Battery Tender Wireless Battery Monitor

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5.0 out of 5 stars

If You Have Patience to Deal with the Cryptic Setup Instructions for the App, these are Great, Robust and Very Useful Gizmos!

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Verified Purchase
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I bought three of these Battery Tender wireless battery monitor gizmos around 09/05/2017 (and then purchased six more a few days later once I had gotten the first three working well), despite the plethora of 1-star reviews (most of them prior to August 2017) for the device and for the smartphone app on sites across the web, including at the Google Android Apps Store, and I did so because I somehow knew on an inner gut level that they would work fine for me, although I admittedly anticipated that I might hit some snags and slowdowns during the initial setup phase of each device.

I initially purchased three of the gizmos because I wished to use them for each of three different dedicated "views" in monitoring the massive 80+ kW AGM battery bank (divided by isolators into 5 separate battery sub-banks or strings) that is part of my off-grid solar-assisted battery backup emergency AC power system (I live out in the mountains, and experience frequent and sometimes-lengthy utility AC power outages, and I use this off-grid battery backup system as a massive AC uninterruptible power supply (aka UPS) to keep all important AC-powered systems in my home operational during power blackouts for up to 20 days at a time...).

Looking back on my decision to purchase these gizmos based solely upon my gut sense, and despite all of the 1-star reviews that had been left by users prior to August 2017, well, I can say that it all ultimately turned out fine for me, as you will see from my tale below:

Well, it took me about four non-stop hours of curses and growls, and one cranky website chat (I was the cranky one) on the Battery Tender website with a customer service person, followed by one phone call on their toll-free line to Tech Support at Battery Tender (made just minutes before all of the company's employees were to be evacuated from the building and from their city in Florida (USA), because Hurricane Irma was bearing down on their region), where I received some good assistance from Luke Gordon (who stayed in touch with me over the next couple of days via email to ensure that everything had worked out okay, and to answer some very techie-type questions that I had about the device), and a fair amount of blood, sweat and tears before I was able to manage to get the first device set up and working, and my subsequent setups of the two other devices (and later, even more of them) were a piece of cake, because I was able to install them using the odd and arcane knowledge that I had gained during the setup of the first such gizmo. Looking back on the bizarre and painful setup experience, I would say that the worst part of the process was the cryptic, vague and confusing instructions, and then there seemed to be an awfully big problem initially in setting up a password (not the WiFi router password, but the device password) for the device, due to some very odd quirks in the device configuration portion of the app.

BTW, I downloaded the Android version of the Battery Tender Wireless Monitor app; I initially installed the app on two older cheap Samsung smartphones, each of which run a generic version of Android 4.0, and then a few days later on a Samsung Android 4.4 tablet PC, and then on Sept. 24, on an Android 5.0 tablet PC, and yes, I downloaded from the Google Android Apps Store the latest version of the app, the one that had been updated in early June 2017.

Once I got over my rage and irritation at the incredibly cryptic, vague, sparse, and often-misleading setup instructions for the battery monitor gizmo and the software app, and once I got the hang of the peculiarities of the app and its cryptic and odd on-screen messages, my setup efforts were 100% successful, and there have never been any problems since that time.

So, despite my initial irritation and annoyance attendant to the hassles of setting up the first gizmo, I would be remiss if I gave these little handy, and very inexpensive, gizmos, and the accompanying latest version of the Battery Tender Wireless Android app, anything less than 4.8 stars (which I have rounded up to 5 stars). You see, the reality is that, once installed, the devices work flawlessly, robustly, reliably, and easily.

Once initial setup has been completed, and even if the gizmos have been disconnected from DC power for long periods of time once setup has been completed, and even if they have been abused by dropping or accidentally reversing the polarity of the battery connections (always easy to do in a field setting in a poorly-lit and cramped control room when using cables equipped with those ancient SAE connectors). it is incredibly easy and fast to connect with any of these devices from my two Android cell phones, and it is also quick and easy to close and then re-load the app throughout the day or week as time passes. And, better, the app never crashes or starts to act weird; it is very stable and very well-behaved.

Additionally, one thing that I must say is that I am very impressed with the range of the little gizmos in communicating via WiFi with the WiFi router in my house. My battery backup shed is located over 130 feet from my house up the heavily-forested mountainside that is my backyard, where it is admittedly on the very outer fringes of the outdoor range of my WiFi router (which is located in the house), and the gizmos are mounted in a battery backup/solar power control room in a shed that is chock-full of all sorts of electrically-noisy electronic equipment -- including solar chargers, inverters, digital panel meters, high-current DC power supplies, and LED lamps -- that emits lots of RF noise (aka RFI) 24 hours per day. and yet the devices communicate flawlessly with the network via the WiFi router that is located at quite a distance in the house.

BTW, you will find notes in a section below on how to run the Android app on a Windows desktop PC; I figured out a way to do this so that I can always have a window open on one of my five PC monitors that will show me battery status 24 hours per day. I kinda want to hate the manufacturer for having supplied software apps only for Android and IOS smartphones, and for not having offered a Windows app for use on Windows desktop PCs and laptops, but then again, the reality is that these little gizmos are the only wireless battery monitor product of their kind on the market, and they are extremely inexpensive, and they do what they do very well.

Looking back at the very wide and broad assortment of one-star reviews that I found on the web for this device and its apps, I must assume that the company finally managed to fix all of the main problems with the earlier versions of the app (at least in the Android app, the only one that I use) in their latest (June 2017) upgrade release of the app.

And now, a few notes:
There seems to be some degree of misconception out there on the web to the effect that a smartphone can access only one of these devices; that is, one smartphone, one device. That claim is not at all true. While a smartphone may indeed be able to view the status of only one of these gizmos at a particular moment in time, the reality is that if you have more than one of these gizmos installed at your location (or really, anywhere in the world, once initial setup has been completed, and so long as both your smartphone and the remote gizmos have WiFi access), you can pick and choose which particular monitor gizmo you want to access for a

battery status report in the app; these choices are made from an on-screen menu, as each gizmo has a unique assigned name (which you can specify at setup) so that you can tell them apart.

Further, there seems to be some degree of a related misconception out there on the web to the effect that a given monitoring device can be married or bonded to only one smartphone, and that none of your other smartphones or tablets, even if they have the app installed, can ever access that particular device for monitoring. That is not at all true. Rather, even if you own six or more of the remote monitoring gizmos (as do I by this point in time), once each has been set up in your Battery Tender account via the app, you can see all six (or more) of the devices on the menus of every smartphone or tablet on which you have the app installed, and you may pick and choose which remote gizmo you wish to monitor at any moment. In fact, you can even monitor the same remote gizmo at the same time using multiple smartphones or tablets, so long as each of them have the app installed, and so long as the app on each one is logged into your Battery Tender account.

Finally, some technical details about the remote monitoring gizmo and the app, etc.:

Remember that this device is designed for installation only in 12 volt nominal battery systems, and it can handle data from standard lead-acid batteries (aka flooded lead-acid, or FLA) and from AGM VRLA sealed lead-acid batteries, and from the newer generation of 12 volt batteries which use lithium (Li) technology.

The monitor app can easily display voltages as low as 10 volts (and likely a bit lower; any voltage much lower than that would likely cause the device to stop working) and while it seems to tolerate voltages as high as 18.5 volts, the Battery Voltage display on the app will not display voltages higher than a cutoff ceiling of between 15.45 and 15.55 volts (it varies a bit across remote monitors); I know all of this from practical hands-on experience, as well as from bench tests in my laboratory, as I employ a bunch of these gizmos to monitor the voltage at points in various subsystems and busses of my 80kW off-grid solar-assisted battery backup emergency power system.

The remote battery monitor device seems to draw about 8 to 10 mA of current at most times when in use, with periodic very brief peaks rising to perhaps 65 mA which occur only when the device is actively sending data via WiFi.

It may be helpful for you to bear in mind that once you have installed and set up (in the app) one or more of the remote battery monitoring devices, they are each send an update on battery charge state/voltage via WiFi only about once every 10 minutes; it seems that the readings are stored on web server maintained by Battery Tender that harvests the latest battery voltage information from each gizmo. This information is then stored at the server and sent back to the app that is running on your smartphone, phablet or tablet, which then displays the voltage and battery charge status to you.

One of the consequences of this particular design configuration for this battery monitoring system is that you will only see new updates of battery voltage and battery charge status (along with time and date of last update) on your app periodically, and, as noted above, the refresh period will usually be 10 minutes; this is based upon my personal experience with a number of these devices and with the app, which is installed on three Android devices, two cheap Samsung smartphones running Android 4.0, and two Android tablets. Of course, your smartphone or tablet with the app installed may be located anywhere in the world, so long as it has WiFi access to a WiFi network that is connected to the Internet. And that note leads me to my next point, below:

Another consequence of this particular design configuration for the battery monitoring system is that if the connection between the local WiFi network to which your remote monitoring device is connected (or the local WiFi network to which your smartphone, phablet or tablet is connected) should lose its connection with the Internet (as can easily occur during power failures or natural disasters such as hurricanes, major storms, flooding, or earthquakes), even though the local WiFi network may remain operational for local LAN traffic

(perhaps because it gets its power from a UPS backup system), the app on your smart device will stop receiving updates from the battery monitor device(s) until such time as the WiFi LAN is once again connected to the Internet.

As you may likely already know, the app displays a colorful graphic showing state of battery charge status along with percentage of full charge, and it also displays the exact battery voltage to two decimals of precision (e.g., 12.84 V), along with the time and date of the most recent update of the battery charge information. Using some Keithley precision DC bench voltmeters in my laboratory, I have been able to determine that the accuracy of the voltage displayed by the app (as sensed by the remote monitor) is extremely tight, displaying correct voltage within +/-0.01 volt. This is quite impressive!

I personally feel that it would be very helpful if Battery Tender would, in their next upgrade of the app, display the battery voltage in a much larger font size; this is important information, and it would be helpful if it were displayed in a more eye-catching and obvious fashion, much as the app does with the large graphic image displaying state of charge and percentage of full charge.

Incidentally, I should mention that in addition to having installed the app on two cheap older Samsung smartphones and on a Samsung Android tablet, I have also managed to get it to run on my desktop Windows 7 PC, as follows: I first installed a free program (the Pro/Premium version is $40/yr) called BlueStacks 3, which allows users to run many (not all) Android apps under Windows, and then installed the Android version of the Battery Tender wireless app in the BlueStacks program. It took a bit of work at first, but the app now runs flawlessly on my desktop PC, and I leave it up at all times on one of the five video display monitors in my PC workspace.

BTW, one minor point of confusion that initially existed for me about this gizmo and the app was that the marketing literature clearly states that the app will notify the user via "alerts" if the battery voltage/state of charge goes too low, but there seemed to be no further information available regarding in what manner this alert was sent, nor could I find any information regarding what threshold voltage the app uses to trigger the sending of the low battery state of charge alert. So, I asked the tech support folks at the company, and they have advised me that the alert is sent via a push notification on the device on which the app is installed, so long as the user has enabled app notifications on their device; it seems that they are considering adding the options of email alerts and/or SMS text message alerts to future versions of the app.

They also advised me that the threshold for sending the low battery alert is when battery state of charge drops below 35%. Now, the exact definition for 35% state of charge varies a bit across battery types and is also dependent upon what authority is defining it, but, in general, a battery no-load voltage of about 12.16 volts is roughly equivalent to a 35% state of charge. BTW, I can tell you with certainty that the current version of the Android app (June 1, 2017 version) does not allow the user to view the battery low state of charge alert threshold voltage, nor to adjust it.

Finally, a Quick FAQ Section re the Battery Monitor:

Q. Does the monitor need external power, such as an AC adapter?

A. No, the monitor does not need external power, beyond the battery to which it is connected. It operates entirely on power from the 12 volt (nominal) battery that it is monitoring. As I mentioned earlier, it draws only 8-10 mA of current. BTW, the monitor seems to continue to work even if battery voltage drops to about 10 volts, which is, of course, a really DEAD battery!

Q. If I use this monitor for my battery, does that mean that I must use only a Battery Tender brand charger for charging the battery or for maintaining its charge?

A. No, not at all; you can use any kind or type of battery charger that you might wish on the battery for charging or charge maintenance (i.e., float, etc.) while this device is monitoring the battery state of charge. In fact, I have some of these devices installed on large AGM battery banks that are charged by PWM/pulse solar chargers using power from PV solar panels, and it all works just fine.

Q. Is it true that the battery monitor can operate only on an open WiFi network without security, that is, one without any password required?

A. No, not at all. The battery monitor works fine on WiFi networks that require a password; you choose the WiFi network name and enter the WiFi password one time only, when you first set up the battery monitor. It keeps this information in its memory forever (even when disconnected from a battery), unless you erase it or update it by running the setup procedure again.

In Closing

Now, by this point, after having read all of my picky technical notes above, you may have asked: What exactly are my technical credentials for having written this review, aside from the fact that I now own 8 of these wireless battery monitor gizmos? Well, I am a consulting and research scientist and engineer (electrical/electronics engineering) with a graduate degree in the sciences, and I also have a number of years of experience in managing IS/IT teams in the corporate world and in the small business world, and I have also designed and prototyped wireless remote monitoring gizmos and systems across the years for various commercial ventures and non-profit research organizations.

This is a brief postscript, circa Sept. 22, 2017, that I have appended to my above review to highlight one of the features about this wireless battery monitor that I find most useful:

I have been on the road and staying in various cities up and down the East Coast for the past 5 days, due to the demands of my work. Regardless of where I am at the moment, whether sitting on an Amtrak train moving through Delaware at 128 mph as it heads toward NYC, or sitting in a hotel room in Philadelphia, New York City, or Boston, or walking on a sidewalk in Manhattan, or reclining in my seat on a passenger jet flying at an air speed of 600 mph at an elevation of 37,000 feet, it is immensely satisfying to me that at any moment that I wish, I can check the battery voltage in the various substages of my 80kW solar-assisted off-grid battery backup emergency power system back at home in a rural area of the Appalachian mountains, using the Battery Tender app on either of my cell phones, or by using the Battery Tender app that I have running under BlueStacks 3 on my Windows 7 laptop PC. As of this moment, I currently have five of these gizmos set up to monitor each of 5 different stages and subsystems of my battery backup system at home, and it takes me less than one minute to check on the status of each of those five key checkpoints using the wireless battery monitor app.