

Programmable Power Distribution Unit series

PDU10 / PDU6 Programmable Power Distribution Unit

Innovative, patented design and functions. Equipped with digital controller, protection, remote measurement, and multiple connections in parallel, it sequentially controls and secures AC mains supply to the DC power supplies, and provides useful CO²e and efficiency readings.

To remain eco-friendly, the PDU series maintains iDRC's stainless steel chassis with very little paint and no plating. The PDU series state-of-the-art functions allow you to manage very high power easily and environmentally.



World First Innovation

- PDU10/PDU6, 4U height, connect with 10/6 units 18kW iDRC DC power supply.
- MAIN / SUBSidiary function, control millions of watts of DC power via a single LAN cable.
- A 5" 800x480 WVGA touchscreen supplemented with physical controls, forms an intuitive control interface.
- A built-in AC mains monitoring system provides ten or more useful reporting parameters such as V, A, Freq, VA, Watt, VAR, kWh, CO₂e and Efficiency.
- Permanent and resettable Time accumulators.
- CE approved.
- LXI 1.5 approved

Electrical

- 3Ø180~460VAC, 47~63Hz Universal Input.
- Embedded system with multiple 32 bit ARM based MCU, fast boot time of 10 seconds or less.
- Built-in timer allows the setting of output running time.
- Built-in RTC maintains reliable time without a time server.
- Closed-case firmware upgrading and enhanced protection to prevent upgrade failures.
- Full remote control via a single LAN cable.
- Definable Power On to a select-able number of SUB units with the surplus SUB units off to save energy.
- Easy to replace individual output terminal.

○ Safety

- SEMATECH std. EMO button- physically off all managed DC power supplies at once.
- Distinct AC output On/Off button, sequence On/Off DC power supplies.
- Lockable power switch to avoid accidental operation.
- Interlock function.

○ Interface

- Built-in 2 LAN(LXI) ports, saves the cost of an extra switch hub.
- Fast LAN response time of 3ms.
- SCPI compatible
- Alarm signal output and interlock mechanism prevent potential injury.
- Supports USB(*1) plug and play to easily read and store data.

PDU2 Power Distribution Unit

Economic Design for sequential on or off of 2 SUBsidiary units.



○ World First Innovation

- PDU2, 1U height, control 2 units 18kW iDRC DC power supply.
- MAX power rate at 36KW
- CE approved

○ Electrical

- 3Ø180~460VAC, 47~63Hz universal Input
- Sequential power ON/OFF.
- Easy to replace output terminal.

○ Safety

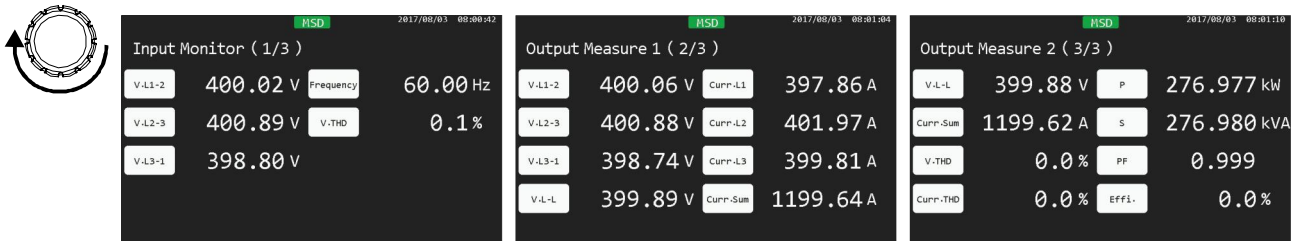
- SEMATECH std. EMO button, physically off all managed DC power supply at once.
- Distinct AC Output On/Off button to On/Off DC power supply in sequence..

*1. The format of USB flash drive should be FAT16(2GB) or FAT32(32GB) USB2.0

Functions and Displays of PDU10/PDU6

PDU10/PDU6 provide various readings in different pages.

Turn MEAS knob to switch between pages



Dedicated TIME knob for all time related parameter adjustments



Models Function List

| | PDU10 | PDU6 | PDU2 |
|--------------------------|-------|------|------|
| Channels | 10 | 6 | 2 |
| Parallel Units | 10 | 10 | |
| Remote Monitoring | V | V | |
| Sequence On/Off | V | V | |
| Number of On/Off Setting | V | V | |
| LXI1.5 | V | V | |
| Web Server | V | V | |
| NTP Sync. | V | V | |
| 4 Input Readings | V | V | |
| 9 Output Readings | V | V | |
| 5 Protections | V | V | |
| Off Time Setting | V | V | |
| Interlock | 3 | 3 | 1 |
| No. of Ext. EMO Input | 2 | 2 | |
| Tower Light Output | V | V | |
| Buzzer Output | V | V | |
| Thermo Switch Input | V | V | |
| EMO Button | V | V | V |
| 5" 800x480 Touchscreen | V | V | |
| Stanless Steel Case | V | V | V |

4 Input Readings

1. Voltage(L1,L2,L3)
2. Frequency
3. Voltage THD
4. Phase Loss

9 Output Readings

1. Current(L1,L2,L3)
2. Effective Power
3. Reactive Power
4. Power Factor
5. Voltage THD
6. Current THD
7. KWh
8. CO2 Emmission
9. Efficiency

5 Protections

1. Line Voltage High
2. Line Voltage Low
3. Output Current High
4. Output Over Loading
5. Magent Contact Fail

Web Server Function

The PDU10/PDU6 provides a web GUI allowing users to control the DC power system via ethernet.

| Instrument Welcome Page | |
|---------------------------|-------------------------------------------------------------------------------|
| Device Model | PDU10 |
| Manufacturer | IDRC |
| Serial Number | 000000 |
| Description | PDU10_000000 |
| LXI Extended Features | LXI HSLIP |
| LXI Version | 1.4 LXI Device Specification 2011 |
| Hostname | PDU10_000000.local |
| MAC Address | 70:46:42:8C:65:F1 |
| TCP/IP Address | 192.168.42.203 |
| Firmware Revision | 0.36.00 |
| Instrument Address String | TCPIP0::192.168.42.203::5025::SOCKET TCPIP0::192.168.42.203::HSLIP0::INSTR |
| Device Indicator | Inactive <input type="button" value="Toggle"/> |

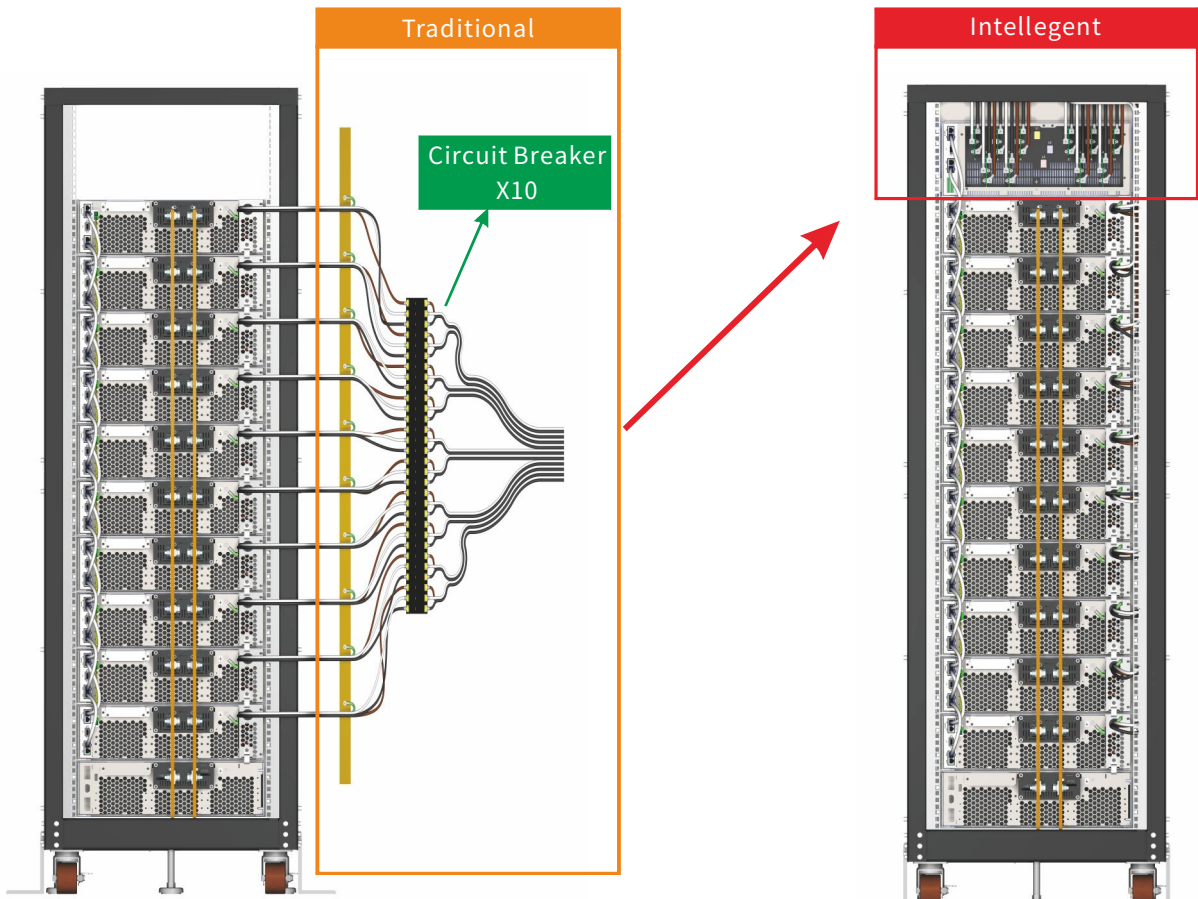
<Web server information>

| | | |
|-------------------------|---------|------|
| Output | OFF | |
| Integrate | OFF | |
| Freq: | 60.00 | Hz |
| U ₁₂ : | 400.19 | V |
| U ₂₃ : | 401.01 | V |
| U ₃₁ : | 398.83 | V |
| THD _U : | 0.1 | % |
| I ₁ : | 397.95 | A |
| I ₂ : | 402.18 | A |
| I ₃ : | 399.80 | A |
| THD _I : | 0.1 | % |
| P: | 277.134 | kW |
| S: | 277.137 | kVA |
| PF: | 1.000 | |
| Effi: | 0.0 | % |
| WH: | 0.0 | kWh |
| Int. time: | 0 | Sec |
| CO ₂ Rate: | 277.133 | kg/h |
| Total CO ₂ : | 0.00000 | t |
| Off in: | | |

<Parameters>

PDU Application Example

Our innovative, patented Power Distribution Unit design consolidates control and management of two hundred thousand VA AC mains in a 4U chassis. This significantly simplifies the control and wiring for a 180 kW DC Power System.



PDU Series Specifications

| Model number | PDU10 | PDU6 | PDU2 |
|----------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|-------------------|
| Control unit | 1~10 | 1~6 | 1~2 |
| Input & Output Specification | | | |
| Input Voltage range | 180~460VAC , Optional 480VAC type:432~528VAC | | |
| Nominal voltage | 200/208/220/380/400/415VAC | | |
| Phase/Wires | 3-phase / 3 wires | | |
| Frequency range | 45Hz ~ 65Hz | | |
| Max Current(at 180V 3-phase) | 600A | 360A | 120A |
| Max Power | 180kVA | 108kVA | 36kVA |
| System settings | | | |
| Nominal voltage | Selectable 200/208/220/380/400/415VAC | | - |
| Frequency | Selectable 50Hz/60Hz | | - |
| Power OFF timer | DDD/HH/MM | | - |
| Number of Interlock I/O | 1~3 | | - |
| CO ₂ emission coefficient | 0.000kg/kWh ~ 9.999 kg/kWh | | - |
| Sequential Control settings | | | |
| Power ON sequence | The power ON order is from the last SUB unit to the MAIN unit. | | |
| Power OFF sequence | The power OFF order is from the MAIN unit to the last SUB unit. | | |
| ON/OFF control | Manual/Timer/Remote | | - |
| Input measurement | | | |
| Voltage (L1, L2, L3) | Range | 600V / 300V | |
| | Resolution | 0.01V | |
| | Accuracy | ± 0.2% | |
| Frequency | Resolution | 0.001Hz | |
| | Accuracy | ± 0.2% | |
| Output measurement | | | |
| Current (L1, L2, L3) | Range | 600A / 300A / 60A | 600A / 300A / 60A |
| | Resolution | 0.01A | |
| | Accuracy | ± 0.8% | |
| Active Power (P) | Resolution | 0.001kW | |
| | Accuracy | ± 1.5% | |
| Apparent Power (S) | Resolution | 0.001kVA | |
| | Accuracy | ± 1.5% | |
| Power Factor | Resolution | 0.001 | |
| | Accuracy | ± 1% | |
| Kilo-Watt-Hour | Resolution | 0.1 kWh | |
| | Accuracy | ± 1.5% | |
| CO ₂ emission | Real time | 0000.000 ~ 9999.999kg | |
| | Accumulate | 0000.0000t ~ 9999.9999t | |
| Efficiency (DC power supply output/input) | Resolution | 0.1% | |
| | Accuracy | ± 1.5% | |
| Voltage | Resolution | 0.1% | |
| Total Harmonic Distortion | Accuracy | ± 1% | |
| Current | Resolution | 0.1 | |
| Total Harmonic Distortion | Accuracy | ± 1% | |
| Safety and Protection | | | |
| Emergency Stop | EMS button on the front panel | | |
| OVP | +10% of Nominal input | | |
| UVP | -10% of Nominal input | | |
| OCP | +10% of Max. input current | | |
| OLP | Adjustable from 18kVA to 180kVA | Adjustable from 18kVA to 108kVA | |
| Frequency | ± 3Hz at 50Hz/60Hz | | |
| Phase loss | Alarm and stop operation when lose any phase. | | |
| Status Indication on the LCD display | | | |
| REMOTE | REMOTE will show on the LCD display when the PDU is connected to PC | | |
| KEY LOCK | KEY LOCK will show on the LCD display when the keys are locked | | |
| Error | ERR will show on the LCD display when any error occurs | | |
| Digital interface - LAN | | | |
| Standard | LXI | | |
| Line ending character | Reception : LF , END ; Transmission : LF+END | | |
| External Control I/O | | | |
| EMS | 1. Multiple rack cabinet EMS can be connected in series. 2. Extendable EMS switch. | | |
| Interlock | Equipped with three interlock connectors (in series). | | |

PDU Series Specifications

| Model number | PDU10 | PDU6 | PDU2 | |
|-------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------|------|------|
| Control units | 1~10 | 1~6 | 1~2 | |
| General specification | | | | |
| Auxiliary Power Supply | Input voltage | 180~460VAC ,Optional 480VAC for 15kW model | | |
| | Frequency | 45Hz ~ 65Hz | | |
| | Power consumption | ≤55W | ≤46W | ≤35W |
| | Standby power | ≤30W | ≤30W | ≤10W |
| Environmental Condition | Operating environment | Indoor use | | |
| | Operating temperature | 0°C ~ 50°C | | |
| | Operating humidity | 30%rh ~ 80%rh (no condensation), 80% RH at 30°C , . Decrease linearly to 50% RH at 40°C | | |
| | Storage temperature | -20°C ~ 70°C | | |
| | Storage humidity | 10%rh ~ 80%rh (no condensation) | | |
| | Altitude | Up to 2000m | | |
| Withstanding voltage | Primary - Chassis | DC2500V | | |
| | Primary - Secondary | DC2500V | | |
| | Secondary - Chassis | DC2500V | | |
| Physical specification | | | | |
| Display panel | TFT LCD Touchscreen 127mm(5" - 800x480) | | - | |
| Dimensions (W x H x D) | 440 x 176 x 849.6 mm | | - | |
| Weight | 40kg | 35kg | 12kg | |
| Accessories | | | | |
| LAN cable | 2m | | - | |
| RS485 cable | 1pc (AWG24-2m) | | - | |

*1. All parameters are measured after 30 minutes warm-up. Ambient temperature at 23±5°C, Humidity Under 80% RH, AC Voltage : 415V±5%, Frequency : 50/60Hz±5%.

Rear Panel

PDU10/PDU6

- ① MAIN / SUB Port
- ② Digital I/O
- ③ LAN (LXI) connector
- ④ I/O Port
- ⑤ Line In
- ⑥ Line Out
- ⑦ Ground Terminal

PDU2

- ⑧ Line In
- ⑨ Ground Terminal
- ⑩ I/O Port
- ⑪ Line Out

