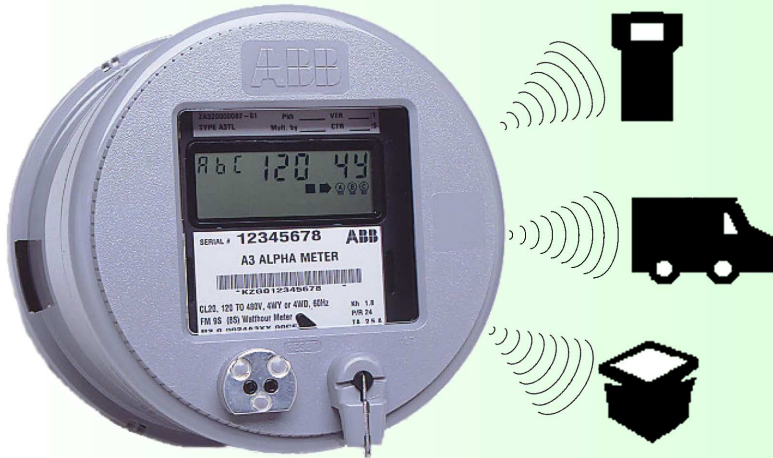


A3 ALPHA® Meter with SSD ERT®



For many years, Itron ERT® devices have provided an economic method to collect consumption data from electricity meters. Until now, however, there has been no similar solution for collecting billing data from demand metered accounts. An ABB A3 ALPHA® meter equipped with an under-the-cover Itron Solid State Demand (SSD) ERT solves this problem.

The SSD ERT is designed to fit under the cover of the A3 ALPHA meter to simplify installation and reduce costs.

An A3T ALPHA meter (TOU meter) equipped with a SSD ERT performs automatic scheduled self reads (with demand resets). The SSD ERT retrieves all billing data directly from the meter registers and transmits the following information:

- previous billing period consumption value (kWh)
- previous billing period maximum demand value (kW)
- date of last demand reset

Because the SSD ERT is always reporting the data from end of the previous billing period, you have a full billing cycle to collect the data. The SSD ERT for the A3 ALPHA functions similarly to the Itron 41ER-1 ERT and continuously bubbles up these data elements in three different SCMs (Standard Consumption Messages).

The data may be collected with any of the following Itron reading systems:

- Handheld OMR (includes PremierPlus 4, Integrator, & MVRs)
- Mobile AMR
- Fixed Network

As additional security for the billing data, the A3 ALPHA meter will store 15 self reads that contain the billing data for the last 15 months.

Meter Status

Included in the SCM messages are multiple error, warning, or status flags that provide key information about the site conditions and enable you to detect possible tamper conditions.

- Standard ERT Meter Removal & Inversion Tamper Flags – Always Included in SCMs
- Examples of up to four additional flags in SCMs (actual list to be determined):
 - End of Calendar Warning
 - Internal Meter Error
 - Phase Outage Warning
 - Low Battery Warning
 - Reverse Power Flow Warning

Read Schedules

The A3T ALPHA meter provides an extensive and flexible calendar permitting the use of both recurring and nonrecurring dates. This calendar is used to define the read schedules (demand reset dates) for meters with an SSD ERT. Using ABB's Metercat™ software you can create and define a calendar schedule for each read cycle.

- If the read calendar is completely defined using "recurring dates" then a perpetual calendar will exist in the meter and no calendar updates will be necessary.
- If no recurring dates can be defined, the A3 ALPHA can provide up to 10 years of scheduled non-recurring monthly resets.



The A3 ALPHA meter is the newest addition to ABB's line of ALPHA electricity meters. The A3 ALPHA meter builds upon the strengths of existing ALPHA meter designs. Like its predecessors, the A3 ALPHA uses ABB's patented digital measurement techniques that offer high accuracy, repeatability, and low ownership costs. In support of open architecture standards, the A3 ALPHA meter is the first ABB meter with full ANSI C12.18, C12.19, and C12.21 communication protocol support.

Alpha Key Upgrades

- ## Communication Options

- Self reads (15 self-reads may be kept at all times)
- Over 50 different instrumentation display quantities
- System service checks
- Class 0.2 accuracy for transformer rated and self-contained

Single phase - 1S, 2S, 3S, 4S

A3 ALPHA Technical Specifications

Operating Ranges		
Voltage	Nameplate nominal range	Operating range
	120V-480V	96V-528V
Current	0 to Class amperes	
Frequency	Nominal 50 or 60Hz $\pm 5\%$	
Temperature range	-40° to 85°C inside meter cover	
Humidity range	0 to 100% non-condensing	

Starting Current

Startup current		
Form 1S and Form 3S	10mA for Class 20 100mA for Class 200 160mA for Class 320	
All other forms	5mA for Class 20 50mA for Class 200 80mA for Class 320	
Startup delay	<3s from power application to pulse accumulation	
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 or 60Hz), with selectable crystal oscillator	
Secondary time base	Meets the ANSI limit of 0.02% using the 32.768kHz crystal. Initial performance is expected to be equal to or better than ± 55 seconds per month at room temperature	
Outage carryover capacity	6 hours at 25°C. Supercapacitor rated at 0.1 Farads, 5.5V	
Battery (optional)	LiSOCl ₂ battery rated 800mAhr, 3.6V and shelf life of 20+ years. 5 years continuous duty at 25°C	
Communications baud	Optical port	9600 baud (nominal)
	Remote port	1200 to 19,200 BPS

C12.1	C12.10	C12.20	C12.18	C12.19	C12.21
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Transmit Frequency	Spread spectrum 910-920 MHz
Data Integrity	Verified in every data message
Operating Temperature	-40°– +85° C
Operating Humidity	5 to 95% non-condensing relative humidity
FCC Compliance	Part 15 certified
ANSI Compliance	Meets or exceeds ANSI C12.1 Standards

The diagram illustrates the Host Mainframe architecture. At the top center is a purple circle representing the **Head End**, which contains a laptop icon. To its right is a green rectangle labeled **Host Mainframe**. Above the Head End is a cloud labeled **SSD ERT ID**. Below the Host Mainframe is a cloud containing **SSD ERT ID + 1** and **SSD ERT ID + 2**. To the left of the Head End is a cloud labeled **IDM**. Below the Head End are four blue circles representing different networks: **Fixed Network** (with a server icon), **MAMR** (with a truck icon), **Micro Network** (with a server icon), and **OMR** (with a person icon). Below the Fixed Network is a cloud labeled **IDM**. Below the MAMR is a cloud labeled **Consumption (ERT ID)**, **Demand (ERT ID+1)**, and **Demand Reset Date (ERT ID+2)**. Below the OMR is a cloud labeled **Consumption (ERT ID)**, **Demand (ERT ID+1)**, and **Demand Reset Date (ERT ID+2)**. At the bottom center is a circle labeled **A3 ALPHA Meter with SSD ERT**, which is connected to the Fixed Network, MAMR, and OMR. Arrows indicate data flow: **Host Upload File** from the Host Mainframe to the Head End, and **Host Download File** from the Head End to the Host Mainframe. The Head End is also connected to the Fixed Network, MAMR, Micro Network, and OMR.



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