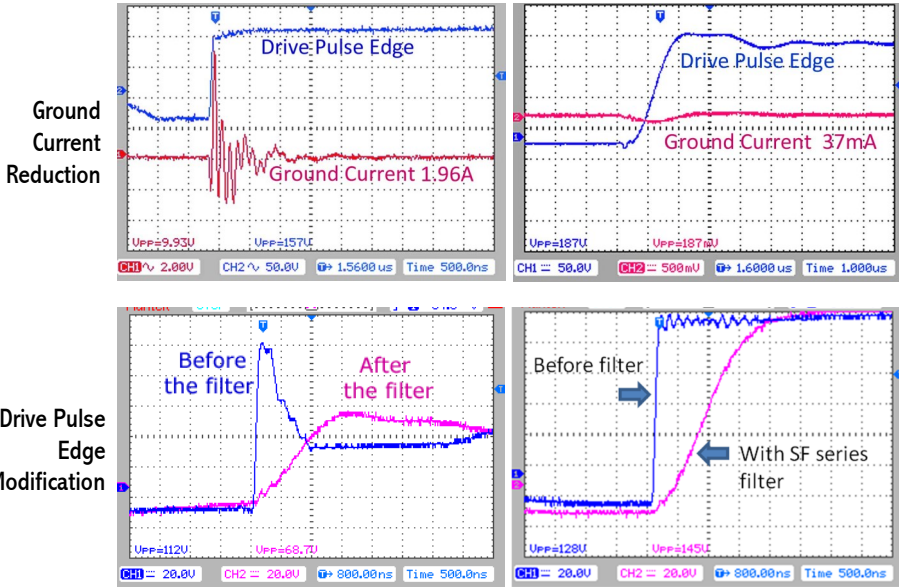


Specification	SV20101	Terminal plug-ins are supplied with the filter.
DRIVE CIRCUIT		The plug-ins for 3A and 10A filters are manufactured by Wurth (http://katalog.we-online.de/)
Drive Voltage, max.	250V	
Drive Current, max.*	10A	Wurth Part Number 691 344 410 004
Rise/Fall Times, typ.	1.2µS	
Nominal DC Resistance	<0.2Ω	

Typical Performance



Filter Care

Normally, filter requires no maintenance and no calibration. It is recommended, though, to periodically inspect filter for overheating and to clean its surface with dry cloth. During its normal operation filter may have elevated temperature which would feel “warm” to the touch, but not what is considered “hot.” If the filter does feel “hot” to the touch (more than 70°C or 158°F), turn your equipment off, disconnect filter from the circuit and discontinue using it.

Warranty Information and Terms and Conditions of Sale:

See links at the footer of www.onfilter.com

Life- and Mission-Critical Applications

OnFILTER products shall not be used in life- or mission-critical applications. See Terms and Conditions of Sale for details.

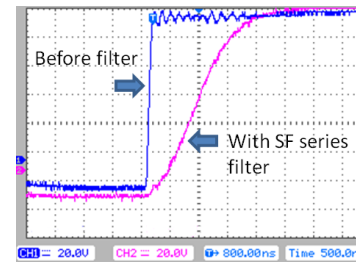


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Servo and VFD Motor EMI Filters

DIN Rail Mounted



User's Guide



Thank you for buying OnFILTER's servo/VFD EMI filter!

Your new filter will reduce unwanted interference caused by operation of your motor. Such interference causes numerous equipment malfunctions, including lock-up, erratic response, software errors, and other often "unexplained" behavior. These filters greatly reduce ground EMI current, protecting your motor's bearing from electrical discharge machining (EDM) pockmarks and fluting, prolonging your motor's life.

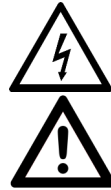
Excessive noise can also cause damage to sensitive components via induced electrical overstress (EOS). For more details on this subject please visit [Library](#) section on our web site www.onfilter.com.

Safety First!

Motor filters operate with high voltage that may cause property damage, injury, or death. Always observe safety measures when using power line filters. Here are some of the key safety precautions you should take:

WARNING

- Do not exceed maximum rating - it may cause overheating
- Allow sufficient space around this device for ventilation to avoid overheating
- No serviceable parts inside - do not open.
- High voltage is present inside
- Properly connect all wiring to avoid damage to equipment
- Firmly fasten this device to the mounting surface



Basics

Servo, variable frequency, and similar motors (for simplicity referred to further in this document as "motors") are driven by pulsed signals. Sharp edges of these pulses can cause the following problems:

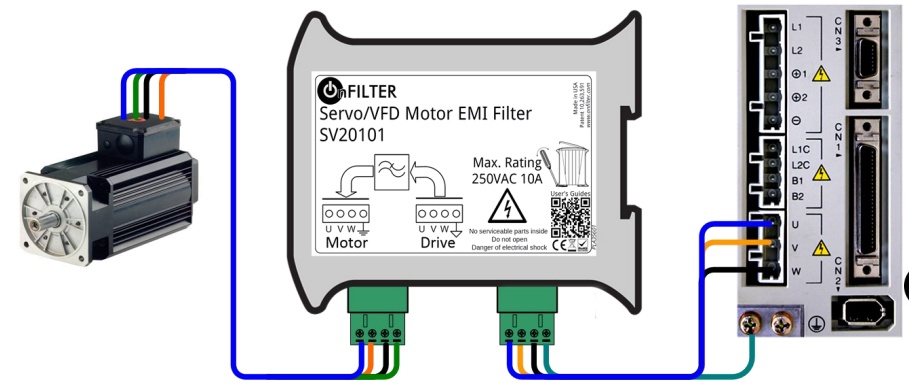
- damage to ball bearings in the motor due to capacitive coupling between stator and rotor of the motor
- vibrations due to damaged bearings
- ringing and overvoltage in wires going to the motor
- electromagnetic interference (EMI) inside the equipment
- electrical overstress (EOS) to sensitive electronic components

The SF/SV series of EMI filters substantially alter ultra-sharp rise and fall times of drive pulses. The spectrum of the signal of drive pulses loses significant portion of energy at the high end. This serves a number of purposes.

- The lower the frequency spectrum, the higher impedance is presented by the capacitive coupling between stator and rotor of the motor. This reduces high-frequency currents through the motor's bearing improving their longevity
- Lesser high-frequency component of the spectrum results in less ringing with high amplitude of the drive signal which reduces stress on the motor and wiring
- High frequency current on ground in the tool is reduced significantly which leads to less EOS (electrical overstress) exposure to sensitive components.

In addition to EMI problems with drive signals, motor drives (often called "controllers," "amplifiers, or "servo packs") also generate noise back to the power line which causes strong interference in the tool. Often, separate power line EMI filters are needed to alleviate this problem. One of SF series filter - SF20032 - combines servo motor filter with AC power line filter in one unit. This saves space inside of your tool and simplifies connections.

Example of connection of SV-series motor filter



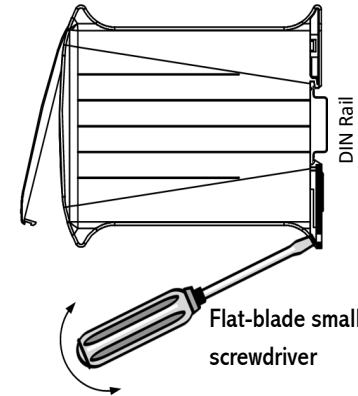
Installation and Removal of SV-series DIN Rail Filters

Installation

For best performance install filter close to the drive/controller/amplifier—this way the wires to the motor won't be carrying high levels of EMI signal.

Please follow these requirements for installation:

- Install filter in a dry location away from debris and from the possibility of spillage, including from floor cleaning
- Ambient temperature at the place of installation should not exceed 5°..40°C range
- Do not install filter in small confined spaces with restricted air circulation in order to avoid overheating. Allow at least 15cm (6") on each side for proper ventilation



Mounting on DIN Rail

See the drawing. You will need a small-blade slot screwdriver, preferably long.

Set filter so that the top rail fits into the top slot of the enclosure. Gently snap the enclosure on the bottom rail. Don't force it. In case of any problem, use slot screwdriver, insert it into the slot in the red latch on the foot of the enclosure and leverage this latch slightly out. The enclosure should install easily.

Dismounting the Filter from DIN Rail

To remove the filter from DIN rail use the flat-head screwdriver, leverage the red latch out, gently pull out the bottom part of the filter away from DIN rail, lift it slightly, and remove it from the top rail.

Connections

IMPORTANT:

Follow indicated polarity of the connections as indicated. Verify proper polarity before connecting. We recommend to pull out removable terminal block plugs and make connection first, then insert plugs back in place. Before applying power verify the correct polarity on each terminal block.