The Power of Reliability

ICT DIN Series Power Distribution Unit Instruction Manual 855-353-000

HELIOS POWER SOLUTIONS

heliosps.com

Specifications subject to change.

Australia
sales-au@heliosps.com
+61 2 7200 9200

New Zealand
sales-nz@heliosps.com
+64 9 835 0700

Asia
sales@heliosps.asia
+65 6871 4140

Middle East
sales@heliosps.asia
+971 4 401 8484

SAFETY GUIDELINES

Principles of Safe Operation and Maintenance

Safety must always be the top priority of all personnel involved in the installation, operation, and maintenance of this unit as it operates at high voltages that could be potentially lethal. Technicians must adhere to the appropriate standards and manufacturer's recommendations to minimize hazards.

Do not attempt to perform the tasks described in this manual if you are not a qualified professional.

It is essential that all safety devices and emergency response systems be fully operational and within their certification periods before starting any service.

Visual Communication

This manual uses extensive visual aids and tries to adhere to ANSI and ISO safety symbol standards. These symbols describe the following situations:

WARNING indicates a hazardous situation that, if not avoided, may result in death or severe injury or damage to equipment and property.

CAUTION indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or damage to equipment and property.

NOTICE indicates practices not related to physical injury but may result in equipment damage, environmental hazards, loss of data, and other undesirable consequences.

General Alerts


WARNING

Risk of serious personal injury or damage to equipment and property. Always observe the following:

- Installation must be done by qualified technicians.
- Shut off or disconnect all DC power sources before connecting or disconnecting wiring.
- Carefully observe wiring polarity when making input and output connections.
- Securely tighten all connections.
- Do not attempt to service any internal parts. Refer all product service to an authorized ICT service facility.


CAUTION

Risk of personal injury or damage to equipment and property. Always observe the following:

- Use wire and connectors rated for the maximum load current and size of fuse or circuit breaker in accordance with NEC Section 210.20(A) and keep cable lengths as short as practical.
- Install unit in a restricted access location (such as an equipment rack) to limit unintentional contact with terminals and wiring.
- Keep sources of moisture away from unit.
- Do not energize the unit before the chassis ground is connected.
- DC-AC inverters should not be connected to the outputs of the distribution unit. DC-AC inverters create significant inrush current and may damage the circuitry or interfere with the operation of power distribution panels that they are connected to. Connecting a DC-AC inverter in this way may void the product warranty.


NOTICE

Risk of damage to equipment, environmental hazards, loss of data and other undesirable consequences. Always observe the following:

- The unit must be properly handled, mounted, and installed.
- Do not block air inlet or outlet openings.
- Due to environmental factors which are common at outdoor communications sites, power surges from lightning strikes, electrostatic discharge, and utility power feeds can occur. These surges can damage connected equipment.

NOTICE

- Third-party surge suppression devices must be utilized to protect every exposed DC power conductor and exposed data cables. These protection devices must be installed at both ends of the exposed conductor, in close proximity to installed equipment. Periodically inspect these surge protection devices for proper function.
- Consult with manufacturers of surge suppression devices to select appropriately rated protection device(s) and proper installation methods.
- ICT's product warranty does not cover damage caused by power surges and electrostatic discharge events including lightning.

NOTE: Due to the fuse-detection circuitry internal to the unit, it may be possible to measure a voltage on the terminal(s) with no load connected, even if that terminal's fuse is open. This is normal operation. The fuse-detection circuitry is a high-impedance circuit, and while a voltage may be present on the output terminal, it is a signal voltage and does not support loading. A load device connected to the output will immediately pull this voltage to zero volts.

Product Alerts

CAUTION

Risk of personal injury or damage to equipment and property. Always observe the following:

- Fuses may be hot to touch. Disconnect power and allow to cool before removing or replacing.
- Wiring terminals may be hot to touch. Disconnect power and allow to cool before disconnecting load wires.
- Ensure continuous load current through each output channel does not exceed 80% of the maximum output ratings in accordance with NEC Section 210.20(A).

GENERAL INFORMATION

Document Number: 855-353-000

Model: ICT-DIN-PDU6

Date and Revision: August 2025, Revision 2.02

Disclaimer

ICT shall not be held liable for any damage or injury involving this product if it has been subjected to misuse and exposure to environmental conditions not conforming to the product's limits of operation, improper installation, or maintenance.

The illustrations in this manual are for illustrative purposes only. Review the drawings before proceeding. If there are questions and concerns regarding the product, refer to the FAQs section or contact ICT.

Contact Information

- North America toll-free: +1 877.930.0717 ext. 810
- International: +1 604.856.6303 ext. 810
- E-mail: techsupport@ictcorporate.com

ICT LIMITED WARRANTY

The warranty period on ICT products is two (2) years from date of purchase from an authorized ICT reseller or OEM with valid proof of purchase, or from date of shipment from the ICT manufacturing facility. The warranty period for a repaired product or part is ninety (90) days or the remainder of the unexpired term of the new product warranty period, whichever is greater. Repair or replacement of a defective product or part does not extend the original warranty coverage period.

The ICT Limited Warranty is only intended for the benefit of the original purchaser and user of this product. This Warranty is not transferable or assignable without the prior written permission of ICT. ICT's sole obligation and liability under this warranty is limited to either repairing or replacing defective products at the sole discretion of ICT. When repairing or replacing the products, ICT may use products or parts that are new, equivalent to new or re-conditioned. Parts repaired or replaced during the warranty period will be under warranty for the remainder of the warranty period.

No claim will be accepted unless written notice of the claim is received by ICT in accordance with ICT's Return Material Authorization (RMA) procedure, as soon as reasonably possible after the defect is discovered. A valid product serial number must be provided with the RMA claim to prove eligibility. The RMA procedure is available on the ICT website at www.ict-power.com/support/warranty-repair/.

The Purchaser shall at their own risk and cost return the defective product to ICT's factory or designated repair center once an RMA is issued by ICT. Return of the products to the customer after repair is completed shall be prepaid by ICT unless otherwise mutually agreed between the parties. Products shipped to ICT which have incurred freight damage will not be covered by this Warranty and any repairs or replacement parts, components or products needed will be invoiced in the full current price amount and returned freight collect to the Purchaser. It is the Purchaser's responsibility to check the product upon receipt for any damage during shipping and to contact the carrier or shipper regarding such damage. Product that is returned as defective, which is determined to operate within published specifications will be returned to the Purchaser freight collect.

ICT assigns to the Purchaser any warranties which are made by manufacturers and suppliers of components of, or accessories for, the ICT product and which are assignable. ICT makes no representations as to the effectiveness or extent of such warranties, assumes no responsibility for any matters which may be warranted by such manufacturers or suppliers and extends no additional coverage under this Warranty to such components or accessories.

In no event shall ICT be liable for any special, indirect, or consequential damages such as, but not limited to, loss of use, business or goodwill, loss of revenue, or loss of profits, which may result, either directly or indirectly, from defects in products provided by ICT.

This Warranty will be void if the product has been subjected to misuse, neglect, accident, exposure to environmental conditions not conforming to the products' limits of operation, improper installation or maintenance, improper use of an electrical source, defects caused by sharp items or by impact pressure, a force majeure event, has been modified or repaired by anyone other than ICT or its authorized representative, has been subjected to unreasonable physical, thermal or electrical stress, improper maintenance, or causes external to the unit including but not limited to general environmental conditions such as rust, corrosive atmospheres, sustained temperatures outside the specified operating range of the equipment, exposure to power surges and/or electrical surges, improper grounding, mold or dust, animal or insect damage, water damage or immersion in liquid of any kind, or if the serial number has been altered, defaced, or removed.

ICT does not control the installation and use of any ICT product. Accordingly, it is understood this does not constitute a warranty of performance or a warranty of fitness for a particular purpose. This Warranty represents the entire agreement between ICT and Purchaser with respect to the subject matter herein and supersedes all prior verbal or written communications, representations, understandings, or agreements relating to this subject.

Return Material Authorization Procedure

1. Request RMA number from ICT through telephone, e-mail, or website from Monday to Friday between 8:00am and 4:30pm Pacific Time.

    - North America toll-free: +1 877.930.0717 ext. 810
    - International: +1 604.856.6303 ext. 810
    - E-mail: techsupport@ictcorporate.com
    - ICT website: https://ict-power.com/support/warranty-repair

2. Provide the following information when requesting an RMA:

    - ICT model number
    - Serial number
    - Return ship-to address
    - The preferred shipping courier and account number, if applicable
    - An estimate of what the possible failure cause might be

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

The ICT DIN Series Power Distribution Unit (PDU) is a DIN-rail mount DC distribution unit which supports 60 amps (maximum) input; with six independently controlled and monitored output channels. Overcurrent protection for each output is available on the front panel with GMT-type fuses that are orderable separately.

The unit can accommodate a supply voltage from 10 to 60 volts DC, either positive or negative polarity, with a maximum input current of 60 amps to be distributed at 15 amps maximum on each of the six output channels. Each channel has independent current sensing, overcurrent protection, alarms, and output on/off control.

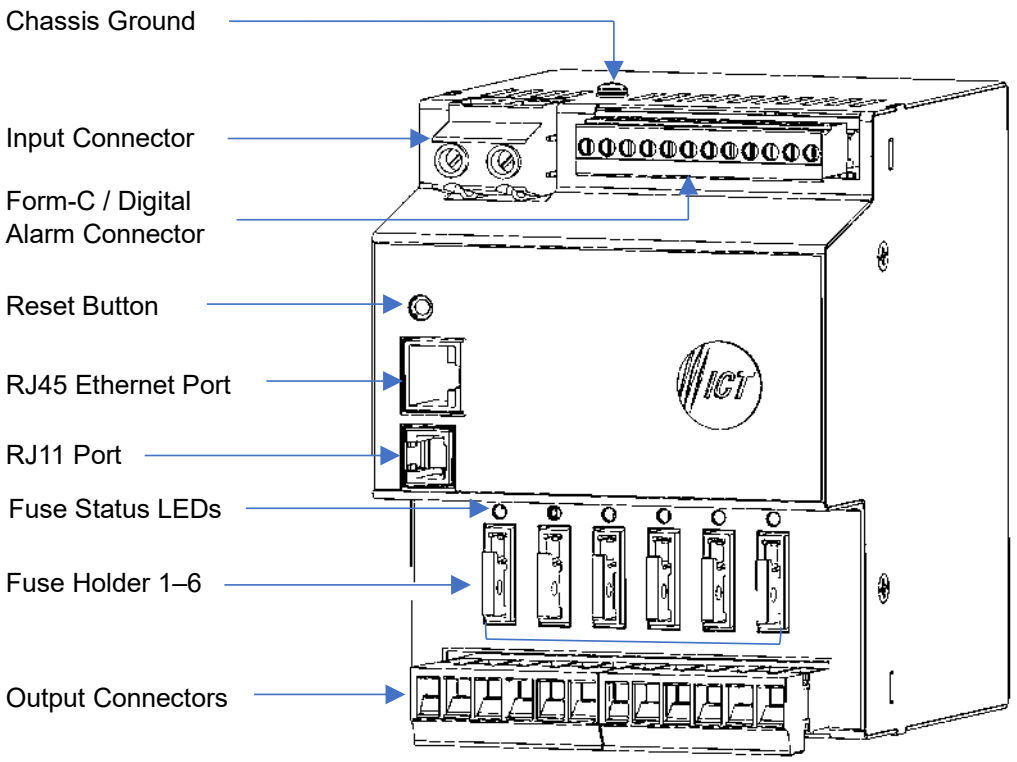


Figure 1. ICT DIN Series Power Distribution Unit

Form-C contact alarm outputs (C/NO/NC) are provided on the front panel to indicate all PDU alarms, while the digital alarm inputs can be used to monitor up to four external devices such as smoke, door or water sensors. The fuse status is displayed by an LED indicator located over each fuse.

Remote monitoring and control are available through the integrated security-protected Ethernet communications port on the front of the unit. The unit has a built-in web server with an embedded web-based Graphical User

Interface (GUI) that can be accessed using any standard commercial web browser. The GUI displays all unit information; allows full access to channel configuration settings; provides remote channel on/off control; and can be set up to send an alarm to user-defined e-mail accounts in the event a fault occurs. The GUI can also be used to configure and download a data log of up to 30 days of time-stamped event information. Full monitoring and control are also available using an SNMP-based management system for larger installations.

When combined with the ICT DIN Series Power Supply Unit, remote monitoring and control of battery current, voltage and temperature, low voltage disconnect setpoints, and battery charge current settings are available through the Ethernet controller and Graphical User Interface (GUI).

1.1 Common Features

- Output voltage range of 10 to 60 volts DC
- 60 amps system current rating
- Six independently controlled and monitored output channels
- Each output is GMT fuse-protected
- Form-C contacts
- −30°C to +60°C operating temperature range
- 2-year warranty

1.2 Intelligent Model

- TCP/IP remote management and power control of system and individual outputs
- On-board web server means no software to maintain
- Easy to use GUI
- Remote firmware update capability
- HTTPS, SMTP, SNMP (v1, v2c, v3), TLS 1.3 protocols supported
- IPv6 and VLAN networking
- User managed security certificates
- Monitoring and alarm reporting of each output
- Alarms can be sent to multiple e-mail accounts
- Each output has adjustable load-shedding settings
- Network watchdog
- Four digital inputs for site monitoring sensors
- Data logging
- Password protection
- Serial port for connecting to ICT DIN Series Power Supply

2.0 INSTALLATION

Risk of serious personal injury or damage to equipment and property. Always observe the following:

- Shut off or disconnect all DC power sources before connecting or disconnecting wiring.
- Carefully observe wiring polarity when making input and output connections.
- Securely tighten all connections.

Risk of personal injury or damage to equipment and property. Always observe the following:

- Use wire and connectors rated for the maximum load current and size of fuse or circuit breaker in accordance with NEC Section 210.20(A) and keep cable lengths as short as practical.
- Channel output fuses must not exceed 15 amps max rating.
- Install unit in a restricted access location (such as an equipment rack) to limit unintentional contact with terminals and wiring.
- Keep sources of moisture away from unit.
- Do not energize the unit before the chassis ground is connected.
- Ensure the total power consumption of the loads does not exceed the 60-amp (peak) rated capacity of the unit.

2.1 Unpacking and Inspection

Perform a physical check of the unit as it is being taken out of the box to ensure it has not been damaged during shipping. Check that the accessories under the package contents section were shipped with the unit.

NOTE: In case of shipping damage, your freight carrier should be notified immediately.

2.2 Package Contents

- Quick start guide
- Power distribution unit
- Bag containing the following:
  - Instruction manual (USB drive)
  - Two removable 6-pin DC output wire clamp connectors
  - One removable 12-pin alarm wire clamp connector

2.2.1 Tools and Parts Needed

- 1/8-inch slotted screwdriver
- Wire stripper

2.2.2 Other Requirements

To complete the installation, appropriate fuses (available from ICT) are needed for each output channel that the user plans to use. Fuses must be ordered separately for the use on the ICT-DIN-PDU6 (PDU) unit.

Table 1. Fuses

ICT Model	Rating (60 VDC)
ICT-GMT5	5 A
ICT-GMT10	10 A
ICT-GMT15	15 A

NOTE: Standard GMT fuses with current ratings up to 15 amps may also be used.

2.3 Quick Install Guide

- Unpack and check that the unit and all materials have been delivered.
- Obtain the recommended tools.
- Mount the unit on a standard DIN rail.
- Connect the chassis ground according to the site design and in accordance with local electrical code standards.
- Connect the sensors and alarms, if required.
- Connect the network cable using third-party surge protection.
- Connect and energize the DC inputs.
- Configure the software settings.
- De-energize the DC source and insert the fuses.
- Connect the load devices using third-party surge protection on all DC conductors which may be exposed to environmental factors such as lightning.
- Verify the system wiring.
- Energize the loads.

2.4 DIN Rail Mounting and Demounting

Mount the unit on a standard TS35 (EN 50022).

1. Push the unit towards the rail to engage the spring-loaded clip. Then push up as illustrated in the first drawing of Figure 2.

2. Pivot the device towards the rail so that the hook clips into the mounting rail as illustrated in the second drawing of Figure 2.

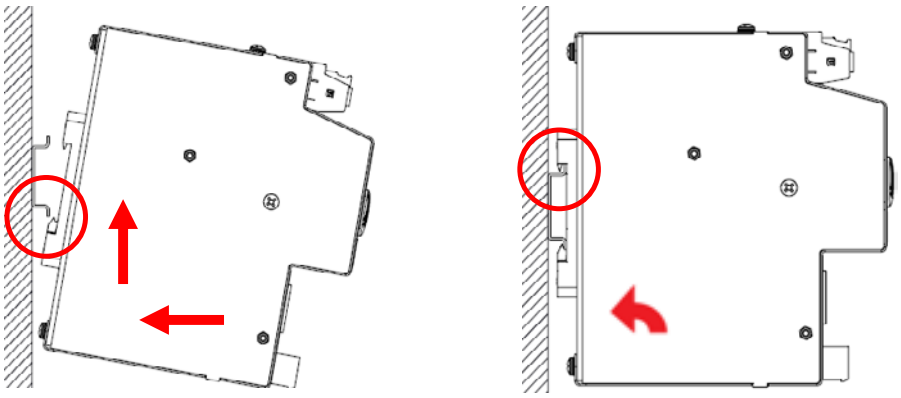


Figure 2. Mounting Unit on DIN Rail

To demount the unit from the standard DIN rail, do the following:

1. Push up and pivot the top of the unit away from the rail as illustrated in the first drawing of Figure 3.

2. When the top hook is detached, slightly lower the unit to disengage the spring-loaded clip and pull the unit away from the rail as illustrated in the second drawing of Figure 3.

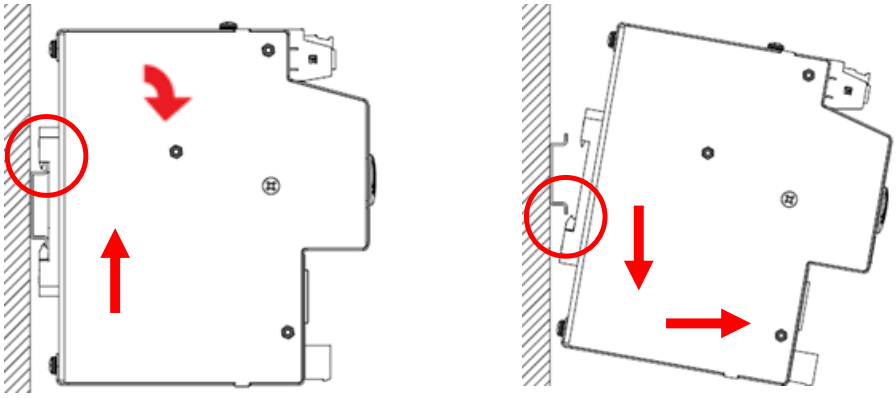


Figure 3. Demounting Unit from DIN Rail

2.5 Ground Connection

Connect a ground bonding wire from the chassis ground stud to a nearby common grounding point. Use a ground bonding wire that is sized in accordance with NEC Table 250.122 (see Table 2). Ensure that the selected ground bonding wire is rated to handle the maximum current rating of the unit.

Table 2. Minimum Size Equipment Grounding Conductors for Grounding Raceway and Equipment

Maximum Circuit Breaker Size (Amps)	Conductor Size (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum
15	14	12
20	12	10
30	10	8
40	10	8
60	10	8
100	8	6

This is sourced from "National Electrical Code 2005 Edition", p. 70-112.

NOTICE

All DC inputs and outputs of ICT's DC distribution units are isolated from chassis ground (floating). DC input and output returns can remain isolated from ground (DC-I) or can be grounded (DC-C), as per site grounding requirements and/or local or national electrical codes. Ensure that all relevant electrical code standards are followed.

2.6 Surge Protection Device(s) Installation

Third-party surge suppression devices must be utilized to protect every exposed DC power conductor and exposed data cables. These protection devices must be installed at both ends of the exposed conductor, in close proximity to installed equipment. Periodically inspect these surge protection devices for proper function.

NOTE: Consult with manufacturers of surge suppression devices to select appropriately rated protection device(s) and proper installation methods.

2.7 Sensor and Alarm Connections

1. Install the 12-pin alarm wire clamp connector.

2. The ALARM connector allows the unit to report faults to an external monitoring device through a form-C contact. If needed, connect form-C contact monitoring wiring to the "ALARM" on the 12-pin alarm wire clamp connector. Use 12–30 AWG wire. Refer to Table 5 for which conditions will trigger a form-C alarm.

NOTE: The Form-C relay provides a voltage-free (dry) contact and does not supply power. It is intended to switch external circuits energized by an external voltage source.

3. Connect up to four external devices such as smoke, door or water sensors to the digital alarm inputs by stripping and terminating 12–30 AWG alarm wiring and connecting to the four "ALARM INPUT" terminals on the 12-pin alarm wire clamp connector. Each alarm input can be connected to a form-C/dry contact output on the external device. If the alarm state changes on the device being monitored, the Graphical User Interface (GUI) will report the alarm. The GUI allows each of the four alarm inputs to be labelled with a unique name (see Section 4.9).

Table 3. Alarm Output/Input Connector

Pin	Alarm Input Function
1	Input 1
2	Common
3	Input 2
4	Common
5	Input 3
6	Common
7	Input 4
8	Common
9	X (unused)
10	Common
11	Alarm NO (alarm state)
12	Alarm NC (alarm state)

2.8 Network Cable Connection

1. Connect a 10/100 Base-T Ethernet cable, using third-party surge protection device, to the RJ45 LAN port on the front of the PDU to allow for remote monitoring and control of the unit.

NOTE: See the Network Monitoring and Control section for information on configuring and using the built in GUI, e-mail, or SNMP functions (see Section 4.7).

2. If the PDU is used in combination with the ICT DIN Series Power Supply (PSU), a serial data cable (provided with the power supply unit) can be installed to allow the PDU to monitor the status of the power supply. Install the PDU and PSU side by side, then connect the two RJ11 COMM ports together using the supplied data cable. The green "DC OK" LED on the PSU will blink once every 10 seconds if the data connection is functioning properly.

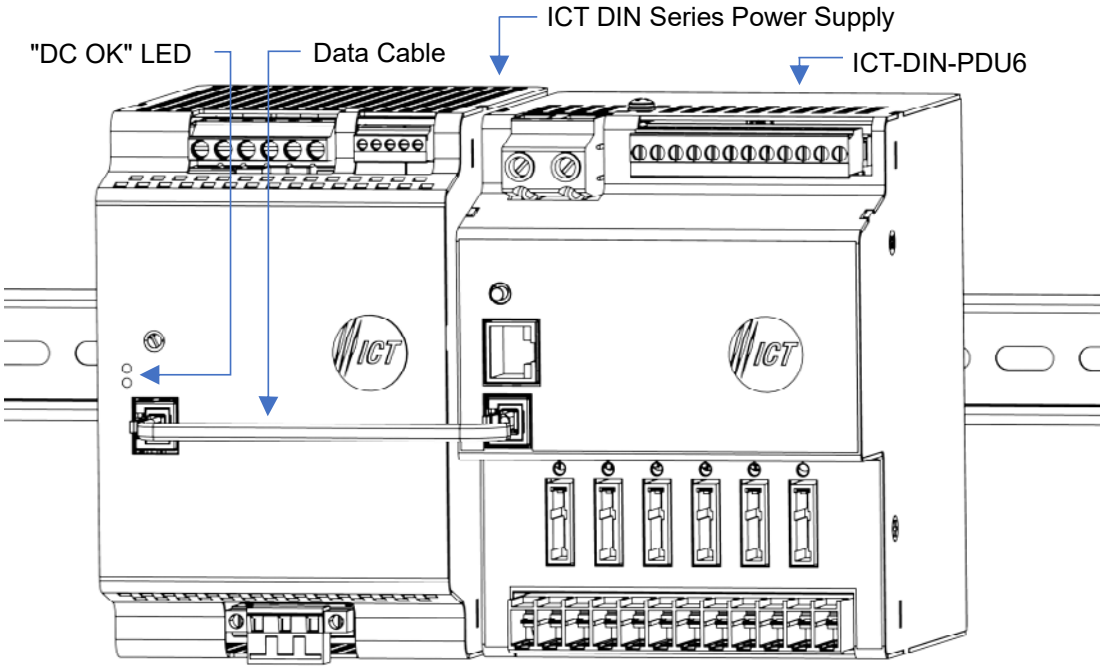


Figure 4. ICT DIN Series Power Supply and ICT-DIN-PDU6

2.9 Input Connections

1. De-energize the DC source and open any disconnect switches.

2. Connect the "+" output terminal of the power supply unit (PSU) to either the PDU "INPUT" terminal for a positive voltage system or "RTN" terminal for a negative voltage system. Use 6–20 AWG wire.

3. Connect the "−" output terminal of the PSU to the other input terminal on the PDU. Use 6–20 AWG wire.

4. Energize the DC source and close any disconnect switches.

NOTE: The unit will support either a negative or positive ground connection.

2.10 Software Configuration

Configure the software (see Section 4).

2.11 Installation of Fuses

1. De-energize the DC source and open any disconnect switches.

2. Install appropriately rated GMT-type fuses into the fuse holder for each output terminal block to be used, where the side of the fuse that has the color-coded flag is facing upwards. The fuse only fits in one direction — do not force wrong orientation.

Fuses must not exceed 15 amps maximum rating.

The fuse can be removed using a fuse puller. Do not use inappropriate tools as they may damage the fuse.

2.12 Load Connections

CAUTION

Risk of personal injury or damage to equipment and property. Always observe the following:

- DC-AC inverters should not be connected to the outputs of these ICT units. DC-AC inverters create significant inrush current and may damage the circuitry or interfere with the operation of power distribution panels that they are connected to. Connecting a DC-AC inverter in this way may void the product warranty.
- Ensure that the combined current draw on all six outputs does not exceed the output capacity of the unit (60 amps).
- Ensure continuous load current through each output channel does not exceed 80% of the maximum output ratings in accordance with NEC Section 210.20(A).
- Install appropriately rated surge protection device on every exposed DC power conductor.

Make connections to the load using wire and connectors appropriately rated for the maximum output current capability of the unit.

An output (labelled OUT) and return (labelled RTN) are provided for each channel.

The unit provides six remotely controlled and monitored outputs, with front panel overcurrent protection provided by GMT-type fuses.

The maximum current rating for the unit is 60 amps. Each output can accept 12 amps maximum current.

1. Ensure that the DC source is de-energized, and all disconnect switches are open.

2. Install the two 6-pin DC output wire clamp connectors.

3. Verify the polarity of the unit.

4. Connect up to six external loads using appropriately rated wire inserted and secured into the six cage-clamp output connector pairs on the front of the unit. The terminals will accept 10–30 AWG wires.

2.13 System Wiring Final Verification

Check that all connections to the distribution unit are correct and properly tightened.

2.14 Mixed Polarity or Voltage Installation (not applicable)

2.15 Energize Loads

Re-energize DC source and close any disconnect switches to energize any loads connected to the unit.

3.0 OPERATION: FRONT PANEL

3.1 Password Reset

3.1.1 Admin Password Reset

Reset the Administrator password, the network, and web server settings to the original factory default values by doing the following (the standard user password and other settings are not affected):

1. Press and hold the recessed "RESET" button on the front panel for approximately 10 seconds.

2. Release the button.

3. Log in to the unit as username "admin", no password is required. Set a new password as desired and reconfigure the network settings.

3.1.2 User Passwords Reset

The unit may be restored to factory settings, including all passwords through the GUI (see Section 4.11).

3.1.3 User Passwords Maintenance

Configure user passwords by following Section 4.10.

3.2 Status Indicators and Alarms

The LEDs located over each fuse and the form-C Alarm contacts on the front of the unit are used to indicate an alarm condition.

Table 4. Fuse Status LED

LED	Fuse Status
ON	Blown
OFF	Good

Table 5. Distribution Unit Alarms

NC/C PINS	NO/C PINS	Condition
Open	Closed	Fuse Alarm • Activate Alarm Form-C contact is checked. • One or more blown or missing fuse
		System Under-Voltage Alarm • Activate Alarm Form-C contact is checked. • System voltage is below the set value.
		System Over-Voltage Alarm • Activate Alarm Form-C contact is checked. • System voltage is above the set value.
		System Over-Current Alarm • Activate Alarm Form-C contact is checked. • System current is above the set value.
		Alarm Input # 1–4 • Activate Alarm Form-C contact is checked. • Digital alarm is triggered.
		Output Over-Current Alarm # 1–6 • Activate Alarm Form-C contact is checked. • Output current is above the set value.
		Output Under-Current Alarm # 1–6 • Activate Alarm Form-C contact is checked. • Output current is below the set value.
		No power to unit.
Closed	Open	Activate Alarm Form-C contact is checked, and no fault occurred.
		All Activate Alarm Form-C Contact is not checked.

4.0 OPERATION: GRAPHICAL USER INTERFACE

Connect to the ICT DIN Series Power Distribution Unit via Ethernet for full remote monitoring and control using any standard web browser on a network connected computer or phone. No additional software is required.

4.1 Log In/Log Out

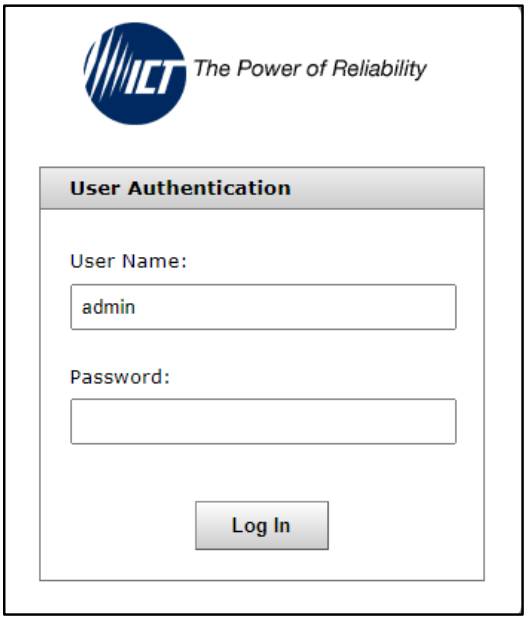
1. Connect to the ICT DIN Series Distribution Unit (PDU) by entering the IP address of the unit in the location/address field of the browser as shown below.

The default IP address of the unit is "192.168.0.180", but any unit connected to a network with a DHCP server will be assigned a different IP address automatically.

NOTE: If connecting directly from a computer to the ICT DIN Series Power Distribution Unit, the computer must be configured with an IP address on the same network subnet as the unit. This is not required for a network connection (See Section 4.7).

The IP address of any ICT unit on a local network can be found by running the ICT "IP Address Discovery tool", after installing it on a Windows computer connected to the same network (tool available for download from ICT http://www.ict-power.com/resources/tools-utilities/). This tool does not support macOS.

2. Log into the unit's built-in server when prompted with the username and password. The default username is "admin", and no password is required as the factory default.

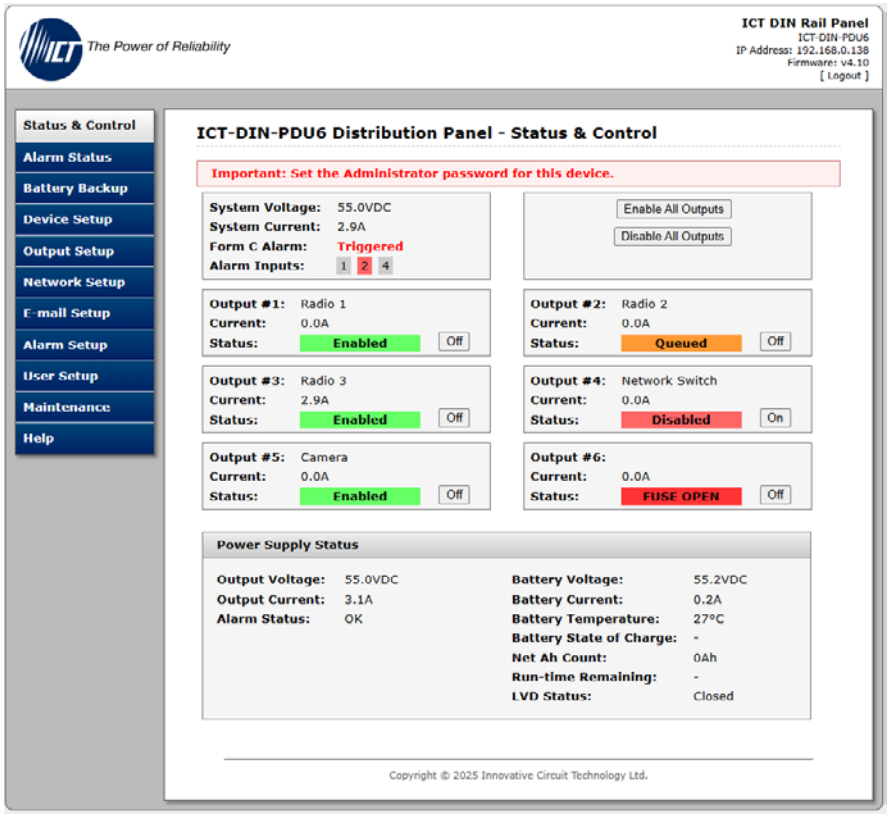


To log out of the ICT DIN Series Power Distribution Unit Graphical User Interface (GUI), click the Logout link on the header. The system will also automatically log off the user after 20 minutes of inactivity.

4.2 Status & Control

Once successfully logged in, the page of the Status & Control tab will be shown in the browser. This tab provides the operating status of the unit.

All tabs have the same header that displays the Site Name, model number, IP address, and firmware version number of the unit. Click the ICT logo to visit the ICT website.



Unit Status

System Voltage: Shows output DC voltage of the distribution unit. This value does specify polarity.

System Current: Shows total amps being supplied by the unit.

Form C Alarm: Shows whether the unit is broadcasting a form-C alarm (Triggered or Inactive).

Alarm Inputs: Shows the status of any of the four Input Alarms that have been enabled (see Section 4.9). Will show grey if inactive or red if an alarm is active. An alarm input indicator box will not be displayed if the alarm is not enabled.

Output Buttons

Enable All Outputs: Use this to close the six channel relays on the unit, applying power to all external loads. The outputs will be enabled in a timed sequence if the "Sequence/Cycle Delay" has been set on the Device Setup page (see Section 4.5).

Disable All Outputs: Use this to open the six channel relays on the unit, disabling power to external loads. Outputs with enabled power cycling will automatically be re-enabled after the "Sequence/Cycle Delay" time.

Output Status

Each output on the unit will be displayed with name and status (Enabled, Disabled, FUSE OPEN, Queued). A green "Enabled" indicates that the internal electronic relay on that output channel is closed or turned on. A red "Disabled" indicates that the internal electronic relay is open or turned off. A red "FUSE OPEN" indicates that the installed fuse is blown. An orange "Queued" indicates that the output is in the power-cycling state.

NOTE: "FUSE OPEN" only displays if a fuse is installed, and the "Ignore Fuse Status" is not enabled in Section 4.6.

Select the "On" or "Off" buttons to turn the output on or off. The default setting is Enabled.

If the "COMM" port on the PDU is connected to an ICT DIN Series Power Supply, the "Power Supply Status" section will be displayed.

Power Supply Status

Output Voltage: Shows output DC voltage of the power supply.

Output Current: Shows total amps being supplied by the power supply. This includes loads and battery charging.

Alarm Status: Shows status of the monitored form-C contacts (Alarm or OK).

Battery Voltage: Shows voltage of the battery.

Battery Current: Shows the current that is passing from, or to the batteries. This number is negative if the battery is discharging; positive if the battery is being charged; and shows 0.0 A if the battery is fully charged.

Battery Temperature: Shows the temperature measured on the ICT Battery Temperature Probe (ICT-TMP) if installed.

Battery State of Charge (only displayed if an ICT DIN Series 480-watt Power Supply is connected): Shows the estimated battery state of charge in %. The system resets the SOC to 100% whenever it detects

that the battery is at the rated Float Voltage with minimal charge current for at least 8 hours with lead-acid, or 1 hour with lithium batteries.

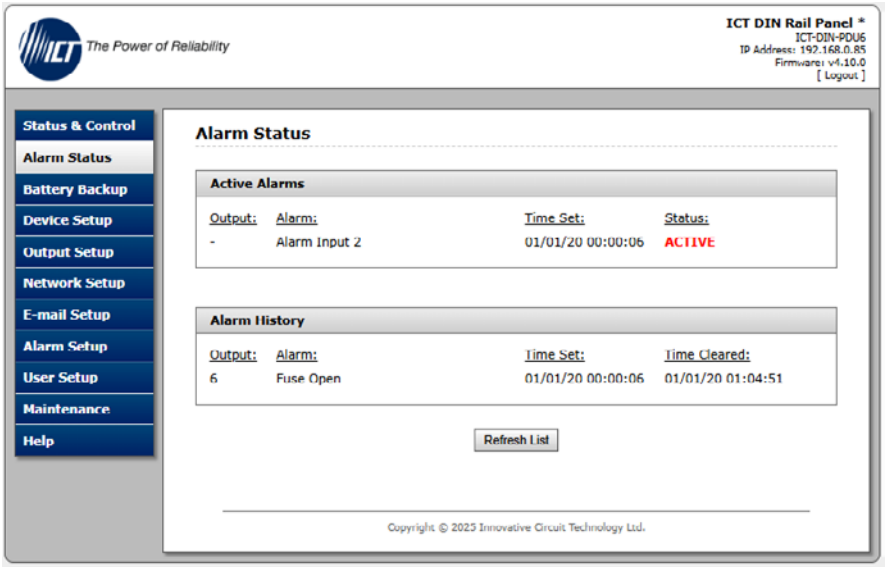
Net Ah Count (only displayed if an ICT DIN Series 480-watt Power Supply is connected): Shows the Ah that have been consumed from the battery. Will display 0 Ah if the batteries are fully charged.

Run-time Remaining (only displayed if an ICT DIN Series 480-watt Power Supply is connected): Shows the estimated time in hours and minutes before the battery is discharged. This is blank if the batteries are charging.

LVD Status: Shows status of the LVD (Open or Closed).

4.3 Alarm Status

Use this tab to monitor all active alarms and up to 100 historic alarms. The history will be cleared after the unit is rebooted.



Active Alarms

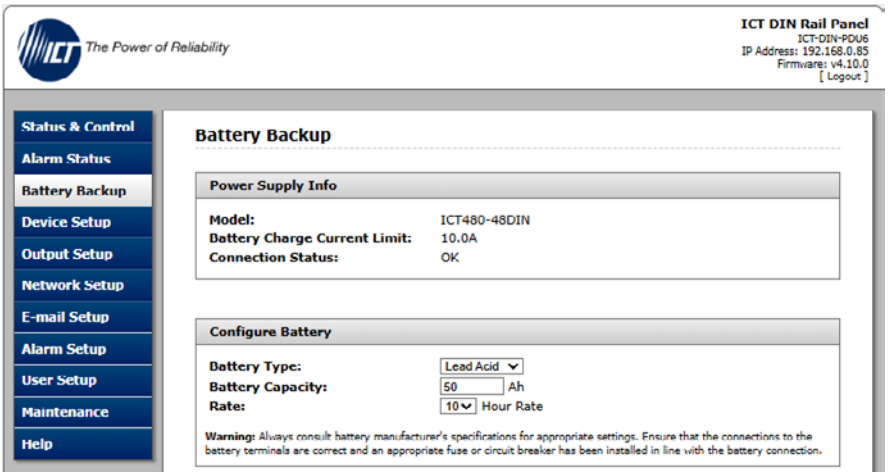
Shows the output that the alarm is on; the name of the alarm; the time that the alarm started and the status of the alarm (ACTIVE).

Alarm History

Shows the output that the alarm is on; the name of the alarm; the time that the alarm started; and the time that the alarm cleared.

4.4 Battery Backup (if ICT DIN Series Power Supply is connected)

The "Battery Backup" page is only accessible if the "COMM" port on the PDU is connected to an ICT DIN Series Power Supply. Use this tab to see the connection status and configure the settings of the power supply.



Power Supply Info

Model: Shows the model number of the ICT DIN Series Power Supply.

Battery Charge Current Limit: Shows the maximum battery current that can be provided through the battery terminals of the power supply. This threshold is set using the selector dial on the ICT DIN Series Power Supply.

Connection Status: Shows the status of the data connection between the PDU and DIN Series Power Supply Unit (PSU). "OK" will be displayed if connection is good while "Comm Bus Error" will be displayed after 30 seconds if there is a wiring fault or hardware issue preventing communications. If the data cable is removed, the connection status message will not change but there will be a "Power Supply Offline" alarm triggered and shown in the Alarm Status.

NOTE: This page does not auto-refresh, it needs to be manually reloaded for the connection status message to change.

Configure Battery

CAUTION

Always consult battery manufacturer's specifications when selecting battery type. Incorrect battery type setting may damage the battery. If a lithium-ion battery is used, it must utilize an integrated battery management system (BMS) to protect the battery cells from inappropriate voltage or current levels.

Battery Type: Configure the "Battery Type" of the battery used with the ICT DIN Series Power Supply (Lead Acid or Lithium Ion).

If Lithium-ion type battery is selected, the following battery parameters and settings will be unavailable. These should be available from the integrated BMS.

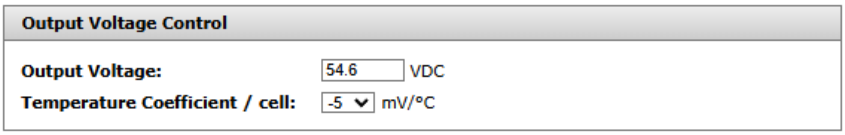
- Temperature Coefficient/cell
- Equalize Charge

Battery Capacity (only available when an ICT DIN Series 480-watt Power Supply is connected): Set the "Battery Capacity" in Ah (20 to 1000 Ah) of the total battery pack connected to the power supply. This value is used by the unit when estimating Run-time Remaining. The default setting is 50 Ah.

Rate (only available when an ICT DIN Series 480-watt Power Supply is connected): Set the discharge "RATE" (in hours) as specified by the battery manufacturer to determine the battery capacity. Normally the 10- or 20-hr rate is used. The system will use this information to help estimate the Battery State of Charge, and remaining battery capacity when in use. The default setting is 10 hr.

NOTE: Connecting batteries in parallel will increase the total Ah capacity, while connecting batteries in series will increase the voltage with no change to the Ah capacity.

Output Voltage Control



Output Voltage: Set the DC output voltage of the ICT DIN Series Power Supply to match the float voltage requirement for the external battery. The default setting varies based on the power supply used.

Table 6. Default Output Voltage Setting

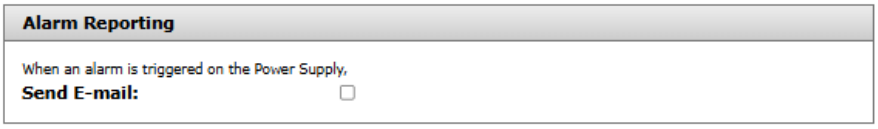
Model	Output Voltage	
	Lead-acid	Lithium-ion
24 VDC Units	27.3 VDC	27.0 VDC
48 VDC Units	54.6 VDC	54.0 VDC

Temperature Coefficient / cell (only available on lead-acid batteries): Set the battery voltage Temperature Coefficient / Cell to optimize the automatic control of the lead-acid battery charging voltage, to keep the battery in a good state of health. This setting is only available if the ICT DIN Series Power Supply is configured for use with a lead-acid type battery.

Adjust this setting to match the battery manufacturer's recommended compensation value in −mV/°C per cell. This value will typically be −4 mV/°C for a flooded lead-acid battery (i.e., will compensate output voltage −24 mV/°C for a six cell 12 V battery) to help ensure the battery is fully charged in cold locations, and is not overcharged when warm. The numbers in the drop-down field are absolute values. The default setting is −5 mV/°C.

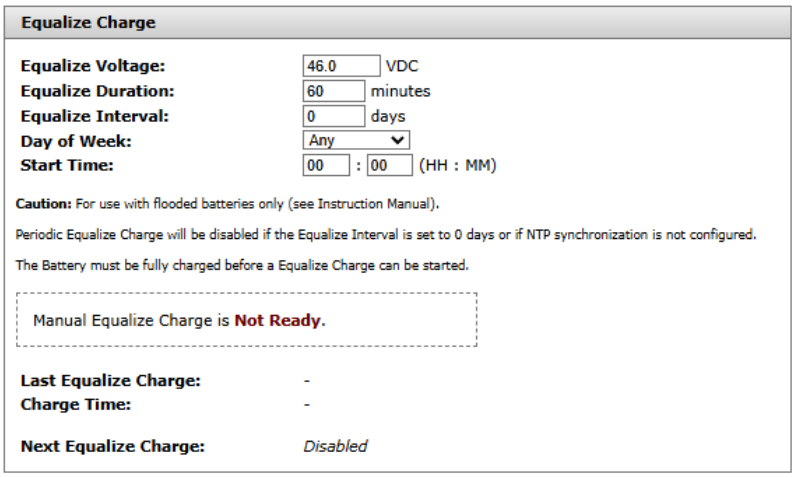
NOTE: The ICT DIN Series Power Supply must have the battery temperature sensor (ICT-TMP) installed on the battery for this setting to have an effect (default setting is −5 mV/°C, assumes 25°C operation).

Alarm Reporting



Send E-mail: Select this checkbox to have an e-mail sent to the e-mail addresses set up on the E-mail Setup page for an alarm condition (see Section 4.8). The default setting is Disabled.

Equalize Charge (only available on lead-acid batteries with an ICT DIN Series 480-watt Power Supply)



Risk of serious personal injury or damage to equipment and property! Always observe the following:

- Equalize charging is intended for flooded lead-acid batteries only and may produce higher than normal levels of hydrogen gas.
- Consult with the battery manufacturer when using SLA batteries.
- **Do not use equalization charging with lithium-ion batteries**.
- Ensure the battery compartment is well ventilated to avoid any risk of explosion.
- Always consult with and observe all battery manufacturer recommendations.

Set up manual or automatic equalize charge cycles for flooded lead-acid batteries. This setting is only available if the system is configured for use with a lead-acid type battery with an ICT DIN Series 480-watt Power Supply.

The connected load devices should continue to run normally while the equalization charge is running.

Equalize Voltage: Set this to the battery manufacturer's recommended value for an equalize (or boost) charge (for flooded lead-acid batteries only). A regular high-voltage equalization charge will help prevent stratification of the electrolyte in the battery and can help extend its life. The default setting varies based on the power supply rating.

Table 7. Default Equalize Voltage Settings

ICT480-24DIN	ICT480-48DIN
23.0 VDC	46.0 VDC

Equalize Duration: Set the time in minutes (10–240 minutes) for the equalize charge voltage to be applied (as recommended by the battery manufacturer). The default setting is 60 minutes.

Equalize Interval: Set the time in days (0–180 days) between automatic equalize charges. Set this time to 0 to disable the automatic equalize charge. The default setting is 0 (Disabled).

Day of Week: Set the day of the week that the automatically recurring equalize charge should take place or select "Any" to allow an equalize charge to take place on any day of the week. Day of Week takes precedence over Equalize Interval. The default setting is Any.

Start Time: Set the time of day for automatically recurring equalize charges to start. The time must be entered using 24-hour time format. The default setting is 00:00.

NOTE: NTP Time Synchronization must be enabled on the Device Setup page to enable automatically recurring equalize charges.

An Equalize Charge can only be initiated when the battery is fully charged (a fully charged battery will have charge current close to zero amps). If the system is unable to start an equalize charge at the selected Start Time, it will attempt again at the same time next day, or next week if a specific Day of Week is selected.

An Equalization Charge will immediately be terminated if AC power fails.

Manual Equalize Charge: Press this button to manually initiate an equalize charge for the set duration time once the battery is fully charged.

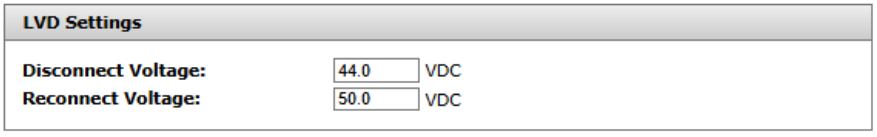
NOTE: The power supply will state that Manual Equalize Charge is Not Ready if battery is not yet fully charged.

Last Equalize Charge: Shows the date and time that the last equalization charge was performed.

Charge Time: Shows the duration of the last equalization charge.

Next Equalize Charge: Shows the scheduled date and time of the next automatic equalize charge, if an Equalize Interval has been set. This information is to help track where the system is within the automatic charge cycle.

LVD Settings



The low voltage disconnect (LVD) protects the battery from excessive discharge by disconnecting the battery when the battery reaches a preset voltage. The battery is reconnected when AC power is restored or after recharging to a preset threshold.

The reconnect voltage setting will be used when charging the battery from an external DC source (such as a solar system), otherwise once AC power returns, the LVD contactor will automatically close so that the power supply can charge the battery directly.

NOTE: For lead-acid battery, the LVD contactor will not close if the lead-acid battery is less than 24 volts in a 48-volt system or 12 volts in a 24-volt system (see Table 8). The unit believes the battery is deeply discharged, and possibly damaged. A deeply discharged battery will not be reconnected as a safety measure. The battery will need to be manually checked for proper function and then manually charged to at least 24 volts (on a 48-volt system) or 12 volts (on a 24-volt system) before the LVD will close. Refer to the battery manufacturer's recommendations on how to proceed with a deeply discharged battery. This does not apply to the system when the Lithium setting has been chosen.

Table 8. Deeply Discharged Battery Values (typical)

24 VDC Units	48 VDC Units
12 VDC	24 VDC

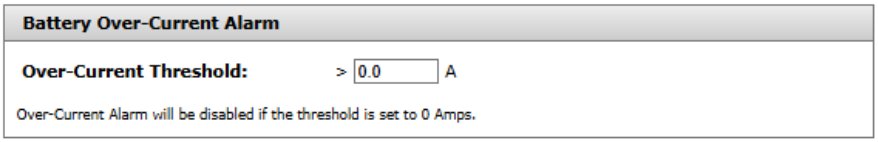
Disconnect Voltage: Set the threshold to a level that will protect the battery from excessive discharge (as recommended by the battery manufacturer). The LVD contactor will open when the battery discharges to this level for at least 3 seconds (see Table 9).

Reconnect Voltage: Set the level where the unit will reconnect to the battery after it has recharged (as recommended by the battery manufacturer). The "Reconnect Voltage" must be higher than the Disconnect Voltage to prevent the LVD contactor repeatedly cycling on and off (see Table 9).

Table 9. Default LVD Settings

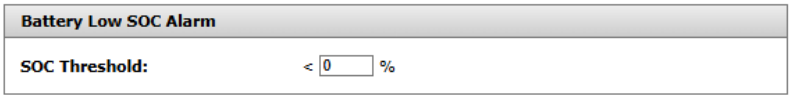
LVD Setting	24 VDC Units	48 VDC Units
Disconnect Voltage	22.0 VDC	44.0 VDC
Reconnect Voltage	25.0 VDC	50.0 VDC

Battery Over-Current Alarm



Over-Current Threshold: Set the threshold to receive an alarm notification when the battery discharge or charge current exceeds a set overcurrent level. Set the threshold to 0 amps to disable this alarm. The default setting is 0.0 (Disabled).

Battery Low SOC Alarm (only available when an ICT DIN Series 480-watt Power Supply is connected)

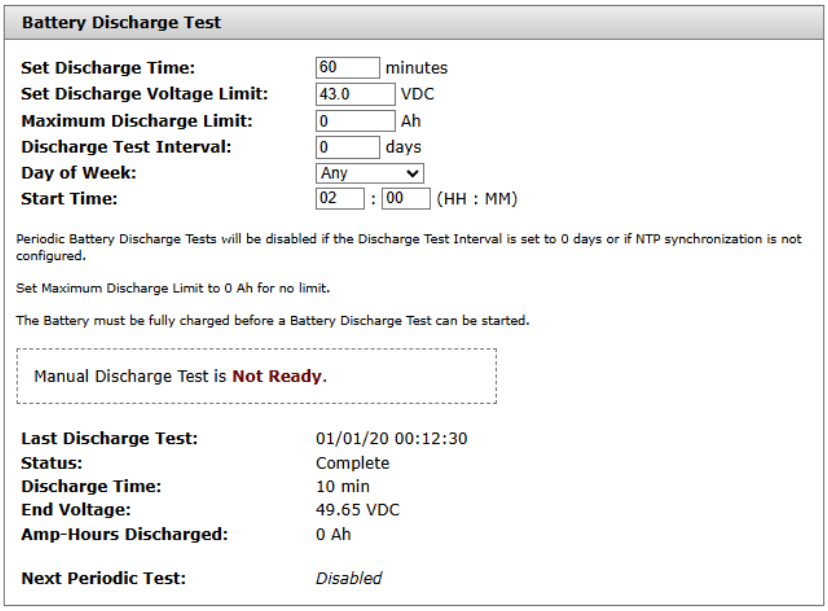


SOC Threshold: Set this to receive an alarm notification when the battery state of charge falls below the specified level. Set the threshold to 0 amps to disable this alarm. The default setting is 0 (Disabled).

Battery Discharge Test (only available when an ICT DIN Series 480-watt Power Supply is connected)

NOTICE

This test must only be done when AC power is present during the test and for adequate time after the test to allow for a full recharging of the battery. Otherwise, the battery may not have sufficient remaining capacity to power the load during an AC power outage.



Configure the Battery Discharge Test settings in this section to either manually or automatically perform a partial discharge test to gauge the relative capacity of the external battery. Limit the depth of discharge to no more than 50% of the nominal battery capacity to avoid stressing the battery

due to a deep discharge. This setting is only available when an ICT480 power supply is connected.

When the test is run, the output voltage from the power supply will be reduced so that the external battery will power the system load until either the "Set Discharge Time" limit or the "Set Discharge Voltage Limit" is reached.

A "Discharge Test Complete" notification indicates the battery can power the connected load for the set test duration while maintaining its voltage above the Discharge Voltage Limit. This notification is delivered via e-mail if messaging is configured via the GUI (see Section 4.8).

The unit's log (see Section 4.5) will record the completion of the discharge test.

A "Discharge Test Failure" notification indicates the battery is unable to power the load for the set duration.

The connected load devices should continue to run normally while the discharge test is running.

Set Discharge Time: Set the maximum time for the test in minutes (10–240 minutes) that the test will run. The default setting is 60 minutes.

Set Discharge Voltage Limit: Set the minimum battery voltage which will terminate the test. The default setting varies based on the power supply rating.

Table 10. Default Discharge Voltage Limit Settings

Model	24 VDC Units	48 VDC Units
Threshold Voltage	21.5 VDC	43.0 VDC

Maximum Discharge Limit: Set the maximum battery capacity in amp-hours that can be discharged before the test will be terminated. Set this to 0 Ah for no limit. The default setting is 0 (no limit).

Discharge Test Interval: Set the time in days (0–180 days) between automatic discharge tests. Set this time to 0 to disable automatic discharge tests. The default setting is 0 (Disabled).

Day of Week: Set the day of the week that the automatically recurring discharge test should take place or select "Any" to allow a discharge test

to take place on any day of the week. Day of Week takes precedence over Discharge Time Interval. The default setting is Any.

Start Time: Set the time of day for an automatically recurring discharge test to start. The time of time must be entered using 24-hour time format. The default setting is 00:00.

NOTE: NTP Time Synchronization must be enabled on the Device Setup page to enable automatic Discharge Tests.

A discharge test can only be initiated when the battery is fully charged (a fully charged battery will have charge current close to zero amps). If the system is unable to start a Discharge Test at the selected Start Time, it will attempt again at the same time next day, or next week if a specific Day of Week is selected.

A discharge test will immediately fail if the unit loses AC power. The log will show that the test failed.

Manual Discharge Test: Press this button to manually initiate a Battery Discharge Test of a fully charged battery.

NOTE: Power supply will state that the discharge test is Not Ready if the battery is not fully charged (a fully charged battery will have charge current close to zero amps).

Last Battery Discharge Test: Shows the date and time that the last discharge test was performed.

Status: Displays the end status of the last discharge test (Complete or Fail).

Discharge Time: Shows the time in minutes that the test lasted.

End Voltage: Shows the battery voltage when the test ended.

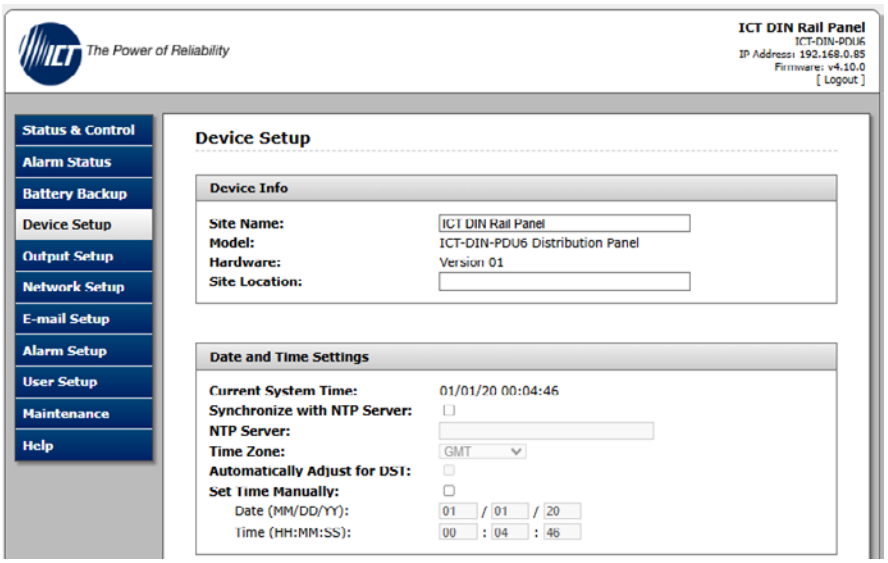
Amp-Hours Discharged: Shows the amp-hours discharged during the test.

Next Periodic Discharge Test: Shows the scheduled date and time of the next automatic discharge test if a Discharge Test Interval has been set. This information is to help track where the system is within the automatic charge cycle.

NOTE: Save Settings to enable any changes made.

4.5 Device Setup

Use this tab to configure the unit's name, set the date and time and enable the watchdog timer and data logging features.



Device Info

Site Name: Enter a descriptive name for the system. This name will be displayed in the header and used in all e-mail messages. This field is limited to 32 characters.

Model: Shows the model number and name of the unit.

Hardware: Shows the hardware version of the unit.

Site Location: Enter the details. This information is optional.

Date and Time Settings

Current System Time: Shows the current system date and time.

Synchronize with NTP Server: Select this checkbox to synchronize with NTP Server. The default is Disabled.

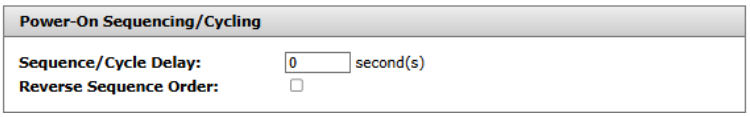
NTP Server: Set an NTP server address here (i.e., time.nist.gov) to automatically load network time. This field is limited to 48 characters.

Time Zone: Set the time zone the unit will be using.

Automatically Adjust for DST: Select this checkbox to automatically adjust the time for Daylight Savings Time when synchronizing the clock with an NTP Server. The default is Disabled.

Set Time Manually: Select this checkbox to enable manually setting the time and date. The default is Disabled.

Power-On Sequencing/Cycling



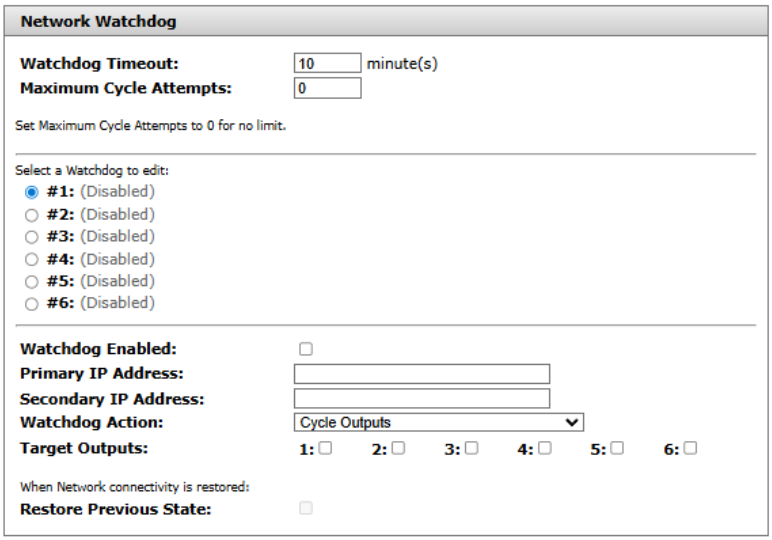
Sequence/Cycle Delay: Set the time in seconds (0–60 seconds) that will be used as the delay between energizing outputs. This will affect all outputs power cycled within the GUI — it will not affect outputs during device power up. Set to 0 to disable. Use this feature to allow a delay between energizing loads to reduce inrush current. The default setting is 0 (Disabled).

The "Sequence/Cycle Delay" time will also be used as the "Power Cycling" time delay for each output that has the "Power Cycling" feature enabled on the "Output Setup" page (see Section 4.6).

NOTE: Power-On Sequencing/Cycling options will only affect outputs that are disabled or cycled through the GUI. It will not affect outputs during device power up. When power is applied to the device input during power up, all outputs are energized.

Reverse Sequence Order: Select this checkbox to cause the power-on sequence to run in reverse order with output 6 on first, ending with output 1, when the "Enable All Outputs" button is clicked on the Status & Control page.

Network Watchdog



The network watchdog will cycle power output on loss of communications. Use this to reset network routers or other devices that may require rebooting to re-establish communications with the unit. The default is Disabled.

Watchdog Timeout: Set a time in minutes (1–80 minutes) for the unit to wait with no ping response from either IP address before initiating the watchdog action. Ensure this time is greater than the normal start-up time for the network hardware to prevent nuisance power cycle events at system start up. The default is 10 minutes.

Maximum Cycle Attempts: This setting will limit the maximum number of times the unit can attempt to cycle power to the output(s). If network connectivity is restored the attempts counter is reset. Rebooting the unit will also reset the counter. Set Maximum Cycle Attempts to zero for no limit. The default is 0.

Select a Watchdog to edit: Select one of the six independent watchdogs to configure. Each watchdog, if enabled, will cause the unit to periodically ping up to two remote IP addresses to verify network connection status. If there is no response from either address, the unit will perform a Watchdog Action as configured below. This feature is useful for re-booting a router or other network device that is powered by one of the distribution panel outputs, to help recover the network IP connection when one of these devices becomes unresponsive.

Watchdog Actions can include cycling power, enabling or disabling selected outputs, or rebooting the entire unit.

Watchdog Enabled: Select this checkbox to enable the selected network watchdog. The default is Disabled.

Primary IP Address: Set a primary IP address for the selected watchdog to monitor. If left blank the unit will monitor the Gateway IP address listed in the Network Setup page.

Secondary IP Address: Set an optional secondary IP address for the unit to monitor to verify network status.

NOTE: The Network Watchdog will only trigger if both the Primary and Secondary IP addresses fail to respond.

Watchdog Action: Sets action to be taken after the Network Watchdog triggers. The default setting is "Cycle Outputs". Select one of the following:

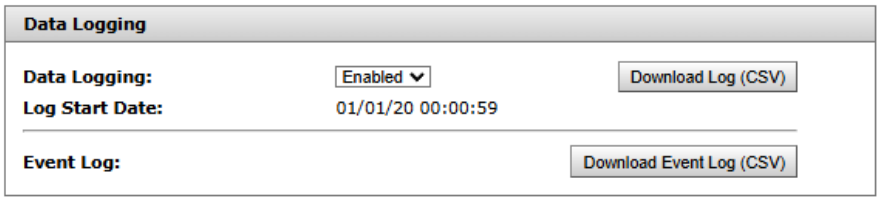
- **Cycle Outputs:** This will cycle the selected target outputs when the Network Watchdog triggers. A delay time must be entered in the "Sequence/Cycle Delay" field for this function to work. Power for a cycled channel will be held in the off state for the duration set by the Sequence/Cycle delay time, then will be turned back on.
- **Enable Outputs:** This will turn the selected target outputs on when the Network Watchdog triggers.
- **Disable Outputs:** This will turn the selected target outputs off when the Network Watchdog triggers.
- **Reset Distribution Panel + Cycle Outputs:** When the Network Watchdog triggers, this will perform a reboot of the Distribution Panel in addition to cycling power to any selected target outputs. A delay time must be entered in the "Sequence/Cycle Delay" field to cycle the target outputs.

Target Outputs: Select which output(s) to target when the Network Watchdog triggers.

NOTE: If Output Load-Shedding is enabled on any of the selected Target Outputs, the outputs will not be enabled by the Network Watchdog while a Load-Shedding alarm is active.

Restore Previous State: Select this checkbox to restore the configured target outputs back to their previous state after network connectivity is restored. This setting is only available if the Watchdog Action has been set to either "Enable Outputs" or "Disable Outputs".

Data Logging



NOTICE

Updating the firmware will delete the current log files. Download the logs before updating the firmware.

Data Logging: Set to "Enabled" to enable data logging. This will keep a running record of the bus voltage, bus current, channel output currents, fuse status, and alarm inputs, recorded once per minute for the last 30 days. The default is Enabled.

Log Start Date: Shows date and time that the data log started.

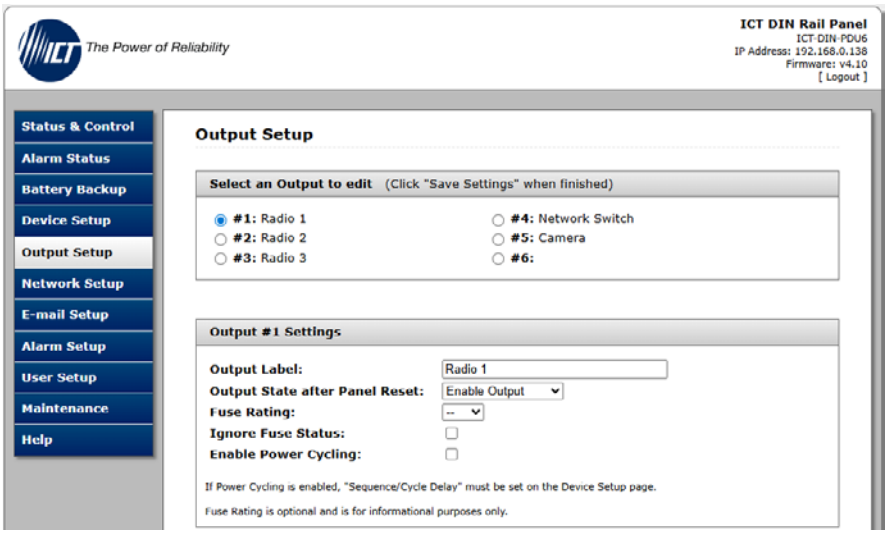
Download Log (CSV): Click on the Download Log (CSV) button to store the CSV format log file on the computer for further analysis.

Download Event Log (CSV): Click on this button to download the Event Log in CSV format. This log keeps a record of alarm events, device logins, configuration changes and other events.

NOTE: Save Settings to enable any changes made.

4.6 Output Setup

Use this tab to configure the settings for each output channel on the PDU.



Select an Output to edit

Select the output to be edited in this section. Make any required changes, and then click on the "Save Settings" button at the bottom of the page to save any edits.

Output Settings

Output Label: Enter a descriptive label for the selected output channel. The default setting is blank. This field is limited to 16 characters.

Output State after Panel Reset: Sets the state for the output after an input power failure, or soft reset of the panel. The default setting is Restore Last State. Select one of the following:

- **Restore Last State:** This will return the output relay to the state prior to the reset event (default).

- **Enable Output:** This will turn the output on, regardless of its previous state.
- **Disable Output:** This will turn the output off, regardless of its previous state.

Fuse Rating: Select the current rating of the fuse installed in the output channel. This field is optional and is for informational purposes only.

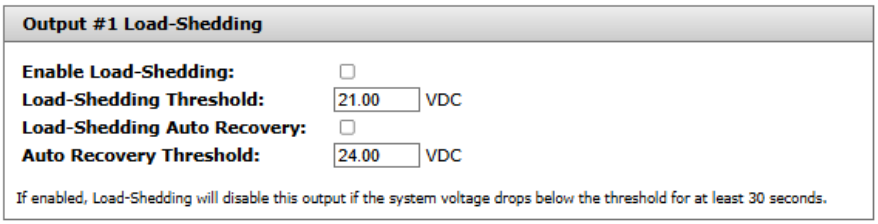
Ignore Fuse Status: Select to disable alarms from this output. Will prevent false alarms on an unused channel. The default setting is Disabled.

Enable Power Cycling: Select this checkbox to enable output power cycling for the selected output. Enabled outputs will automatically be re-enabled after the "Sequence/Cycle Delay" time whenever the output is disabled using the "Output Off" button on the "Status & Control" page, or when the Network Watchdog is triggered. This feature is useful for remotely resetting power to a router or other hardware required for the network connectivity of the unit. The default setting is Disabled.

NOTE: The "Sequence/Cycle Delay" time must be set on the "Device Setup" page with duration long enough for the connected network hardware to fully reset for this function to be effective. Multiple outputs that are disabled using Power Cycling will be re-enabled in sequence from output #1 to output #6, or from output #6 to output #1 if "Reverse Sequence Order" is selected in Section 4.5.

Power-On Sequencing/Cycling options will only affect outputs that are disabled or cycled through the GUI. It will not affect outputs during device power up. When power is applied to the device input during power up, all outputs are energized.

Output Load-Shedding



Load shedding will disable specified outputs when the system DC voltage reaches a preset threshold for at least 30 seconds. This will save battery capacity for mission-critical load devices by turning off non-critical load

devices. Loads will be reconnected if "Load-Shedding Auto Recovery" is enabled, and the DC voltage exceeds the "Recovery Threshold" for 60 seconds.

Enable Load-Shedding: Select this checkbox to enable load-shedding on this output. The default setting is Disabled.

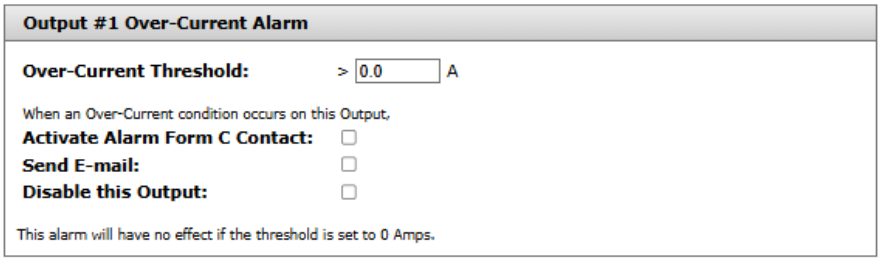
Load-Shedding Threshold: Set the voltage (1.00–60.00 VDC) at which the selected output will be disabled. The default setting is 21.00 VDC.

Load-Shedding Auto Recovery: Select this checkbox to allow the output to be automatically reconnected when the system voltage is above the "Auto Recovery Threshold" for 60 seconds. The default setting is Disabled.

Auto Recovery Threshold: Set the voltage (1.50–60.50 VDC) at which the selected output will automatically be reconnected. This value must be at least 0.5 V above the "Load-Shedding Threshold" voltage. The default setting is 24.00 VDC.

NOTE: Output that has been disabled on the "Status & Control" page will reconnect automatically if "Load-Shedding Auto Recovery" is enabled for that output. To prevent this, ensure that "Load-Shedding Auto Recovery" is not enabled.

Output Over-Current Alarm



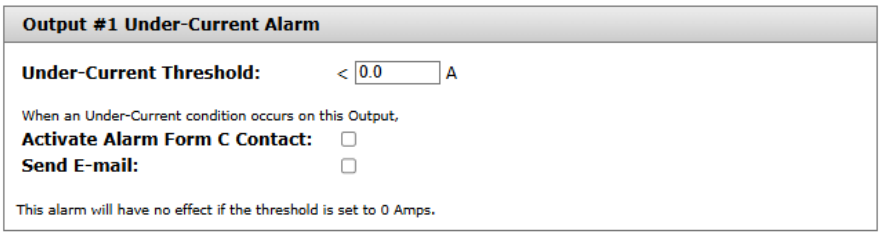
Over-Current Threshold: Set the current (1.0–26.3 A) that will trigger an overcurrent alarm on this output. Output current above this level for at least 5 seconds will trigger the Over-Current Alarm. Disable this alarm by setting the threshold to 0 amps. The default setting is 0.0 A (Disabled).

Activate Alarm Form C Contact: Select this checkbox for the Alarm relay to trigger for an overcurrent condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an output Over-Current alarm e-mail sent to the e-mail addresses set up on the "E-mail Setup" page (see Section 4.8). The default setting is Disabled.

Disable this Output: Select this checkbox to disable the output if an overcurrent alarm occurs. This function may be used as an electronic circuit breaker which can then be remotely reset by clicking the "Output ON" button on the Status & Control page. The default setting is Disabled.

Output Under-Current Alarm

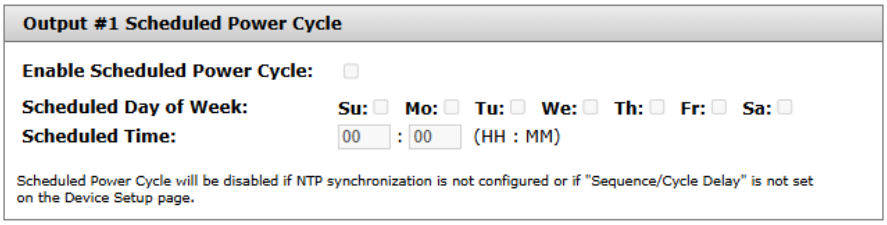


Under-Current Threshold: Set the current (0.0–26.3 A) that will trigger an undercurrent alarm on this output. Output current below this level for at least 5 seconds will trigger the Under-Current Alarm. Disable this alarm by setting the threshold to 0 amps. The default setting is 0.0 A (Disabled).

Activate Alarm Form C Contact: Select this checkbox for the Alarm relay to trigger for an undercurrent condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an output Over-Current alarm e-mail sent to the e-mail addresses set up on the "E-mail Setup" page (see Section 4.8). The default setting is Disabled.

Output Scheduled Power Cycle



Enable Scheduled Power Cycle: Select this checkbox to schedule a recurring power cycle of the output, which will reboot the equipment connected to the output channel. The default setting is Disabled.

A delay time must be entered in the "Sequence/Cycle Delay" field on the Device Setup page field for this function to work. Power for a cycled channel will be held in the off state for the duration set by the Sequence/Cycle delay time, then will be turned back on.

NOTE: NTP Time Synchronization must be enabled on the Device Setup page to enable scheduled power cycles.

Scheduled Day of Week: Set the day of the week that the scheduled recurring power cycle should occur. Multiple days can be selected at once.

Scheduled Time: Set the time of day that the scheduled recurring power cycle should occur.

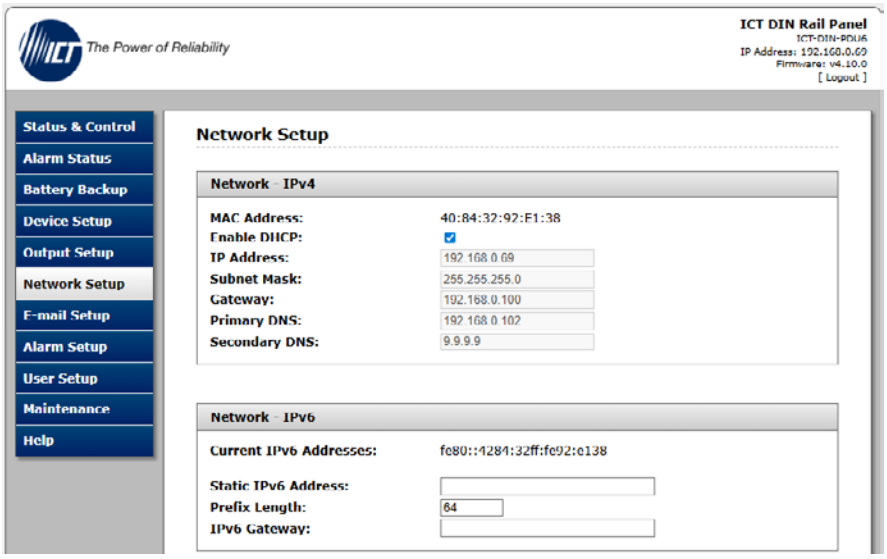
NOTE: Save Settings for each channel and then repeat the setup process for all output channels to be used, or Copy Settings to All.

4.7 Network Setup

Use this tab to configure the unit's network settings.

NOTICE

Saving any changes to the network settings will cause the unit's control board to re-start, output power will be unaffected.



Network – IPv4

MAC Address: Shows the MAC address assigned to the unit.

Enable DHCP: Set the checkbox if the network uses a DHCP server to automatically assign IP addresses. The default is Enabled.

To manually assign a static IP address to the unit uncheck this box, then set the following parameters.

IP Address: Set a unique IP address for the unit.

Subnet Mask: Set the mask for the subnet the unit is located on.

Gateway: Set the IP address of the default router (Gateway) used for connecting attached devices to different networks.

Primary DNS: Set the IP address of the Primary DNS Server for the network.

Secondary DNS: Set the IP address of the Secondary DNS Server for the network.

Network – IPv6

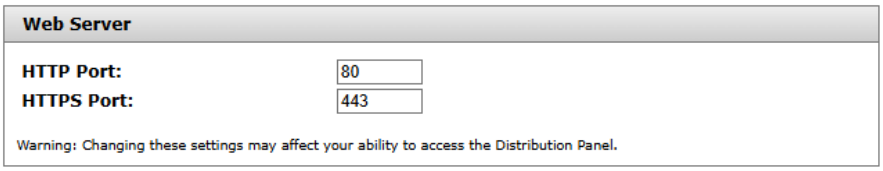
Current IPv6 Addresses: Shows the IPv6 addresses assigned to the unit. An IPv6 Link-Local address will be configured automatically. Addresses can also be configured by the router through Router Advertisements.

Static IPv6 Address: Set a unique static IPv6 address for the unit. Configuring a static IPv6 address is optional.

Prefix Length: Set the IPv6 prefix length for the network. The default value is 64.

IPv6 Gateway: Set the gateway IPv6 address for the network (optional).

Web Server



NOTICE

Changing the web server port numbers may cause loss of communication with the unit.

The following ports may be changed within a range of 1 to 65,565, if required:

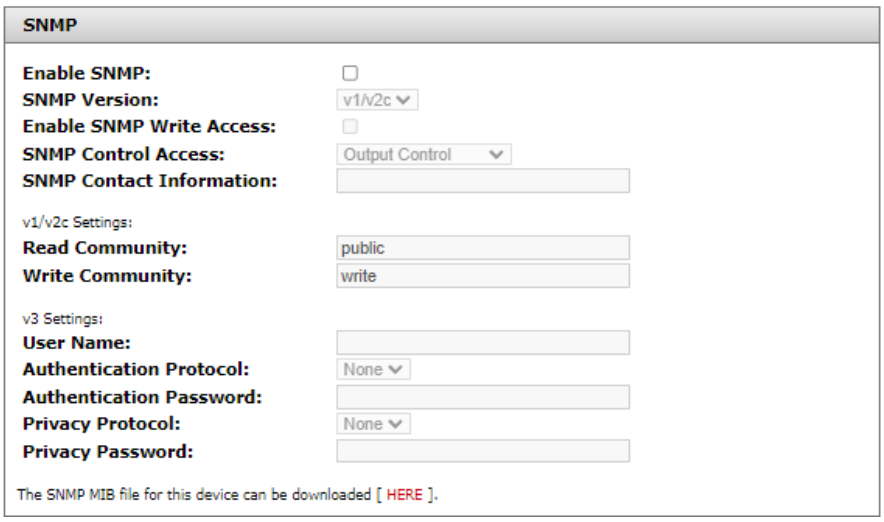
HTTP Port: Set the port used for HTTP traffic between the unit and the browser. The default HTTP port is "80", and if this is changed, the new HTTP port number must be appended to the URL used to access the unit (e.g., use URL "http://192.168.0.180:8000" for IP address "192.168.0.180", port "8000").

Setting the HTTP Port to zero will disable HTTP access to the unit.
HTTPS Port: Set the power used for HTTPS traffic between the unit and the browser. The HTTPS (HTTP Secure) protocol uses encrypted data transfer between web browsers and servers for higher security. The default HTTPS port is "443". Append any changed HTTPS port to the end of the URL for the unit.

To access the unit through a secure HTTPS connection, use "https://" at the start of the unit's URL (e.g., "https://192.168.0.180:8888" for IP address "192.168.0.180", HTTPS port "8888").

Setting the HTTPS Port to zero will disable HTTPS access to the unit.

SNMP



SNMP (Simple Network Management Protocol) is an industry standard protocol for network management software. Enabling the SNMP function on the PDU will allow standard SNMP management software to connect to the SNMP agent running on the PDU and read real-time system information such as system voltage, and channel currents. The SNMP is for the PDU functions only, and it does not monitor and control the PSU functions. The

PDU can send SNMP traps to the external management software when an alarm or fault occurs. Only PDU alarms are reported via SNMP.

The information available from the SNMP agent is described in a MIB (Management Information Base) file, which can be downloaded from the ICT website: https://ict-power.com/resources/tools-utilities/. Use the ICT Distribution Series MIB files. The MIB file can also be downloaded from within the GUI. There are links in the SNMP section of the Network Setup tab and on the Help tab. The unique unit MIB file must then be imported into the external SNMP management software.

Enable SNMP: Select this checkbox to enable the SNMP agent. The default setting is Disabled.

SNMP Version: Set the SNMP version (v1/v2c, v3, or All) supported by the SNMP agent. If "All" is selected, all SNMP versions will be supported simultaneously. The appropriate settings for the selected SNMP version will need to be configured.

Enable SNMP Write Access: Select this checkbox to enable DC power to individual outputs through SNMP. If this box is unchecked, all information available from the SNMP agent will be read-only.

SNMP Control Access: Set the level of unit control that is allowed through SNMP. This setting is only available if Enable SNMP Write Access is enabled.

- **Output Control:** Allows remote SNMP control of the system output and channel outputs only.
- **Full Device Control**: Allows SNMP client to set all unit settings through SNMP. This setting requires a different MIB file which can be downloaded from the ICT Website: https://www.ict-power.com/resources/tools-utilities/.

SNMP Contact Information: Set contact information, such as an operator name and phone number for the unit, which can be read via SNMP queries (this information is optional).

v1/v2c Settings

Read Community: Enter the community string/password here for read-only SNMP access. The default read community string is "public".

Write Community: Enter the community string/password here for read/write SNMP access. The default write community string is "write".

NOTE: The community strings should be changed to unique passwords before enabling SNMP, as the defaults are well known.

v3 Settings

User Name: Set the username for SNMPv3 access.

Authentication Protocol: Set the SNMPv3 authentication protocol (None, MD5, or SHA).

Authentication Password: If an authentication protocol is selected, set the authentication password.

Privacy Protocol: Set the SNMPv3 privacy protocol (None, or AES).

Privacy Password: If a privacy protocol is selected, set the privacy password.

SNMP Traps:

Trap Version: Set the SNMP version (v1 or v3) for SNMP traps sent from the system. The appropriate settings for the selected SNMP version will need to be configured.

Trap Community: Set the community string/password that will be sent with all SNMPv1 traps. Some trap receivers can filter based on Trap Community. This field is only used for v1 traps.

Trap User Name: Set the username for SNMPv3 traps. This field is only used for v3 traps.

Authentication Protocol: Set the authentication protocol for SNMPv3 traps (None, MD5, or SHA)

Authentication Password: If an authentication protocol is selected, set the authentication password for SNMPv3 traps.

Privacy Protocol: Set the privacy protocol for SNMPv3 traps (None, or AES)

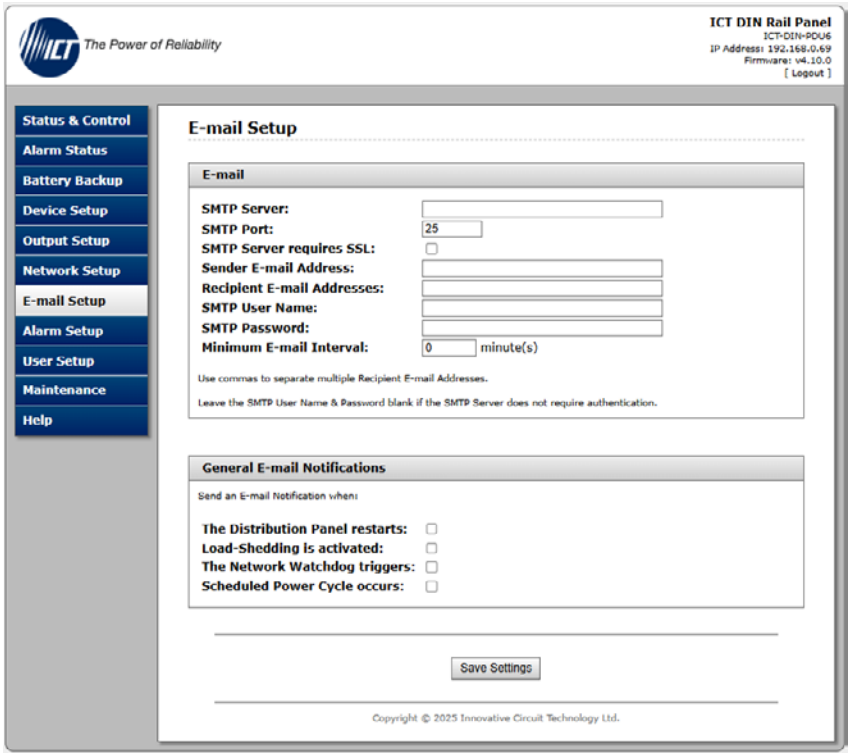
Privacy Password: If a privacy protocol is selected, set the privacy password for SNMPv3 traps.

Trap IP Addresses: Set the IP addresses for up to two devices that will receive SNMP traps from the unit.

NOTE: Save Settings to enable any changes made.

4.8 E-mail Setup

Use this tab to configure all e-mail settings to enable automatic e-mail notifications directly from the unit. The information required for this is available from the Network Administrator, or Internet Service Provider (ISP).



E-mail

SMTP Server: Set the name or the IP address of the SMTP server used for sending outgoing e-mail (e.g., "smtp.gmail.com"). This field is limited to 64 characters.

SMTP Port: Set the port used by the SMTP server. The default setting is 25.

SMTP Server requires SSL: Select this checkbox if the SMTP server requires an encrypted SSL connection. This box should normally be checked if the SMTP port used by the SMTP server is 465. If the SMTP server uses STARTTLS (normally port 587), this box should be unchecked.

Sender E-mail Address: Set an e-mail address that will appear as the sender for all e-mail notifications sent from the unit. This field is limited to 48 characters.

Recipient E-mail Addresses: Set one or more e-mail addresses that are to receive all e-mail notifications from the unit. Use commas to separate multiple addresses. This field is limited to 128 characters.

NOTE: This field can also be used to send text message notifications to a phone (see Section 6.5).

SMTP User Name: Set an SMTP username here, if required by the SMTP server. Leave this field blank if the server does not require authentication. This field is limited to 48 characters.

SMTP Password: Set an SMTP password here, if required by the SMTP server. Leave this field blank if the server does not require authentication. This field is limited to 48 characters.

Minimum E-mail Interval: Set a minimum interval in minutes (0–60 minutes) between e-mail notifications. This time interval is used to prevent an unintended flood of e-mail alarm notifications that could occur when an alarm limit is incorrectly configured, for example. The default setting is 0.

General E-mail Notifications

Set these options to receive an e-mail when one or more of these events occurs:

The Distribution Panel restarts: Select this checkbox to receive an e-mail notification when the unit restarts after a power failure or a soft reset.

Load-Shedding is activated: Select this checkbox to receive an e-mail notification when any of the outputs are disabled or enabled due the voltage crossing one of the load-shed settings configured on the Output Setup page (see Section 4.6).

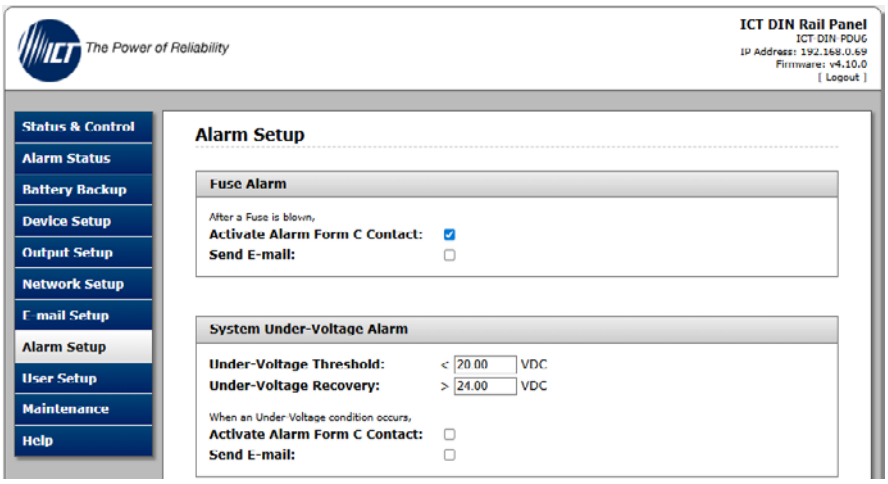
The Network Watchdog triggers: Select this checkbox to receive an e-mail notification when the Network Watchdog triggers due to a loss of the network connection (see Section 4.5).

Scheduled Power Cycle occurs: Select this checkbox to receive an e-mail notification after a scheduled power cycle of an output has occurred.

NOTE: Save Settings to enable any changes made.

4.9 Alarm Setup

Use this tab to control the settings for the PDU alarms. If DIN PDU is connected, there is an option on the "Battery Backup" tab (see Section 4.4) to configure the PDU to send emails for the PSU alarms.



Fuse Alarm

Activate Alarm Form C Contact: Set the checkbox to have the unit trigger a form-C alarm for a fuse that is blown or open. The default setting is Enabled.

NOTE: Alarm output will not be triggered for any blown or open fuse if the "Ignore Fuse Status" is enabled.

Send E-mail: Select this checkbox to have an e-mail sent to the e-mail addresses set up on the E-mail Setup page when a fuse is blown or open on any of the output channels (see Section 4.8). The default is Disabled.

System Under-Voltage Alarm

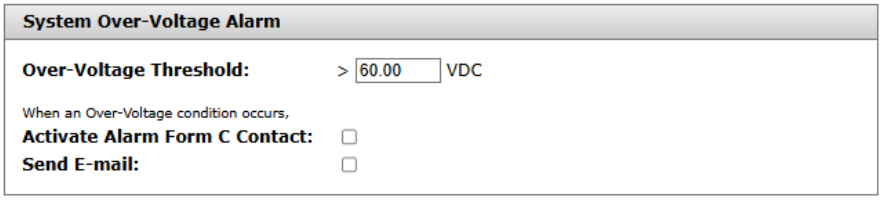
Under-Voltage Threshold: Set the voltage that will trigger an undervoltage alarm. System voltage dropping below this level will immediately trigger an undervoltage alarm. Default setting is 20.00 VDC.

Under-Voltage Recovery: Set the voltage that will clear the alarm. System voltage rising above this level will clear the alarm. This value must be at least 0.05 V above the Under-Voltage Threshold. The default setting is 24.00 VDC.

Activate Alarm Form C Contact: Set the checkbox for the Alarm relay to trigger for an undervoltage condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an Under-Voltage alarm e-mail sent to the e-mail addresses set up on the E-mail Setup page (see Section 4.8). The default setting is Disabled.

System Over-Voltage Alarm

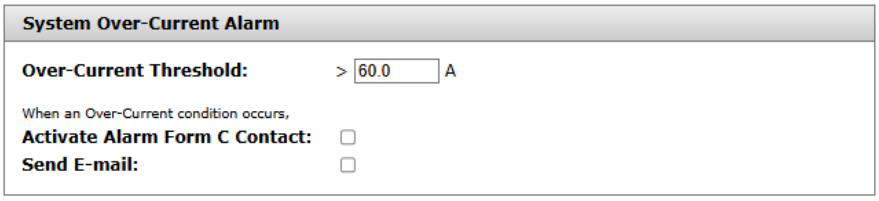


Over-Voltage Threshold: Set the voltage that will trigger an overvoltage alarm. System voltage rising above this level will immediately trigger an overvoltage alarm. The default setting is 60.00 VDC.

Activate Alarm Form C Contact: Select this checkbox to have Alarm relay trigger for an overvoltage condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an Over-Voltage e-mail sent to the e-mail addresses set up on the E-mail Setup page (see Section 4.8). The default setting is Disabled.

System Over-Current Alarm

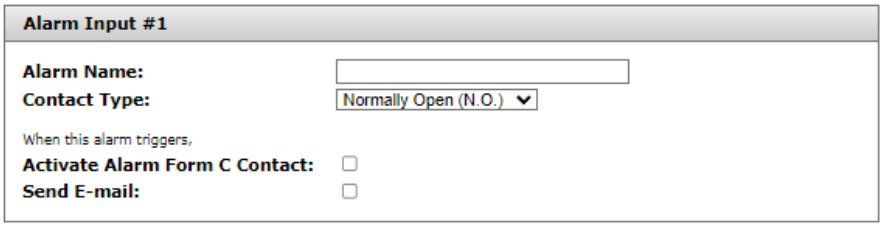


Over-Current Threshold: Set the current that will trigger an overcurrent alarm. System current above this level for at least 5 seconds will immediately trigger an Over-Current Alarm. Default settings is 60.0 A.

Activate Alarm Form C Contact: Select this checkbox to have Alarm relay trigger for an overcurrent condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an Over-Current Alarm e-mail sent to the e-mail addresses set up on the E-mail Setup page for an overcurrent alarm condition (see Section 4.8). The default setting is Disabled.

Alarm Input #



Alarm Name: Set a meaningful name to suit the installation (these will be used for e-mailed alarm messages).

Contact Type: Set the form-C behavior for each device to be monitored (Not Used, Normally Open, Normally Closed). Select Not Used for all unused alarm input channels. The default setting is Not Used.

Activate Alarm Form C Contact: Select this checkbox to have the unit send a form-C alarm for an alarm condition. The default setting is Disabled.

Send E-mail: Select this checkbox to have an e-mail sent to the e-mail addresses set up on the E-mail Setup page for an alarm condition (see Section 4.8). The default setting is Disabled.

NOTE: Save Settings to enable any changes made.

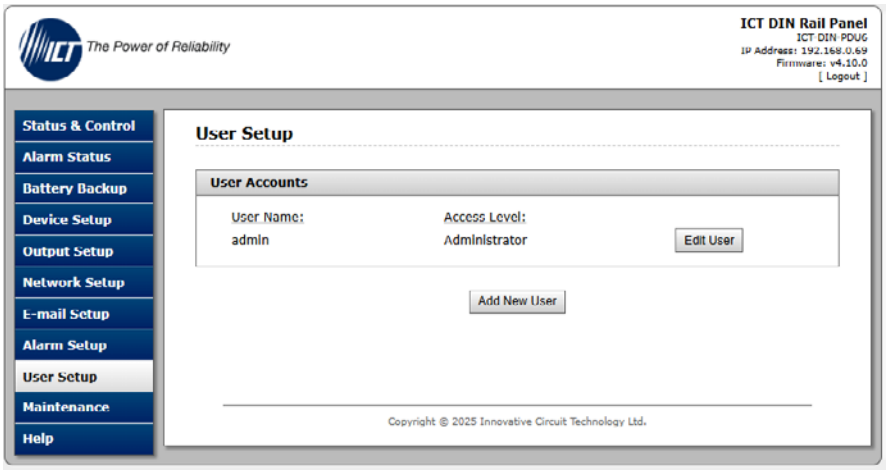
4.10 User Setup

Use this tab to set up and configure the usernames and passwords for up to 10 users. Set the level of access to the unit settings allowed for each user. Click on the Save Settings button at the bottom of the page to save any password changes.

NOTE: The unit has no password assigned by default, so an Administrator password should be assigned to the unit for improved security.

NOTICE

Record the new password(s) for future access. If the Administrator password is lost the unit must be reset to return the password to the blank default setting, causing loss of all other user settings (see Section 3.1).

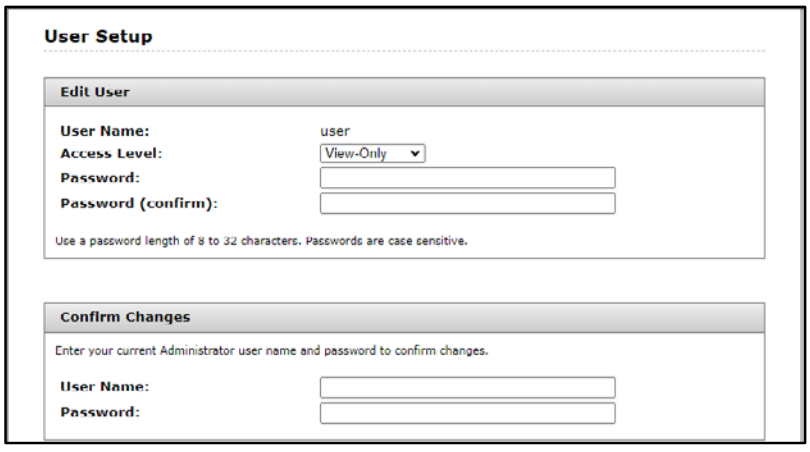


User Accounts

Shows the User Name and Access Level.

Edit User

Select to edit an existing user account. Set the access level for each user.



User Name: Shows the username.

Access Level: Set the access level:

- **Administrator:** This level has full access to the unit settings and can set up users and change passwords ("admin" is the default user).

- **Control:** User has read-only access to the unit, but can enable or disable the outputs, and change some of the basic settings.
- **View-Only**: User can only view status, cannot change any settings.

Password: Enter the password for the chosen user. This field is limited to 32 characters.

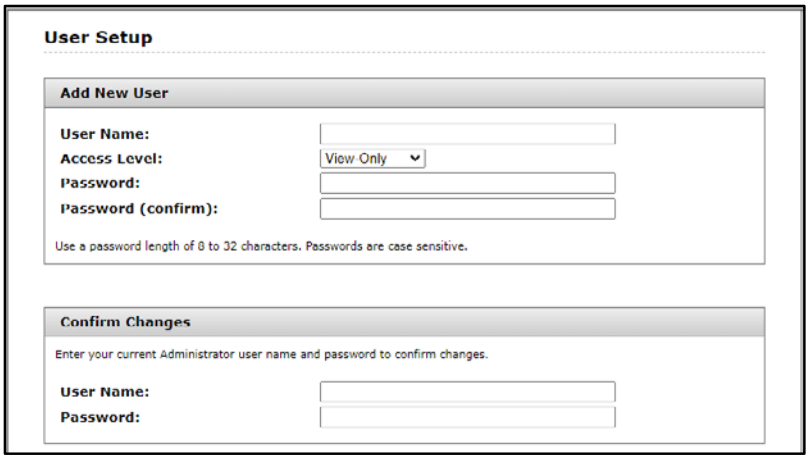
Password (confirm): Re-enter the new password to confirm the entry.

Confirm Changes

User Name: Enter admin username to confirm these changes are valid.

Password: Enter the admin password to confirm the changes are valid.

Add New User



User Name: Set username.

Access Level: Set the access level:

- **Administrator:** This level has full access to the unit settings and can set up users and change passwords ("admin" is the default user).
- **Control:** User has read-only access to the unit, but can enable or disable the outputs, and change some of the basic settings.
- **View-Only**: User can only view status, cannot change any settings.

Password: Enter the new password for the chosen user. This field is limited to 32 characters.

Password (confirm): Re-enter the new password to confirm the entry.

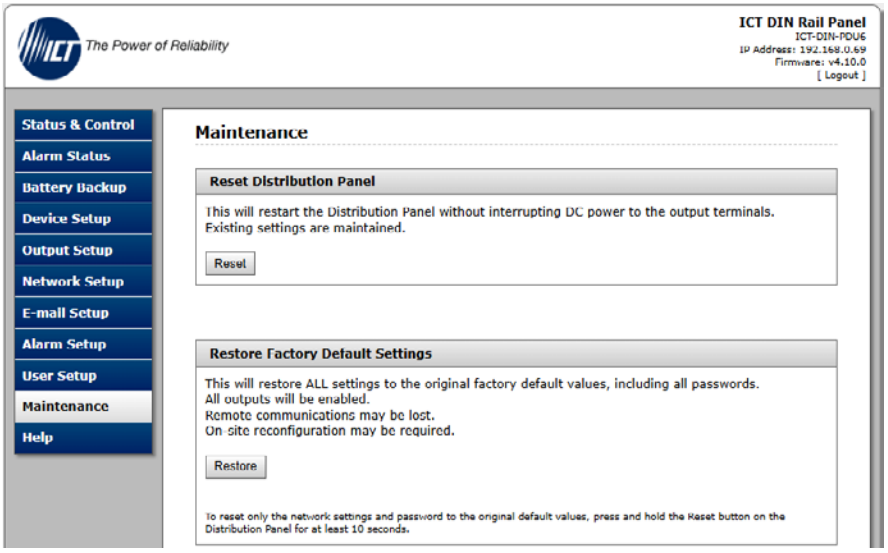
Confirm Changes

User Name: Enter admin username to confirm these changes are valid.

Password: Enter the admin password to confirm the changes are valid.

4.11 Maintenance

Use this tab to reset the unit (soft reset), restore the factory default settings, or send a test e-mail to verify e-mail functionality.



Reset Distribution Panel

Select the "Reset" button to restart the unit's control board. The channel output states will be restored according to the "Output State after Panel Reset" setting for each output on the "Output Setup" page (see Section 4.6). All other settings are maintained during the reset.

NOTICE

Resetting the unit will not affect the power output.

Restore Factory Default Settings

Select the "Restore" button to restore all settings to the original factory default values, including the user passwords. To only restore the network settings and passwords see the "Password Reset" section (this feature is only available to the system Administrator).

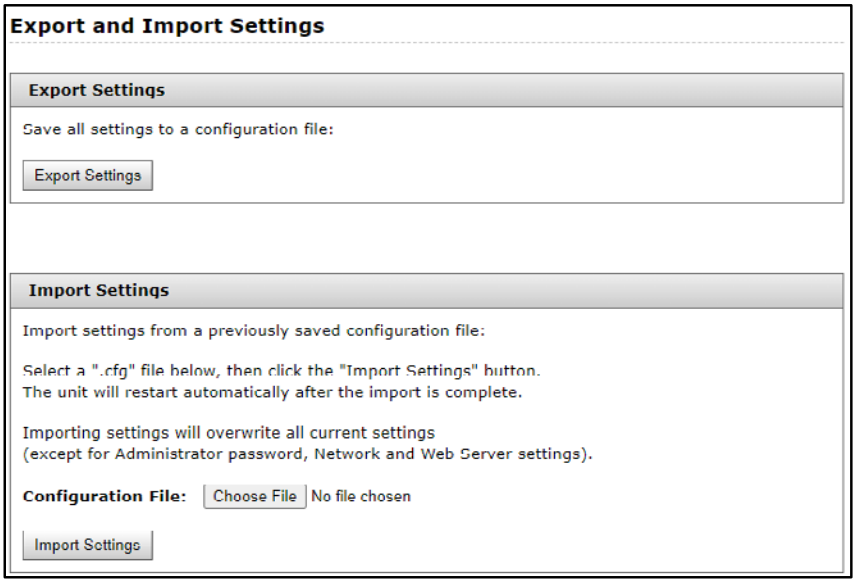
NOTICE

- Restoring the unit to Factory Default settings may cause loss of network communications due to loss of custom changes to any network settings.
- Restoring the unit to Factory Default settings will not affect the power output.

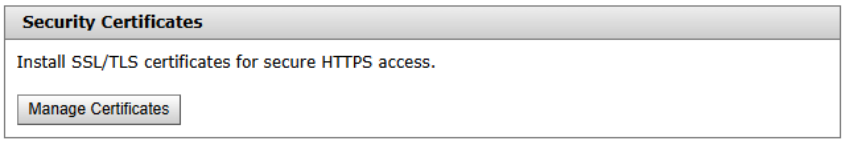
To reset only the network settings and Administrator password to the original default values, see Section 3.1.1.

Export and Import Settings

Select the "Manage Settings" button to access the Export and Import Settings page shown below. Use this page to export all system settings to an encrypted .cfg file which may be imported into other units to speed configuration. The export does not include Administrator password, Network nor Web Server settings. Use the Import Settings section on other systems to locate this file and then import it to any other DIN Series Power Distribution Unit.

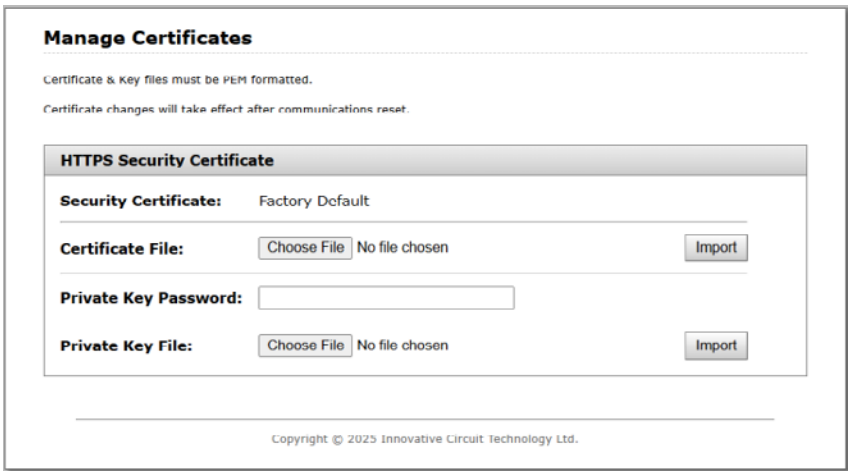


Security Certificates



Select the "Manage Certificates" button to access the Manage Certificates page shown below. Use this page to import a new HTTPS Security Certificate to replace the default certificate. Both the Certificate File and

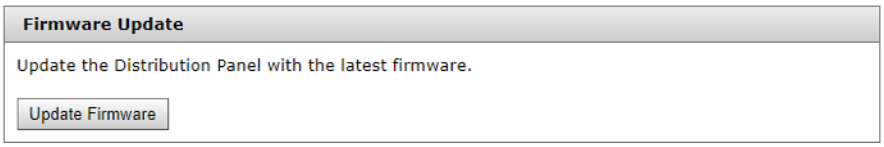
Private Key File must be imported individually in PEM format. An optional Private Key Password can be entered if the Private Key is password-protected.



After a certificate has been successfully imported, a "Delete" button will be available which will erase the imported certificate.

The Distribution Panel must be restarted before any certificate changes will take effect.

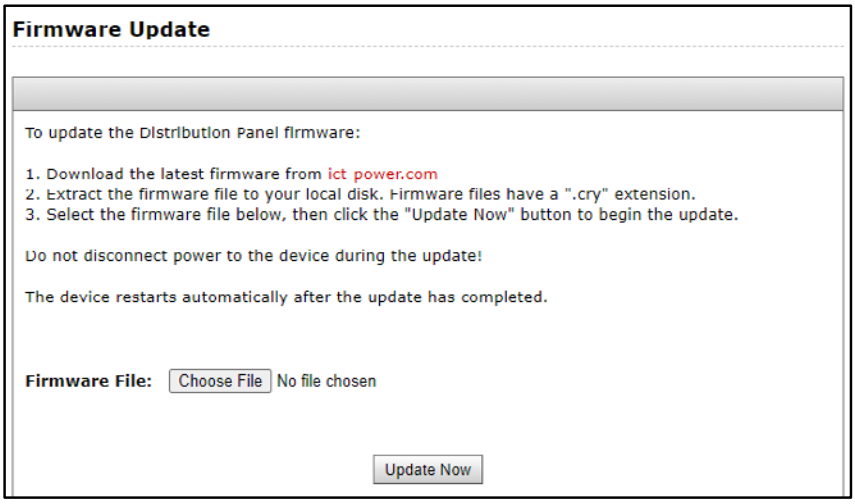
Firmware Update



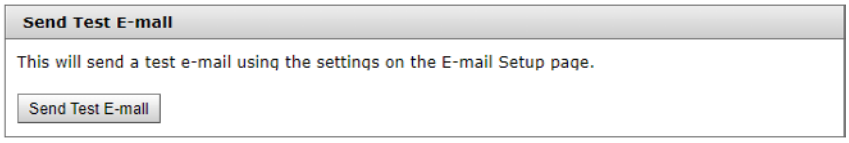
NOTICE

Updating the firmware will delete the current log files. Download the logs before updating the firmware.

Download the latest DIN Series Power Distribution Unit firmware file from the ICT website (ict-power.com/resources/product-firmware/) to a local computer. Select the "Update Firmware" button to access the Firmware Update page shown below. Use this page to update the firmware on the unit by clicking the "Choose File" button to link the downloaded firmware then click the "Update Now" button. Do not disconnect power to the device during the update process. The device restarts automatically after the update has been completed. The channel output states will be restored according to the "Output State after Panel Reset" setting for each output on the "Output Setup" page (see Section 4.6). All other settings are maintained during the reset. This will not affect the output power.

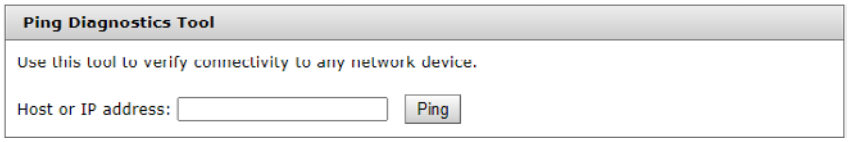


Send Test E-mail



Select the "Send Test E-mail" button to send a test e-mail to the e-mail recipients listed on the E-mail Setup page (see Section 4.8).

Ping Diagnostics Tool



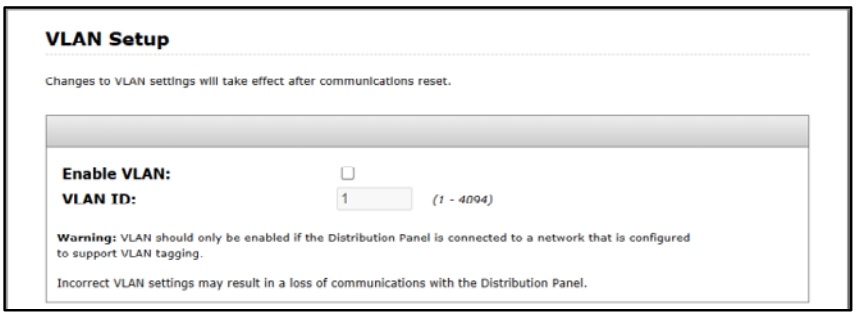
Use this feature to verify connectivity of any network connected unit. Enter the hostname or IP address of the target device, and then click the "Ping" button to check if the device is active.

VLAN Setup

NOTICE

VLAN should only be enabled if the Distribution Panel is connected to a network that is configured to support VLAN tagging. Incorrect VLAN settings may result in a loss of communication with the Distribution Panel.

Select the "Configure VLAN" button to access the VLAN Setup page shown below.



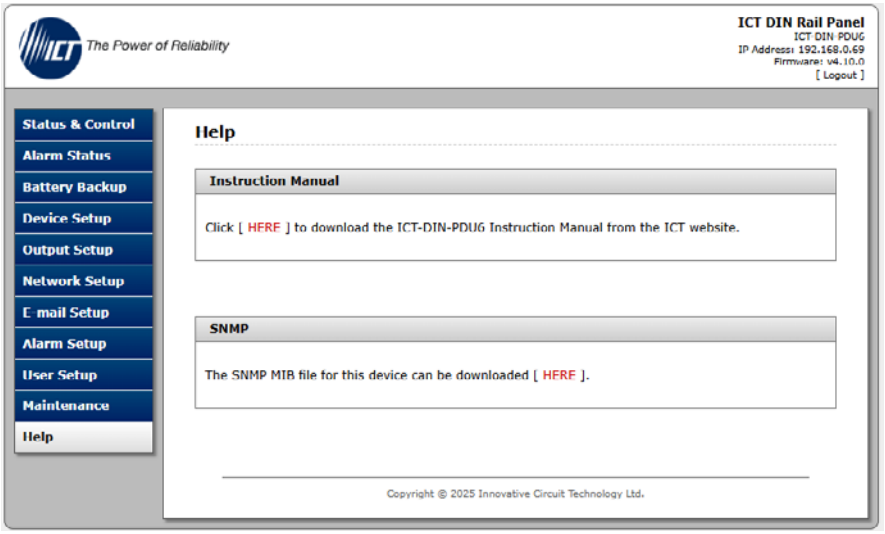
Enable VLAN: Select this checkbox to enable VLAN tagging on the network interface. The default setting is Disabled.

VLAN ID: Enter the VLAN ID number (1–4094).

NOTE: The Distribution Panel must be restarted before any VLAN configuration changes will take effect.

4.12 Help

This tab has helpful links to ICT's website.



Instruction Manual

Click the "HERE" button to download the ICT DIN Series Power Distribution Unit Instruction Manual from ICT's website.

SNMP

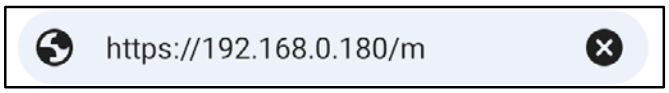
Click the "HERE" button to download the SNMP MIB file.

5.0 OPERATION: MOBILE VERSION

Use the mobile version of the "Status & Control" page to monitor and control the unit with a smartphone web browser.

5.1 Log In/Log Out

1. Connect to the DIN Series Power Distribution Unit by entering the IP address of the unit in the address field of the mobile browser, followed by "/m" (e.g., https://192.168.0.180/m) shown below.

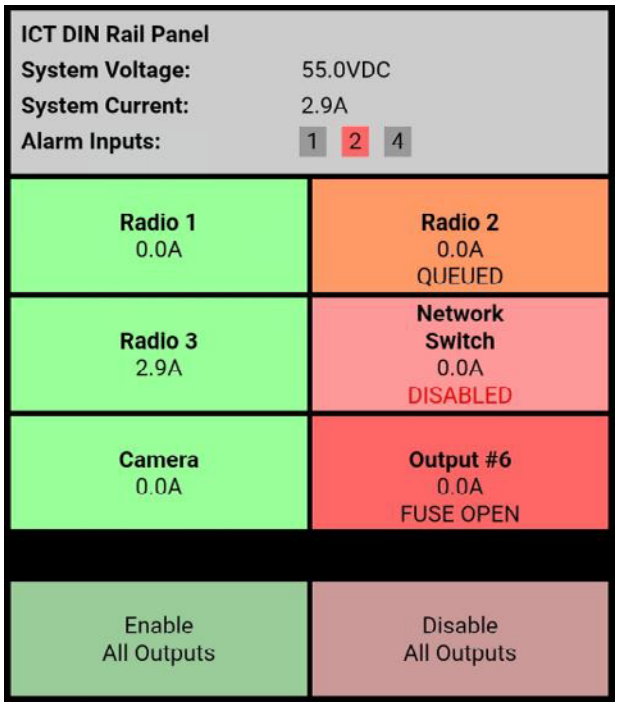


   For improved security, the user should normally use a HTTPS (secure) connection when accessing the unit over the Internet with the mobile web version or use a Virtual Private Network (VPN) connection.

2. Log into the unit's built-in server when prompted with the username and password. The default username is "admin", and no password is required as the factory default.

5.2 Status & Control

Once successfully logged in, the mobile version of the Status & Control page will be shown in the smartphone web browser.



The mobile web version page provides information on the system voltage, system current, input alarm status, and the status and current level of each output channels. Each individual output may be manually enabled or disabled by tapping on an output cell (if the user is logged in using the administrator account).

Site Name

Displays the name inputted in the Device Info section (see Section 4.5).

System Voltage

Shows the output voltage of the unit. This value does specify polarity.

System Current

Shows the total amps being supplied by the unit.

Alarm Inputs

Shows the status of any of the four Input Alarms for alarms that have been enabled (see Section 4.9). Will show grey if inactive or red if an alarm is active. An alarm input indicator box will not be displayed if the alarm is not enabled.

Output Status

Output #x cells: Use these to toggle the internal relay for each channel, enabling or disabling the power to the load on that output. Each output on the unit will be displayed with name and status (green cell, red cell with DISABLED, red cell with FUSE OPEN, orange cell with QUEUED). A "green cell" indicates the electronic relay on that output channel is closed or turned on. A red cell with "DISABLED" indicates that the internal electronic relay is open or turned off. A red cell with "FUSE OPEN" indicates that the installed fuse is blown. An orange cell with "QUEUED" indicates that the output is in the power-cycling state.

NOTE: "FUSE OPEN" only displays if a fuse is installed, and the "Ignore Fuse Status" is not enabled in Section 4.6.

Enable All Outputs Cell

Use this to enable DC power to all output channels simultaneously. The outputs will be enabled in a timed sequence if the "Sequence/Cycle Delay" has been set on the Device Setup page (see Section 4.5).

Disable All Outputs Cell

Use this to disable DC power to all output channels simultaneously. Outputs with enabled power cycling will automatically be re-enabled after the "Sequence/Cycle Delay" time.

6.0 FAQs

6.1 How do I configure a router?

To set up the ICT DIN Series Power Distribution Unit with remote internet access when it is located behind a router, Port Forwarding will need to be enabled on the router to forward incoming HTTP or HTTPS traffic to the local IP address of the unit. Refer to the router's user manual for instructions on how to configure Port Forwarding.

6.2 How do I reset the password?

See Section 3.1.

6.3 How do I access the web-based configuration utility?

- Check that the IP address for the unit is correct by downloading and running the ICT IP Address Discovery tool (tool available for download from ICT http://www.ict-power.com/resources/tools-utilities/).
- Check the network cable connections to the unit and the network.
- Ensure that the network card settings on the computer are configured for accessing the IP address of the unit. To access a unit with the default IP address of 192.168.0.180, the typical network settings for the computer are:

    - IP Address: 192.168.0.100
    - Subnet Mask: 255.255.255.0
    - Gateway: 192.168.0.1

- If the HTTP port of the unit has been changed, append the new port number to the URL used to access the unit (see Section 4.7). See the Password Reset Section (see Section 4.11) for details on how to reset the port number to the factory default value.
- If the network switch allows the user to manually configure port speed and duplex settings, turn-on "Auto Negotiation" for the switch port that the unit is connected to.
- If VLAN is enabled, check that the VLAN ID configured on the unit matches the VLAN ID set on the user's network. After any changes to the VLAN configuration, make sure to restart the distribution panel to have the changes take effect.

6.4 How do I receive e-mails from the unit?

- See Section 4.8 E-MAIL SETUP.
- Verify that the "Send E-mail" check boxes are selected for any alarm conditions for which the user wishes to receive e-mail notifications.

- Verify the e-mail settings by going to the "Maintenance" tab on the unit's GUI and clicking on the "Send Test E-mail" button to send a test message to the designated recipient addresses. The "Send Test E-mail" page will show an error message if the system is unable to send the e-mail.
- Check on the "E-mail Setup" page and ensure that the "SMTP Server" field is the correct address for the e-mail provider, and that the "SMTP Port" is correct (Port should be 25 for most servers).
- If the SMTP server requires SSL encryption, ensure that the "SMTP Server requires SSL" checkbox is ticked. Otherwise leave it blank.
- If the SMTP server requires authentication, ensure that the "SMTP User Name" and "SMTP Password" fields are correctly entered.

6.5 How do I receive text message alarm notifications?

The unit can send alarm notifications to a cell phone by configuring the alarm e-mails to be sent to the mobile phone service provider.

To use this feature, check with the user's mobile phone service provider to confirm whether email-to-text messaging is supported and to obtain the correct address format. Alternatively, third-party email-to-SMS services may be used to deliver text message notifications.

6.6 How do I upgrade the firmware?

On the ICT website, click on Resources > Product Firmware and select the product. Download the latest firmware. In the ZIP file will be a README document with step-by-step instructions or see section "Firmware Update" in Section 4.11.


NOTICE

Updating the firmware will delete the current log file. Download the log before updating the firmware.

6.7 How can I access the MIB file?

The MIB file can be downloaded from the ICT website: https://ict-power.com/resources/tools-utilities/. Use the ICT-PDU MIB files. It can also be downloaded from within the GUI through the links in the SNMP section of the Network Setup tab (see Section 4.7) and on the Help tab (see Section 4.12).

6.8 Can the SNMP monitor and control both PDU and PSU?

The SNMP is only for the ICT DIN Series Power Distribution Unit (PDU) functions, and it cannot monitor and control the ICT DIN Series Power Supply Unit (PSU) functions. The information available from the SNMP agent in only for the PDU which is described in the ICT Distribution Series MIB files.

Only PDU alarms are reported via SNMP. There is an option on the "Battery Backup" section on the GUI (see Section 4.4) to configure the PDU to send emails for the PSU alarms.

6.9 How do I log out of the GUI?

To log out of the ICT DIN Series Power Distribution Unit GUI, click on the Logout link on the top right of the browser window. The system will also automatically log off the user after 20 minutes of inactivity.

7.0 PRODUCT SPECIFICATIONS

7.1 Electrical Specifications

Table 11. Electrical Specifications

Parameters	Rating
Operating Voltage (POS or NEG ground)	10 to 60 VDC
System Current Rating	60 A continuous/peak
Outputs	6 (normally closed)
Max Output Rating	15 A peak (12 A continuous)[1]
Meter Accuracy, Voltage	Bus voltage readings +/−1%
Meter Accuracy, Current	Channel current readings +/− 3%
Power Consumption	< 8 W (all outputs disabled) < 4 W (all outputs enabled)
Network Communications	RJ45 10/100-T port (IPv4, IPv6, VLAN, HTTP, HTTPS, SMTP, DNS, TCP, UDP, ICMP, DHCP, ARP, SNMP v1/v2c/v3)
Network Security	Password protection, SSL encryption for HTTPS and SMTP (TLS 1.3) and SNMPv3

[1] In accordance with NEC Section 210.20(A).

7.2 Physical Specifications

Table 12. Physical Specifications

Parameters	Configuration
Outputs	Floating
Alarm Output	Form-C dry contact, 1 A, 60 VDC max (voltage-free contact)
Input Connector	2-pin terminal block, 6–20 AWG
Output Connector	2x 6-pin removable plug cage clamp type, 10–30 AWG
Alarm Output/ Input Connector	12-pin removable plug, cage clamp type, 12–30 AWG
Operating Temperature	−20°C to +60°C (Derate max bus current by 2% per degree C above 50°C)
Storage Temperature Range	−45°C to +85°C
Humidity	Operating: 10–90% (non-condensing) Storage: 5–95% (non-condensing)
Cooling	Convection (no fan)
Heat Dissipation	28 BTU/hr (idle, all outputs disabled) 26 BTU/hr (when using the ICT360 DIN PSU) 30 BTU/hr (when using the ICT480 DIN PSU) 127 BTU/hr (System Current: 60 A; System Voltage: 55.2 VDC)

7.3 Regulatory Specifications

Table 13. Regulatory Compliance

Category	Certification
Safety, EMC-Emissions, EMC-Immunity, RoHS	RoHS, FCC Class B, and CE (certified). Designed to meet CSA 60950 (not certified).

7.4 Mechanical Specifications

Table 14. Dimension and Weight

Physical Property	Value
Dimension - L x W x H	5.4 x 4.4 x 5.9 in. (137 x 111 x 149 mm)
Weight	2.8 lbs. (1.27 kg)

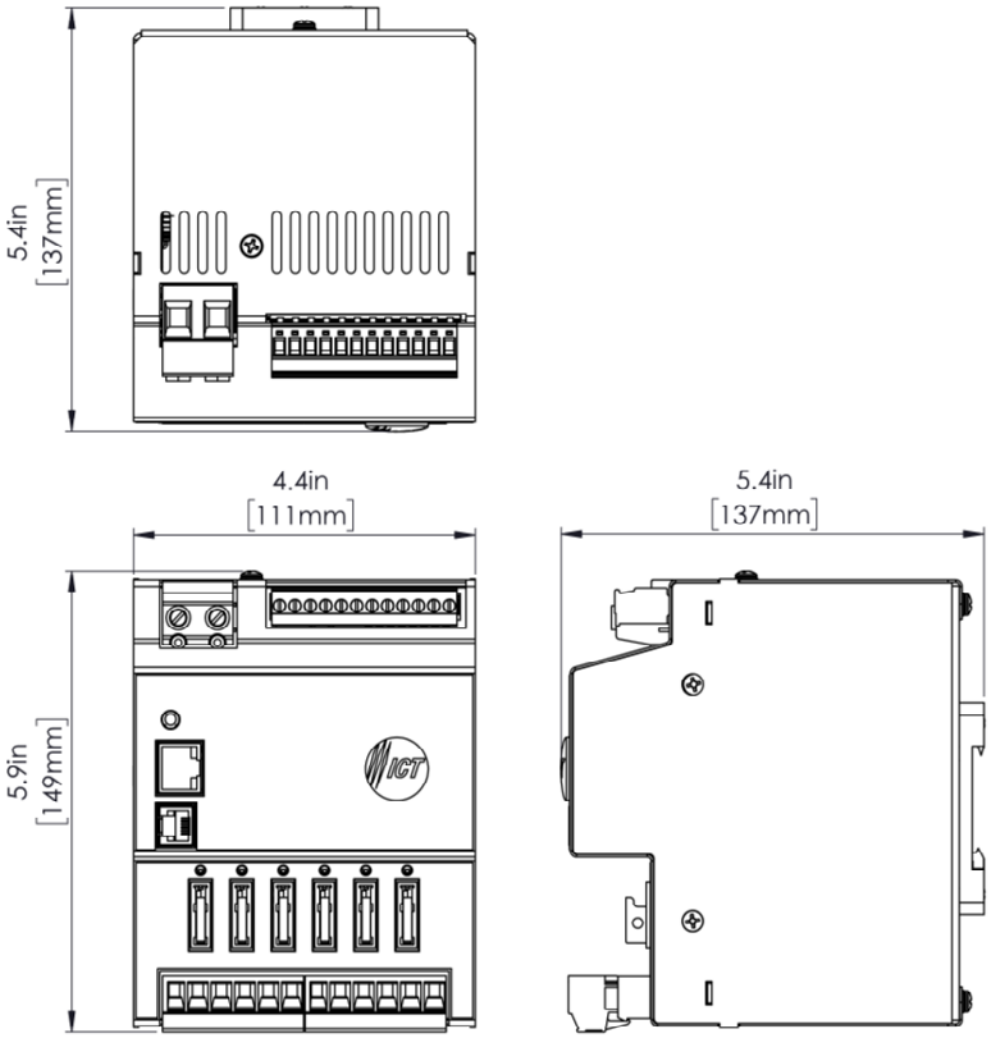


Figure 5. Unit Dimensions

8.0 GLOSSARY

- A, amps — Amperes
- AES — Advanced Encryption Standard
- ANSI — American National Standards Institute
- AWG — American Wire Gauge
- BTU — British Thermal Unit
- CE — Conformité Européenne
- CSA — Canadian Standards Association
- CSV — Comma-Separated Values
- DHCP — Dynamic Host Configuration Protocol
- DIN — Deutsche Institut fur Normung
- DNS — Domain Name System
- EMC — Electromagnetic Compatibility
- FCC — Federal Communications Commission
- GUI — Graphical User Interface
- HTTPS — Hypertext Transfer Protocol Secure
- ICES — Interference-Causing Equipment Standard
- ICMP — Internet Control Message Protocol
- ISO — International Organization for Standardization
- ISP — Internet Service Provider
- LVD — Low Voltage Disconnect
- MAC — Media Access Control
- MIB — Management Information Base
- NEC — National Electrical Code
- OEM — Original Equipment Manufacturer
- PDU — Power Distribution Unit
- PEM — Privacy Enhanced Mail
- PSU — Power Supply Unit
- RMA — Return Material Authorization
- RoHS — Restriction of Hazardous Substances
- SHA — Secure Hash Algorithms
- SMTP — Simple Mail Transfer Protocol
- SNMP — Simple Network Management Protocol
- TCP/IP — Transmission Control Protocol/Internet Protocol
- TLS — Transport Layer Security
- UDP — User Datagram Protocol
- V — Volts
- VDC — Volts, Direct Current
- VLAN — Virtual Local Area Network
- VPN — Virtual Private Network