

Installation Manual

160KW-400Amp AC NS-Protection - Double Disconnect Board For Grid Tied Solar Inverter Systems

Part Number: DDU-400A



Introduction.

In accordance with local and international standards, the protection of equipment and people are required to ensure the safe operation and maintenance of electrical products, appliances or devices.

This AC protection is designed for both the protection and safe operation of the Solar inverter it is designed for.



WARNING: Installation of this AC Protection board to be by qualified personnel only



WARNING: Electricity is dangerous- Please ensure the correct tools and personal protective equipment is used when Installing, Wiring or Operating Electrical Equipment



WARNING: All terminations should be checked for any potential loose connections that may have occurred as a result of transport activities and vibration. Loose connection may cause hot connections that could lead to damage and/ or fire



WARNING: Although all precautionary measures are taken into account during manufacturing it is the responsibility of the installer of this product to ensure that it is installed in accordance with the relevant bylaws applicable to embedded generation systems and low voltage electrical equipment



WARNING: This Electrical board has an IP65 rating, and is suitable for outdoor mounting.

Installation should where possible be done out of direct sunlight, direct water spray, and rain. If this is not possible, it is recommended the board is to be fitted with a suitable rain and sun canopy to protect from direct sunlight and rain or spray.



WARNING: In accordance with local bylaws and installation and wiring of premises, this board should be installed in such a manner that maintenance and inspection can be carried out without the use of special tools or equipment, such as ladders and scaffolding.

Description

This AC Board is designed for the connection and protection of a single or combiner PV System input not exceeding a total of 400A (160KW)

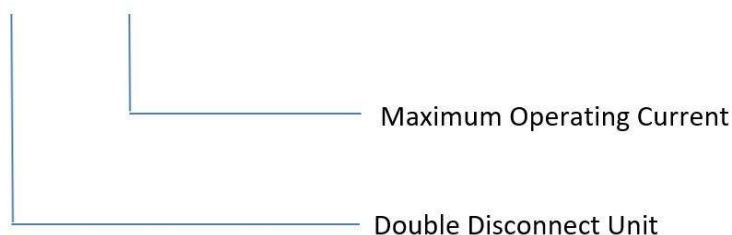
This double disconnect unit is controlled by the standard double disconnect control unit which is a standard control unit for all the double disconnect units.

Once coupled with the double disconnect control unit the connection between the utility grid and the PV Solar system is monitored by an independent grid monitoring relay and can be configured according to the required Country Grid Code for its intended use. A secure grid disconnection is required by series connection of two independently switched contactors. The switching control is obtained from the Grid Monitoring Relay installed in the control enclosure

This board is supplied pre-wired with the installer only required to connect the combined output from the PV system, and the Utility side of the installation.

Ordering Code:

DDU-400A



Mounting:

The board is designed to be Wall mounted. Please ensure that the chosen surface is suitable in order to support the weight of the board, for example brick wall.

It is recommended that the board is mounted vertically.

Please ensure enough clearance area below the board to facilitate the incoming and outgoing cables. Cables must be installed in such a way to maintain the cable manufacturers recommended bending radius. See Fig 1.

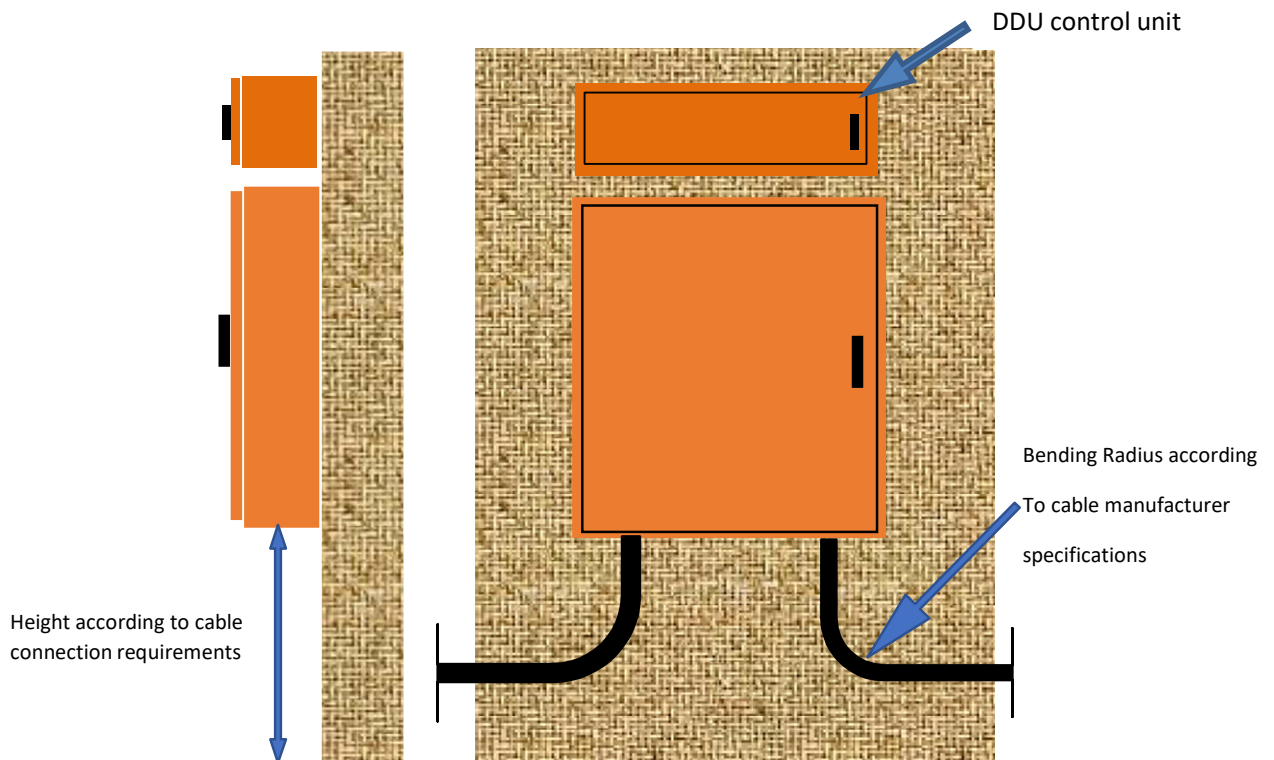


Fig 1.

Connecting the PV System Combined Output cable to the Input of THE NSDD Board:

This AC Board is suitable for the connection of the following Inverter: up to 160KW
Maxoutput Power: 2 x 80kW Inverter or 4 x 40kW Inverters or 8 x 20kW Inverters etc

The Number of Inverters exceeding the quantity of one must first be combined in an AC PV Combiner Board as this Board is designed to accept a single input from the PV System.

Recommended cable entry point is from the bottom of the enclosure. See Fig 2.

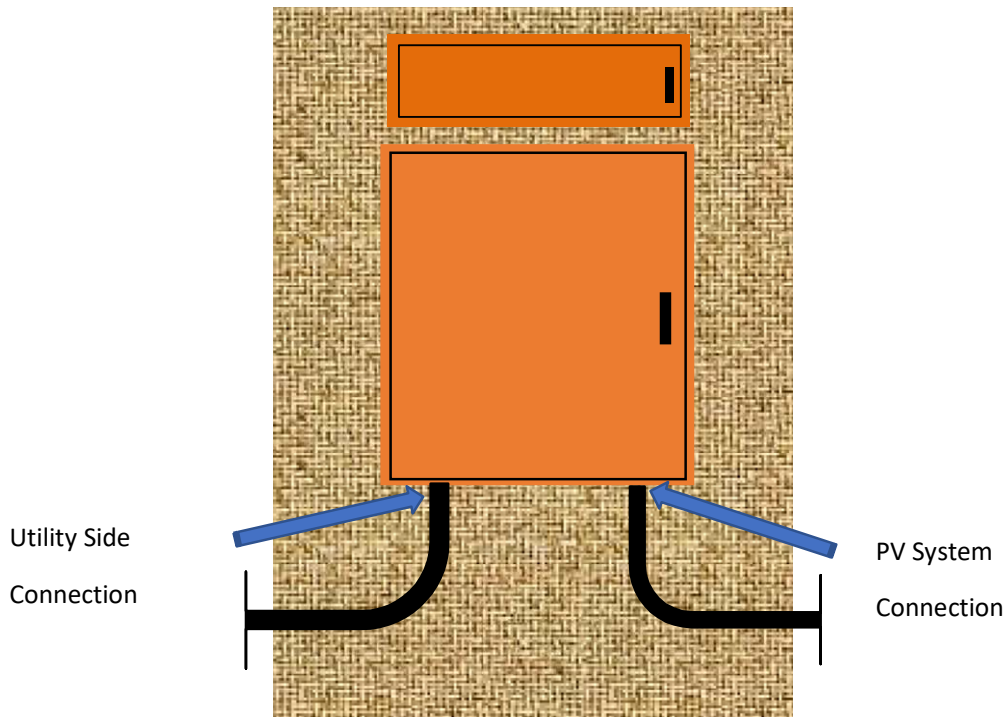


Fig 2.

Note: Please use the appropriate cable gland for the cable type that is used for the installation.

For SWA cable: Steel wire armoured gland with cone

For Flexible cable ie. H07-RNF- suitably selected IP 65 Compression gland

In all instances ensure the use of the matching shroud to protect the gland and assist with ingress protection. See Fig 3,3a, and 4 below.

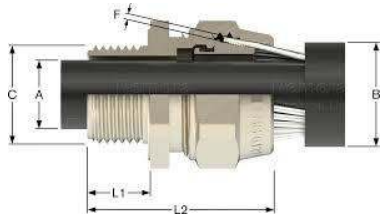


Fig 3



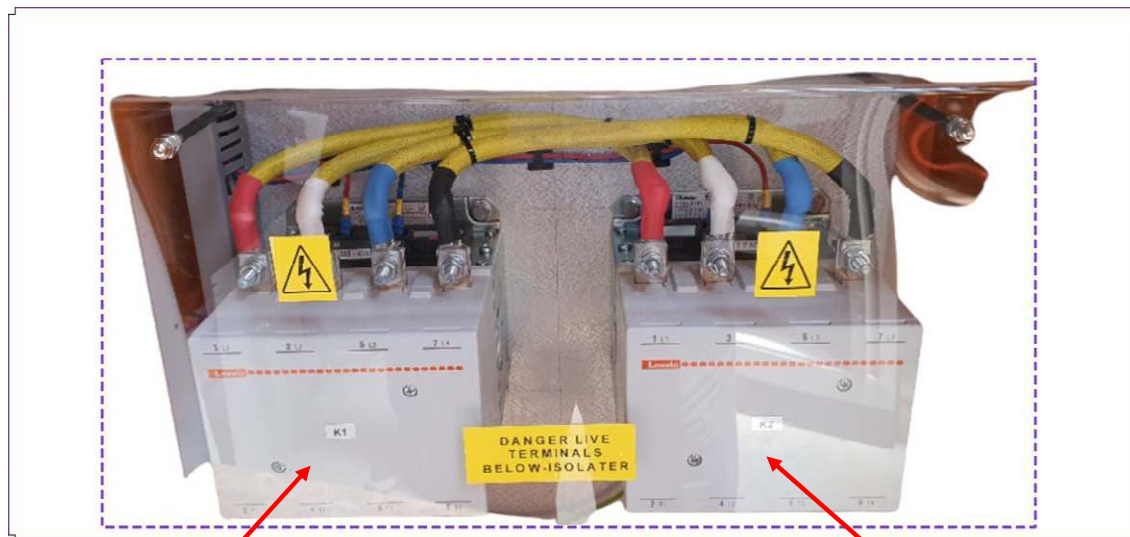
Fig 3a



Fig 4

PV System AC Connection

Connect the PV System cable (L1, L2, L3, N) from the AC protection or combiner board to K2 contactor terminals as per Fig 5 below



K1 Contactor – Utility Connection Point

K2 Contactor- PV Systems Connection Point

Fig 5

Recommended Cable Size: Main Cable - **185mm² x 4C**, Earth Conductor – **50mm² x 1C**

Earthing:

All Metallic parts of this assembly must be earthed in accordance with the Low Voltage wiring standard requirements.

The Earth conductor for each individual cable must be connected to Earth Point Provided

See Fig 6 Below

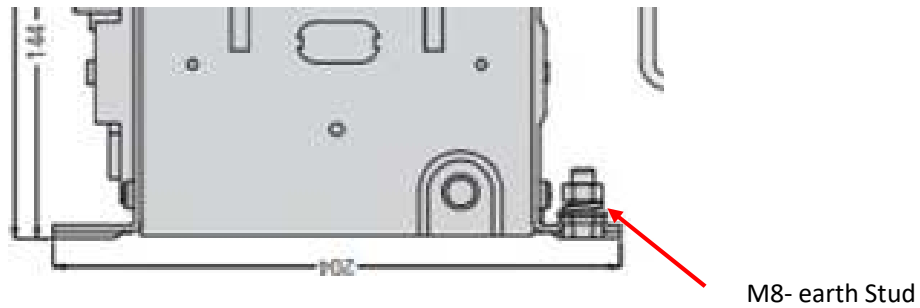


Fig 6

- Conduct an insulation test prior to final connection of all connected cables
- NB - Ensure all Cable are properly fastened to avoid loose connections prior to powering system

Warranty:

This system carries a standard 12-month Warranty from date of purchase.

Warranty shall be void if not used within strict compliance with the installation manual, and the user manual of the protection relay.



WARNING: Please ensure all connections including factory connections are checked, as it is possible for them to loosen during transport and handling.

The ACDB is supplied with the appropriate marking and rating labels, please ensure any additional warning or rating information is added to the system as may be required due to site specific conditions and location.



SAFETY FIRST- Equipment to be inspected and tested by suitably Qualified person