

ALPHA Plus[®] meter



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:

Channels	Max. days stored
1 channel	141 days*
4 channels	36 days*

*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

Maximum voltage	Continuous at maximum of operating range	
Maximum current	Continuous at Class amperes; temporary (1 second) at 200 % of meter maximum current	
Surge voltage withstand	ANSI C37.90.1 oscillatory	2.5 kV, 2500 strikes
	ANSI C37.90.1 fast transient	5 kV, 2500 strikes
	ANSI C62.41	6 kV at 1.2/50 μ s, 10 strikes
	IEC 61000-4-4	4 kV, 2.5 kHz repetitive burst for 1 minute
	ANSI C12.1 Insulation	2.5 kV, 60 Hz for 1 minute
Voltage range	Nameplate nominal range	Operating range
	120 V to 480 V	96 V to 528 V
	63 V to 240 V*	54 V to 264 V*
	Dedicated 240 V	192 V to 264 V
Current range	0 to Class amperes	
Frequency range	Nominal 50 Hz or 60 Hz \pm 5 %	
Temperature range	-40 °C to +85 °C inside the meter cover	
Humidity range	0 % to 100 % noncondensing	
Power supply burden	Less than 3 W	
Per phase current burden	0.1 milliohms typical at 25 °C	
Per phase voltage burden	0.008 W at 120 V; 0.03 W at 240 V; 0.04 W at 480 V	
Accuracy	Power supply	ANSI C12.20 accuracy
	120 V to 480 V	Meets accuracy Class 0.2 %
	120 V to 240 V	
	Dedicated 240 V	
	63 V to 240 V*	Meets accuracy Class 0.5 %
Starting current	Forms 15 and 3S	10 mA for Class 20
		100 mA for Class 200
		160 mA for Class 320
	All other forms	5 mA for Class 20
		50 mA for Class 200
		80 mA for Class 320
Primary time base	Power line frequency (50 Hz or 60 Hz) with selectable crystal oscillator	
Secondary time base	Meets the ANSI limit of 0.02 % using the 32.768 kHz crystal. Initial performance is expected to be equal to or better than \pm 55 seconds per month at room temperature.	
Outage carryover capacity	6 hours at 25 °C. Super capacitor rated at 0.1 Farads, 5.5 V.	
Communication rates	Optical port: 9600 bps (nominal); Remote port: 1200 to 19,200 bps	
S-base shipping weights	Single	5.5 lbs [2.5 kg], approximate
	4 pack	15.5 lbs [7 kg], approximate
A-base shipping weights	Single	7.5 lbs [3.4 kg], approximate
	4 pack	26 lbs [11.8 kg], approximate

*Not available on meters with CPS power supply
See the ALPHA Plus Meter Technical Manual for complete specifications

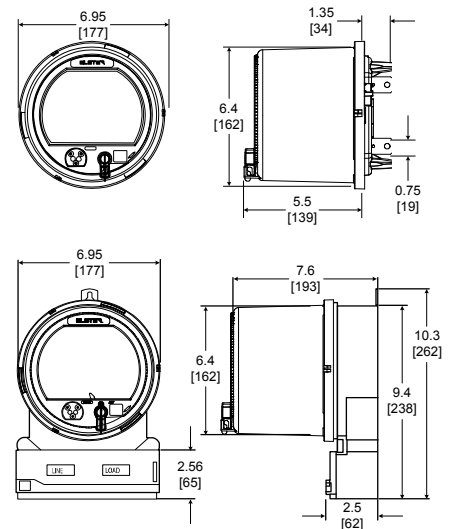
Communications

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.



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