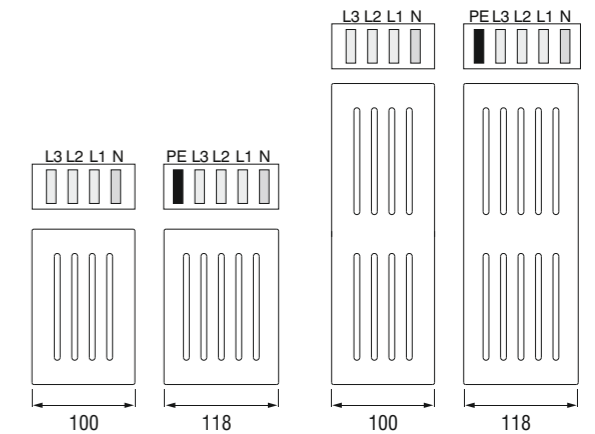


► Technical Characteristics
Aluminium Conductor (Al)

Rated Current	I _n	A	630	800	1000	1250	1600	2000	2500	2250	2500	3000	3200	3600	4000	5000
Busbar Code			06	08	10	12	16	20	25	23	27	30	33	36	40	50
Standards	IEC 61439-6:2012 Ed.1 ; IEC 61439-1 Ed.2:2011, TS EN 61439-1: 2011															
Rated Isolation Voltage	U _i	V	1000													
Rated Operational Voltage	U _e	V	1000													
Rated Frequency	f	Hz	50													
Pollution Degree	III															
Protection Degree	IP68															
External Mechanical Impacts (IK Code)*	50J, greater than IK10															
Protection for Safety	Basic Protection (HD 60364-4-41, Clause A1)															
Rated Short-time Withstand Current (1s)	I _{cw}	kA _{rms}	20	28	40	55	70	70	70	100	100	120	120	120	120	120
Rated Peak Withstand Current	I _{pk}	kA	40	58,8	84	121	154	154	154	220	220	264	264	264	264	264
Rated Short-time Withstand Current for Neutral Conductor (1s)	I _{cw}	kA	12	16,8	24	33	42	42	42	60	60	72	72	72	72	72
Rated Peak Withstand Current for Neutral Conductor	I _{pk}	kA	24	33,6	50,4	72,6	92,4	88,2	88,2	132	132	158,4	158,4	158,4	158,4	158,4
Rated Short-time Withstand Current for PE Conductor (1s)	I _{cw}	kA	12	16,8	24	33	42	42	42	60	60	72	72	72	72	72
Rated Peak Withstand Current for PE Conductor	I _{pk}	kA	24	33,6	50,4	72,6	92,4	88,2	88,2	132	132	158,4	158,4	158,4	158,4	158,4
MEAN PHASE CONDUCTOR CHARACTERISTICS AT RATED CURRENT I_n																
Resistance at a conductor temperature of 20 °C	R ₂₀	mΩ/m	0,125	0,090	0,061	0,045	0,030	0,024	0,020	0,022	0,021	0,016	0,015	0,012	0,010	0,008
Resistance at an ambient air temperature of 35 °C	R	mΩ/m	0,161	0,117	0,079	0,057	0,039	0,032	0,026	0,029	0,028	0,020	0,019	0,016	0,013	0,010
Reactance (Independent from Temperature)	X	mΩ/m	0,068	0,057	0,044	0,034	0,027	0,022	0,019	0,019	0,018	0,014	0,015	0,012	0,010	0,008
Positive and negative sequence impedances at an ambient air temperature of 35 °C	Z	mΩ/m	0,175	0,130	0,091	0,067	0,047	0,039	0,032	0,035	0,033	0,024	0,024	0,020	0,016	0,013
Positive and negative sequence impedances at an ambient air temperature of 20 °C	Z ₂₀	mΩ/m	0,142	0,106	0,075	0,056	0,040	0,033	0,027	0,029	0,028	0,021	0,021	0,017	0,014	0,012
Rated Power Loss at 35 °C		Watt	191,9	212,9	237,3	268,6	302,6	382,8	483,8	446,5	525,0	545,4	559,1	606,5	604,8	780,0
DC Resistance at a conductor temperature of 20 °C for Phases	R _{phdc}	mΩ/m	0,128	0,098	0,060	0,043	0,030	0,024	0,020	0,025	0,022	0,018	0,016	0,014	0,012	0,012
DC Resistance at a conductor temperature of 20 °C for Neutral	R _{ndc}	mΩ/m	0,132	0,101	0,062	0,044	0,031	0,025	0,020	0,026	0,024	0,019	0,017	0,015	0,013	0,013
DC Resistance at a conductor temperature of 20 °C for PE	R _{pedc}	mΩ/m	0,132	0,101	0,062	0,045	0,031	0,025	0,020	0,026	0,024	0,019	0,017	0,015	0,012	0,012
SECTIONS																
L1,L2,L3,N		mm ²	240	330	480	660	960	1200	1500	1320	1500	1920	2040	2400	3000	3600
PE (5 Conductors)		mm ²	240	330	480	660	960	1200	1500	1320	1500	1920	2040	2400	3000	3600
Conductor Cross Section		mmxmm	6x40	6x55	6x80	6x110	6x160	6x200	6x250	2(6x110)	2(6x125)	2(6x160)	2(6x170)	2(6x200)	2(6x250)	3(6x200)
Busbar Weight (5 Conductors)		kg/m	28	33	40,4	49,9	64,9	77	90	97,3	108	129	139,3	151,8	188	224,9
MEAN FAULT-LOOP CHARACTERISTICS																
Zero-sequence Impedance																
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phN}	mΩ/m	0,670	0,518	0,381	0,281	0,204	0,167	0,165	0,155	0,131	0,108	0,106	0,087	0,081	0,054
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phPE}	mΩ/m	0,670	0,522	0,381	0,294	0,205	0,166	0,166	0,142	0,131	0,106	0,100	0,087	0,071	0,066
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphN}	mΩ/m	0,811	0,622	0,453	0,330	0,237	0,197	0,195	0,184	0,155	0,127	0,121	0,101	0,090	0,063
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphPE}	mΩ/m	0,811	0,626	0,453	0,341	0,239	0,196	0,197	0,169	0,155	0,125	0,116	0,102	0,080	0,074
Mean Resistances and Reactances																
Resistance at a conductor temperature of 20 °C	R _{b20phph}	mΩ/m	0,257	0,181	0,128	0,091	0,062	0,051	0,052	0,050	0,042	0,035	0,030	0,025	0,022	0,017
Resistance at a conductor temperature of 20 °C	R _{b20phN}	mΩ/m	0,261	0,185	0,131	0,094	0,064	0,053	0,052	0,052	0,043	0,036	0,031	0,026	0,023	0,017
Resistance at a conductor temperature of 20 °C	R _{b20phPE}	mΩ/m	0,261	0,186	0,132	0,094	0,064	0,053	0,052	0,052	0,041	0,037	0,030	0,026	0,024	0,017
Resistance at an ambient air temperature of 35 °C	R _{bphph}	mΩ/m	0,332	0,236	0,166	0,117	0,080	0,067	0,066	0,065	0,055	0,045	0,038	0,032	0,028	0,021
Resistance at an ambient air temperature of 35 °C	R _{bphN}	mΩ/m	0,337	0,242	0,170	0,121	0,082	0,069	0,068	0,068	0,056	0,048	0,039	0,034	0,029	0,022
Resistance at an ambient air temperature of 35 °C	R _{bphPE}	mΩ/m	0,337	0,242	0,171	0,121	0,083	0,069	0,069	0,068	0,054	0,048	0,039	0,033	0,030	0,022
Reactance (Independent from temperature)	X _{bphph}	mΩ/m	0,142	0,089	0,083	0,066	0,050	0,040	0,041	0,041	0,034	0,028	0,024	0,022	0,014	0,014
Reactance (Independent from temperature)	X _{bphN}	mΩ/m	0,172	0,153	0,112	0,091	0,072	0,059	0,059	0,057	0,047	0,040	0,037	0,033	0,028	0,023
Reactance (Independent from temperature)	X _{bphPE}	mΩ/m	0,173	0,154	0,117	0,093	0,071	0,058	0,059	0,056	0,047	0,040	0,037	0,032	0,028	0,024

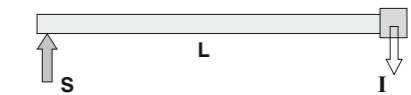


Voltage Drop Calculation

Generally Voltage drop of a busbar system can be calculated with the following formula.

$$\Delta U = \sqrt{3} \cdot L \cdot I \cdot (R_1 \cdot \cos\phi + X_1 \cdot \sin\phi) \cdot 10^{-3} [V]$$

- ΔU = Voltage Drop (V)
- L = Line Length (m)
- I = Line Current or Load (A)
- R₁ = Resistance (mΩ/m)
- X₁ = Reactance (mΩ/m)
- cosφ = Power Factor



S = Supply Point

⁽¹⁾All phase conductor characteristics have been determined according to Annex BB of IEC 61439-6.

⁽²⁾Fault-loop zero-sequences impedances have been determined according to Annex CC of IEC 61439-6.

⁽³⁾Fault-loop resistances and reactances have been determined according to Annex DD of IEC 61439-6.

*IK10 corresponds to impact energy of 20J according to IEC 62262.

**Cast Resin Busbars are produced with a minimum of 3 conductors.

Attention! The standard mounting of the Cast Resin busbar is with the conductors on edge. This allows for the easy application of the resin at the joint.