

Guidelines for laying wiring in energy chains

Great care must be taken when laying wiring in energy chains.

As a matter of principle the following points should be adhered to:

1. The wires should be laid individually, loosely beside one another, insofar as this is possible. If wires of different diameters are being laid on top of each other or beside each other then it is recommended to use separating stays.
2. Permanently flexible wiring with an outer diameter < 10 mm, with which a separation using stays is not possible, should be gathered loosely together, arranged in a flexible conduit and laid in the energy supply chain. The diameter of the flexible conduit selected should be substantially larger than the sum of the individual cable diameters.
3. The wires must be able to move freely in the frame stays. For safety, 10% of the wiring diameter should be provided as free space.
4. It is necessary to carefully ensure that the wiring can pass through the curve radii without any constraint. Also with multi-layer laying the wires must have sufficient free space between one another through the curve radii.
5. The wires must be laid in the energy chain in such a way that they are not contorted (no twists). Therefore the wires must be unrolled from the drum or ring before laying (do not lift wires off in coils).
6. The weight distribution in the chain or in the chain stays should be symmetrical as far as possible. Heavy wires should be laid outwards, lighter supply lines towards the centre.
7. All wires must be strain-relieved at anchoring points and attachments. In doing so it must be ensured that the pressure on the outer sheath is spread over a large surface area. The clamping must be carried out carefully such that the cores in the wires are not crushed and yet that the wires are no longer able to slide.
8. In principle, only permanently flexible wiring should be used. It is essential to comply with the permitted bend radii.
9. When installing and laying energy chains the following standards (amongst others) must be complied with:

DIN VDE 0100

DIN VDE 0113