

DC/DC converter for railway applications

Description

The 300W ATG series is a range of cost-effective, medium power single output converters that comply fully with the latest rail specifications and norms for protection and EMC. Although simple in construction, the mounting arrangement ensures compliance with the vibration and shock requirements of EN 50155.

Special features include:

- Wide choice of output voltages
- High efficiency
- Fully compliant with rail standards, including EN 50155 & EN 50121.3.2



Option for all series

Code	Detail
Z	No fuse wire link fitted to input circuitry
L	Output status flag Output fail relay fitted
S	Current share option Droop current share circuit and series diode fitted
S2	Droop current share circuit fitted

Part number	Output V_o [VDC]	I_o [A]
ATG 1200-*/1	12	20
ATG 1500-*/1	15	16
ATG 2400-*/1	24	12.5
ATG 3600-*/1	36.6	8.2
ATG 3600-*/2	36	8.3
ATG 4800-*/1	48	6.25
ATG 6000-*/1	60	5
ATG 7200-*/1	72	4.2
ATG 110-*/1	100	2.5

Input specifications

The following input voltage versions are available as standard:

110V (66.0 - 137.5V) dc (Suffix A)
72V (43.2 - 90.0V) dc (Suffix D)
52V (31.2 - 65.0V) dc (Suffix C)
36V (21.0 - 50.4V) dc (Suffix F)
24V (16.8 - 33.6V) dc (Suffix B)

Parameter	Detail
Input Ripple	To EN 50155
Input Protection	Reverse polarity protection (some input versions require external fuse or circuit breaker) Surges and transients EN 50155 (direct and indirect)
Inrush Current	Limited to typically 6 x nominal current (after 0.1ms)
Efficiency	90% typical
Hold-up time (110V dc input version only)	10ms to EN 50155 Class S2 (input removal only)
Input Fuse	15 Amp wire link (25 SWG) is fitted for safe unit protection in the case of catastrophic failure

Output specifications

Parameter	Detail
Maximum Output Power	300W (except 12V & 15V output versions which are rated at 240W continuous, 300W for 5 seconds)
Output Versions	Single output only
Output Voltage	Can be specified from 12V to 110V
Setting Tolerance	$\pm 1.0\%$ at 50% load, 15°C to 25°C
Minimum Load	Zero

Output specifications (Continued)

Parameter	Detail
Line Regulation	±0.5%
Load Regulation	±0.5%
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 1% (for a 10% - 100% load change)
Current Limit	Operates at approximately 110% of rated output power
Thermal Protection	Shuts down PSU if safe internal temperature is exceeded Auto recovery
Isolation	Input to Output 1.5kV ac (tested at 2.2kV dc)
	Input to Case 1.0kV ac (tested at 1.4kV dc)
	Output to Case 1.0kV ac (tested at 1.4kV dc)

Environmental details

Parameter	Detail
Operating Temperature	-25°C to +70°C (no derating). Base plate is suitable for cold wall mounting and must not exceed 85°C for full power operation
Output power derating	Above 70°C: 2% / °C; 100°C absolute maximum
Storage Temperature	-40°C to +80°C
Cooling	Convection / Conduction
Relative Humidity	95% max
Shock & Vibration	EN 50155 (EN 61373)
Environmental Protection	IP20

Applicable norms

Parameter	Detail
EMC	EN 50155 (2017), EN 50121-3-2 (2016)
Other	EN 50155 (2017), EN 45545-2 (2020)

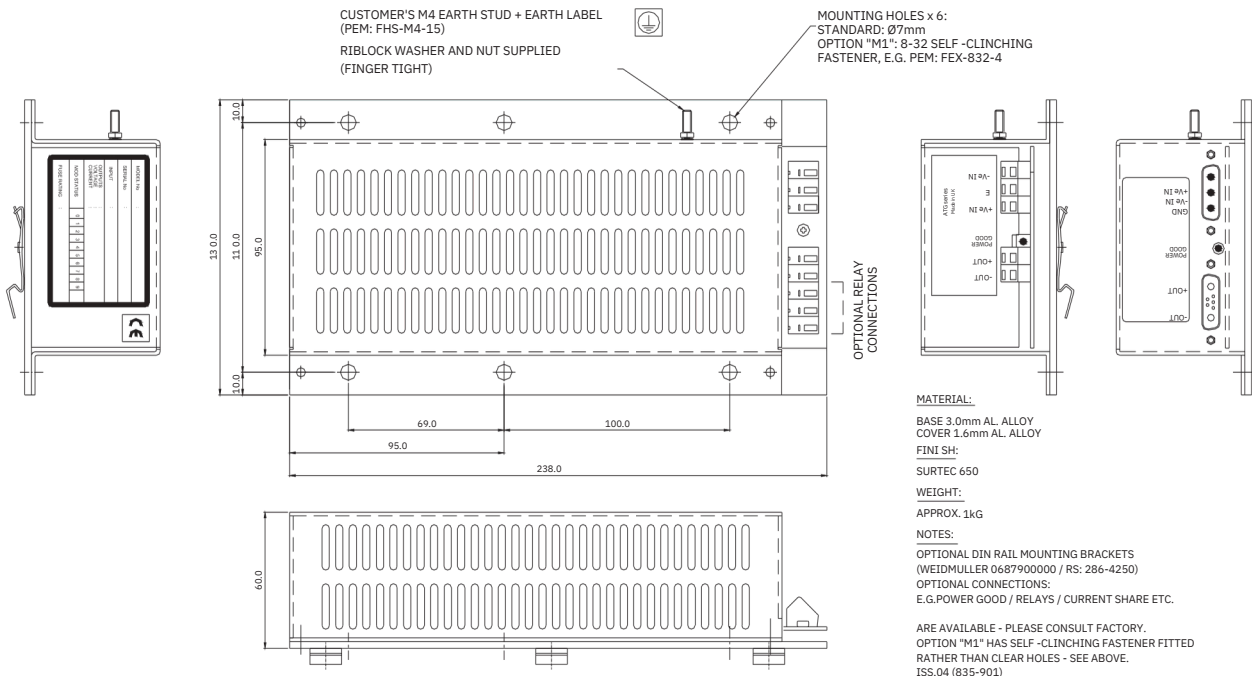
Mechanical characteristics

Parameter	Detail
Construction	Simple aluminium chassis with Suretec 650 finish
Dimensions	Length = 238mm
	Width = 130mm
	Height = 60mm
Weight	<1.0kg
Connections	Wago 236-501 terminal blocks and an M4 earth stud Power D-type connectors also available
Fixings	Six ø 7mm fixing holes on base plate

Options

Code	Detail
T	Extended temperature range to -40°C
D	DIN rail fixings fitted
Q1	Power D-type connectors fitted to input and output
SAV	RIA version, power reduced to 216 Watts Includes IP54 Enclosure and D-type connectors

Technical drawing



LPA Channel Electric
Glebe Farm Technical Campus
Knapwell, Cambridge
CB23 4GG, UK
+44 (0) 1954 267726
powersystems@lpa-group.com

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LPA Group plc
Light & Power House,
Shire Hill, Saffron Walden,
CB11 3AQ, UK
+44 (0) 1799 512800
enquiries@lpa-group.com