The Power of Reliability

ICT DIN Series Power Supply Instruction Manual 855-361-000

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

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

- Install and operate unit in a restricted access location. A restricted access location is an area to which access can be gained only by service personnel using a special tool, lock and key, or other means of security and which is controlled by the authority responsible for the location.
- Install the unit in locations where children are likely not to be present.
- Installation, operation, and service must be done by qualified technicians, with all wiring and connections done in accordance with the local electrical codes.
- Input voltages can range up to 240 volts AC. All upstream AC, load and battery breakers must be shut OFF prior to installation. The system must be completely de-energized.
- All AC connections must conform to local codes and regulations.

Always observe the following for applications requiring a backup battery:

- Use a battery with rating and capacity appropriate for the model of power supply in use.
- Use an appropriate DC overcurrent protection device in-line with the backup battery connection.
- Use wire and connectors rated for the maximum load current.
- Ensure battery polarity is correct before connecting.
- Do not attempt to charge a frozen battery.
- Handle batteries with care. Never short-circuit battery terminals.
- Always install batteries in well-ventilated areas.
- Always consult with battery manufacturer and observe all battery manufacturer recommendations.


CAUTION

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

- Install in a protected environment and keep sources of moisture away from unit.
- Ensure the total power consumption of the load does not exceed the continuous rated capacity of the power supply output.
- Remove all metallic jewelry before working with the unit.
- Wear appropriate eye protection and always use appropriate tools during installation.
- Use caution when handling unit under load as surfaces may be hot.
- DC-AC inverters should not be connected to any of the load connection points without a battery connected to the unit. DC-AC inverters create significant inrush current and may damage the circuitry or interfere with the operation of power supply when there is no battery connected. 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.
- Third-party surge suppression devices must be utilized to protect AC input power feeds, and every exposed DC power conductor and data cable. To provide optimal protection, these protection devices should 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.

Product Alerts

- Operate the supply from a grounded 3-wire 120-volt AC or 230/240-volt AC source (50 or 60 Hz) with a branch circuit breaker rated 20 amps or less.

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

- Do not touch the power supply during operation as surfaces may be hot. Before removing the unit from DIN rail, disconnect AC and battery power and allow the unit to cool for at least 10 minutes.
- Lithium-ion battery support is available when the unit is connected to an ICT DIN Series Power Distribution Unit.
- If a lithium-ion battery is used, it must have an integrated battery management system (BMS) to protect the battery cells from inappropriate voltage or current levels.

GENERAL INFORMATION

Document Number: 855-361-000

Models:

ICT360-24DIN
ICT360-48DIN

Date and Revision: November 2025, Revision 2.01

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 Supply is a DIN-rail mounted DC power supply with integrated battery charging and Low Voltage Disconnect (LVD). The unit provides 360 watts of 48- or 24-volt DC output for use in either positive or negative voltage applications; and features wide-ranging AC input, low-noise emissions, temperature-compensated charging, adjustable charge current, and form-C alarm contacts.

The power supply can be paired with the ICT DIN Series Power Distribution Unit to allow remote monitoring of voltage, current, temperature and alarms over Ethernet.

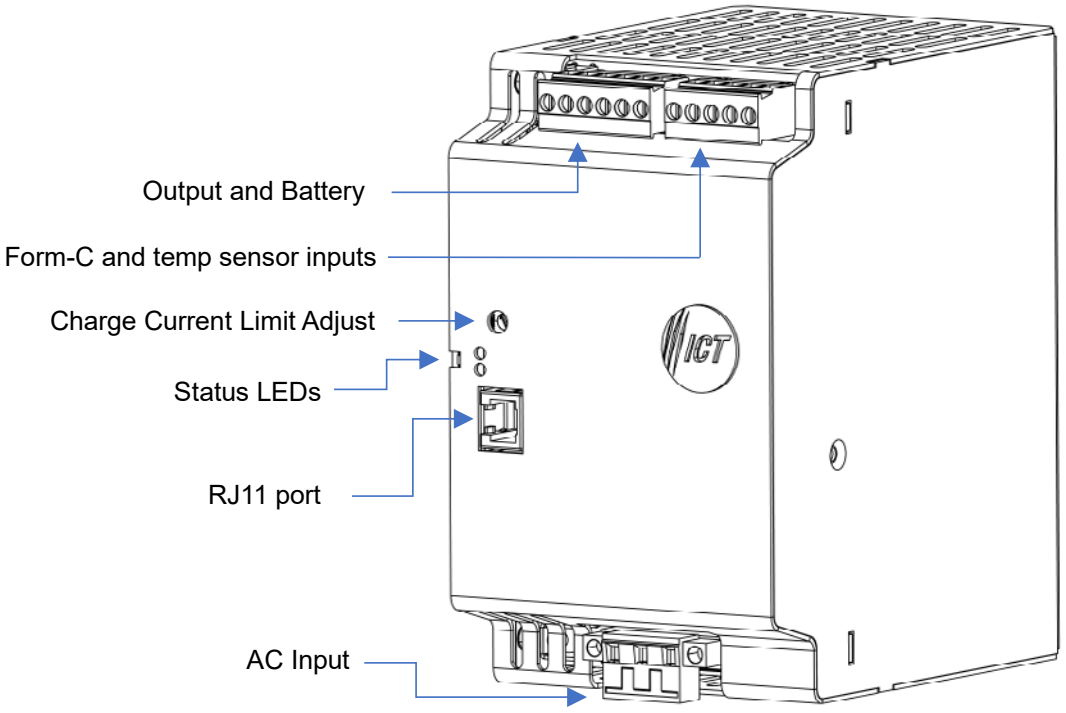


Figure 1. ICT DIN Series Power Supply

Table 1. Power Supply Models

Description	Model Number
DIN-rail mount 360-watt, 48-volt DC power supply with integrated low voltage disconnect. Functions independently or with remote monitoring over Ethernet when used with ICT-DIN-PDU6 intelligent power distribution unit.	ICT360-48DIN
DIN-rail mount 360-watt, 24-volt DC power supply with integrated low voltage disconnect. Functions independently or with remote monitoring over Ethernet when used with ICT-DIN-PDU6 intelligent power distribution unit.	ICT360-24DIN

Table 2. Power Supply Ratings

Model	Output Voltage (V)	Max Output Current (A)	Continuous Current (A)
ICT360-48DIN	55.2	7.5	6.5
ICT360-24DIN	27.6	15	13

1.1 Features

- 108–264 VAC input
- 360-watt 48- or 24-volt DC output
- 90 to 91% efficiency
- −30°C to +60°C operating range (de-rate output 2% per °C above 40°C)
- Integrated battery charging and low voltage disconnect
- Dual load connectors for installation flexibility
- Temperature-compensated battery charging (lead-acid battery only)
- Support for lead-acid and lithium-ion battery types (available when the unit is connected with an ICT DIN Series Power Distribution Unit)
- Adjustable battery charge current
- Form-C alarm contacts
- Serial communication port for remote monitoring when used with ICT DIN Series Power Distribution Unit

2.0 INSTALLATION

The following is the recommended sequence for the installation process.

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 system configuration matches the version ordered, and 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 supply
- Bag containing the following:
  - Instruction Manual
  - Removable 3-pin AC input wire clamp connector plug
  - Removable 5-pin form-C alarm and temperature sensor wire clamp connector

- Removable 6-pin DC output wire clamp connector for output load and battery input
- RJ11 data cable

2.2.1 Tools and Parts Needed

- 1/8-inch slotted screwdriver
- Wire stripper

2.3 Quick Install Guide

- Unpack and check that the unit and all materials have been delivered.
- Obtain the recommended tools.
- Check and verify the configuration.
- Mount the unit.
- Connect the ground according to the site design and in accordance with local electrical code standards.
- Connect the temp sensor and form-C alarms, if needed.
- Connect the battery, if applicable.
- Connect the load devices using third-party surge protection.
- Verify the system wiring.
- Connect and energize the AC power source, using third-party surge protection.
- Configure the software settings (if using the optional ICT-DIN-PDU6 power distribution unit).
- Energize the loads and battery connections.

2.4 System Configuration

When combined with the DIN Series Power Distribution Unit, remote monitoring and control of the power supply will be available using the Graphical User Interface (GUI).

NOTE: Accessories must be ordered separately.

Table 3. Available Accessories

Description	Model No.
DIN Series Power Distribution Unit	ICT-DIN-PDU6
Battery temperature sensor	ICT-TMP

2.5 DIN Rail Mounting and Demounting

CAUTION

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

- The unit must be placed near the backup battery in a location that restricts access to the wiring and battery terminals such as in an enclosed equipment cabinet.
- This unit is convection cooled. Provide at least a 4-inch open space above and below the unit for sufficient air flow.

Mount the unit on a standard DIN rail TS-35 (EN5002).

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 top hook clips into the mounting rail as illustrated in the second drawing of Figure 2.

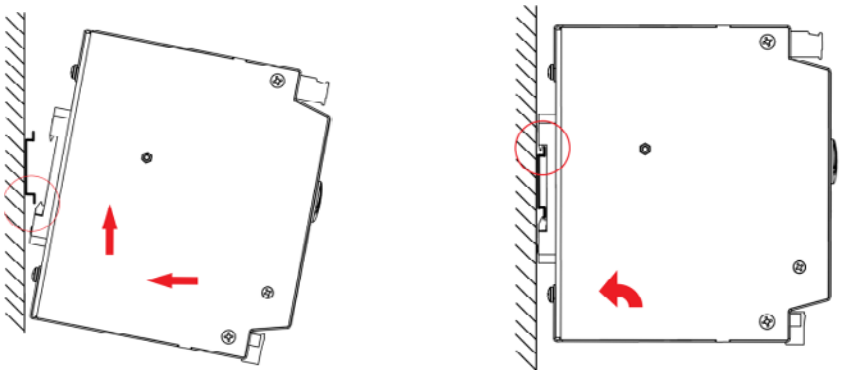


Figure 2. Mounting unit on DIN Rail

To demount the unit from the standard DIN rail TS-35 (EN5002), do the following:

CAUTION

Do not touch the power supply during operation as surfaces may be hot. Before removing the unit from DIN rail, disconnect AC and battery power and allow the unit to cool for at least 10 minutes.

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.

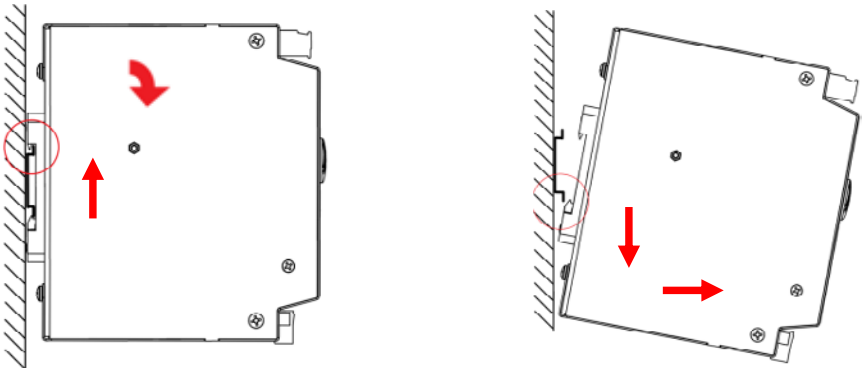


Figure 3. Demounting unit from DIN Rail

2.6 Ground Connection

WARNING

De-energize the system before making any change to the wiring and connections.

CAUTION

If connecting for positive ground, do not ground the battery terminal as this may bypass the internal LVD circuitry. Make a single ground connection at the load point only.

NOTICE

All DC outputs of ICT's DC power systems are isolated from chassis ground (floating). DC 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.

Ensure to use a grounded 3-wire AC source.

2.7 Surge Protection Device(s) Installation

Third-party surge suppression devices must be utilized to protect AC input power feeds, 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.

2.8 Sensor and Alarm Connections

1. Install the 5-pin form-C alarm and temperature sensor wire clamp connector.

2. The ALARM connector allows the ICT DIN Series Power Supply to report faults to an external monitoring device through a form-C contact. If needed, connect form-C contact monitoring wiring to the ALARM connector as listed in Table 4. Use 22–26 AWG wire. Refer to Table 10 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.

Table 4. Alarm Output Connector

Pin Number	Name	Function
1	NC	Alarm NC (alarm state)
2	NO	Alarm NO (alarm state)
3	Common	Alarm output common

3. Connect the optional external Battery Temperature Sensor (ICT-TMP for use with lead-acid batteries only) to the TEMP input on the removable connector. This will allow the ICT DIN Series Power Supply to compensate the output voltage according to the battery temperature. Use 22–26 AWG wire.

   Mount the sensor to the mid-level side of the middle battery in a battery bank using the adhesive-backed clip. The rate of voltage compensation can be adjusted through the Graphical User Interface (GUI) on the optional ICT DIN Series Power Distribution Unit. The default compensation is 5 mV/°C per cell (no compensation). Adjust this according to the battery manufacturer's recommendation to enable charge voltage temperature compensation.

NOTE: Battery temperature is assumed to be 25°C if no sensor is installed.

2.9 Battery Connections (If applicable)

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

- Use a battery with rating and capacity appropriate for the model of power supply in use.
- Use an appropriate DC overcurrent protection device in line with the backup battery connection.
- Use wire and connectors rated for the maximum load current.
- Ensure battery polarity is correct before connecting.
- Do not attempt to charge a frozen battery.
- Always install batteries in well-ventilated areas.
- Handle batteries with care. Never short-circuit the battery terminals.
- Always consult with battery manufacturer and observe all battery manufacturer recommendations.
- When connecting a battery ensure the nominal battery voltage is correct, and that the battery positive is connected to a positive terminal and the battery negative is connected to a negative terminal.
- Do not connect the "LOAD +" to the BAT terminal, as this may short-circuit the battery or bypass the internal LVD circuitry.
- Use wire and connectors appropriately rated for the highest possible system current when making connections to the battery.

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

- To avoid damage to the LVD contactor, ensure the connected loads do not exceed the maximum current rating of the LVD contactor (15 amps).
- Lithium-ion battery support is available **ONLY** when the unit is connected with an ICT DIN Series Power Distribution Unit.
- 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.

The BATT connector provides a convenient and safe way to connect an external lead-acid or lithium-ion backup battery to the ICT DIN Series Power Supply. An internal 15-amp LVD contactor will disconnect the battery should it discharge below the set voltage level. External battery status monitoring by the optional ICT DIN Series Power Distribution Unit provides a suite of remote battery charge monitoring features.

Install the battery as close to the power supply as possible to minimize cable lengths. Use 12–14 AWG wire.

1. Choose a battery with a nominal DC voltage rating (48 or 24 volts) that matches the power supply's output voltage. For lead-acid batteries, select a battery with an amp-hour (Ahr) capacity rating of at least three times the power supply's maximum charge current setting. For lithium-ion batteries, select a battery with an amp-hour (Ahr) capacity that meets or exceeds the manufacturer's maximum charge rating (typically 1C).

Table 5. Default System Output Settings

Output Settings	ICT360-24DIN	ICT360-48DIN
Output Voltage	27.6 VDC	55.2 VDC
Current Limit	15 A	7.5 A

2. Connect the battery negative terminal to the "BATT −" terminal on the power supply.

3. Install an appropriate in-line DC overcurrent protection device, such as a fuse or circuit breaker on the battery positive lead.

4. With the battery fuse removed or disconnect switch open, connect the fuse or switch to the "BATT +" terminal of the power supply.

5. Set the charge current to be supplied to the battery by rotating the selector dial with a slotted screwdriver. The settings are 100%, 75%, 50% and 25%. The default setting is 100%.

NOTE: The actual current flow to the battery may be less than the setting and is determined by the battery state of charge and temperature.

The internal Low Voltage Disconnect (LVD) contactor is connected in series with the "BATT +" terminal through an internal fuse (15 amps). In order to adjust the LVD settings, the ICT DIN Series Power Distribution Unit (ICT-DIN-PDU6) must be installed together with the ICT DIN Series Power Supply.

Table 6. Default LVD Setpoints

LVD Setting	ICT360-24DIN	ICT360-48DIN
Disconnect	22 VDC	44 VDC
Reconnect	25 VDC	50 VDC

2.10 Load Connections

CAUTION

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

- Ensure that the current draw on the DC outputs does not exceed the output capacity of the ICT DIN Series Power Supply.
- DC-AC inverters should not be connected to any of the load connection points without a battery connected to the unit. DC-AC inverters create significant inrush current and may damage the circuitry or interfere with the operation of power supply when there is no battery connected. Connecting a DC-AC inverter in this way may void the product warranty.

The unit has dual load outputs in a 6-pin connector. Utilize dual wiring for the load connection to minimize the voltage drop due to cable length in cases where the load cable is more than 15 feet from the unit. Use 12–14 AWG wire.

Figure 4. Dual Load Output

1. Install the 6-pin DC output wire clamp connector.

2. Make connections to the load using wire and connectors appropriately rated for the maximum load current. Connect the load device's return to either the "LOAD +" terminal for a negative voltage system or the "LOAD -" terminal for a positive voltage system (see Figure 4). Connect the load device's output to the other terminal.

2.11 Installation of the Breakers (not applicable)

2.12 Installation of the Power Modules (not applicable)

2.13 AC Power Source Connections

AC input wiring to the ICT DIN Series Power Supply must be protected using an outlet with a branch rated circuit breaker of 20 amps or lower value.

Install appropriately rated surge suppression systems on AC, DC, and data connections.

The ICT DIN Series Power Supply provides DC power from single-phase AC power between 108 and 264 volts AC.

1. Create an AC power cable using a 3-conductor cord rated for the maximum input current of the unit (up to 4 amps) by stripping and terminating the three wires in the Line, Neutral, and Ground terminals of the removable AC input connector provided with the unit (AC line labeled "L", neutral labeled "N" and safety ground labeled "⏚"). Use 12–16 AWG wire.

Table 7. AC Source Wiring Connection

AC Voltage	3-Conductor Cord	Connection to ICT Unit
120/240 VAC (Single-Phase)	Line Neutral Ground	Line to Line Neutral to Neutral Ground to Ground
240 VAC (Split-Phase/Two-Phase)	Line 1 Line 2 Ground	Line 1 to Line Line 2 to Neutral Ground to Ground

2. De-energize the AC source by switching off its circuit breaker.

3. Plug the AC connector into the AC input on the unit and tighten the captive retaining screws.

4. Connect the source end of the cord to the de-energized AC feed equipped with a branch rated circuit breaker of 20 amps or less.

5. Energize the AC feed.

2.14 Software Configuration (if applicable)

Applicable when ICT DIN Series Power Supply is used with ICT DIN Series Power Distribution Unit.

2.15 System Wiring Final Verification

Check that all connections to the ICT DIN Series Power Supply are correct and properly tightened and all terminal blocks are firmly installed.

2.16 Energize Loads and Battery Connections

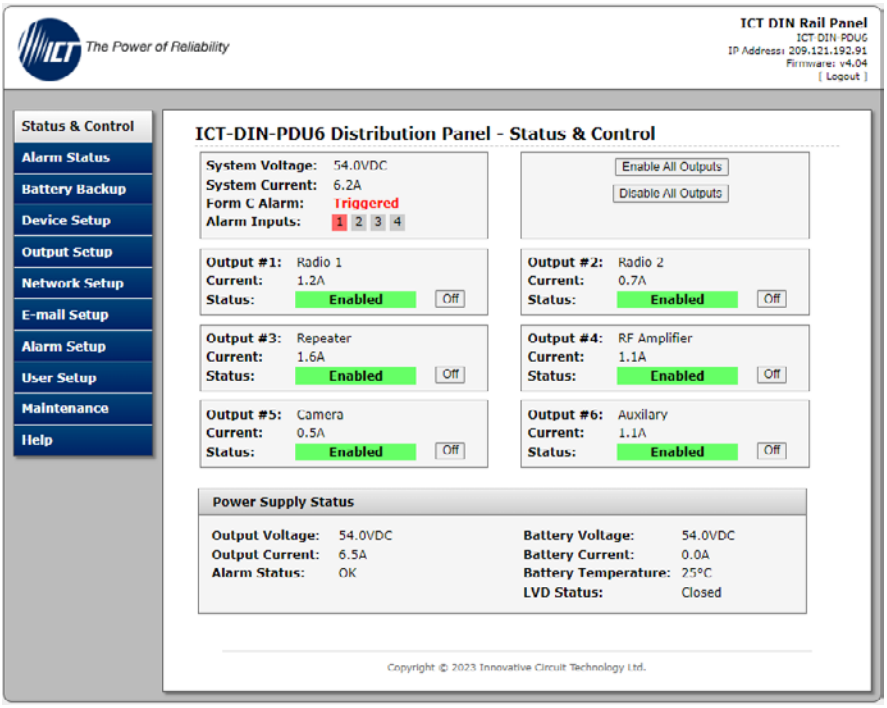
1. De-energize the unit to allow safe modification of the connections, if necessary; then re-energize the unit to energize the loads.

2. Close the external battery breaker or disconnect switch to connect the backup battery string to the system.

3.0 OPERATION: FRONT DISPLAY PANEL (not applicable)

4.0 OPERATION: GRAPHICAL USER INTERFACE

Combined with the ICT DIN Series Power Distribution Unit (ICT-DIN-PDU6), remote monitoring and control is available using a secure, easy-to-use Graphical User Interface (GUI) shown below. Refer to Section 4.0 of the ICT DIN Series Power Distribution Unit manual for a detailed operation of the GUI.



5.0 OPERATION: PARALLEL (not supported)

6.0 OPERATION: STANDARD POWER SUPPLY

The ICT DIN Series Power Supply operating without an ICT DIN Series Power Distribution Unit will behave as a fixed output power supply, with the output voltage and current limit set to the factory default levels (see Table 5).

Check that the unit's green "DC OK" LED is illuminated, indicating normal operation. A red "FAULT" LED indicates an alarm on the unit (see Section 6.2).

Alarm indications can be monitored remotely using the form-C alarm relay contacts accessible via the "ALARM" connector (see Table 10).

6.1 Battery Settings

Battery charge current is adjusted by rotating the "CHARGE CURRENT" selector dial with slotted screwdriver. The adjustable level of battery charge current is 25%, 50%, 75%, and 100% of available output current; the factory default is 100%. Batteries will be charged to the supply output voltage level with charge current limited to the maximum supply output rating. To increase the battery charging current, rotate the selector dial clockwise.

Figure 5. Selector Dial and LEDs

When AC power is present, the ICT DIN Series Power Supply will provide DC voltage to the connected loads and battery. In the event of an AC power failure and providing the external backup battery voltage is greater than the Low Voltage Disconnect (LVD) setpoint, the battery will provide power to connected loads to maintain operation. When the battery voltage decreases below the LVD disconnect level, the internal LVD relay will open, preventing the battery from being excessively discharged.

When AC power is restored, the unit will close the LVD relay and charge the battery to restore battery voltage to the float voltage level.

Table 8. Default Battery Settings

Settings	ICT360-24DIN	ICT360-48DIN
Disconnect	22 VDC	44 VDC
Reconnect	25 VDC	50 VDC
Charge Current	100%	100%

NOTE: For lead-acid battery, the LVD contactor will not close if the lead-acid battery is less than 24 volts on a 48-volt system or 12 volts on a 24-volt system. 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 40 volts (on a 48-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 9. Deeply Discharged Battery Values (typical)

24 VDC Units	48 VDC Units
12 VDC	24 VDC

6.2 Status Indicators and Alarms

The two LEDs on the front of the unit, and the form-C alarm contact indicate the status of the power supply. The form-C alarm contact will be triggered for any condition that illuminates the red "FAULT" LED or shuts down the output of the unit.

Table 10. Power Supply Alarms (cont'd on next page)

Alarm Condition	Trigger Condition	LOAD Output	BATT LVD	Red FAULT LED	DC OK LED
Input AC OK, battery charging	Normal operation, battery charging	Enabled	Closed	Off	On
Input AC OK, battery charged	Normal operation, battery charged	Enabled	Closed	Off	On
AC Voltage Failure	AC input power fails	Battery power only	Closed	On	Off
Over temperature	Triggers when the internal temperature is too high. Clears when back to normal range.	Battery power only	Closed	On	Off
		Limited output voltage	Open	On	Off

Alarm Condition	Trigger Condition	LOAD Output	BATT LVD	Red FAULT LED	DC OK LED
DC Output Failure (Overvoltage)	Triggers when Output Voltage rises above 33/66.0 V for 3 seconds. Clears when Input power cycled off/on.	Battery power only	Open	On	Off
Battery Over temperature	Triggered when Battery Temperature is over 50°C. Clears when Battery Temperature drops below 45°C for 25 seconds (Lead-acid battery only).	Enabled	Open	On	Off
Battery Disconnected by LVD	Triggers when the LVD disconnects the Battery due to fault conditions. Clears when the fault condition is removed.	Enabled	Open	On	Off
Battery Overcurrent (requires DIN PDU)	Triggers when Battery Current rises above Overcurrent threshold (configurable in Web GUI) for 10 seconds. Clears when Battery Current drops 0.5 A below Overcurrent threshold for 10 seconds.	Enabled	Closed	On	Off

7.0 FAQs

7.1 Why does the unit have two load outputs?

For a load that is more than 15 feet away from the power supply, a single loading cable may result in a large voltage drop due to cable length. The ICT DIN Series Power Supply allows for a dual-wiring load connection, thereby reducing the current being carried by each conductor, to minimize the voltage drop over distances of over 15 feet.

7.2 How do I set the charge current to be supplied to the battery?

Battery charge current is adjusted by rotating the "CHARGE CURRENT" selector dial with slotted screwdriver. The adjustable level of battery charge current is 25%, 50%, 75%, and 100% of available output current, and the factory default is 100%.

7.3 Can I mount the unit sideways?

The ICT DIN Series Power Supply is convection cooled and is designed for maximum thermal performance when mounted upright where air vents are located at the top and bottom of the unit. Mounting the unit in other configurations is not recommended and may void the warranty.

7.4 Can the unit communicate with ICT Intelligent Distribution Units other than the ICT-DIN-PDU6?

The ICT DIN Series Power Supply is designed to communicate with the ICT-DIN-PDU6 only. When combined with other distribution units, the remote monitoring and control of the power supply will not be available.

7.5 How do I connect the temperature sensor to the battery?

- Mount the sensor to the mid-level side of the middle battery in a set using the adhesive-backed clip.
- See Section 2.8 for more information.

8.0 PRODUCT SPECIFICATIONS

8.1 Electrical Specifications

Table 11. Overall Electrical Specifications

Parameters	Rating
AC Input Nominal Rating	120 / 240 VAC 50 / 60 Hz
AC Input Operating Range	108 to 264 VAC
AC Input Maximum Range	108 to 264 VAC
Input Power Factor (typical)	0.99 (120 VAC input)
Efficiency	90%
Output V Line Regulation	+/− 0.5%
Network Communication	RJ11 connection for optional ICT-DIN-PDU6

Table 12. Power Supply Specifications

Model	ICT360-24DIN	ICT360-48DIN
AC Input Current (A_{rms} at 230 VAC)	< 2 A	
AC Input Current (A_{rms} at 115 VAC)	< 4 A	
Output Voltage[1] (Nominal Battery float Voltage) (+/− 0.5%)	27.6 V	55.2 V
Output Voltage Range (adjustable with optional ICT-DIN-PDU6)	23.0–30.0 VDC	44.0–60.0 VDC
Output Power (max)	360 W	
Output Current (Max) (+/−5%)	15 A	7.5 A
Output Current (continuous)	13 A	6.5 A
Output Derating	2 % / °C (Derate above 40°C)	
Meter Accuracy, Voltage	Bus voltage readings +/–1%	
Meter Accuracy, Current	Channel current readings +/− 3%	
Efficiency (peak)	91%	90%
Heat Dissipation	122 BTU/hr	137 BTU/hr
Output Noise (max mV_{rms})	< 100 mV p-p	
LVD Threshold V (default)	22 V	44 V
LVD Reconnect V (default)	25 V	50 V
Max Total Battery Current Through LVD	15 A	

[1] Actual operating point may be lower due to battery charge requirement.

8.2 Physical Specifications

Table 13. Physical Specifications

Parameters	Configuration
Output Grounding	Floating
Alarm Output	Form-C dry contact, 0.5 A 60 VDC max (voltage-free contact)
DC Connectors: (Output, Battery)	6-pin removable plug, cage clamp type 12–14 AWG
Alarm / Temp Connector	5-pin removable plug, cage clamp type 22–26 AWG
AC Input Connector	3-pin removable plug, cage clamp type 12–16 AWG
Operating Temperature Range	−30 to +60°C[1]
Storage Temperature Range	−45 to +85°C
Humidity	(Operating) 10–90% (non-condensing) (Storage) 5–95% (non-condensing)
Cooling	Convection (no fan)
Mounting	TS35 (EN50022) standard DIN rail mount

[1] De-rate output 2% per °C above 40°C

8.3 Regulatory Specifications

Table 14. Regulatory Compliance

Category	Certification
Safety, EMC-Emissions, EMC-Immunity, RoHS	RoHS (certified). Designed to meet UL/CSA60950-1, FCC Part 15 Class B limits, and CE (not certified).

8.4 Mechanical Specifications

Table 15. Dimension and Weight

Physical Property	Value
Dimension - L x W x H	5.43 x 3.44 x 5.79 in. (138.0 x 87.4 x 147.2 mm)
Weight	3.68 lbs. (1.67 kg)

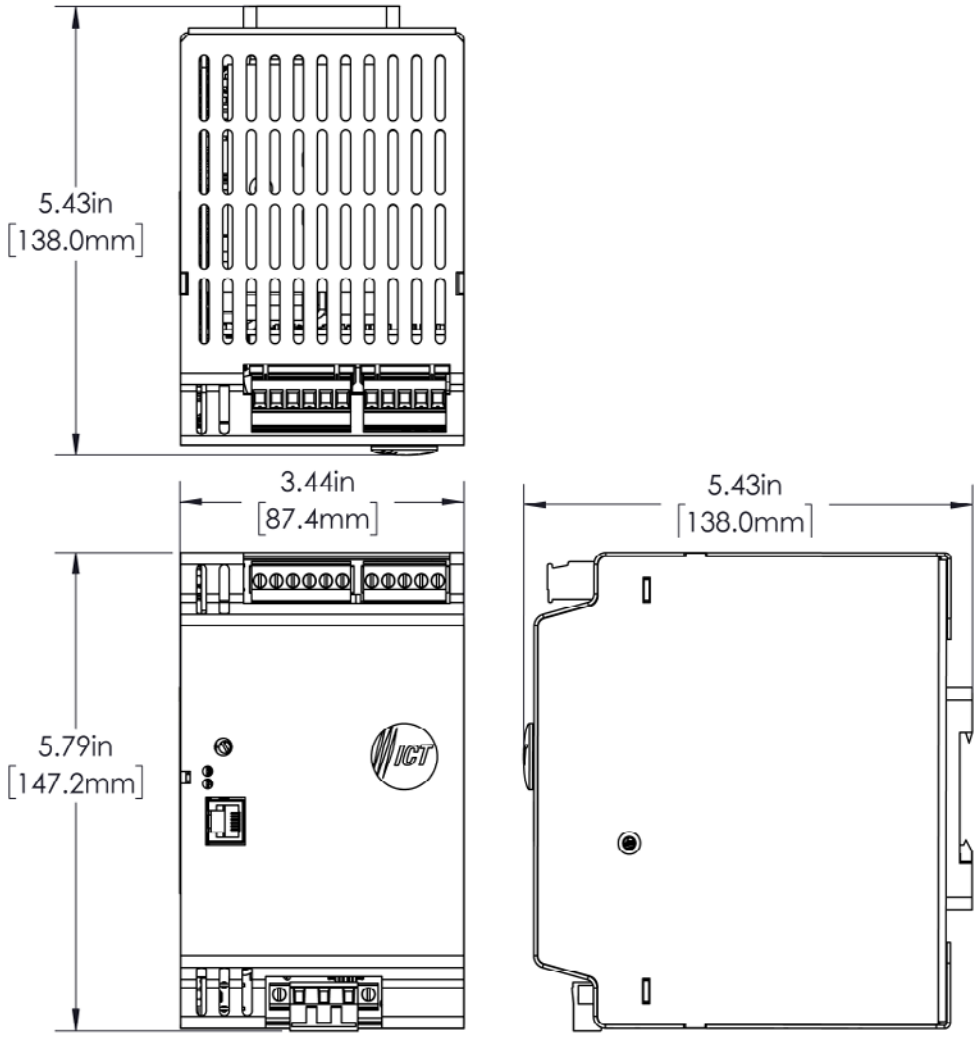


Figure 6. Dimensions

9.0 GLOSSARY

- A, amps — Amperes
- Ahr — Ampere-Hours
- ANSI — American National Standards Institute
- A_{rms} — Amperes (Root Mean Square)
- AWG — American Wire Gauge
- BMS — Battery Management System
- BTU — British Thermal Unit
- CE — Conformité Européenne
- CSA — Canadian Standards Association
- DIN — Deutsche Institut fur Normung
- EMC — Electromagnetic Compatibility
- FCC — Federal Communications Commission
- GUI — Graphical User Interface
- Hz — Hertz
- ISO — International Organization for Standardization
- LVD — Low Voltage Disconnect
- mV_{rms} — Millivolt (Root Mean Square)
- PDU — Power Distribution Unit
- RMA — Return Material Authorization
- RoHS — Restriction of Hazardous Substances
- UL — Underwriters Laboratories
- V — Volts
- VAC — Volts, Alternating Current
- VDC — Volts, Direct Current