VAR TECH PPS-3020 S

VAR TECH Programmable DC Power Supply PPS-3020 S User Manual

Model: PPS-3020 S

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your VAR TECH Programmable DC Power Supply, model PPS-3020 S. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage or injury.

1.1 Safety Precautions

- Always connect the power supply to a grounded outlet.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation to prevent overheating.
- Do not open the casing; refer servicing to qualified personnel.
- Verify correct voltage and current settings before connecting to a load.

2. PRODUCT OVERVIEW

The VAR TECH PPS-3020 S is a programmable DC power supply offering 0-30V and 0-20A output with a USB interface for remote control. It features high precision, stability, and multiple protection functions.

2.1 Key Features

- 0-30 V, 0-20 A Programmable output with USB Interface.
- 5 L.E.D. Multicolour meters of 4 Digits for CV (Constant Voltage) and CC (Constant Current) indication.
- 6 Sets of Memory for storing and recalling settings.
- Output On/Off Facility for safe load connection/disconnection.
- Supports MODBUS-RTU Commands for remote control.
- Over Voltage Protection (OVP), Over Current Protection (OCP), and Over Temperature Protection (OTP).
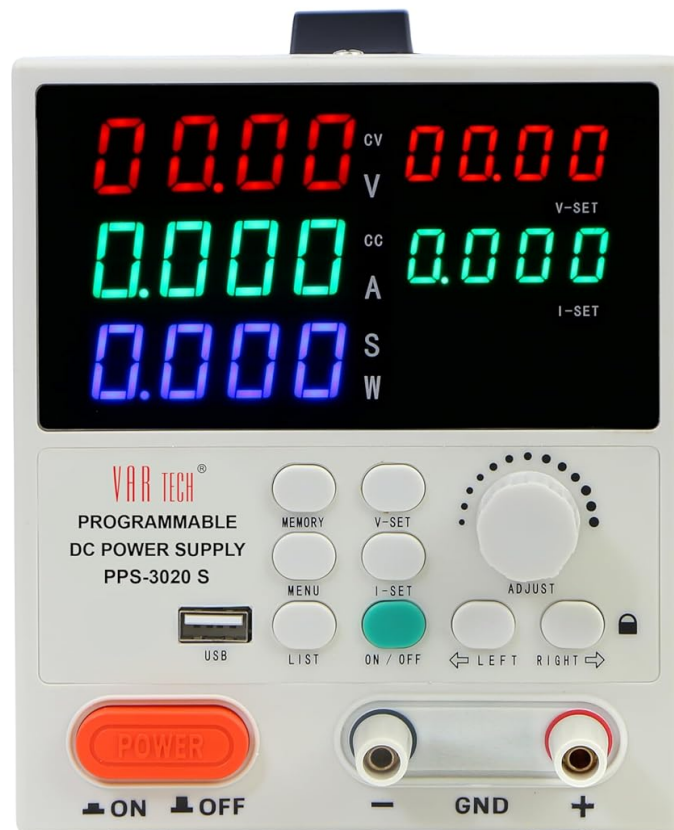
2.2 Front Panel Controls and Indicators

Figure 1: Front Panel Layout

1. **Digital Displays:** Multi-color LED displays for Voltage (V), Current (A), Power (W), and Set Values (V-SET, I-SET).

2. **CV/CC Indicators:** LEDs indicating Constant Voltage or Constant Current mode.

3. **V-SET Button:** Press to adjust voltage setting.

4. **I-SET Button:** Press to adjust current setting.

5. **ADJUST Knob:** Rotary encoder for fine adjustment of voltage and current values.

6. **MEMORY Button:** Access memory functions.

7. **LIST Button:** Navigate through memory slots.

8. **ON / OFF Button:** Toggles output power.

9. **LEFT / RIGHT Buttons:** Used for digit selection during setting adjustments.

10. **USB Port:** For PC connection and remote control.

11. **Power Switch:** Main power ON/OFF button.

12. **Output Terminals:** Positive (+), Negative (-), and Ground (GND) terminals for load connection.

2.3 Side and Rear Panel

Figure 2: Angled View with Side Vents

The side panels feature ventilation grilles for heat dissipation. The rear panel typically includes the AC power input socket, a cooling fan, and potentially additional communication ports (not explicitly shown in provided images but common for such devices).

3. Setup

3.1 Unpacking and Inspection

Carefully remove the power supply from its packaging. Inspect the unit for any signs of physical damage. Retain the packaging for future transport or storage.

3.2 Power Connection

1. Ensure the main power switch on the front panel is in the OFF position.
2. Connect the provided AC power cord to the power input socket on the rear panel of the power supply.
3. Plug the other end of the AC power cord into a suitable grounded electrical outlet.

3.3 Output Terminal Connection

Connect your load to the output terminals using appropriate test leads. Ensure correct polarity:

- Connect the positive (+) terminal of the power supply to the positive input of your load.
- Connect the negative (-) terminal of the power supply to the negative input of your load.
- The GND terminal is for chassis ground and should be connected to the load's ground if required for safety or noise reduction.

Caution: Do not short-circuit the output terminals for extended periods, even with protection enabled.

4. Operating Instructions

4.1 Power On/Off

1. Press the main **POWER ON/OFF** switch on the front panel to turn the unit on. The displays will illuminate.
2. To turn off, press the **POWER ON/OFF** switch again.

4.2 Setting Voltage and Current

1. Press the **V-SET** button to enter voltage setting mode. The voltage display will flash.
2. Use the **ADJUST** knob to change the voltage value. Turn clockwise to increase, counter-clockwise to decrease.
3. Use the **LEFT** and **RIGHT** buttons to select the digit you wish to adjust for finer control.
4. Press **V-SET** again to confirm the setting or wait a few seconds for it to auto-confirm.
5. Repeat steps 1-4 for current setting using the **I-SET** button.

4.3 Output Control

After setting the desired voltage and current, press the **ON / OFF** button (typically green) to enable or disable the output. When the output is ON, the corresponding indicator will light up, and power will be supplied to the load. When OFF, no power is supplied.

4.4 Memory Functions

The PPS-3020 S allows you to store and recall up to 6 sets of voltage and current settings.

1. **To Save:** Set the desired voltage and current. Press and hold the **MEMORY** button until a memory slot number (e.g., 'M1') flashes on the display. Use the **ADJUST** knob or **LIST** button to select a memory slot (M1-M6), then press **MEMORY** again to save.
2. **To Recall:** Press the **MEMORY** button briefly. The current memory slot will be displayed. Use the **ADJUST** knob or **LIST** button to select the desired memory slot. Press **MEMORY** again to load the stored settings.

4.5 USB Interface and MODBUS-RTU

The USB port on the front panel allows connection to a computer for remote control and monitoring. The device supports MODBUS-RTU commands, enabling integration into automated test systems or custom software applications. Refer to the separate software manual or communication protocol guide for detailed instructions on using the USB interface and MODBUS-RTU commands.

5. Maintenance

5.1 Cleaning

To clean the unit, disconnect it from the power source. Use a soft, dry cloth to wipe the exterior. Do not use

abrasive cleaners or solvents. Ensure no liquids enter the device.

5.2 Storage

When not in use for extended periods, store the power supply in a cool, dry environment, away from direct sunlight and excessive dust. It is recommended to use the original packaging for storage.

6. TROUBLESHOOTING

Problem	Possible Cause	Solution
No power when turned on	Power cord not connected; Power outlet faulty; Internal fuse blown.	Check power cord connection; Test outlet; Contact service for fuse replacement.
No output voltage/current	Output is OFF; Voltage/current set to zero; Overload/protection activated.	Press Output ON/OFF button; Adjust V/I settings; Check load for short-circuit or excessive current draw.
Unit overheats	Blocked ventilation; Excessive ambient temperature; Continuous high load.	Ensure clear airflow around vents; Operate in a cooler environment; Reduce load or operating time.
Inaccurate readings	Poor connection; External interference; Unit requires calibration.	Check all connections; Isolate from strong electromagnetic fields; Contact service for calibration.

7. SPECIFICATIONS

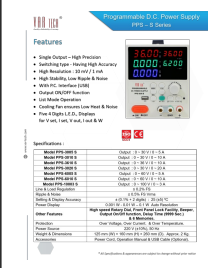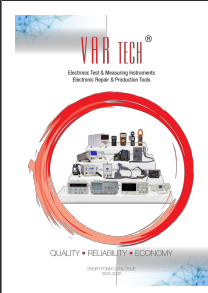| Parameter	Value
Brand	VAR TECH
Model	PPS-3020 S
Output Voltage	0-30 V DC
Output Current	0-20 A
Output Wattage	600 Watts
Display	5 L.E.D. Multicolour meters, 4 Digits
Interface	USB (MODBUS-RTU support)
Protection	Over Voltage, Over Current, Over Temperature
Memory Sets	6
Product Dimensions	26 x 16 x 12.5 cm
Item Weight	2.5 kg
Cooling Method	Air
Country of Origin	China

8. WARRANTY AND SUPPORT

VAR TECH products are designed for reliability and performance. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. For warranty claims, technical support, or service inquiries, please contact VAR TECH customer service. Please have your model number (PPS-3020 S) and purchase information ready when contacting support.

Contact Information:

Email: info@var-tech.com

Related Documents - PPS-3020 S

[VAR TECH Programmable DC Power Supply PPS-S Series: Features & Specifications](#)
Detailed overview of the VAR TECH PPS-S Series Programmable DC Power Supply, highlighting key features, technical specifications, and model variations for precision power control.

[VAR TECH Short Form Catalogue 2025-2026: Electronic Test & Measuring Instruments](#)
VAR TECH's short form catalogue for 2025-2026 features a wide range of electronic test and measuring instruments, including digital multimeters, clamp meters, DC/AC power supplies, oscilloscopes, soldering stations, and calibrators, emphasizing quality, reliability, and economy.

[VAR TECH Slim D.C. Power Supplies 3005 S, 3010 S, 6005 S - Technical Specifications](#)
Detailed specifications and features of VAR TECH's Slim D.C. Power Supplies, including models 3005 S, 3010 S, and 6005 S, designed for performance and reliability in education and electronics industries.

[VAR TECH V 2101+ Digital Clamp Multimeter: Features & Specifications](#)
Explore the VAR TECH V 2101+ Digital Clamp Multimeter. This device offers 3 5/6 digits (6000 counts), 1000A AC/DC current measurement, 2000V AC/DC voltage, True RMS, and auto-ranging capabilities. It includes features like capacitance, frequency, temperature measurements, In Rush Current, V.F.C., Data Hold, Backlight, Torch, Continuity, Diode Test, NCV, and Live Wire Test. Detailed specifications and supplied accessories are provided.

[VAR TECH V 92 S Digital Multimeter - True RMS, Auto Ranging Specifications](#)
Explore the comprehensive specifications of the VAR TECH V 92 S Digital Multimeter. This advanced device features a 3 5/6 digit (6000 counts) display, True RMS measurement, Auto Ranging, NCV detection, Data Hold, and a built-in torch. Ideal for professionals and hobbyists requiring precise electrical measurements.

[VAR TECH V 830 L+ Digital Multimeter - Features and Specifications](#)
Detailed features and specifications for the VAR TECH V 830 L+ True RMS Digital Multimeter, including its measurement capabilities, accuracy, and other functions.