



# Optima™ 533 Series Power Distribution Units

## Operating Guide and Reference



Mar 2025 : P/N 501035-000 Rev F

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# 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 533 Series (model numbers MPD 533XXX) began as a family of fifteen power distribution units (PDUs) designed for use with 120/208 Vac 3-phase supply power. As of early 2025, many models have shifted to legacy status, but this manual continues to describe all original 15 models.

Each PDU receives mains power through a NEMA L21-30P inlet located on either the front or rear panel depending on the model. Power is distributed as 120 and/or 208 Vac through eight branch circuits, each outfitted with a variety of optional outlets.

All models include an EMI filter, surge suppression, and remote-EPO feature. Circuit 1 of all models includes one unswitched NEMA 5-20R duplex receptacle (J1) which is not controlled by the remote-EPO feature. Circuits 2–6 are also a 5-20R duplex subject to the remote control bus (EPO). Circuits 7 and 8 are either the same as 2–6, or are one outlet each of either L5-20, L5-30, L620, or L6-30. Some models feature a “9th circuit” with an L21-30R outlet, which is fed directly from the main breaker (there is no branch breaker).

All models are constructed of a steel chassis, and designed for fixed mounting within a 3U rack space in an EIA-310 compliant rack enclosure.

## 1.6 Product Models

Models are primarily organized by what type of power inlet they have. Then by the outlet configurations. All models have a continuous duty rating of 24 A per phase at the inlet (30 A maximum).



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.

Inlet Configurations			Outlet Configurations					
Front Panel Straight*	Front Panel Flanged*	Rear Panel Straight*	Straight Blade Duplex	Twist Lock				
				5-20R	L5-20	L5-30	L6-20	L6-30 L21-30
533000	533005	533010	8					
533001	533006	533011	6		2			1
533002	533007	533012	6			2		1
533003	533008	533013	6				2	1
533004	533009	533014	6					2 1

\* Each model has one of two “dash number” designators:

- -000 = the remote EPO is a Normally Open (N.O.) type
- -001 = the remote EPO is a Normally Closed (N.C.) type



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## 1.7 Product Ratings

All models of the 533 Series have the same input rating. Outlet ratings vary depending on the outlet type.

Inlet Rating	Outlet Ratings
NEMA L21-30P	120 Vac, 1 $\Phi$ , 16 A continuous (20 A max.) per NEMA 5-20R duplex receptacle
120/208VAC	120 Vac, 1 $\Phi$ , 16 A continuous (20 A max.) per NEMA L5-20R receptacle
3 $\Phi$ 4P5W	120 Vac, 1 $\Phi$ , 24 A continuous (30 A max.) per NEMA L5-30R receptacle
50/60Hz	208 Vac, 1 $\Phi$ , 16 A continuous (20 A max.) per NEMA L6-20R receptacle
24 A continuous	208 Vac, 1 $\Phi$ , 24 A continuous (30 A max.) per NEMA L6-30R receptacle
30 A maximum	120/208 Vac, 3 $\Phi$ , 24 A continuous (30 A max.) per NEMA L21-30R receptacle
	24 A continuous (30 A max.) total per phase regardless of receptacle combination
	(Outlet combinations are for connection flexibility, not for increased current capacity.)



## 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 at the front and rear of the unit, and for any attached cables. Inadequate or uneven support may create a hazardous mechanical or electrical condition over time.
2. **Ventilation:** The user is responsible for ensuring the mounting location provides adequate ventilation to dissipate heat generated during operation of the product. Ensure the product is securely mounted before applying power. 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.
3. **Chassis ground:** Grounding should be achieved through the main inlet power cable, assuming that cable is properly grounded at the source end. For additional protection, the rear of 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.
4. **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.
5. **If applicable, connect the cabling between the PDU and remote EPO control panel.**
6. **PDU Main Breaker:** Ensure the Main Breaker on the front of the PDU is in the off position before connecting the PDU's inlet cable to the facility power source.
7. **Facility Power Source:** The three-phase facility power source for these product must include an overcurrent protective device capacity as defined in the table below.

Main Inlet	Continuous Current Rating	Mains Protection Required
NEMA L21-30P	24 A	30 A
NEMA L21-30 RM	24 A	30 A



## 2.2 Installation Mounting

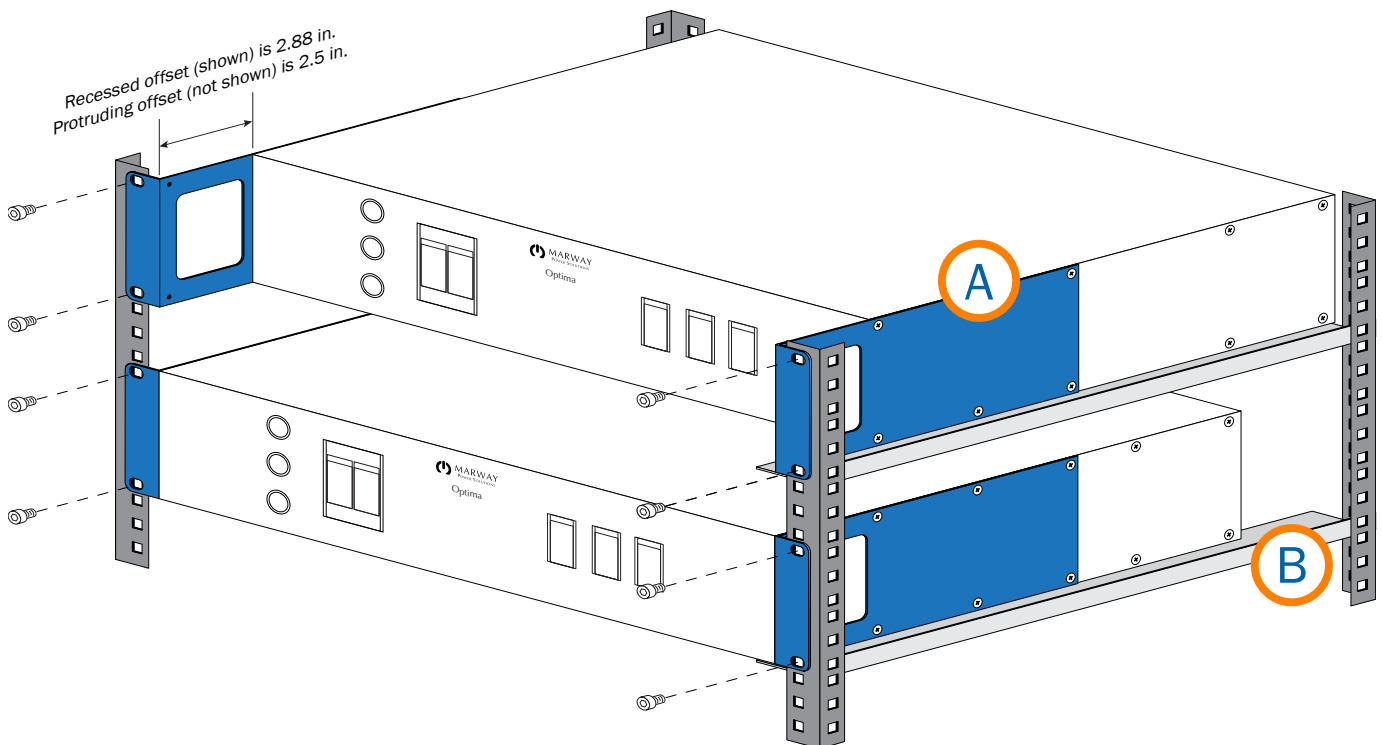


EN — These products are heavy. The flange mounting ears are designed to hold the PDU securely against the rack mounting rails, but are NOT designed to support the weight of the product vertically. The end user is responsible for ensuring the product's weight is properly supported by the rack's infrastructure (which may require adding support rails).

FR — Ces produits sont lourds. Les oreilles de montage à bride sont conçues pour maintenir solidement l'unité de distribution de l'alimentation contre les rails de montage, mais NE sont pas conçues pour soutenir le poids du produit verticalement. Il incombe à l'utilisateur final de s'assurer que le poids du produit est correctement supporté par l'infrastructure du bâti (ce qui peut nécessiter l'ajout de rails de support).

(A) The mounting ears, highlighted in blue, can be positioned in one of three ways relative to the front. (1) Flush with the front (bottom unit). (2) With the PDU recessed from the front (top unit) which may be useful for units with front power inlets to allow the inlet power cable to route through the side access hole. (3) With the PDU protruding beyond the front of the brackets (not shown) for cabinet with deeply inset rails. The mounting brackets can also be flipped (not shown) to mount flush with the rear of the PDU.

(B) The PDU should be supported by rails (not provided). The PDU is too heavy to mount only with the ears.

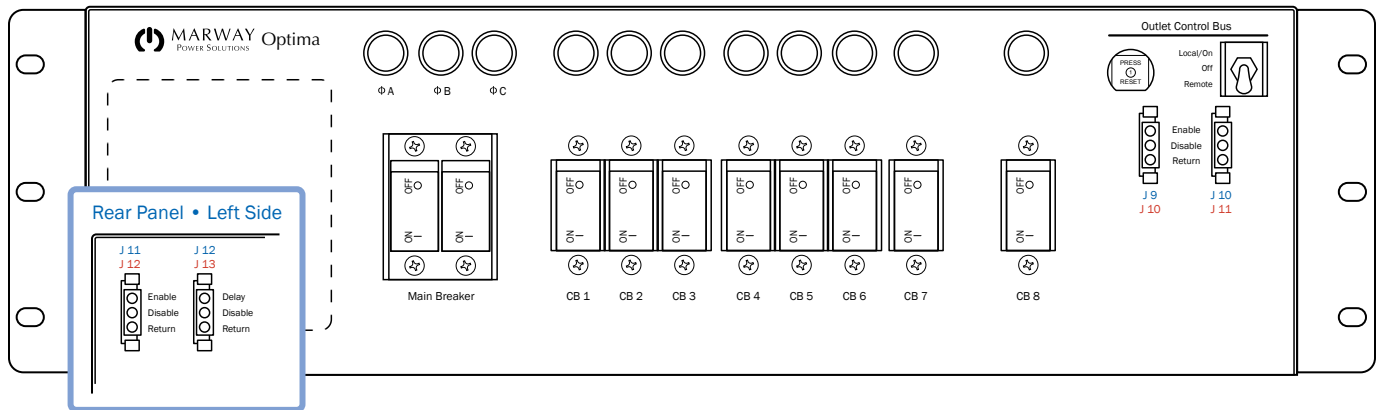


Note the illustration is conceptual, and not intended to depict any specific model, chassis size, or exact bracket hole pattern.





## 3 Operation



### 3.1 Startup

Switch all breakers on the PDU control panel to the off position. Switch the **Outlet Control Bus** mode switch to the up position labeled **Local/On**. (This forces the PDU into local mode, ignoring any existing remote panel for now.)

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. At this point, the PDU is energized, though all indicator lamps will be off.

Switch the PDU's **Main Breaker** to the On position, and the ΦA, ΦB, ΦC indicators will be lit. All branch circuits are ready for use. As each branch breaker is switched on (e.g. **CB1**, **CB2**, etc.), the indicator above it will be lit.

If there is not an EPO panel connected to the PDU, leave the switch in the up **Local/On** position. If there is remote EPO panel connected to the PDU, such as Marway's Commander UCP 5000, flip the **Outlet Control Bus** switch to the down **Remote** position.

### 3.2 Breaker Controls

The PDU has three distinct groups of controls: the main breaker, the branch breakers, and the remote EPO system.

#### 3.2.1 Main Breaker

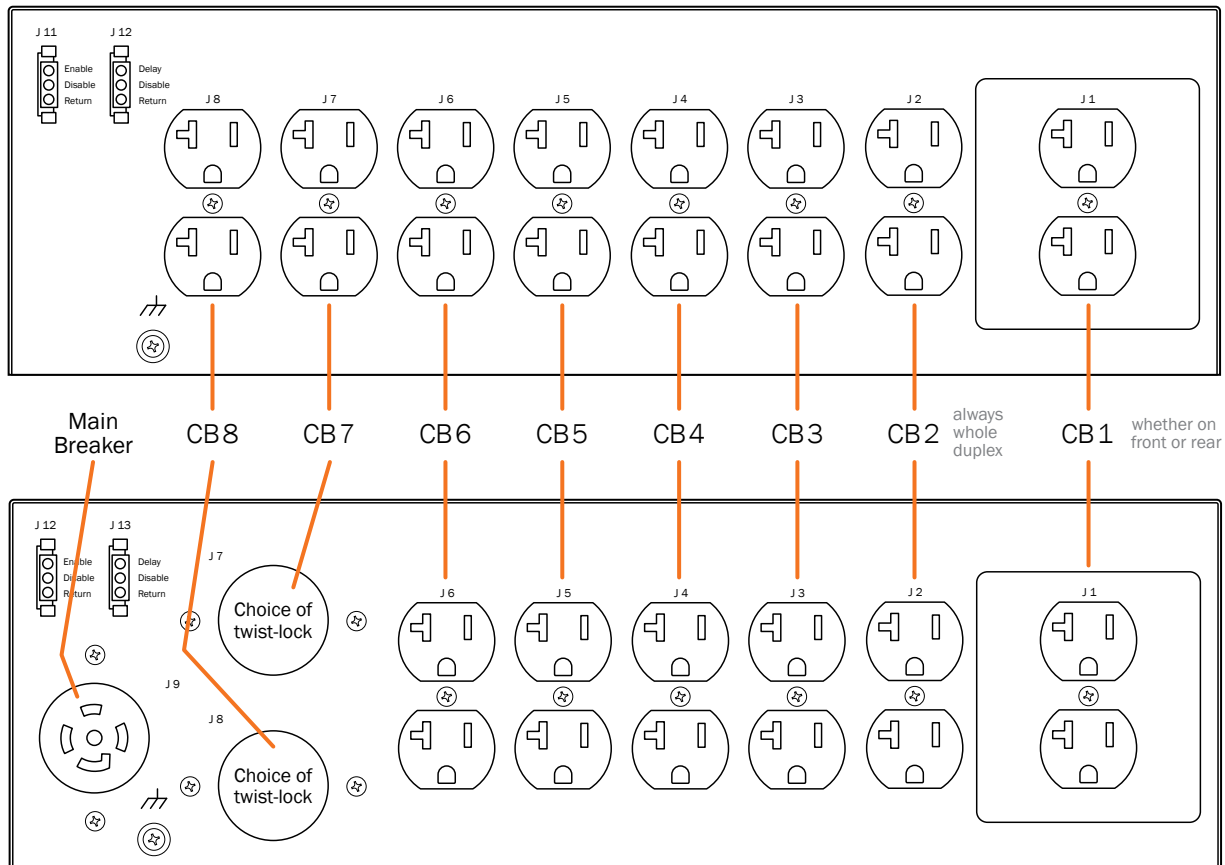
The **Main Breaker** prevents or enables power to all PDU outlets. When **Main Breaker** is switched on, the indicators labeled ΦA, ΦB, ΦC will be lit.

This breaker includes a breaker guard with a lockout feature. Attaching a small padlock (not included) through the guard hole will prevent the breaker from being switched on.

#### 3.2.2 Branch Breakers

All Optima 533 models include eight branch breakers. All are rated at 16 A continuous load (20 A maximum). CB1 is for J1 (both outlets of the duplex). CB2 is for J2, et cetera. There is no breaker for the L21-30 outlet J9 on the models where this outlet is included. Each breaker has an unlabeled, corresponding indicator just above it. When the breaker is in the on position, the corresponding lamp will be lit.





### 3.2.3 Controls Breaker

There is a small pop-out breaker protecting the control system components. This isn't used during normal operation. If it were to pop out, try pressing it back in. If it fails to stay in, there may be failure in one of the controls which is shorted, or is drawing excessive current. This would likely indicate the need for an RMA repair. Contact Marway support.

## 3.3 EPO Controls

All Optima 533 PDUs include the controls to interface to Marway's Commander UCP 5000 Remote On/Off/EPO panels and similar compatible panels. This panel is not required to operate the PDU.

### 3.3.1 Remote Mode Switch

The **Outlet Control Bus** has a three-mode switch which is used as a local override to the overall remote command system. The three modes are labeled **Local/On**, **Off**, and **Remote**.

When there is not a remote control panel connected:

- **Local/On** (up position) is the normal operating mode.
- **Off** (center position) causes an internal contactor to disengage power from all branches except for the CB1/J1 branch which continues to be powered. Therefore, **Off** disconnects power to almost all outlets even if the breakers are switched on.
- **Remote** (up position) will behave like **Off**.

When there is a remote panel connected to the PDU:

- **Remote** (down position) is the normal operating mode. Outlets are subject to the branch breakers, the main breaker, and the upstream remote panel On/Off/EPO controls.
- **Local/On** (up position) causes the PDU to ignore the On/Off/EPO commands of the remote panel. The local breakers will then be in sole control of the outlets.
- **Off** (center position) causes an internal contactor to disengage power from all branches except for the CB1/J1 branch which continues to be powered. The PDU will ignore the On/Off/EPO commands of the remote panel. Therefore, **Off** disconnects power to almost all outlets even if the breakers are switched on.



If there will not be a remote On/Off/EPO panel connected to the PDU, switch the **Outlet Control Bus** mode switch to the up position labeled **Local/On**. This is the normal operating position for any unit with no remote panel. (The other positions will prevent power from getting to the outlets.)



Whether there is a remote control panel connected or not, toggling the **Outlet Control Bus** mode switch to the center position labeled **Off** will disconnect power to almost all outlets even if the breakers are switched on. The **Off** mode causes an internal contactor to disengage power from all branches except for the CB1/J1 branch which continues to be powered.

### 3.3.2 Remote Bus Connectors

There are a total of four connectors, but note that there are two types of connectors. Based on the label of the top pin, we call the two types the standard “enable” type, and the alternative “delay” type. There are three of the standard type (2 front, 1 back), and one of the delay type (on the back).

Multiple PDUs can be wired in a daisy-chain fashion to be operated by a single remote panel.

Remote Bus connectors have two different numbering systems depending on the model. (Why? A convention from the military equipment realm is that all connectors are labeled sequentially. Since some models have 8 outlet junctions, and some have 9 outlet junctions, the subsequent connectors for the Remote Bus have labels of either J9, J10, J11, J12, or J10, J11, J12, J13.)

#### Models with J1 through J8 Outlets

The standard enable connectors are J9, J10, J11. These are all wired in parallel.

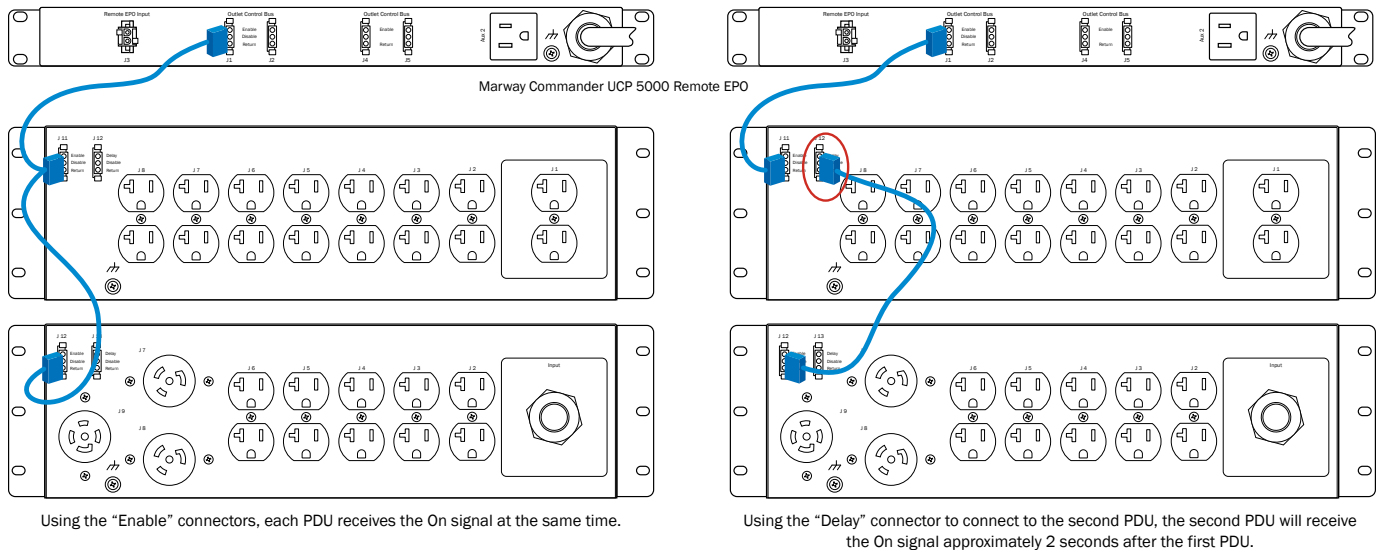
The delay connector is J12. When used, the On signal from the remote panel is delayed by about 2 seconds.



## Models with J1 through J9 Outlets

The standard enable connectors are J10, J11, J12. These are all wired in parallel.

The delay connector is J13. When used, the On signal from the remote panel is delayed by about 2 seconds.



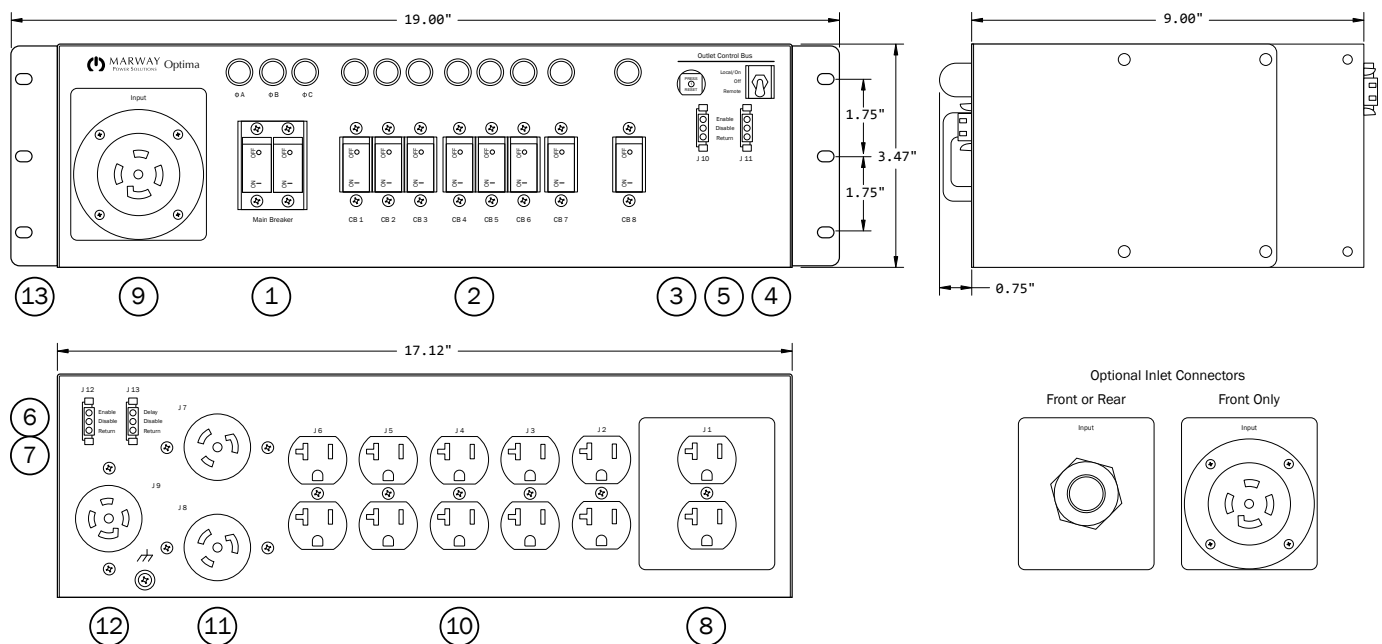
### 3.3.2.1 Remote Bus Connector Wiring

The 3-pin connectors use two low-voltage signals as follows:

- Shorting the **Enable** pin to the **Return** pin with a dry contact will trigger the remote bus Enable signal.
- Shorting the **Disable** pin to the **Return** pin with a dry contact will trigger the remote bus Disable signal.
- Note that the Disable signal has priority, so that if both signals are triggered at the same time, the net result will be Disable.

For additional information about Marway's Commander UCP remote panel, visit the web site at <http://www.marway.com/commander-epo-panels>

## 4 Reference



### Standard Features

- (1) Main 24/30 A breaker and phase-power indicators.
- (2) Branch 16/20 A circuit breakers for outlets. CB1 is for J1. CB2 is for J2, et cetera. There is no breaker for J9 on the models where J9 is included.
- (3) Internal controls 1 A, push-type breaker.
- (4) Remote EPO mode switch. A three-position toggle provides manual control over the remote EPO mode. The Local/On position forces all outlets powered on, and only the remote EPO button will have affect (not the remote on/off). The Off position forces all outlets off, and the remote panel has no affect. The Remote position allows full control of the outlets by the remote panel.
- (5) Front panel remote EPO control bus interface. Two connectors enable the PDU to be daisy chained between a remote EPO panel (such as Marway's UCP) and another PDU, or between two PDUs.
- (6) Rear panel remote EPO interface. A third connector for when a rear connection is more convenient.
- (7) Rear panel remote EPO delay interface. When the Enable signal of a remote panel is triggered, the signal is propagated immediately to all downstream devices through the connectors identified by (5) and (6). This connector (7) introduces a delay of 2 seconds before forwarding the Enable signal. By daisy chaining PDUs with the delay connectors, a staggered start can be created between each downstream PDU.

- (13) Mounting brackets. May be mounted to yield a "flush," front-recessed, rear-facing, or rear-recessed position of the chassis relative to the rack's mounting rails. The brackets include a cutout to allow an inlet cable to be directed into the interior of the rack when the brackets are mounted for a recessed-chassis position. The brackets may also be removed for table top operation, or adaptation of the end user's own brackets.

### Optional Configurations

- (8) A 5-20R duplex at J1 is standard on all models. The location of the J1 duplex and the Inlet connector (9) are swapped on some models. Therefore, the inlet can be located on the rear panel or the front panel.
- (9) Power inlet. Some models include a recessed male connector as shown. Some models include a strain-relieved 9-foot cable with an L21-30 plug.
- (10) All models include at least six 5-20R duplexes.
- (11) On some models, J7 and J8 are twist lock connectors (with a choice of L5-20, L5-30, L6-20, L6-30 where both are the same). On other models, J7 and J8 are 5-20R duplexes.
- (12) Models which include twist locks for J7 and J8 will also include J9 which is always an L21-30 providing pass-through power from the main breaker.



# 5 Specifications

## Inlet Voltage and Current

- All models 120/208 Vac, 50/60 Hz, three-phase wye
- All models 24 A continuous load / 30 A maximum

## Overload Protection (standard)

- All models include a four-pole main circuit breaker wired with all three phases and neutral passing through the breaker.
- All branch breakers are UL 489, 16 A continuous load (20 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.

## Surge Suppression (standard)

- All models include a thermally protected varistor on each phase with a single-pulse energy rating of 120 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

## EMI Filter (standard)

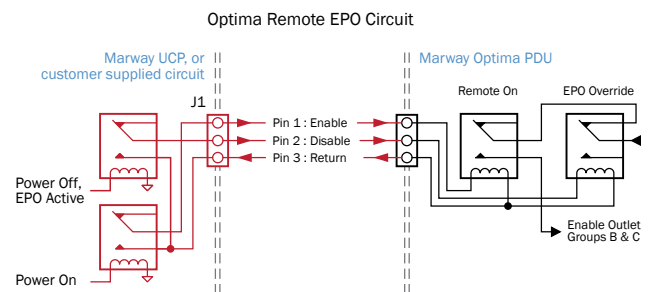
- All models have < 1.0 mA leakage.

Typical Insertion Loss (closed 50 Ohm system)

Frequency (MHz)	0.15	0.5	1	10	30
Common Mode (dB)	55	62	65	50	45
Differential Mode (dB)	36	55	60	60	50

## Remote EPO (standard)

- Panel connector: AMP #1-480304-0, 250 Vac, 4 A maximum.
- Mating cable connector: AMP #1-480305-0.
- Where Outlet Control Bus is labeled starting with J9, the J9, J10, J11 connectors are wired in parallel. J12 delay the enable signal.
- Where Outlet Control Bus is labeled starting with J10, the J10, J11, J12 connectors are wired in parallel. J13 delay the enable signal.
- All outlets other than J1 are managed by the Remote Control Bus.
- J1 outlets (and outlet J9 if present) are always powered relative to the Main Breaker state.



## 6 Contact and Support

### 6.1 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.

### 6.2 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

### 6.3 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 authorization 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 warranty 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 occurrences 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.**



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## Global Support Contacts

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

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

# Optima™ 533 Series Power Distribution Units

## Operating Guide P/N 501035-000 Rev F



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