

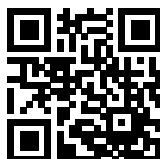
# FN220-450-99-C2222-R99

SAP Code: 822426



- Chassis mount
- 450 A EMC filter with bus bars
- DC

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## Family Technical Specifications

<b>Maximum continuous operating voltage</b>	500 VDC (FN223X) 1000 VDC (FN222X, FN224X)
<b>Certified to</b>	UL 60939-3, IEC 60939-3, CSA 22.2 No. 8-13
<b>Output connections</b>	Ni-plated busbars
<b>Pollution degree</b>	PD 3 acc. IEC 60664-1
<b>Overvoltage category</b>	II acc. IEC 60664-1
<b>Surge withstand</b>	DC+/DC- to PE: 4000 V (FN223X) / 6000 V (FN222X, FN224X) DC+ to DC-: 2000 V acc. to IEC 61000-4-5
<b>Altitude</b>	up to 2000 m no derating applies. Above 2000 m derating acc. to IEC 60664-1 applies
<b>Operating frequency</b>	DC
<b>Protection category</b>	IP00 acc. to IEC 60529
<b>Vibration and shock</b>	3M12 (operation) acc. to IEC 60721-3-3
<b>Flammability corresponding to</b>	Plastics: UL 94 V-0
<b>MTBF</b>	> 300,000 hours
<b>Rated currents</b>	450
<b>Overload capability</b>	6x rated current for 1 sec, once per hour 1.5x rated current for 1 minute, once per hour
<b>Cooling</b>	Natural convection AN
<b>Climatic class</b>	40/100/21 acc. to IEC 60068-1
<b>Temperature range (operation and storage)</b>	-40 °C to +100 °C (with current derating >55 °C)
<b>High potential test voltage</b>	DC+/DC- -> PE 2500 VDC for 2 s (FN223X)* DC+ -> DC- 3600 VDC for 2 s (FN222X, FN224X)* DC+ -> DC- 2000 VDC for 2 s (FN223X)* DC+/DC- -> PE 5000 VDC for 2 s (FN222X, FN224X)*

## Approvals & Compliances



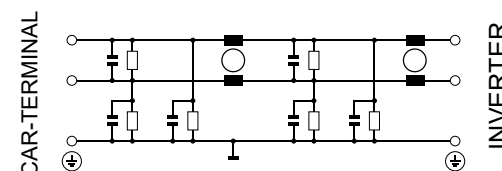
## Features and Benefits

- FN222X, FN223X and FN224X series of filters provides state-of-the-art EMI attenuation with a choice of three performance levels
- The filters are built to fit perfectly to high power EV charging applications
- The shape allows a convenient and space-saving installation
- Fulfills the requirements in IEC/EN 61851-23 Electric vehicle conductive charging system
- Fulfills the requirements in UL 2202 Electric Vehicle (EV) Charging System Equipment
- FN224X offers voltage and performance ratings of FN222X on a smaller footprint

## Typical Applications

- High Power EV DC charging beyond HPC350 (500 A @ 920 V)
- Two voltage levels (500 VDC and 1000 VDC) for CHAdeMO and CCS

## Typical electrical schematic



\*High potential test voltage: Repetition with max. 80% of specified values

## General Specification

Voltage AC	1000 (Volt)
Nominal Frequency	DC
Rated Current @ambient	450
Ambient temperature [°C]	55

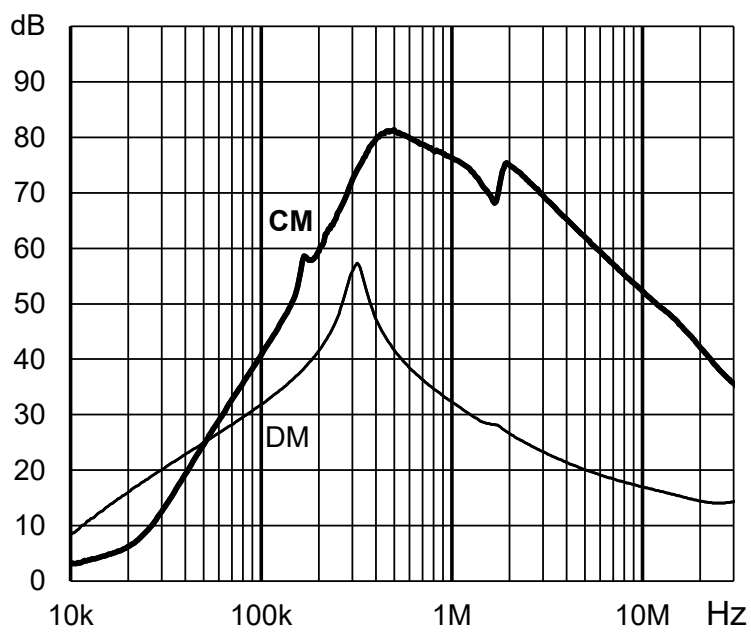
## Electric Specification

Input terminal	99 - special / busbar
Output terminal	99 - special / busbar
Resistance	10 (Kilohm)

## Attenuation Specification

CM attenuation @ 150kHz [dB]	51 (Decibels)
DM attenuation @ 150kHz [dB]	36 (Decibels)
Capacitance Cy1 [nF]	330 (Nanofarad)
Capacitance Cy2 [nF]	330 (Nanofarad)

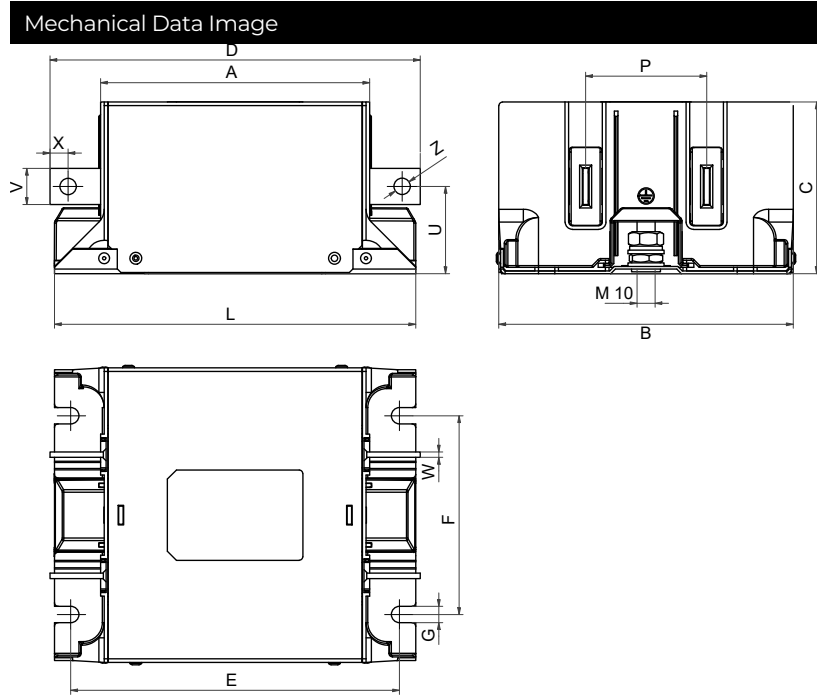
### Attenuation graph



## Mechanic Specification

Length [mm]	150
Width [mm]	163
Height [mm]	95
Volume [cm <sup>3</sup> ]	2323 (Cubic Centimeter)
NetWeight [g]	3260 (Gram)

## Schaffner schemes



## Dimensions

A [mm]	145
B [mm]	163
C [mm]	95
D [mm]	210
E [mm]	182
F [mm]	110
G [mm]	9
L [mm]	200
P [mm]	67
U [mm]	48
V [mm]	25
W [mm]	4
X [mm]	12.5
Z [mm]	11