

## Samlex

### NEW! Battery Watch

The battery watch is a smart piece of equipment which automatically detects battery voltages between 7V and 32V. It can be used to monitor approximate battery state-of-charge on 12- and 24-volt battery systems.



Three LEDs – green, red and yellow – light in various combinations to indicate battery voltage. An audio alarm can be set to sound at high or low voltage levels and all settings are programmable by the user with a push button on the front panel.

| Description          | Item code | Price |
|----------------------|-----------|-------|
| Samlex battery watch | 028-02257 | \$60  |

## AEE Solar

### Digital DC Volt & Amp Meters



Measure amps and volts in 12-, 24- or 48-volt systems with these high-quality, low-cost LCD digital meters. The surface mount, 3" x 2" x 1" plastic enclosure can be easily attached to wood or metal surfaces with two screws. Terminal strip on the back of the meter accepts 14 to 22 AWG wire.

Amp meters are available with a 100A/100mV shunt for measuring up to 100 amps with 0.1 amp resolution, a 500A/50mV shunt to measure up to 500 amps with 1 amp resolution or without a shunt for installations that already have a shunt. Current draw is only 20mA. Amp meter requires 4-conductor wire; volt meter requires 2-conductor wire. Use 22 gauge or larger for up to 50 feet. Use 18 AWG for up to 150 feet. 2-year warranty.

| Description                     | Item code | Price |
|---------------------------------|-----------|-------|
| Digital volt meter 11 to 65 VDC | 028-09228 | \$42  |
| Digital amp meter w/o shunt     | 028-09257 | \$42  |
| Digital amp meter w/ 100A shunt | 028-09259 | \$65  |
| Digital amp meter w/ 500A shunt | 028-09261 | \$65  |

## Mastech

### Digital Multimeter

Test diodes and measure DC volts, AC volts, up to 10 amps AC or DC current, ohms and continuity with this 9-volt powered digital multimeter (battery included). This inexpensive troubleshooting tool is made in China. Dimensions are 2.75" x 5" x 1".



| Description        | Item code | Price |
|--------------------|-----------|-------|
| Digital multimeter | 028-08031 | \$19  |

## Atkinson

### PV and Wind Digital Monitor

This digital monitor and shunt combination can measure amps and amp-hours from two charging sources of up to 40 amps each on a 12-, 24- or 48-volt battery system. The monitor and shunt module are connected with a cat-5 network cable. The monitor stays in the battery voltage mode until the select button is pushed. The button can turn on the backlight, advance through display settings, reset amp-hours, lock the display in any mode or activate a scroll setting. Backlight comes on for 15 seconds every time the button is pushed and stays on in scroll mode.



Display module requires a shunt module to operate. Order both items. Cat 5 cable required to connect display to shunt.

| Description                    | Item code | Price |
|--------------------------------|-----------|-------|
| Atkinson PVWDM digital monitor | 028-02205 | \$126 |
| Atkinson PVWDM shunt module    | 028-02207 | \$130 |
| Cat 5 cable – 50'              | 030-04199 | \$25  |
| Cat 5 cable – 6'               | 030-04197 | \$8   |

# Hoyt

## Induction Amp Meters



These meters read DC amps from a wire that is placed in the slot frame on the rear of the meter case. No electrical connection is needed. The 30-amp meter will work with wires up to 8 gauge. The dual range meter has a 75-amp scale and a 600-amp scale. This amp meter will work with wire up to 20 gauge.

| Description                 | Item code | Price |
|-----------------------------|-----------|-------|
| Hoyt 30A induction meter    | 028-08045 | \$29  |
| Hoyt 75A induction meter    | 028-08047 | \$29  |
| Dual Range 0-75 / 0-600 ADC | 028-08049 | \$35  |

## Analog Amp Meters

These high quality amp meters mount in a 72mm square hole. The meter movement is very smooth and accurate. The shunt is built into the 30-amp meter so it can be in series with the load to be measured on the negative or positive wire. The 60-amp meter comes with a separate shunt. The mounting plate in the table below holds 1 meter and mounts in a 2-gang wiremold deep switch box.



| Description                            | Item code | Price |
|--|-----------|-------|
| Analog meter 0-30A DC                  | 028-07332 | \$18  |
| Analog meter 0-60A DC                  | 028-07362 | \$18  |
| Mounting plate for 2-gang wiremold box | 028-09015 | \$5   |

## Kill-a-Watt

### AC Meter

This kilowatt-hour meter is easy to set up and use. It gives the user power usage information for individual appliances, displaying true power consumed (including power factor information), and keeps track of cumulative kilowatt-hours, cumulative time the meter has been plugged in, and amount of money the electricity consumed costs. A 15-amp circuit breaker protects against overloads. UL Listed.



| Description                              | Item code | Price |
|--|-----------|-------|
| Kill-A-watt portable kilowatt hour meter | 028-02005 | \$50  |

## AC Kilowatt-Hour Meter

These EZ-Read cyclometer GE utility-grade meters have been removed from service and reconditioned and certified. If you are selling power back to the utility grid, you can keep track of how much power your system is generating. Order one of the raintight meter bases to mount and connect wires to the meter. For use on 120 or 120/240 VAC systems. Maximum current 200 amps. GE Model I-70S, CEC approved. Please contact us for pricing on kilowatt-hour meters for higher power and for 3-phase systems.

### Kilowatt-Hour Meter Sockets

We stock two types of kilowatt hour meter bases. The cast, low-cost round base has 1-1/2" threaded holes in the top and bottom. The Milbank brand sheet metal base is 8" W x 11.5" H (shown with meter mounted). Both are for single phase 2- or 3-wire 100-amp service and both come with sealing ring. Raintight, NEMA 3R for outdoor use.



| Description                                   | Item code | Price |
|---|-----------|-------|
| GE kilowatt hour meter w/ EZ-Read cyclometer  | 028-03015 | \$30  |
| GE kilowatt hour meter w/ conventional dial   | 028-03018 | \$32  |
| Kilowatt hour meter socket 120/240VAC - round | 028-03025 | \$16  |
| Kilowatt hour meter base 120/240VAC NEMA-3R   | 028-03031 | \$90  |

## Tech Tip: Amp-Hour Meters

With the use of an amp-hour meter, you can tell the condition of your batteries at a glance. An amp-hour meter is the best indicator of your system's condition. As you use power, the meter counts how many amp-hours are used. As the battery is charged, the meter goes backwards, toward zero. When the battery is full, the meter reads zero. This type of meter is a must for nickel-cadmium and nickel-iron batteries, where it

is hard to tell state of charge from voltage, or specific gravity. The main destroyer of lead acid batteries is sulfation caused by undercharging. These sophisticated meters help you keep track of your batteries state of charge so you can keep them charged. Get maximum life out of your batteries and save money and system down time. Note: Amp-hour meters lose accuracy if batteries are always run in a very discharged state.

## Xantrex

### Link 10 Meters

Link 10 meters provide complete battery status information for a battery bank. Simple and easy-to-use digital display shows volts, amps, amp-hours consumed, and operating time remaining. It also has an easy-to-read multi-color LED bar graph. The Link 10 allows you to select automatic, sleep and scanning modes and automatically calculates and displays charging efficiency. By adding an optional prescaler, Link 10 can monitor battery banks up to 500 volts. The splash-proof panel allows for outdoor mounting and hands-free operation. It displays key historical battery information such as charge efficiency, deepest discharge, and average discharge and they are compatible with 12- and 24-volt DC systems. The shunt is included. Accessories include prescalers (0-100 or 0-500 volts) to extend voltage range covered by your meter. 1-year warranty.



### TM-500A

The TM-500A is similar to the Trimetric meter in a special package with fuse and fuse holder. An improved display shows volts, amps, amp-hours and percent without changing mode. Very easy to install and use.



Installation is simplified with a special shunt that includes a phone-type jack. Install the shunt, plug the special six-conductor cable into the shunt and meter and all the connections are made! Meter shows days since fully charged, cumulative amp-hours, recharge indicator, low-voltage indicator, and full-charge indicator. Comes with a 50' six-conductor cable with jacks, fuse, and a special 500A/50mV shunt. Also is capable of turning DR, PS, and UX inverters on and off. 2550 amp-hour max battery size. Longer length cables are available for long runs. Use the 48-volt adapter for 48-volt systems.

Dimensions: 4.55" x 4.55" x 1.725". 2-year warranty.

| Description  | Item code | Price |
|--|-----------|-------|
| Link-10 Standard – Meter w/ 500A/50mV shunt        | 028-01128 | \$250 |
| Pre-scaler 0-100V – Use w/ battery higher than 24V | 028-01131 | \$110 |
| Pre-scaler 0-500V – For use w/ battery up to 500V  | 028-01134 | \$175 |
| Temperature sensor – Increases meter accuracy      | 028-01137 | \$57  |
| Mounting bracket                                   | 028-09014 | \$7   |
| Meter wire 8-conductor 18 AWG (price/ft)           | 050-01252 | \$.40 |

| Xantrex model | Description              | Item code | Price |
|---------------|--------------------------|-----------|-------|
| TM-500A       | Amp-hour meter w/shunt   | 028-01405 | \$375 |
| TM-500NS      | Amp-hour meter w/o shunt | 028-01403 | \$325 |
| TM48          | 48-volt adapter          | 028-01413 | \$75  |
| TC25          | 25-foot cable            | 028-01421 | \$22  |
| TC50          | 50-foot cable            | 028-01422 | \$36  |

### Battery Monitor XBM



The Xantrex battery monitor uses sophisticated microprocessor technology to provide complete battery status information for your battery. A simple display shows volts, amps, amp-hours consumed, and operating time remaining. An optional communications kit is available that contains hardware and software to enable battery monitoring

from a Windows-based laptop. The splash-proof panels allow for outdoor mounting and hands free operation. XBM is compatible with 12- and 24-volt DC systems and comes with a 500A/50mV shunt. Front panel measures 2.56" square and the back fits in a 2.05" hole. 1-year warranty.

| Description                                     | Item code | Price |
|---|-----------|-------|
| XBM meter w/ 500A/50mV shunt                    | 028-01119 | \$300 |
| XBM communication kit with software for Windows | 028-01120 | \$225 |
| XBM connection kit – 32 feet                    | 028-01121 | \$90  |
| XBM connection kit – 50 feet                    | 028-01122 | \$115 |
| XBM temperature sensor kit – 32 feet            | 028-01123 | \$75  |
| XBM temperature sensor kit – 64 feet            | 028-01124 | \$105 |

# Bogart Engineering

## Trimetric 2020

This amp-hour meter for 12- or 24-volt battery systems (and 48-volt with adapter) reads volts, amps and amp-hours on an LED display. Amp-hours can be displayed in actual amp-hour numbers or as “% full”. An LED lights when the battery is charging and flashes when the battery has been fully charged. Another LED flashes when batteries should be recharged, equalized, and during low battery voltage. It also records min and max voltage, days since batteries were last charged, days since equalized, and total lifetime amp-hours withdrawn from the batteries. The Trimetric can be located hundreds of feet away from batteries using inexpensive 4-conductor twisted-pair meter wire. For 48V systems or additional lightning protection on 12/24 V systems, use a 48V adapter with the meter. A shunt is required for operation. Use the 500-amp shunt if you have a 12V inverter larger than 800 watts or a 24V inverter larger than 1600 watts. Use a 1000-amp 100mV shunt for systems with stacked XW inverters or where continuous current is over 300 amps. The 1000A/100mV shunt has the same resistance as the 500A/50mV shunt and may be used interchangeably. Order shunt separately. Allows for a maximum battery bank size of 2500 amp-hours. The positive lead to the Trimetric should be fused with a 1-amp fuse. Flush mount or use wiremold box to mount. Made in USA. Dimensions: 4.5" x 4.75". 2-year warranty.



| Description                   | Item code | Price    |
|-------------------------------|-----------|----------|
| Trimetric 2020 amp-hour meter | 028-00020 | \$175.00 |
| 48-volt adapter               | 028-00023 | \$28.00  |
| Surface mount box             | 028-00026 | \$11.00  |
| 500A/50mV shunt               | 028-09253 | \$35.00  |
| 100A/100mV shunt              | 028-09245 | \$35.00  |
| 1000A/100mV shunt             | 028-09254 | \$47.00  |
| 4-conductor 22 AWG wire       | 050-01243 | \$0.50   |
| 4-conductor 18 AWG wire       | 050-01237 | \$0.78   |

## Pentametric Battery Monitor



The Pentametric monitor measures 1 or 2 battery systems with a common negative. With one battery system, battery current plus two charging sources/loads can be measured.

The new PentaMetric battery monitor system offers a lot more capability than the TriMetric monitor. The complete system consists of 3 parts: input unit (near batteries), display unit (shown here) and computer interface unit. It can monitor up

to 3 shunts: For example; measure total solar input and wind input independently in addition to monitoring battery “state of charge”. You can access the data with display unit (shown above) with LCD display and buttons up to 1000 feet from batteries. An optional computer interface with Windows software allows you to control and read out all data from the computer. It has a relay output to control a generator or external alarm and it has audible and visual alarms for high and low battery conditions. 2-year warranty.

| Description                         | Item code | Price    |
|-------------------------------------|-----------|----------|
| Pentametric display unit PM-100D    | 028-00011 | \$199.00 |
| Pentametric input unit PM-5000U     | 028-00013 | \$220.00 |
| Computer interface PM-100C          | 028-00015 | \$100.00 |
| Temperature Sensor TS-1             | 028-00018 | \$29.00  |
| 500A/50mV shunt                     | 028-09253 | \$35.00  |
| 100A/100mV shunt                    | 028-09245 | \$35.00  |
| 8-conductor 22 AWG wire / per foot* | 050-01255 | \$0.36   |

\* 8-conductor wire is ok for measuring one battery. One additional conductor will be required for two batteries.

### Basic measurements:

- 2 voltage channels: 8-100 volts. (For example you can monitor volts from two-battery systems).
- 3 amperage channels  $\pm 0.01$ -200 amps (with 100A/100mV shunt).  $\pm 0.1$ -1000 amps (with 500A/50mV or 1000A/10mV shunt). Each of these requires a separate shunt.
- Temperature -20 to +65 degrees C.

### Secondary measurements:

- Amp-hour (3 channels): to  $\pm 83,000$  amp-hours
- Cumulative (negative) battery amp-hours (2 channels)
- Smoothed (time filtered) amps
- Volts (2 channels): 0-100 volts
- Watts (2 channels)  $\pm 0.1$ - 20,000 watts
- Watt-hours (2 channels)  $\pm 21,000$  kilowatt hours
- Battery % full (2 channels) 0-100%
- Days since batteries charged (2 channels) .01-250 days
- Days since batteries equalized (2 channels) .01-250 days

### Data logging functions

There are 3 types of data logging functions. With the computer interface all 3 types can be output to spreadsheet file.

1. “Periodically logged data” can record any or all of the following at regular intervals: once per day to up to once per minute, amp-hours (3 channels), watt hours (2 channels), Temperature max/min (1 channel), volts (1 channel), amps (1 channel)
2. “Battery discharge voltage profile” data logs volts and amps every time charge level changes by 5% (or 10%) for 1 or 2 battery systems.
3. “Battery cycle efficiency data” documents system efficiency for up to 2 battery systems.

## NEW! Obvius

### A8812-1 AcquiSuite DR Acquisition Server

The AcquiSuite data acquisition server provides “plug & play” connectivity to detect and configure Modbus devices in just seconds. Data from the connected Modbus devices are time stamped and stored in memory at user selected intervals. This interval data can be stored by the AcquiSuite or updated to a destination of the user’s choice through XML or CSV. Data can also be accessed using the modem or LAN connection using any web browser. This enables the user/contractor to push/pull data into energy kiosks, building dashboards, or other custom software applications or web interfaces. The A8812-1 has 8 flex IO inputs; each input can monitor analog, resistance, or pulse data. The AcquiSuite provides a cost-effective solution for monitoring solar system performance down to the string and panel level.



### R9120-3 ModHopper Wireless Transceiver

The ModHopper provides a self-optimizing wireless interface between multiple Modbus devices and the AcquiSuite server. The device uses 900Mhz, FHSS (frequency hopping spread spectrum) technology.

It’s the perfect solution for wireless communication with solar current monitors, net meters, inverters, and environmental sensors (weather stations). There are two pulse inputs available on each ModHopper and users can connect up to 32 hardwired Modbus devices. The R9120-3 has a range up to 1500 feet (typical indoor). Combining ModHoppers with the AcquiSuite and sensors from Obvius provides solar users and contractors with a complete wireless monitoring package.



### A89DC-08 Multi-Circuit DC Monitor (MCDM)

The MCDM allows owners and installers of PV systems or other DC generating applications to monitor the performance of each device individually by providing high accuracy direct current readings. It can monitor 8 sources, strings or subarrays using 8 non-contact Hall Effect current sensors, and provides a Modbus RS485 output. If used with the AcquiSuite the user can utilize many additional features including alarming. Up to 247 MCDMs can be networked when used with the wireless ModHoppers. Use the MCDM to monitor key performance parameters and quickly detect issues with panels or strings.



### H8035/8036 Networked Power Meters

The H8035 and H8036 are three-phase networked (Modbus RTU) AC power meters. They can be used to measure three-phase or single inverter output or building loads. These innovative meters combine power metering electronics and high-accuracy industrial-grade current transformers (CTs) in a single package, eliminating the need for external electrical enclosures and greatly reducing installation time and cost. There are two application-specific platforms to choose from. The Basic Enercept Energy Meters (H8035) measure kW and kWh. The Enercept Enhanced Data Stream meters (H8036) output 26 energy variables including kW, kWh, volts, amps and power factor, making them ideal for power monitoring and diagnostics. Up to 63 power meters can be daisy-chained on a single RS-485 network. Connect power meters directly to AcquiSuite via Modbus RS485 output. They can also be use with the ModHopper for wireless connectivity. Call for higher current meters. Call for pricing on larger power meters.



### Weather Stations

By integrating a wireless or wired “plug and play” weather station with the AcquiSuite™ and ModHopper subsystems, you can add any combination of solar radiance, wind direction and speed, temperature and relative humidity, barometric pressure and rainfall and leaf wetness. Call for a complete list of wired and wireless sensors and the weather station will be assembled to order. These weather stations automatically detect and configure Modbus devices in just seconds, reducing installation time and costs. A basic wired weather station that gives temperature and irradiance and a wireless one with wind speed added are listed on the price list. Other options are also available.



| Model    | Description   | Item code | Price   |
|----------|---|-----------|---------|
| A8812-1  | AcquiSuite DR acquisition server                    | 029-02011 | \$1,649 |
| A89DC-08 | Multi-circuit DC monitor (MCDM)                     | 029-02015 | \$ 995  |
| H8035    | Power meter - basic 100A                            | 029-02022 | \$842   |
| H8036    | Power meter - enhanced 100A                         | 029-02041 | \$1061  |
| R9120-3  | ModHopper wireless transceiver                      | 029-02044 | \$ 535  |
|          | Wireless weather station w/ wind speed & humidity   | Call      | \$3,300 |
|          | Wired weather station w/ temperature and irradiance | Call      | \$1,205 |

## Why Use Monitoring Tools?

Residential and commercial system owners and installers can benefit from remote monitoring services for renewable energy systems. These services provide knowledge and control over energy system generation and demand and are remotely accessible via the Internet. Monitoring systems typically consist of a local device that connects to the energy system, collects data, and communicates with the monitoring service provider's central data center. Using such a service, residential and commercial system owners can remotely monitor their solar electric installations and see the impact of changes in consumption as well as problems such as tree shading or equipment degradation over time. Installers can check system performance, diagnose

problems, and take corrective actions quickly and cost-effectively – often without ever leaving their office. Over time your solar energy generation and demand fluctuates. Periodic meter readings provide only a summary view of energy consumption, telling you little or nothing about PV generation or –short-term performance issues. Good monitoring and display tools can help reveal trends, transient issues, cost-saving opportunities and emerging issues. They feature real-time and historical system performance graphs and downloadable data. Additionally, they provide the independent third-party, revenue-grade monitoring and reporting required to collect performance-based financial incentives.

## Fat Spaniel Technologies

### Monitoring and Visualization Services

The Fat Spaniel monitoring product was designed with residential and commercial system owners and installers in mind. Fat Spaniel Technologies' simple, powerful, and field-proven monitoring and visualization services work with your residential or commercial solar electric or wind system to provide web-based visual displays. This remote monitoring solution allows you to manage and view your solar energy system or whole-building energy usage in a single view. You can view your system anytime, anywhere using a web browser or mobile phone. Residential and commercial installers can assure customers that their renewable energy system is operating properly. Fat Spaniel provides views for post-installation support, alerting you to failure issues and providing tools for remote trouble-shooting. The Fat Spaniel service also generates the regular reports required for performance-based financial incentives available under programs such as California's CSI.

### Residential Monitoring Service

Fat Spaniel's Residential Monitoring Service gives the residential system owner the monitoring and visualization tools to understand their solar energy system. The residential solution allows you to improve your net metering results and reduce your electricity bill by managing your energy use.

The image on the bottom left is a typical simple view showing real-time and historical data about energy generation, the building's energy usage, and environmental information. Energy information can be selected to show daily, weekly, monthly and yearly comparisons.

Fat Spaniel offers inverter-direct monitoring for most grid-tie inverters as well as revenue grade, inverter-independent monitoring that can be used for power purchase agreements, performance incentives and renewable energy credit trading. Residential monitoring systems can be used for systems under 20 kW.

Inverter-direct monitoring meets the California PUC < 10kW EPBB metering requirement, and is not designed to meet the PUC PBI metering requirement. SMA and Fronius inverters require optional equipment from the inverter manufacturer. See information on the table on the next page. Xantrex inverters do not require extra equipment. Inverter-direct monitoring comes with a simple web-based view. Detail view and alerts are an extra-cost option.

Inverter-independent monitoring includes ANSI standard revenue-grade meter with 2% accuracy and meets metering and reporting requirements of California EPBB & PBI programs and of all states requiring revenue-grade meters. These systems come with simple and detail web-based views, and alerts for inverter-off condition and communications failures

Weather data and building load are options that can be added to the monitoring package. All packages include hardware, 5 years of hosted monitoring services and 5 years of warranty coverage. Broadband Internet access is required for standard systems. Cellular and dialup modems are optional.



## Commercial Monitoring Service

With Fat Spaniel Technologies Commercial Monitoring Service you get an accurate and real-time view of your savings and production, whenever and wherever you need it. It allows you to view your whole-building energy picture by monitoring one or many building systems in a single view.

The image at right is a typical commercial simple view showing real-time and historical data. Custom commercial views are available to view selected aspects of your whole-building energy picture. Monitor one or many building systems in a single view.

A Fat Spaniel monitoring system is custom designed to meet your needs from a variety of options through an eleven-step checklist. The table below has a summary of the choices to be made. The first 5 items are required. Step 6 through 10 are optional. The prices are for the minimum in each category and there may be premium products that have a higher cost.

Contact us for actual options and prices.



|  | Description of products  | Price   |
|--|--|---------|
| <b>Required Items - choose at least 1 from each step</b> |  |         |
| Step 1   | Revenue-grade monitoring - meets metering and reporting requirements of California EPBB & PBI programs and of all states requiring revenue grade meters  | \$2,899 |
|  | Inverter-direct monitoring - Provides access to detailed inverter information such as fault events   | \$650   |
| Step 2   | Monitoring capacity - one-time cost based on maximum of 10 kW DC system capacity rating  | \$0     |
|  | Monitoring capacity - one-time cost based on maximum of 20 kW DC system capacity rating  | \$125   |
|  | Monitoring capacity - one-time cost based on maximum of 30 kW DC system capacity rating  | \$240   |
| Step 3   | Monitoring service - 5 years cost based on maximum of 10 kW DC system capacity rating  | \$249   |
|  | Monitoring service - 5 years cost based on maximum of 20 kW DC system capacity rating  | \$539   |
|  | Monitoring service - 5 years cost based on maximum of 30 kW DC system capacity rating  | \$1,025 |
| Step 4   | Web views option - Standard Web Views hosted on Fat Spaniel site, HTML, for public or private access   | \$0     |
|  | Web views option - Flash-based implementation includes "How it Works" module explaining operation of a solar electric system. Can be viewed from either lobby kiosk display or online with a web browser.  | \$4,995 |
| Step 5   | Internet access - Provides an Ethernet port - Internet access must be supplied by a third party  | \$0     |
|  | Cellular modem - Provides Internet access for Fat Spaniel gateway - requires purchase of cellular service from a 3rd party   | \$999   |
| <b>Optional Items - choose any needed for system</b>     |  |         |
| Step 6   | Basic weather station - monitors irradiance, module temperature and ambient air temperature  | \$1,999 |
|  | Full weather station - monitors irradiance, module temperature, ambient air temperature, wind speed and wind direction   | \$3,299 |
| Step 7   | Building demand with gateway - used with Inverter Direct Base System or as a standalone unit   | \$2,950 |
|  | Building demand without gateway - used with a Revenue Grade Base System (which already has meter and gateway)  | \$2,300 |
| Step 8   | String monitoring - Includes gateway, one required for every 120 strings monitored, setup and service five years   | \$1,500 |
|  | Subarray monitoring service only, for a SatCon inverter for five years   | \$608   |
| Step 9   | Data feed for five years - five years, for one site used for non-billing purposes such as graphing - average power (kW), incremental energy (kWh) and incremental irradiance (Wh/m <sup>2</sup> ) in 15-minute increments - delivered on an hourly basis - CSV and / or XML format | \$1,294 |
|  | Data feed for five years - as above, but billing grade - used for billing purposes   | \$1,725 |
| Step 10  | Agency report (PUC / REC) for 5 years - pricing is for 5 years, per site, per report destination (i.e. a specific agency or other recipient)   | \$862   |