PQM enabled, the meter searches for exceptions to user-defined thresholds for voltage, current, power factor, total harmonic distortion, and other items. The meter performs PQM tests 24 hours a day.

**System service tests**
System service tests are performed to check the validity of the electrical service as wired to the meter. The ALPHA Plus meter verifies the service type, phase rotation, and validity of phase voltages. The ALPHA Plus meter also determines if phase currents are within a user-defined threshold.

**Revenue metering**
A1K+ and A1R+ meters measure, store, and display a full set of energy and demand values for both real/apparent and real/reactive quantities, respectively. These meters provide two complete blocks of TOU data. The TOU rate is supported by separate fractional energy registers.

The A1R+ meter offers vectorial kVA values as a metered quantity choice. Average PF can be displayed when kW and kVA are selected as metered quantities.
Technology to empower utilities

Instrumentation
Instrumentation values provide near instantaneous analysis of the electrical service. All quantities can be programmed to display on the LCD in the normal or alternate display sequence:

- per phase values for:
  - voltage and current
  - voltage and current phase angles (compared to phase A)
  - current phase angle as measured to same-phase voltage
  - power factor and power factor angle
- KW, KVAR, and KVA
- THD for voltage and current
- system frequency
- system kW, KVAR, KVA, power factor, and power factor angle

Communications
Data can be retrieved using the standard optical port. By adding an option board, other communication interfaces are available, including the following:

- 2400 bps internal telephone modem with outage callback
- RS-232 serial interface
- RS-485 serial interface
- 20 mA current loop
- external serial interface

About Elster Group
A world leader in advanced metering infrastructure, integrated metering, and utilization solutions to the gas, electricity and water industries, Elster's systems and solutions reflect over 170 years of knowledge and experience in measuring precious resources and energy. Elster provides solutions and advanced technologies to help utilities more easily, efficiently, and reliably obtain and use advanced metering intelligence to improve customer service, enhance operational efficiency, and increase revenues. Elster's AMI solutions enable utilities to cost-effectively generate, deliver, manage and conserve the life-essential resources of gas, electricity and water. Elster has 7500 staff and operations in 38 countries in North and South America, Europe, and Asia.