

Understanding Surge Suppressors and the Travato Pure3/Volta System

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The goal of this document is to give people a better understanding of how surge suppressors (aka surge protectors) work with the Pure3 Power Management system by Volta.

What is a Surge Suppressor?

In simple terms, a power line may suffer a voltage spike in the event of a lightning strike and can also happen due to problems with transformers, motors, and shorts in the supply line. These events are usually extremely short (in the microsecond range) but can be enough to fry electronics. A surge suppressor has circuitry which “clamps” the voltage to prevent it getting though. The amount of protection is measured in Joules, which is a term you are unlikely to run across in any discussion but it’s a measurement of energy. Less expensive suppressors have a rating in the 500-1000 Joule range which may be sufficient but there are better 2000+ J units for reasonable prices so spend a few extra bucks.

Do I Have to Have a Surge Suppressor?

The short answer is no, you don’t. There is circuitry built into all Travato’s that does the same thing. But, having a separate outside unit can be inexpensive insurance. And, most surge suppressors have two functions – analysis and protection. There is some confusion about this when it comes to the Pure3/Volta system, however. There is a greater level of protection built into these than a normal Travato which lowers the value of an external unit. But contrary to what some have heard, they won’t cause any problems for you either. One thing to remember is that these units do wear out so keep an eye on the indicator light that lets you know if it’s still protecting you.

What Else Do These Do?

Almost all surge suppressors have a tester built in that will indicate if there are any wiring problems in the shore power outlet you are plugging into. No reputable RV park should have any of these issues, but poor maintenance and poor electrical work can result in problems. These wiring problems are:

- 1) Reverse Polarity – the ‘hot’ and ‘neutral’ prongs are reversed
- 2) Open Neutral – the ‘neutral’ wire isn’t connected
- 3) Open Ground – the ‘ground’ wire isn’t connected

With the exception of an Open Neutral, you could actually connect up a regular Travato and have it run, but it would not be safe. In the case of the Pure3/Volta system, any of these would be detected by the system and your connection would not be established. The proper way to use a surge suppressor is to plug it in and check the lights to see if one of these faults exist BEFORE plugging in your Travato. If you don’t get a surge suppressor, buy a simple circuit tester at any home store; it will accomplish the same thing.

I’ve Read That Some Units Don’t Work With a Pure3/Volta System

I fear that this one is on me... When I first got my 2019 KL, I splurged on a Progressive Industries EMS-PT30X surge suppressor. This had the analysis and protection of a regular device but also had protection for low and high voltages. The way this works is that if the voltage goes outside a specific range, the device will cut off power. This is where the EMS (electrical management system; aka EPO) comes in. Problem is, neither I nor Volta were able to get this unit to work with the KL. The two just failed to connect - I called it a ‘handshake’ problem for lack of a better term. The odd thing was, another person who got their KL just after me was able to make it work and I found I could get it to work if the Pure3/Volta system was off when I plugged it in. There was clearly more going on but I couldn’t figure it out. And that brings us to another aspect of some of these devices – the delay timer.

Why Doesn't My Model XYZ Surge Suppressor Connect Immediately?

Of the dozen or so surge suppressors I was able to find information on while researching this piece, there were four models which had a feature which set them apart. The Progressive EMS-PT30X along with two Surge Guard units and one Hughes have a delay circuitry built in to them. This delay is between 90-128 sec during which time the unit monitors the line voltage to ensure that it is stable. Once this delay is over, the unit then opens the connection and allows current to flow.

For some reason, if you connect up your GL/KL to the Progressive EMS prior to the delay ending, it won't connect. I don't know the exact reason at this time, only a guess, but I am hoping Volta can figure it out. However, there is a way around it. I found that if I plugged the Progressive EMS into the outlet and just left it alone for about 3 min while doing other things, I could then connect to it just fine. I don't have one of the other units to test so I cannot say for sure if they have the same issue, but it's a possibility.

The Watchdog Surge Suppressors from Hughes Autoformers have a Bluetooth module which allows you to monitor your Voltage, Amperage, and Wattage right from you phone. You can also set alerts if you exceed preset ranges.

Which Unit Should I Purchase for My GL/KL

Best advice would seem to be to stick with a model that does not have either a delay or any high/low voltage protection. Neither of these features are going to give you any advantage and typically add a lot to the price tag. Below is a list of the models I found and some notes on features.

30A RV External Surge Suppressors						
Mfgr	Model	Joules	Wiring*	Overheating	Lo/Hi**	Delay***
Camco						
	55310	1,050	yes	no	no	no
	55313	2,100	yes	no	no	no
Watchdog (Hughes Autoformers)						
	PWD30	2,400	yes	no	no	no
	PWD30-EPO	2,400	yes	no	yes	90 Sec
Progressive Industries						
	SSP-30X/XL	825	yes	no	no	no
	EMS-PT30X	1,790	yes	no	yes	136 sec
Surge Guard (Southwire aka Technology Research/TRC)						
	44750	510	no	no	no	no
	44260	2,100	yes	no	no	no
	44280/380	2,100	yes	monitor	no	no
	34930	2,450	yes	protect	yes	128 sec
	34931	2,450	yes	protect	yes	128 sec
*Wiring: Reverse Polarity, Open Neutral, Open Ground						
**Lo/Hi: Monitor for Low/High Voltage and Shut Off if out of range						
***Delay: Delay for analysis before connecting						
Note: Do not connect Pure3 until after delay interval is complete						