

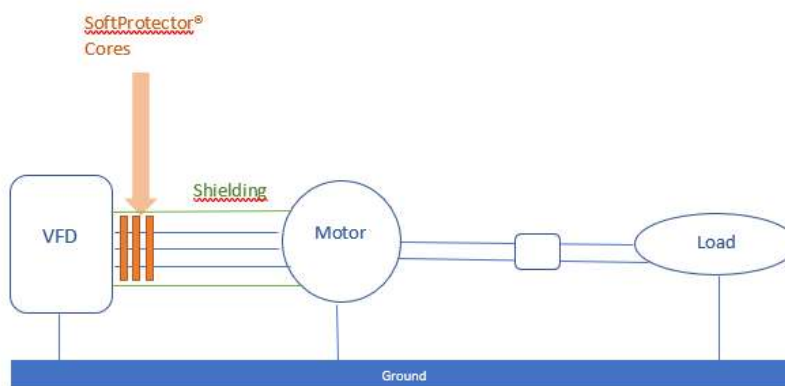


# SoftProtector® Installation Guide

Excellent Motor protect-solution by inductive absorbers called SoftProtector®!

Easy to retrofit – Function result can be read off\* immediately.

\*test equipment (e.g. HF coil measurement device + oscilloscope) is needed.

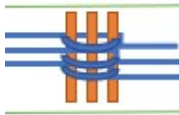


Modern high-power, frequency converter operated systems, especially those that are operated at very high switching frequencies, cause harmful interference currents which, among other things, groove and destroy the bearings of motors as so-called bearing currents. Systems stop unexpectedly, communication problems can arise, the function of sensors can be affected, and even motor terminals can wear out. By using easy-to-retrofit SoftProtector® Cores, such a malfunction can be reduced to a minimum so that your system can be operated with a calculable maintenance cycle. It may also be possible to switch from hybrid bearings to conventional steel bearings. The SoftProtector® Cores absorb the harmful high-frequency part of the interference current and convert it into thermal energy, which can be released without damage via the core surface.

When placed correctly, you not only protect the bearings of your engine, but also the entire system. SoftProtector® Cores are working as single turn common mode choke and reduce the asymmetrical radio frequency noise current without affecting the symmetrical power current.

One or more SoftProtector® toroidal cores shall be placed over the connector cables (no shielding, no grounding wire inside) at inverter output (can be placed in the DC-link as well). We recommend one core per 50m cable (e.g. 200m cable = 4 cores).

For small power devices (about 0,5kW to 7,5kW) it is recommended to make two turns (run the cable twice through the cores) to increase necessary inductance for suppression of  $I_{peakcm}$ .



If you are not sure about suitable SoftProtector® size for your application, please keep a safety margin (air space) between cable and inductive absorbers to avoid any damage at isolation of cable. Inductive absorbers can handle much higher temperature than cable isolation. An indicator for best choice of product size and performance is the temperature of the cores itself. Please check temperature raising once installed after some time (10min. to about 2 hours, depending on size). The ideal relationship to temperature of the cores and efficiency are approx. 40-70 °C.

If you use placeholders inside the cores, they should not be made of metal if possible. This could affect the absorption. Plastic holders (even cable ties) can be a suitable solution to keep air distance between the SoftProtector® core and the cable (L1, L2, L3).



## CAUTION

All safety policies applicable to electric testing and any hazardous eventualities must be followed.

Employees must be informed about these safety precautions and comply with them without restriction. The manufacturer shall not be liable for any injury, loss or damage resulting from improper use or installation, directly or as a result of the use of the products.