

Application Note VPCD-010

Concern: **Actions for the correct mounting of components with electromagnetic emission according to EN 50 081-2 used in residential application**

Background

According to the application there are different limits valid concerning the electromagnetic emission of electronic components. For the use in residential applications the limits are very strict (according to EN 50 081-1), and will not be reached by all components of the automation techniques. With appropriate actions when mounting it's also possible to use products in residential applications, which reach the less strict standard EN 50 081-2. This document describes these actions. The efficiency of them was verified by measures.

Examples of products which can be used in residential applications considering these actions:

- PCD2.M150, M157, M250, M257,
- PCD2.M170, M177 Version less or equal to "A4"
- PCS1 Version less or equal to "C1"

Actions when mounting

Two actions have to be done:

- 1) Use a metal cabinet
- 2a) all cable are shielded and the shield is strongly connected to the reference ground of the cabinet
- 2b) Ferrite cores wrap every cable.

In the following these actions are described in more detail.

Metal cabinet

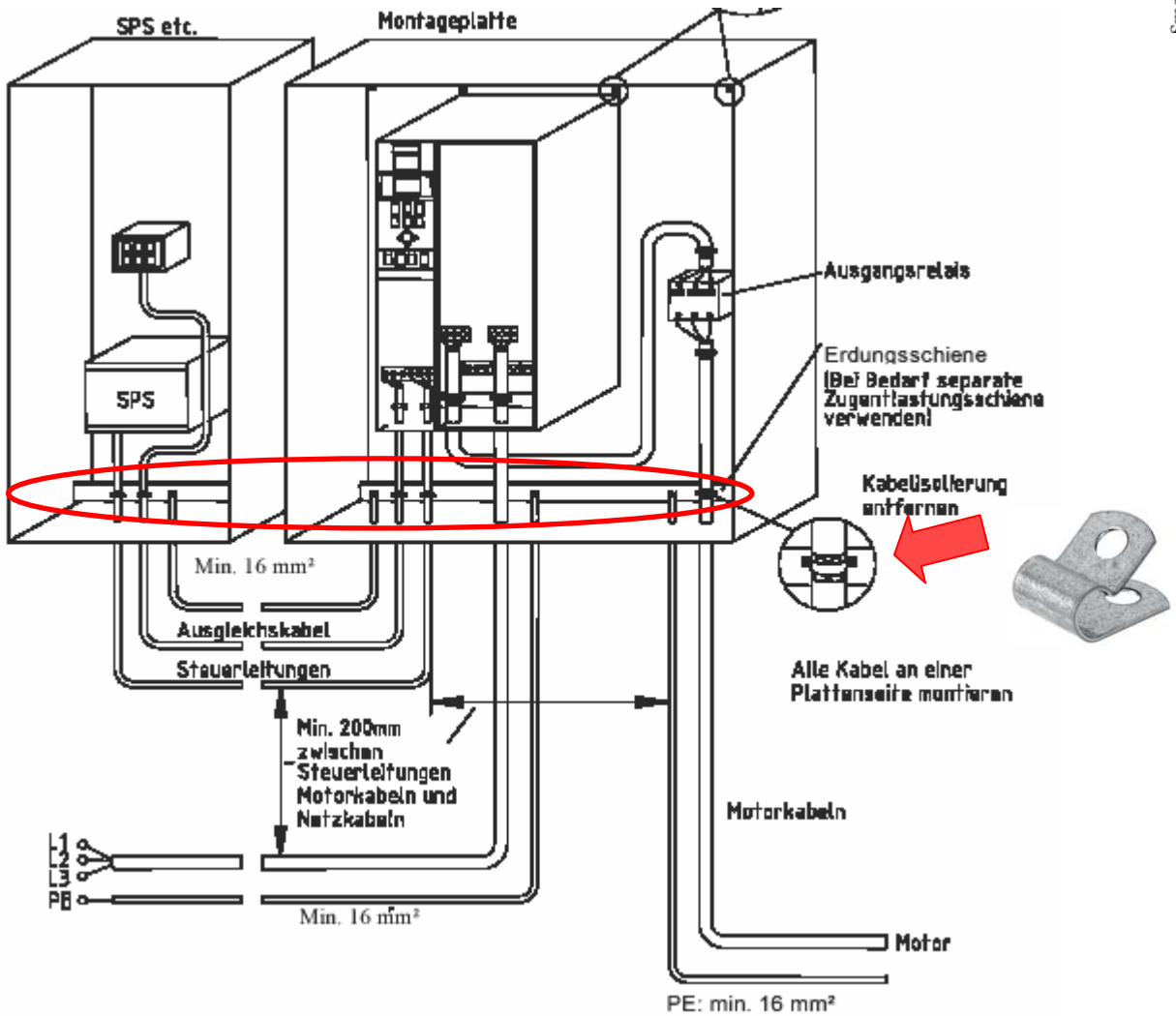
The suppliers present two executions: the standard and the specific for EMC.

In our case the standard execution is satisfying, the conductive parts are constituted by standard metal without any specific HF characteristic. A window (less then 0.25 m) is presented on the door. The electric connection between door and case has to be realised with a copper wire.

Correct grounding of shielded cables

The following extract of the documentation a well known supplier of cabinets specifies:

"Take out the isolation of the cable and tidily connect this shielded part of the cable to the Ground bare. Connect all cables on the same side of the ground plan, very nearly passing through the cabinet."



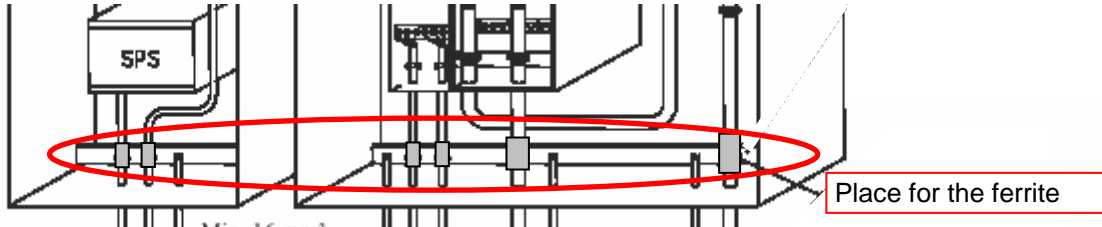
As an alternative you can use EMC compatible "panel feed-through" e. g. www.distrelec.ch, order no. 50 30 36 or 50 30 45)



For additional information please consult the Web-pages of the suppliers of cabinets like www.rittal.de or www.lohmeier.de

Correct placing of ferrites

On existing installation that already exist, the large band ferrites represent an easy solution.



You have to choose the ferrites in function of the diameter of the cables.

Put a ferrite around each cable inside the cabinet, just before the passing.

Possible supplier: www.steward.com, e. g. type 28A2025-0A0 or 28A2029-0A0

