

Power Solutions for Data Center and Open Compute





Introduction Murata has been developing and manufacturing a range of modular, scalable, High-Density, Titanium products including AC-DC Power Supplies and DC-DC Converters for various applications for more than 35 years. Recently, Murata has focused efforts on Power Distribution Sub-Systems used in the emerging Data Center Market. Our latest product offerings include shelf systems support Open Compute V2 and V3 Power Shelf Specifications. While typical OCP Power Shelves only support 3-phase AC input, our Power Shelves support Single Phase AC, 3-phase AC and HVDC (200-400Vdc) inputs, allowing your organization to achieve a leading edge, power efficient Data Center with either an AC or DC input power architecture.



Key Components

- ❖ 21" 10U Power Shelf
- ❖ 19" 10U/2RU Power Shelf
- ❖ 12V, 3kW Titanium Efficiency Power Supply
- ❖ 54V,50V 3.6kW Titanium Efficiency Power Supply
- ❖ 50V 5.5kW Titanium+ Efficiency Power Supply
- ❖ RMU (Remote Management Unit)
- ❖ ORV3 System Support Products

Murata's Key Power Shelf Features:

- ❖ Up to 15kW/12kW Output Power @12Vout
- ❖ Up to 21.6kW Output Power @54Vout,50Vout
- ❖ Up to 33kW Output Power @50Vout
- ❖ PSU conversion efficiency higher than 96% at 50% of load (80PLUS Titanium class)
- ❖ Available input configurations: Single-phase AC, 3-Phase AC & HVDC

Data Center and Open Compute Power Solutions

The OCP power distribution architecture for Centralized Power Supply Systems is an ideal solution for applications requiring a high degree of redundancy and expandability. Murata's OCP System Support products provide a Total Power Solution capable of meeting today's and tomorrow's power requirements.

50V Architecture System Components:

3.6kW Power Supply

MWOC68-3600-B-RM is an 80 PLUS certified Titanium, 3,600-Watt front-end power module that provides a 51.0Vdc Main and 12Vdc Standby Outputs. Up to six Power Supply Units (PSUs) fit into a 21" Shelf.

Features

- 3,600W Output Power
- Max.50.5Vdc 72A Output
- Hold-Up Time 12ms @3,600W and 14ms @ 3,000W Output
- Size : 67(W)×490(L)×40(H)mm (2.63"×19.29"×1.57")
- Active Current sharing together with Droop Current sharing for Main Output
- Hot-Swappable



5.5kW High Power Supply(Under Development)

MWOC67-5500-B-RM is a High Efficient ORV3 5,500W front-end power module featuring a 50.0Vdc Output.

Features

- 5,500W Output Power
- Max.50.0Vdc 112.3A Output
- Hold-Up Time 20ms @5,500W Output
- Size : 67.0 (W)×640(L)×40(H)mm (2.67"×26.38"×1.57")
- Active Current sharing together with Droop Current sharing for Main Output
- Hot-Swappable

10U 21" Power Shelf

MWOCS-211-P-C of 21" 10U Power Shelves accommodate up to six 3.6kW Power Supply Units (PSUs).

This Shelf provides up to 21.6kW Total Output Power, configured for N+1 and N+N redundancy.

Features

- 21.6kW Total Output Power
- 50.5/54.5V Output
- OCP(V3) System Support
- UP to 6 PSUs per Shelf
- 10U Height 537(W)x720(L)x44.5(H)mm (21.14"x28.34"x1.75")
- N+1 / N+N Redundancy
- Designed to support BBU
- Available in Parallel Operation
- Hot-Swappable



MWOCS-211-P-C-S of 21" 10U Power Shelves accommodate up to six 3.6kW Power Supply Units (PSUs).

Single Input version of MWOCS-211-P-C.

This Shelf provides up to 20.4kW Total Output Power, configured for N+1 redundancy.

Features

- 20.4kW Total Output Power
- 50.5/54.5V Output
- OCP(V3) System Support
- UP to 6 PSUs per Shelf
- 10U Height 537(W)x720(L)x44.5(H)mm (21.14"x28.34"x1.75")
- N+1 Redundancy
- Single Input
- Designed to support BBU
- Available in Parallel Operation
- Hot-Swappable



10U 19" Power Shelf

MWOCES-191-P-C of 19" 10U Power Shelves accommodate up to six (6) 3.6kW Power Supply Units (PSUs.).

This Shelf provides up to 21.6kW Total Output Power, configured for N+1 and N+N redundancy.

Features

- ❖ 21.6kW Total Output Power
- ❖ 50.5/54.5V Output
- ❖ OCP(V3) System Support
- ❖ Up to 6 PSUs per Shelf
- ❖ 1RU Height 448.6(W)x720(L)x44(H)mm (17.66"x28.34"x1.73")
- ❖ N+1 / N+N Redundancy
- ❖ Designed to support BBU
- ❖ Available in Parallel Operation
- ❖ Hot-Swappable



10U 21" High Power Shelf(Under Development)

MWOCES-211-P-D is a 33.0kW, 21" 10U Power Shelf that provides a delivery system for up to six 5.5kW Power Supply Units (PSUs.).

It is intended to support 50.0V Power Distribution Architectures in OCP(V3) Systems.

Features

- ❖ 33.0kW Total Output Power
- ❖ 50.0V Output
- ❖ OCP(V3) System Support
- ❖ UP to 6 PSUs per Shelf
- ❖ 10U Height 537(W)x720(L)x45(H)mm (21.14"x28.34"x1.77")
- ❖ N+1 / N+N Redundancy
- ❖ Designed to support BBU
- ❖ Available in Parallel Operation
- ❖ Hot-Swappable



1RU 19" High Power Shelf(Under Development)


MWOCS-191-P-D is a 33.0kW, 19" 1RU Power Shelf that provides a delivery system for up to six 5.5kW Power Supply Units (PSUs.) It is intended to support 50.0V Power Distribution Architectures in OCP(V3) Systems.

Features

- ❖ 33.0kW Total Output Power
- ❖ 50.0V Output
- ❖ OCP(V3) System Support
- ❖ UP to 6 PSUs per Shelf
- ❖ 1RU Height 448(W)x720(L)x44.4(H)mm (17.63"x28.34"x1.74")
- ❖ N+1 / N+N Redundancy
- ❖ Available in Parallel Operation
- ❖ Hot-Swappable

Configuration Examples

❖ **50V Architecture**

MWOCS-211-P-C	Configuration Example and Required Quantity																														
 <p>Features</p> <ul style="list-style-type: none"> • Total Output Power: 3.6kW ~ 21.6kW (N+0) • Can be deployed in ORV3 Rack • Supports Multi-Input Configuration; any Input can be used 	Application: 3-Phase Wye Input; installed in ORV3 Rack.																														
	<table border="1"> <thead> <tr> <th>Related Products</th> <th>Description</th> <th>10.8kW(N+1)</th> <th>21.6kW(N+0)</th> </tr> </thead> <tbody> <tr> <td>MWOCS-211-P-C</td> <td>Power Shelf</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOCP68-3600-B-RM</td> <td>PSU</td> <td>4</td> <td>6</td> </tr> <tr> <td>MWOCP68-B</td> <td>PSU-Blanking Panel</td> <td>2</td> <td></td> </tr> <tr> <td>MWOC-RMU-3</td> <td>Remote Management Unit</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOC-PCA-231W-6-3</td> <td>AC Power Cable</td> <td>2</td> <td>2</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Height</td> <td>10U</td> <td>10U</td> </tr> </tbody> </table>	Related Products	Description	10.8kW(N+1)	21.6kW(N+0)	MWOCS-211-P-C	Power Shelf	1	1	MWOCP68-3600-B-RM	PSU	4	6	MWOCP68-B	PSU-Blanking Panel	2		MWOC-RMU-3	Remote Management Unit	1	1	MWOC-PCA-231W-6-3	AC Power Cable	2	2	Total Height		10U	10U		
Related Products	Description	10.8kW(N+1)	21.6kW(N+0)																												
MWOCS-211-P-C	Power Shelf	1	1																												
MWOCP68-3600-B-RM	PSU	4	6																												
MWOCP68-B	PSU-Blanking Panel	2																													
MWOC-RMU-3	Remote Management Unit	1	1																												
MWOC-PCA-231W-6-3	AC Power Cable	2	2																												
Total Height		10U	10U																												

54V Architecture System Components: 3.6kW Power Supply

MWOC68-3600-D-RM is an 80 PLUS certified Titanium, 3,600-Watt front-end power module that provides a 54.5Vdc Main and 12Vdc Standby Outputs. Up to six Power Supply Units (PSUs) fit into a 19" Shelf and 21" Shelf with Accessory Kit.

Features

- ❖ 3,600W Output Power
- ❖ Max.54.5Vdc 66A Output
- ❖ Hold-Up Time 12ms @ 3,600W Output
- ❖ Size : 68(W)×490(L)×40(H)mm (2.67"×19.29"×1.57")
- ❖ Active Current sharing Main Output, Droop Current sharing for 12VSB Output
- ❖ Hot-Swappable



1U 19" Power Shelf

MWOCES-191-M-B of 19" 1U Power Shelves accommodate up to six (6) 3.6kW Power Supply Units (PSUs.)

This Shelf provides up to 18kW Total Output Power, configured for N+1 and N+N redundancy.

Features

- ❖ 18kW Total Output Power
- ❖ 54.5Vdc Output
- ❖ OCP System Support
- ❖ UP to 6 PSUs per Shelf
- ❖ 1OU Height 448.6(W)×650(L)×45(H)mm (17.66"×25.59"×1.77")
- ❖ N+1 / N+N Redundancy
- ❖ Designed to support BBU
- ❖ Available in Parallel Operation
- ❖ Hot-Swappable



Configuration Examples

54V Architecture

MWOCS-191-M-B



Features

- Total Output Power: 3.6kW ~ 18kW (N+1)
- Can be deployed in ORV2, SPZ and EIA Rack types
- Supports Multi-Input Configuration; any Input can be used

Configuration Example and required quantity

Application: 3-Phase Wye Input; installed in ORV2 Single Power Zone Rack.

Related Products	Description	10.8kW(N+1)	18kW(N+1)
MWOCS-191-M-B	Power Shelf	1	1
MWOCP68-3600-D-RM	PSU	4	6
MWOCP68-B	PSU-Blanking Panel	2	
MWOC-RMU-3	Remote Management Unit	1	1
MWOC-KIT-21	Installation KIT (V2 SPZ)	1	1
MWOC-PCA-7-3-6	AC Power Cable	2	2
Total Height		10U	10U

12V Architecture System Components:

Power Supply (PSU), 3,000W:

MWOCP74-3000-A-RM is an 80 PLUS certified Titanium, 3,030-Watt front-end power module that provides a 12Vdc Main and 12Vdc Standby Outputs. Up to six Power Supply Units (PSUs) fit into a 19" Shelf and 21" Shelf with Accessory Kit.

Features

- ❖ 3,030W Output Power
- ❖ 12.3V Main Output @2.5A
- ❖ Size : 73.5(W)x550(L)x40(H)mm (2.89"x21.65"x1.57")
- ❖ Active Current sharing on 12V Main Output, ORing FET Isolation
- ❖ Hot-Swappable



10U 21" Power Shelf

MWOCES-211 series of 21" 10U Power Shelves accommodate up to six (6) 3kW Power Supply Units (PSUs), providing up to 15kW Total Output Power configured for N+1 and N+N redundancy.

Features

- ❖ 15kW Total Output Power
- ❖ 12.3Vdc Output
- ❖ OCP System Support
- ❖ UP to 6 PSUs per Shelf
- ❖ 10U Height 537(W)x680(L)x45(H)mm (21.14"x26.77"x1.77")
- ❖ N+1 / N+N Redundancy
- ❖ 2 AC Outlets
- ❖ Designed to support BBU, Model MWOCES-211-G only
- ❖ Available in Parallel Operation
- ❖ Hot-Swappable



2U 19" Power Shelf

MWOCES-192-M of 19"(convertible to 21") 2U Power Shelves accommodate up to six (6) 3kW Power Supply Units (PSUs)

This Shelf provides up to 15kW Total Output Power, configured N+1 & N+ N redundancy. Various input configurations are supported and is a low-cost multi-input version of 19" 2RU Power Shelf.



Features

- ❖ 15kW Total Output Power
- ❖ 12.3Vdc Output
- ❖ OCP System Support
- ❖ UP to 6 PSUs per Shelf
- ❖ 2OU Height 444(W)x680(L)x87(H)mm (17.48"x26.77"x3.42")
- ❖ N+0 - N+N Redundancy
- ❖ Designed to support BBU



12V Architecture

Configuration Examples

MWOCES-192-M	Configuration Example and Required Quantity																																
 <p>Features</p> <ul style="list-style-type: none"> • Supports Multi-Input Configuration; any Input can be used • Fits within the 21-Inch Rack (both SPZ and DPZ) using Installation Kit • Total Output Power: 3kW ~ 15kW (N+1) • Equipped with Six C13 2.5A / AC Outlet 	<p>Application: 3-Phase Delta Input; installed in ORV2 Single Power Zone Rack</p> <table border="1"> <thead> <tr> <th>Related Products</th> <th>Description</th> <th>9kW (N+1)</th> <th>15kW (N+1)</th> </tr> </thead> <tbody> <tr> <td>MWOCES-192-M</td> <td>Power Shelf</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOCP74-3000-A-RM</td> <td>PSU</td> <td>4</td> <td>6</td> </tr> <tr> <td>MWOCP74-B</td> <td>PSU-Blanking Panel</td> <td>2</td> <td></td> </tr> <tr> <td>MWOC-RMU-3</td> <td>Remote Management Unit</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOC-KIT-26</td> <td>Installation KIT (V2 SPZ)</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOC-PCA-151D-4-3</td> <td>AC Power Cable</td> <td>1</td> <td>1</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total Height</td> <td>2U</td> <td>2U</td> </tr> </tbody> </table>	Related Products	Description	9kW (N+1)	15kW (N+1)	MWOCES-192-M	Power Shelf	1	1	MWOCP74-3000-A-RM	PSU	4	6	MWOCP74-B	PSU-Blanking Panel	2		MWOC-RMU-3	Remote Management Unit	1	1	MWOC-KIT-26	Installation KIT (V2 SPZ)	1	1	MWOC-PCA-151D-4-3	AC Power Cable	1	1	Total Height		2U	2U
Related Products	Description	9kW (N+1)	15kW (N+1)																														
MWOCES-192-M	Power Shelf	1	1																														
MWOCP74-3000-A-RM	PSU	4	6																														
MWOCP74-B	PSU-Blanking Panel	2																															
MWOC-RMU-3	Remote Management Unit	1	1																														
MWOC-KIT-26	Installation KIT (V2 SPZ)	1	1																														
MWOC-PCA-151D-4-3	AC Power Cable	1	1																														
Total Height		2U	2U																														
MWOCES-211 Series	Configuration Example and Required Quantity																																
 <p>Features</p> <ul style="list-style-type: none"> • Can be deployed in both Single and Dual Power Zone Racks • MWOCES-211-F and -G can be conveniently installed into Rack without Installation Kit • Total Output Power: 3kW ~ 15kW (N+1) • Streamlined, Low-Profile, 10U Height 	<p>Application: 3-Phase Wye Input; installed in ORV2 Single Power Zone Rack</p> <table border="1"> <thead> <tr> <th>Related Products</th> <th>Description</th> <th>12kW (N+1)</th> <th>15kW (N+0)</th> </tr> </thead> <tbody> <tr> <td>MWOCES-211-G</td> <td>Power Shelf</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOCP74-3000-A-RM</td> <td>PSU</td> <td>5</td> <td>6</td> </tr> <tr> <td>MWOCP74-B</td> <td>PSU-Blanking Panel</td> <td>1</td> <td></td> </tr> <tr> <td>MWOC-RMU-3</td> <td>Remote Management Unit</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOC-KIT-8</td> <td>Installation KIT (V2 SPZ)</td> <td>1</td> <td>1</td> </tr> <tr> <td>MWOC-PCA-5-3-6</td> <td>AC Power Cable</td> <td>2</td> <td>2</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total Height</td> <td>10U</td> <td>10U</td> </tr> </tbody> </table>	Related Products	Description	12kW (N+1)	15kW (N+0)	MWOCES-211-G	Power Shelf	1	1	MWOCP74-3000-A-RM	PSU	5	6	MWOCP74-B	PSU-Blanking Panel	1		MWOC-RMU-3	Remote Management Unit	1	1	MWOC-KIT-8	Installation KIT (V2 SPZ)	1	1	MWOC-PCA-5-3-6	AC Power Cable	2	2	Total Height		10U	10U
Related Products	Description	12kW (N+1)	15kW (N+0)																														
MWOCES-211-G	Power Shelf	1	1																														
MWOCP74-3000-A-RM	PSU	5	6																														
MWOCP74-B	PSU-Blanking Panel	1																															
MWOC-RMU-3	Remote Management Unit	1	1																														
MWOC-KIT-8	Installation KIT (V2 SPZ)	1	1																														
MWOC-PCA-5-3-6	AC Power Cable	2	2																														
Total Height		10U	10U																														

PDU(Power Distribution Unit)

MWOC-PDU-A-3 is equipped with three C13 AC Outlets for provided power to peripheral equipment. Each Outlet has a 15A class CC fuse on the circuit. PDU is an accessory to a Power Shelf that don't have AC Outlets and has Positronic 7pin connector for input.

Features

- ❖ OCP System Support
- ❖ Equipped with three C13 10A / AC Outlet
- ❖ Size : 43.8(W)x490(L)*x60(H)mm *424(L)mm without attachment bracket
- ❖ Built-in fuse for each Outlet



Remote Management Unit (RMU):

MWOC-RMU-3 is latest model of RMU.

MWOC-RMU-3 is a Remote Management Unit compatible with MWOCES/MWDCES series OCP power shelves and provides monitor and control capability between the host system and any PSU(s) / peripheral equipment installed in the shelves using PMBus™.

Communication with the host system via Ethernet by SNMP ensures effective communication and reporting for datacenter applications.

In addition, it also supports 1000BASE-T and Redfish.

Features

- ❖ Communicates Internally via PMBus™.
- ❖ Communicates Externally via SNMP.
- ❖ LED Status Indicators
- ❖ Two RJ45 Connectors
 - Port 1 Ethernet (1000BASE-T)
 - Port 2 Serial Console (RS-232C)
- ❖ Available for REDFISH
- ❖ Hot-Swappable



Accessories

Murata offers accessories necessary for configuring a Centralized Power Supply System.

Installation KIT

Shelves are designed to industry-standard widths of 19 inch (482.6mm) and 21 inch (533.4mm) Each kit provides required brackets and assembly hardware for specific rack installations.



AC Power Cable

Provide the electrical connection between the Data Center Power Distribution System and the MWOCES/MWDCES series Power Shelves.



Blanking Panel

Provides an attractive and convenient option for covering/blanking unused shelf openings for each unit slot in the Power Shelf and Battery Shelf.



Immersion Cooling System Components:

MWOCS-213-P-C-L is a 54kW, 21” 3OU, OCP V3 based Power Shelf specialized for Liquid Immersion Cooling that provides a delivery system for up to fifteen 68mm, 1OU Power Supplies (PSU), and three Remote Management Unit (RMU), intended for 50.5V/54.5V power distribution architectures. (Under development)

Features

- 54kW Total Output Power(N+0)
- 50.5/54.5V Output
- Up to 15 PSUs and 3 RMU per Shelf
- OCP(V3) System Support
- 3OU Height 537(W)x788.7(L)x131.7(H)mm (21.14”x31.05”x5.18”)
- N+1 /N+N Redundancy
- Specialized for Liquid Immersion Cooling
- Hot-Swappable

There is no warranty against refrigerants. A Proof of Concept (PoC) is required in advance.

Configuration Examples

Configuration Example and required quantity

Application: 3-Phase Wye Input; installed in Immersion Tank

Related Products	Description	54kW (N+0)
MWOCS-213-P-C-L	Power Shelf	1
MWOCP68-3600-B-RM	PSU	15
MWOC-RMU-3	Remote Management Unit	3
MWOC-PCA-261W-2-3	AC Power Cable	3
Total Height		3OU

Product Map

Category	Order P/N	Output		AC Input Voltage [Vac]		DC Input Voltage [Vdc]	
		V[V]	Power [KW]	min	max	min	max
Power Supply Unit	MWOCP67-5500-B-RM	50.0	5.5	180	305	192	400
	MWOCP68-3600-B-RM	50.5	3.6	180	305	192	400
	MWOCP68-3600-D-RM	54.5	3.6	180	305	192	400
	MWOCP74-3000-A-RM	12.3	3.0	90	300	192	400

Category	Order P/N	Open Rack			19" Rack	Height	Outlet Qty	BBU Connection	Input Configuration			Redundancy	Output		Applicable PSU
		V1	V2	V3					3 Phase	Single Phase	HVDC		V [V]	Power [KW]	
21" Empty Shelf	MWOCES-211-P-D			●		10U	0	Yes	Wye			N+1/N+N	50.0	33(N+0)	MWOCP67-5500-B-RM
	MWOCES-211-P-C			●		10U	0	Yes	Wye/Delta	●		N+1/N+N	50.5/54.5	21.6(N+0)	MWOCP68-3600-X ^{※1} -RM
	MWOCES-211-P-C-S			●		10U	0	Yes	Wye/Delta	●	●	N+1	50.5/54.5	20.4(N+0)	MWOCP68-3600-X ^{※1} -RM
	MWOCES-211-G	●	●			10U	2	Yes	Wye	●		N+1/N+N	12.3	15(N+1)	MWOCP74-3000-A-RM
	MWOCES-211-F ^{※2}		●			10U	2	No	Wye	●		N+1/N+N	12.3	15 (N+1)	MWOCP74-3000-A-RM
19" Empty Shelf	MWOCES-191-P-D			●	●	1RU	0	Yes	Wye			N+1/N+N	50.0	33(N+0)	MWOCP69-5500-B-RM
	MWOCES191-P-C			●	●	1RU	0	Yes	Wye/Delta	●	●	N+1/N+N	50.5/54.5	21.6(N+0)	MWOCP68-3600-X ^{※1} -RM
	MWDCES-191-M-B		●		●	10U ^{※3}	0	Yes	Wye/Delta	●		N+1/N+N	50.5/54.5	18 (N+1)	MWOCP68-3600-B-RM
	MWDCES-192-M	●	●		●	2RU	6	Yes	Wye/Delta	●		N+1/N+N	12.3	15 (N+1)	MWOCP74-3000-A-RM
	MWOCES-192-A	●	●		●	2RU	6	Yes	Delta			N+1	12.3	15 (N+1)	MWOCP74-3000-A-RM
	MWOCES-191-C				●	1RU	2	Yes	Wye/Delta	●		N+1	12.3	12 (N+1)	MWOCP74-3000-A-RM
	MWOCES-191- D ^{※1}				●	1RU	0	Yes			●	N+1	12.3	12 (N+1)	MWOCP74-3000-A-RM

※1 Planned future product. Contact Murata for the latest details

※2 MWOCEES-211-F can be installed into Nitto (Nitto Kogyo) rack directly, Installation KIT is not required. MWOCES-211-F can be installed into TDI rack directly, Installation KIT is not required

※3 Please pay attention to the height when placing the MWOCES-191-M-B in a 19-inch rack.

Category	Order P/N	Product Description	Applicable Shelf
Remote Management Unit	MWOC-RMU-2	Remote Management Unit(100BASE-TX)	All Power shelves
	MWOC-RMU-3 ^{※1}	Remote Management Unit(1000BASE-T)	All Power shelves
ATS Bypass	MWOC-ATS-3	Bypass Unit	MWOCES-192-A
Blanking Panels	MWOC-ATS-B	Blanking panel for MWOCES-192-A ATS slot	MWOCES-192-A
	MWOC-RMU-B ^{※1}	Blanking panel for MWOC-RMU series	All Power shelves
	MWOCP74-B	Blanking panel for MWOCP74 series	Other than MWOCES-211-P-C and MWOCES-191-M-B
	MWOCP68-B	Blanking panel for MWOCP68 series	MWOCES-211-P-C and MWOCES-191-M-B

Category	Order P/N	Product Description	Open Rack			19" rack	Applicable Shelf			
			Rittal		TDI		MWOCS	MWOCS	MWDCS	MWOCS
			V1	V2	V2		211	192	191	191
Installation Kit	MWOC-KIT-6	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)		SPZ			A			
	MWOC-KIT-7	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)		DPZ			A			
	MWOC-KIT-8	Link Bus bar(1 pair) Tray(1pc)		SPZ		G				
	MWOC-KIT-9	Link Bus bar(1 pair) Tray(1pc)		DPZ		G				
	MWOC-KIT-20	Side Angle adjuster(2pc), Link 3 Bus Bar (1pair)	DPZ				A			
	MWOC-KIT-21	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)		SPZ					-M-B	
	MWOC-KIT-23	Tray(1pc)		SPZ/DPZ		G				
	MWOC-KIT-26	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)		SPZ			A,M			
	MWOC-KIT-27	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)		DPZ			A,M			
	MWOC-KIT-29 ^{※1}	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)			SPZ		A,M			
	MWOC-KIT-30 ^{※1}	Side Angle adjuster(2pc), Link Bus Bar (1pair) Tray(1pc)			DPZ		A,M			
	MWOC-KIT-37 ^{※1}	Link Bus bar(1 pair)				●	M			
MWDC-KIT-12	Side Rail (4pc)				●		C	-M-B		

※1 Planned future product. Contact Murata for the latest details

Category	Order P/N
Input Cable	Please see the AC power configuration page

Category	Order P/N	Product Description
Expansion Cable	MWOC-KIT-C1	Expansion cable that connects three power shelves in parallel and has a current adjustment function.
	MWOC-KIT-C2	Expansion cable that connects two power shelves in parallel and has a current adjustment function.


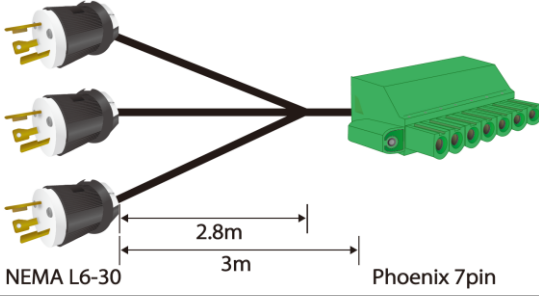

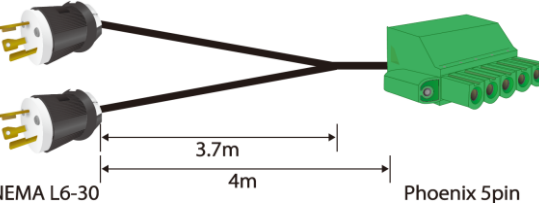

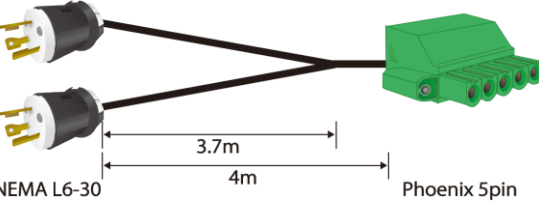

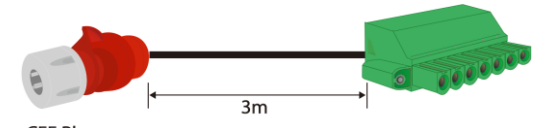

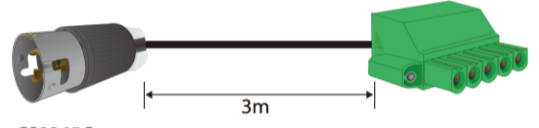

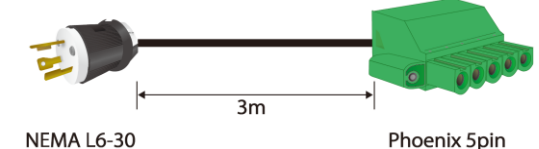

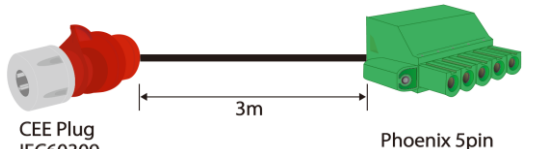

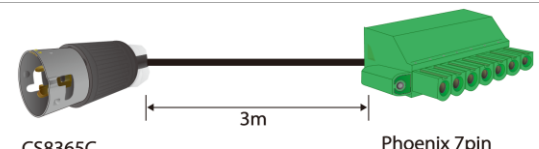
Category	Order P/N	Product Description
Power Distribution Unit	MWOC-PDU-A-3	Equipped with three C13 AC outlets for provided power to peripheral equipment(example : network switch etc).

Input Cable Configuration



ORDERING GUIDE

Order Number	Applicable Shelf	Input Cfg	Max. Curt(A)	Plug Cfg.	Facility Side Plug	Equipment Side Connector	Weight (kg)
MWOC-PCA-151D-4-3H	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C	3 Phase Delta	50		 CS8365C HUBBLE	 Positronic (Amphenol) 7pin	3.3
MWOC-PCA-231W-4-3H	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C	3 Phase Wye	32		 CEE Plug IEC60309	 Positronic (Amphenol) 7pin	2.6
MWOC-PCA-151D-6-3	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C MWOCES-211-P-C-S	3 Phase Delta	50		 CS8365C HUBBLE	 Positronic (Amphenol) 7pin	2.6
MWOC-PCA-231W-6-3	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C MWOCES-211-P-C-S	3 Phase Wye	32		 CEE Plug IEC60309	 Positronic (Amphenol) 7pin	2.0
MWOC-PCA-B31W-6-3	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C MWOCES-211-P-C-S	3 Phase Wye	30		 NEMA L22-30	 Positronic (Amphenol) 7pin	2.0
MWOC-PCA-331S-6-3	MWOCES-191-P-C MWOCES-192-M MWOCES-211-P-C MWOCES-211-P-C-S	Single Phase	30		 NEMA L6-30	 Positronic (Amphenol) 7pin	2.0

ORDERING GUIDE

Order Number	Applicable Shelf	Input Cfg	Max. Curt. (A)	Plug Cfg.	Facility Side Plug	Equipment Side Connector	Weight (kg)
MWOC-PCA-7-3-5	MWDCES-191-C MWOCES-191-M-B	Single Phase	30		 NEMA L6-30 2.8m 3m Phoenix 7pin	Phoenix 7pin	5.0
MWOC-PCA-3-4-7A	MWOCES-211- F MWOCES-211-G	Single Phase	30		 NEMA L6-30 3.7m 4m Phoenix 5pin	Phoenix 5pin	4.7
MWOC-PCA-3-4-7B	MWOCES-211-F MWOCES-211-G	Single Phase	30		 NEMA L6-30 3.7m 4m Phoenix 5pin	Phoenix 5pin	4.7
MWOC-PCA-7-3-6	MWDCES-191-C MWOCES-191-M-B	3 Phase Wye	32		 CEE Plug IEC60309 3m Phoenix 7pin	Phoenix 7pin	1.9
MWOC-PCA-4-3-1	MWOCES-192-A	3 Phase Delta	50		 CS8365C HUBBLE 3m Phoenix 5pin	Phoenix 5pin	3.0
MWOC-PCA-3-3-2	MWOCES-211-F MWOCES-211-G	Single Phase	30		 NEMA L6-30 3m Phoenix 5pin	Phoenix 5pin	1.8
MWOC-PCA-5-3-6	MWOCES-211-F MWOCES-211-G	3 Phase Wye	32		 CEE Plug IEC60309 3m Phoenix 5pin	Phoenix 5pin	1.9
MWOC-PCA-151D-2-3	MWOCES-191-M-B	3 Phase Delta	50		 CS8365C HUBBLE 3m Phoenix 7pin	Phoenix 7pin	2.0

ORDERING GUIDE

Order Number	Applicable Shelf	Input Cfg	Max. Curt(A)	Plug Cfg.	Facility Side Plug	Equipment Side Connector	Weight (kg)	
MWOC-PCA-261W-2-3	MWDCES-191-C MWOCES-191-M-B MWOCES-213-P-C-L	3 Phase Wye	60			CEE Plug IEC60309	Phoenix 7pin	4.2

Global locations

For details, visit www.murata.com



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- Undersea equipment
- Power plant equipment
- Medical equipment
- Transportation equipment (vehicles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention /crime prevention equipment
- Data-processing equipment
- Application of similar complexity and/or reliability requirements to the applications listed above

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