



## FEATURES

- 12kW total output power<sup>1</sup> (N+1)
- N+1 redundancy
- Single Phase and HVDC input models
- 1U height
- 437(W) x 650(L) x 43.8(H) mm
- Accommodates up to five PSUs and one RMU
- Supports external BBU (Murata battery backup system)
- 12.3VDC output
- Hot swappable
- Equipped with two C13 2.5A/AC outlet<sup>2</sup>
- Optional mounting kit available

<sup>1</sup> Includes power drawn from AC outlets

<sup>2</sup> Only available on MWDCES-191-C Model



For full details go to:  
[www.murata-ps.com/rohs](http://www.murata-ps.com/rohs)



## PRODUCT OVERVIEW

MWDCES-191 series of redundant 19" 1U 12kW OCP compliant shelves provide a simple solution for 12V distributed applications that are limited by single phase AC mains or HVDC input power availability. These shelves can be deployed with up to five, 74mm 1U [Power Supplies \(PSU\)](#), and a [Remote Management Unit \(RMU\)](#) and also provide C13 outlets (AC model only) for peripheral equipment power. These features in addition to the single DC output busbar configuration make this shelf an ideal solution for OCP or application requiring distributed 12V intermediate bus architectures.

## ORDERING GUIDE

Part Number <sup>3</sup>	Input Configuration	DC Output Busbar Configuration
MWDCES-191-C	Single Phase AC	Multi-link busbar
MWDCES-191-D	HVDC	

<sup>3</sup> Shelf does not include PSUs and RMU, refer to the [product datasheets](#) for details

## INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Nom.	Max.	Units
Input Voltage	MWDCES-191-C, Line to Neutral	180	200/208/240	264	Vac
Operating Range	MWDCES-191-D	192	240/380	400	VDC
Frequency		47	50/60	63	Hz
Input Current	MWDCES-191-C			34	Arms
	200-240VAC (each input, per line)				
	MWDCES-191-D				

## OUTPUT CHARACTERISTICS

Output Voltage	Parameter	Conditions	Min.	Typ.	Max.	Units
12.3VDC	Output Power	With five (5) PSUs	0		12,000	W
		With four (4) PSUs	0		12,000	
		With three (3) PSUs	0		9,000	
		With two (2) PSUs	0		6,000	
		With one (1) PSU	0		3,000	
	Output Current	With five (5) PSUs	0		976	A
		With four (4) PSUs	0		976	
		With three (3) PSUs	0		732	
		With two (2) PSUs	0		488	
		With one (1) PSU	0		244	
	Holdup Time	With five (5) PSUs [4+1]	15			ms
		With four (4) PSUs [3+1]	16			
		With four (4) PSUs [2+2]	24			
		With three (3) PSUs [2+1]	18			
		With two (2) PSUs [1+1]	24			
With one (1) PSU		12				

## ENVIRONMENTAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage temperature range		-40		70	°C
Operating temperature range	Altitude < 3,000m	0		40	°C
Storage humidity	Non-condensing	10		90	%
Operating humidity	Non-condensing	10		85	%
MTBF	Per Telcordia SR-332 M1C1 @ 40°C	300k			Hrs
Shock	30G non-operating				
Vibration	Operating, random vibration, 5-500Hz 1.11G				
Safety approval	c-CSA-us (CSA 60950-1-03 / UL 60950-1 second edition) RoHS				
Weight	Shelf only, without PSUs/RMU		12.5		Kg

## ISOLATION CHARACTERISTICS

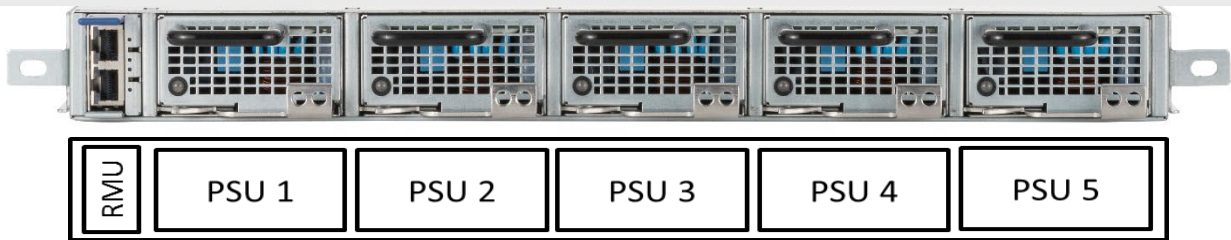
Parameter	Conditions	Min.	Typ.	Max.	Units
Insulation safety rating / test voltage	Input to output - Reinforced	3,000			Vrms
	Input to chassis	1,500			
Isolation	Output to chassis	50			Vdc

## EMISSION AND IMMUNITY

Parameter	Standard	Criteria
Input current harmonics	IEC/EN 61000-3-2	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 4 criteria A

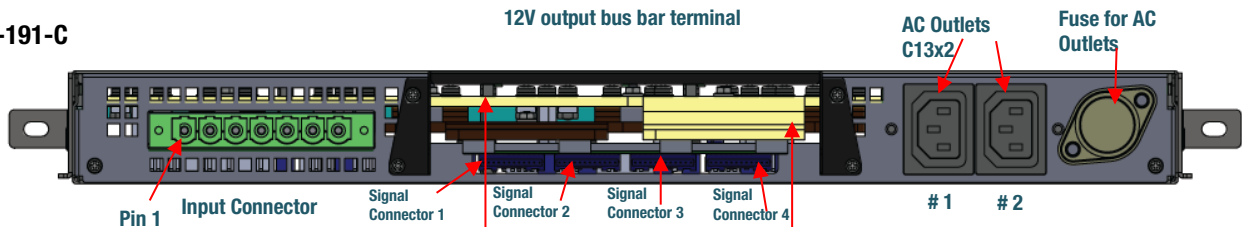
## PRODUCT VIEWS AND CONNECTOR DETAILS

Front View, All Models

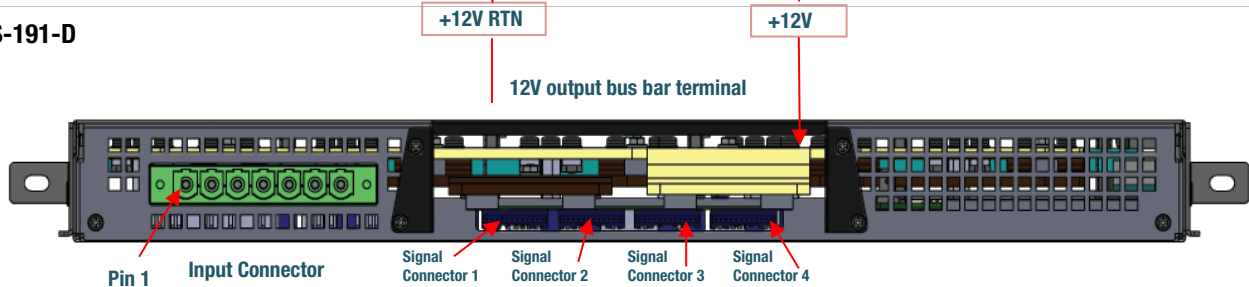


Rear Views

### MWDCES-191-C



### MWDCES-191-D



Note: Signal Connector 1,2,3 and 4 are used for battery shelf

## INPUT CONNECTOR DETAILS (PHOENIX CONTACT 1999055, SHELF END)

MWDCES-191-C			MWDCES-191-D		
PIN NO.	SIGNAL	FUNCTION	PIN NO.	SIGNAL	FUNCTION
P1	PE	PROTECTIVE EARTH	P1	PE	PROTECTIVE EARTH
P2	N	NEUTRAL	P2	N	DC RETURN
P3	L	AC LIVE	P3	L	DC POSITIVE
P4	N	NEUTRAL	P4	N	DC RETURN
P5	L	AC LIVE	P5	L	DC POSITIVE
P6	N	NEUTRAL	P6	N	DC RETURN
P7	L	AC LIVE	P7	L	DC POSITIVE

## SAFETY CONSIDERATIONS



Junction between shelf and rack Busbar may be extremely hot, in the case of a heavy load and especially when shelf is mounted in V2 Open Rack (Single Busbar). Please be aware and take adequate precautions.

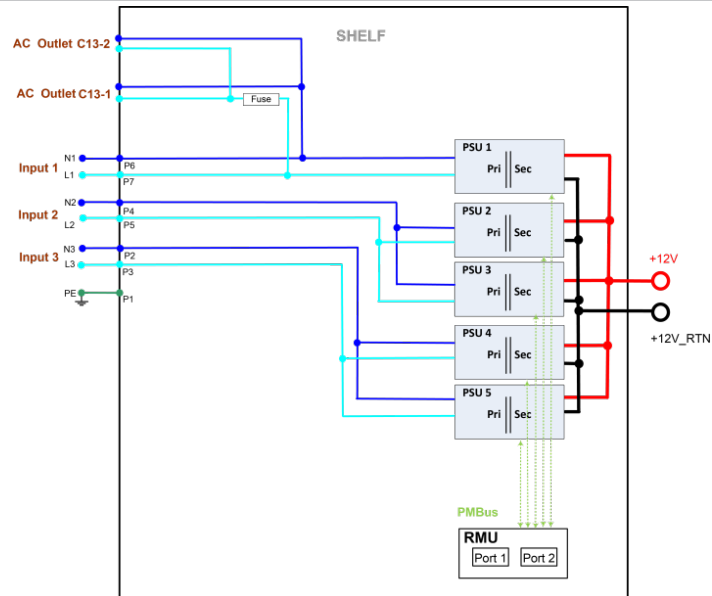
## CONVENIENCE AC OUTLET CONNECTORS 1-2

Description	Notes
IEC 320-2-2/F (C13)	<ol style="list-style-type: none"> <li>The convenience outlets are internally connected to the main AC inputs and are not galvanically isolated.</li> <li>Output voltage: 200-240VAC 50/60Hz, maximum 2.5A per outlet; Total power drawn from these outlets needs to be considered by end user when selecting the external mains circuit protector and also to ensure maximum input current ratings of this shelf are not exceeded.</li> <li>Branch fuse protection is provided by 600V 6A Bussmann FNQ-R-6 or LP-CC or Littlefuse KLDR006.TXP. Replaced with same type and ratings.</li> </ol>

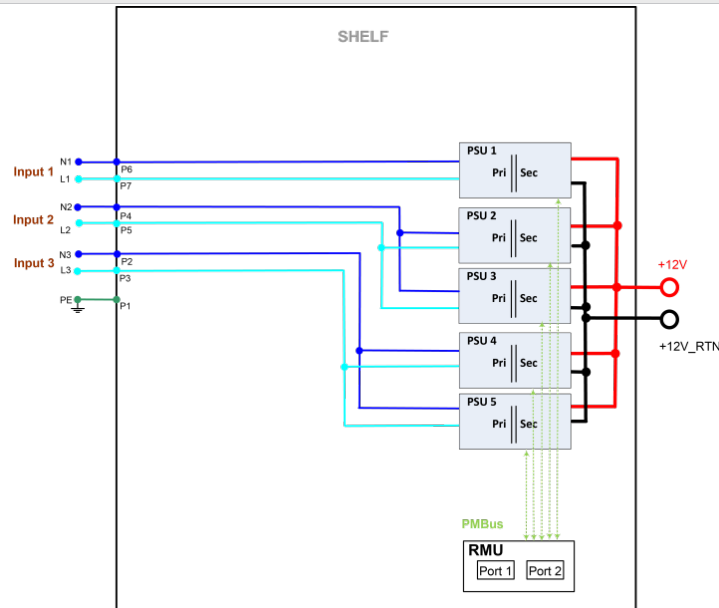


## INTERNAL CONNECTION

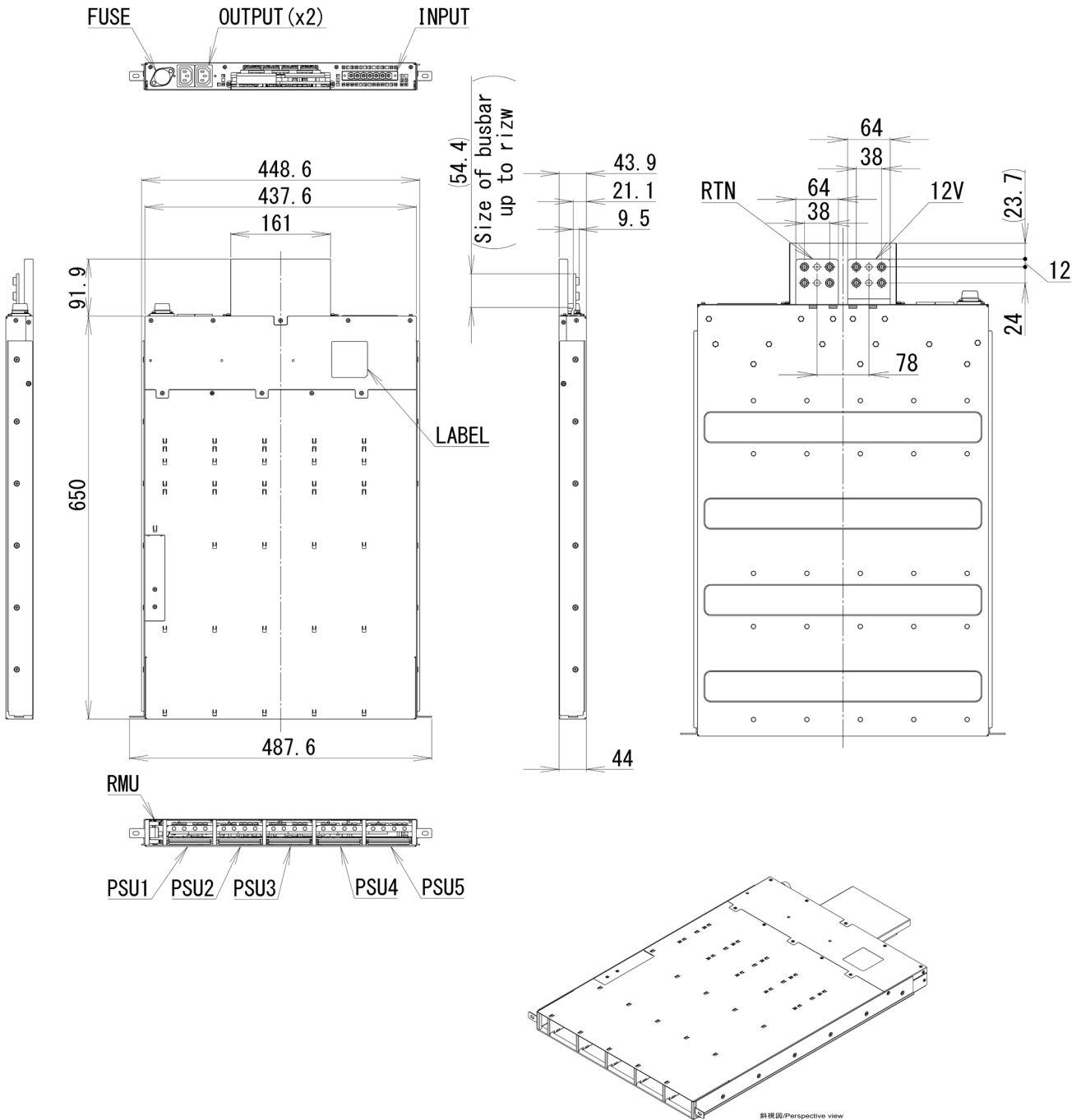
### MWDCES-191-C (Single Phase AC)



### MWDCES-191-D (HVDC)



MECHANICAL DRAWING



**RELATED PRODUCT DATASHEETS**

Document Number	Description	Link
MWOC-RMU	MONITOR AND CONTROL UNIT	<a href="https://power.murata.com/datasheet?/data/power/mwoc-rmu.pdf">https://power.murata.com/datasheet?/data/power/mwoc-rmu.pdf</a>
MWOC74-3000-A-RM	3KW AC-DC FRONT END PSU MODULE	<a href="https://power.murata.com/datasheet?/data/power/mwoc74-3000-a-rm.pdf">https://power.murata.com/datasheet?/data/power/mwoc74-3000-a-rm.pdf</a>
MWOC_BLANKING_PANELS	BLANKING PANEL ACCESSORIES	<a href="https://power.murata.com/datasheet?/data/power/mwoc_blanking_panels.pdf">https://power.murata.com/datasheet?/data/power/mwoc_blanking_panels.pdf</a>

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