FILTER RIA12 100-W/Ks, .../Ksl.../Ksp

RAILWAY FILTER.

FOR PCB AND CHASSIS MOUNTING

HIGHLIGHTS

- Output Power up to 100 Watts*
- Efficiency up to 99%
- Ultra Wide Input Range
- Wide Temperature Range
- Hold-up-time > 10ms
- RoHS compliance
- According to EN50155 and RIA12
- Reverse Polarity Protection
- Integrated EMC Filter

INPUT

Input Voltage Nominal	72, 96 and 110 V
Input Voltage Operating	50,4-137,5 VDC
Input Voltage Range	43,2-154 VDC (t ≤ 1,0 sec.)
No Load Input Current	See table page 2

OUTPUT

Output Voltage	See page 5
Output Load	See page 5
Minimum Load	No minimum load
Voltage Drop	< 0,75 % (0% - 100% load)
Start Time	< 1,0 ms
Max. Output Capacitance	300 uF/A

FEATURES

Active Inrush Current Limitation	Max. 6 A (for ≥ 0,5 ms)***
Reverse Polarity Protection	Max.160 V
Hold-up-time	> 10 ms at full load (only for V_{in} 110 V)

TRANSIENTS RIA 12

Wave Form A – 385VDC	20ms, 0,2 Ohm
Wave Form B – 165VDC	1s, 0,2 Ohm
Wave Form C – 960V	10us/100us, 5 Ohm
Wave Form D – 1800V	5us/50us, 5 Ohm
Wave Form E – 3600V	0,5us/5us, 100 Ohm
Wave Form F – 4800V	0,1us/1us, 100 Ohm
Wave Form G – 8400V	0,05/0,1us, 100 Ohm

PROTECTION

Over Temperature Protection (OTP)	Shutdown at +95°-100°C Case-temp. with about 5°C hysteresis and auto recovery.

GENERAL

Product Standard	EN 50155:2007
Isolation	2200 VDC Input/Output to Earth (PE)
Dimensions [mm]	113,5 x 35 x 46
Weight	approx. 300 g
MTBF	TBD

ENVIRONMENTAL

Operating Ambient Temp.	-40°C to +85°C*
Storage Temperature	-40°C to +100°C
Vibration / Shock / Bump	EN 61373:2010, Cat. 1

EMC

EMC Standard	EN 50121-3-2:2006
Emissions	EN 55011:2009+A1:2010, Class B**
ESD Immunity	EN 61000-4-2:2009, level 3 (6kV/8kV), Criteria A
Burst	EN 61000-4-4:2004, level 3 (2kV), Criteria A
Surge	EN 50121-3-2:2006, line to line ±1kV, 42R, and line to case ±2kV, 42R, Criteria A EN 61000-4-5:2006, line to line ±1kV, and line to case ±2kV, Criteria A
Conducted Immunity	EN 61000-4-6:2009, level 3 (10V), Criteria A
Radiated Immunity	EN 61000-4-3:2006+A1:2008+A2:2010, 20V/m, Criteria A
Safety	Designed to meet EN61204-7:2006

* +85°C continuously.
** In built-in condition the devices may show different EMC properties.
*** Only valid for filter interval capacitance.

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Specifications subject to change without notice · 80 72 00 3001 8 a02 · 03.2019

TECHNICAL DATA

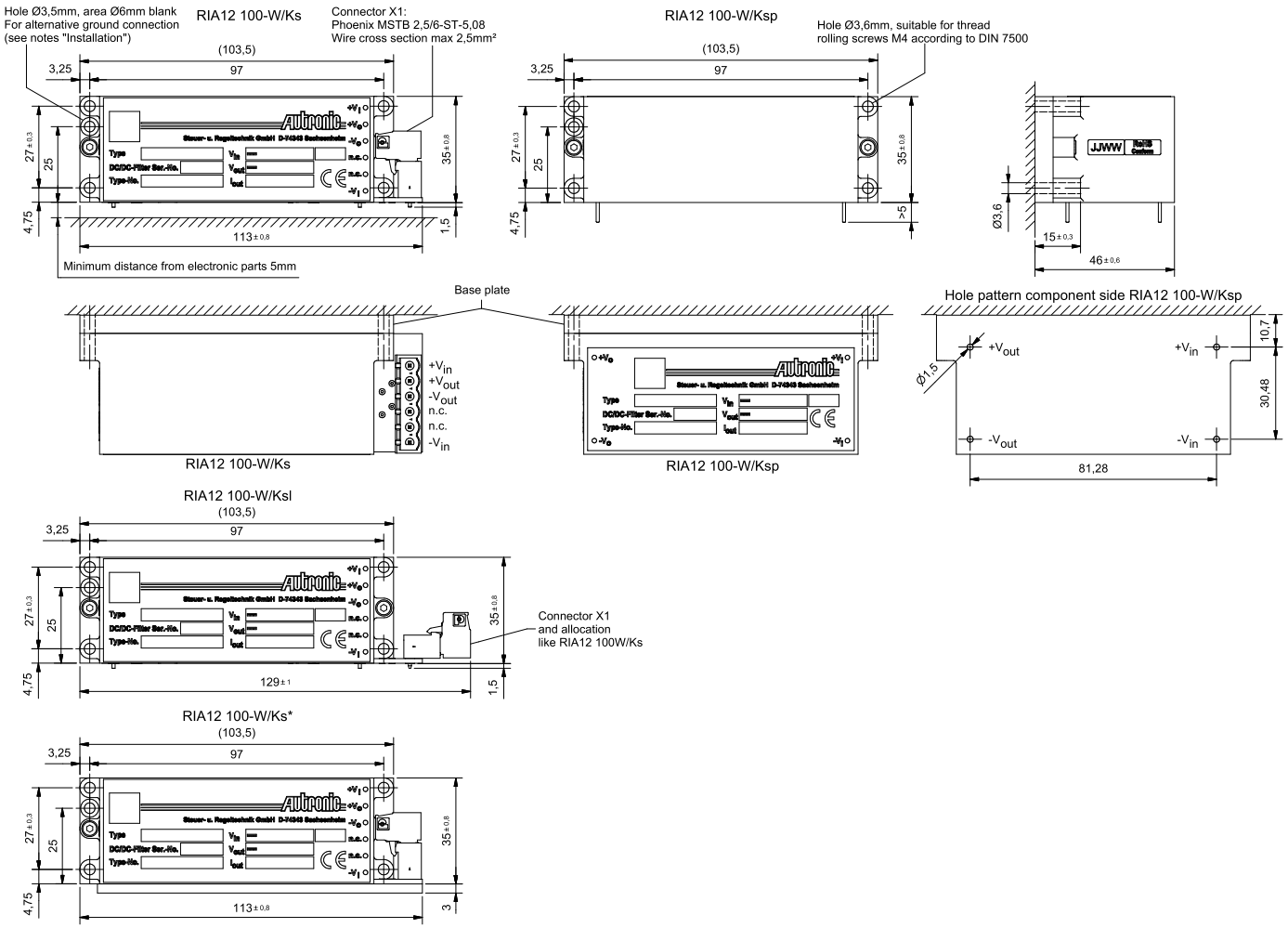
For T_{amb}=25°C,$V_{in\ nom}$,$I_{out\ nom}$, unless otherwise specified

SPECIFICATION Input 43,2 - 154 VDC

	TYPE		RIA12 100-W		
	ORDER NUMBER		87 72 01 0222 5		
	CHARACTERISTIC	Unit			
INPUT	Input Voltage Nominal	V	72	96	110
	Input Voltage Range	V	43,2...101	57,6...134,4	66...154
	Under Voltage Turn-on	V	<50,4		
	Under Voltage Turn-off	V	<35...40		
	Input Current @ Full Load	A	1,40	1,04	0,91
	Input Current @ No Load	A	0,006	0,006	0,006
	Recommended External Fuse	A	3,0		
OUTPUT	Output Power	W	100		
	Efficiency @ Full Load (typical)	%	99	99	99

MECHANICAL DETAILS

1. Dimensions are in mm
2. Unless otherwise specified, general tolerances +/-0,5 are for values in brackets (XX)
   Values not in brackets are according to ISO-2768-1m



Resin compound: Polyurethane blue, UL94-V0, EN45545-2:2016-02 HL-HL2-HL3 (R24)

* For models with pin cover

TECHNICAL DATA

For T_{amb}=25°C,$V_{in\ nom}$,$I_{out\ nom}$, unless otherwise specified

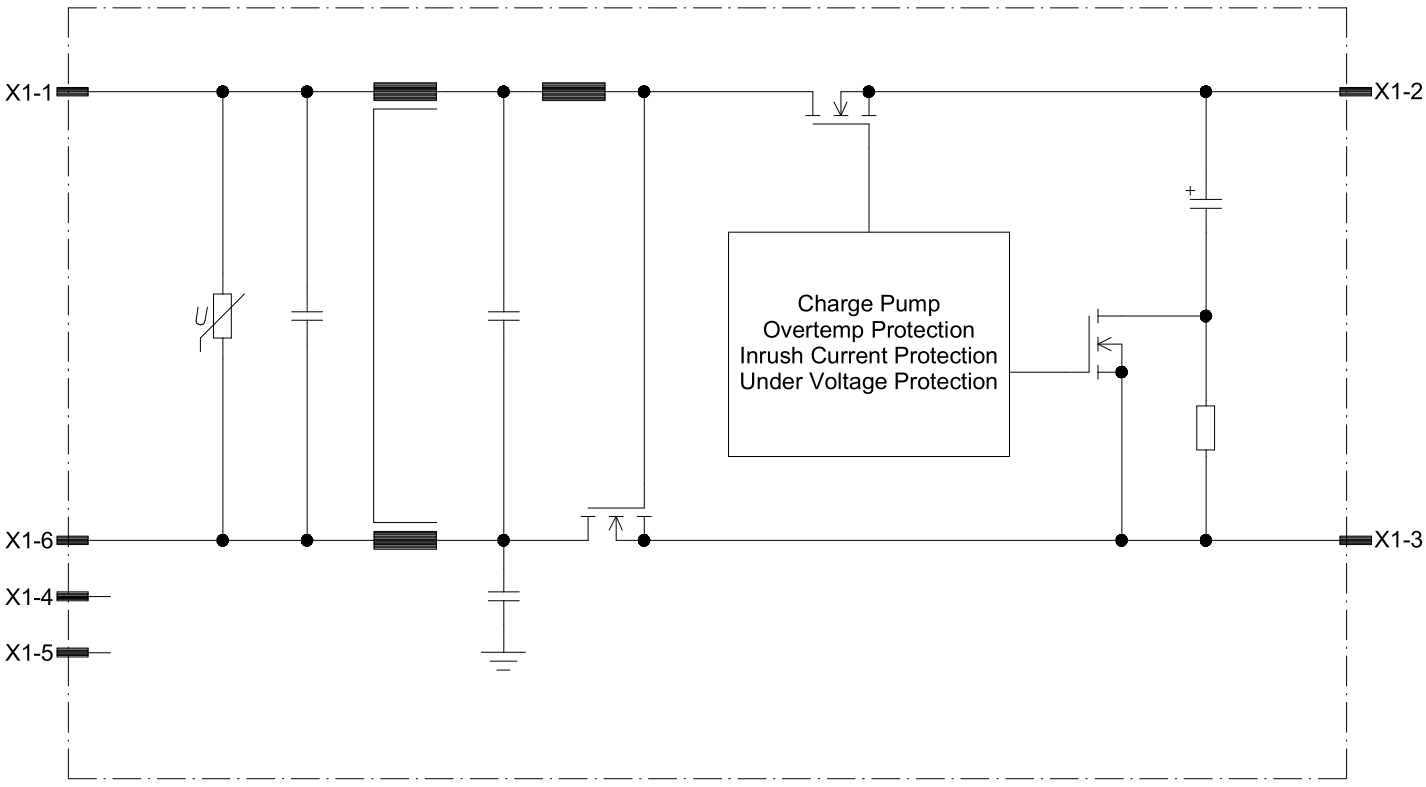
PINNING

Pin	Function
X1-1	$+V_{in}$
X1-2	$+V_{out}$
X1-3	$-V_{out}$
X1-4	ic
X1-5	ic
X1-6	$-V_{in}$

NOTES

Installation instructions:
The converters have to be installed according to the guidelines currently in force, like other open electronic component assemblies. Attention must be paid to sufficient ventilation, carry off heat, fastening and protection against accidential contact. Plug in not under voltage. The base plate has to be grounded by using thread rolling screws M 4 according to DIN 7500. An alternative connection to ground can be realized by a special mounting hole, which is free of anodizing surface.
Fault protection: For input protection a time-lag fuse corresponding to IEC 60127-2 must be installed. For recommended rating of the fuse refer to specification table above. Pay attention on sufficent current source in case of short circuit. In some applications 2 fuses would be necessary, one in each input line.
Caution:
1. Output Voltage may stay longer than 30 sec. on harmfull levels. After power off, minimum time before disconnecting is 5 minutes.
2. Not all Types have protection against touching, dangerous voltage.

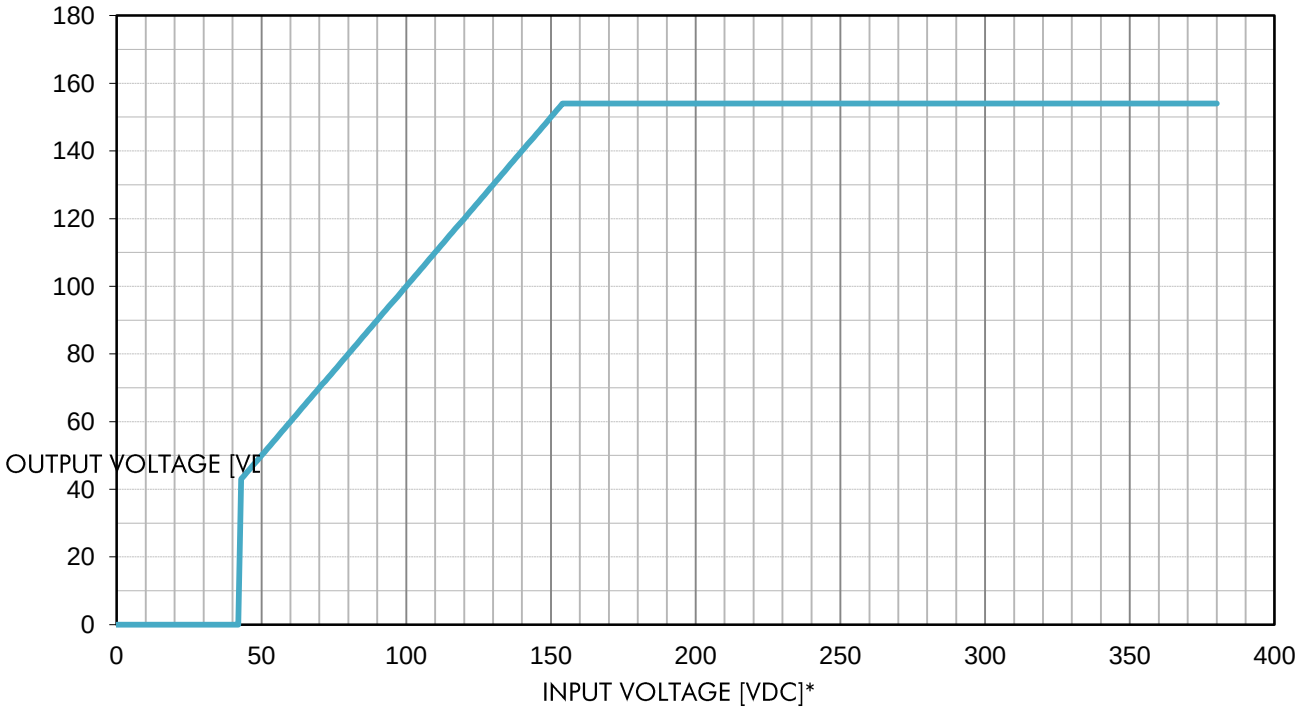
BLOCK DIAGRAM



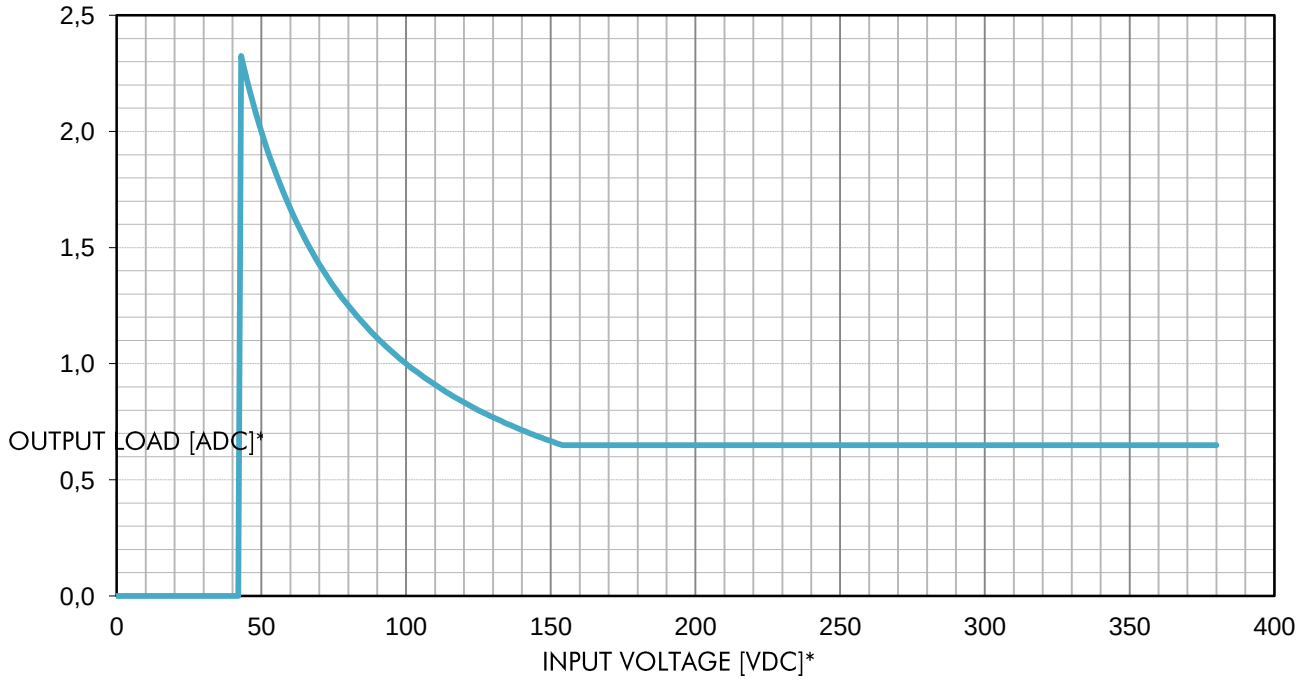
DESCRIPTION OF FEATURES

For T_{amb}=25°C,$V_{in\ nom}$,$I_{out\ nom}$, unless otherwise specified

OUTPUT VOLTAGE



MAXIMUM OUTPUT LOAD



* For Vin >154V only allowed according to RIA12 requirements.

** For Vin: 50,4V...137,5V double value allowed for t < 1s at start time.