



# SMART PDU

## User's Manual

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## 1. DEVICE STRUCTURE

### General Features

The Smart PDU can be manufactured in Vertical and Horizontal configurations (19" 1U Dual-Face or 2U Single-Face).

It is compatible with all socket types, and different socket combinations on a PDU is available.

Configuration can be Single-Phase or Three-Phase. If needed, the configuration can be changed between Single-Phase and Three-Phase later as well by simply modifying the connections.

The PDU features FOUR separate output channels, each channel can have desired number of sockets. The consumption value of each channel can be measured individually. Depending on the PDU model, one channel includes an On/Off feature, which can be operated manually or in automatic mode. Details regarding the automatic mode are provided in the following sections.

The management module includes the following:

- One RJ45 Ethernet Port (Fast Ethernet - 10/100Mbit)
- One One-Wire Sensor Port (active on certain models)
- USB Type-C port for firmware upgrades
- MODE button for accessing LCD screen information
- RESET button for restarting the device

### Management Module

The management module is designed to fit 1U profiles. The module features an LCD screen 30x30mm (approximate), which displays total values, per-channel values, network parameters, and device status information. These details can be accessed by pressing the MODE button.

There is a RESET button for resetting the device or updating the firmware.



Figure 1: Management Module

### Sockets

The socket types shown in Figure 2 can be used on the Smart PDU in any desired quantity and configuration. Some sockets (Schuko Type, French Type, C13-C19) are also available in different colors (Black, Red, Gray, White), enabling the creation of distinct groups on the PDU through color differentiation.

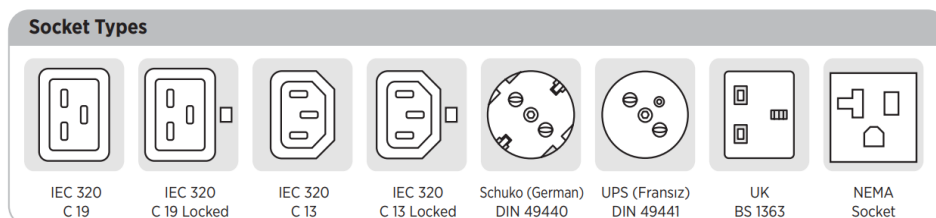


Figure 2: Socket Types



## Plugs

The Smart PDU can be connected as Single-Phase or Three-Phase. For this connection: Terminal blocks can be installed on the PDU, or it can be connected using various plug types listed in the table in Figure 3.

The length and cross-section of the cable to be used for these connections depend on the power requirements and the plug type. It is important to provide this information during the ordering process.

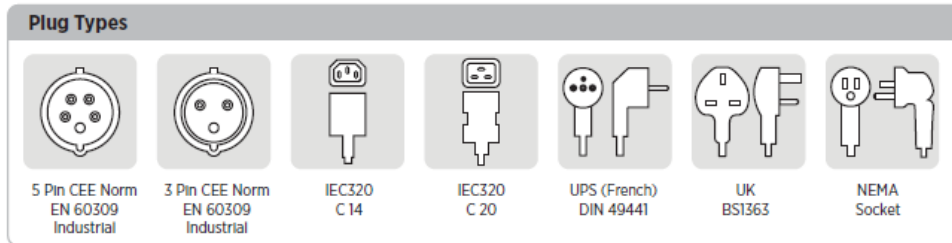


Figure 3: Plug Types

**CAUTION:** The cable cross-section and plug must be suitable for the total power to be drawn from the PDU. Using inappropriate cable or plug may pose a risk.

## Installation

The SMART PDU, designed for its intended purpose and after being connected to the appropriate electrical network, displays the LOGO on the LCD screen. This is followed by total energy data. These details include the network voltage, current drawn (if any devices are connected), total power, and energy consumption per hour.

The appearance of this information on the LCD screen indicates that the product is ready for use.

## 2. MANAGEMENT SOFTWARE

### General Features

The management software is provided in a compressed file format. (This software is designed to run in an MS Windows environment and will later be developed as a *GOOGLE CHROME EXTENSION MODULE* for compatibility across all platforms.)

Once copied to the appropriate folder and extracted from its compressed format, the software becomes ready for use and starts performing the SMART PDU management functions.

The software consists of two separate pages: DASHBOARD and SETTINGS.

### Dashboard

The dashboard includes:

- A section to input the IP address for PDU access.
- A section to configure the frequency of data retrieval from the PDU (minimum interval: 5 seconds).
- PDU Connect/Disconnect button.
- Dark/Light Mode toggle button.
- Graphical representations of Voltage, Current, Wattage, and Energy/hour values for each channel.
- A table at the bottom displaying these values numerically.

The date and time information are sourced from the NTP SERVER.

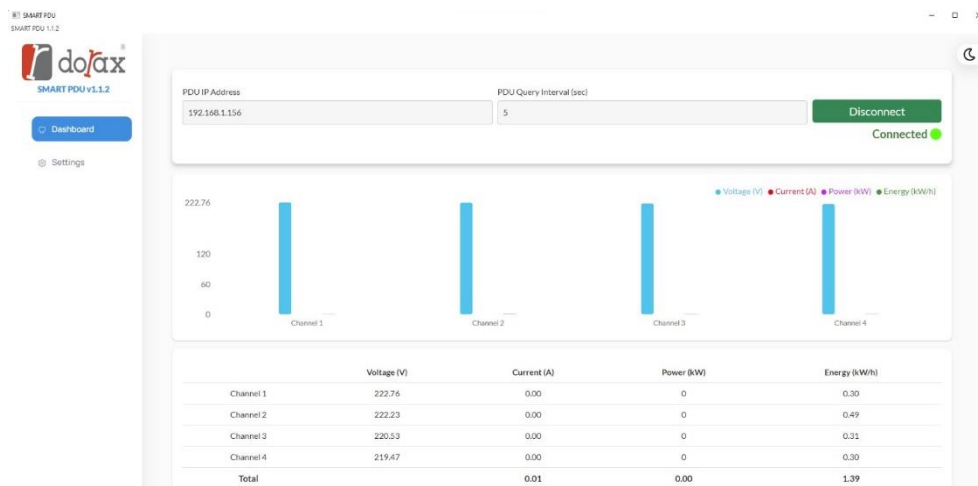


Figure 4: Dashboard Interface



### Settings Panel

In the Settings Panel, the following sections are available:

**Alarm Settings:** where the upper and lower limits for alarm thresholds are defined.

**NTP Server Settings:** for configuring parameters to retrieve real-time data.

**Network Settings:** to define IP addresses either via DHCP or STATIC.

**Location Settings:** where a name is assigned to the PDU (This information is also displayed on the LCD panel).

**System Monitoring Settings:** Allows setting the PDU to be powered on or off manually or automatically.

**Management:** to reset the PDU or energy values.

**Screen Rotation:** to adjust the LCD screen orientation based on its use.

**Firmware Update:** for updating the firmware.

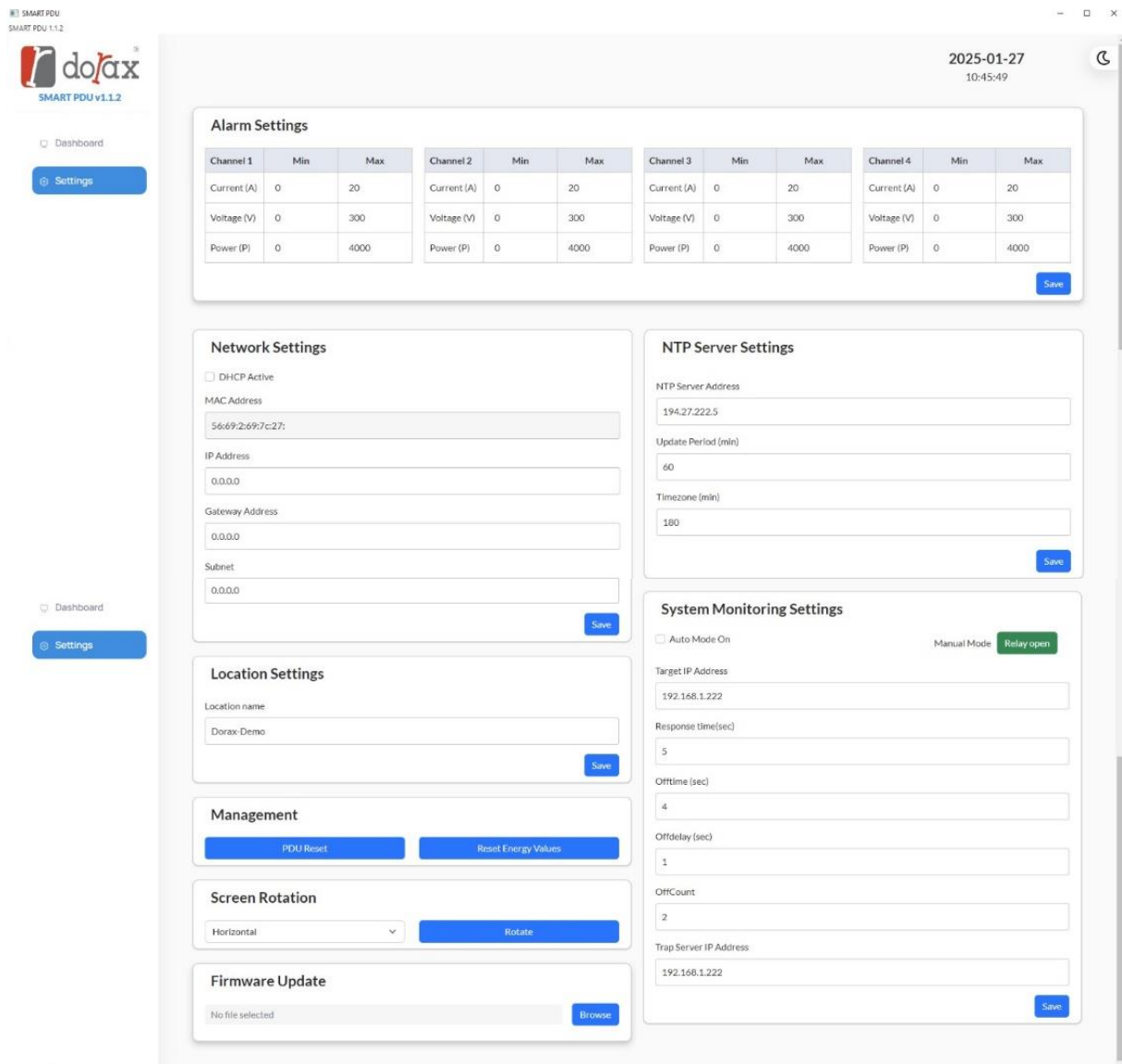


Figure 5: Settings Page Interface



## General Use Settings

The IP address required for PDU connection can be viewed in the **Network Parameters (NW)** section by pressing the **MODE** button on the PDU.

### IP Assignment Options for PDU:

- If the PDU is connected to a network and DHCP mode is active, it will obtain an IP address assigned by the DHCP server.
- During production, a standard IP address for all Smart PDUs, is assigned. The user can later change it to a suiting one for their network system.
- If the user provides IP addresses with their order, each PDU will be individually assigned the specified address and manufactured to connect directly to the network. In this case, the assigned IP address will be included on an **information label** on the PDU.

The IP address assigned by the DHCP server or defined during production can be seen in the **NW** section on the LCD screen.

This IP address should be entered into the **PDU IP Address** field in the management software. Clicking the **CONNECT** button establishes communication with the PDU, and the button turns **GREEN**.

### Note:

If the IP address is entered correctly, and the Ethernet cable is properly connected and functional, the connection button will turn **GREEN**. Once the button turns **GREEN**, data will appear in the tables below. If there is an issue, the button will remain **RED**, and communication with the PDU will not be established.

If the PDU is set to obtain a random IP address from the DHCP server, the **DHCP** button in the **Network Settings** section of the **Settings** page should be enabled. If a pre-defined static IP address will be used, **DHCP** should remain disabled. The **MAC Address** of the connected PDU will be displayed below. The **IP Address**, **Subnet**, and **Gateway** information should be entered into their respective fields. This completes the PDU network connection setup. To activate the entered values, the PDU must be reset.

If there are multiple Smart PDUs in the system, their IP addresses can be entered one by one in the **PDU IP Address** section on the main page, and management functions can be performed for each PDU individually.

## System Monitoring Settings

The Smart PDU, through a built-in relay, can turn one of the channels or other connected devices on and off. This function can be performed manually or automatically.

For manual control, the button at the top right in the System Monitoring Settings section can be pressed to toggle between ON and OFF states. If the status should change based on the network connection, the target IP address is entered in the **MONITORED IP ADDRESS** section.

The following parameters are set:

- **Response Time(sec):** The time in seconds to wait if communication is lost.
- **Off Time(sec):** The wait time when the turn-off function is triggered and the device is in the off state.
- **Off Delay(sec):** The time for waiting before sending a ping again after the relay is turned on.
- **Off Count:** The number of times this scenario will repeat if communication remains inactive. Once the Maximum Shutdown Count is reached, the system will turn ON and wait in that state until the issue is resolved.
- Time values are entered in SECONDS, and the repeat count is entered as a NUMBER.
- **Trap Server IP Address:** When the defined upper and lower working limits are exceeded, or when communication is lost and then restored, the PDU generates alarm information. If there is a **TRAP SERVER** in the system, entering the server's IP address in the **TRAP SERVER IP ADDRESS** section will send all alarm values to this server.
- **Note:** Relay can be connected to the Channel 1 Sockets or any other external device.



## Troubleshooting

Follow the steps below for possible issues and solutions during the initial setup and use of the device.

### Issue: The Device is Not Working

#### Solution:

1. Ensure that the device is properly connected to the power supply.
2. Check that the connection is done with the correct operating voltage and that the cables are properly connected. If the power cables are correctly connected and power is present, information will appear on the LCD screen.
3. If the LCD screen still doesn't show anything, contact technical support for assistance.

### Issue: Voltage Values Are Not Displayed for Some Channels on the LCD Screen

#### Solution:

1. In three-phase connections, if some of the phases have no power, or if a three-phase PDU is connected in a single-phase configuration, the voltage values for some channels may not be displayed.
2. Ensure that the energy connection is compatible with the PDU technical specifications and that power is available.
3. If the issue persists, contact technical support for assistance.

### Issue: The LCD Screen Is Not Oriented Correctly for PDU Usage

#### Solution:

1. Adjust the screen orientation using the Screen Orientation Change section in the management software to fit the device's usage.

### Issue: No PDU Access Despite Entering the IP Address

#### Solution:

1. Ensure that the entered IP address is correct and visible in the NW section of the PDU's LCD screen.
2. If the IP address is not displayed, confirm that the network connection is active. Check that the LINK and ACTIVE LEDs on the PDU's Ethernet port are lit.
3. Verify that the cable and socket connections are correct.

**WARNING: There are no parts inside the device that can be serviced by you. Opening the cover or interfering with the system outside of authorized service centers may damage the device and expose you to the risk of ELECTRICAL SHOCK. The PDU contains HIGH VOLTAGE that can cause harm.**

## Service and Support Services

If the issue persists after following the troubleshooting steps, please contact our service center to have your device repaired as soon as possible. Your device will be returned with its full functionality restored in the shortest time.

For information about the service center where you can send your device and other details, please visit:

[www.doraks.com.tr](http://www.doraks.com.tr) or email us at [teknik@doraks.com.tr](mailto:teknik@doraks.com.tr).

### Contact Us:

**Doraks Teknolojik Ürünler San. ve Tic. Ltd. Sti.**

K.Bakkalköy Mah. Kayışdağı Cad. Ozan Veysel Sok. No:9-134750 Ataşehir/İSTANBUL

**Tel:** +90 216 577 2848 **Whatsapp:** +90 533 895 1966 **E-mail:** [teknik@doraks.com.tr](mailto:teknik@doraks.com.tr)

**Origin:** Türkiye

**Warranty:** 2(Two) Years