

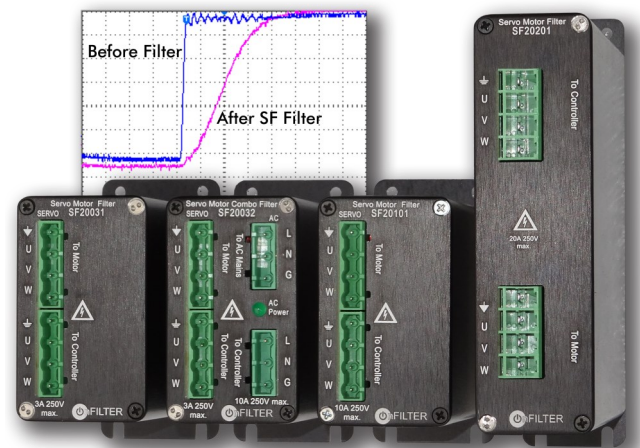
# EMI dV/dt Filters for Servo Motors and VFD

- Improve Reliability of Your Motor
- Reduce EMI in Your Equipment
- Reduce EDM-Caused Vibrations
- No Programming Changes Required

Operation of PWM-driven motors - servo and variable frequency drives (VFD) - causes a number of problems in equipment, including damage to the motor's bearings from leakage currents via electrical discharge machining (EDM), as well as resulting vibration. Strong EMI generated by PWM-driven motors causes errors in equipment.

OnFILTER' patented dV/dt SV-series filters are not simple reactors—they are complete EMI filters incorporating common mode, differential mode, and ground filtering, shrinking EMI spectrum and providing reduction of ground currents in a range of typically 50 to 100 times.

SF series motor filters are designed for incorporation into automated equipment containing servo or VFD drives.



## Applications

Industrial robotics  
Automated tools  
Control panel UL 508A  
Semiconductor fabrication  
Electronic assembly  
Reduction of vibration due to bearing damage  
Wherever EMI and EOS are a problem

## Features

Reduction of high-frequency currents  
Compliance with IEC60034-17/-25 and IEC61800-3  
Prevention of EDM (Electrical Discharge Machining)  
Reduction of overall EMI  
Easy plug-in installation  
No mechanical attachments  
No software changes  
Optimized for most PWM motors  
Effective management of rise and fall times of drive pulses

## Substantial Reduction of EMI

SF series filters greatly reduce overall EMI in the tool, reducing errors in automated equipment and testers, and improving precision and up-time

## Reduction of EDM

High-frequency currents through bearings literally eat into the bearings, irreversibly damaging them and causing vibrations. SF/SV series filters prevent EDM damage by blocking these currents from reaching motors.

## IEC60034-25 and IEC61800-3 Compliance

dV/dt filters are required for PWM-driven motors to reduce EMI and to extend life of motors. SF/SV-series patented filters reduce noise from PWM drive pulses beyond capabilities of common reactors, substantially reducing leakage through the motor bearing preventing motor's failure

## No Mechanical Attachments

SF/SV series filters require no mechanical attachments to a motor and no maintenance. Unlike mechanical approach, SF/SV-series filters provide complete EMI reduction, addressing PWM noise problem at its core.

## No Software Changes

Simply plug-and-play, no changes needed.

## SF Series EMI Filters VFD and Servo Motors

Suitable for UL 508A Panels

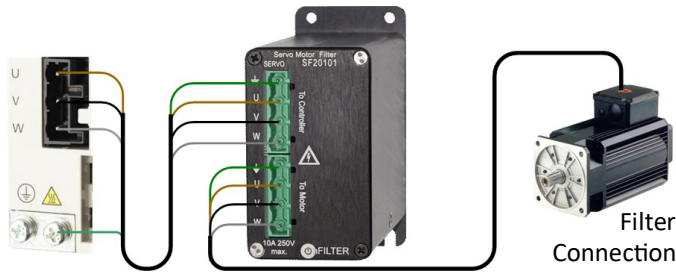


## Specification

OnFILTER servo filters utilize patented technology to provide maximum noise suppression and reduce high-frequency currents from servo and variable frequency motor operation.

Parameter	SF20031	SF20032	SF20101	SF20201
<b>DRIVE FILTER</b>				
Drive Voltage, max.	250V	250V	250V	250V
Drive Current, max.	3A	3A	10A	20A
Rise/Fall Times, typ.	1.5µS	1.5µS	1.2µS	1.2µS
Ground Current Reduction (typ.)	50...100 times			
<b>AC FILTER</b>				
AC Voltage, max.	N/A	250VAC	N/A	N/A
AC Current, max.	N/A	10A	N/A	N/A
Noise Reduction, typ.	N/A	>20dB	N/A	N/A
Nominal DC Resistance	<0.2Ω	<0.2Ω	<0.2Ω	<0.2Ω
<b>Dimensions w/plug-ins</b>				
Width	1.85"	1.85"	1.85"	1.56"
	47mm	47mm	47mm	40mm
Height	4.0"	4.0"	4.0"	6.45"
	102mm	102mm	102mm	164mm
Depth	5.87"	5.87"	5.87"	7.22"
	150mm	150mm	150mm	184mm

## Typical Connection



## Ordering Information

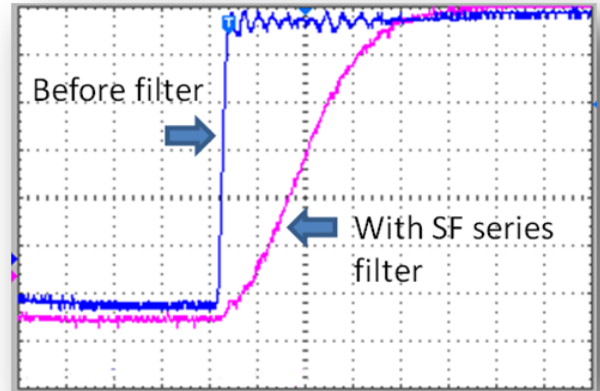
OnFILTER VFD/servo motor EMI filters work with the majority of servo and variable frequency controllers and motors.

You would need to know just two parameters: max. drive voltage and current - both are typically indicated on a label of the motor itself, or on the servo/VFD drive. Do not exceed specified maximum rating of the filter as this may damage the filter itself, the motor, the motor controller and, possibly, your equipment.

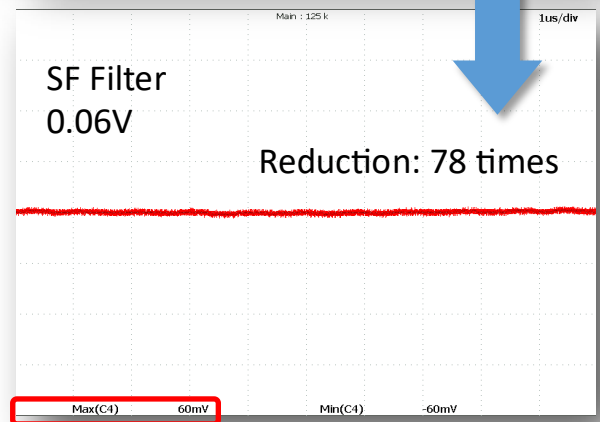
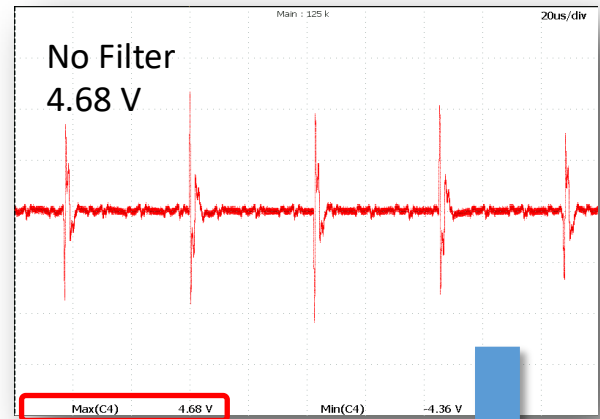
Model	Motor	AC Power
<b>SF20031</b>	250V 3A	N/A
<b>SF20032</b>	250V 3A	250VAC 10A Single Phase
<b>SF20101</b>	250V 10A	N/A
<b>SF20201</b>	250V 20A	N/A

Contact us for other configurations

## Smooth Pulse Edges



## Bearings' Ground Current Reduced 50...100 Times



Current is measured with Tektronix CT1 probe 5mA/mV

Reduction: 78 times

For DIN rail mount see our SV series filters



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RECOGNIZED COMPONENT

