

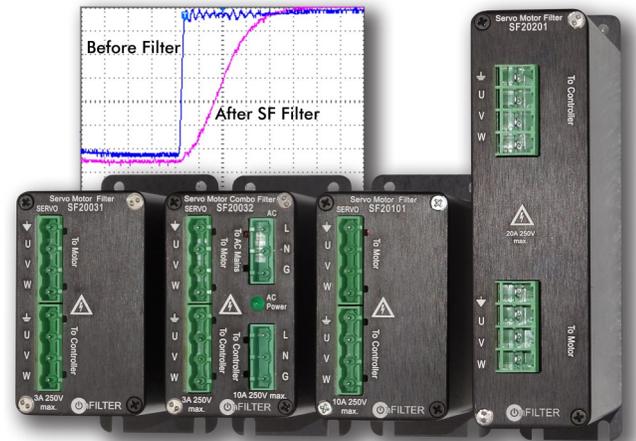
EMI dV/dt Filters for Servo Motors and VFD

Improve Reliability of Your PWM-Driven Motors
Reduce EDM-caused Vibrations
Reduce EMI and Electrical Overstress

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 SF-series filters are not just reactors—they are complete filters incorporating common mode, differential mode, and ground filtering 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 PWM drives. Filters are small in size and are placed next to the drives to assure that the cables to the motors don't carry excessive EMI that pollutes the tool causing interference problems.



Applications

- Industrial robotics
- Automated tools
- 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
- Prevention of EDM (Electrical Discharge Machining)
- Reduction of overall EMI
- Easy plug-in installation
- No mechanical attachments
- Combined drive and AC filtering in some models
- Optimized for most PWM motors
- Effective management of rise and fall times of drive pulses

Reduction of EDM

High-frequency currents through bearings cause electrical discharge machining (EDM), literally eating into the bearings, irreversibly damaging them and causing vibrations. SF series filters prevent EDM damage by blocking these currents from reaching motors.

IEC60034-17/-25 Compliance

dV/dt filters are required for PWM-driven motors to reduce EMI and to extend life of motors. OnFILTER' SF-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 series filters require no mechanical attachments to a motor and no maintenance. Filters' small size enables easy installation. Unlike mechanical approach, SF-series filters provide complete EMI reduction, addressing PWM noise problem at its core.

Reduced Ground EMI

SF series filters greatly reduce high-frequency noise on ground, as well as overall EMI in the tool, lowering risk of electrical overstress (EOS) and reducing errors in automated equipment and testers.

VFD and Servo Motor EMI Filters

SF20031
SF20032
SF20101
SF20201

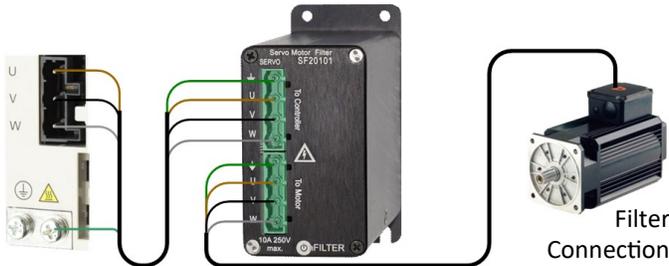


Specification

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

Parameter	SF20031	SF20032	SF20101	SF20201
DRIVE FILTER				
Drive Voltage, max.	250V	250V	250V	250V
Drive Current, max.*	3A	3A	10A	20A
Rise/Fall Times, typ.	1.5µS	1.5µS	1.2µS	1.2uS
Ground Current Reduction (typ.)	50...100 times			
AC FILTER				
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
Dimensions w/plug-ins				
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
* at duty cycle (motor exerting max. torque) of 20%				

Typical Connection



Ordering Information

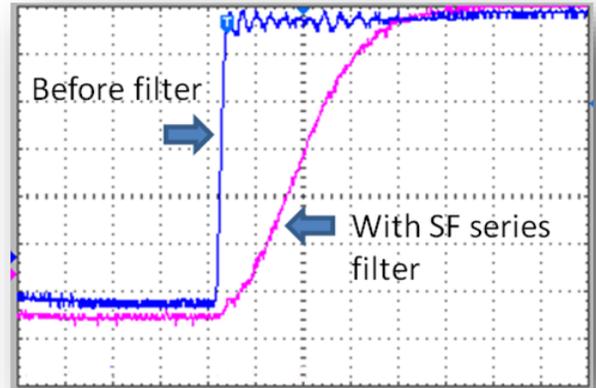
OnFILTER VFD/servo motor EMI filters work with the majority of servo and variable frequency controllers and motors.

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.

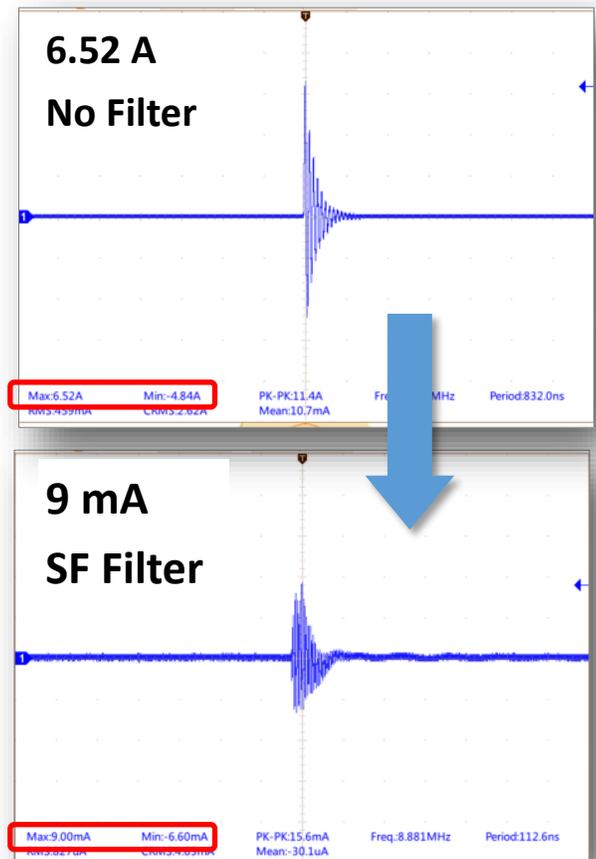
Model	Motor	AC Power
SF20031	250V 3A	N/A
SF20032	250V 3A	250VAC 10A Single Phase
SF20101	250V 10A	N/A
SF20201	250V 20A	N/A

Filters can be back-panel surface or DIN-rail mounted. For DIN-rail mount add "-N" to the model number"

Smooth Pulse Edges



Bearings' Ground Current Reduced 50...100 Times



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All specifications are subject to change without notice. Made in U.S.A.

