



Growatt Voltage Optimizer User Manual and Installation Guide

Shenzhen Growatt New Energy Technology Co., Ltd

1st East & 3rd Floor, Jiayu Industrial Zone, Xibianling,
Shangwu Village, Shiyan, Baoan District, Shenzhen, P.R. China.

Tel: +86 (0)755 2747 1900

Fax: +86 (0) 755 2749 2131

Email: service@ginverter.com

Website: www.ginverter.com

GR - UM - 067 - 00-A

1 Introduction

- 1.1 Validity
- 1.2 Additional information
- 1.3 Warnings

2 Product Description

- 2.1 Growatt Voltage Optimizer
- 2.2 Type label

3 Installation

- 3.1 Selecting the Installation Location
- 3.2 Mounting the Growatt TL-US
- 3.3 Electrical Connection

4 Growatt Factory Warranty

5 Specification

6 Contact

1.1 Validity



Growatt Voltage optimizer is designed for use in domestic and light commercial applications. It installed between the electricity meter and main consumer unit.

This manual is for qualified personnel. Qualified personnel have received training and have demonstrated skills and knowledge in the construction and operation of this device. Qualified personnel are trained to deal with the dangers and hazards involved in installing electric devices.

1.2 Additional information

Find further information on special topics in the download area at www.ginverter.com

1.3 Warnings

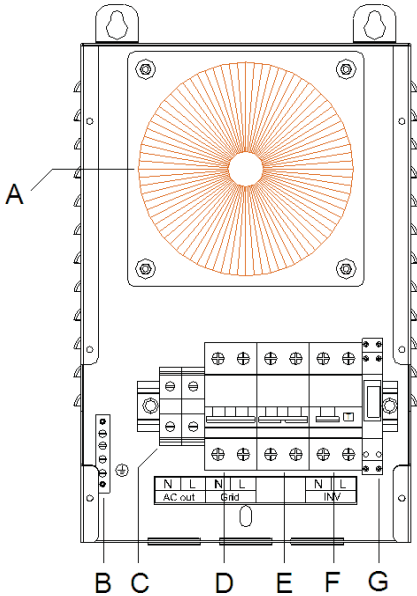
 WARNING	→ Make all electrical connections (e.g. conductor termination, fuses, PE connection, etc.) in accordance with prevailing regulations. When working with the inverter powered on, adhere to all prevailing safety regulations to minimize risk of accidents.
	→ Anytime the unit been disconnected from the power network, use extreme caution as some components can retain charge sufficient to create a shock hazard; to minimize occurrence of such conditions, comply with all corresponding safety symbols and markings present on the unit and in this manual.
	→ Although designed to meet all safety requirements, some parts and surfaces of unit are still hot during operation. To reduce the risk of injury, do not touch the top cover or nearby surfaces while unit is operating.
 DANGER	→ The components in the unit are live. Touching live components can result in serious injury or death. <ul style="list-style-type: none"> • Do not open the unit by unqualified persons. • Electrical installation, repairs and conversions may only be carried out by electrically qualified persons. • Do not touch damaged component.

2 Product Description

2.1 Growatt Voltage Optimizer

2.1. 1 Growatt VO60-PV

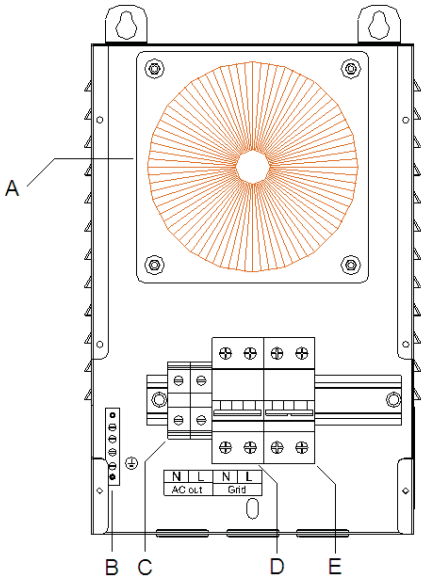
This unit works with PV system, and reduce the incoming supply voltage by 18V approximately (exactly $V_{out}=0.925 \times V_{in}$). You could reduce your electricity bill and extend the life span of your electrical appliances. It has short circuit, overload and overheat protection built in. it can measure the energy fed into the Grid from PV system.



Item	Description
A	Internal transformer
B	Grounding terminal
C	Output terminal
D	Main AC Switch
E	Circuit breaker for OCP & OTP
F	RCBO
G	Power meter

2.1. 2 Growatt VO60

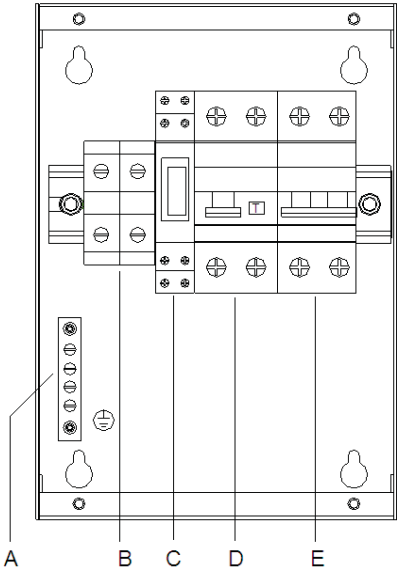
This unit works without PV system, and reduce the incoming supply voltage by 18V approximately (exactly $V_{out}=0.925 \times V_{in}$). You could reduce your electricity bill and extend the life span of your electrical appliances. It has short circuit, overload and overheat protection built in.



Item	Description
A	Internal transformer
B	Grounding terminal
C	Output terminal
D	Main AC Switch
E	Circuit breaker for OCP & OTP

2.1. 3 Growatt FB60

This unit works with PV system, and can measure the energy fed into the Grid from PV system.



Item	Description
A	Grounding terminal
B	Output terminal
C	Power meter
D	RCBO
E	Main AC Switch

2.2. Type label

The type labels provide a unique identification of the unit (The type of product, Device-specific characteristics, Certificates and approvals).

GROWATT Voltage Optimizer	
Model Name	Growatt VO60-PV
Input voltage range	232-253 Vac
Nominal input voltage	240 Vac
Output voltage range	0.925 *Vin
AC Frequency range	50Hz
Ingress protection	IP 20
Operation Ambient Temperature	-5°C - +40°C

GROWATT Voltage Optimizer	
Model Name	Growatt VO60
Input voltage range	232-253 Vac
Nominal input voltage	240 Vac
Output voltage range	0.925 *Vin
AC Frequency range	50Hz
Ingress protection	IP 20
Operation Ambient Temperature	-5°C - +40°C

GROWATT Voltage Optimizer	
Model Name	Growatt FB60
Input voltage range	232-253 Vac
Nominal input voltage	240 Vac
Output voltage range	Same as input
AC Frequency range	50Hz
Ingress protection	IP 20
Operation Ambient Temperature	-5°C - +40°C

3 Installation

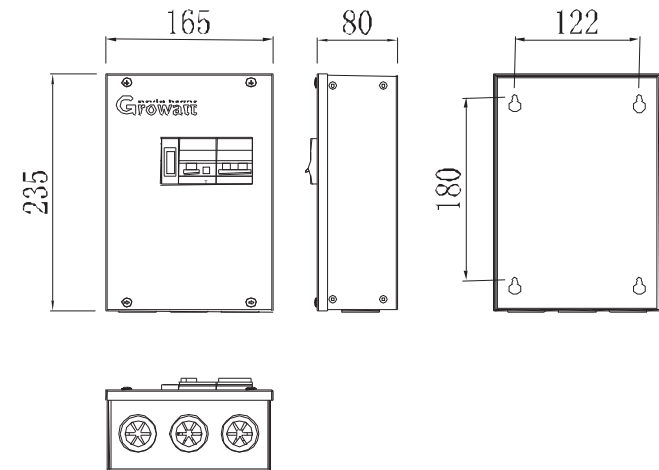
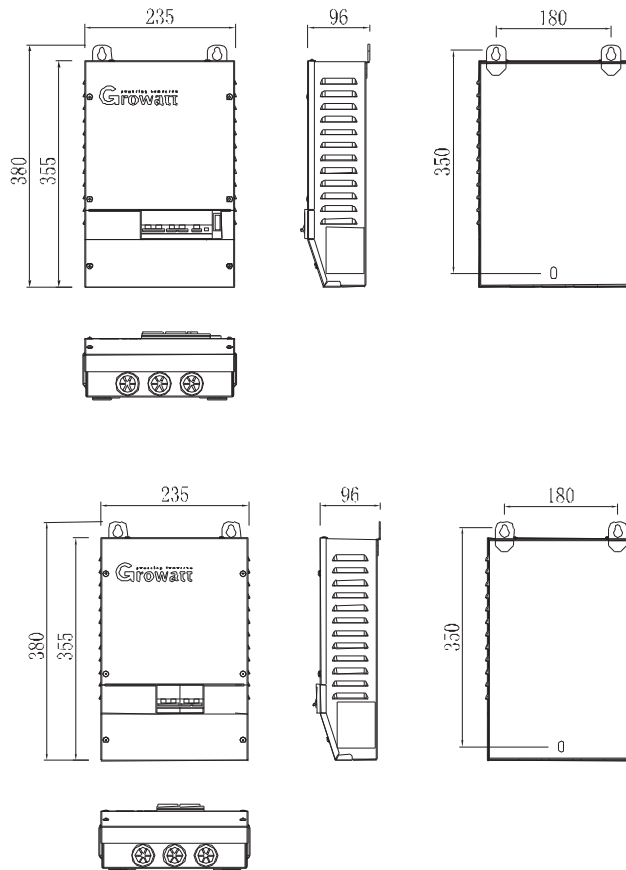
3.1. Installation Location

Select the installation location based on the following considerations:

- 1) Select a dry well-ventilated location mount the unit vertically.
- 2) Choose a location that allows unobstructed airflow around the unit.
- 3) Be sure that the unit is out of the children's reach.
- 4) Don't put any things on and cover the unit.

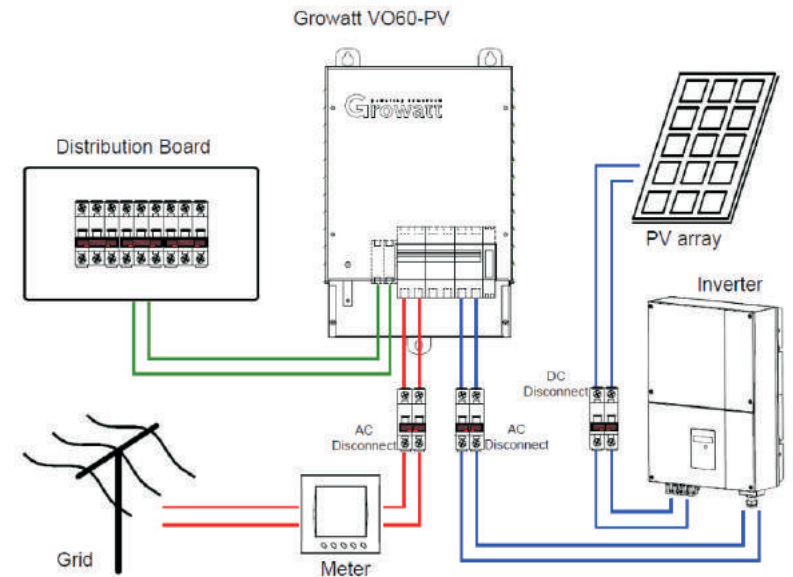
3.2. Mounting

Dimensions of the mounting



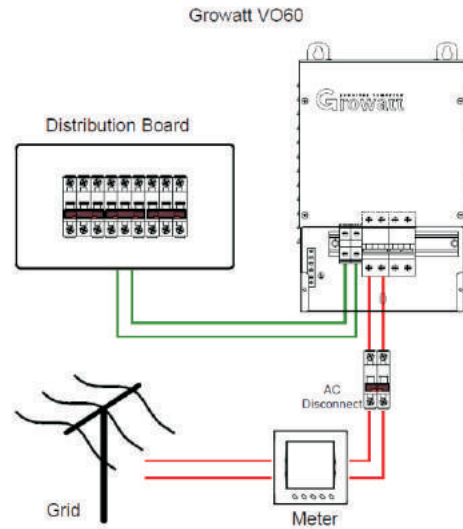
3.3. Electrical Connection

The Growatt VO60-PV works with PV system, and reduce the incoming supply voltage by 18V approximately (exactly $V_{out}=0.925 \cdot V_{in}$).

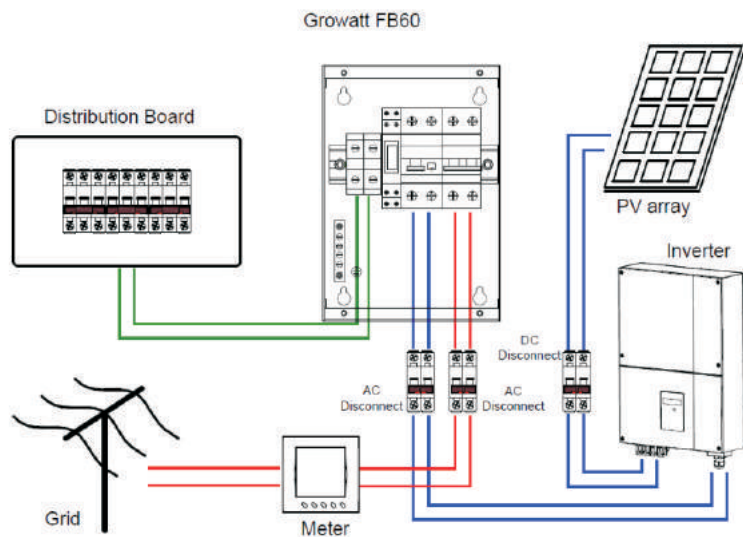


The Growatt VO60 works without PV system, and reduce the incoming supply voltage by 18V approximately (exactly $V_{out}=0.925 \cdot V_{in}$).

Please refer to the warranty card.



The Growatt FB60 works with PV system.



Model	Growatt VO60-PV	Growatt VO60	Growatt FB60
Specification			
Input voltage range	232-253 Vac	232-253 Vac	232-253 Vac
Nominal input voltage	240 Vac	240 Vac	240 Vac
Output voltage range	0.925*Vin(approximately input voltage less 18V)	0.925*Vin(approximately input voltage less 18V)	Same as input
Nominal Input frequency	50Hz	50Hz	50Hz
Max. Output current	60A continues 70A for 30 minutes	60A continues 70A for 30 minutes	NA
Display	MID meter	NA	MID meter
Protection	OCB, OTP, GFCI	OCB, OTP	GFCI
Ingress protection	IP 20	IP 20	IP 20
Dimensions(W/H/D)	230*340*90 mm	230*340*90 mm	165*235*80 mm
Weight	10 Kg	10 Kg	2 Kg
Operating temperature	- 5°C ... +40°C	- 5°C ... +40°C	- 5°C ... +40°C
Altitude	<2000m	<2000m	<2000m
Cooling concept	Nature cooling	Nature cooling	Nature cooling

If you have technical problems concerning our products, contact your installer or Growatt. During inquiring, please provide below information:

1. Model number

2. Serial number

3. Date of installation

Shenzhen Growatt New Energy Technology Co., Ltd

1st East & 3rd Floor, Jiayu Industrial Zone, Xibianling,
Shangwu Village, Shiyan, Baoan District, Shenzhen, P.R.China.

Tel: +86 (0)755 2747 1900
Fax: +86 (0) 755 2749 2131
Email: service@ginverter.com
Website: www. ginverter.com