Power rating and overload

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Power rating inverter 3000VA

For example, the inverter power of a Multi 24/3000/70:

- Continuous power at 25°C is: 3000 VA = 2500W
- Continuous power at 40°C is: 2700VA = 2200W
- Peak power at 25°C is: 6000W

MultiPlus	12 Volt 24 Volt 48 Volt	C 12/800/35 C 24/ 800/16	C 12/1200/50 C 24/1200/25	C 12/1600/70 C 24/1600/40	C 12/2000/80 C 24/2000/50	12/3000/120 24/3000/70 48/3000/35	24/5000/120 48/5000/70
Cont. output power at 25 °C (VA) (3)		800	1200	1600	2000	3000	5000
Cont. output power at 25 °C (W)		700	1000	1300	1600	2500	4500
Cont. output power at 40 °C (W)		650	900	1200	1450	2200	4000
Peak power (W)		1600	2400	3000	4000	6000	10.000

# Overload mechanism in Multi

Pre-alarm (blinking LED)

- When the nominal power of the inverter has been exceeded.

- Depending on the size of the overload, this condition can remain for some time.

Alarm (LED is on)

- In case of a severe overload or short circuit the unit will attempt to power the overload 3 times, every 30 seconds.

Switch off

- If, at the 3th attempt, the overload or short circuit still persists, the unit will turn off while the overload led will remain lit.

- A manual turning unit off and on is required to restart
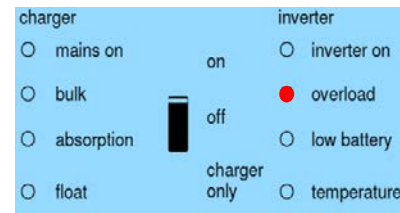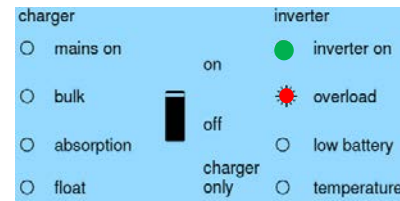
What determines overload

Overload is initiated when:

- the current trough the inverter is too high

- When the inverter output voltage drops

When determining loading, always look at the AC output current

- Current = power / voltage

- For a 8000 VA unit at 240V the current rating is 8000/240 = 33.33 A

- This is the half hour current

- The peak current is twice that, so 2 x 33.33 = 66.66A

When investigating overload situations use a true RMS current clamp
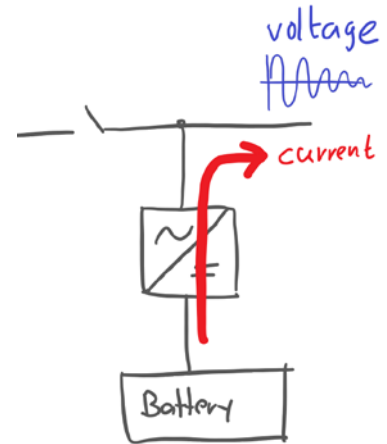
Overload, how long

The following guideline can be used, providing that:

- The battery voltage remains stable during the overload:
- The unit is not over-heated due to earlier overload attempts

Overload	Time
130% of nominal power	30 minutes
Overload where the output voltage remains stable	2 minutes
150% of nominal power where the output voltage remains stable	5 seconds
Peak power of 200% of the nominal power (short-circuit)	0.5 seconds = 30 cycles

Current and voltage during an overload

Starting a compressor

- Yellow is voltage

- Blue is current
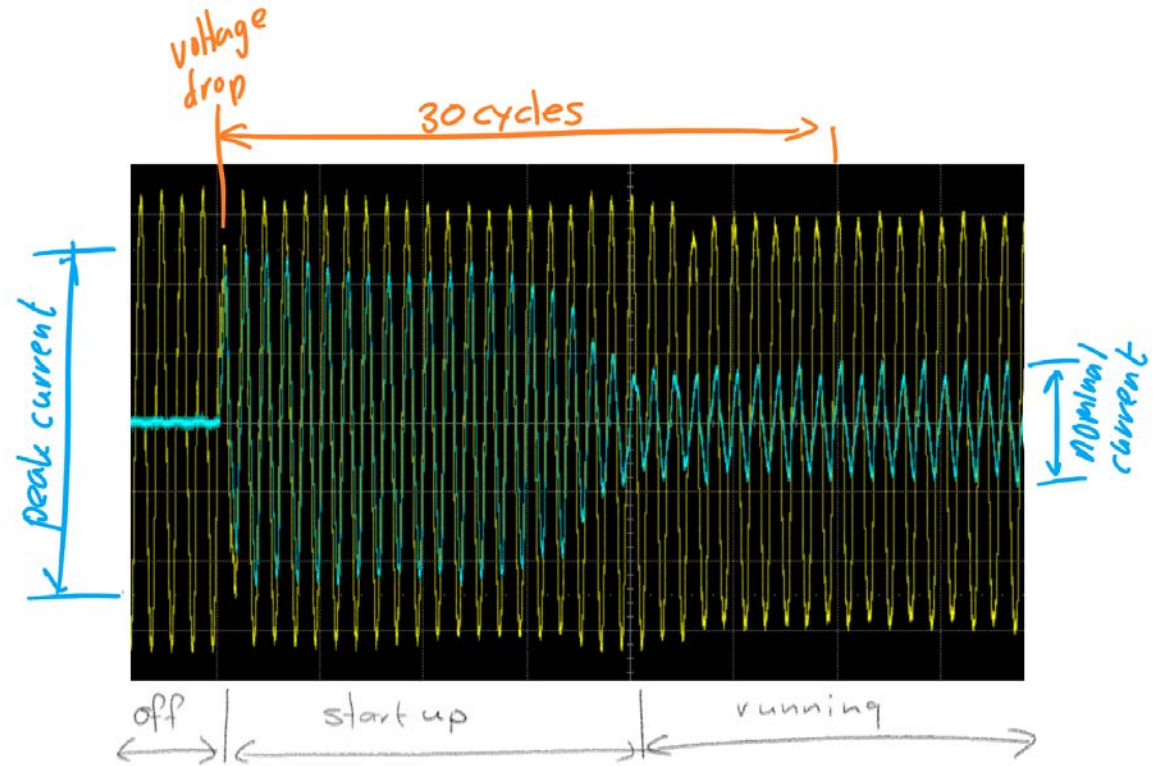
Start up current of loads

Rule of thumb:

- Single phase motor: 6 x nominal current

- 3 Phase motor: 3 x nominal current

- For inductive or capacitive loads (0.7 power factor): double inverter size is needed

Soft start devices:

- Use frequency drive devices,

- Don't use devices that chop the sinewave

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BLUE POWER

Power rating together with power assist

For example a 48/3000/16 - 50A unit:

\With its PowerAssist active the Multi can add up to 3 kVA to the output during periods of peak power requirement
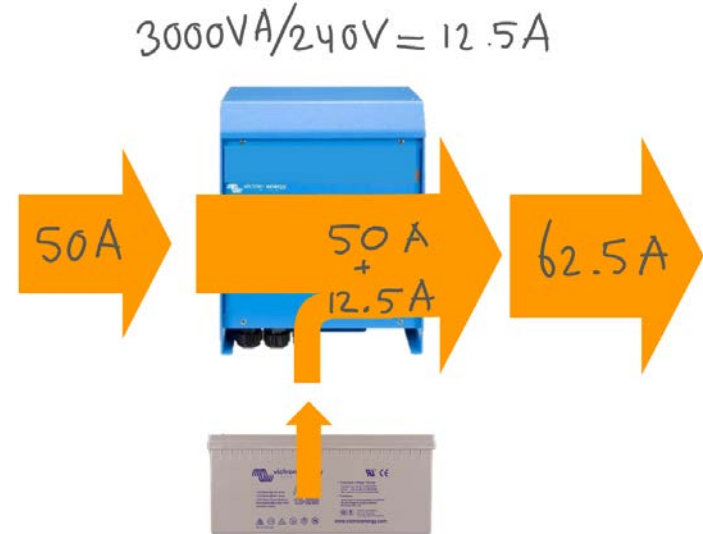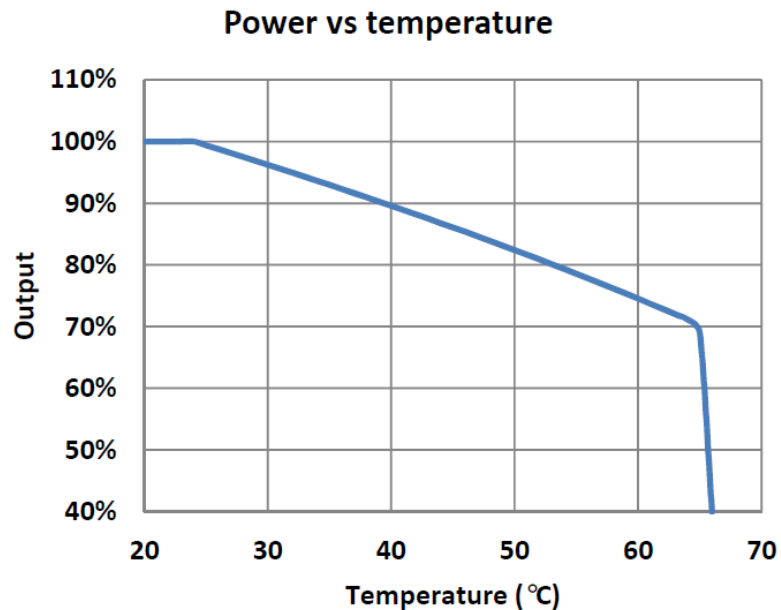
Temperature deration

- When the internal temperature of the Multi or Quattro increases the output power decreases.

Excessively high ambient temperature will result in the following:

- Reduced peak capacity, or shutdown of the inverter

- Reduced charging current

Power vs temperature

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AES - Auto Economy Setting = Standby mode

Inverter tab
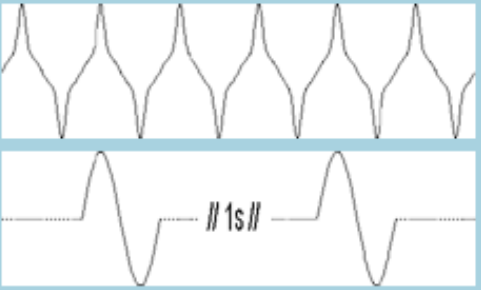
MultiPlus	12 Volt	12/3000/120
	24 Volt	24/3000/70
	48 Volt	48/3000/35
Zero load power (W)		20 / 20 / 25
Zero load power in AES mode (W)		15 / 15 / 20
Zero load power in Search mode (W)		8 / 10 / 12