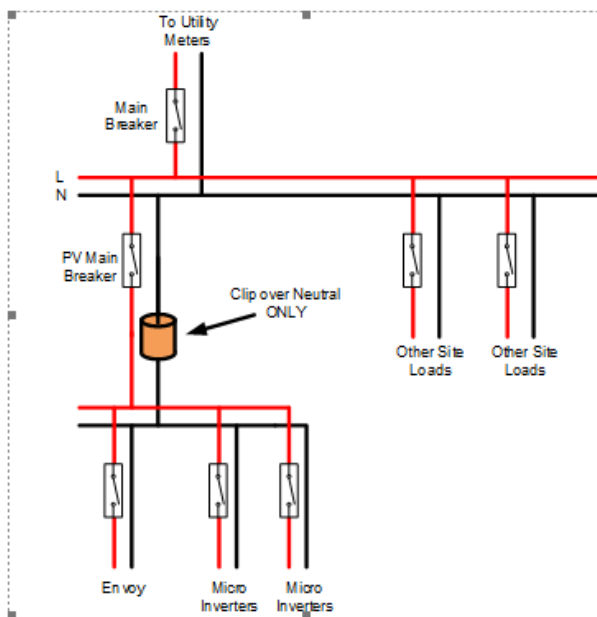


May 1st 2020

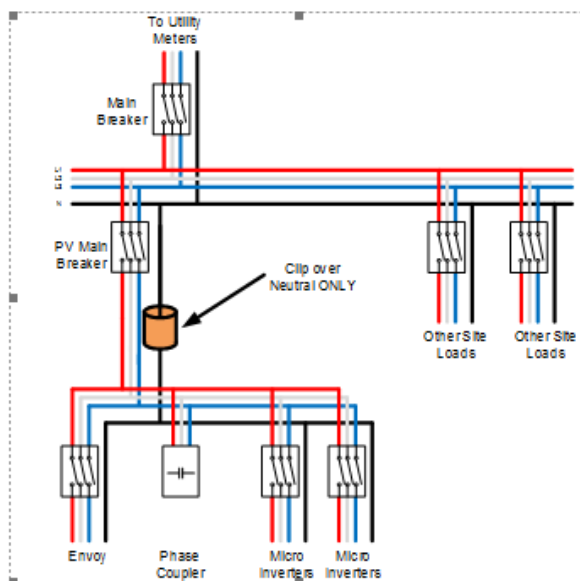
Ferrite Core Installation to suppress site noise issues

The application for using Ferrite Cores to suppress noise is to separate the Power Line Communications (PLC) of the Enphase system from the rest of the household loads. This allows the envoy to communicate to the micros without any external interference from any of the circuit in the rest of the house. Recommended Ferrite Cores can be purchased at [TDK](#) and [JayCar](#). To achieve this the Ferrite Cores should be installed around the neutral to the sub board as shown below:

3.1. Single phase with comms L-N, ETD cable



3.1. Multi-phase with comms L1/L2/L3 - N, ETD cable



To increase the effectiveness of the Ferrite Cores the neutral cable can be wrapped around the core, if there is enough length of cable to do so, if not the number of ferrite cores installed can be increase, as shown below:

General Examples of Fitted Ferrite Toroid Ring(s) and PLC Filters:



Figure 6: Toroid Rings Fitted on a Small Core Phase Cable



Figure 7: Multiple Toroid Rings Fitted on a Larger Core Cable

If you do not have a dedicated PV sub-board on site, you will need to either find the noisy circuit and install the core around the active of that circuit or separate the neutral connections between the Envoy and the microinverters.

Once installed you should restart the microinverter circuit then login to the installer toolkit and check if all the microinverters are now communicating and the comms status for each microinverter to see if they are reporting or not, this is found in under “microinverter” then “status”.

A poor PLC level is shown below:

● 121719033579	
Last Report: 23 W 01/05/2020 10:05 AM	
Status:	OK
Last Report:	23 W 01/05/2020 10:05 AM
Detected:	13 Feb, 2020 2:07 PM Assigned via provisioning
Comm Level:	■ ■ ■ ■ ■
Grid Profile:	Profile Set (AU AS4777.2:2015)
Phase:	L2(B)
Part Number:	800-00586-r03
Running Image:	520-00066-r01-v00.34.09 Updated 02/02/2017 4:51 AM

Compared to good PLC level (after Ferrite Core installation):

● 121719031436	
Last Report: 21 W 01/05/2020 10:06 AM	
Status:	OK
Last Report:	21 W 01/05/2020 10:07 AM
Detected:	13 Feb, 2020 2:06 PM Assigned via provisioning
Comm Level:	■ ■ ■ ■ ■
Grid Profile:	Profile Set (AU AS4777.2:2015)
Phase:	L1(A)
Part Number:	800-00586-r03
Running Image:	520-00066-r01-v00.34.09 Updated 02/02/2017 4:51 AM