



INVERSION METHODS EXPLAINED

IRON CORE TRANSFORMERS AND FIELD EFFECT TRANSISTORS

There are two distinct types of industrial grade power inverters distinguished by the size of their transformers, and the switching speed of their transistors. The ability of an inverter to absorb the electrical surges inherent in certain loads like motors, pumps, and torque-related tools is directly proportional to the physical amount of iron present in the transformer. Size and tolerances of the transistors used in the inversion process, and the speed at which they operate determines the classification of high or low frequency.

High Frequency Inverters (HF)

The large majority of inverters available in the retail market are high frequency. They are typically less expensive, have smaller footprints, and have a lower tolerance for industrial loads. HF inverters have over twice the number of components and use multiple, smaller transformers. Their application is appropriate for a wide variety of uses like tool battery chargers, small appliances, A/V and computers, but have a decreased capacity for long term exposure to high-surge loads like pumps, motors, and some high-torque tools.

Low Frequency Inverters (LF)

Our UL-listed, low frequency inverters and inverter/chargers are the pinnacle of electrical durability. The massive iron core transformer is aptly capable of absorbing surge loads because of the “Flywheel Effect” inherent in the physical amount of a transformer’s iron. LF inverters have larger and more robust Field Effect Transistors (FET’s) that can operate cooler, in part due to the slower frequency of switching required to produce AC power. These inverters are feature rich to include the optional ability to hardwire additional external GFCI outlets, input of multiple DC voltages, provide regulated dual output voltages (120/240VAC), and integrate chemistry appropriate battery chargers and transfer relays for shore power.

HIGH FREQUENCY

Pros	Cons
Smaller footprint Less expensive	Doesn't operate well with high-surge loads like pumps and high-torque tools

LOW FREQUENCY

Pros	Cons
Runs well with high-surge loads Operates cooler	Heavier More expensive

DIMENSIONS AND MAGNUM BRAND INVERTER LINES

High Frequency

CSW Series Inverter
CMW Series Inverter

Low Frequency

LP Series Inverter
N Series Inverter
ME Series Inverter/Charger
MM Series Inverter Charger
MMS Series Inverter/Charger
MS Series Inverter/Charger
MSH-M Series Inverter/Charger
NP Series Inverter/Charger

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