

Tricom[®]

▶ FUTUR / FUTUR smart



Energy. Endurance. Performance.

▶ TriCOM[®] FUTUR and TriCOM[®] FUTUR smart



Two strong performers

Innovative high-frequency (HF) charging technology with two strong performers – TriCOM FUTUR and TriCOM FUTUR smart. The TriCOM FUTUR charger series for traction and block-type batteries features a highly integrated circuit technology. TriCOM FUTUR chargers do not operate with conventional thyristors, but with clocked driver circuit semiconductors.

User-friendly, compact and stable cabinets ensure trouble-free operation and facilitate ease of use. The electronic charging system is controlled by a microprocessor which monitors the charging process and ensures an optimally charged battery. Overall quality, quality assurance and continuous improvement are of highest priority and guarantee a market leading charging system.

Conservation of resources

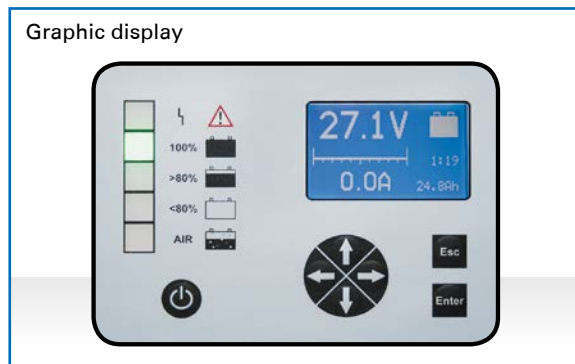
As a result of an improved efficiency compared to conventional chargers, the energy consumption is reduced by up to 20%.

The optional »IONIC Mixing« reduces the power consumption again by up to 10% and significantly extends the battery watering intervals of the traction battery due to lower water consumption.

TriCOM[®] FUTUR

SYSTEM FEATURES

- ▶ **Very high efficiency** - energy costs reduced by up to 20%.
- ▶ **Low residual ripple** - significantly lower heating of the battery during charge.
- ▶ **Greatly reduced volume and weight** - small space requirement, on-board ability.
- ▶ **FUTUR charge curve** - patented charging method for dynamic, particularly "soft" charging - regardless of the battery type, battery age or state of charge.
- ▶ **Graphic display** - precise information of all relevant charging and maintenance data with time and date function.
- ▶ **Status display** - traffic light function with high-performance LEDs (visible from a distance).
- ▶ **Service notifications** - accurate display of all maintenance needs and faults.
- ▶ **ConVision** - compact programming and analysis system, storage of the last 256 charging data sets, optimum analysis possibility for your vehicle fleet, exact error checking in the event of a fault, read-out option without additional work.
- ▶ **Fully automatic charging process** - Plug & Play for all battery states of discharge.
- ▶ **Programmable charge curves** - one device for all battery technologies, optimized setting for each application.
- ▶ **Delayed start option** - flexible and uniform utilization of the existing energy resources.
- ▶ **Electrical safety to EN standards** - safe operation in all applications.
- ▶ **Options: Temperature sensor, battery management counter, IONIC Mixing, remote control, electrolyte circulation system** - high flexibility, ideal adaptation possibilities, investment security.



Tricom® FUTUR table of types

Device type	Charging times depending on capacity C5 in Ah						Mains connection			Weight in kg	Housing type
	PzS				PzV	GIV	AC	Plug	kVA		
	6.5 - 7.5 h Electrolyte circ. 5.5 - 6.0 h	7.5 - 8.5 h Electrolyte circ. 6.5 - 7.5 h	8.5 - 10.0 h Electrolyte circ. 7.5 - 9.0 h	10.0 - 14.0 h Electrolyte circ. 9.0 - 12.0 h	12.0 - 14.0 h	11.0 - 14.0 h					
E 24 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	1.3	10	HF 450
E 24 / 45	225 - 281	281 - 360	360 - 450	450 - 563	300 - 375	250 - 375	E 230	Schuko	1.5	10	HF 450
E 24 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	E 230	Schuko	1.7	10	HF 450
E 24 / 60	300 - 375	375 - 480	480 - 600	600 - 750	400 - 500	334 - 500	E 230	Schuko	2.0	10	HF 450
E 24 / 65	325 - 406	406 - 520	520 - 650	650 - 813	434 - 541	361 - 541	E 230	Schuko	2.2	10	HF 450
E 24 / 70	350 - 438	438 - 560	560 - 700	700 - 875	467 - 583	389 - 583	E 230	Schuko	2.3	10	HF 450
E 24 / 75	375 - 469	469 - 600	600 - 750	750 - 938	500 - 625	417 - 625	E 230	Schuko	2.5	10	HF 450
E 24 / 80	400 - 500	500 - 640	640 - 800	800 - 1000	534 - 666	445 - 666	E 230	Schuko	2.7	10	HF 450
E 24 / 90	450 - 563	563 - 720	720 - 900	900 - 1125	600 - 750	500 - 750	E 230	Schuko	3.0	10	HF 450
E 24 / 100	500 - 625	625 - 800	800 - 1000	1000 - 1250	667 - 833	556 - 833	E 230	Schuko	3.3	10	HF 450
E 24 / 110	550 - 688	688 - 880	880 - 1100	1100 - 1375	734 - 916	612 - 916	E 230	Schuko	3.1	10	HF 450
Z 24 / 115	575 - 719	719 - 920	920 - 1150	1150 - 1438	767 - 958	639 - 958	Z 400	CEE 16	3.8	23	HF 550
Z 24 / 120	600 - 750	750 - 960	960 - 1200	1200 - 1500	800 - 1000	667 - 1000	Z 400	CEE 16	4.0	23	HF 550
Z 24 / 130	650 - 813	813 - 1040	1040 - 1300	1300 - 1625	867 - 1083	723 - 1083	Z 400	CEE 16	4.3	23	HF 550
Z 24 / 140	700 - 875	875 - 1120	1120 - 1400	1400 - 1750	934 - 1166	778 - 1166	Z 400	CEE 16	4.7	23	HF 550
Z 24 / 150	750 - 938	938 - 1200	1200 - 1500	1500 - 1875	1001 - 1250	834 - 1250	Z 400	CEE 16	5.0	23	HF 550
Z 24 / 160	800 - 1000	1000 - 1280	1280 - 1600	1600 - 2000	1067 - 1333	890 - 1333	Z 400	CEE 16	5.3	23	HF 550
Z 24 / 170	850 - 1063	1063 - 1360	1360 - 1700	1700 - 2125	1134 - 1416	945 - 1416	Z 400	CEE 16	5.7	23	HF 550
Z 24 / 180	900 - 1125	1125 - 1440	1440 - 1800	1800 - 2250	1201 - 1499	1001 - 1499	Z 400	CEE 16	6.0	23	HF 550
Z 24 / 190	950 - 1188	1188 - 1520	1520 - 1900	1900 - 2375	1267 - 1583	1056 - 1583	Z 400	CEE 16	6.3	23	HF 550
Z 24 / 200	1000 - 1250	1250 - 1600	1600 - 2000	2000 - 2500	1334 - 1666	1112 - 1666	Z 400	CEE 16	6.7	23	HF 550
E 36 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	1.5	10	HF 450
E 36 / 35	175 - 219	219 - 280	280 - 350	350 - 438	233 - 292	195 - 292	E 230	Schuko	1.7	10	HF 450
E 36 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	2.0	10	HF 450
E 36 / 45	225 - 281	281 - 360	360 - 450	450 - 563	300 - 375	250 - 375	E 230	Schuko	2.2	10	HF 450
E 36 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	E 230	Schuko	2.5	10	HF 450
E 36 / 60	300 - 375	375 - 480	480 - 600	600 - 750	400 - 500	334 - 500	E 230	Schuko	3.0	10	HF 450
Z 36 / 70	350 - 438	438 - 560	560 - 700	700 - 875	467 - 583	389 - 583	Z 400	CEE 16	3.5	23	HF 550
Z 36 / 75	375 - 469	469 - 600	600 - 750	750 - 938	500 - 625	417 - 625	Z 400	CEE 16	3.7	23	HF 550
Z 36 / 80	400 - 500	500 - 640	640 - 800	800 - 1000	534 - 666	445 - 666	Z 400	CEE 16	3.9	23	HF 550
Z 36 / 90	450 - 563	563 - 720	720 - 900	900 - 1125	600 - 750	500 - 750	Z 400	CEE 16	4.4	23	HF 550
Z 36 / 100	500 - 625	625 - 800	800 - 1000	1000 - 1250	667 - 833	556 - 833	Z 400	CEE 16	4.9	23	HF 550
Z 36 / 110	550 - 688	688 - 880	880 - 1100	1100 - 1375	734 - 916	612 - 916	Z 400	CEE 16	5.4	23	HF 550
Z 36 / 115	575 - 719	719 - 920	920 - 1150	1150 - 1438	767 - 958	639 - 958	Z 400	CEE 16	5.7	23	HF 550
Z 36 / 120	600 - 750	750 - 960	960 - 1200	1200 - 1500	800 - 1000	667 - 1000	Z 400	CEE 16	5.9	23	HF 550
D 36 / 130	650 - 813	813 - 1040	1040 - 1300	1300 - 1625	867 - 1083	723 - 1083	D 400	CEE 16	6.4	28	HF 550
D 36 / 140	700 - 875	875 - 1120	1120 - 1400	1400 - 1750	934 - 1166	778 - 1166	D 400	CEE 16	6.9	28	HF 550
D 36 / 150	750 - 938	938 - 1200	1200 - 1500	1500 - 1875	1001 - 1250	834 - 1250	D 400	CEE 16	7.4	28	HF 550
D 36 / 160	800 - 1000	1000 - 1280	1280 - 1600	1600 - 2000	1067 - 1333	890 - 1333	D 400	CEE 16	7.9	28	HF 550
D 36 / 170	850 - 1063	1063 - 1360	1360 - 1700	1700 - 2125	1134 - 1416	945 - 1416	D 400	CEE 16	8.4	28	HF 550
D 36 / 180	900 - 1125	1125 - 1440	1440 - 1800	1800 - 2250	1201 - 1499	1001 - 1499	D 400	CEE 16	8.9	28	HF 550
D 36 / 190	950 - 1188	1188 - 1520	1520 - 1900	1900 - 2375	1267 - 1583	1056 - 1583	D 400	CEE 32	9.4	45	HF 560
D 36 / 200	1000 - 1250	1250 - 1600	1600 - 2000	2000 - 2500	1334 - 1666	1112 - 1666	D 400	CEE 32	9.9	45	HF 560
E 48 / 35	175 - 219	219 - 280	280 - 350	350 - 438	233 - 292	195 - 292	E 230	Schuko	2.3	10	HF 450
E 48 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	2.6	10	HF 450
E 48 / 45	225 - 281	281 - 360	360 - 450	450 - 563	300 - 375	250 - 375	E 230	Schuko	2.9	10	HF 450
E 48 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	E 230	Schuko	3.3	10	HF 450
E 48 / 55	275 - 344	344 - 440	440 - 550	550 - 688	367 - 458	306 - 458	E 230	Schuko	3.0	10	HF 450

Device type	Charging times depending on capacity C5 in Ah						Mains connection			Weight in kg	Housing type
	PzS				PzV	GIV	AC	Plug	kVA		
	6.5 - 7.5 h Electrolyte circ. 5.5 - 6.0 h	7.5 - 8.5 h Electrolyte circ. 6.5 - 7.5 h	8.5 - 10.0 h Electrolyte circ. 7.5 - 9.0 h	10.0 - 14.0 h Electrolyte circ. 9.0 - 12.0 h	12.0 - 14.0 h	11.0 - 14.0 h					
Z 48 / 60	300 - 375	375 - 480	480 - 600	600 - 750	400 - 500	334 - 500	Z 400	CEE 16	3.9	23	HF 550
Z 48 / 65	325 - 406	406 - 520	520 - 650	650 - 813	434 - 541	361 - 541	Z 400	CEE 16	4.2	23	HF 550
Z 48 / 70	350 - 438	438 - 560	560 - 700	700 - 875	467 - 583	389 - 583	Z 400	CEE 16	4.6	23	HF 550
Z 48 / 75	375 - 469	469 - 600	600 - 750	750 - 938	500 - 625	417 - 625	Z 400	CEE 16	4.9	23	HF 550
Z 48 / 80	400 - 500	500 - 640	640 - 800	800 - 1000	534 - 666	445 - 666	Z 400	CEE 16	5.2	23	HF 550
Z 48 / 90	450 - 563	563 - 720	720 - 900	900 - 1125	600 - 750	500 - 750	Z 400	CEE 16	5.9	23	HF 550
Z 48 / 100	500 - 625	625 - 800	800 - 1000	1000 - 1250	667 - 833	556 - 833	Z 400	CEE 16	6.5	23	HF 550
Z 48 / 110	550 - 688	688 - 880	880 - 1100	1100 - 1375	734 - 916	612 - 916	Z 400	CEE 16	6.0	23	HF 550
Z 48 / 120	600 - 750	750 - 960	960 - 1200	1200 - 1500	800 - 1000	667 - 1000	Z 400	CEE 16	6.6	23	HF 550
D 48 / 130	650 - 813	813 - 1040	1040 - 1300	1300 - 1625	867 - 1083	723 - 1083	D 400	CEE 16	8.5	28	HF 550
D 48 / 140	700 - 875	875 - 1120	1120 - 1400	1400 - 1750	934 - 1166	778 - 1166	D 400	CEE 16	9.1	28	HF 550
D 48 / 150	750 - 938	938 - 1200	1200 - 1500	1500 - 1875	1001 - 1250	834 - 1250	D 400	CEE 16	9.8	28	HF 550
D 48 / 160	800 - 1000	1000 - 1280	1280 - 1600	1600 - 2000	1067 - 1333	890 - 1333	D 400	CEE 16	10.5	28	HF 550
D 48 / 170	850 - 1063	1063 - 1360	1360 - 1700	1700 - 2125	1134 - 1416	945 - 1416	D 400	CEE 16	9.3	28	HF 550
D 48 / 180	900 - 1125	1125 - 1440	1440 - 1800	1800 - 2250	1201 - 1499	1001 - 1499	D 400	CEE 16	9.8	28	HF 550
D 48 / 190	950 - 1188	1188 - 1520	1520 - 1900	1900 - 2375	1267 - 1583	1056 - 1583	D 400	CEE 32	12.4	45	HF 560
D 48 / 200	1000 - 1250	1250 - 1600	1600 - 2000	2000 - 2500	1334 - 1666	1112 - 1666	D 400	CEE 32	13.1	45	HF 560
E 80 / 10	50 - 63	63 - 80	80 - 100	100 - 125	67 - 83	56 - 83	E 230	Schuko	1.1	10	HF 450
E 80 / 15	75 - 94	94 - 120	120 - 150	150 - 188	100 - 125	83 - 125	E 230	Schuko	1.6	10	HF 450
E 80 / 20	100 - 125	125 - 160	160 - 200	200 - 250	133 - 167	111 - 167	E 230	Schuko	2.2	10	HF 450
E 80 / 25	125 - 156	156 - 200	200 - 250	250 - 313	167 - 208	139 - 208	E 230	Schuko	2.7	10	HF 450
E 80 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	3.2	10	HF 450
Z 80 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	Z 400	CEE 16	4.3	23	HF 550
Z 80 / 45	225 - 281	281 - 360	360 - 450	450 - 563	300 - 375	250 - 375	Z 400	CEE 16	4.9	23	HF 550
Z 80 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	Z 400	CEE 16	5.4	23	HF 550
Z 80 / 60	300 - 375	375 - 480	480 - 600	600 - 750	400 - 500	334 - 500	Z 400	CEE 16	6.5	23	HF 550
Z 80 / 65	325 - 406	406 - 520	520 - 650	650 - 813	434 - 541	361 - 541	Z 400	CEE 16	5.9	23	HF 550
Z 80 / 70	350 - 438	438 - 560	560 - 700	700 - 875	467 - 583	389 - 583	Z 400	CEE 16	6.3	23	HF 550
Z 80 / 75	375 - 469	469 - 600	600 - 750	750 - 938	500 - 625	417 - 625	Z 400	CEE 16	6.8	23	HF 550
Z 80 / 80	400 - 500	500 - 640	640 - 800	800 - 1000	534 - 666	445 - 666	Z 400	CEE 32	7.2	23	HF 550
D 80 / 90	450 - 563	563 - 720	720 - 900	900 - 1125	600 - 750	500 - 750	D 400	CEE 16	9.7	28	HF 550
D 80 / 100	500 - 625	625 - 800	800 - 1000	1000 - 1250	667 - 833	556 - 833	D 400	CEE 16	9.0	28	HF 550
D 80 / 110	550 - 688	688 - 880	880 - 1100	1100 - 1375	734 - 916	612 - 916	D 400	CEE 16	9.9	28	HF 550
D 80 / 120	600 - 750	750 - 960	960 - 1200	1200 - 1500	800 - 1000	667 - 1000	D 400	CEE 32	10.8	28	HF 550
D 80 / 130	650 - 813	813 - 1040	1040 - 1300	1300 - 1625	867 - 1083	723 - 1083	D 400	CEE 32	14.0	45	HF 560
D 80 / 140	700 - 875	875 - 1120	1120 - 1400	1400 - 1750	934 - 1166	778 - 1166	D 400	CEE 32	12.6	45	HF 560
D 80 / 150	750 - 938	938 - 1200	1200 - 1500	1500 - 1875	1001 - 1250	834 - 1250	D 400	CEE 32	13.5	45	HF 560
D 80 / 160	800 - 1000	1000 - 1280	1280 - 1600	1600 - 2000	1067 - 1333	890 - 1333	D 400	CEE 63	14.4	45	HF 560
D 80 / 170	850 - 1063	1063 - 1360	1360 - 1700	1700 - 2125	1134 - 1416	945 - 1416	D 400	CEE 32	15.3	50	HF 650
D 80 / 180	900 - 1125	1125 - 1440	1440 - 1800	1800 - 2250	1201 - 1499	1001 - 1499	D 400	CEE 32	16.2	50	HF 650
D 80 / 190	950 - 1188	1188 - 1520	1520 - 1900	1900 - 2375	1267 - 1583	1056 - 1583	D 400	CEE 32	17.1	50	HF 650
D 80 / 200	1000 - 1250	1250 - 1600	1600 - 2000	2000 - 2500	1334 - 1666	1112 - 1666	D 400	CEE 63	18.0	50	HF 650

Housing type	Width	Height	Depth
HF 450 ^{1,2}	430 mm	256 mm	115 mm
HF 455	430 mm	395 mm	157 mm
HF 460	295 mm	495 mm	115 mm

Housing type	Width	Height	Depth
HF 550	430 mm	395 mm	300 mm
HF 560	430 mm	482 mm	300 mm
HF 650	430 mm	695 mm	300 mm

¹ also available as HF 460

² at electrolyte circ. HF 455

▶ **TriCOM[®] FUTUR smart**

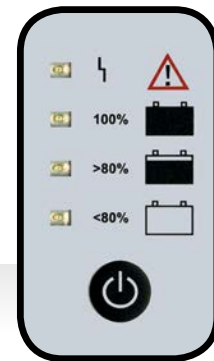
SYSTEM FEATURES

- ▶ **Very high efficiency** - energy costs reduced by up to 20%.
- ▶ **Low residual ripple** - significantly lower heating of the battery during charge.
- ▶ **Greatly reduced volume and weight** - small space requirement, on-board ability.
- ▶ **FUTUR charge curve** - patented charging method for dynamic, particularly "soft" charging - regardless of the battery type, battery age or state of charge.
- ▶ **Status display** - traffic light function with high-performance LEDs (visible from a distance).
- ▶ **ConVision** - compact programming and analysis system, storage of the last 256 charging data sets, optimum analysis possibility for your vehicle fleet, exact error checking in the event of a fault, read-out option without additional work.
- ▶ **Fully automatic charging process** - Plug & Play for all battery states of discharge.
- ▶ **Programmable charge curves** - one device for all battery technologies, optimized setting for each application.
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- ▶ **Options: Temperature sensor, battery management counter, IONIC Mixing, remote control, electrolyte circulation system** - high flexibility, ideal adaptation possibilities, investment security.

Charger
TriCOM FUTUR smart



Graphic display
TriCOM FUTUR smart



TriCOM[®] FUTUR smart table of types

Device type	Charging times depending on capacity C5 in Ah						Mains connection			Weight in kg	Housing type
	PzS				PzV	GIV	AC	Plug	kVA		
	6.5 - 7.5 h	7.5 - 8.5 h	8.5 - 10.0 h	10.0 - 14.0 h	12.0 - 14.0 h	11.0 - 14.0 h					
E 12 / 6	30 - 38	38 - 48	48 - 60	60 - 75	40 - 50	33 - 50	E 230	Schuko	0.104	3.0	HF 180
E 12 / 8	40 - 50	50 - 64	64 - 80	80 - 100	53 - 67	44 - 67	E 230	Schuko	0.139	3.0	HF 180
E 12 / 10	50 - 63	63 - 80	80 - 100	100 - 125	67 - 83	56 - 83	E 230	Schuko	0.173	3.0	HF 180
E 12 / 12	60 - 75	75 - 96	96 - 120	120 - 150	80 - 100	67 - 100	E 230	Schuko	0.208	3.0	HF 180
E 12 / 15	75 - 94	94 - 120	120 - 150	150 - 188	100 - 125	83 - 125	E 230	Schuko	0.260	3.0	HF 180
E 12 / 20	100 - 125	125 - 160	160 - 200	200 - 250	133 - 167	111 - 167	E 230	Schuko	0.347	3.0	HF 180
E 12 / 25	125 - 156	156 - 200	200 - 250	250 - 313	167 - 208	139 - 208	E 230	Schuko	0.433	3.0	HF 180
E 12 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	0.520	3.0	HF 180
E 12 / 35	175 - 219	219 - 280	280 - 350	350 - 438	233 - 292	195 - 292	E 230	Schuko	0.607	3.0	HF 180
E 12 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	0.693	3.5	HF 190
E 12 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	E 230	Schuko	0.867	3.5	HF 190
E 24 / 6	30 - 38	38 - 48	48 - 60	60 - 75	40 - 50	33 - 50	E 230	Schuko	0.200	3.0	HF 180
E 24 / 8	40 - 50	50 - 64	64 - 80	80 - 100	53 - 67	44 - 67	E 230	Schuko	0.267	3.0	HF 180
E 24 / 10	50 - 63	63 - 80	80 - 100	100 - 125	67 - 83	56 - 83	E 230	Schuko	0.333	3.0	HF 180
E 24 / 12	60 - 75	75 - 96	96 - 120	120 - 150	80 - 100	67 - 100	E 230	Schuko	0.400	3.0	HF 180
E 24 / 15	75 - 94	94 - 120	120 - 150	150 - 188	100 - 125	83 - 125	E 230	Schuko	0.500	3.0	HF 180
E 24 / 20	100 - 125	125 - 160	160 - 200	200 - 250	133 - 167	111 - 167	E 230	Schuko	0.667	3.0	HF 180
E 24 / 25	125 - 156	156 - 200	200 - 250	250 - 313	167 - 208	139 - 208	E 230	Schuko	0.833	3.0	HF 180
E 24 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	1.000	3.0	HF 180
E 24 / 35	175 - 219	219 - 280	280 - 350	350 - 438	233 - 292	195 - 292	E 230	Schuko	1.167	3.0	HF 180
E 24 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	1.333	3.5	HF 190
E 24 / 50	250 - 313	313 - 400	400 - 500	500 - 625	334 - 417	278 - 417	E 230	Schuko	1.667	3.5	HF 190
E 24 / 60	300 - 375	375 - 480	480 - 600	600 - 750	400 - 500	335 - 500	E 230	Schuko	2.000	10	HF 450
E 24 / 65	325 - 407	407 - 520	520 - 650	650 - 812	434 - 542	362 - 543	E 230	Schuko	2.170	10	HF 450
E 24 / 70	350 - 438	438 - 560	560 - 700	700 - 875	467 - 583	389 - 583	E 230	Schuko	2.330	10	HF 450
E 24 / 75	375 - 469	469 - 600	600 - 75	750 - 937	500 - 625	417 - 625	E 230	Schuko	2.500	10	HF 450
E 24 / 80	400 - 500	500 - 640	640 - 800	800 - 1000	534 - 667	445 - 667	E 230	Schuko	2.670	10	HF 450
E 36 / 10	50 - 63	63 - 80	80 - 100	100 - 125	67 - 83	56 - 83	E 230	Schuko	0.493	3.0	HF 180
E 36 / 12	60 - 75	75 - 96	96 - 120	120 - 150	80 - 100	67 - 100	E 230	Schuko	0.592	3.0	HF 180
E 36 / 15	75 - 94	94 - 120	120 - 150	150 - 188	100 - 125	83 - 125	E 230	Schuko	0.740	3.0	HF 180
E 36 / 20	100 - 125	125 - 160	160 - 200	200 - 250	133 - 167	111 - 167	E 230	Schuko	0.987	3.0	HF 180
E 36 / 25	125 - 156	156 - 200	200 - 250	250 - 313	167 - 208	139 - 208	E 230	Schuko	1.233	3.5	HF 190
E 36 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	1.480	3.5	HF 190
E 36 / 35	175 - 219	219 - 280	280 - 350	350 - 438	233 - 292	195 - 292	E 230	Schuko	1.727	3.5	HF 190
E 36 / 40	200 - 250	250 - 320	320 - 400	400 - 500	267 - 333	222 - 333	E 230	Schuko	1.973	3.5	HF 190
E 48 / 10	50 - 63	63 - 80	80 - 100	100 - 125	67 - 83	56 - 83	E 230	Schuko	0.653	3.0	HF 180
E 48 / 12	60 - 75	75 - 96	96 - 120	120 - 150	80 - 100	67 - 100	E 230	Schuko	0.784	3.0	HF 180
E 48 / 15	75 - 94	94 - 120	120 - 150	150 - 188	100 - 125	83 - 125	E 230	Schuko	0.980	3.0	HF 180
E 48 / 20	100 - 125	125 - 160	160 - 200	200 - 250	133 - 167	111 - 167	E 230	Schuko	1.307	3.5	HF 190
E 48 / 25	125 - 156	156 - 200	200 - 250	250 - 313	167 - 208	139 - 208	E 230	Schuko	1.633	3.5	HF 190
E 48 / 30	150 - 188	188 - 240	240 - 300	300 - 375	200 - 250	167 - 250	E 230	Schuko	1.960	3.5	HF 190

Housing type	Width	Height	Depth
HF 180	262 mm	92 mm	164 mm
HF 190	262 mm	112 mm	164 mm
HF 450	430 mm	256 mm	115 mm



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