

A3 ALPHA® Meter/Collector



Meter and Collector Functionality

Elster Electricity's EnergyAxis® System is a family of data management, data collection, metering, and communications products that provide remote communication to utility meters. Each A3 ALPHA meter/collector (or collector) contains an internal telephone modem (ITM3) and an internal local area network (LAN) controller option board (ILC1) with two-way 900 MHz transmit and receive capability. The collector is the interface between the metering Automation Server (MAS) and the 900 MHz radio frequency (RF) network composed of Elster Electricity's REX® meters and A3 ALPHA meter/nodes with ILN1 (internal LAN node option board). Collectors can be either single phase or polyphase A3 ALPHA meters for installation on a variety of residential or commercial meter locations. Thus each collector performs a dual function in the network: acting as a meter and as a data collector for a group of other meters.

Intelligent Two-Way Communications

Each collector can manage a network of up to 1,024 meters. The ILC1 option board supports automatic RF registration of meters, designates certain meters as RF repeaters, and selects optimized communications routes to each meter based on signal strength and other factors. If the ITM3 in the collector is equipped with an optional outage reporting battery, the collector can also provide both power outage and restoration data to MAS.

Managing the Network

The A3 ALPHA meter's ILC1 option board manages the 900 MHz RF local area network of REX and A3 ALPHA meters, collects and stores data from the meters, and handles a variety of other system functions. These functions include storing and downloading time-of-use (TOU) schedules to REX meters, transmitting time synchronization signals, scheduling demand resets, collecting load profile interval data, and returning meter data to MAS. Data available to MAS include energy, TOU, demand, load profile, statuses, outage counts, and voltage. The data collected is available to MAS via a single telephone call made on a scheduled or on-request basis.

Easy to Install, Highly Accurate, and Low Cost

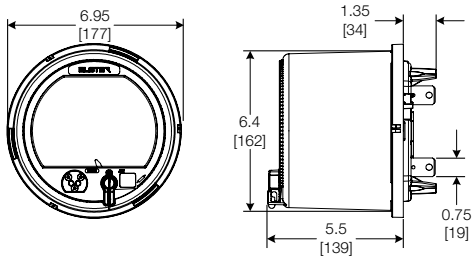
Like its predecessors, the A3 ALPHA meter/collector uses Elster Electricity's patented digital measurement techniques that offer high accuracy, repeatability, and low ownership costs. The A3 ALPHA meter's architecture supports a wide variety of metering functions and software programming. In support of open architecture standards, the A3 ALPHA meter/collector fully supports ANSI communications standards C12.18, C12.19, and C12.21. Because the A3 ALPHA meter/collector is a meter, the installation is as simple as inserting the meter into its socket and connecting it to a telephone line.

Technology to Empower Utilities

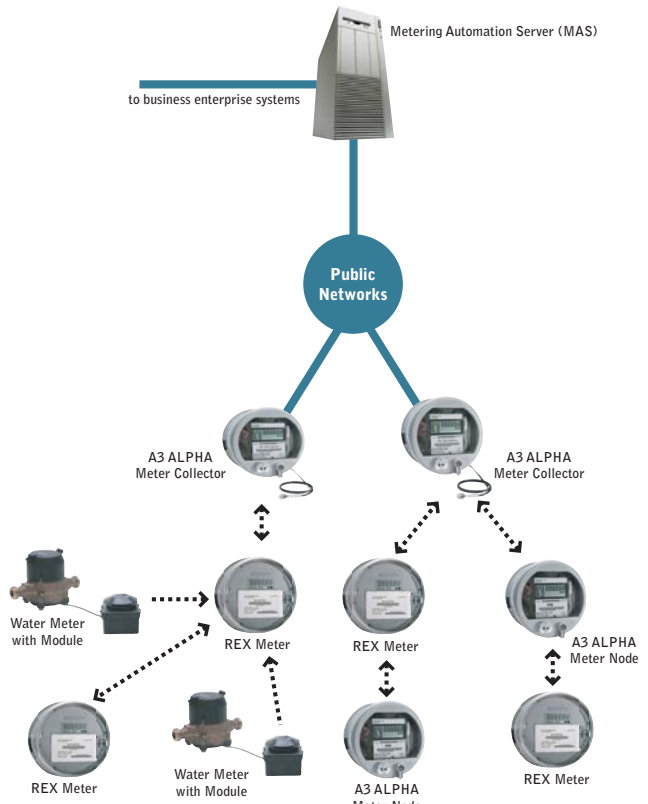
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Technical Specifications

Absolute Maximums	
Voltage	Continuous 528 VAC ANSI C37.90.1 Oscillatory 2.5 kV, 2500 strikes Fast transient 5 kV, 2500 strikes
Surge voltage withstand	ANSI C62.41 6 kV @ 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
Current	Continuous at Class amperes Temporary (1 second) at 200 % of meter maximum current
Operating Ranges	
Voltage	Nameplate nominal range Form 35S 120 V to 240 V All other forms 120 V to 480 V Operating range 96 V to 288 V 96 V to 528 V
Current	0 to Class amperes
Frequency	Nominal 50 Hz or 60 Hz \pm 5 %
Temperature range	-40 °C to +85 °C inside meter cover
Humidity range	0 % to 100 % noncondensing
Operating Characteristics	
Power supply burden (Phase A)	Less than 4 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	Meets ANSI 12.20 accuracy for accuracy class 0.2 %
General Performance Characteristics	
Starting Current	Form 1S and Form 3S 10mA for Class 20 All other forms 5 mA for Class 20 100 mA for Class 200 50 mA for Class 200 160 mA for Class 320 80 mA for Class 320
Creep 0.000A (no current)	No more than one pulse measured per quantity, conforming to ANSI C12.1 requirements
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. Supercapacitor rated at 0.1 Farads, 5.5 V
Battery (optional)	LiSOCl ₂ battery rated 1000 mAh, 3.6 V and shelf life of 20+ years. 5 years continuous duty at 25 °C
Communications rate	Optical port 300 bps to 28,800 bps ITM3 option board 1200 bps or 2400 bps
Applicable Standards	
ANSI	C12.1 C12.10 C12.18 C12.19 C12.20 C12.21



Dimensions in inches [millimeters]. For reference only. Do not use for construction.



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