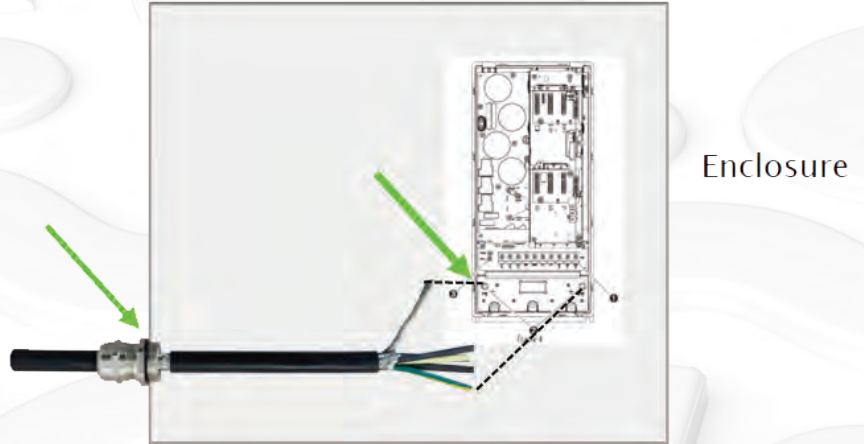


One of the most common questions we are asked is, what is the best way to ground VFD cables? Do I ground at the motor side or do I ground at the drive side?

Q: What is the best way to ground a VFD cable?

A: Shields should always be terminated at the motor and at the drive. The shield acts as a ground path for CMC, so proper termination is essential because a single terminated drain wire is a weak link! Both Drive and Motor have 2 PE terminals: 1 for G/Y ground and 1 for shield pig tail.



Q: Why both sides?

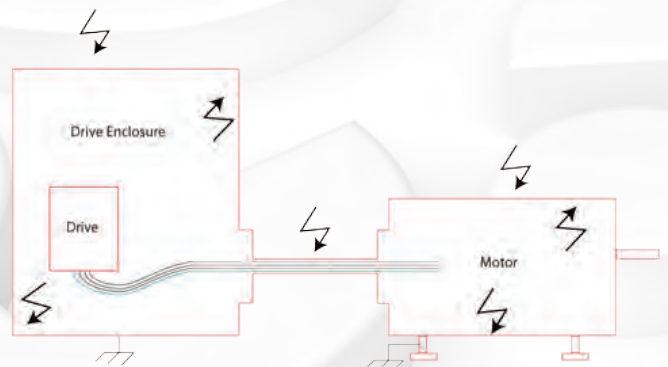
A: In theory, the increases in voltages/currents will go back towards the drive, however, common mode current (CMC) can go towards the motor and through the stator. If it is not grounded properly, CMC can cause failure at the ball bearing on the stator called bearing fluting or EDM (electro-discharge machining.)

Q: How do I ground the increased voltage and CMC?

A: Some VFD cables will have a drain that can be terminated to the 2nd PE terminal on the drive and motor. However, the copper mass in the drain may not be sufficient to properly drain all the noise. Pig-tailing the tinned copper braid shield gives much more copper mass to properly drain the noise and bring to earth ground.

Q: Is grounding the shield at the motor and drive all that is needed to protect surrounding circuits from EMI?

A: No. It is recommended to also ground the shield at the drive enclosure and motor housing. You can do this with an EMC gland. By doing this, you have, in essence, created a faraday cage that will block external static and non-static electric fields by channeling electricity through the enclosure to ground protecting surrounding circuits.



Q: What solution does SAB offer?

A: SAB EMC glands provide 360° termination of shield which passes to the enclosure. Excellent ground path versus just braid and/or drain to PE terminal. Use grounding EMC glands at the motor and at the enclosure to create a Faraday Cage and protect circuits inside enclosure & outside from interference/noise.

Drain wire not necessary if grounding gland is used.

Nickel plated brass, water-tight impact resistant strain relief
PG, Metric and NPT

IP 68- 5 Bar, NEMA 4X



EMC-2



EMC-4



EMC-2: One direction installation

- Optimal grounding of shielded cable
- Easy installation
- Easy handling
- High corrosion resistance

EMC-4: Bi-directional installation can be uninstalled and reinstalled multiple times

- Optimal grounding of shielded cable
- Free radial and axial movement of the cable without any damage to the braid
- Easy installation
- Large contact surface of the fingers allowing low contact resistance
- High contact performance under vibrating conditions

SAB North America offers a detailed selection table for both VFD cable and EMC grounding glands. Call your SAB Sales Specialist today for our latest copy at 866-722-2974.