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AEDNX AEDNX1617

User Manual for AEDNX Photovoltaic Surge Protector

Model: AEDNX1617 | Brand: AEDNX

Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the AEDNX Photovoltaic Surge Protector, model AEDNX1617, designed to be compatible with CITEL DS50PVS-1000/SG systems. This device is crucial for protecting photovoltaic (PV) installations from transient overvoltages caused by lightning strikes or switching operations. Please read this manual thoroughly before installation and operation to ensure safe and efficient use.

Product Overview

The AEDNX Photovoltaic Surge Protector is a high-performance device engineered to safeguard sensitive electronic equipment within solar power systems. It features a modular design for easy installation and replacement. Key specifications include a nominal DC voltage (Un) of 1000 Vdc and a maximum continuous operating voltage (Uc) of 1300 Vdc, with a nominal discharge current (In) of 20 kA and a maximum discharge current (Imax) of 40 kA. The voltage protection level (Up) is 4.0 kV.

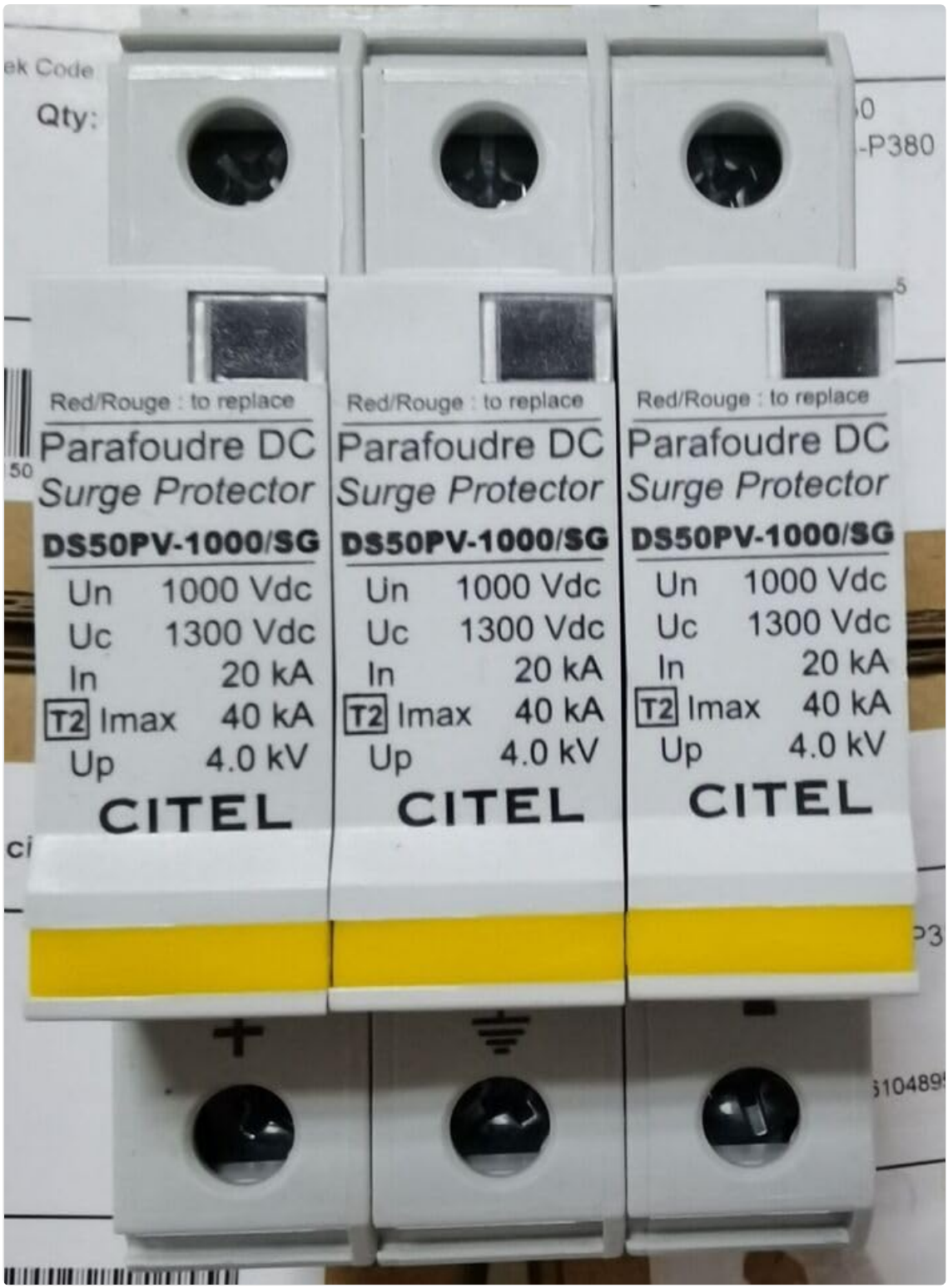


Figure 1: Front view of the AEDNX Photovoltaic Surge Protector modules. Each module is clearly labeled with its specifications, including nominal voltage (Un), maximum continuous operating voltage (Uc), nominal discharge current (In), maximum discharge current (Imax), and voltage protection level (Up). The "Red/Rouge: to replace" indicator is visible at the top of each module, signifying the need for replacement when red.

Setup and Installation

Installation should only be performed by qualified personnel in accordance with local electrical codes and regulations. Ensure the PV system is completely de-energized before beginning installation.

Safety Precautions:

- Always disconnect power to the PV system before installation or maintenance.

- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Verify correct polarity before connecting the surge protector.
- Ensure proper grounding of the surge protector.

Installation Steps:

1. Mount the surge protector on a DIN rail within an appropriate enclosure, ensuring adequate ventilation.
2. Connect the positive (+) and negative (-) DC lines from the PV array to the corresponding terminals on the surge protector. Refer to the markings on the device for correct polarity.
3. Connect the ground terminal of the surge protector to the main grounding busbar of the PV system.
4. Ensure all connections are secure and tightened to the manufacturer's specifications.
5. Once connections are complete, re-energize the PV system.
6. Verify the status indicators on the surge protector. They should appear green, indicating normal operation.

Operation

The AEDNX Photovoltaic Surge Protector operates automatically to protect your PV system from transient overvoltages. It requires no user intervention during normal operation.

Status Indicators:

- **Green Indicator:** Indicates that the surge protector module is functioning correctly and providing protection.
- **Red Indicator (or "Red/Rouge: to replace"):**Indicates that the surge protector module has absorbed a significant surge and needs to be replaced. This is a visual cue for maintenance.

Regularly inspect the status indicators to ensure continuous protection. If any module shows a red indicator, it must be replaced promptly.

Maintenance

Routine maintenance ensures the longevity and effectiveness of your surge protector. Always de-energize the PV system before performing any maintenance.

Inspection Schedule:

- **Monthly:** Visually inspect the surge protector for any signs of physical damage or discoloration. Check the status indicators to ensure they are green.
- **Annually:** Perform a more thorough inspection, checking all wiring connections for tightness and integrity.
- **After a Lightning Storm:** Immediately inspect the surge protector's status indicators. If a red indicator is present, replace the affected module(s).

Module Replacement:

1. De-energize the PV system completely.
2. Carefully pull out the faulty module from its base. The modular design allows for easy removal without disconnecting wiring.
3. Insert a new, identical replacement module into the base, ensuring it clicks securely into place.
4. Re-energize the PV system and verify that the new module's indicator is green.

Troubleshooting

This section addresses common issues you might encounter with the surge protector.

Problem	Possible Cause	Solution
Red indicator visible on module.	Module has absorbed an overvoltage surge and is no longer functional.	Replace the affected module(s) immediately as per the "Module Replacement" instructions in the Maintenance section.
No indicator light (module appears off).	No power to the surge protector, or module is not properly seated.	Check power supply to the PV system. Ensure the module is fully inserted into its base. If issue persists, consult a qualified electrician.
System still experiences overvoltage issues after surge protector installation.	Improper installation, incorrect sizing, or severe, repeated surges.	Verify installation according to instructions. Ensure the surge protector is correctly rated for your system. Consult a qualified PV system designer or electrician.

Technical Specifications

Parameter	Value
Model Number	AEDNX1617
Compatibility	CITEL DS50PVS-1000/SG Photovoltaic Surge Protector systems
Nominal DC Voltage (Un)	1000 Vdc
Maximum Continuous Operating Voltage (Uc)	1300 Vdc
Nominal Discharge Current (In)	20 kA (8/20 µs)
Maximum Discharge Current (Imax)	40 kA (8/20 µs)
Voltage Protection Level (Up)	4.0 kV
Protection Mode	Differential and Common Mode
Operating Temperature	-40°C to +80°C
Mounting	DIN Rail
Enclosure Protection	IP20 (when installed in appropriate enclosure)

Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact AEDNX customer service. Keep your purchase receipt as proof of purchase for any warranty claims.
For further assistance, please visit the official AEDNX website or contact their support team directly. Always provide your model number (AEDNX1617) when seeking support.

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