



# **Surge protection for agricultural buildings**

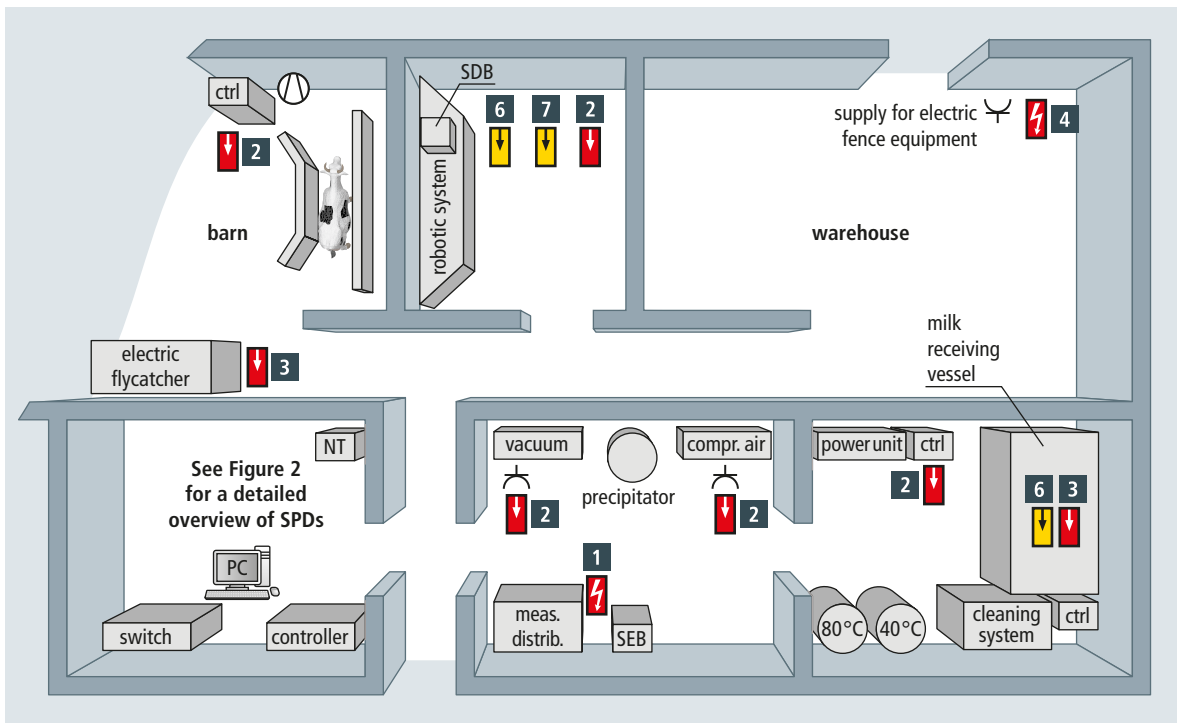


Figure 9.6.1 Surge protective devices for an agricultural building

| No. in Fig. 9.6.1 and 2 | Surge protective device |                    | Part No.                             |         |
|-------------------------|-------------------------|--------------------|--------------------------------------|---------|
| 1                       | DEHNventil              | DV ZP TNC 255      | 900 390                              |         |
|                         | DEHNventil              | DV ZP TT 255       | 900 391                              |         |
|                         | <i>alternative:</i>     |                    |                                      |         |
|                         | DEHNshield              | DSH TNC 255        | 941 300                              |         |
| 2                       | DEHNshield              | DSH TT 255         | 941 310                              |         |
|                         | DEHNrail                | DR M 4P 255        | 3/N/PE ≤ 25 A<br>953 400             |         |
| 3                       | DEHNrail                | DR M 2P 255        | 1/N/PE ≤ 25 A<br>953 200             |         |
|                         | DEHNflex                | DFL A 255          | 1/N/PE ≤ 16 A<br>924 389             |         |
| 4                       | DEHNshield              | DSH TT 2P 255      | 941 110                              |         |
| 5                       | SFL Protector           | SFL PRO 6X         | Multiple socket outlet<br>909 250    |         |
| 6                       | BLITZDUCTOR             | BSP M2 BE HF 5     | CAN bus or ALCOM bus<br>926 270      |         |
|                         | + base part             | BXT BAS            |                                      | 920 300 |
| 7                       | DEHNpatch               | DPA M CLE RJ45B 48 | LAN<br>929 121                       |         |
| 8                       | BLITZDUCTOR             | BXT ML2 BD 180     | Telephone U <sub>K0</sub><br>920 247 |         |
|                         | + base part             | BXT BAS            |                                      | 920 300 |
|                         | <i>alternative:</i>     |                    |                                      |         |
|                         | DEHNbox                 | DBX TC 180         | 922 210                              |         |

Table 9.6.1 Example of surge protective devices for an agricultural building with robotic milking system (technical data of the manufacturer must be observed)

Complex electrical and information technology systems shape the image of modern agriculture. These systems are used to optimise and, if possible, automate time-consuming processes to increase the revenue.

For dairy animal breeding, this means

- ➔ That the fully automated milking system/feeding station identifies the transponder of the cow and controls the milking process or the food volume;
- ➔ That fresh milk is analysed for the presence of blood/infections and is discarded or transferred to the milk receiving vessel;
- ➔ That the milk from the milking system is cooled in the milk receiving vessel and the waste heat of the compressor is passed through a heat exchanger to heat the water in an industrial water boiler (reduced costs by heating industrial water);
- ➔ That the cleaning system rinses the milk hoses;
- ➔ That the vacuum system provides a vacuum to extract milk from the cow;
- ➔ That compressed air is produced to actuate the entrance gates of the robotic milking system, position the feeding trough/droppings box and supply the forced cow traffic system;
- ➔ That electric flycatchers minimise fly populations and thus disease transmission;
- ➔ That ventilators improve the climate in the barn and thus animal health/milk quality.

**Figure 9.6.1** shows an example of an agricultural building with robotic milking system. The individual systems are controlled via several data lines (**Figure 9.6.2**). The operator can access the entire building via modem.

In subsection 705.443 of the IEC 60364-7-705 (HD 60364-7-705) standard it is recommended that lightning and surge protec-

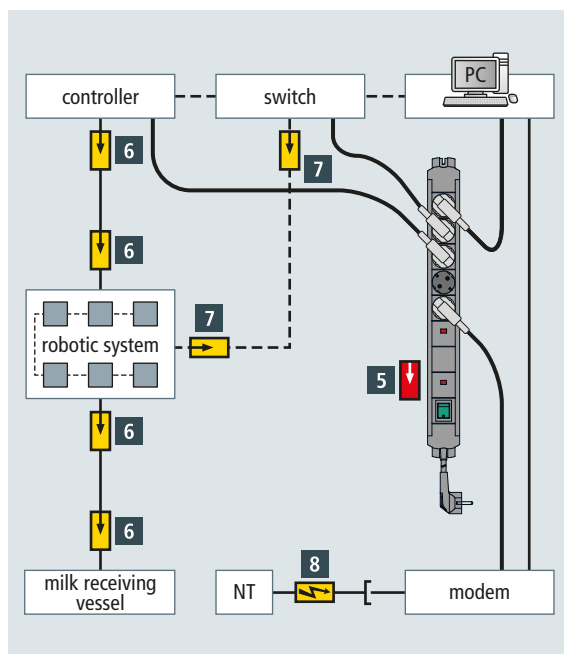


Figure 9.6.2 Surge protective devices for bus systems and the telephone

tion measures be taken if electronic equipment is installed. **Table 9.6.1** shows suitable surge protective devices for the sample building (**Figures 9.6.1 and 9.6.2**).

Protective equipotential bonding according to IEC 60364-5-54 (HD 60364-5-54) as well as supplementary protective equipotential bonding for agricultural and horticultural premises according to IEC 60364-7-705 (HD 60364-7-705) is important to protect agricultural buildings against surges. These standards describe how to integrate extraneous conductive parts in the floor of the standing, lying and milking area (also recommended for slatted floors made of concrete).

