

PRODUCT OVERVIEW

MWOCES-211-P-C-S is a max 20.4kW, 21" 10U power shelf that provides a delivery system for up to six 68mm, 10U [Power Supply Unit \(PSU\)](#), and one [Remote Management Unit \(RMU\)](#). It is intended to support 50.5V/54.5V power distribution architectures in OCP (V3) systems. One AC input connector accommodate either three-phase four-wire delta (without neutral) or three-phase five-wire wye (with neutral) configurations for added flexibility. The input is configured to power six power supply unit slot. DC output connection is provided by pluggable bus bars.

ORDERING GUIDE		
Part Number ¹	Input Configuration	DC Output Busbar Configuration
MWOCES-211-P-C-S ² (Single input)	✓ Three-Phase four wire Delta ✓ Three-Phase five wire Wye ✓ Single-Phase ✓ HVDC	Bar clip

¹ Shelf does not include the power supply units and RMU and needed to be ordered separately as required.

² Contact Murata for availability

FEATURES

- OCP system support
- 10U height
- 537(W) x 720(L) x 44.5(H) mm
- 20.4kW total output power (N+0)
- Accommodates up to six PSU and one RMU
- 50.5/54.5V output
- PSU & RMU are hot-swappable
- N+1 Redundancy
- Four RJ45 ports with RMU
- FRU Data available
- 2-year warranty



For full details go to
www.murata.com/rohs



INPUT CHARACTERISTICS

Parameter	Conditions	Min	Nom.	Max.	Units
Input Voltage Operating Range	Line to Line (Delta source)	180	200/208/277	305	Vac
	Line to Line (Wye source with neutral connection)	312	346/360/480	528	
	HVDC	192	240/380	400	Vdc
Frequency	AC input	47	50/60	63	Hz
Input Current	Wye / Single-phase: 200-240Vac (Each input, per line)			32	Arms
	Delta : 200-277Vac (Each input, per line)			55.5	
	240-380Vdc (each input, per line)			32	Adc

OUTPUT CHARACTERISTICS(At Output Voltage 50.5Vdc)

Parameter	Configuration	Min.	Typ.	Max.(At Input Voltage)			Units
				200-230V	230-240V	240-277V /240-380Vdc	
Output Power	With six (6) PSUs	0		15,251	19,543	20,452	W
	With five (5) PSUs	0		12,726	16,311	17,018	
	With four (4) PSUs	0		10,150	13,029	13,635	
	With three (3) PSUs	0		7,625	9,746	10,201	
	With two (2) PSUs	0		5,050	6,514	6,817	
	With one (1) PSU	0		3,600	3,600	3,600	
Output Current	With six (6) PSUs	0		302	387	405	A
	With five (5) PSUs	0		252	323	337	
	With four (4) PSUs	0		201	258	270	
	With three (3) PSUs	0		151	193	202	
	With two (2) PSUs	0		100	129	135	
	With one (1) PSU	0		72	72	72	
Holdup Time	With six (6) PSUs [5+1]		14.4 (at 18kW Output power) (*)				ms
	With six (6) PSUs [3+3]		24 (at 10.8kW Output power)				
	With five (5) PSUs [4+1]		15 (at 14.4kW Output power) (*)				
	With four (4) PSUs [3+1]		16 (at 10.8kW Output power) (*)				
	With four (4) PSUs [2+2]		24 (at 7.2kW Output power)				
	With three (3) PSUs [2+1]		18 (at 7.2kW Output power)				
	With two (2) PSUs [1+1]		24 (at 3.6kW Output power)				
	With one (1) PSU		12 (at 3.6kW Output power)				

(*)Input voltage is partially limited (230V-277V).

OUTPUT CHARACTERISTICS(At Output Voltage 54.5Vdc)							
Parameter	Configuration	Min.	Typ.	Max.(At Input Voltage)			Units
				200-230V	230-240V	240-277V /240-380Vdc	
Output Power	With six (6) PSUs	0		15,532	19,838	20,490	W
	With five (5) PSUs	0		12,916	16,568	17,058	
	With four (4) PSUs	0		10,355	13,243	13,625	
	With three (3) PSUs	0		7,739	9,919	10,246	
	With two (2) PSUs	0		5,177	6,594	6,812	
	With one (1) PSU	0		3,600	3,600	3,600	
Output Current	With six (6) PSUs	0		285	364	375	A
	With five (5) PSUs	0		237	304	313	
	With four (4) PSUs	0		190	243	250	
	With three (3) PSUs	0		142	182	188	
	With two (2) PSUs	0		95	121	125	
	With one (1) PSU	0		66	66	66	
Holdup Time	With six (6) PSUs [5+1]				14.4 (at 18kW Output power) (*)		ms
	With six (6) PSUs [3+3]				24 (at 10.8kW Output power)		
	With five (5) PSUs [4+1]				15 (at 14.4kW Output power) (*)		
	With four (4) PSUs [3+1]				16 (at 10.8kW Output power) (*)		
	With four (4) PSUs [2+2]				24 (at 7.2kW Output power)		
	With three (3) PSUs [2+1]				18 (at 7.2kW Output power)		
	With two (2) PSUs [1+1]				24 (at 3.6kW Output power)		
	With one (1) PSU				12 (at 3.6kW Output power)		

(*)Input voltage is partially limited (230V-277V).

ENVIRONMENTAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage temperature range	Non-operating	-40		70	°C
Operating temperature range	Altitude < 5,000m	0		40	
Storage humidity	Non-condensing	10		90	%
Operating humidity	Non-condensing	10		85	
Weight (Typical)	Shelf Only, without PSUs and RMU	12.1			kg
Vibration Test	Vibration Non-operating	Vibration Operating			
Excitation Mode:	Sinusoidal	Sinusoidal			
Test Frequency:	5Hz to 500Hz (5.0-9.0Hz) 6mm peak to peak (9.0-500.0Hz) 1G	5Hz to 500Hz (5.0-9.0Hz) 3mm peak to peak (9.0-500.0Hz) 0.5G			
Amplitude:	1G	0.5G			
Frequency Change Rate:	1 octave / min	1 octave / min			
Test Directions:	3 directions in space (x, y, z)	3 directions in space (x, y, z)			
Duration:	10 sweep cycles (2hours 13 minutes)	10 sweep cycles (2hours 13 minutes)			
Test Temperature:	Room temperature	Room temperature			
Electrical Work:	None	Power supply in operation			
Shock Test	Shock Non-operating	Shock Operating			
Shock Pulse:	Half sinusoidal	Half sinusoidal			
Shock Duration:	19ms	11ms			
Shock Amplitude:	7.5G	3.5G			
Test Directions:	2 directions (±z)	6 directions (±x, ±y, ±z)			
Number of Shocks:	6 (3 per each direction)	60 (10 per each direction)			
Test Temperature:	Room temperature	Room temperature			
Electrical Work:	None	Power supply in operation			
Safety approval	UL62368-1 : 2018 (3rd Edition) (Information Technology Equipment – safety – Part 1: General Requirements) CAN/CSA-C22.2 No. 62368-1 : 2018 (3rd Edition) (Information Technology Equipment – safety – Part 1: General Requirements) TUV : EN62368-1:2018 (3rd Edition) CQC : GB4943.1-2022 CB : IEC 62368-1:2018 (3rd Edition)				

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Insulation safety rating/test voltage	Input to output - Reinforced	5,000			Vdc
	Input to chassis	2,500			
Isolation	Output to chassis	50			Vdc

EMISSION AND IMMUNITY

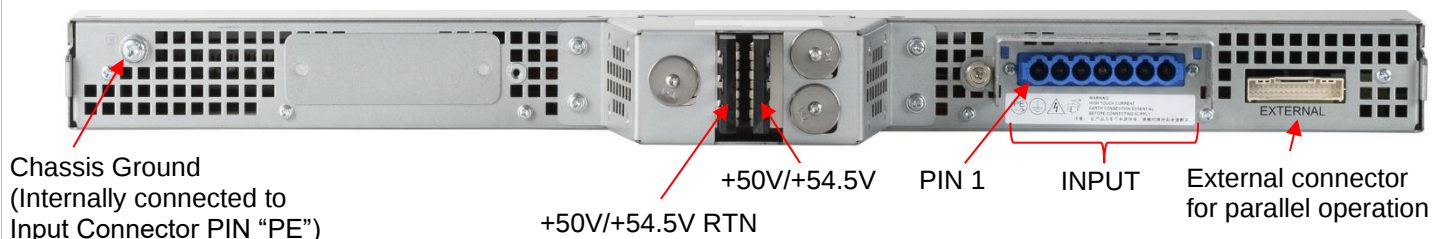
Parameter	Standard	Criteria
Input current harmonics	IEC/EN 61000-3-12	Class A
Conducted emission	CISPR 22	Class A
ESD immunity	IEC/EN 61000-4-2	Level 4 criteria A
Electrical fast transient/burst immunity	IEC/EN 61000-4-4	Level 3 criteria B
Surge immunity	IEC/EN 61000-4-5	Level 3 criteria A

PRODUCT VIEWS AND CONNECTOR DETAILS

Front View

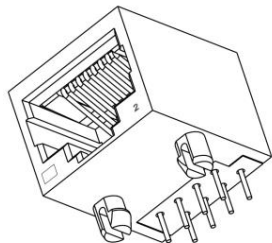


Rear View



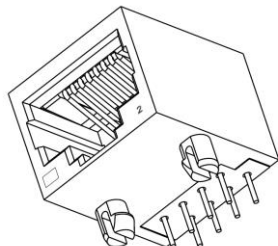
4mm² diameter(AWG10) earthing wire shall be connected to the chassis by screw at screw hole marked with "Protective Earth" symbol.

RJ45 CONNECTOR PIN ASSIGNMENT (AUX PORT 3)



Pin	I/O	Function	Description
1	I	GND	-
2	O	PLS_F	Notification signal that at least one PSU AC input fault
3	O	BKP_F	Notification signal that at least one PSU is in FAULT state
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-

RJ45 CONNECTOR PIN ASSIGNMENT (AUX PORT 4)



Pin	I/O	Function	Description
1	A	ISHARE	PSU current share signal
2	I	GND	-
3	I/O	SYNC_START	PSU activation signal
4	O	VOUT_SEL	Notification signal that PSU output voltage setting mode
5	I	GND	-
6	-	-	-
7	-	-	-
8	-	-	-

QR CODE(Readable information)

Company name	Murata Power solutions
Product name	MWOCES-211-P-C-S
Serial number (Includes date code)	12 digit alphanumeric characters
Phase	MP

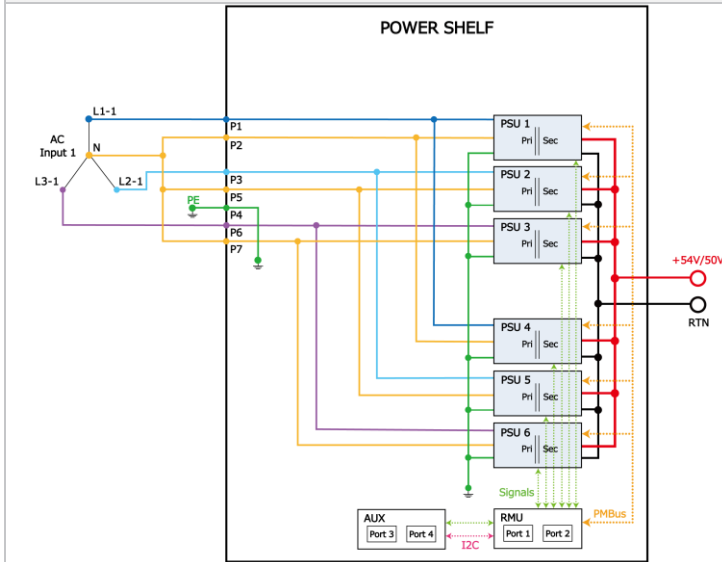
INPUT CONNECTOR PIN ASSIGNMENT (AC INPUT)

Positronic SP10RSSS48RM220A1-AA-2269 (Input) mating connector: Positronic SP10RSSS1F0W01/AA-2268

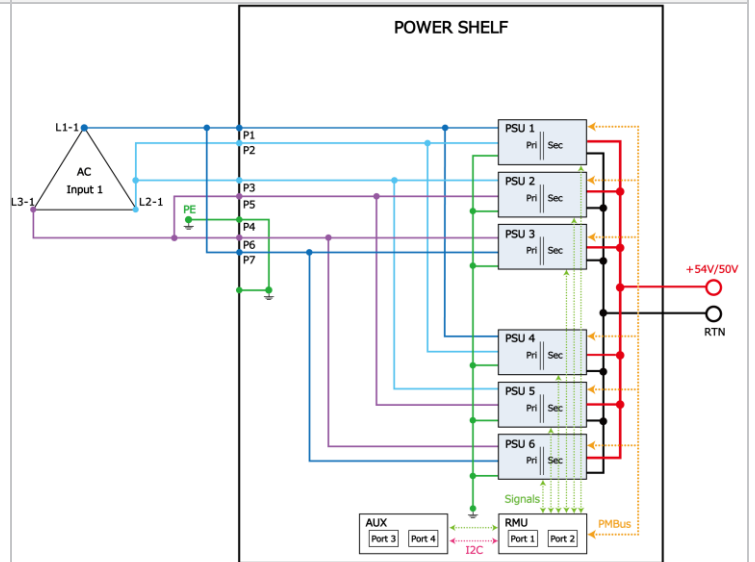
Wye Input			Delta Input			Single Input			HVDC Input		
Pin No	Signal	Function	Pin No	Signal	Function	Pin No	Signal	Function	Pin No	Signal	Function
1	L1	AC line voltage 1	1	L1	AC line voltage 1	1	L	AC live	1	(+ HVDC)	DC POSITIVE
2	N	Neutral	2	L2	AC line voltage 2	2	N	Neutral	2	(- HVDC)	DC RETURN
3	L2	AC line voltage 2	3	L2	AC line voltage 2	3	L	AC live	3	(+ HVDC)	DC POSITIVE
4	PE	Protective earth	4	PE	Protective earth	4	PE	Protective earth	4	PE	Protective earth
5	N	Neutral	5	L3	AC line voltage 3	5	N	Neutral	5	(- HVDC)	DC RETURN
6	L3	AC line voltage 3	6	L3	AC line voltage 3	6	L	AC live	6	(+ HVDC)	DC POSITIVE
7	N	Neutral	7	L1	AC line voltage 1	7	N	Neutral	7	(- HVDC)	DC RETURN

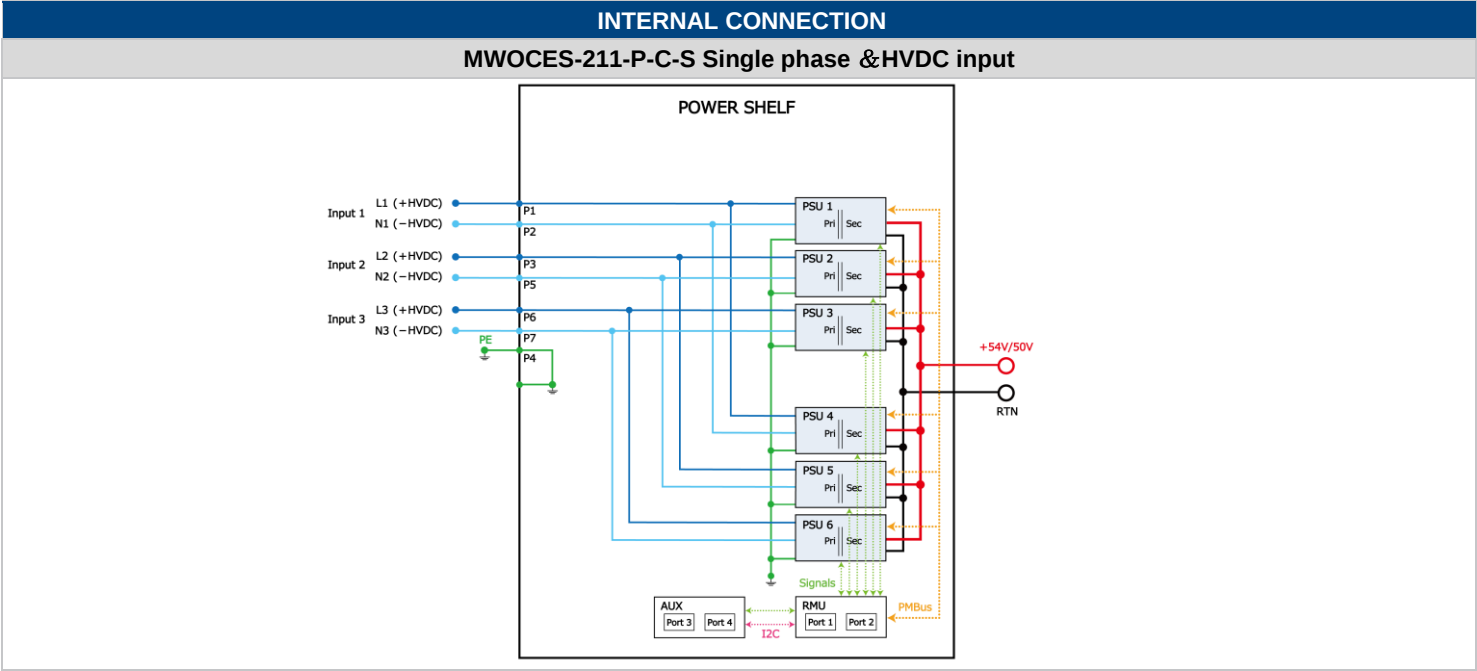
INTERNAL CONNECTION

MWOCES-211-P-C-S Wye input



MWOCES-211-P-C-S Delta input





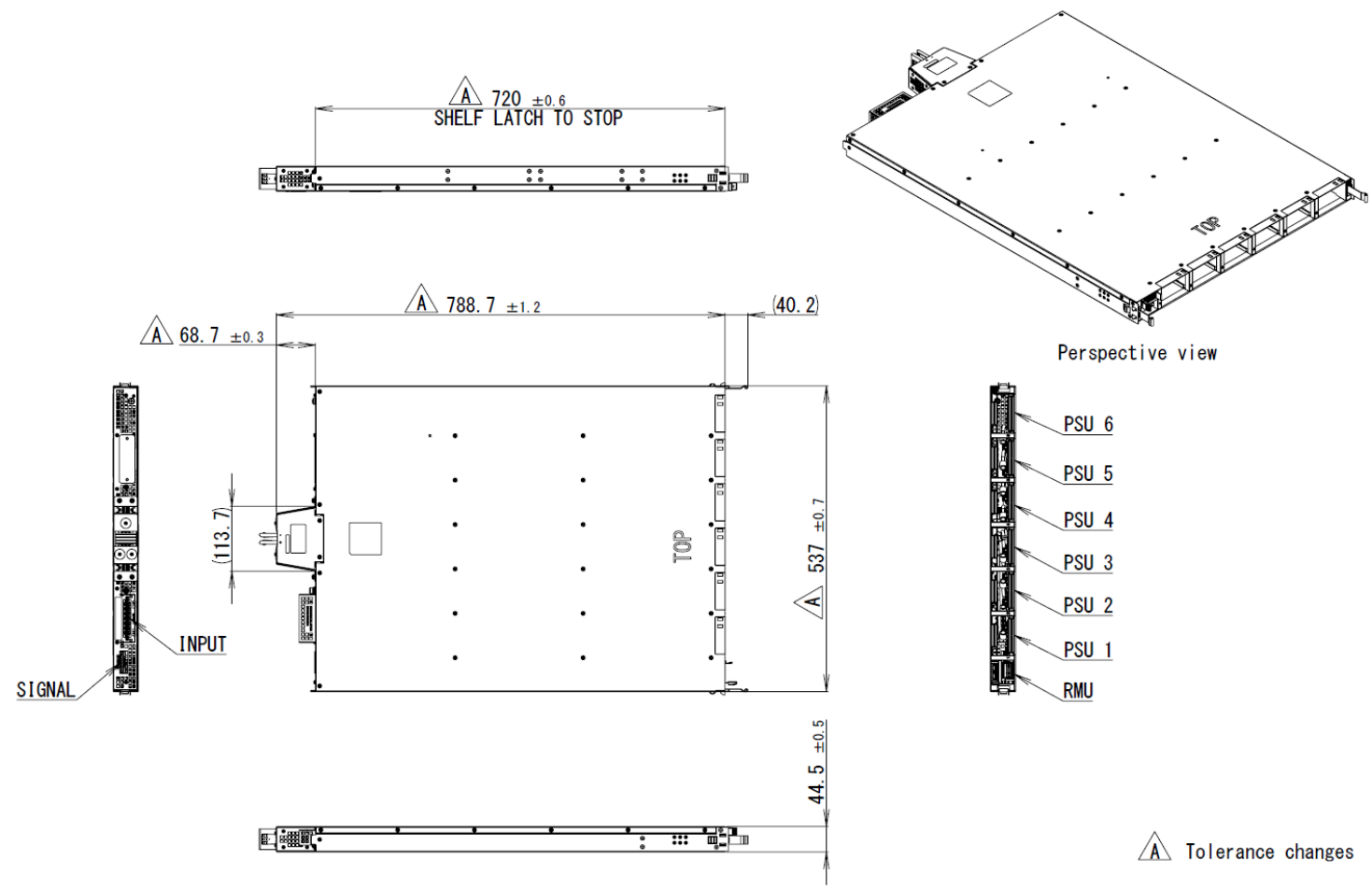
COMMUNICATION (WITH MWOC-RMU)	
FUNCTION	DESCRIPTION
Control the units	ON/OFF control of each unit installed in the power shelf Select the power source line
Reporting to the host	ON/OFF Status and presence information of each unit Status of input power sources Fault information of each unit Input power and output power of PSUs
FRU Data(*)	A connection to read information See AUX below for details.

(*)MWOC-RMU-3 only

COMMUNICATION (WITH MWOC-AUX)	
FUNCTION	DESCRIPTION
Auxiliary power supply for 12V_SB	Outputs 12V from the bus voltage to back up the RMU during a power failure
Auxiliary signal	Outputs signals such as current share, fault, output voltage switching
FRU Data	The following information is recorded - Part No - Serial No - Manufacturer - Manufacturer Date Time - Product Name - Version

Link Back To [Order Guide](#)

MECHANICAL DRAWING



1. This drawing is a graphical representation of the product and may not show all fine details such as molded part surface features, internal components, screw head type. Please contact Murata for 3D model for additional details
2. Dimensions in mm
3. Subject to change without notice; contact Murata for latest version

RELATED PRODUCT DATASHEETS

Document Number	Description	Click link below to open online datasheet
MWOC-RMU	Monitor and control unit	Link to: Datasheet
MWOC68-3600-D-RM	3.6kW/54.5V ac-dc front-end PSU	Link to: Datasheet
MWOC68-3600-B-RM	3.6kW/50V ac-dc front-end PSU	Link to: Datasheet
MWOC_BLANKING_PANELS	Blanking panel accessories	Link to: Datasheet

[back to the product overview](#)

Murata Power Solutions, Inc.
129 Flanders Road
Westborough, MA 01581
ISO 9001 REGISTERED



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