



> Description

Originally designed for on-board passenger information systems, the JL series is now available in a wide variety of input and output configurations. Capable of providing 35W or 50W of continuous power at ambient temperatures of up to 75°C, the low component count makes the JL series a highly reliable yet cost effective solution. For applications where the converter will be housed within an enclosure, the open frame version offers a further cost saving. The JL and JLH series have recently expanded to include alternative size footprints, connectors and functional features.



Special features include:

- Wide operating temperature range
- Low component count, high reliability
- Simple construction - open frame or enclosed versions available
- Low cost

- \* New versions JLR & JLHR series with functional options and to RIA norms
- \* New versions JLM & JLHM M1 Conduction cooled versions

> Input Specifications

The following input voltages versions are available as standard:

110V	(66.0 - 137.5V)	dc	(Suffix A)
72V	(50.0 - 90.0V)	dc	(Suffix D)
52V	(36.0 - 65.0V)	dc	(Suffix C)
36V	(25.0 - 50.4V)	dc	(Suffix F)
24V	(16.8 - 33.6V)	dc	(Suffix B)

**Other ranges are available to order**

JL series family—overview	
35Watts	JL versions rectangular PCB with enclosure option
	JLR versions include RIA and other functional options
	JLM versions mini PCB footprint with enclosure option
	JLM M1 versions mini PCB footprint with conduction cooled package
50Watts	All versions as above; JLH, JLHR, JLHM

Options for JLR and JLHR versions	
Code	Detail
L	Output OK Relay (NO and NC)
R	RIA filtering (RIA 12 & 13)
V	Enable. Connect to + input to enable

Parameter	Detail
Input Ripple	EN50155
Input Protection	Reverse polarity protection. Surges and transients to EN50155 (Direct and Indirect)
Inrush Current	Limited to typically 5 x nominal current (after 0.1ms)
Efficiency	85% typical
Hold up time	10ms to EN50155 S2 (except JLH 72Vdc input version)
Supply change over (dips)	0 - 6Un 100mS to EN50155 Class C1

> Output Specifications

Parameter	Detail
Maximum Output Power	35Watts JL, JLR, JLM, versions 50Watts JLH, JLHR, JLHM, versions
Output Versions	Single output all series
Output Voltage	Fixed output can be specified from 5V to 110Vdc (5Vdc output versions limited to 35Watts)
Setting Tolerance	±2%
Line / Load Regulation	±2%
Temperature Coefficient	<0.02% / °C
Output Ripple	<1% Pk-Pk of Output Voltage
Output Noise	<75mV Pk-Pk superimposed (up to 20MHz)
Response Time	1.0ms to within 2% (for a 20% - 90% load change)
Current limit	Operates at approximately 115% of rated current
Isolation (tested at dc equivalent voltage)	Input to Output 2.0kV ac Output / Input to Case 1.0kV ac (enclosed version)





> Environmental Details

Options for all versions	
Code	Detail
T	Extended temperature range; -40°C operating

Parameter	Detail
Operating Temperature	-25°C to +75°C (no derating)
Storage Temperature	-40°C to +80°C
Cooling	By convection (M1 versions have conduction cooled package)
Relative Humidity	95% max.
Shock & Vibration	EN50155 (EN61373)

> Applicable Norms

Parameter	Detail
EMC	EN50155 (2007), EN50121-3-2 (2006)
Other	EN50155 (2007) RIA 12, 13 version specific

> Mechanical Characteristics

Options for all series	
Code	Detail
S	Enclosure with DIN Rail mounting clips
S2	Enclosure no clips

Options for JLM & JLHM series	
Code	Detail
M1	Conduction cooled package
Q1	Power d-type connectors
Q4	Alternative Wago input connector

Parameter	Detail		
Construction	Open frame PCB with Enclosure options		
Dimensions (Length x Width x Height)	<b>Version</b>	<b>PCB Footprint</b>	<b>Enclosed version</b>
	JL & JLH	220x73x30mm	250x78x35mm
	JLR & JLHR	220x73x30mm	Consult sales office
	JLM & JLHM	115x85x22mm	Consult sales office
JLM M1 Conduction cooled	135x85x30mm with base plate		
Finish	PCB, Conformal coating. Enclosure, plated mild steel.		
Weight	<0.5kg		
Connections	<b>Version</b>	<b>Input Connectors</b>	<b>Output Connections</b>
	JL & JLH	Wago 236-501	Wago 236-501
	JLR & JLHR	Wago 236-501 or Wago 721-434	Wago 236-501 or Wago 721-435
	JLM & JLHM	standard Q4 option Q1 option	Wago 236-501 Wago 721-433/001-000 3W3 male power d-type
Outline drawings	<b>Version</b>	<b>Outline Drawing</b>	
	JL & JLH	900-928	
	JLR & JLHR	Consult Sales	
	JLM & JLHM	978-900 PCB outline 978-902 Enclosure	
	JLM & JLHM M1 Conduction cooled	978-901	



JL & JLH Enclosed Version



JL & JLH PCB



JLM M1 Conduction cooled



JLM PCB Version Q4 option