

# Connecting

## 3.1 Electrical isolation and grounding

### 3.1.1 Introduction

#### Redundant 24 V DC power supply

You can connect the PN/PN coupler to two independent 24 V DC power supplies. Only one 24 V DC power supply is ever active at any one time. If one power supply fails, the other automatically becomes active. During parameterization, you identify which power supplies (PS1, PS2 or both) are connected and are to be diagnosed. You need only connect up one 24 V DC power supply to operate the PN/PN coupler.

#### Properties of the PN/PN coupler

- Both PROFINET IO subnets are electrically isolated from one another.
- Both PROFINET IO subnets are electrically isolated from the 24 V DC power supply.
- Both 24 V DC power supplies are electrically isolated from one another.
- The PROFINET IO subnet to X1 and the logic of the PN/PN coupler are electrically linked.

#### Ungrounded incoming supply

Non-grounded operation of the PN/PN coupler is possible with a 24 V DC power supply.

#### See also

Parameters (Page 34)

### 3.1.2 General operating rules and regulations

#### Introduction

If they are part of plants or systems the modules described require adherence to specific rules and regulations depending on the application.

The most important rules, which you must observe for safe integration into a plant or system, are listed below.

#### Specific application

Please observe the safety and accident prevention regulations applying to specific applications (e.g. machine protection guidelines).

#### EMERGENCY STOP equipment

EMERGENCY STOP devices according to IEC 6204 (coincides with VDE 113) must remain effective during all operating modes of the plant or system.

#### System startup after certain events

The table below identifies situations you must pay attention to when the system starts up after the occurrence of certain events.

When ...	...
<ul style="list-style-type: none"><li>starting up after a voltage dip or power failure,</li><li>starting up after bus communication has been interrupted,</li></ul>	no dangerous operating states may occur. If necessary actuate an EMERGENCY-STOP!
<ul style="list-style-type: none"><li>starting up after unlocking the emergency stop device,</li><li>starting up without the IO Controller activating the IO Devices,</li></ul>	the start up must always be controlled and defined.