

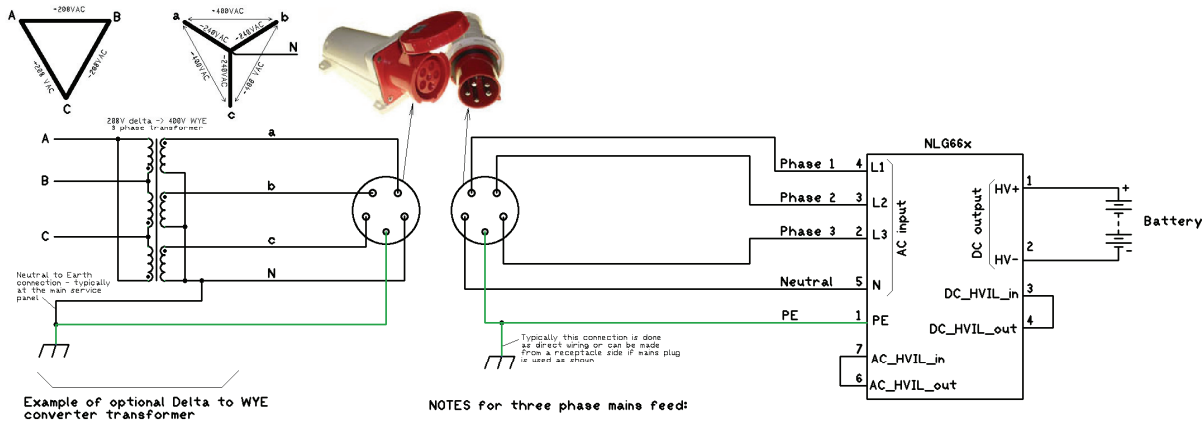


Application Note MMC_007

contact: [Victor Tikhonov](mailto:Victor.Tikhonov@metricmind.com), MMC President/CTO +1-503-477-6071

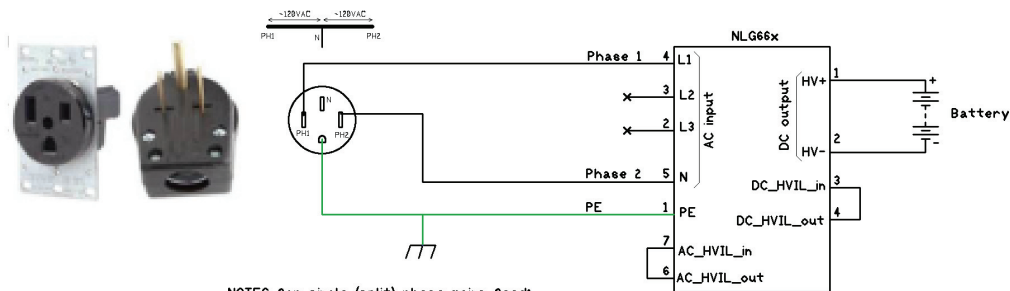
NLG6xx Connection and plugs for USA / Canada mains

Three phase connection diagram



- NOTES for three phase mains feed:
1. N and PE of the NLG6 must have the same potential.
 2. Interlock connections for NLG6 are optional
 3. PE = Protective Earth

Single (split) phase connection diagram



- NOTES for single (split) phase mains feed:
1. Neutral connection of mains is not used but assumed to be connected to Earth ground at the service panel. PE potential of the NLG6 must be the same as neutral of the mains feed.
 2. Yes, "N" terminal of the NLG6 is connected to hot phase of the mains feed. In single phase configuration "N" terminal of the NLG6 does not represent "neutral" of its AC input circuit.
 3. L2 and L3 inputs of the NLG6 must be left unconnected.
 4. Interlock connections for the NLG6 are optional.

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To take advantage of full power capability of BRUSA NLG6xx series charger, it requires three phase feed with Neutral line available, which is typical standard Star mains feed configuration. Ideally PE line of the charger should be connected to its N line at the charger side if local code permits. However, as long as N potential is equal to PE, this connection is normally already exists at the main service entry panel or sub-panel, therefore explicit link between N and PE at the charger side is not required.

Note that PE line must ALWAYS be connected to protective earth of the mains feed for safety.

The NLG6xx will also work off typical single split phase US mains feed, albeit with output power limited to 6.5 kW. To implement such connection, ~240 VAC is applied between L1 and N terminals of the NLG6. L2 and L3 lines must remain unconnected. Like for three phase connection, the PE line MUST be connected to the protective earth of the mains feed. One hot phase of the 240 VAC mains is connected to L1 line and the other hot phase to N line. Please note, L1 and N terminals are connected to both HOT lines of the 240 VAC mains, e.g. for single (split) phase mains feed "N" line does not represent "Neutral" function of the internal charger circuitry and like L1 line will be 120 VAC away from the PE line. As far as internal power supply, "L1" and "N" lines are equal and interchangeable, e.g. hot ends of the 240 VAC feed can be swapped. As long as ~240 VAC exists between L1 and N lines and PE is connected to earth e.g. L1-PE-N potentials are 120+120 VAC), the charger will work.

The PE line is not used to conduct current and no power is transmitted through it, therefore conductor crossection can be typical for safety ground. As a rule of thumb, use the same type and crossection conductor for PE as for the conductor used for safety ground connection between mains outlets and the main service panel.

WARNING: for any type of connection always observe precharging requirements for initial connection to the battery, see application note MMC_006 for details. Failure to precharge charger's output may cause hardware damage and is not covered by warranty.