## ARIS POWER Srl
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**INSTALLATION INSTRUCTIONS**      BGD-DCU150M1224-R00-AM30.docx

This device is a **DC-UPS** belonging to the **DCU Series**, AC to DC Uninterruptable Power Supply systems. Its mission is providing Power Security to critical DC loads in conjunction with an external battery. For flexibility of use, it features dipswitch. selectable output voltage, 12 Vdc or 24 Vdc. Input is wide range, AC or DC, very flexible to match most common applications.
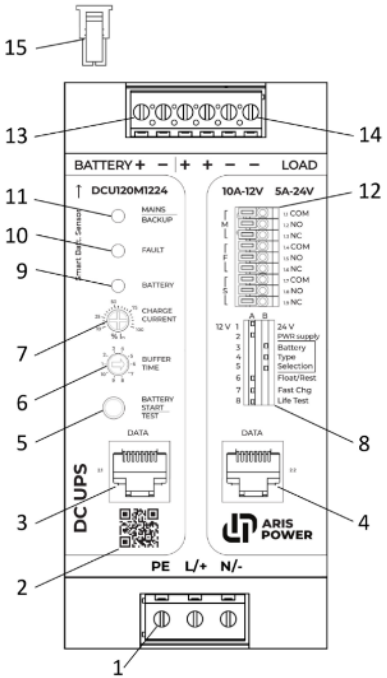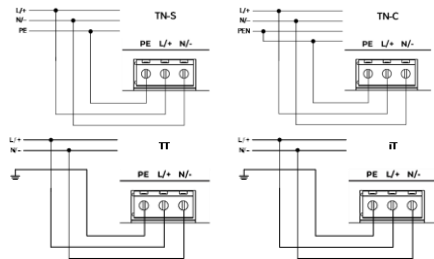


## Technical Data
### DCU150M1224
### DCU150M1224S (*)
Order code

| Input | AC:, 100-227Vac, 1.6-0.6A, 50-60Hz |
| --- | --- |
| | DC: 110–220Vdc 1.4-0.5A |
| Protection breaker | 6A, Curve C |
| Output -Selectable | DC: 12V-10A, Boost 25A (5s) |
| | DC: 24V-5A, Boost 25A (5s) |
| Efficiency (Typ.) | ➢    92% |
| Insulation Voltage (In/Out) | 4 kVac |
| IP degree/Protection class | IP20 / II |
| Operating temperature | -25°C +70°C |
| | -13°F +158°F |
| Storage Temperature | -40°C +85°C |
| | -40°F +185°F |
| Pollution Degree | 2 |
| Relative Humidity, no condensation @25°C | max 95% |
| Suitable for battery types | Vented Lead, VRLA AGM Lead, VRLA Gel Lead, Li-Io, Li-PoFe, NiCd/NiMh |
| Data Link * | MODBUS RTU |
| Dimensions | 60 x 130 x 126 mm |
| Weight | 0.65 kg |

| N. | Description |
| --- | --- |
| 1 | INPUT VOLTAGE TERMINALS |
| 2 | QR CODE LINK TO ONLINE USER'S MANUAL |
| 3 | CAN BUS/MODE BUS RJ45 CONNECTOR 1 |
| 4 | CAN BUS/MODE BUS RJ45 CONNECTOR 2 |
| 5 | BATTERY START/TEST PUSH BUTTON |
| 6 | BUFFER TIME SELECTOR |
| 7 | CHARGE CURRENT TRIMMER |
| 8 | FUNCTIONS DIP-SWITCHES |
| 9 | BATTERY STATUS LED |
| 10 | FAULT LED |
| 11 | MAINS/BACKUP LED |
| 12 | ALARMS PUSH-IN TERMINALS |
| 13 | BATTERY OUTPUT TERMINALS |
| 14 | LOAD OUTPUT TERMINALS |
| 15 | SENSOR FOR BATTERY TEMPERATURE COMPENSATION (UART CONNECTOR) |

**Installation Check List -** Please carefully follow this check list during installation. We suggest printing, fill out and file it as installation report. Add notes as felt necessary. Details for each setting are on the User Manual.

| Item | Action | Device Settings Ref. to User Manual |
| --- | --- | --- |
| 1 | Read Safety and Warning notes | Chapt. 1 |
| **2** | **Set Output Voltage, 12V or 24V** | **Dipswitch 1** |
| 3 | Set Maximum Charge Current | Selector 7, Chapt. 6.2 |
| 4 | Mount the DC-UPS | Chapt. 4 |
| 5 | Wire the DC-UPS | Chapt. 5.1 |
| 5.1 | Wire Mains | Chapt. 5.2 |
| 5.2 | Wire Load | Chapt. 5.3 |
| 5.3 | Wire Battery | Chapt. 5.4 |
| 5.4 | Wire Alarm contacts | Chapt. 5.5 |
| 5.5 | Wire SBS Temperature sensor | Chapt. 5.6 |
| 5.6 | Wire Data Link * | Chapt. 5.7 |
| 6 | Configure the DC-UPS | |
| 6.1 | Set Battery Type | Dipswitch 3-4-5, Chapt. 6.3 |
| 6.2 | Set Buffer Time * | Selector 6, Chapt. 6.4 |
| 6.3 | Enable or disable Fast Charge | Dipswitch 7, Chapt. 6.5 |
| 6.4 | Enable or disable Life Test | Dipswitch 8, Chapt.6.6 |
| 6.5 | Enable or disable Rest Mode | Dipswitch 6, Chapt. 6.8 |

**WARNING: Electric shock risk!**
This device must be properly installed, started up, and operated only by qualified technicians.

**Mounting -** The device must be installed in a control cabinet that can be locked and only opened by qualified electrician
The protection class of the device is IP20. Therefore, it must be installed in a dry and clean environment.
Penetrating external bodies, e.g., paper clips or metal parts, must be prevented from entering the device
Vertical mounting is the normal and only authorized mounting position
Observe specified mechanical and thermal operating limits.

**Wiring -** National safety and accident prevention guidelines must be followed
Always verify no voltage is present before beginning installation.
Ensure correct wiring connection and safety regulation compliance to protect against electric shock.
Connect the protection conductor terminal "PE" with ground.
Assembly and electrical installation must correspond to the state of the art.
Install a switch/circuit breaker close to the device at the Mains input, Load output and at the battery terminals which are labeled as the disconnecting device for this device.
Ensure that the primary- and secondary-side wiring are the correct size and have correct fuse protection.
Refer to the associated table for the connection parameters, such as the necessary stripping length for the wiring with and without ferrule (see Wire cross sections table).

**Battery Connections** When connecting batteries, check for correct polarity. Make sure not to short circuit the battery terminals.
Do not disconnect the fuse and/or battery connection when in hazardous locations.
The device outputs are active outputs according to SELV. These may only be operated on permitted SELV circuits.

**Fire Prevention**
Do not place flammable or exploding material nearby the device.
To reduce the risk of fire, connect only to a circuit provided with a maximum branch circuit overcurrent protection in accordance with the Norms
To reduce the risk of fire, replace fuses only with same type and rating.

**Hot surface** Both ambient temperature and heat losses during operation may overheat the device housing surfaces.
Ensure sufficient convection (minimum gap: above/below 50 mm; sides 10 mm)
The device may only be used for its intended use.
Improper use invalidates the device warranty.
The device is maintenance-free. Repairs may only be carried out by the manufacturer.
Warranty is void if the housing is opened.

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**IMPORTANT** - Keep these instructions sheet in a safe place – It contains important safety notes which must be observed during installation, operation and maintenance of DC-UPS devices and related batteries.

### LEDs Signaling Meaning

| LEDs Signaling Meaning | Mains/Backup (11) Red | Orange | Green | Fault (10) Red | Orange | Green | Notes | Battery (9) Red | Orange | Green | Notes |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Device off | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | |
| Power-Init | ○ | ● | ○ | ○ | ● | ○ | | ○ | ● | ○ | |
| Recovery-charge | ○ | ○ | ● | ● | ○ | ○ | | ☼ | ○ | ○ | 2 blink / 1 sec |
| Bulk | ○ | ○ | ● | ○ | ○ | ● | | ○ | ☼ | ○ | 1 blink / 1 sec |
| Absorption | ○ | ○ | ● | ○ | ○ | ● | | ○ | ☼ | ○ | 1 blink / 2 sec |
| Float | ○ | ○ | ● | ○ | ○ | ● | | ○ | ○ | ● | |
| Reverse Polarity | ○ | ○ | ● | ☼ | ○ | ○ | 1 pulse | ● | ○ | ○ | |
| Disconnected Battery | ○ | ○ | ● | ☼ | ○ | ○ | 2 pulses | ● | ○ | ○ | |
| Wrong Battery Voltage | ○ | ○ | ● | ☼ | ○ | ○ | 3 pulses | ● | ○ | ○ | |
| Float, cell in short circuit | ○ | ○ | ● | ☼ | ○ | ○ | 4 pulses | ● | ○ | ○ | |
| Float, Life Test | ○ | ○ | ● | ☼ | ○ | ○ | 5 pulses | ● | ○ | ○ | |
| Low Battery Voltage | ○ | ○ | ● | ☼ | ○ | ○ | 6 pulses | ● | ○ | ○ | |
| Overload or Short circuit on load output | ○ | ○ | ● | ○ | ☼ | ○ | 1 pulse | ○ | ○ | ○ | |
| Load Boost | ○ | ○ | ● | ○ | ● | ○ | | ○ | ○ | ○ | |
| Rectifier fail | ○ | ○ | ● | ○ | ☼ | ○ | 3 pulses | ○ | ○ | ○ | |
| Wire High impedance | ○ | ○ | ● | ○ | ☼ | ○ | 4 pulses | ○ | ○ | ○ | |
| Back-up operation ok | ○ | ● | ○ | ○ | ○ | ○ | | ○ | ○ | ● | |
| Battery almost discharged | ○ | ● | ○ | ○ | ○ | ○ | | ○ | ● | ○ | |
| Battery fully discharged | ○ | ● | ○ | ○ | ○ | ○ | | ● | ○ | ○ | |
| Overload or Short circuit on load output during back-up | ○ | ● | ○ | ○ | ☼ | ○ | 1 pulse | ○ | ○ | ○ | |

| Legend | Color | Green = All good | Orange = Warning | Red = Alarm |
| --- | --- | --- | --- | --- |
| | Status | ☼ LED flashing | ● LED on | ○ LED off |

| Connect to | Terminal Type | Solid (mm²) | Stranded (mm²) | AWG | Torque (Nm) | Stripping Length (mm) |
| --- | --- | --- | --- | --- | --- | --- |
| **Mains** | Screw | 0.2 - 2.5 | 0.2 - 2.5 | 26 - 12 | 0.5 - 0.6 | 7 |
| **Load** | Screw | 0.2 - 2.5 | 0.2 - 2.5 | 26 - 12 | 0.5 - 0.6 | 7 |
| **Battery** | Screw | 0.2 - 2.5 | 0.2 - 2.5 | 26 - 12 | 0.5 - 0.6 | 7 |
| **Signals** | Push in | 0.2 - 1.0 | 0.2 - 1.0 | 24 - 20 | 0.5 - 0.6 | 11 |