



# Martek Power 300W PMEH series –ac input Datasheet



## AC/DC converter for railway applications

### Description

The PMEH series is the highest power model in a new range of highly cost effective, single output converters for chassis mounting. The range is fully compliant with the latest European standards for railway equipment, including EMC and fire and smoke. The PMEH is available for both ac and dc input voltages; this data sheet covers the ac input model.



UK  
CA

### Special features include:

- Very compact, lightweight and cost effective
- Very high efficiency
- Output current sharing as standard
- EN 50155 (2021), EN 50121.3.2 (2016) and EN 45545 (2020) compliant

### Input specifications

Output		
Part number	Vo [Vdc]	Io[A]
PMEH 1500-Z/1	15	20.0
PMEH 2400-Z/1	24	12.5

\* -15V output only: de-rate to 200W at 24V input and 70°C ambient

### Options

Code	Detail
B	Board mounted input fuse

Parameter	
Nominal input voltage	230Vac
Input voltage range	197.8 –253Vac
Input frequency	47 –63Hz
Inrush Current	To EN50155
Efficiency Supply	93% typical
Interruptions	EN 50155 Class S2 (10ms interruptions)
Input fuse	Not fitted as standard; external fuse or circuit breaker required. Option for board mounted fuse (fitted for safe unit protection in the case of catastrophic failure. Factory replacement only).



## Output specifications

Parameter	Detail	
Maximum output power	300W (200W for 15V output at 24V input and maximum ambient)	
Output versions	Single Output Only	
Output voltage	See table	
Setting tolerance	+1.0% at 50% load, 15°C	
Minimum load	Zero	
Start-up delay (typical)	<1.0s	
Remote sensing	Not fitted	
Maximum output variation	+2.0% combined line & load regulation	
Temperature coefficient	<0.02%/°C	
Output ripple	<1% Pk-PK of Output Voltage	
Output noise	<75mV Pk-PK super imposed (up to 20MHz)	
Response time	0.5ms to within 1% (for a 10%-100% load change)	
Current Limit	Operates at 105-130% of rated output current	
Thermal protection	Shuts down PSU if safe internal temperature is exceeded. Auto Recovery.	
Current sharing	Passive current sharing with output drop	
Redundant operation	Low loss output series device included as standard	
Indicators	Green 'Output OK' LED	
Output monitoring	Volt free relay contacts	
Maximum capacitive load (output model dependant)	Output Model: 15V 24V Capacitance: 10,000µF 4,000µF	
Isolation	Input to Output	3.0kV ac (tested at 4.25kV dc)
	Input to Case	3.0kV ac (tested at 4.25kV dc)
	Output to Case	3.0kV ac (tested at 4.25kV dc)

## Environmental details

Parameter	Details
Operating Temperature	EN 50155 class OT4: -40°C to +70°C (no de-rating). (85°C for 10 minutes.) Base plate is intended for cold wall mounting and must not exceed 85°C for full power operation (90°C during 10 minute over temperature).
Output power de-rating	Above 70°C: 3.0%/°C; 100°C absolute maximum
Storage Temperature	-40°C to + 85°C
Cooling	Convection / Conduction. Mounting surface should be thermally rated at <1.0°C/W. A thermal mass equivalent to 300g of aluminium is required for 10 minutes operation at 85°C.
Relative Humidity	95% max
Shock & Vibration	EN 50155 (EN 61373) for mounting in any orientation
Environmental Protection	IP20. PCB is conformal coated

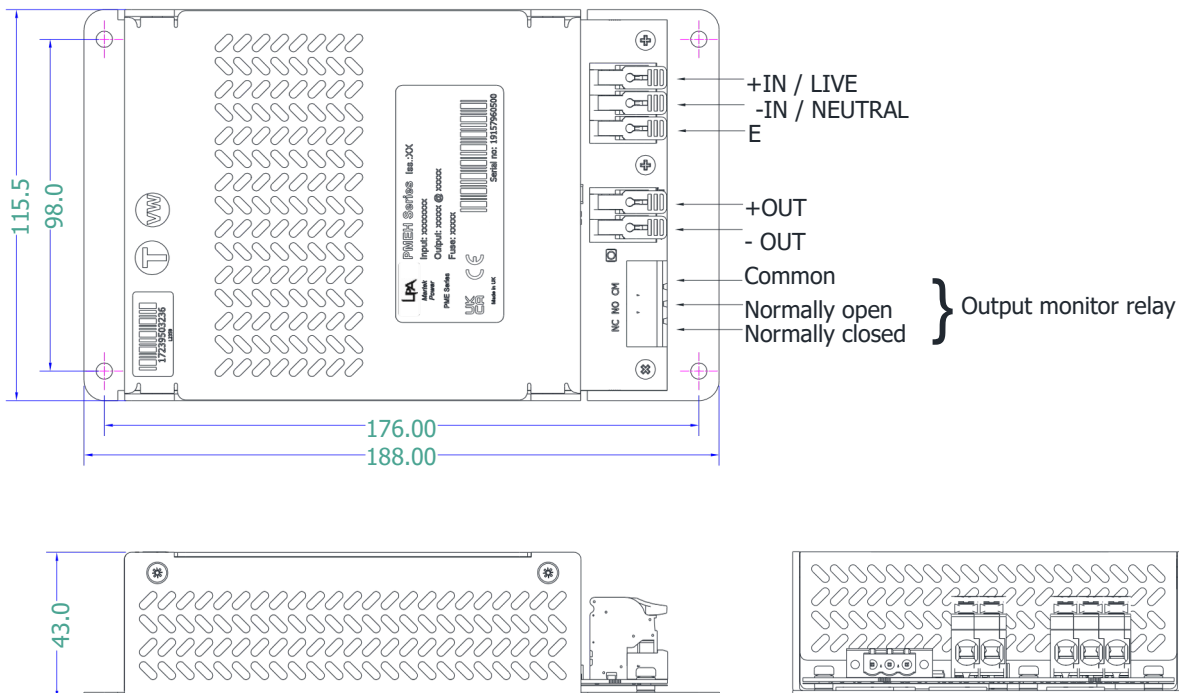
## Mechanical characteristics

Parameter	Details
Construction	Ventilated enclosure, aluminium base, steel cover, black power coat paint finish
Dimensions (L x W x H)	188.00 x 115.50 x 43.00mm (including mounting flanges)
Weight	735g
Connections	Input: Würth 691404910003B 24-10AWG/ Output: Würth 691404910003B 0.2-5.26mm Output Monitor: Phoenix MSTB 2,5/ 3-GF-5,08
Fixings	4 x Ø 4.8mm clear holes

## Applicable norms

Parameter	Detail
General	EN 50155 (2021), EN 50533 (2011 + A1 2016)
EMC	EN 50155 (2021), EN 50121-3-2 (2016 + A1 2019)
Fire & Smoke	EN 45545-2 (2020) HL3
Safety	EN 50153 (2014), EN 50124-1 (2017), EN 62368-1 (2020)

## Outline drawing



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