

Regulatory requirements and Safety standards

- **Regulatory requirements**

We pride ourselves in conforming to relevant regulations as noted below. It is based on the Small Scale Embedded Generation (SSEG) principles, which is a regulated industry with documented and defined standards of application. The list of defined standards that we adhere to is recorded for the reader's benefit as follows:

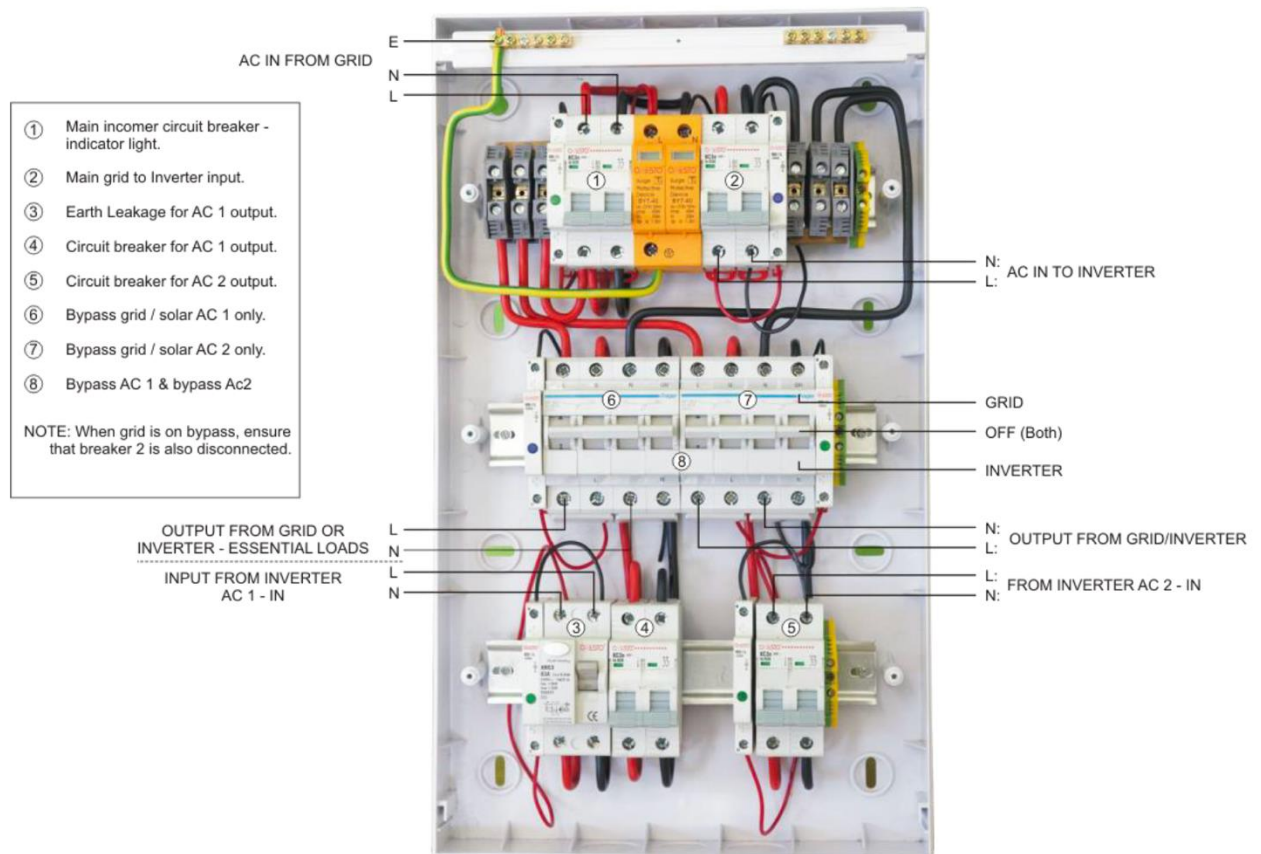
- ★ NRS 097-1/2: Grid interconnection of Embedded Generation.
- ★ Municipal SSEG Standards or Regulations (determine the standards required by the Municipality in which area the installation is required).
- ★ Eskom SSEG application requirements as per their standard documentation.
- ★ SANS 10142/1 to 4: The wiring of premises (as amended and published).
- ★ NRS 048: Electricity Supply – Quality of Supply.
- ★ SANS 474 and NRS 057: Code of Practice for Electricity Metering.
- ★ SANS 62305-1: Protection against Lightning
- ★ Electricity Regulation Act, Act 4 of 2006 and Electricity Regulation Amendment Act, Act 28 of 2007.
- ★ Occupational Health and Safety Act, No 85 of 1995 as Amended.
- ★ South Africa Distribution Code (all parts).
- ★ South Africa Grid Code (all parts).
- ★ South Africa Renewable Power Plants Grid Code.
- ★ TNC-S Earthing: According to SANS 10142.

Safety standards

- **AC (Alternating current) Standards**

When we connect the inverter to your AC supply, we have to make sure that all appropriate levels of protection are built into our AC-DB board. We have concurrently designed a board that does exactly that with indicator lights and a bypass switch should something go wrong.

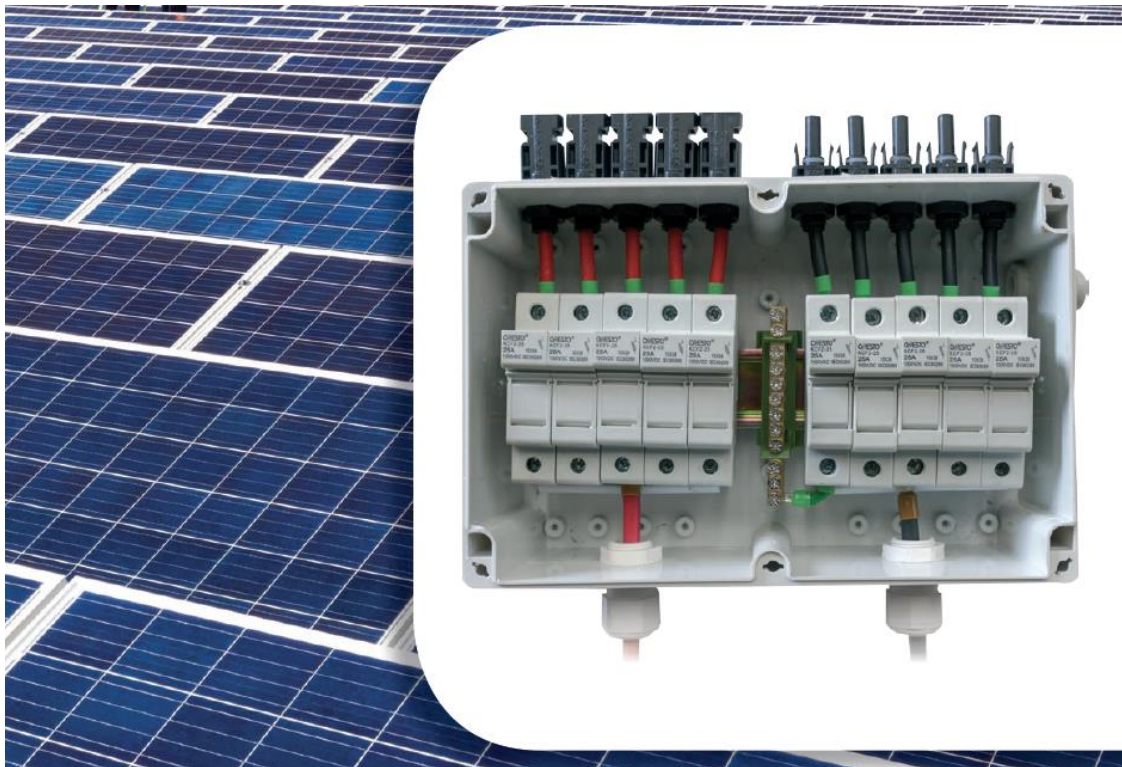
The bypass switch in these distribution boxes allows the customer to utilize grid to AC 1 and AC 2 from either the grid or the inverter, depending on the bypass switch's position. These systems' design will also allow for industrial bypass between AC1 only and/or AC2 separately. Therefore, the bypass can be used for complete pass-through or for proportional pass-through. Also included is a set of AC Surge protection devices to protect any incoming surges from the supply side



- **DC (Direct current) Standards**

Conversely, and as important is the protection of the DC supply from panels, MPPT and battery to inverter. We have carefully designed each item with appropriate DC breakers, fuses, correct wiring to maximise your investment, and minimise failures in the solar power plant.

- Panels to combiner box. We string and fuse both the positive and negative lines



- Panels to MPPT: Battery and PV disconnect with surge protection on panels

Figure 2 and 3
DC Protection Box enclosure with markings and circuit breakers

