Load Share Function

This applicaton note describes how to connect up to four TXN 1000 power supplies in parallel for load-sharing.
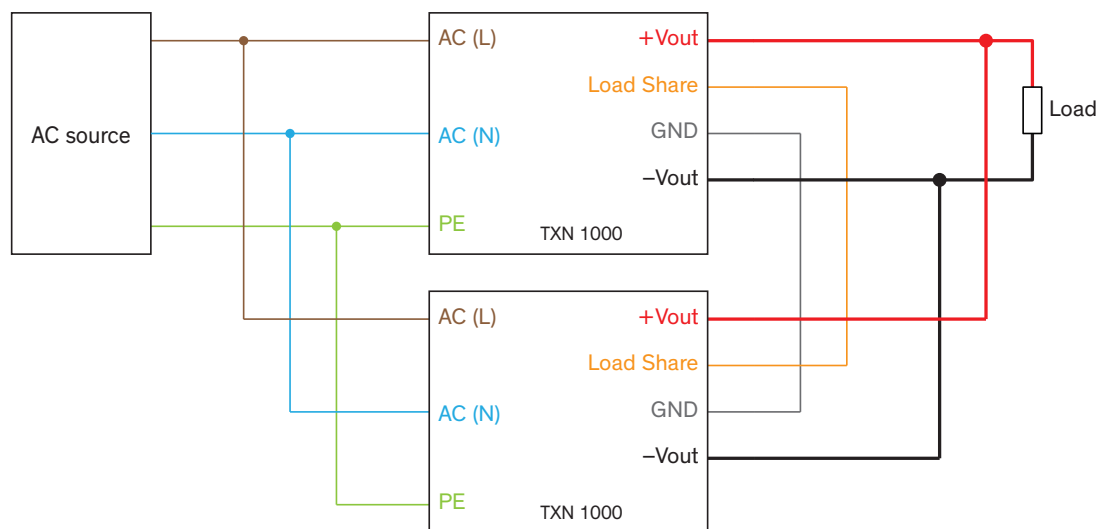
Description

The TXN 1000 series includes a load-sharing function that allows up to four units to operate in parallel, effectively increasing the total output power.

This load-sharing function also allows up to four units to be connected in parallel for redundancy. In this configuration, having an extra power supply prevents application malfunctions in case one unit fails, providing additional time to replace the faulty unit. If one power supply fails, the remaining units will automatically share the load to maintain continuous operation.

For optimal performance and to ensure balanced output currents among the connected modules, the Load Sharing pin and the GND pin of each TXN 1000 module must be interconnected.

The following basic circuit diagram illustrates the configuration for two TXN 1000 power supplies operating in parallel.

Notes

- A maximum of four identical TXN 1000 modules can be connected in parallel.
- No protection diodes are required.
- To ensure balanced power distribution and prevent any module from entering protected mode, cables with identical specifications and lengths must be used when connecting each TXN 1000 power supply to both the final load and the AC source.
- In practice the output current of each power supply may not be perfectly balanced. The resulting balancing currents lead to a slight reduction in efficiency.
  Therefore the maximum combined output power can be calculated as following: $P_{TOTAL} = P_{TXN1000} \times n \times 0.9$
- Load-sharing accuracy is specified within a 5% tolerance. This accuracy is guaranteed when the output load of each power supply is at least 50% of its rated maximum output power. Operation at lower load will not damage the converter.
- In case of an unit failure during redundancy operation the remaining units must not operated in a overload condition.

➜ The product specifications provided in the data sheet apply to individual units and may differ when using multiple TXN 1000 power supplies in parallel.