

1.1.4 Machinery Directive

In accordance with the Machinery Directive 89/392/EC, it should be ensured that if SIMADYN D fails or executes an incorrect function, that this does not result in the machine/system going into a potentially hazardous condition. This must always be taken into account when configuring the machine/system.

The system may not be commissioned until it has been proven that the final product is in conformance with the Directive.

Low-Voltage Directive

The Low-Voltage Directive 73/23/EC is only applicable for products with supply voltages of ≥ 50 V AC and/or > 75 V DC.

For SIMADYN D, this involves the following components:

- SP 7 6DD 1683-0BB0
- SP 8.5 6DD 1683-0BC0
- SP 9.5 6DD 1683-0BE5
- SP 22.5 6DD 1683-0CC5
- SP 23.5 6DD 1683-0CD5
- SB 60 6DD 1681-0AF4
- SB 70 6DD 1681-0AG2
- SRT 400 6DD 1662-0CG0

These components correspond to the requirements of the Low-Voltage Directive.



WARNING

Open equipment

SIMADYN D is regarded as open equipment. This means that you must always install SIMADYN D in a cubicle, cabinet or electrical control room that can only be accessed using a key or tool. Only trained or authorized personnel are allowed access to such cubicles, cabinets or electrical operating rooms.

1.1.4.1 SIMADYN D outputs



DANGER

When the equipment is powered-up or powered -on, the outputs have undefined statuses while the power supply voltages are running-up. This fact must be taken into account when designing the system.

1.1.4.2 Professionally-trained and knowledgeable personnel

Only professionally-trained, knowledgeable personnel may configure, install, commission and operate SIMADYN D.

1.1.4.3 CE Mark

SIMADYN D components have **no** CE Mark for the following reasons:

- they cannot be practically used autonomously
- they are not generally available
- they can only be used by specially-trained personnel

NOTE

If a CE Mark is required, this is the responsibility of the manufacturer of the machine/complete system.

1.1.4.4 Connecting external voltages

If external voltages (e. g. pulse encoders) are connected to SIMADYN D inputs, which are supplied from an external power supply, then this external supply must also be shutdown when the SIMADYN D power supply is shutdown or fails.

1.1.5 Mounting

SIMADYN D components must be mounted in a metal cabinet, enclosed on all sides.

1.1.6 Cables

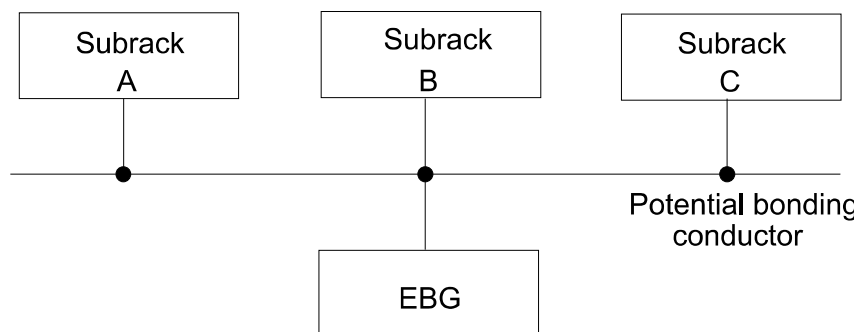
All signal cables which are connected to SIMADYN D must be screened.

1.1.7 Potential bonding

In order to ensure disturbance-free operation, the components which are connected and communicate with one another may not be at different potentials. This means that all components must be connected with one another through potential bonding cables.

1.1.8 Principle when connecting components

All of the components (subracks, power supplies etc.), which are connected using signal cables, must also be connected with potential bonding cables (exception: Components with fiber-optic cable connections).

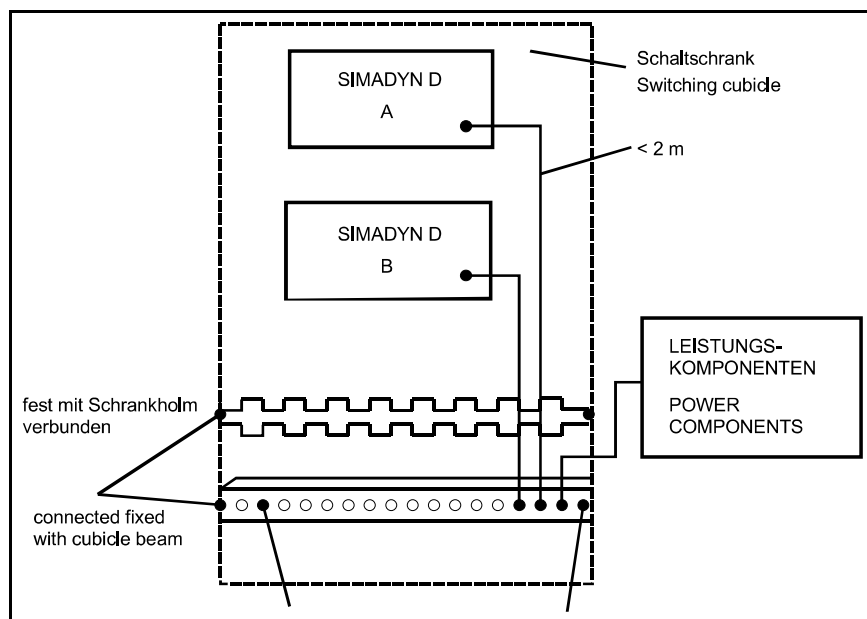


1.1.9 Potential bonding rail

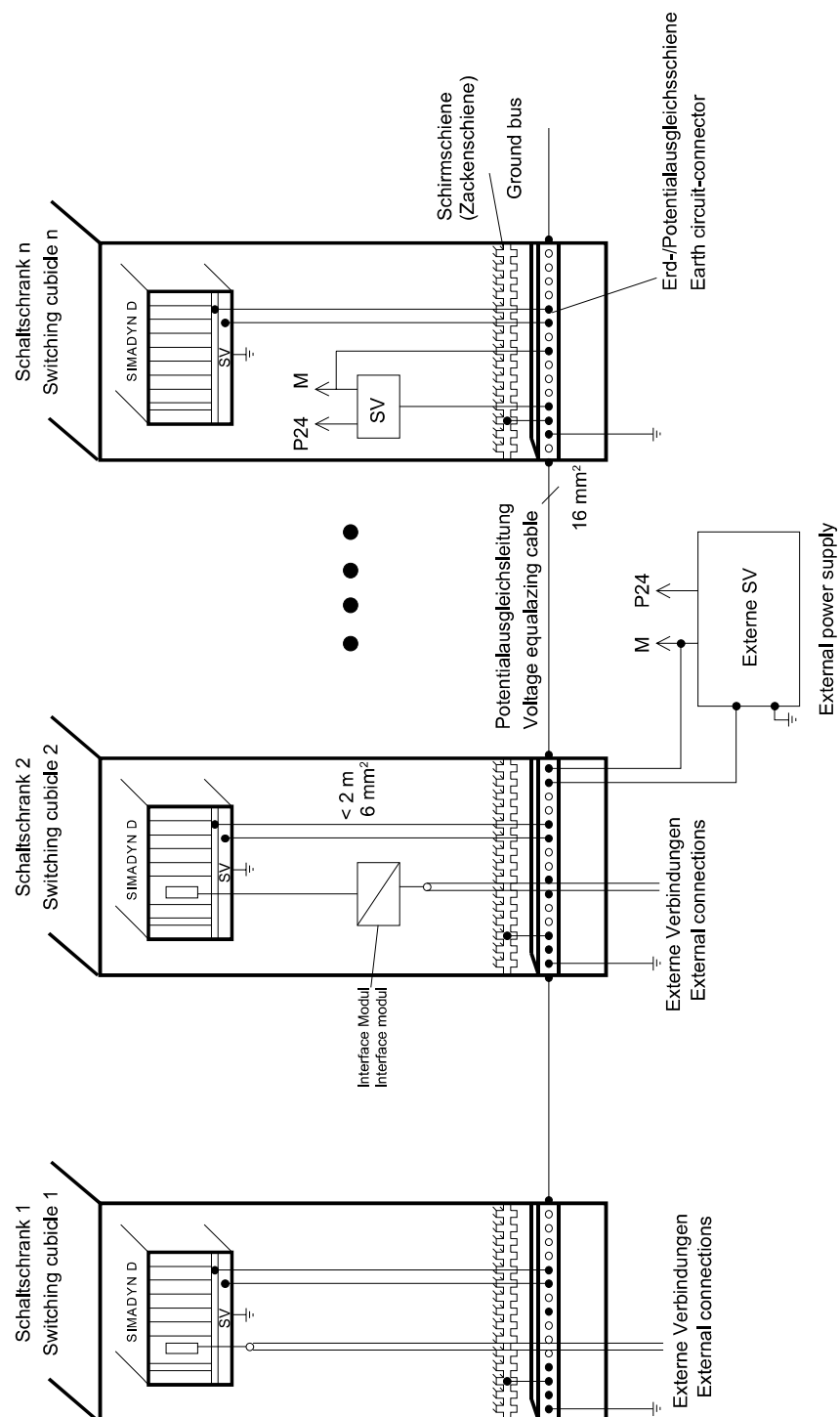
A potential bonding- or grounding rail must be provided in each cabinet to allow simple wiring.

All of the internal and external components must be connected to this potential bonding- and grounding rail.

Basic circuit



1.1.10 Actual example of a multi-motor drive



1.1.11 Protective grounding

The protective ground is connected via the protective conductor (PE) at the cabinets and components. For SIMADYN D, the potential bonding conductor/cable does not have a protective conductor function. For SIMADYN D it is required for reliable operation and noise suppression.

The protective conductor must be routed in accordance with DIN VDE 0100 and DIN VDE 0160.

For subracks, the protective conductor cross-section must be $\geq 6 \text{ mm}^2$ and for cabinets, $\geq 10 \text{ mm}^2$.

1.1.12 Radios

It is not permissible to use radios $> 2\text{W}$ close to SIMADYN D.

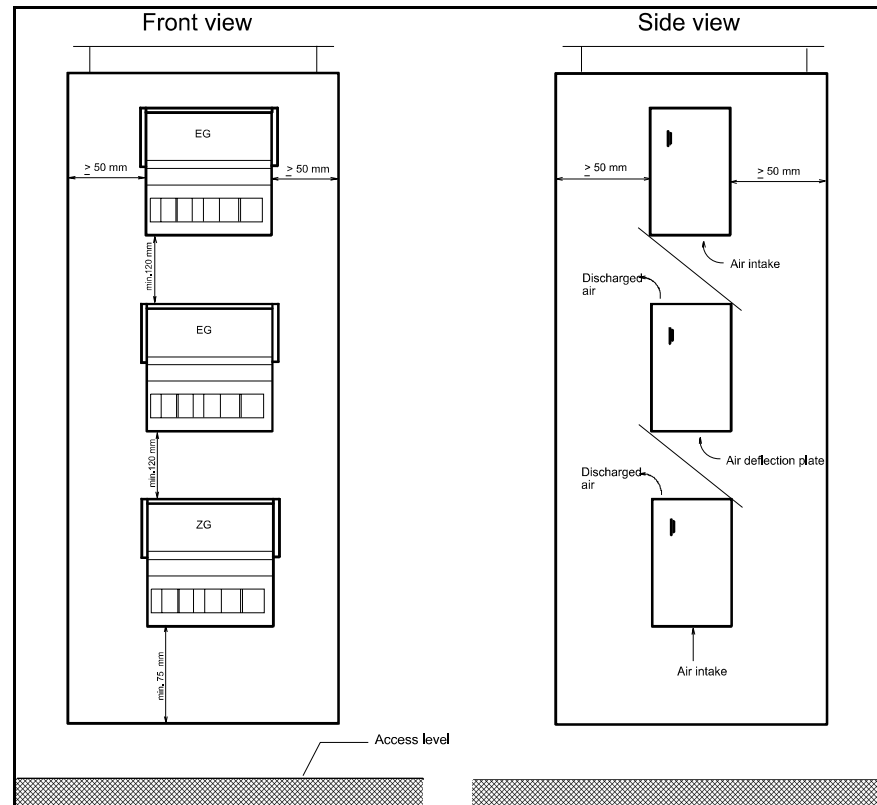
For low-rating radios, a distance of $> 1\text{m}$ must be maintained between the radio and SIMADYN D.

1.1.13 Cabinet

- All SIMADYN D components must be mounted in a metal cabinet
- Each cabinet must have a ground/potential bonding rail, which is connected to the cabinet frame at both ends.
- All SIMADYN D subracks must be connected to the grounding/potential bonding rail through a 6 mm^2 cable which should be as short as possible. The connection via the PE connection of the power supply is not sufficient.
- Non-damped contactors may not be used in a cabinet with SIMADYN D components.
- If non-damped contactors are used in a cabinet next to SIMADYN D, then the cabinets must be separated by a metal partition.
- All of the cabinets associated with multi-motor SIMADYN D drives must be connected through a potential bonding conductor with at least a 16 mm^2 cross-section (the customers PE connection is not sufficient).
- Each cabinet in which SIMADYN D components are installed/mounted must have a screen rail. Serrated rails are suitable. The screen rail must be connected directly to the cabinet frame.
- No gas discharge lamps may be used in the cabinet.
- The screens of incoming cables must be connected directly to the screen rail.
- The cabinets must be designed so that air can circulate freely within them.

1.1.14 Mounting clearances

The following minimum clearances must be maintained if SIMADYN D subracks are mounted one on top of the other:
(For 2200 × 600 × 600 mm cabinets)

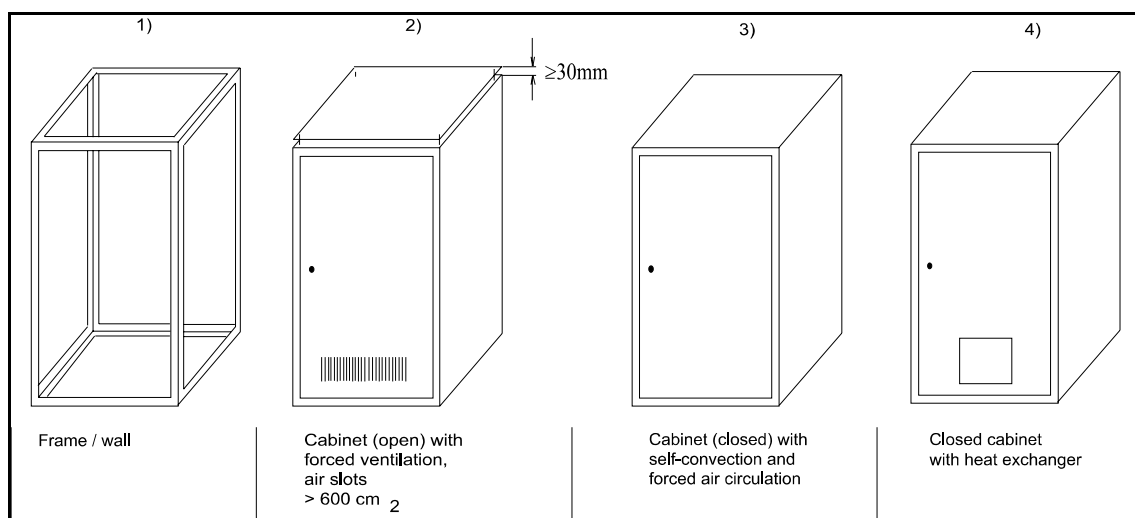


1.1.15 Power loss in the cabinet

Different maximum temperature values are obtained for the SIMADYN D components, depending on the installation type

- open rack
- cabinet with air mesh
- closed cabinet with forced convection
- closed cabinet with heat exchanger

1



The power loss dissipated from a cabinet depends on the cabinet design, its ambient temperature and the arrangement of the various devices in the cabinet.

