

Earth leakage circuit breakers in Europe

General

We use SEW Eurodrive frequentie drives in our machines, these frequentie drives cause earth leakage currents. SEW eurodrive recommends that you shouldn't use earth leakage circuit breakers, however if the customer want/need to use an earth leakage circuit breaker, then SEW Eurodrive recommend a type B earth leakage circuit breaker.

8.1.1 Line protection and earth-leakage circuit breaker

- Install **fuses at the beginning of the mains cable** behind supply bus junction (→ Basic unit connection diagram).
- SEW-EURODRIVE recommends that you do not use earth-leakage circuit breakers. However, if an earth-leakage circuit breaker is stipulated for direct or indirect protection against contact, **observe the following note in accordance with EN 61800-5-1:**

! WARNING Wrong type of earth-leakage circuit breaker installed. Severe or fatal injuries. MOVITRAC® can cause direct current in the protective earth. In cases where an earth-leakage circuit breaker (FI) is used for protection against direct or indirect contact, only an earth-leakage circuit breaker (FI) of type B on the external power supply side of the MOVITRAC® is permitted.

If an earth leakage circuit breaker is used the PE mains connection need to fulfil to the following terms:

8.1.2 PE mains connection (→ EN 61800-5-1)

Earth-leakage currents ≥ 3.5 mA may occur during normal operation. To meet the requirements of EN 61800-5-1 observe the following:

- **Supply system lead < 10 mm² (0.016 in²):** Route a **second PE conductor with the cross section of the supply system lead** in parallel to the protective earth via separate terminals or use a **copper protective earth conductor with a cross section of 10 mm² (0.016 in²)**.
- **Supply system lead 10 mm² ... 16 mm² (0.016 in² ... 0.025 in²):** Route a **copper protective earth with the same cross-section as the supply system lead**.
- **Supply system lead 16 mm² ... 35 mm² (0.025 in² ... 0.054 in²):** Route a **copper protective earth with a cross-section of 16 mm² (0.025 in²)**.
- **Supply system lead > 35 mm² (0.054 in²):** Route a **copper protective earth with half the cross-section of the supply system lead**.

IT Systems

We use SEW Eurodrive frequentie drives in our machines, these frequentie drives cause earth leakage currents. If the customer has an IT system, SEW Eurodrive Recommends:

IT systems	<ul style="list-style-type: none">• SEW recommends using earth-leakage monitors with pulse code measuring in network systems with a non-earthed star point (IT systems). Use of such devices prevents the earth-leakage monitor mis-tripping due to the earth capacitance of the inverter.• For size 0, SEW recommends deactivating the interference suppressor filter using the enclosed insulation discs (see "Deactivating EMC capacitors (size 0 only)").
------------	--

If the customer has an IT system SEW Eurodrive recommends to deactivate the EMC capacitor.