ENSTO

Ensto Voltage Booster

Solution for power quality problems

Better life.
With electricity.

Ensto Voltage Booster corrects the lowered voltage level of energy consumers at the end of network.

ensto.com

Power quality by Ensto

Boost the voltage drops

Ensto, a provider of electricity distribution solutions, has taken a big step in the direction of power electronics products that improve the quality of electricity. The first outcome of the product development is Ensto Voltage Booster.

Ensto Voltage Booster corrects voltage drop in a low voltage network

Voltage Booster fixes the lowered voltage level of an energy consumer at the remote end of the network. If there are no other needs for improving the distribution network, a seasonal voltage level drop can be fixed permanently by installing the Voltage Booster.

On the other hand, Voltage Booster can be a temporary solution when the network capacity is continuously exceeded, causing a permanent state of undervoltage. It provides extra time for replanning the network and making investments. After the network has been updated, Voltage Booster can be reused by installing it in a new place.

Electricity distribution challenges

The total consumption of electric energy keeps increasing. At the same time, the geographical distribution expands along with the electrification of sparsely populated areas and holiday housing. The distribution distances of low voltage can be long, and due to distribution losses, the voltage level can drop.

Ensto Voltage Booster is the choice when having problems with lowered voltage levels.

Quality requirements have been set for electricity distribution e.g. in the EN50160 standard. According to the standard, the tolerance of line voltage is ±10% of its nominal value.
The network owner can solve the voltage drop problem by building a new supply line from a transformer to the consumer. In difficult cases, the distribution distance of a low voltage network is shortened by bringing a medium voltage network branch closer to the consumer.

A handy solution from Ensto

Voltage Booster measures the existing voltage continuously and if necessary, activates its boost function. Boosted voltage is based on an auto-transformer, the ratio of which can be changed step by step with semiconductor switches. The reaction time of the device is fixed to 300 ms.
The device is installed near a consumer with lowered voltage level problems. After the installation, the device is immediately ready to be used without separate settings or calibration. In an overhead line installation, we recommend overvoltage protectors both in the input and output wires. The necessary surge arresters, fuses, terminals, and connecting wires are available as installation kits from Ensto.

Why Ensto Voltage Booster?

The best solution for power quality problems

Quick
- Quick to install – no tricks, no special skills needed
- Quick to be taken in use – no calibration needed
- Quick to remove the voltage drop
- Quick to choose – a thought-through package

Efficient
- Utilize the whole capacity of the existing grid
- Update the existing grid to meet current demands
- Gain more time for planning
- Minimize transfer losses
- Maximize long life time

Compact
- Small size
- Lightweight
- High efficiency

Compatible
- Complies with the existing grid design
- Adapts to mixed installation (overhead lines & underground cables)
- Fits into the environment
- Transparent for Smart Grid signals
- Suitable for permanent and re-use

Safe
- Increased protection level
- Air-cooled, no harmful oil needed
- Ecological materials
- Fully recyclable

Protected
- Undervoltage protection
  - Undervoltage limit 162 V *
  - Bypass mode, automatic recovery after network stabilization **
  - Return treshold 185 V ***

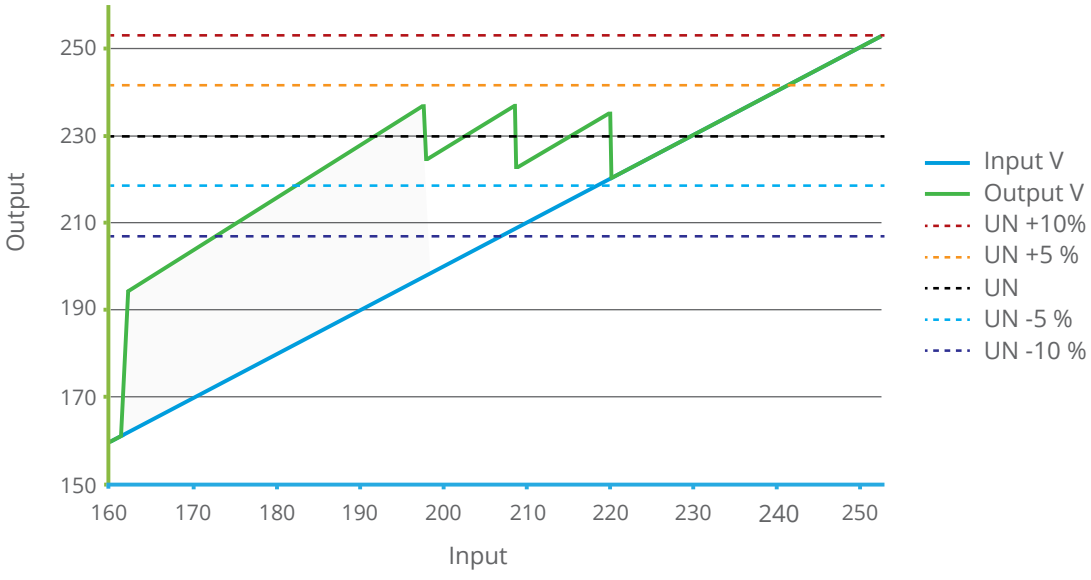
* If the voltage in at least one phase remains over 162 V, Voltage Booster will keep boosting.

** If all three phases go under 162 V, Voltage Booster will enter bypass mode.

*** Voltage Booster will resume from bypass mode when at least one phase reaches over 185 V.

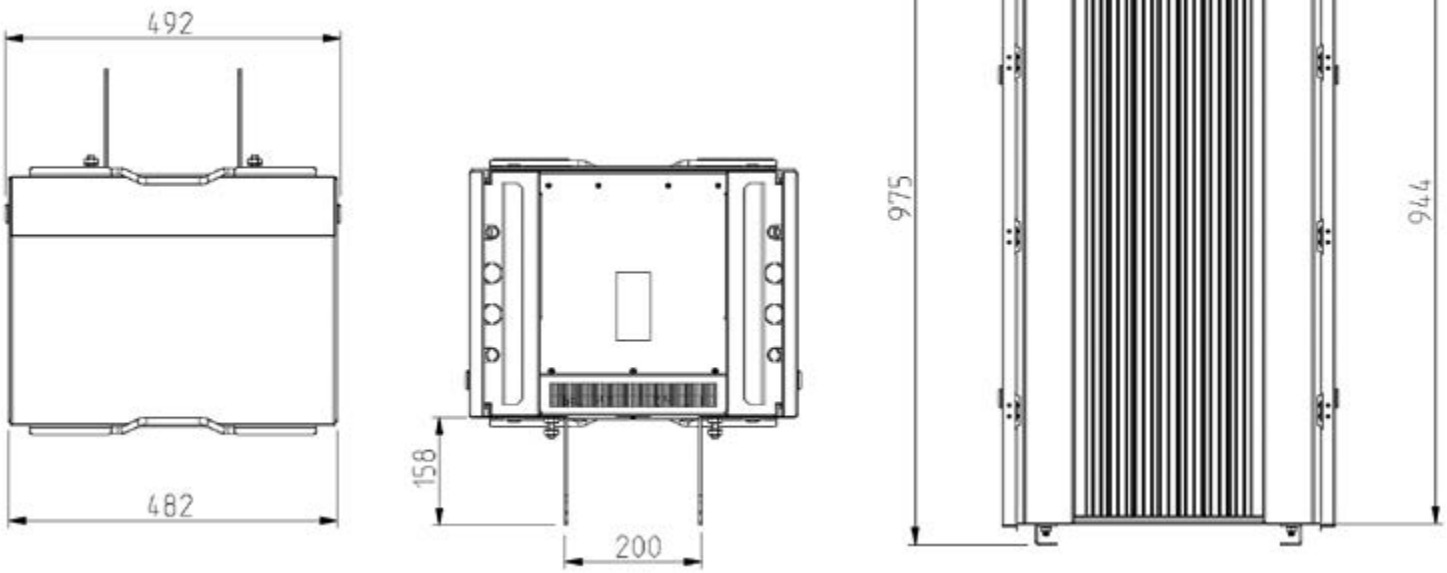
Quick solution that provides better life quality for the end users in their homes.

Voltage boost step by step: 3 levels and bypass mode



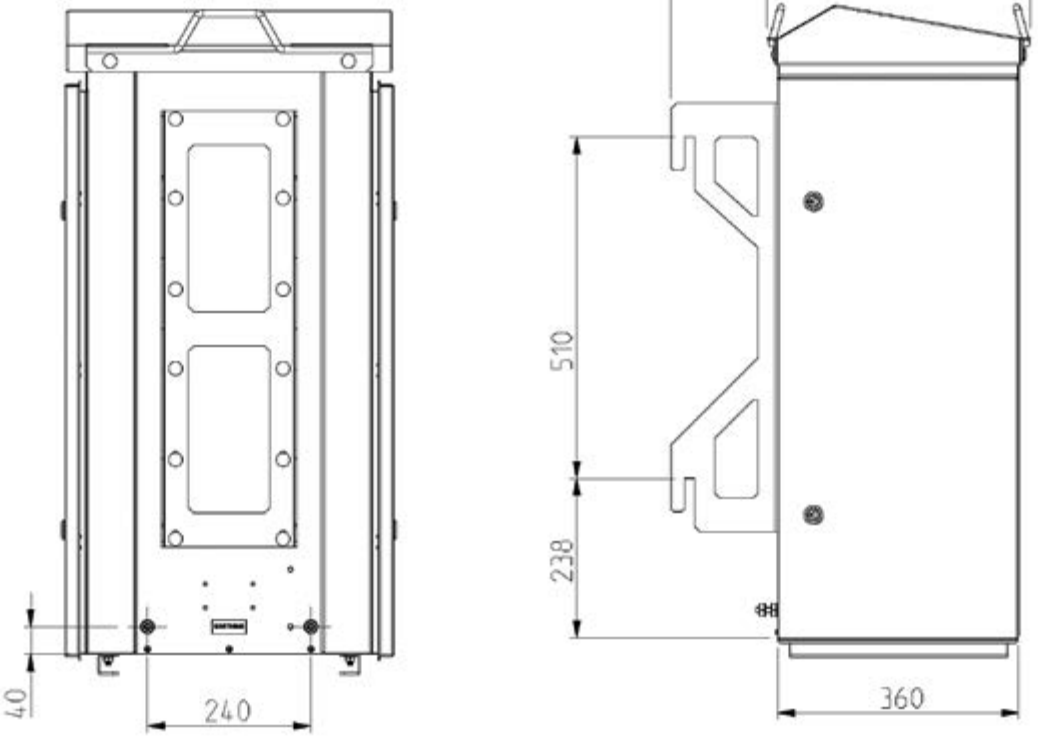
Product information

Ensto Voltage Booster



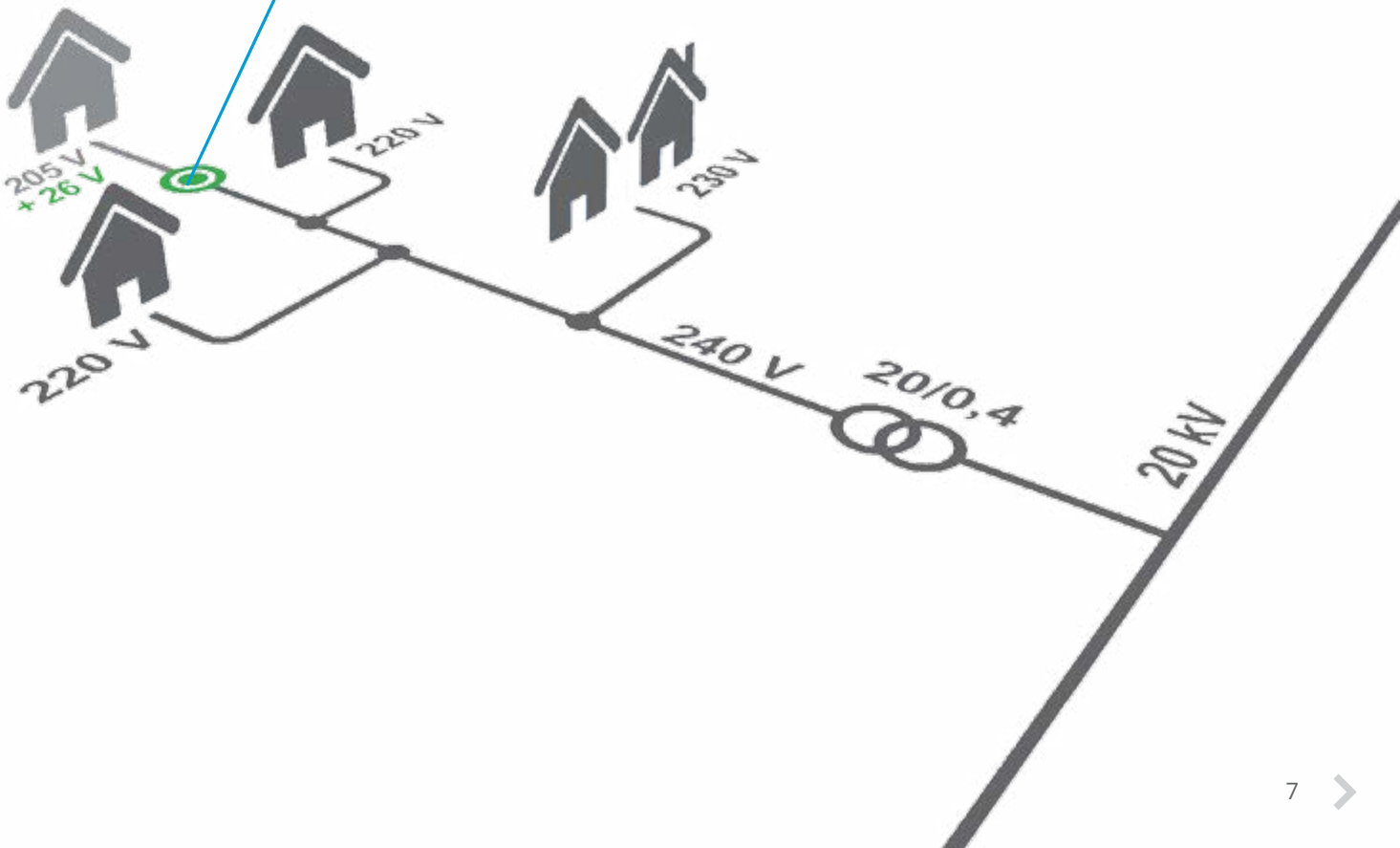
Summary

Product code	VB20K	VB30K	VB45K
Nominal power kVA	3 x 7	3 x 10	3 x 15
Nominal current A	3 x 30	3 x 44	3 x 65
Max input current A	3 x 36	3 x 52	3 x 75
Network	3-phase		
Reaction time ms	300		
No-load loss W	< 10	< 10	< 10
Efficiency %	> 98	> 98	> 98
Weight kg	105	130	170
Size W x D x H mm With pole adaptor	482 x 536 x 975		
Boosting levels	20% (Vin = 162...198V) 13,3% (Vin = 198...209V) 6,7% (Vin = 209...222V) Bypass (Vin > 222V)		
Casings	Galvanized steel, painted default color RAL 7035		



Ensto Voltage Booster

- Location is near the problem area
- Here the voltage levels can drop as low as 205 V
- Voltage Booster fixes the problem by bringing the level back to 231 V



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