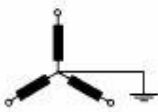
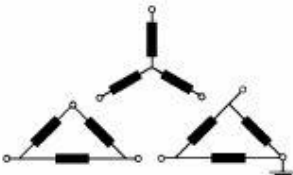




Correspondence between the nominal voltage of the supply system and the equipment rated impulse withstand voltage, in the case of overvoltage protection by surge-arresters according to IEC 60099-1

Maximum value of rated operational voltage to earth, a.c. r.m.s. or d.c. V	Nominal voltage of the supply system (≤ rated insulation voltage of the equipment) V				Preferred values of rated impulse withstand voltage (1,2/50 μs) at 2 000 m kV			
					Overvoltage category			
	 AC r.m.s.	 AC r.m.s.	 AC r.m.s. or d.c.	 AC r.m.s. or d.c.	IV Origin of installation (service entrance) level	III Distribution circuit level	II Load (appliance, equipment) level	I Specially protected level
50	–	–	12,5, 24, 25, 30, 42, 48	–	1,5	0,8	0,5	0,33
100	66/115	66	60	–	2,5	1,5	0,8	0,5
150	120/208 127/220	115, 120 127	110, 120	220-110, 240-120	4	2,5	1,5	0,8
300	220/380, 230/400 240/415, 260/440 277/480	220, 230 240, 260 277	220	440-220	6	4	2,5	1,5
600	347/600, 380/660 400/690, 415/720 480/830	347, 380, 400 415, 440, 480 500, 577, 600	480	960-480	8	6	4	2,5
1 000	–	660 690, 720 830, 1 000	1 000	–	12	8	6	4

Power-frequency withstand voltage for main circuits (10.9.2)

Rated insulation voltage U_i (line to line a.c. or d.c.) V	Dielectric test voltage a.c. r.m.s. V	Dielectric test voltage ^{b)} d.c. V
$U_i \leq 60$	1 000	1 415
$60 < U_i \leq 300$	1 500	2 120
$300 < U_i \leq 690$	1 890	2 670
$690 < U_i \leq 800$	2 000	2 830
$800 < U_i \leq 1\,000$	2 200	3 110
$1\,000 < U_i \leq 1\,500$ ^{a)}	-	3 820

a) For d.c. only.

b) Test voltages based on 4.1.2.3.1, third paragraph, of IEC 60664-1.

Impulse withstand test voltages (10.9.3)

Rated impulse withstand voltage U_{imp} kV	Test voltages and corresponding altitudes during test									
	$U_{1,2/50}$ a.c. peak and d.c. kV					a.c. r.m.s. kV				
	Sea level	200 m	500 m	1 000 m	2 000 m	Sea level	200 m	500 m	1 000 m	2 000 m
2,5	2,95	2,8	2,8	2,7	2,5	2,1	2,0	2,0	1,9	1,8
4,0	4,8	4,8	4,7	4,4	4,0	3,4	3,4	3,3	3,1	2,8
6,0	7,3	7,2	7,0	6,7	6,0	5,1	5,1	5,0	4,7	4,2
8,0	9,8	9,6	9,3	9,0	8,0	6,9	6,8	6,6	6,4	5,7
12,0	14,8	14,5	14,0	13,3	12,0	10,5	10,3	9,9	9,4	8,5