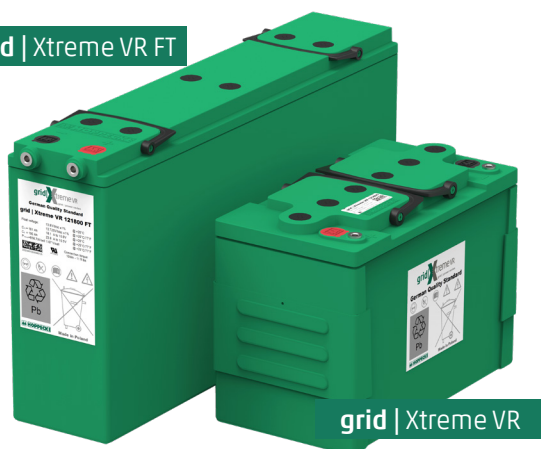


grid | Xtreme VR FT



grid | Xtreme VR

DATA SHEET

grid | Xtreme VR

GREEN series

Application | Data Center

Cost-optimized pure lead technology (green series)

The HOPPECKE grid | Xtreme VR green series was developed with a high cost-benefit factor in mind to make the advantages of pure lead technology available to cost-conscious customers. The superior technical characteristics in both top and front terminal versions make them the preferred solution for UPS batteries in data center.

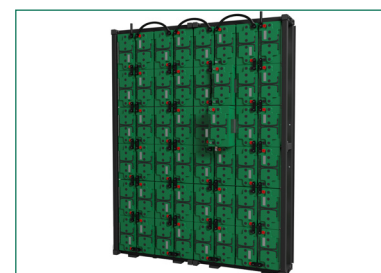
Unique dual-pole design - less service efforts

Dedicated pole contact points with touch protection allows for a precise impedance measurement making it quick and easy during installation and regular maintenance work.



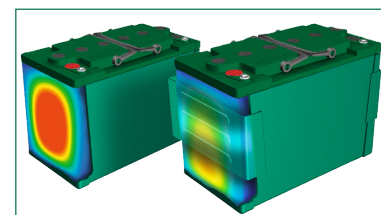
grid | XtremeStack – optimal use of space with a minimal footprint

The innovative stacking solution from HOPPECKE. Tailored for grid | Xtreme VR batteries in the top terminal variant to achieve maximum efficient use of space and power density (kW/m²) - with comparatively less installation effort and lower costs. grid | XtremeStack is both horizontally and vertically expandable and adapts flexibly to your needs. Suitable for seismic loads up to UBC Zone 1.



Patented. innovative safeguard-tec - lower operational costs

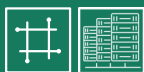
The innovative safeguard-tec for the top terminal types (optional) ensures dimensional stability throughout battery lifetime and at elevated ambient temperature. This allows installation in cabinets or on racks with limited demand for a continuous cost-intensive air-conditioning.



Proven ESS technology - reduced life cycle costs (TCO)

The result of Enhanced Stability Standard (ESS) technology is a proprietary improved resilience against thermal runaway, better charge acceptance and more even voltage behavior of the battery. This leads to a longer service life and reduced service costs: in summary optimized life cycle costs.





Construction

- High Performance Pure Lead grid electrodes for very good corrosion resistance also under **elevated operating temperature**
- Active mass is designed for **high discharge performance** with good cyclability
- High-quality and low resistance microporous glass fibre separators combined with **ESS technology** ensures optimum charge carrier exchange and improves a **long-term stability**
- Fully isolated** HOPPECKE connector system
- Innovative plastic-overmolded dual-pole design with an **access for impedance measurements**
- 100% tested self-regulating pressure relief valve per cell to prevent interaction between cells of a block with backfire inhibiting for increased **operational safety**
- UL94 V-0** rated flame retardant ABS-PC material (halogen-free) - high heat, shock and vibration resistant
- 15 years** design life and optimized aging behavior at high temperatures



Installation & Operation

- Suitable for standby parallel operation as well as partial cyclic applications
- Vertical as well as horizontal installation** on racks, in battery cabinets or in the grid | XtremeStack due to the robust folding handles integrated in the lid for easy assembly
- FT: **real front terminals** for an ease of installation and maintenance – no additional connectors needed
- TT: safeguard-tec optional available – **improves the overall performance** significantly
- Recommended charge float voltage: 2.3 Vpc @ 68°F (20°C) / 2.288 Vpc @ 77°F (25°C)
- Operating temperature range extremely wide from **-31°F to +122°F (-35°C to +50°C)**
- Storage time** extended up to **2 years** for maximum project deployment flexibility
- Reduced maintenance: no refilling of distilled water is required



Standards

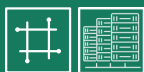
- Designed to be compliant with international standard **IEC 60896-21/22**
- Usage in applications where longest life (15 years design life) and highest reliability are required. Therefore, classified as "Very Long Life" according to Eurobat Guide 20 15
- UL recognized** component
- UL94 V-0 rated flame retardant ABS-PC material (halogen-free)
- Classified as non-spillable battery and approved as non-hazardous cargo for land, sea and air transportation in accordance with the requirements of **ADR / RID, IMDG and IATA**
- Exclusively manufactured in HOPPECKE certified production facilities in accordance with **ISO 9001, ISO 14001, ISO 50001 and ISO 45001**



Type overview grid | Xtreme VR

Capacity, dimensions and weights

MODEL	VOLTAGE [V]	CONSTANT POWER RATINGS IN WATTS PER CELL @ 77°F (25°C)			DIMENSIONS [inches]			WEIGHT	
		1.67 VPC 5 MIN	1.67 VPC 10 MIN	1.67 VPC 15 MIN	LENGTH	WIDTH	HEIGHT	LBS	KG
grid Xtreme VR 122700	12	649.6	454.7	345.8	10	6.85	9.17	55.6	25.2
grid Xtreme VR 122900	12	678.6	493.5	386.4	10	6.85	9.17	55.6	25.2
grid Xtreme VR 123600	12	870.8	610.5	464.6	12.6	6.85	9.17	69.9	31.7
grid Xtreme VR 123900	12	900.8	656.0	514.0	12.6	6.85	9.17	69.9	31.7
grid Xtreme VR 124700	12	948.7	765.5	612.6	12.6	6.85	11.14	92.4	41.9
grid Xtreme VR 124400	12	1061.2	802.6	640.6	14.13	6.85	11.14	100.1	45.4
grid Xtreme VR 125200	12	1096.9	861.1	708.5	14.13	6.85	11.14	100.1	45.4
grid Xtreme VR 125100	12	1252.4	930.1	735.5	19.61	6.85	9.17	111.1	50.4
grid Xtreme VR 126000	12	1295.3	998.7	814.1	19.61	6.85	9.17	111.1	50.4
grid Xtreme VR 12-1000 FT 19"	12	710.3	522.7	410.6	15.91	4.33	10.39	65.3	29.6
grid Xtreme VR 12-1000 FT 23"	12	809.7	595.0	467.3	22.17	4.92	7.87	73	33.1
grid Xtreme VR 12-1500 FT	12	921.9	751.2	632.8	22.17	4.33	12.09	108.5	49.2
grid Xtreme VR 12-1800 FT	12	1035.2	856.7	717.7	22.17	4.92	12.09	123.9	56.2
grid Xtreme VR 12-2000 FT	12	1027.2	859.9	735.7	22.17	4.92	12.74	132.3	60



MODEL	TERMINAL	MAXIMUM DISCHARGE CURRENT [A]	SHORT CIRCUIT CURRENT (acc. IEC 60896-21) [A]	TERMINAL TYPE	TERMINAL TORQUE	FIG.
grid Xtreme VR 122700	TOP	1100	2110	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 122900	TOP	1100	2110	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 123600	TOP	1100	2715	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 123900	TOP	1100	2715	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 124700	TOP	1100	2810	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 124400	TOP	1100	2984	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 125200	TOP	1100	2984	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 125100	TOP	1100	3818	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 126000	TOP	1100	3818	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-1000 FT 19"	FRONT	1000	2076	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-1000 FT 23"	FRONT	1000	2217	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-1500 FT	FRONT	1000	2350	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-1800 FT	FRONT	1000	2953	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-2000 FT	FRONT	1000	2821	Insert (M8)	133 in.-lbs (15 Nm)	B

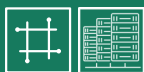
*) Top terminal batteries: +0.12 inch in length and +0.2 inch in width using optional safeguard-tec

grid | Xtreme VR 122700

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	691.9	691.9	691.9	637.9	591.9	438.6	342.8	283.5	211.9	154.5	122.0
1.70	824.6	824.6	753.1	688.6	631.7	451.4	345.8	284.6	212.0	154.5	122.0
1.67	858.0	858.0	782.1	711.8	649.6	454.7	345.8	284.6	212.0	154.5	122.0
1.65	877.6	877.6	792.9	721.1	660.1	455.7	345.8	284.6	212.0	154.5	122.0
1.60	930.4	930.4	834.0	750.4	679.3	455.7	345.8	284.6	212.0	154.5	122.0

grid | Xtreme VR 122900

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	703.1	703.1	703.1	655.2	613.3	464.5	370.6	303.4	222.4	158.2	122.7
1.7	827.8	827.8	756.1	695.4	648.6	484.8	382.2	309.5	225.2	159.4	123.2
1.67	861.2	861.2	785.1	724.7	678.6	493.5	386.4	310.8	225.5	159.4	123.2
1.65	880.9	880.9	799.6	740.9	690.1	497.7	389.4	311.6	225.6	159.4	123.2
1.6	959.9	959.9	861.8	781.4	714.4	502.6	389.7	311.6	225.6	159.4	123.2



grid | Xtreme VR 123600

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	927.5	927.5	927.5	855.5	794.0	589.0	460.6	381.1	284.9	207.9	164.1
1.70	1104.0	1104.0	1008.9	922.9	847.0	606.1	464.6	382.5	285.1	207.9	164.2
1.67	1148.2	1148.2	1047.3	953.8	870.8	610.5	464.6	382.5	285.1	207.9	164.2
1.65	1174.2	1174.2	1061.6	966.1	884.8	611.8	464.6	382.5	285.1	207.9	164.2
1.60	1243.7	1243.7	1116.0	1004.9	910.3	611.8	464.6	382.5	285.1	207.9	164.2

grid | Xtreme VR 123900

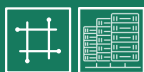
END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	933.3	933.3	933.3	870.1	814.7	617.7	493.1	403.8	296.2	210.8	163.5
1.7	1097.5	1097.5	1003.1	923.1	861.3	644.5	508.4	411.9	299.8	212.3	164.2
1.67	1141.3	1141.3	1041.2	961.6	900.8	656.0	514.0	413.7	300.3	212.3	164.2
1.65	1167.0	1167.0	1060.2	982.9	915.9	661.5	518.0	414.7	300.4	212.3	164.2
1.6	1270.4	1270.4	1141.8	1036.0	947.8	667.9	518.4	414.7	300.4	212.3	164.2

grid | Xtreme VR 124700

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	871.7	871.7	871.7	880.8	842.8	679.5	568.8	474.7	353.5	255.9	201.3
1.70	990.9	990.9	990.9	939.7	902.4	731.6	599.3	490.8	359.5	257.7	201.7
1.67	1104.8	1104.8	1033.0	982.7	948.7	765.5	612.6	495.4	360.2	257.9	201.7
1.65	1134.1	1134.1	1063.2	1013.9	968.7	770.6	621.2	497.7	360.2	257.9	201.7
1.60	1222.7	1222.7	1143.2	1075.8	1016.1	793.3	625.9	497.9	360.2	257.9	201.7

grid | Xtreme VR 124400

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	1070.3	1070.3	1070.3	1009.3	954.8	751.5	615.8	518.0	394.4	294.1	236.1
1.70	1162.6	1162.6	1162.6	1090.4	1025.9	788.0	636.2	529.5	398.0	294.3	236.1
1.67	1299.6	1299.6	1210.9	1131.8	1061.2	802.6	640.6	530.3	398.1	294.3	236.1
1.65	1332.9	1332.9	1240.0	1156.7	1082.2	810.3	641.8	530.3	398.1	294.3	236.1
1.60	1404.9	1404.9	1303.1	1210.2	1126.6	823.4	641.9	530.3	398.1	294.3	236.1



grid | Xtreme VR 125200

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	1076.9	1076.9	1076.9	1026.2	979.3	787.5	658.6	548.4	409.8	298.2	235.2
1.70	1155.8	1155.8	1155.8	1090.4	1042.7	837.0	695.1	569.7	418.6	300.7	235.3
1.67	1291.8	1291.8	1203.7	1140.7	1096.9	861.1	708.5	574.5	420.6	301.1	235.3
1.65	1304.3	1304.3	1219.3	1158.5	1102.6	861.9	708.5	574.5	420.6	301.1	235.3
1.60	1434.7	1434.7	1332.5	1246.6	1171.7	900.3	720.0	577.6	420.9	301.1	235.3

grid | Xtreme VR 125100

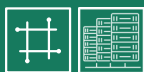
END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	1290.5	1290.5	1290.5	1210.5	1139.5	878.9	713.3	594.4	450.8	333.8	267.1
1.70	1497.4	1497.4	1395.3	1303.5	1221.2	918.6	730.9	604.4	453.5	334.1	267.1
1.67	1561.3	1561.3	1445.0	1342.7	1252.4	930.1	735.5	605.3	454.6	334.1	267.1
1.65	1599.2	1599.2	1478.6	1371.5	1276.6	938.2	736.3	605.5	454.6	334.1	267.1
1.60	1680.9	1680.9	1550.1	1431.7	1326.1	952.2	737.8	605.5	454.6	334.1	267.1

grid | Xtreme VR 126000

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	1298.6	1298.6	1298.6	1231.1	1169.2	921.4	763.2	629.5	468.5	338.5	266.1
1.70	1488.7	1488.7	1387.4	1303.7	1241.6	976.4	799.2	650.6	477.0	341.3	266.5
1.67	1552.0	1552.0	1436.7	1353.7	1295.3	998.7	814.1	656.1	480.5	341.3	266.5
1.65	1589.6	1589.6	1476.7	1395.2	1321.2	1013.5	823.6	659.9	480.5	341.3	266.5
1.60	1717.7	1717.7	1586.2	1475.9	1380.4	1042.3	827.4	661.5	480.5	341.3	266.5

grid | Xtreme VR 12-1000 FT 19"

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	736.2	736.2	736.2	685.7	641.9	487.4	393.5	331.6	253.2	187.4	150.1
1.70	846.8	846.8	788.6	735.8	688.3	513.5	406.3	339.2	256.3	188.7	150.5
1.67	891.6	981.6	823.3	763.2	710.3	522.7	410.6	341.1	256.5	188.7	150.5
1.65	913.7	913.7	842.3	779.3	723.8	528.1	412.3	341.6	256.5	188.7	150.5
1.60	966.0	966.0	883.5	811.9	749.7	536.6	414.3	341.6	256.5	188.7	150.5



grid | Xtreme VR 12-1000 FT 23"

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	839.1	839.1	839.1	784.5	735.9	558.5	448.1	374.7	284.1	209.5	166.3
1.70	973.9	973.9	904.1	841.7	786.2	584.8	462.5	382.8	287.1	210.3	166.7
1.67	1015.5	1015.5	938.4	870.1	809.7	595.0	467.3	384.8	287.2	210.3	166.7
1.65	1041.5	1041.5	959.2	886.8	823.3	600.0	469.1	385.2	287.2	210.3	166.7
1.60	1097.0	1097.0	1002.5	920.6	849.7	607.2	469.9	385.2	287.2	210.3	166.7

grid | Xtreme VR 12-1500 FT

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	818.3	818.3	818.3	818.3	818.3	683.7	585.6	510.9	404.9	307.7	247.8
1.70	924.8	924.8	924.8	924.8	886.3	730.0	619.2	534.7	417.9	313.4	250.2
1.67	1007.9	1007.9	1007.9	963.5	921.9	751.2	632.8	543.3	421.4	314.0	250.2
1.65	1029.9	1029.9	1029.9	984.8	942.0	764.6	639.4	546.9	422.5	314.0	250.2
1.60	1151.6	1151.6	1092.4	1037.7	987.4	788.9	649.7	549.6	422.5	314.0	250.2

grid | Xtreme VR 12-1800 FT

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	919.2	919.2	919.2	919.2	919.2	774.8	660.1	576.5	460.0	348.2	279.8
1.70	1073.8	1073.8	1073.8	1033.7	995.3	830.4	701.7	602.9	472.8	353.5	281.9
1.67	1120.2	1120.2	1120.2	1076.8	1035.2	856.7	717.7	613.7	476.8	354.0	281.9
1.65	1151.3	1151.3	1151.3	1103.6	1058.6	871.1	726.3	619.4	478.9	354.0	281.9
1.60	1256.8	1256.8	1208.2	1159.4	1111.4	901.1	740.1	625.1	478.9	354.0	281.9

grid | Xtreme VR 12-2000 FT

END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	908.2	908.2	908.2	908.2	908.2	775.5	676.8	594.1	477.2	365.6	295.7
1.70	1025.1	1025.1	1025.1	1025.1	986.1	832.3	716.8	624.8	492.1	371.0	297.4
1.67	1117.3	1117.3	1117.3	1070.1	1027.2	860.0	735.8	638.1	495.9	371.7	297.7
1.65	1145.7	1145.7	1145.7	1095.6	1050.4	876.6	746.2	644.8	499.5	372.8	297.7
1.60	1264.3	1264.3	1205.9	1152.7	1103.9	911.2	767.0	656.0	500.4	372.8	297.7

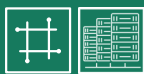


Fig. A

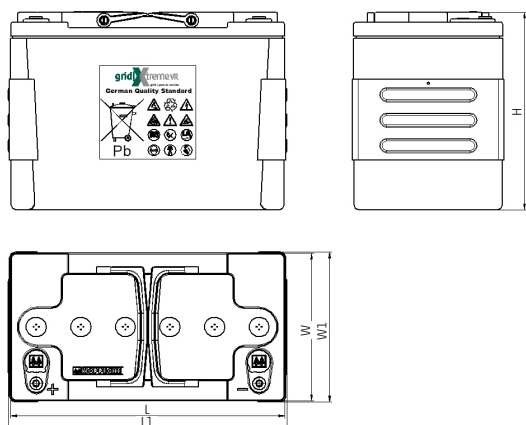
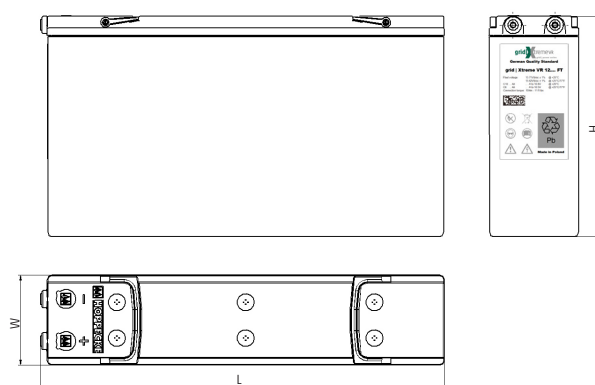


Fig. B



Tightening torque of terminal screw: 15 Nm - 133 lbf in

grid | Xtreme VR is versatile and may be used in other DC or AC industrial applications.

All of our cells and batteries should be installed, commissioned and operated in accordance with:

- HOPPECKE Operational Manual / Recommendations / Instructions
- International Standard IEC 62485-2 Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries
- Regional / National / Local Standards for the Environment

Optimal environmental compatibility - closed material cycle in certified recycling system

HOPPECKE Baterie Polska Sp. z o.o.
ul. Logistyczna 10
63-006 Śródka
Poland
Tel.: +48 61 64 65 000
Fax: +48 61 64 65 001
E-Mail: sbo@hoppecke.pl

HOPPECKE Batterien GmbH & Co. KG
Bontkirchener Straße 1
59929 Brilon
Germany
Tel: + 49 (0) 2963 61-374
Fax: + 49 (0) 2963 61-270
E-Mail: reservpower@hoppecke.com

