

Data Sheet

EC-BDF1200-63

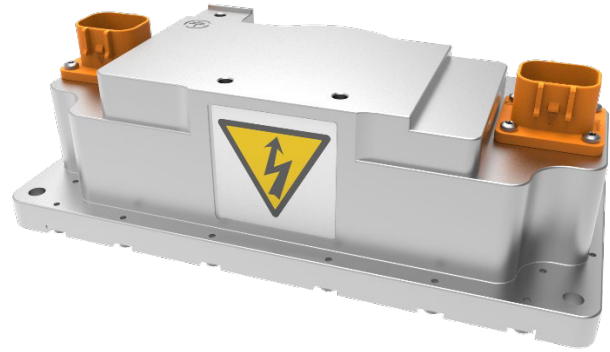
EMI filter for liquid cooled onboard charger ED3 (EC-BDC1200)

FEATURES

- Enclosure with high degree of protection from ingress (IP6K9K) – sealed from moisture and dust
- Passive cooling
- Ambient temperature between -40°C and +70°C
- Robust design withstanding high levels of mechanical vibration and shocks

TYPICAL APPLICATIONS

- EMI filter for AC-charging with ED3 onboard charger



GENERAL

The device is an EMI filter intended to be used as a supplemental noise suppressor for ED3 onboard charger to comply with UNECE R10 requirements.

SPECIFICATIONS

AC-In and AC-Out connections	
AC voltage	1-phase 90 – 293 V 3-phase 156 – 507 V Only in combination with functional 30 mA Type B RCD while charging from TN network with and without neutral. Charging is prohibited from: IT or corner grounded networks
Maximum power	43.6 kVA
Maximum current	63 A per phase
Input frequency	50 Hz \pm 2 Hz, 60 Hz \pm 2 Hz

Note that the input power is determined by the ED3. See ED3 data sheet for performance curves.

Mechanical	
Dimensions (W x H x L, mm)	301 x 149 x 90 mm
Volume	4.3 l \pm 2 %
Weight	4.7 kg \pm 2 %
Main materials	Enclosure: EN AW-6082-T651
Surface treatment	Passivation

Cooling	
Cooling type	Passive air cooling

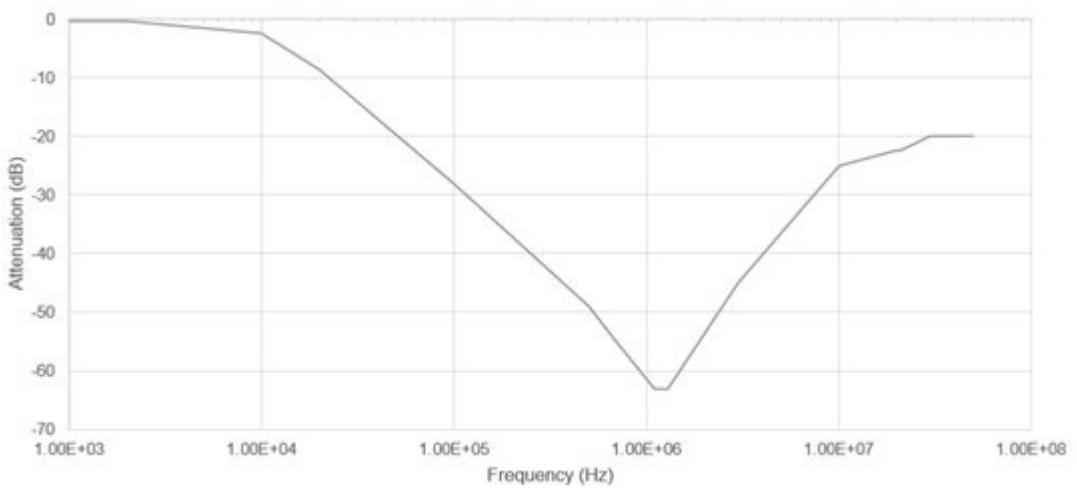
Ambient conditions	
Storage temperature	-40°C...+70°C
Operating temperature	-40°C...+70°C
Altitude	max. 3000 m
Relative humidity	93 %
Enclosure class	IP6K9K with all external connectors mated. IP34 without connectors
Mechanical impact	IK08 according to IEC 62262, 60068-2-75:1997 and SFS-EN 62262:2011
Mechanical vibration	ISO 16750-3:2023 Test XVI: Random vibration of large/heavy DUT's, Sprung masses in hybrid/electric commercial vehicle
Mechanical shock	ISO 16750-3:2023 4.2.2 Test for devices on rigid points on the body and on the frame

Connections	
AC _{IN} connector	Amphenol ELR4A04
AC _{IN} mating connector	Amphenol ELP4A04
AC _{OUT} connector	Amphenol ELR4Z04
AC _{OUT} mating connector	Amphenol ELP4Z04

Standards and classifications	
EN 61851-1: 2019 Electric vehicle conductive charging system – Part 1: General requirements.	
EN 61851-21-1: 2017 Electric vehicle conductive charging system – Part 21-1: Electric vehicle onboard charger EMC requirements for conductive connection to AC/DC supply.	
UN Regulation No. 10 Revision 6 Uniform provisions concerning the approval of vehicles with regards to electromagnetic compatibility.	

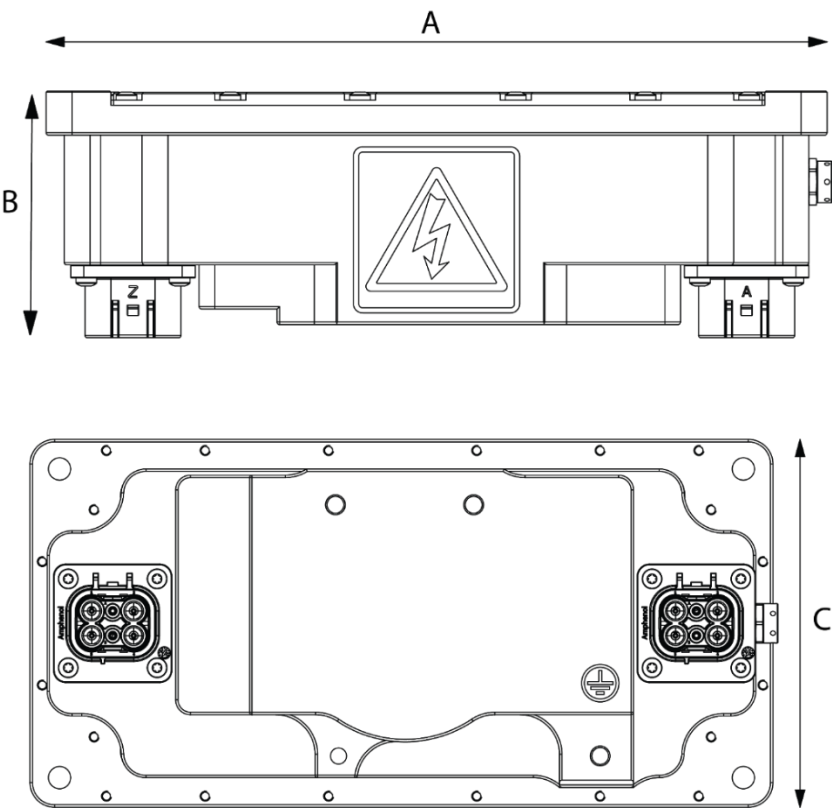
FILTER FREQUENCY RESPONSE

The nominal filter common mode frequency response of a single phase (measurement reference to ground) is shown in the picture below.



Picture 1 Filter frequency response

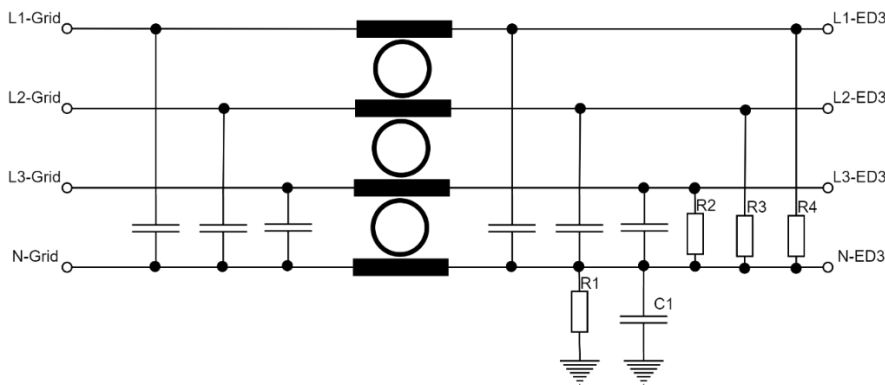
DIMENSIONS



Picture 2 External filter dimensions

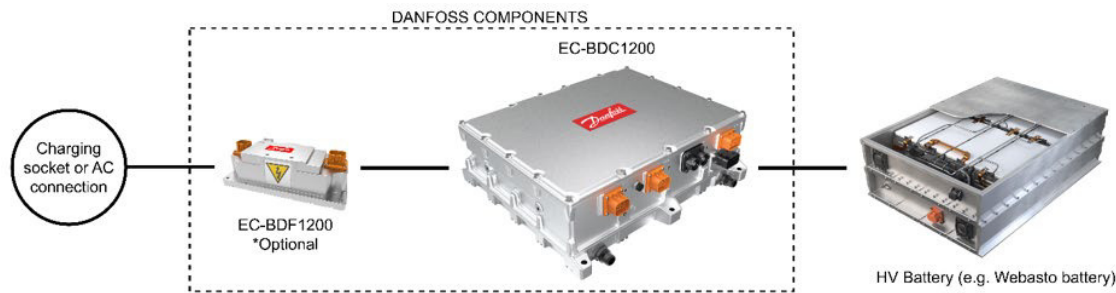
Dimension	External filter
A	301 mm
B	90 mm
C	149 mm

INTERNAL SCHEMATIC AND COMPONENTS



Component	Description
Y-capacitance C1	300 nF
Y-capacitance discharge resistance R1	100 MΩ
Phase discharge resistance R2, R3, R4	100 kΩ

APPLICATION EXAMPLE



Picture 3 EC-BDC1200 application example with EMI filter EC-BDF1200-63

*) UNECE R10 compliance is reached at the component level when external filter is used. For more information, see EC-BDF1200-63 data sheet.

AC CONNECTOR PINOUTS

Pin number	Description
1	L1
2	L2
3	L3
4	Neutral
A	Not used
B	Not used

Table 1 AC input/output connector pinout

PRODUCT CODE

Use the product code for ordering.

Product code	Description
EC-BDF1200-63	Standard unit

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