

JT-DPM8600

Programmable lab power supplies



1. GENERAL INFORMATION

Dear customer,

thank you for choosing our product. In the following, we will show you how to use your product. Should you encounter any unexpected problems during use, please do not hesitate to contact us.

The DPM8600 series are programmable power supplies which have a large output power, are compact and are well structured. At the same time, it is equipped with TTL serial communication interface or RS485 communication interface, which provides a serial communication protocol.

It can also be applied to modbus-RTU communication protocol and supports further development from users. Moreover, it can provide multi-purpose solution according to your design and testing requirements.

Also, DPM8600 series can be equipped with a wireless remote control. The wireless controller adopts 2.4-inch LCD screen. It has many display values, a simple operation, a built-in lithium battery which can be recharged and it can control the power supply from up to 10 meters wirelessly. The wireless controller can control multiple power supplies simultaneously.

This modular power supply can be applied in several aspects. It can be used for example as an ammeter, a smartmeter, a LED driver, a voltage regulator for solar panels or in an industrial control.

If the device is damaged or the scope of delivery incomplete, do not use it and contact our support. Otherwise, if the device is damaged, it could cause shortings and the device could inflame.

2. TECHNICAL PARAMETERS

| Model | DPM-8605 | DPM8624-485 |
|-----------------------------|---|--|
| Input voltage | 10 - 75 V | 10 - 75 V |
| Output voltage | 0 - 60 V | 0 - 60 V |
| Output current | 0 - 5 A | 0 - 24 A |
| Output power | 0 - 300 W | 0 - 1440 W |
| Communication interface | DPM-8605 DPM8624-485 | TTL serial communication interface RS-485 communication interface |
| Voltage resolution | 10 mV | |
| Current resolution | 1 mA | 10 mA |
| Output ripple | < 50 mVpp | |
| Efficiency | 92 % | |
| Display accuracy | 10 mV, 1 mA | 10 mV, 1 mA |
| Output tolerance | voltage: $\pm 2 \%$ / current: $\pm 5 \%$ | |
| Response time | < 50 ms | |
| Dimension | 120 · 131 · 55 mm | 150 · 120 · 59 mm |
| Applied ambient temperature | -25 - 60 °C | |

NOTE: The following description uses the DPM8624 as an example. The DPM8605 works similar to the DPM8624.

3. MODULE



4. DISPLAY

| | | | |
|-------|---|------|---|
| 0500 | shows voltage values | 4-Fd | Activates quick response |
| 0300 | shows current values | --L | |
| 1-5A | Sets upper limit of voltage and current | 5-CS | Simple communication |
| --10- | | --0- | |
| 1-5A | Sets lower limit of voltage and current | 5-CS | Communication with modbus |
| --11- | | --L | |
| 1-5A | Cancels the limits of voltage and current | 6-bd | Possible to select 2.4, 4.8, 9.6, 19.2, 38.4, |
| --12- | | 0096 | 57.6, 115.2 (Kbps) as the baud |
| 2-dF | No factory settings | 7-Ad | 99 communication addresses |
| --n- | | --0L | |
| 2-dF | Sets device to factory settings | 8-CH | 31 communication channels from 00 to 30 |
| --y- | | --0L | (00 means no connection) |
| 3-0n | When the device starts, it works only after | -Ld- | Calls parameter from a storage location |
| --0- | activating it | --0- | 0-9 |
| 3-0n | It works automatically after the start | -5A- | Saves parameters to storage location |
| --1- | | --0- | |
| 4-Fd | Deactivates quick response | Corr | Calibrate voltage and current |
| --0- | | -°C- | Displays temperature of the device |
| | | 0280 | |

5. INDICATOR



| | |
|-----|---|
| | <u>Overheat protection indicator</u> |
| PT | If the temperature is greater than 80 °C, the light is activated to indicate the overheat protection. |
| | <u>Constant voltage indicator</u> |
| CV | The CV indicator light indicates constant voltage output. |
| | <u>Constant current indicator</u> |
| CC | The CC indicator light indicates constant current output. |
| | <u>Communication indicator</u> |
| COM | The COM-LED will light up if the device is communicating. |

6. SETUP

First, you have to connect the input and the output correctly to ensure that the input voltage is high enough for operation. A reverse polarity can cause damage to the device.

NOTE: The input voltage must be higher than the output voltage by more than 0.5 V.

Now you can adjust the voltage and current values after your purposes. The “V” on the digital tube display shows the voltage and “A” the current. The LCD displays the voltage with 2 decimal digits (00.00) and the current with 3 decimal digits (0.000). After that, you can press “OK” to activate the device. Then the CV or the CC lights up to indicate that the is active.

In the following is explained in detail how to set the voltage and current value:



The default is 5 Volt and 3 Ampere.





Press "SET" that this value lights up.



If you press this button again the selected digit will move one further.



The value can be changed with the buttons  and .

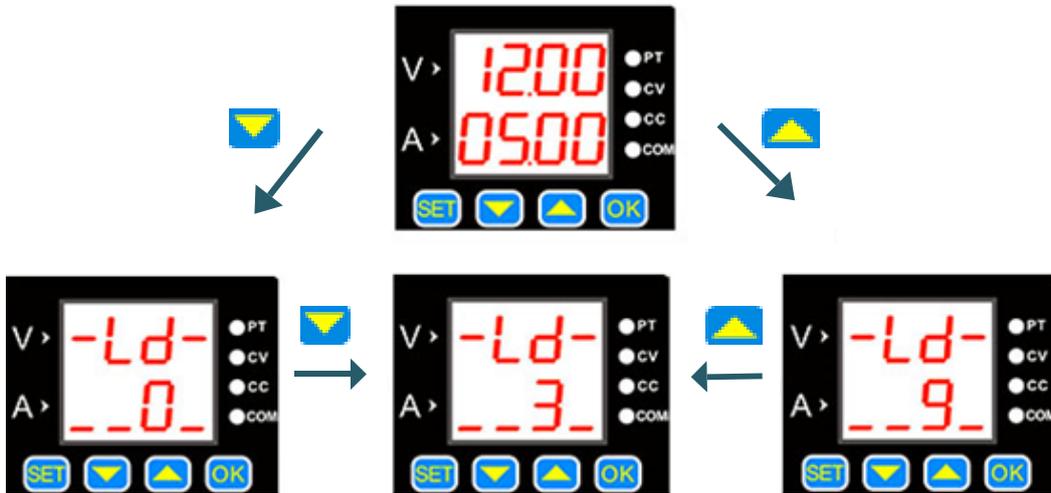


Press "OK" to turn on and off the output. If the load current is below the set current, the output is a constant voltage. The CV light comes on.



If the load current reaches the set current, the output is at the same level as the set current and constant current. Then the CC light comes on.

Press the  or  to enter the save and load menu as well as the temperature display and calibration menu.



If you press **SET**, you can adjust the loaded memory. The different locations can be selected with **▼** and **▲**. With **OK** you confirm your settings.



Press **▼** to return to the menu. To calibrate the device press **OK**. In the following is the function of the calibration explained.

Press **▼** to exit the temperature display.

Calibration

1. If the set voltage is higher than 20 V, the output is switched on and there is no load connected, the output current can be calibrated to zero with the function "Corr.". For example if you set 25 V as the output voltage, the zero calibration for the voltage is still by 25 V.
2. If the output is turned off and you trigger the calibration, the zero points of voltage and current are set.
3. If you short-circuit the enabled output and the maximal output current is set higher than 2 A, the calibrated value is at the defined value. For example if you set the output current to 3 A, then you calibrate the output to 3 A.

Temperature display

The temperature display shows the temperature of the device which is controlled by the fan speed and overheat protection. If the temperature is higher than 40°C then the fan starts working. With each 5 °C the fan speed increases by one level. If the temperature reaches 60 °C, the fan is at its maximal speed. If it reaches 80 °C, the overheating protection turns off the output.

SET menu

Press the **SET** button long, then you enter the SET menu. With pressing the **SET** button you switch between each menu point. You can change every value in this menu by pressing  and . You must press **OK** to confirm the settings.



This menu point declares the limit of voltage as well as current. The “10” means the upper limit, “11” the lower limit and “12” the cancelation of the limits.



In this menu point, you can reset your device to the factory settings with “Y” you reset the device and with “N” you stay with your settings.



This menu point is the status interface. It accomplishes that when the power supply starts it can start automatically the output or you must turn it on manually. The “0” means the function is deactivated and “1” means it is activated.





This menu point declares the response time of the interface when it is discharging. In that case “0” means slow and “1” fast.



This menu point declares the communication protocol. Here the “0” is for the simple communication protocol and “1” for the modbus communication protocol.



In this menu point you can enter the baud rates. There are 7 different rates in Kbps.



In this menu point you can enter the local addresses. There are 99 communication addresses.

Upper and lower limits of voltage and current

These limits can be adjusted in the SET menu. For example you set 30 V and 5 A in the main interface. If you now activate the upper limit, you can not adjust the voltage and the current over the 30 V and the 5 A anymore. Only lower values are now possible to choose for example 20 V and 4.5 A. The lower limit works the same way in reverse. You can adjust the voltage and the current only higher then the chosen values. If you set both limits, the device can only be in operation in the range from lower limit to upper limit.

Communication protocol

There are two options for the communication protocol the simple and the Modbus communication. These can be selected in the SET menu.

The simple communication protocol is our custom communication protocol which is easy to understand.

The Modbus communication protocol is the standard Modbus communication protocol.

Quick response

After the quick response is activated, the response time is shorter when you adjust the voltage lower than before. For example the output voltage is set on 30 V and you adjust it down to 5 V directly. If the quick response is not operating, it takes 5 seconds to reduce the voltage from 30 V to 5 V. If it is active, it takes less than 1 second to reduce the same amount.

Power-on default status

It refers that the output is automatically on or off after you turned on the device. If this function is activated and the device goes into operation, the output automatically starts without any adjustments. If the function is deactivated, the output is turned off. It can only be activated if you turn it on manually.

Key lock

If you press long on the OK button, then you activate the key lock. If you press it long again, it will reverse it again.

7. DECLARATION OF CONFORMITY

Hereby, Simac Electronics Handel GmbH declares that the radio equipment type JT-DPM8605 and JT-DPM8624 are in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet addresses:

www.simac-gmbh.de/CE/jt-dpm8605.pdf

www.simac-gmbh.de/CE/jt-dpm8624.pdf

information on transmission power and frequency band of DPM8605:

frequency band: 2412~2472 MHz

max. transmission power: 11.93 dBm

information on transmission power and frequency band of DPM8624:

frequency band: 2412~2472 MHz

max. transmission power: 11.93 dBm

7. SUPPORT

If any questions remain open or problems arise after your purchase, we are available by e-mail, telephone and with a ticket support system to answer these.

E-Mail: service@joy-it.net

Ticket-System: <http://support.joy-it.net>

Telephone: +49 (0)2845 98469 – 66 (10 - 17 o'clock)

For further information visit our website:

www.joy-it.net