MARWAY
POWER SOLUTIONS

Optima™ 829 Series Power Distribution Units

Operating Guide and Reference

Apr 2025 : P/N 501056-000 Rev E

1 General

1.1 Documentation Symbols (EN)

Safety and warning notices as well as general notices in this document are shown in a box with a symbol as follows:

	Symbol for a life threatening danger.
	Symbol for general safety notices (instructions and damage protection bans) or important information for operation.
	Symbol for general notices.

1.2 Safety Notices (EN)

Mortal danger - Hazardous voltage

- This product is classified as pluggable equipment. The mains inlet plug serves as the disconnect device. The mains inlet plug shall be installed so that it is easily accessible.
- This product is equipped with a safety ground connection through the mains inlet plug, as well as a redundant chassis ground screw on the rear panel. Ensure that the product is properly grounded before applying power.
- Disconnect all power to the product prior to servicing control signal cabling.
- Do not open this product as it contains no user serviceable parts inside. All service concerns should be directed to Marway Power Solutions.
- If this product is used in a manner which does not comply with this instruction manual, the protection provided by the equipment may be impaired.
- All work on connections must be carried out under zero voltage (output disconnect), and may only be performed by qualified and informed persons. Improper actions can cause fatal injury as well as serious material damage.

- This product is intended for indoor use only and should not be exposed to excess moisture. Avoid any use of liquids near the equipment, and condition which cause condensation.
- This product is intended for installation in a restricted access location by a skilled person.
- This product is intended for use by an instructed person.
- The equipment is only approved for use within the connection limits stated on the product label.
- The ratings for all output receptacles are marked on the chassis. Be sure to observe the ratings for all connected load equipment.

1.3 Symboles de Documentation (FR)

Les consignes de sécurité et avertissements, ainsi que les avis généraux figurant dans ce document sont présentés dans un encadré avec un symbole, comme illustré ci-dessous.

	Symbole pour les avis de danger potentiellement mortel.
	Symbole pour les avis de mise en garde pour la sécurité personnelle ou pour la protection de l'équipement.
	Symbole pour les avis importants concernant le fonctionnement.

1.4 Avis de sécurité (FR)

Danger de mort – Tension dangereuse

- Ce produit est classé comme un équipement enfichable. La prise d'alimentation secteur sert de dispositif de déconnexion. La prise d'alimentation secteur doit être installée de manière à être facilement accessible.
- Ce produit est équipé d'une mise à la terre de sécurité via la prise d'alimentation secteur, ainsi que d'une vis redondante de mise à la terre du châssis. Assurez-vous que le produit est correctement mis à la terre avant de le mettre sous tension.
- Débranchez toute alimentation électrique du produit avant d'effectuer l'entretien du câblage des signaux de commande.
- N'ouvrez pas ce produit, car il ne contient aucune pièce réparable par l'utilisateur. Tous les problèmes de service doivent être adressés à Marway Power Solutions.
- Si ce produit est utilisé d'une manière non conforme au présent manuel d'instructions, la protection fournie par l'équipement peut être compromise.
- Tous les travaux sur les connexions doivent être effectués sous une tension nulle et ne doivent être effectués que par des techniciens qualifiés et compétents. Des actions inappropriées peuvent entraîner des blessures mortelles et des dommages matériels graves.

- Ce produit est conçu pour une utilisation à l'intérieur uniquement et ne doit pas être exposé à une humidité excessive. Évitez toute utilisation de liquides à proximité de l'équipement et les conditions susceptibles de provoquer de la condensation.
- Ce produit est destiné à être installé par une personne qualifiée dans un endroit à accès restreint.
- Ce produit est destiné à être utilisé par une personne qui a reçu des instructions appropriées.
- L'utilisation de l'équipement est approuvée uniquement dans les limites de connexion indiquées sur l'étiquette du produit.
- Les valeurs nominales de toutes les prises de sortie sont indiquées sur leur boîtier. Assurez-vous de respecter les valeurs nominales de tous les équipements de charge raccordés.

1.5 General Description

The Optima 829 Series (model numbers MPD 829XXX) began as a family of 32 power distribution units (PDUs) designed for use with a single-phase supply power of either 120 Vac, 110–240 Vac, or 200–240 Vac. As of early 2025, many models have shifted to legacy status, but this manual continues to describe all original models.

Each PDU receives mains power through an inlet located at the bottom. Power is distributed to all outlets on one, two, or three branches depending on the model. A variety of inlet and outlet connectors is available.

All models include a circuit breaker, indicator, surge suppression, and Marway's RCM™ networking control system to provide individual outlet switching over Ethernet®. Additionally, an optional inlet power monitoring system with digital display and keypad is available.

All models are constructed of a steel chassis, and designed for fixed mounting within a 1U rack space in an EIA-310 compliant rack enclosure.

1.6 Product Models

Models are primarily organized by size (full height and short height), then by the outlet configurations. Marway's Standard Products Catalog includes more detailed tables with exact model number configurations with inlets, outlets, and options identified.

Be aware that as of early 2025, many models have been shifted to legacy status. That is, only a few models (as found in our Standard Products Catalog) are generally stocked. Support and service is continues to be available for all models. This manual continues to describe all original models.

Chassis Style	Model*	RCM Type	Inlet Configuration	Outlet Configuration			
				IEC C13	IEC C19	NEMA 5-15R	NEMA 5-20R
Full Height (72") IEC	829001	PSW / NSW	C20 chassis	36	6		
	829002	PSW / NSW	C20 cord	36	6		
	829003	PSW / NSW	L6-20P cord	36	6		
	829004	PSW / NSW	L6-30P cord	36	6		
Full Height (72") NEMA	829005	PSW / NSW	5-15P cord			36	
	829006	PSW / NSW	5-20P cord				36
	829007	PSW / NSW	L5-20P cord				36
	829008	PSW / NSW	L5-30P cord				36
Short Height (52.5") IEC	829009	PSW / NSW	C20 chassis	18	3		
	829010	PSW / NSW	C20 cord	18	3		
	829011	PSW / NSW	L6-20P cord	18	3		
	829012	PSW / NSW	L6-30P cord	18	3		

Continued next page.

Chassis Style	Model*	RCM Type	Inlet Configuration	Outlet Configuration
Short Height (52.5”) NEMA	829013	PSW / NSW	5-15P cord	18
	829014	PSW / NSW	5-20P cord	18
	829015	PSW / NSW	L5-20P cord	18
	829016	PSW / NSW	L5-30P cord	18

* A complete part number follows the format of 829NNN-RRR-000 where:
- NNN is part of the base part number from the list of models.
- RRR defines the RCM capabilities where:
  - –PSW = inlet power is monitored, outlets are switched
  - –NSW = inlet power is not monitored, outlets are switched
- 000 is a dash number allowing for future variations

1.7 Product Ratings

By model number, the following are the corresponding inlet and outlet ratings.

Model	Inlet Rating	Outlet Ratings
829001 829002 829009 829010	100–240 Vac, 1ϕ, 50/60 Hz 16 A continuous (20 A maximum)	• 100–240 Vac, 1ϕ, 12 A continuous (15 A max.) per C13 receptacle • 100–240 Vac, 1ϕ, 16 A continuous (20 A max.) per C19 receptacle • 16 A continuous (20 A max.) total per unit (regardless of receptacle count used)
829003 829011	200–240 Vac, 1ϕ, 50/60 Hz 16 A continuous (20 A maximum)	• 200–240 Vac, 1ϕ, 12 A continuous (15 A max.) per C13 receptacle • 200–240 Vac, 1ϕ, 16 A continuous (20 A max.) per C19 receptacle • 16 A continuous (20 A max.) total per unit (regardless of receptacle count used)
829004 829012	200–240 Vac, 1ϕ, 50/60 Hz 24 A continuous (30 A maximum)	• 200–240 Vac, 1ϕ, 12 A continuous (16 A max.) per C13 receptacle • 200–240 Vac, 1ϕ, 16 A continuous (20 A max.) per C19 receptacle • 16 A continuous (20 A max.) total per outlet group (regardless of receptacle count used) • 24 A continuous (30 A max.) total per unit (regardless of receptacle count used)
829005 829013	100–120 Vac, 1ϕ, 50/60 Hz 12 A continuous (15 A maximum)	• 100–120 Vac, 1ϕ, 12 A continuous (15 A max.) per 5-15R receptacle • 12 A continuous (20 A max.) total per unit (regardless of receptacle count used)
829006 829007 829014 829015	100–120 Vac, 1ϕ, 50/60 Hz 16 A continuous (20 A maximum)	• 100–120 Vac, 1ϕ, 12 A continuous (15 A max.) per 5-15R receptacle • 16 A continuous (20 A max.) total per unit (regardless of receptacle count used)

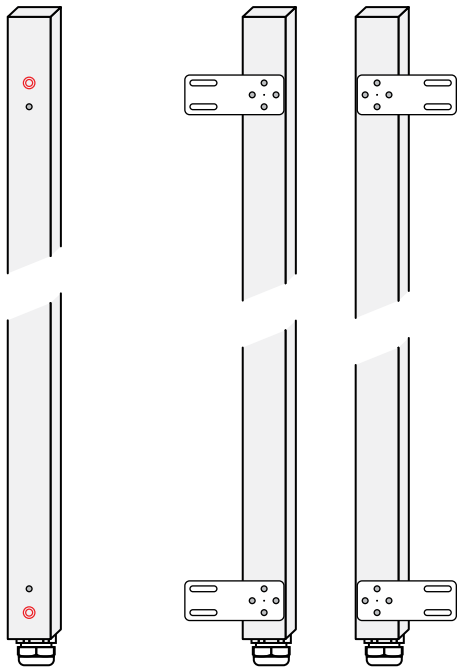
Model	Inlet Rating	Outlet Ratings
829008 829016	100–120 Vac, 1ϕ, 50/60 Hz 24 A continuous (30 A maximum)	• 100–120 Vac, 1ϕ, 16 A continuous (20 A max.) per 5-20R receptacle • 16 A continuous (20 A max.) total per outlet group (regardless of receptacle count used) • 24 A continuous (30 A max.) total per unit (regardless of receptacle count used)

2 Installation

2.1 Installation Notes

The following guidance must be followed for proper installation of the product.

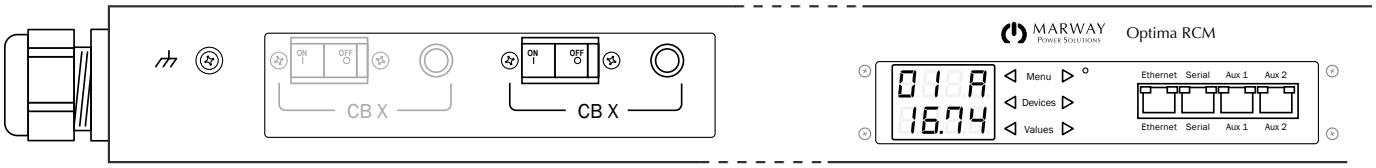
1. Mounting: This product is designed for mounting in an EIA-310 compliant 19” rack. The user is responsible for ensuring the mounting method provides adequate structural support of the unit, and for any attached cables. Inadequate or uneven support may create a hazardous mechanical or electrical condition over time.
2. Brackets: There are multiple mounting configurations derived from the relocatable positioning of the optional mounting plates, or the use of tool-less mounting buttons without plates (concentric circles shown in red). See “4 Specifications” on page 10 for dimensions.
3. Ventilation: The user is responsible for ensuring the mounting location provides adequate ventilation to dissipate heat generated during operation of the product. If the unit has ventilation holes, slots, screens, or fans, these must not be blocked. The unit’s specified maximum ambient temperature rating must not be exceeded.
4. Chassis ground: Grounding should be acheived through the main inlet power cable, assuming that cable is properly grounded at the source end. For additional protection, near the inlet, the chassis includes a redundant chassis ground screw and ground wire. If desired for your installation location, connect the chassis ground wire to the rack cabinet using an appropriate fastener.



5. Optionally, connect the appropriate cables between the PDU outlets and the equipment being powered by the PDU. This may be done later according to the startup procedures suitable to the end-user’s equipment and application.
6. Circuit Breaker(s): Ensure all breakers are in the off position before connecting the PDU’s inlet cable to the facility power source.
7. Facility Power Source: The single-phase facility power source for this product must include an overcurrent protective device capacity as defined in the table below:

Main Inlet	Continuous Current Rating	Mains Protection Required
NEMA 5-15P	12 A	15 A
NEMA 5-20P	16 A	20 A
NEMA L5-20P	16 A	20 A
NEMA L6-20P	16 A	20 A
IEC C20	16 A	20 A
NEMA L5-30P	24 A	30 A
NEMA L6-30P	24 A	30 A

3 Operation



Your model may have 1 or 2 branch breakers.

Your model may or may not have a power meter.

3.1 Startup

In order to monitor or control the system over Ethernet, it will need to be configured to run on your specific network. However, to perform an electrical or installation validation test, or even to run the system indefinitely without the use of the network, the unit can be run without first configuring the software.

By default, the system will enable all outlets, though it may take a minute or so before outlets are switched on after power is applied. This delay is caused by the software system starting up, and eventually setting the state of each relay according to configurable settings.

In the sections below, a startup process is described suitable for first-time network setup, or running without the software.

> The breaker(s) can be used to manually cut power from the outlets. However, even with the circuit breaker(s) Off, as soon as the inlet of the PDU is plugged into a live facility outlet, the control system of the PDU is powered, and the software will start running.

3.1.1 Startup Without Configuring the Software

It is assumed the PDU is not plugged into the facility power source.

1. Switch all breakers on the PDU control panel to the Off position.
2. If there is a facility disconnect switch for the PDU inlet, switch that Off.
3. Insert the PDU's inlet connector into the facility mains power source. If there is a facility power disconnect, switch that to the On position.

   3.1. At this point, the PDU control system is energized. Outlets will not have power, because the PDU's breaker(s) are off, but the software will begin its startup process. The default factory setting configures the software to switch the outlet relays on, however, while the breaker(s) are off, power is not actually delivered to the outlets. Allow about a minute for the software to switch on the relays.
4. Switch the breaker(s) to the On position, and the indicator(s) will be lit. This indicator does not necessarily mean power is applied to the outlets. It simply means the breaker is on and power is *available* to that branch's outlets. The internal outlet control relays are able to prevent power from reaching the outlets. However, with a factory default setup, power should now be applied to all outlets.

The PDU can continue to be used in this way as long as needed. The software can be configured later, or can be left unconfigured if it will not be used.

3.1.2 Startup to Configure the Software

The document *Optima RCM User Guide : Software and Basic Controls Reference* located on our website at http://www.marway.com/docs is the complete resource for the process of configuring the network settings, and other software features of the PDU. Obtain that document, and review the Getting Started chapter.

In effect, prepare the Serial and Ethernet connections to the PDU as described in the *Software Guide*, then use the startup process described above in "3.1.1 Startup Without Configuring the Software" on page 9.

3.2 Ethernet and Serial Control

The document *Optima RCM User Guide : Software and Basic Controls Reference* located on our website at http://www.marway.com/docs is the complete resource for how to setup, configure, and operate the Optima RCM software over serial, Telnet, SSH, HTTP, SNMP, and RESTful API.

The Ethernet connection supports 10/100 Base-T, IPv4 DHCP and manual addressing. It is recommended to use a manual address, or DHCP in conjunction with MAC ID reservations so that the IP address stays consistent.

The Serial interface is RS-232 implemented in an RJ45 connector. A protocol conversion cable with a USB connection at one end and an RJ45 at the other end is ideal for connecting a computer to the Serial port. Marway offers these cables as part number 311118-000. They can also be found on many online cable retailer web sites.

3.3 Breakers

Various models have one or two breakers.

When there is a single breaker, in effect this behaves like a main breaker, protecting the whole unit, and providing on/off control for the whole unit.

When there are two breakers, each breaker protects one group of outlets. Outlets are organized into identical groups. Following the length of the PDU from the inlet, the first breaker operates the first group of outlets, etc.

Each breaker has it's own indicator. When lit, power is being supplied to the correlating outlet group.

All models use 2-pole breakers with both line and neutral routed through the breaker.

3.4 Digital Power Meter Option

If the PDU is equipped with an inlet power monitoring system, the front control panel will include a digital display and keypad.

The display will default to showing the amperage being drawn by the system as a whole (all outlets, plus the internal control system). It will update approximately every 3 seconds.

The keypad can be used to navigate through power values for volts, amps, watts, voltamps, voltamps reactive, power factor, and Hertz.

For complete display and keypad details, refer to the document *Optima RCM User Guide : Software and Basic Controls Reference* located on our website at http://www.marway.com/docs. Obtain that document, and review the Display and Keypad Operation c

4 Specifications

Inlet Voltage Options

- 120 Vac, 50/60 Hz, single phase
- 100–240 Vac, 50/60 Hz, single phase
- 200–240 Vac, 50/60 Hz, single phase
- All voltages are listed as nominal input sources.

Current Capacity Options

- 12 A continuous load / 15 A maximum
- 16 A continuous load / 20 A maximum
- 24 A continuous load / 30 A maximum
- Based on NEC regulations, traditional load ratings are de-rated to 80% for continuous duty. For example, a traditional 30 A maximum rating is now interpreted and labeled as a 24 A continuous duty rating. Optima current ratings are shown with continuous/maximum rating values.

Overload Protection (standard)

- All models include UL 489 two-pole circuit breakers.
- All single-phase models are wired with both line and neutral passing through the two-pole circuit breaker.
- All multi-breaker models are wired with one outlet group per breaker.

Surge Suppression (standard)

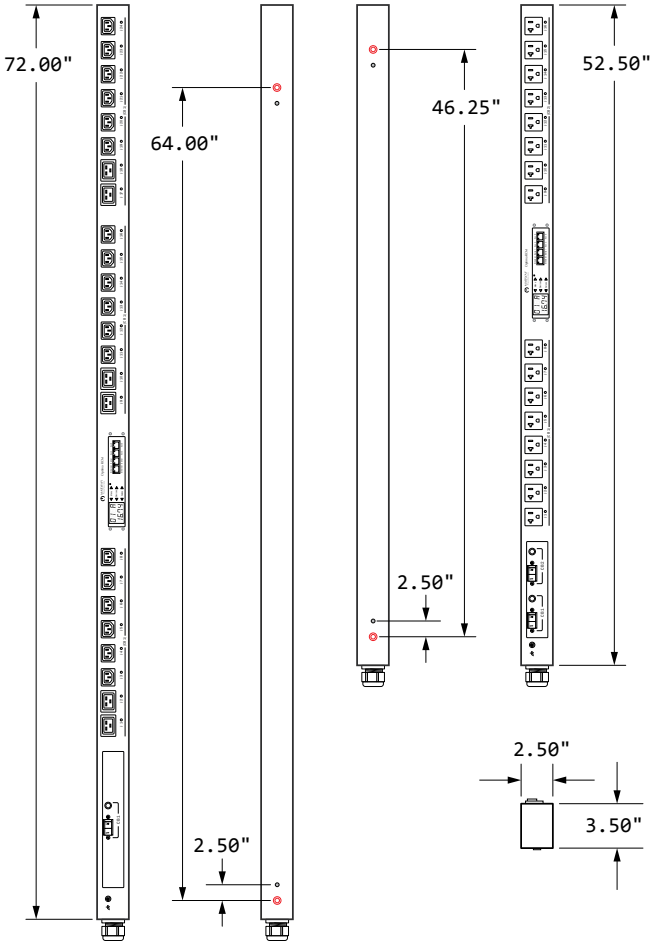
- All models include a thermally protected varistor.
- 120 Vac models have a single-pulse energy rating of 100 joules.
- 240 Vac models have a single-pulse energy rating of 170 joules.
- All models have a peak surge current rating of 10,000 A for a single pulse 8x20µs wave.

Environment

- Operating Temperature: 32°F to 122°F
- Maximum Altitude: 6,562 feet
- Relative Humidity: 5% to 85% non-condensing

Dimensions

- Typical for all outlet types
- Download detailed drawings from web site
- Mounting by brackets or tool-less buttons, see “Installation”



Networking

Ethernet 10/100T
- IPv4: DHCP, Static

Web Interface
- HTTP, HTTPS

Command Line Interface
- Telnet, SSH, RS-232

SNMP
- v2/v3
- Access to power data, alarms, outlet switching

Alerts
- Email over SMTP
- SMS over SMTP
- SNMP v2/v3 Traps

Scriptability
- RESTful API
- Telnet/SSH
- SNMP

Other Protocols
- SNTP, SNMP, FTP

5 Contact and Support

5.1 Repairs

If not otherwise arranged between Marway and the customer, repairs must be carried out by Marway. The unit must be returned to Marway clearly labeled with a Return Materials Authorization (RMA) number. Contact Marway Support to obtain an RMA. Package the equipment adequately and send it, together with a detailed description of the problem, and if still under warranty, a copy of the invoice, to the address below.

5.2 Contact Options

Problems with or questions about operation of the unit, use of optional components, with the documentation or software, can be addressed to technical support either by telephone or email.

Address	Email	Telephone
Marway Power Solutions 1721 S. Grand Ave. Santa Ana, CA 92705	Technical support: support@marway.com All other issues: info@marway.com	714-917-6200

5.3 Two Year Warranty

Marway Power Solutions warrants each of its manufactured units to be as described in its specifications, made with quality materials and good workmanship, but also limited by this warranty and no other.

Two Year Warranty — For a period of two years following the date of shipment, Marway will repair or exchange, at Marway's sole discretion, any unit purchased shown to be defective in materials or workmanship when used for its intended purpose. This will be done at no charge to the purchaser. Purchaser will return unit(s) at its own expense and only with prior autorization from the factory. Instructions will be given by an authorized factory representative at the time an inquiry is made. All repairs will be made at Marway Power Solutions' corporate headquarters.

Transferability — This warranty is fully transferable to the end user if the purchaser is an original equipment manufacturer and the Marway unit is a component of their product or system sold to an end user.

Further Limitations — Marway's liability under the terms of this warrenty and the purchase and sale of its units is limited to the repair or replacement of its units. Marway shall in no situation be liable for any special, consequential damages or other damages of any kind or nature. Marway's warranty does not cover units damaged by accident, abuse, misuse, unauthorized repair and such-the-like occurences out of Marway's control.

Exclusion of all Implied Warranties — **There are no warranties which extend beyond description on the face hereof. There are no warranties that any unit is fit for any particular purpose nor that they are merchantable.**

Global Support Contacts

Web: www.marway.com
Email: support@marway.com
sales@marway.com
Phone: 800-462-7929 (7am–5pm PST)

There may be updates to this documentation at:
http://www.marway.com/docs

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MARWAY
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