

DriveBoosters™

DC Power Supplies for Variable Frequency Drives

Variable frequency drives (VFD or VSD or drives) are useful items to optimise the speed of motors, pumps, fans. Standard drives produce three-phase power. Voltages are 415V in Europe and Australasia, 240V or 480V in North America.

All drives run on three-phase power, the same voltage they produce.

Many drives are equipped with a DC bus screw connector: Plus and Minus. A drive can be powered by DC (direct current) alone. These drives can be used to run three-phase motors on single phase cables.

Since Edison lost against Tesla and Westinghouse (http://en.wikipedia.org/wiki/War_of_Currents), power cables are not utilised as good as they could. When using steady DC at higher voltage for power transmissions instead of AC, three to four times the power can be transferred over a single-phase cable (<http://en.wikipedia.org/wiki/HVDC>).

DriveBoosters@ are wall mountable power supplies for VFDs to be used at the source of a long cable. A VFD changes DC into three-phase power the other end of a long cable.

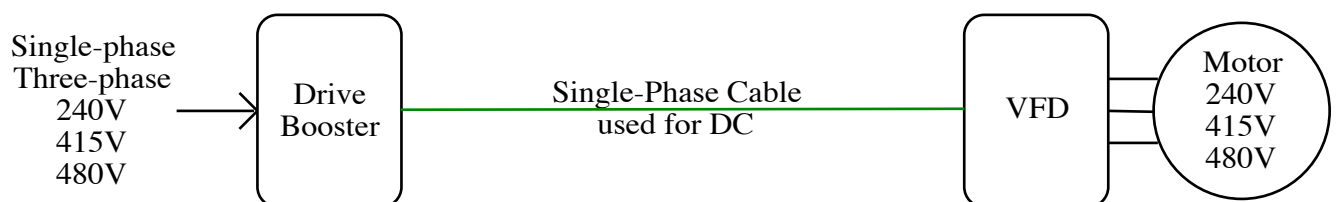
Applications:

- * Run a three-phase motor on a single-phase cable.
- * Reduce power losses in long cables to a pump or a fan.
- * Use a low cost single-phase cable for a three-phase motor, pump or fan.
- * The efficiency, characteristics and output power of aVFD remains unchanged.
- * A VFD stays cooler, life expectancy is increased.
- * Single to three-phase conversion.



DriveBooster™ conversions:

from		to	
1-phase 240V	3-phase 240V	3-phase 415V	3-phase 480V
2-phase 415V		3-phase 415V	3-phase 480V
2-phase 480V		3-phase 415V	3-phase 480V
3-phase 240V	3-phase 240V	3-phase 415V	3-phase 480V
3-phase 415V		3-phase 415V	3-phase 480V



Version	hp	kW	Supply	Cable current*	VFD output
U3-50	3	2.2	1x 240V 10 - 15A	4 - 6A	3x 415V
U5-50	5	4.0	1x 240V 18 - 27A	6 - 9A	3x 415V
U7-50	7.5	5.5	1x 240V 24 - 35A	9 - 14A	3x 415V
U10-50	10	7.5	1x 240V 32 - 48A	12 - 18A	3x 415V
U3-60	3	2.2	1x 240V 10 - 15A	4 - 6A	3x 480V
U5-60	5	4.0	1x 240V 18 - 27A	6 - 9A	3x 480V
U7-60	7.5	5.5	1x 240V 24 - 35A	9 - 14A	3x 480V
U10-60	10	7.5	1x 240V 32 - 48A	12 - 18A	3x 480V
L5	5	4.0	1x 240V 18-27A	12 - 18A	3x 240V
L10	10	7.5	1x 240V 32-48A	24 - 36A	3x 240V
H5-50	5	4.0	1x 480V 9 - 13A	6 - 9A	3x 415V
H10-50	10	7.5	1x 480V 16 - 24A	12 - 18A	3x 415V
H15-50	15	11	1x 480V 23 - 35A	17 - 26A	3x 415V
H20-50	20	15	1x 480V 32 - 48A	24 - 36A	3x 415V
H5-60	5	4.0	1x 480V 9 - 13A	6 - 9A	3x 480V
H10-60	10	7.5	1x 480V 16 - 24A	12 - 18A	3x 480V
H20-60	20	15	1x 480V 32 - 48A	24 - 36A	3x 480V
3L5	5	4.0	3x 240V 8 - 12A	12 - 18A	3x 240V
3L10	10	7.5	3x 240V 16 - 24A	24 - 36A	3x 240V
3U5	5	4.0	3x 240V 8 - 12A	6 - 9A	3x 480V
3U10	10	7.5	3x 240V 16 - 24A	12 - 18A	3x 480V
3H5	5	4.0	3x 480V 4 - 6A	6 - 9A	3x 480V
3H10	10	7.5	3x 480V 8 - 12A	12 - 18A	3x 480V
3H20	20	15	3x 480V 16 - 24A	24 - 36A	3x 480V
3H30	30	22.5	3x 480V 24 - 36A	36 - 54A	3x 480V

* Left value: at full continuous load. Right value: when a motor accelerates.

DriveBoosters™ contain smoothing DC capacitors.

U units step-up the voltage.

The DC voltage is unregulated.

DriveBooster™ functions:

Soft starts, low inrush currents.

Disconnects when the supply power becomes unstable.

Reconnects when the power condition returns to normal.

Requirements:

A VFD must have two DC bus connector screws (+ -). This is standard with many drives.

Use a standard 1000V single phase cable between a DriveBooster™ and a VFD.

A DriveBooster does not produce any RFI (radio frequency interference) but VFDs do.

RFI filters in some drives are inactive when powered by DC.

Use a single-phase or a DC filter if RFI reduction is wanted.

Ambient temperature: - 20 to + 40 degrees C.

Protection: IP 20