Application Note – Connecting an External Disconnection Unit (EDU) to a StorEdge System

This document is intended to assist in planning external disconnection unit connection to the StorEdge inverter.

Revision History

- Version 1.0 – initial version

Introduction

SolarEdge's StorEdge Solution can be used for various applications that enable energy independence for system owners, by utilizing a battery to store power and supply power as needed. The solution is based on and managed by the StorEdge single phase inverter for both PV and battery management and is compatible with LG Chem High Voltage Batteries.

In countries where storage systems with backup need to meet Neutral and/or Ground disconnection requirements in case of power outages, an External Disconnection Unit, connecting the StorEdge single phase inverter to the house distribution panel and grid must be installed.

The StorEdge single phase inverter is compatible with a single phase external disconnection unit provided by Enwitec Electronic GmbH & Co.KG[1]. In case of a power outage, the inverter automatically switches to backup mode, disconnecting from the grid and supplying power to pre-selected backed-up loads. For this system, a separate electrical panel is required.

NOTE

The StorEdge solution for Backup (with or without an external disconnection unit – EDU) cannot be used as an uninterruptible power supply for medical supply devices and/or life-supporting devices (e.g. respirators).

Related Documentation

For detailed instructions on installation and configuration of the StorEdge inverter and other system components, refer to the following installation guides:

- StorEdge Inverter Installation Guide
  https://www.solaredge.com/sites/default/files/storedge_backup_installation_guide_with_LG.pdf
- Modbus meter Installation Guide:
  https://www.solaredge.com/sites/default/files/solaredge-meter-installation-guide.pdf
- StorEdge Wiring guide and onsite checklist
  https://www.solaredge.com/sites/default/files/storedge_inverter_wiring_quick_guide_and_on_site_checklist.pdf

[1] Enwitec is a leading European manufacturer in energy storage solutions connection technology. For more information about Enwitec, refer to their website: http://enwitec.eu/?lang=en

Connecting External Disconnection Unit to StorEdge Inverter

Single Phase Unit

The following diagram illustrates the connection of the single phase external disconnection unit to the system components:

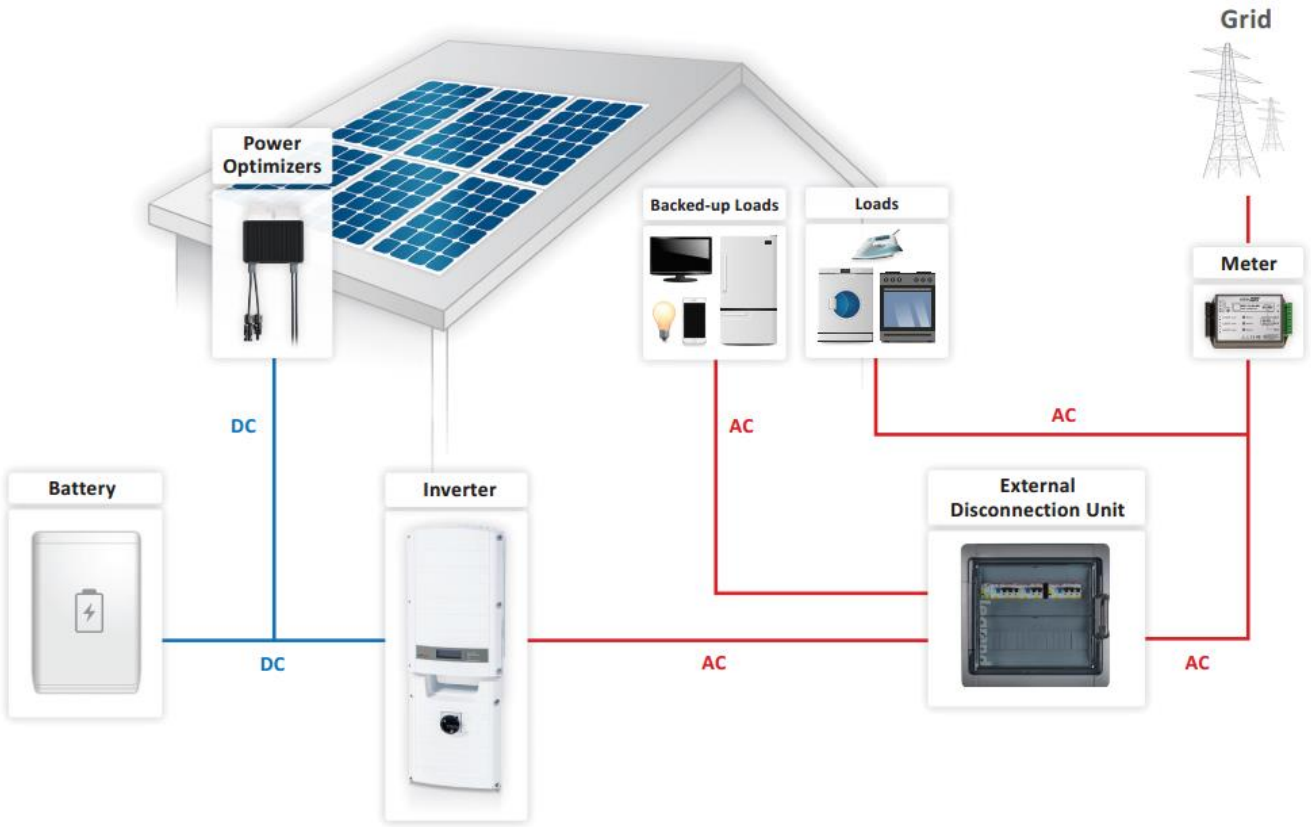

Figure 1: StorEdge Solution with Single Phase External Disconnection Unit

System Connection

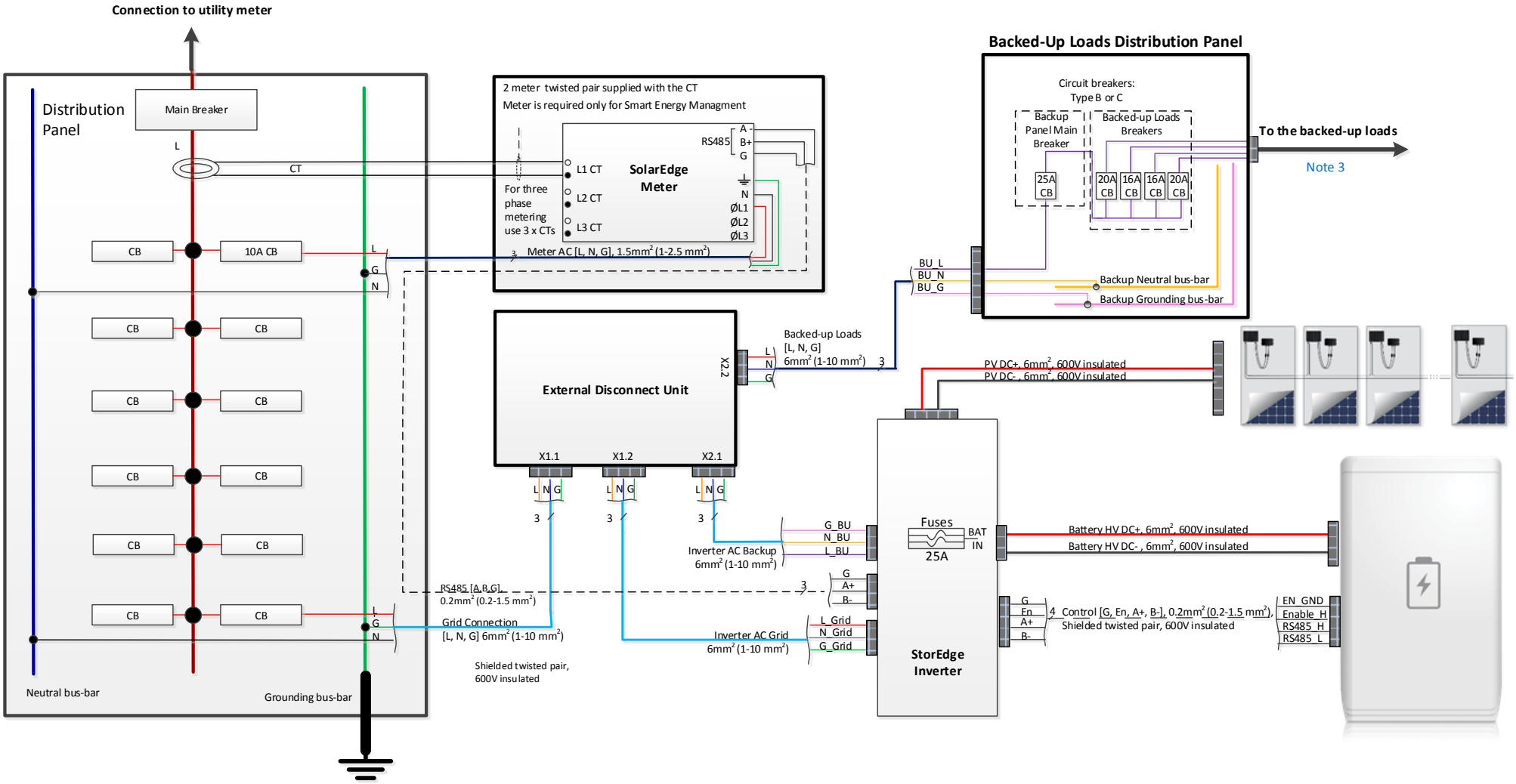

Figure 2: StorEdge Solution with Single Phase External Disconnection Unit Wiring

Inverter Connections and Wire Types

StorEdge Inverter Connection	StorEdge Inverter Wire	Component/ Connector	Component/ Connector Wire	Recommended Cable Type (Min-Max Cross Section)
AC Grid	L	EDU/X1.2	L_Grid	3 wire – 6 mm^2 (1-10 mm^2)
	N		N_Grid	
	G		G_Grid	
AC Backup	L	EDU/X2.1	L_BU	3 wire – 6 mm^2 (1-10 mm^2)
	N		N_BU	
	G		G_BU	
RS485	G	Meter/RS485	G	4 wire – 0.2 mm^2 (0.2-1.5 mm^2)
	A+		A+	
	B-		B-	
Battery Control	G	Battery/Control	EN_GND	4 wire – 0.2 mm^2 (0.2-1.5 mm^2)
	En		Enable_H	
	A+		RS485_H	
	B-		RS485_L	
Battery DC	DC+	Battery/DC	DC+	6 mm^2, 600V insulated
	DC-		DC-	6 mm^2, 600V insulated
PV	DC+	PV System	DC+	6 mm^2, 600V insulated
	DC-		DC-	6 mm^2, 600V insulated

EDU Connections and Wire Types

This table does not include Inverter-to-EDU connections, which are listed in the *Inverter Connections and Wire Types* table above.

EDU Connection	EDU Connection Wire	Component/ Connector	Component/ Connector Wire	Recommended Cable Type (Min-Max Cross Section)
AC Grid Connection/X1.1	L	Distribution Panel	L	3 wire – 6 mm^2 (1-10 mm^2)
	N		N	
	G		G	
Backed-up Loads/X2.2	L	Distribution Panel	L	3 wire – 6 mm^2 (1-10 mm^2)
	N		N	
	G		G	

Support and Contact Information

If you have technical queries concerning our products, please contact us:

Worldwide (+972)	**073 240 3118**	**support@solaredge.com**
DACH and Rest of Europe (+49)	089 454 59730	support@solaredge.de
Benelux	NL (+31): 0800-7105 BE (+32): 0800-76633	support@solaredge.nl support@solaredge.be

Before contact, make sure to have the following information at hand:

- Inverter and power optimizer model numbers
- Serial number of the product in question
- The error indicated on the inverter screen or on the SolarEdge monitoring portal, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The communication method to the SolarEdge monitoring portal, if the site is connected
- Inverter software version as appears in the ID status screen.