

## Boost Module For GD100-PV/GD170-PV

GD100-PV series solar pump VFDs of 2.2kW and lower and GD170-PV

series solar pump VFDs of 4kW and lower support the optional boost

module (PP100-PV) to improve the utilization of the solar module.



### 1. Features

- Ease of use

It can automatically identify the inverter type so as to set the bus voltage based on the type, increases the voltage to 350V for 220V inverters and 570V for 380V inverters.

- Auto switch between the grid and PV input

The function can be implemented by connecting both grid and PV input after setting P15.32 to 0 (auto switch). When the PV voltage is lower than P15.33, the input power is switched to the grid. When the PV voltage is bigger than P15.34, the power is switched back to PV input.

- Cost reducing

It can reduce the cost by decreasing the number of solar panels. The table below shows the number of solar panels between the system with or without boost module (330W solar panel for example).

| Pump        | Number of solar panels |                      |         |
|-------------|------------------------|----------------------|---------|
|             | With boost module      | Without boost module | Reduced |
| 220V 0.4kW  | 3*1 /330W              | 10*1 /330W           | 7       |
| 220V 0.75kW | 4*1 /330W              | 10*1 /330W           | 6       |
| 220V 1.5kW  | 6*1 /330W              | 10*1 /330W           | 4       |
| 380V 0.75kW | 4*1 /330W              | 10*1 /330W           | 12      |
| 380V 1.5kW  | 6*1 /330W              | 16*1 /330W           | 10      |
| 380V 2.2kW  | 9*1 /330W              | 16*1 /330W           | 7       |

### 2. Specifications

#### Boost module specifications

| Model                    | PP100-3R2-PV  | PP100-5R5-PV |
|--------------------------|---|--------------|
| <b>Input</b>             |   |              |
| Max. input power (W)     | 3200  | 5500         |
| Max. DC voltage (V)      | 600   | 600          |
| Starting voltage (V)     | 80  | 80           |
| Min. working voltage (V) | 70  | 70           |
| Max. input current (A)   | 12  | 15           |
| <b>Output</b>            |   |              |
| Output voltage (V)       | 350V for 220V inverters and 570V for 380V inverters |              |

### 3. Usage

1. Connect PV+ and PV- of the boost module to the positive input terminal and negative input terminal of the solar modules respectively.
2. Connect the output terminals (+) and (-) of the boost module to the input terminals (+) and (-) of the pumping inverter.
3. Connect RS-422communication receiving terminal RX of the boost module to RS-422communication sending terminal TX of the pumping inverter. Connect RS-422communication sending terminal TX of the boost module to RS-422communication receiving terminal RX of the pumping inverter. Use twisted pairs for wiring.
4. If the wiring is connected, switch on the breaker Q1 at the DC side for automotive running.

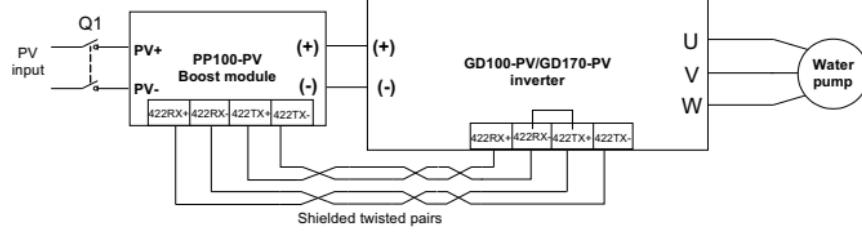


Figure 1 Connection between the boost module and inverter

#### LED status description

| LED status         | Description   |
|--------------------|---|
| Green LED blinking | The boost module has been powered on, and the control circuit is working. |
| Green LED on       | The boost module is running.  |
| Red LED on         | The boost module is faulty.   |

### 4. Installation dimensions

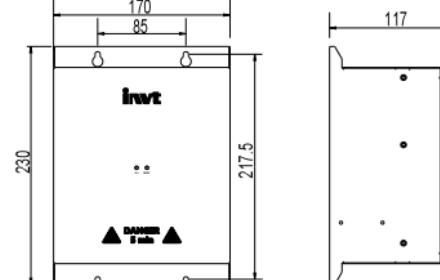


Figure 2 Installation dimensions of the boost module (Unit: mm)

**GD100-PV/GD170-PV升压模块**

GD100-PV 系列 2.2kW (含) 以下及 GD170-PV 系列 4kW (含) 以下

的光伏水泵变频器支持选配升压模块(PP100-PV)

以提高光伏电池组件的利用率，减少电池板配置的数量。

**1. 产品特点**

- 易用性好：升压模块自动识别变频器类型来设置母线电压，220V 变频器自动升压至 350V，380V 变频器自动升压至 570V。
- 支持市电和光伏输入自动切换；同时接上市电和光伏输入并将功能码 P15.32 设置为 0(自动切换模式)，即可实现自动切换。当光照减弱至低于 P15.33 的值，自动由光伏输入切换到市电输入模式；当光照增强至大于 P15.34 的值，自动由市电输入切换到光伏输入模式，实现不间断供电。
- 可减少电池板配置，节省客户投资成本；有、无配置升压模块的太阳能电池板配置对比如下（以 330W 电池板为例）：

| 水泵型号        | 配置太阳能电池板数量 |            |    |
|-------------|------------|------------|----|
|             | 有升压模块时     | 无升压模块时     | 节省 |
| 220V 0.4kW  | 3*1 /330W  | 10*1 /330W | 7  |
| 220V 0.75kW | 4*1 /330W  | 10*1 /330W | 6  |
| 220V 1.5kW  | 6*1 /330W  | 10*1 /330W | 4  |
| 380V 0.75kW | 4*1 /330W  | 10*1 /330W | 12 |
| 380V 1.5kW  | 6*1 /330W  | 16*1 /330W | 10 |
| 380V 2.2kW  | 9*1 /330W  | 16*1 /330W | 7  |

**2. 产品规格**

升压模块产品规格参数

| 型号         | PP100-3R2-PV              | PP100-5R5-PV |
|------------|---------------------------|--------------|
| <b>输入侧</b> |                           |              |
| 最大输入功率 (W) | 3200                      | 5500         |
| 最大直流电压(V)  | 600                       | 600          |
| 启动电压 (V)   | 80                        | 80           |
| 最低工作电压 (V) | 70                        | 70           |
| 最大输入电流 (A) | 12                        | 15           |
| <b>输出侧</b> |                           |              |
| 输出电压 (V)   | 220V 变频器：350；380V 变频器：570 |              |

**3. 使用方法**

1. 升压模块的 PV+、PV-接光伏电池组件的正、负输入；
2. 升压模块的输出(+)、(-)接水泵变频器的输入(+)、(-)；
3. 升压模块的 422 通讯接收端 RX 接水泵变频器的 422 通讯发送端 TX，升压模块的 422 通讯发送端 TX 接水泵变频器的 422 通讯接收端 RX，使用两组双绞线相连；
4. 检查接线正确后，闭合直流侧断路器 Q1 即可自动运行。

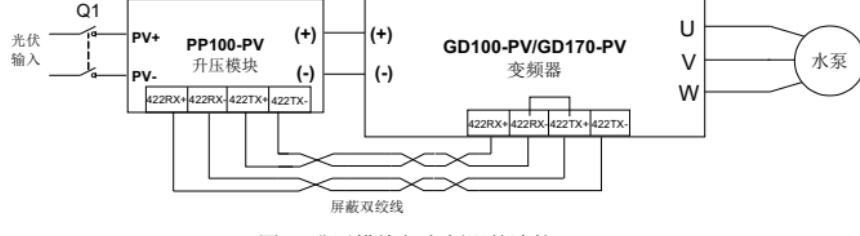


图 1 升压模块与变频器的连接

状态指示灯说明

| 显示状态         | 说明             |
|--------------|----------------|
| 绿灯 (RUN) 闪烁  | 升压模块已上电，控制电路工作 |
| 绿灯 (RUN) 常亮  | 升压模块正在运行       |
| 红灯 (FAULT) 亮 | 升压模块故障         |

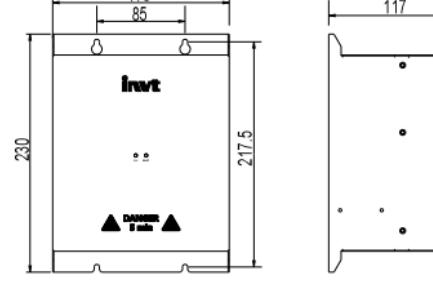
**4. 安装尺寸**

图 2 升压模块安装尺寸 (单位: mm)



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