Instructions for Optional Electrical Line-Noise Filters

TED Model M005 In-Line Filter
TED Model M006 Plug-In Filter
Safety and Installation Instructions

Operational Description

1. TED uses powerline carrier transmission (PLC) to send data from the MTU(s) to the Gateway.
2. PLC is wonderful technology, allowing transmission of energy-use data from your electrical panel to a display or computer located in your living area without the need for running any additional electrical wiring.
3. PLC transmission superimposes very short bursts of high-frequency electrical data onto the existing powerlines. It is extremely efficient and can travel up to 100m (330’). However, the signal can be adversely affected by electrical noise on the powerline. Electrical noise is most commonly caused by switching power supplies that are used to power most of today’s computers, electronics, LED and fluorescent lighting and dimmers. If there is enough noise, it will overwhelm the PLC signal and cause the system to work intermittently, or in some cases not at all.
4. The objective is to isolate the MTU-to-Gateway PLC signal from line-noise interference. This is done via filtering the offending devices from the MTU-Gateway circuit.

When to Use a Plug-In Filter

If specific electronic devices/equipment can be identified as the source of line-noise, a plug-in filter is a simple solution. Simply plug the offending device into the filter. This will isolate the equipment from the Gateway and the circuit feeding the Gateway.

When to Use an In-line Filter

A large house with lots of electronics, home office equipment, LED or fluorescent lighting or dimmers would likely benefit from an in-line filter to block noise from other circuits or utility powerlines, and would optimally isolate the circuit feeding the Gateway. This solution is best used when the offending device(s) are not identifiable, or when a plug-in filter will not work.

Safety First

1. TED Model M005 in-line filter is installed in the electrical panel and should only be installed by a licensed electrician, or homeowner familiar with electrical panels and wiring.
2. All wiring must comply with the NEC or CEC as well as all local regulations.
3. Turn off power to the panel before beginning the installation.
4. Insure that all connections are secure and tight before reenergizing power.
Installing an In-Line Filter

1. Turn off the power.
2. Remove the wire from the circuit breaker feeding the Gateway. It is most likely black or may be red.
3. Connect the in-line filter as instructed below.
   a. Using wire nut, connect filter black wire to the black wire from the MTU power cable as well as the wire feeding the Gateway circuit (from Item 2 above). The MTU power cable red wire is not used, and should be capped-off.
   b. Using a wire nut, connect the filter white wire to the MTU power cable white wire, then connect to the neutral bus in the panel.
   c. Connect filter red wire to the circuit breaker where you just removed the wire in Step 2 above.
4. Make sure that all the wire connections are secure and that the filter is secured in the panel.
5. Restore power.
6. Check that the PLC-signal is being correctly received at the Gateway.

Installing a Plug-In Filter

1. Plug all electronic and home office equipment into a plug strip.
2. Insure that the load does not exceed 5a (600w @ 120v) to prevent damage to the filter and your equipment.
3. Plug the plug strip into the filter which you have plugged into the outlet.
4. Plug the Gateway into a different outlet. **Important:** Do NOT plug the Gateway into the filter.
5. Check that the PLC signal is being correctly received at the Gateway.