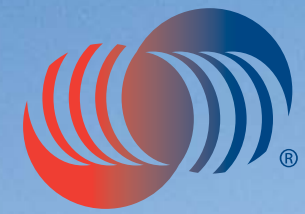


# Magtech Voltage Booster

Stabilising low voltage lines



**Magtech™**

- **Dynamic** – lifts and stabilises frequent voltage changes
- **Robust** – no moving parts, no maintenance
- **Safe** – direct bypass during operation
- **Self adaptive** – no need for calibrations and adjustments
- **Easy planning** - simplified free Excel planning tool

Tel.: +47 69 27 92 00  
Fax: +47 69 25 68 40  
e-mail: [sales@magtech.no](mailto:sales@magtech.no)  
web: [www.magtech.no](http://www.magtech.no)

# Magtech Voltage Booster – MVB

## Save money

- Reduce or / and postpone investments
- Save man-hours for engineering and installation
- Increase technical and economical life span for existing grid
- Flexible - move installation to next site

## Power Quality

- Lifts and stabilizes voltages for each phase individually
- Corrects unbalanced voltages (symmetrical)
- Significantly increases single pole short circuit capacity in Y-ground network
- Voltage is not influenced if N-conductor is disconnected
- Reducing overvoltage caused by unbalanced loads
- Fast regulation; 10 ms response

## Robust

- 25 years designed lifetime - no moving parts or semiconductors in power circuit
- Smart patented controllable inductor design with no moving parts
- Galvanized casing for outdoor use
- Oil cooled, standard transformer oil, optional with organic decomposable oil
- Hermetically sealed with overpressure valve
- Overvoltage protected

## Safe

- Bypass contactor ensures fail safe (no power interruptions) at overload or faults
- Returns automatically to operation when fault is not present (e.g. high temperature, overload)
- Increases one pole short circuit capacity in ground Y networks.
- Ik1 increases typically by more than 60%
- Option: electronic circuit breaker on output takes care of very low short circuit levels



## Proven

- Developed in close cooperation with several electric utilities (a.o. Vattenfall Eldistribution AB, Hafslund Nett AS)
- In compliance with EN50160 and CE-marking for domestic use
- A large number of units installed in Europe, first pilot installed 2003

## Quick installation

- Easy to install - one day
- Pole mounted, no housing required, one or two poles
- Ground mounted, no housing required
- Free planning tool (Excel) available on [www.magtech.no](http://www.magtech.no)

## Areas of application

- Stabilizing voltage for long LV lines or sea cables. Supporting telecom base station transmitters for GSM and UMTS, vacation homes, weekend cottages, rural homes and stores, farms, fish farms, production plants etc. Provisional power supply for construction areas, tunnels etc. Stabilizing voltage in the grid when voltage fluctuation is caused by distributed generation like solar cells, hydropower or wind-power-plants. Stabilizing and lifting voltage on the LV side, when voltage drop is caused on 1kV or higher. For ground cables in rural or densely populated areas. Mounted on the ground or on poles.



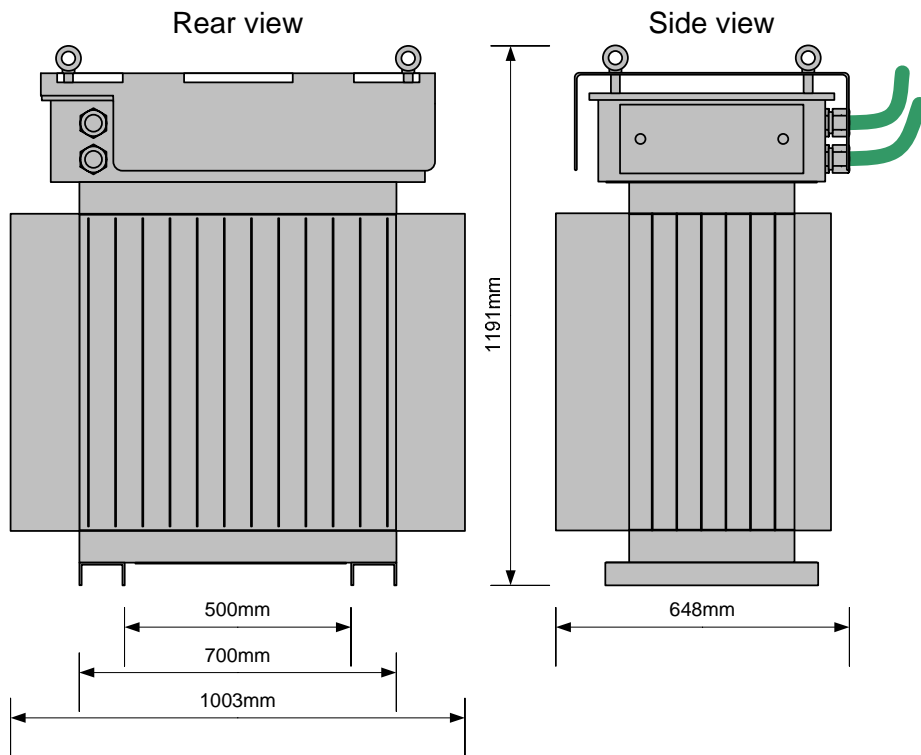
## Technical data

Model	MVB40-230	MVB125-230	MVB250-230	MVB70-400	MVB160-400	MVB250-400
Distribution system connection	IT	IT	IT	TN / TT	TN / TT	TN / TT
Frequency [Hz]	50	50	50	50	50	50
Voltage [volts] (3 – phase)	230	230	230	230 / 400	230 / 400	230 / 400
Load, nominal [kVA]	10	32	65	30	70	112
Load, 6 hours, @20°C, input voltage 195 V [kVA]	16	50	100	50	110	170
Current nominal [A]	25	80	160	40	100	160
Current, 6 hours, @20°C, input voltage 195 V [A]	40	125	250	70	160	250
Voltage set point [V]	235	235	235	235	235	235
Voltage lift [%] (symmetrical loads)	0...+17	0...+20	0...+10	0...+15	0...+15	0...+10
Voltage lift, voltage reduction [%] (unbalanced loads)	0...+17	0...+20	0...+10	0...+28, 0...-7	0...+28, 0...-7	0...+18, 0...-7
Dynamic response [ms] <sup>1</sup>	150	200	200	150	200	200
No-load loss [W] <sup>2</sup>	180	220	220	180	220	220
Efficiency [%] <sup>3</sup>	95-97	95-97	95-97	97-99	97-99	97-99
Power factor [cos φ] <sup>3</sup>	0,96-0,97	0,96-0,97	0,96-0,97	0,98-0,99	0,98-0,99	0,98-0,99
Total Harmonic Distortion [%] <sup>3</sup>	1-4	1-4	1-3	1-5	1-5	1-4
<b>Mechanical dimensions</b>						
Width x Height x Depth [mm]	754x928x539	1003x1190x648	1003x1190x648	754x928x539	1003x1190x648	1003x1190x648
Weight [kg]	390	750	750	390	750	750
Cable connection [Copper mm <sup>2</sup> ]	≤ 16	≤ 50	≤ 70	≤ 16	≤ 50	≤ 70
Oil filled [liters]	75	158	158	75	158	158
Enclosure oil filled	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized
<b>Features</b>						
Bypass @ U <sub>out</sub> ±15% or high temp - No voltage interruption - Automatic restart	√	√	√	√	√	√
Handles 100% unbalanced load and maintains the voltage	50%	50%	50%	√	√	√
Single pole short circuit capacity increased by a minimum of 60%	unchanged	unchanged	unchanged	√	√	√
No moving parts in the power circuit	√	√	√	√	√	√
Maintenance free	√	√	√	√	√	√
25 years designed lifetime	√	√	√	√	√	√
Quick installation < one day	√	√	√	√	√	√

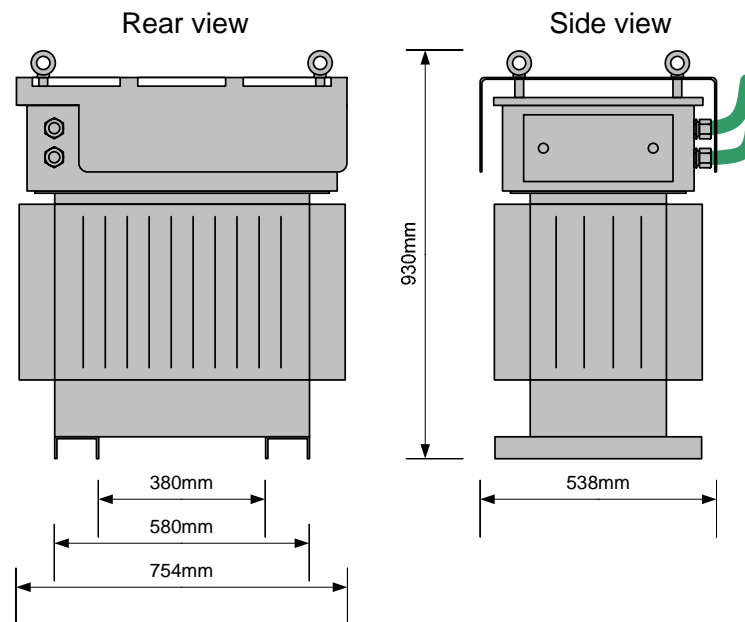
Option: SSP = Short-Circuit Safety Protection, 3-pole circuit breaker installed on output, FR3 = Environmental friendly organic oil.

<sup>1</sup> – from zero voltage boost to full voltage boost <sup>2</sup> – zero voltage boost <sup>3</sup> – nominal load, varying voltage boosting

# Mechanical dimensions



**MVB160-400**  
**750kg**



**MVB70-400**  
**390kg**