DC/DC Converter 150W for Railway application 04/2021 Serie EWB


Version C (100x70x20mm) Version K


Version S (100x41x17mm) Version P

- **SMT - on ceramic technology**
- **Metal case in different shapes**
- **100% burn-in & parameter test**
- **Assembling according to ANSI/IPC-A-610**
- **Laser trimmed thick film resistors**
- **High efficiency up to 94,5%**
- **Short circuit proof**
- **Extended temperature range: -40°C to +85°C**
- **Designed to meet EN50155 and EN50121-3-2**
- **Integrated hold-up-time**
- **Integrated Input filter**
- **Integrated reverse polarity protection**
- **OVP: Burst EN61000-4-4 2kV (5/50ns, 5kHz)**
- **Surge EN61000-4-5 2kV Line-Earth;1kV Line-Line**
- **RoHS compliant**
- **UL94V-0 compliant**

Examples of Part Number

Model	Input	Output	Efficiency	Connection
EWB150-24-12-C	14V to 34V	12V / 12,5A	91%	Cable
EWB150-24-12-K				Connector
EWB150-24-12-S				Connector
EWB150-24-12-P				Pin
EWB150-24-24-C	14V to 34V	24V / 10A	93%	Cable
EWB150-24-24-K				Connector
EWB150-24-24-S				Connector
EWB150-24-24-P				Pin
EWB150-36-28-C	21V to 51V	18V / 8,33A	93%	Cable
EWB150-36-18-K				Connector
EWB150-36-18-S				Connector
EWB150-36-18-P				Pin
EWB150-110-24-C	66V to 154V	24V / 6,25A	94%	Cable
EWB150-110-24-K				Connector
EWB150-110-24-S				Connector
EWB150-110-24-P				Pin

Part Numbering System

EWB	150	110	24	K
Serie	**Power**	**Input**	**Output**	**Mechanics**
EWB	150: 150W	110: 66V to 154V 36: 21V to 51V 24: 14V to 34V	12: 12V 15: 15V 18: 18V 24: 24V XX: custom solution value between 12 and 24	C: Cable (100x70x20mm) K: Connector (100x70x20mm) S: Connector (110x42x15mm)

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General electrical specifications (Note1)				
INPUT	Nominal input voltage	24V DC	36V DC	110V DC
	Input voltage range	14V to 34V DC	21V to 51V DC	66V to 154V DC
	Low side turn off / on	12V / 13,5V	18V / 20V	58V / 64V
	High side turn off / on	37 / 35V	54V / 53V	165V / 160V
	Max. input voltage	± 80V DC	± 100V DC	± 200V DC
	No load input current	50 mA	50 mA	50 mA
	Nominal input current	6,87 A	4,53 A	1,46 A
	Hold-up-time (Class S2)			>10ms for Pout<100W
	Efficiency	90,6% to 92,6%	91,8% to 93,5%	92,3% to 94,5%

OUTPUT	Output voltage	12V	15V	18V	24V
	Output current	12,5A	10A	8,33A	6,25A
	Output voltage accuracy	± 1%			
	Regulation line³ (Note 2)	± 1%			
	Regulation load (Note 3)	± 2%			
	Ripple (20 MHz)	< 80 mVpp	< 100 mVpp	< 125 mVpp	< 150 mVpp

PROTECTION	Short circuit protection	current limiting
	Overload protection	Thermal shutdown @ ca 120°C
	Reverse polarity	See max. input voltage
ISOLATION	Isolation I/O	2500V DC
	Isolation I/ case	1500V DC
	Isolation O/case	1000V DC
Environment (Note 4)	Operating temperature	-40 to +85°C
	Storage temperature	-55 to +125°C
Other	Temperature coefficient	0,02%/°C

Notes:
1. Typical specifications at T_a = 25°C under normal line voltage and full load conditions, unless otherwise noted
2. Ui min to Ui max
3. Imin = 0 to Imax = 100%
4. Case temperature

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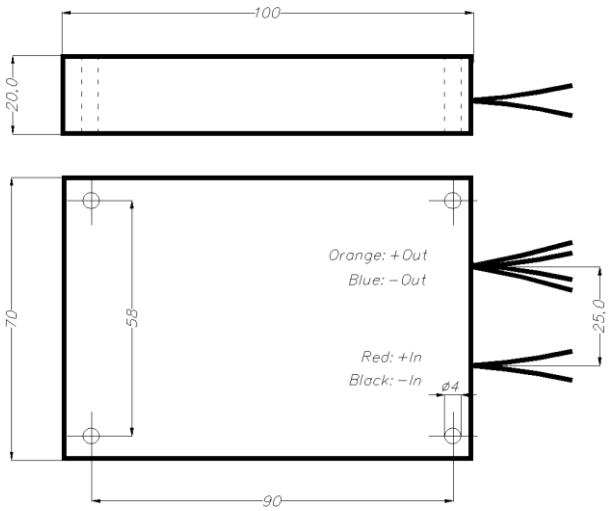
Mechanic solution

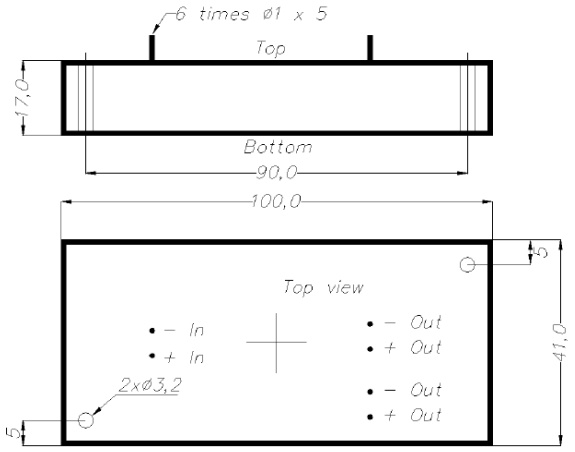
Version C



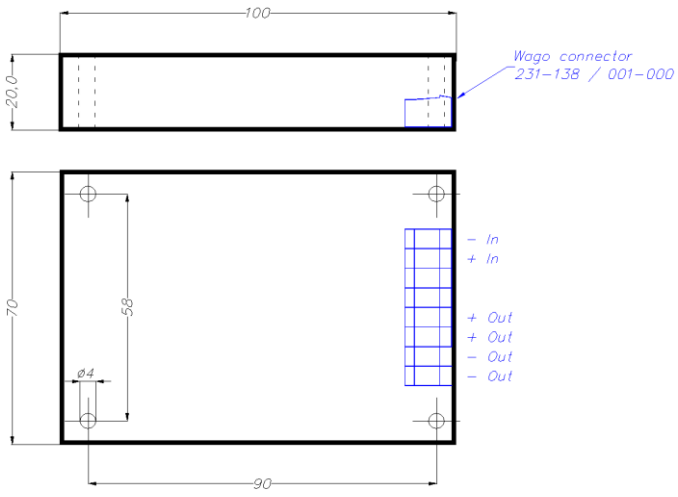
Red: 200mm / 0,75mm²	+ Input
Black: 200mm / 0,75mm²	- Input
Orange: 2 x 200mm / 0,75mm²	+ Output
Blue: 2 x 200mm / 0,75mm²	- Output

all dimensions in mm
tolerance: ±1mm

Version P

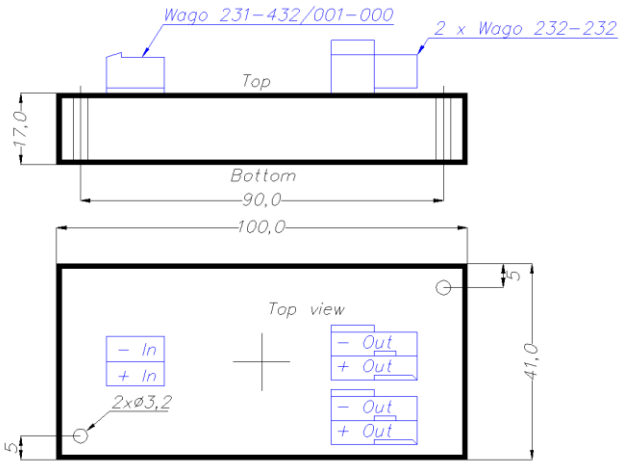


Version K



all dimensions in mm
tolerance: ±0,5mm

Version S



all dimensions in mm
tolerance: ±0,5mm

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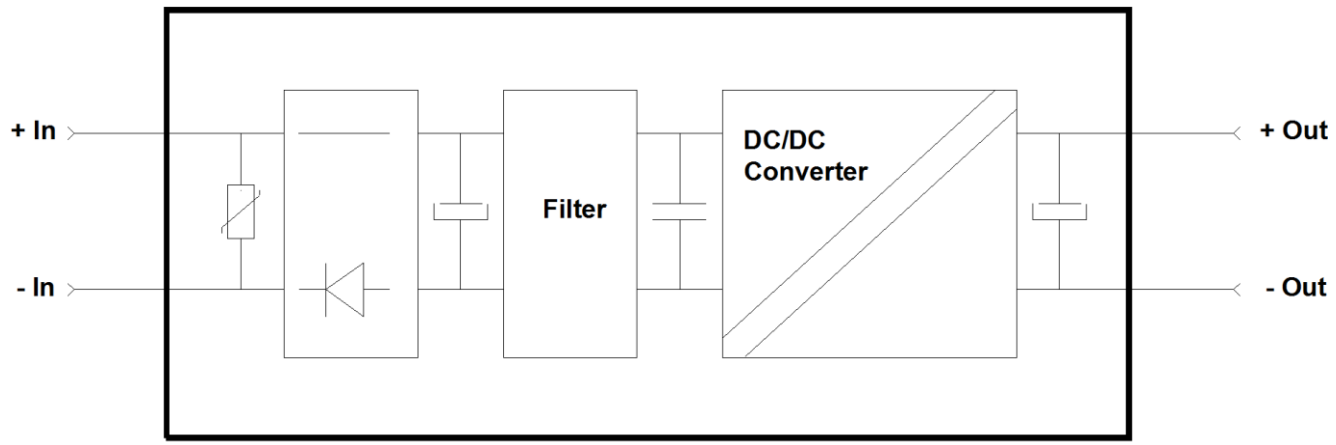
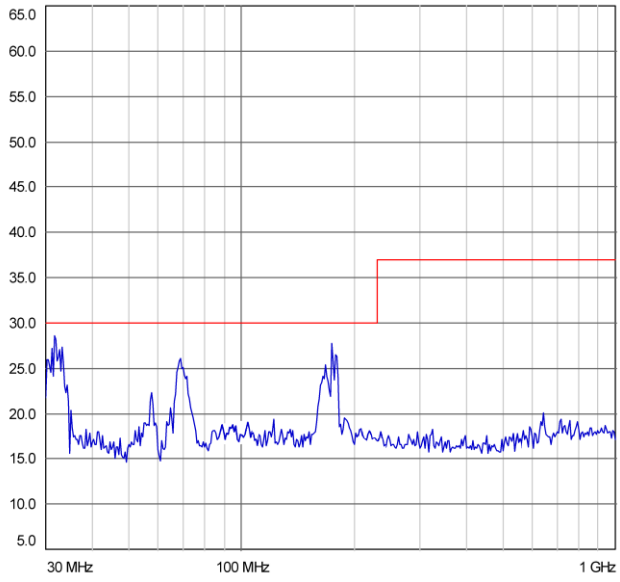
Schematic

Block diagram



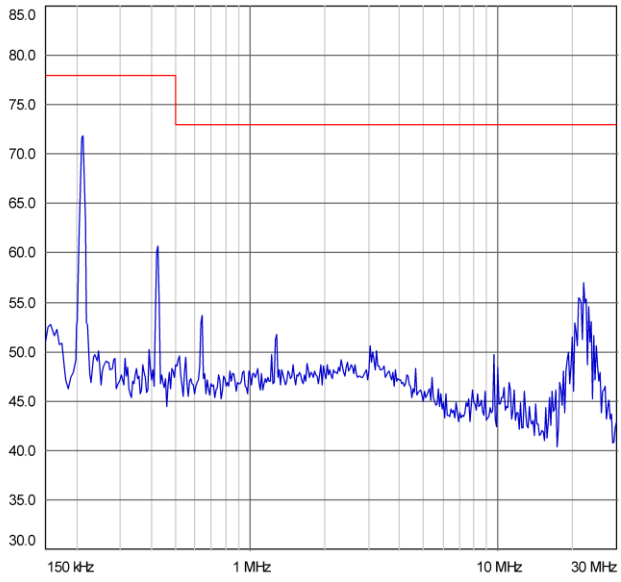
EMI/RFI

Radiated



EWB150-xx-xx

Conducted



EWB150-xx-xx

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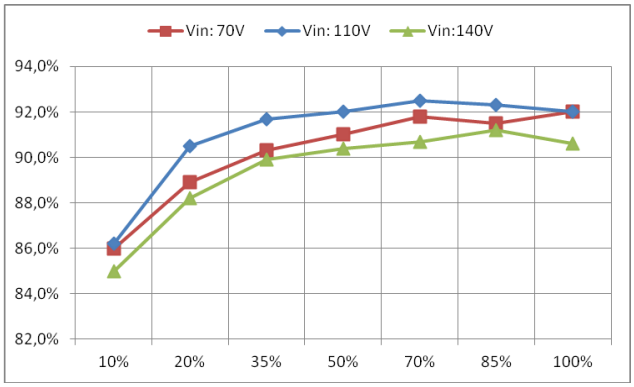
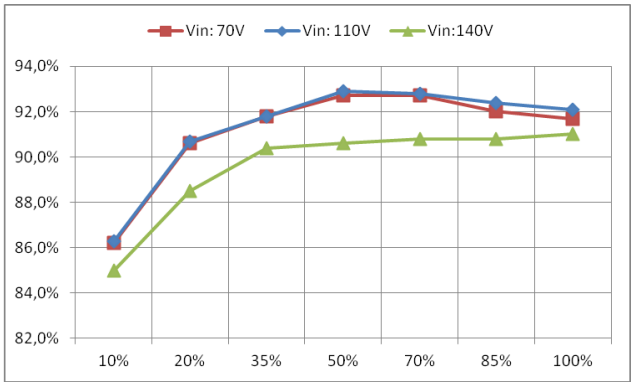
Efficiency

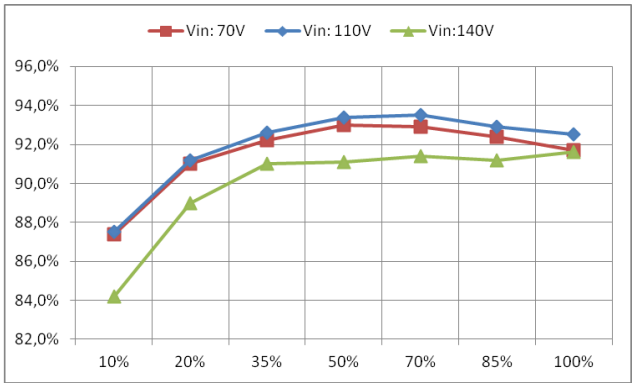
EWB150-110-12



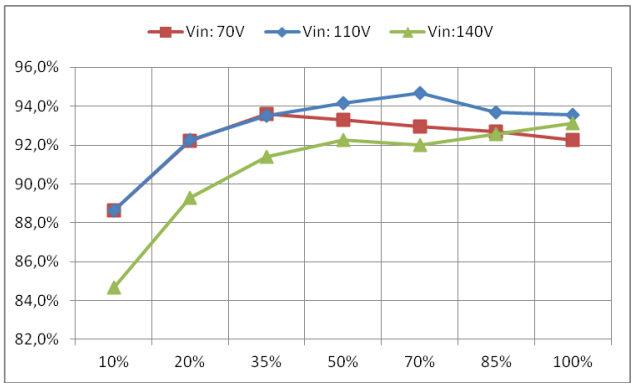
EWB150-110-15



EWB150-110-18



EWB150-110-24



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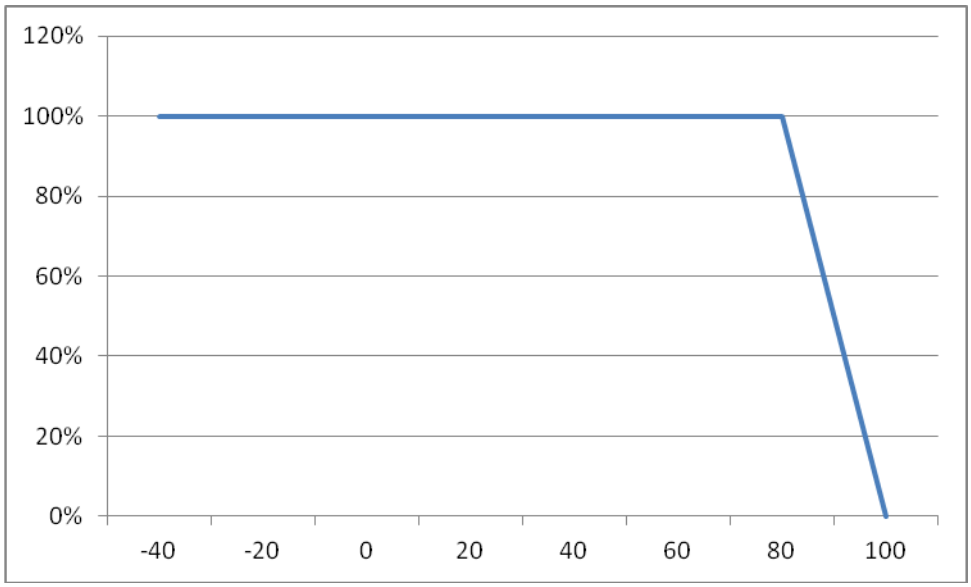
Derating

Output power vs. case temperature



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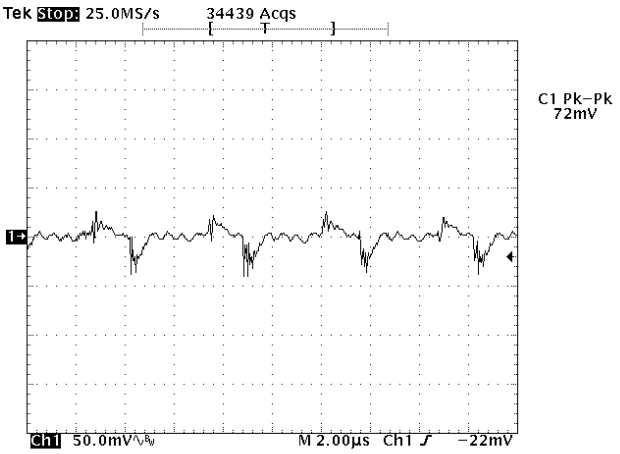
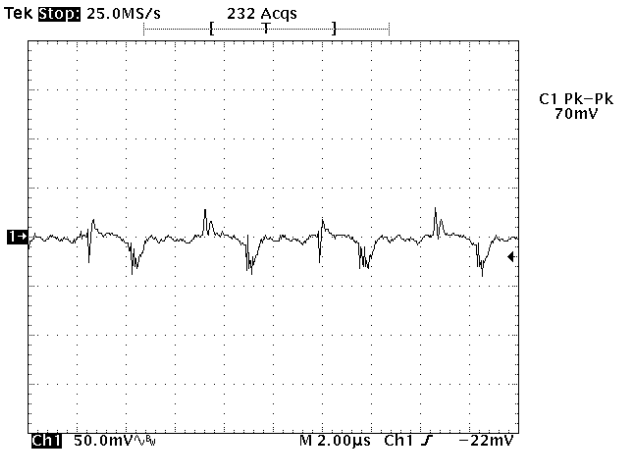
Output ripple (nominal Input and full load)

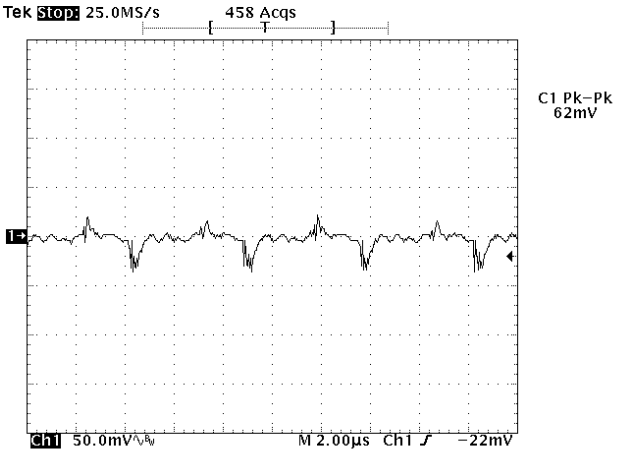
EWB150-xx-12



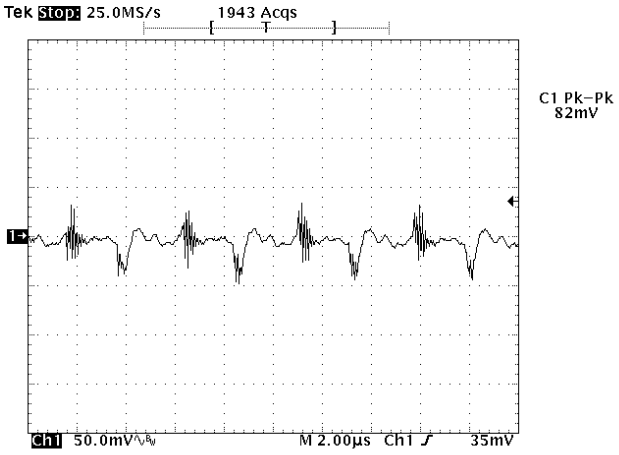
EWB150-xx-15



EWB150-xx-18



EWB150-xx-24



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