

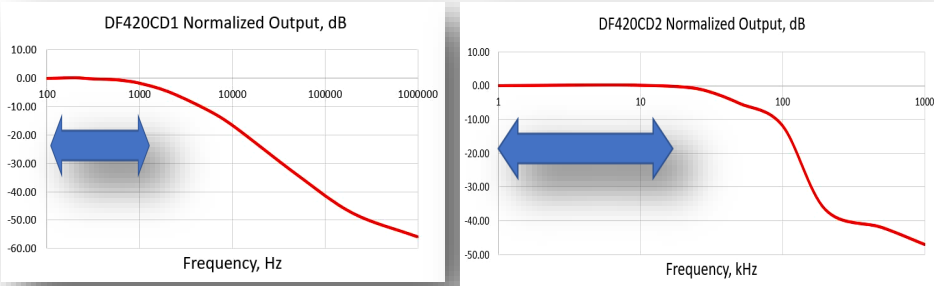
## Filter Care

Normally, PDU requires no maintenance and no calibration. It is recommended, though, to periodically inspect whether the wires are tightened properly. For warranty or other repair contact factory or its authorized distributors.

See <https://www.onfilter.com/ordering-information> for warranty information.

## Specification

Recommended Data Passbands for Data EMI Filters



## Life Critical Applications

**OnFILTER products shall not be used in life-critical or mission-critical applications.** While OnFILTER believes it designs and manufactures very reliable products, many of the vendors that OnFILTER sources components from do not recommend or endorse the use of their products in life- or mission-critical applications. By extension, OnFILTER must adhere to the same business policy.

## Disclaimer

OnFILTER products are not designed, intended, authorized, tested, or listed for use in systems intended to support or sustain life, or for any other application in which the failure of an OnFILTER product could create a situation where personal injury or death may occur. Should Buyer purchase or use OnFILTER products for any such unintended or unauthorized application, Buyer shall indemnify and hold OnFILTER and its officers, employees, subsidiaries, affiliates, agents and distributors harmless against all claims, costs, damages and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim or personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that OnFILTER was negligent regarding the design or manufacture of the part.



OnFILTER, Inc.

730 Mission Dr. Ste. 102  
 Santa Cruz, CA 95060 U.S.A.  
 Tel. +1.831.824.4052  
 FAX +1.206.350.7458  
[www.onfilter.com](http://www.onfilter.com)  
[info@onfilter.com](mailto:info@onfilter.com)



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

# Data EMI Filters

## For 4...20mA Current Loops



## User's Guide



Thank you for buying data EMI filter for 4...20mA loops!

Your new data filter will help to “clean up” your current loop from external noise and provide better data integrity with lower rate of malfunction. For more details on this subject please visit [Library](http://www.onfilter.com) section on our web site [www.onfilter.com](http://www.onfilter.com).

**WARNING**

- Do not use data EMI filter for anything else other than 4...20mA current loops. The filter will get damaged if exposed to higher voltages and currents
- No serviceable parts inside - do not open.

**Introduction**

Data EMI filters for 4...20mA lines are designed to suppress high-frequency electromagnetic interference (EMI) on current loops while preserving integrity of your data. OnFILTER offers two models of data filters, depending on your data type:

- **DF420CD1:** slow data (i.e. analog temperature or pressure sensor)
- **DF420CD2:** fast data ( i.e. fast-changing parameters or data communication)

Use of filter designed for a wrong purpose may either cause problem with data communication or provide insufficient EMI suppression.

**Installation**

Proper installation of data filter helps to assure its continuous operation for a long time. Please follow these requirements for installation:

- Use filter in a dry location away from debris and from the possibility of spillage, including from cleaning
- Ambient temperature at the place of installation should not exceed the range of 5°...40°C
- Preferably fasten filter to a flat surface in a place where it can be observed and allow for easy connectivity
- Place filter close to the “receiving end,” i.e. in case of sensors and alike that send data to a data acquisition system or controller place filter close to that controller; in case of actuators place filter close to such actuator. The reason is to be able to suppress all the noise collected by long wires. If the output of sensor connected to long wires, EMI on these wires will not be suppressed.

**Connections**

Data filter is non-polar. Connections are straight pass-through as indicated by arrows on the label. Central connector is ground connected on both ends. It is recommended to connected it to ground of the “receiving” equipment. Connection to ground of “sending” equipment is optional. Should you decide to connect both grounds to the filter first make sure that these two grounds are the same using multimeter and check both resistance and AC/DC voltage between the wires from these two grounds. Close to zero for all parameters is a good indication that both grounds are safe to connect together. At the very least, voltage (AC and DC) and current should be near zero if the remote equipment is not locally grounded.

Figure 1. Placement of data filter between sensor and data acquisition system

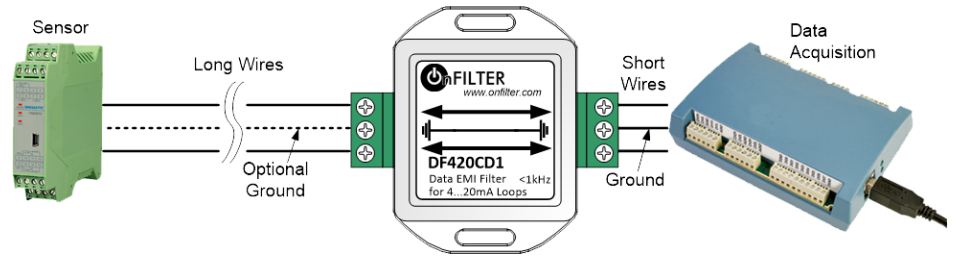


Figure 2. Placement and connection of data filter between controller and actuator

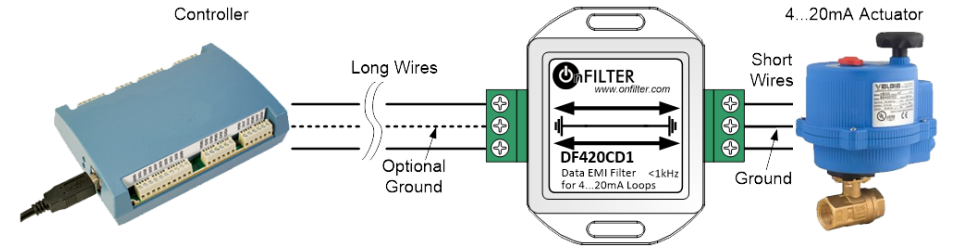
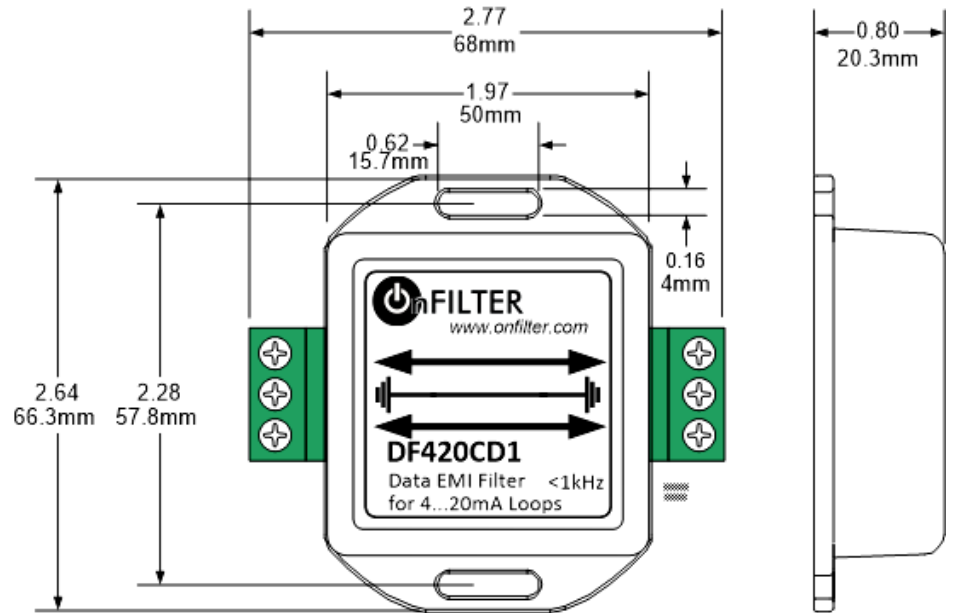


Figure 3. Dimensions of DF420xxx filters



Terminal blocks are of plug-in type. They use wires 14...22 AWG