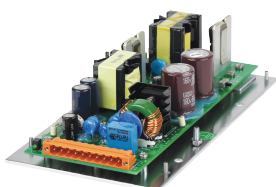




DC/DC converter for railway applications

XER open frame version



XER enclosed version



Description

The 200W XER series is a range of very cost effective medium power, single output converters. The range is compliant with the latest European standards for railway equipment, including EMC and fire and smoke.

Special features include:

- Very compact, lightweight and cost effective
- High efficiency
- Each model covers two nominal vehicle battery voltages
- Fully compliant with rail standards, including EN50155 (2017) & EN50121.3.2 (2016)

Input specifications

The following input voltages versions are available as standard:

72V / 110V (50.4 - 137.5V)dc (Suffix AD)

24V / 36V (16.8 - 50.4V)dc (Suffix BF)

Part number	Output	
	V _o [Vdc]	I _o [A]
XER 1200	12	12.5
XER 1500	15	10
XER 2400	24	8.3
XER 3600	36	5.6
XER 4800	48	4.2

Parameter	Detail	Suffix AD	Suffix BF
Under-voltage switch-off (Customer configurable) (approximate value)	Standard (factory set) configuration ('L') Alternate configuration ('H')	41V 63V	13V 20V
Input Ripple	To EN50155		
Input Protection	Active reverse polarity protection by series device Surges and transients to EN50155 (direct and indirect)		
Inrush Current	To EN50155		
Efficiency	90% typical		
Hold-up time	EN50155 Class S2 (10ms interruptions) with low impedance source (input short) (24V & 72V input: 9ms @ 200W load, or de-rate to 180W for 10ms)		
Input fuse	Not fitted. External fuse or circuit breaker required		



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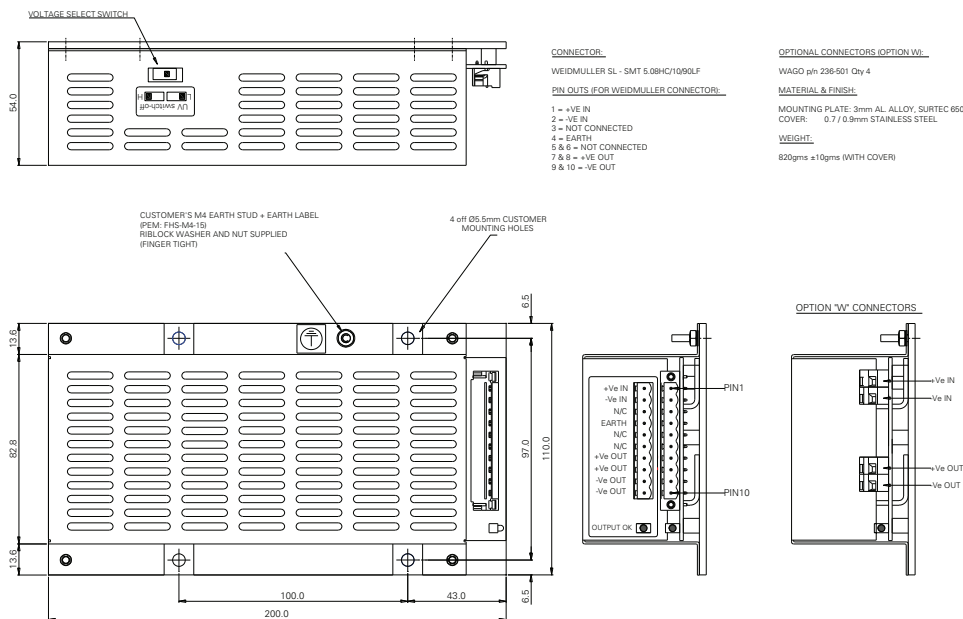
Output specifications

Parameter	Detail	
Maximum Output Power	200W (12V & 15V models de-rated to 150W)	
Output Versions	Single output only	
Output Voltage	Can be specified from 12V to 48V	
Setting Tolerance	±1.00% at 50% load 15°C to 25°C	
Minimum Load	Zero	
Start-up delay (typical)	at 24V input: <1.5s at 36V input: <1.0s	at 72V input: <1.5s at 110V input: <1.0s
Remote sensing	Not fitted	
Line & Load Regulation	±1.00% combined	
Temperature Coefficient	<0.02% / °C	
Output Ripple	<1% Pk-Pk of Output Voltage	
Output Noise	<75mV Pk-Pk superimposed (up to 20MHz)	
Response Time	0.5ms to within 2% (for a 20% - 90% 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.	
Indicators	Green 'Output OK' LED adjacent to connector	
Maximum capacitive load (output model dependant)	Output model	12V & 15V 24V 36V 48V
	Capacitance:	10,000µF 4,000µF 1,500µF 1,000µF
Isolation	Input to Output	2.0kV ac (tested at 3.0kV dc)
	Input to Chassis	1.0kV ac (tested at 1.5kV dc)
	Output to Chassis	1.0kV ac (tested at 1.5kV dc)

Environmental details

Parameter	Detail
Operating Temperature	EN50155 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 with optional ventilated steel cover

Technical drawing



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Applicable norms

Parameter	Detail
EMC	EN50155 (2017), EN50121-3-2 (2016)
Other	EN50155 (2017), pr EN50155 (2016)
Fire & Smoke	EN 45545-2 (2013)

Mechanical characteristics

Parameter	Detail
Construction	Conformal coated PCB with aluminium base plate. Optional ventilated stainless steel cover.
Dimensions (L x W x H) (excluding mounting flanges)	Open frame: 200 x 80 x 50mm With cover: 200 x 83 x 54mm (mounting plate width = 110mm)
Weight	570g (820g with cover)
Connections	Standard: 10 way PCB mounted connector with screw locks part number: Weidmüller SL-SMT 5.08/10/90LF Option W: Wago cage clamp p/n 236-501 (5 pos) M4 earth stud on base plate
Fixings	Four Ø 5.5mm fixing holes.

Options for XER series

Code	Detail
S	Ventilated cover
W	Wago connectors