EAE E L E K T R İ K

Technical Characteristics			Aluminium Conductor (MKA)		Copper Conductor (MKC)		
Busbar Code			10	16	10	16	22
Rated Current	In A		100	160	100	160	225
Standards	IEC 60439-2: 2000						
Rated Insulation Voltage	Ui V 1000						
Rated Operational Voltage	Ue V 1000						
Rated Frequency	f Hz 50 / 60						
Protection Degree	IP 55						
Short-Circuit (peak)	Ip kA		5,25	10,2	5,25	10,2	25
Short-Circuit (1 sec)	Icw kA_{rms}		3,5	6	3,5	6	12,5
Short-Circuit Value of Neutral (peak)	Ip kA		3,15	6,12	3,15	6,12	15
Short-Circuit Value of Neutral (1 sec)	Icw kA		2,1	3,6	2,1	3,6	7,5
Short-Circuit Value of Protective Circuit (peak)	Ip kA		3,15	6,12	3,15	6,12	15
Short-Circuit Value of Protective Circuit (1 sec)	Icw kA		2,1	3,6	2,1	3,6	7,5
R_{20} 20°C	R_{20} mΩ/m		0,675	0,401	0,794	0,419	0,249
Direct Current Resistance	R mΩ/m		0,825	0,437	0,838	0,363	0,257
Impedans	Z mΩ/m		0,868	0,469	0,888	0,415	0,362
Loses at Rated Current	I^2R_1 W/m		8,507	12,69	9,555	10,60	14,88
Resistance (at rated current, at steady state op. temp.)	R_1 mΩ/m		0,850	0,496	0,955	0,414	0,294
Reactance (at rated current, at 50Hz)	X_1 mΩ/m		0,216	0,160	0,257	0,198	0,193
Impedans (at rated current)	Z_1 mΩ/m		0,877	0,521	0,989	0,459	0,352
L1, L2, L3, N	mm²		42,9	72,15	22,65	42,9	72,15
PE (5 Conductor)	mm²		42,9	72,15	22,65	42,9	72,15
Housing Cross Section (sheet metal)	mm²		198	198	198	198	198
Conductor Size	mmxmm		4,5x10,5	4,5x17	4,5x6	4,5x10,5	4,5x17
Weight - 4 Conductors	kg/m		2,35	2,7	2,75	3,3	4,5
Weight - 5 Conductors	kg/m		2,5	2,9	3,0	3,7	5,2
Brand Last	kW/m		2,48	2,48	2,48	2,48	2,48

Voltage Drop Calculation

Voltage drop of a busbar system can be calculated with the following formula taking into account the "α" load distribution constant.

$$\Delta V = \alpha \sqrt{3}.L.I.(R.Cos\varphi + X_L.Sin\varphi)\ 10^{-3}\quad [Volt]$$

ΔV = Voltage Drop (V)
α = Load Distribution Constant
L = Line Length (m)
I = Line Current (A)
R = Resistance (mΩ/m)
XL = Inductive Reactance (mΩ/m)
Cosφ = Load Factor

Load Distribution Factor α

	α
F= Supply L= Load	1.00
F= Supply L1,L2,L3,L4 Load	0.50
F= Supply L1,L2 Load	0.25
F= Supply L1,L2,L3,L4 Load	0.125
F= Supply L1,L2,L3,L4 Load	0.25