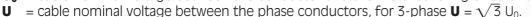
Nominal voltage and Operating voltage

Nominal voltage

Voltage of cables and wires, by which the construction and the tests in respect of electrical characteristics are to be refered.

According to DIN VDE 0298 and IEC 183 the cables are specified U₀/U, where

U₀ = cable nominal voltage between the conductor and the metal covering or earth and





According to IEC regulations, the maximum permissible voltage $\mathbf{U_m}$ is given in brackets. The identification is: $\mathbf{U_0/U}$ ($\mathbf{U_m}$).

As the insulation of plastic insulated cables are measured with a nominal voltage $U_0/U = 0.6/1$ kV and all radial field cables for the voltage U_0 , these cables are suitable for installation:

- in single phase systems, in which the both phase conductors are insulated, with nominal voltage $U_N = 2 U_0$
- in single phase systems, in which one phase conductor is earthed, with the nominal voltage $U_N = U_0$

Operating voltage

Voltage between conductors of a power system or between a conductor and earth under specified condition in a given time during an undisturbed operation.

Coordination of cable-Nominal voltages

| Nominal- | for | for 1-phase alternating current | |
|----------|---------|---------------------------------|---------------------|
| voltages | 3-phase | both phase conductors | one phase conductor |
| U₀/U | system | insulated | earthed |
| kV | kV | kV | kV |
| 0,6/1 | 1 | 1,2 | 0,6 |
| 3,6/6 | 6 | 7,2 | 3,6 |
| 6/10 | 10 | 12 | 6 |
| 12/20 | 20 | 24 | 12 |
| 18/30 | 30 | 36 | 18 |

Coordination of maximum permissible **Operating voltages**

| Naminal | Nominal maximum maximum voltage for 1-phase alternating current | | | | |
|--|---|------------------------------------|--------------------------------|--|--|
| Nominal voltages U ₀ /U kV | maximum voltage for 3-phase system kV | both phase conductors insulated kV | one phase conductor earthed kV | | |
| 0,6/1 | 1,2 | 1,4 | 0,7 | | |
| 3,6/6 | 7,2 | 8,3 | 4,1 | | |
| 6/10 | 12 | 14 | 7 | | |
| 12/20 | 24 | 28 | 14 | | |
| 18/30 | 36 | 42 | 21 | | |
| | | | | | |

Note:

Cable with U_0/U 0,6/1 kV is allowed for **Direct Current Systems**, of those the maximum operating voltage conductor/conductor 1.8 kV or conductor/earth 0.9 kV not to be exceeded.

