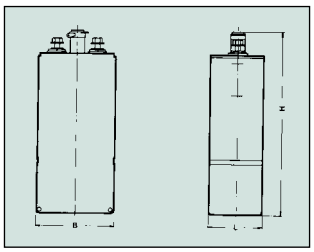
FNC® CAPACITIES, DIMENSIONS AND WEIGHTS

Type	Capacity C_5	Dimensions			Cell weight with electrolyte	Cell weight without electrolyte	Weight solid electrolyte	Electrolyte quantity
		Length	Width	Height				
	Ah	**mm**	**mm**	**mm**	**kg**	**kg**	**kg**	**ltr.**
FNC 103 X	**10**	30	122	250	1.4	1.1	0.06	0.25
FNC 106 X	**19**	47	122	250	2.5	1.9	0.12	0.48
FNC 110 X	**33**	72	122	250	3.7	2.9	0.18	0.75
FNC 114 X	**45**	92	122	250	5.0	3.9	0.24	0.99
FNC 118 X	**58**	115	122	250	6.2	4.8	0.29	1.18
FNC 203 X	**13**	30	122	309	1.8	1.3	0.10	0.40
FNC 206 X	**25**	47	122	309	3.2	2.4	0.23	0.93
FNC 210 X	**43**	72	122	309	4.8	3.6	0.26	1.06
FNC 214 X	**60**	92	122	309	6.3	4.8	0.30	1.25
FNC 218 X	**77**	115	122	309	7.8	5.4	0.49	2.02
FNC 201 H	**12**	30	122	309	1.5	1.0	0.12	0.48
FNC 202 H	**23**	30	122	309	1.8	1.3	0.09	0.37
FNC 203 H	**35**	47	122	309	2.7	1.8	0.17	0.71
FNC 204 H	**46**	47	122	309	3.0	2.3	0.15	0.63
FNC 205 H	**58**	72	122	309	4.2	2.8	0.29	1.17
FNC 206 H	**69**	72	122	309	4.4	3.1	0.27	1.10
FNC 207 H	**80**	72	122	309	4.6	3.5	0.23	0.93
FNC 208 H	**93**	92	122	309	5.6	4.0	0.33	1.34
FNC 209 H	**104**	92	122	309	5.8	4.4	0.29	1.18
FNC 210 H	**115**	115	122	309	6.9	4.9	0.42	1.73
FNC 211 H	**125**	115	122	309	7.2	5.3	0.39	1.60
FNC 307 H	**140**	92	194	309	8.6	6.0	0.52	2.14
FNC 308 H	**160**	92	194	309	9.2	6.7	0.50	2.06
FNC 309 H	**180**	92	194	309	9.2	7.2	0.43	1.76
FNC 310 H	**200**	115	194	309	11.1	8.1	0.62	2.52
FNC 311 H	**220**	115	194	309	11.6	8.7	0.60	2.44
FNC 201 L	**20**	30	122	309	1.6	1.0	0.12	0.49
FNC 202 L	**40**	47	122	309	2.6	1.6	0.19	0.80
FNC 203 L	**60**	47	122	309	2.7	2.1	0.15	0.58
FNC 204 L	**80**	72	122	309	4.1	2.7	0.30	1.15
FNC 205 L	**100**	72	122	309	4.3	3.2	0.25	0.95
FNC 206 L	**120**	92	122	309	5.2	3.7	0.34	1.30
FNC 207 L	**140**	92	122	309	5.6	4.2	0.31	1.18
FNC 208 L	**160**	115	122	309	6.8	4.8	0.45	1.74
FNC 209 L	**180**	115	122	309	6.9	5.0	0.41	1.58
FNC 306 L	**200**	92	194	309	8.5	6.0	0.54	2.08
FNC 307 L	**233**	92	194	309	9.2	7.1	0.45	1.74
FNC 308 L	**266**	115	194	309	10.7	7.7	0.65	2.53
FNC 309 L	**300**	115	194	309	10.9	8.2	0.58	2.25
FNC 404 L	**150**	77	157	405	7.3	4.7	0.58	2.25
FNC 405 L	**185**	77	157	405	7.8	5.4	0.51	1.99
FNC 406 L	**225**	109	157	405	10.3	6.6	0.80	3.11
FNC 407 L	**265**	109	157	405	10.9	7.4	0.77	2.98
FNC 408 L	**300**	109	157	405	12.0	8.9	0.68	2.65
FNC 409 L	**340**	109	157	405	13.1	10.4	0.59	2.30
FNC 410 L	**375**	157	157	405	15.3	10.0	1.15	4.45
FNC 411 L	**415**	157	157	405	15.8	10.6	1.13	4.37
FNC 412 L	**450**	157	157	405	16.5	11.7	1.05	4.08
FNC 413 L	**490**	157	157	405	17.1	12.8	0.94	3.66

Type	Capacity C_5	Dimensions			Cell weight with electrolyte	Cell weight without electrolyte	Weight solid electrolyte	Electrolyte quantity
		Length	Width	Height				
	Ah	**mm**	**mm**	**mm**	**kg**	**kg**	**kg**	**ltr.**
FNC 201 M	**20**	30	122	309	1.5	1.0	0.11	0.44
FNC 202 M	**40**	47	122	309	2.6	1.7	0.20	0.76
FNC 203 M	**60**	47	122	309	2.8	2.2	0.14	0.54
FNC 204 M	**80**	72	122	309	4.2	2.9	0.28	1.09
FNC 205 M	**100**	72	122	309	4.5	3.5	0.21	0.80
FNC 206 M	**120**	92	122	309	5.6	4.1	0.32	1.24
FNC 207 M	**140**	92	122	309	5.9	4.5	0.30	1.18
FNC 208 M	**160**	115	122	309	7.1	5.2	0.42	1.64
FNC 209 M	**180**	115	122	309	7.4	5.8	0.35	1.34
FNC 306 M	**200**	92	194	309	8.5	6.0	0.54	2.10
FNC 307 M	**233**	92	194	309	9.2	7.4	0.40	1.56
FNC 308 M	**266**	115	194	309	10.0	7.1	0.63	2.44
FNC 309 M	**300**	115	194	309	10.9	8.4	0.53	2.05
FNC 404 M	**150**	77	157	405	7.5	4.2	0.72	2.78
FNC 405 M	**185**	77	157	405	7.8	4.6	0.69	2.68
FNC 406 M	**225**	109	157	405	10.5	7.0	0.76	2.94
FNC 407 M	**265**	109	157	405	10.5	7.5	0.65	2.52
FNC 408 M	**300**	109	157	405	12.0	8.5	0.57	2.20
FNC 409 M	**340**	157	157	405	15.5	10.0	1.19	4.62
FNC 410 M	**375**	157	157	405	16.0	11.0	1.09	4.20
FNC 411 M	**415**	157	157	405	16.2	11.6	1.00	3.87
FNC 412 M	**450**	157	157	405	16.8	12.6	0.91	3.53

Capacities above 490 Ah to 1300 Ah available on request.



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Applications

FNC® batteries are used in a great variety of applications:

- In power stations and transformer plants
- In emergency power supply
- In telecommunication installations
- In off-the-line power supply plants and when using regenerative energies
- In signalling and control systems
- In starting emergency power units

Product features

FNC® cells come in different designs and are often used in UPS stations.

Electrodes

The positive and negative electrodes consist of nickel fibre-structured elements with graphite-free active material. The three-dimensional fibre structure comprising a nickel fibre composite is extremely elastic. Mechanical stresses and volume changes during charge/discharge cycles are therefore absorbed by the electrodes.

Separators

The positive electrodes are enveloped in microporous separators. The separators are designed to ensure that the electrodes are properly separated and that they show low internal resistance corresponding to the level of stress they are subjected to.

Cell connectors

The cell connectors are screwed onto the cells. This makes it easy to fit the connectors. Fully insulated connectors are supplied on request. The connectors consist of nickel-plated copper with a very low resistance.

Electrolyte

The electrolyte comprises diluted potassium hydroxide with a density of 1.19 kg/l at 20°C. The cells are delivered in a filled and charged state. For sea or air transport, delivery in a dry, discharged condition is recommended. The electrolyte is then delivered separately packed and ready to fill or as dry electrolyte.

Container

The battery container is made of high resistant translucent polypropylene (PP). This facilitates checking the electrolyte level. Material variations are possible. Container and lid are welded together to prevent gas and electrolyte escaping. Special O-rings ensure that the pole bushings are sealed properly.

Vent plugs

Back-fire resistant flip-top vent plugs are standard delivery.

Attributes

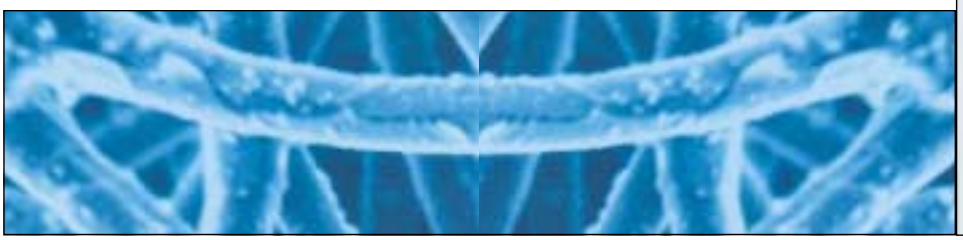
With continuous battery power supply with float charge FNC® batteries have a service life of up to 20 years. Because of the graphite-free electrodes, **no electrolyte change** is necessary during their entire service life. The FNC® battery is also distinguished by its cycle resistance (over 2000 cycles under DIN), its extremely low internal resistance and a high energy density.

Advantages

Apart from long maintenance intervals and low life-cycle costs, the optional AquaGen® vent plug provides an added advantage: At the corresponding charge voltage water need only be topped up once during the entire service life.

The FNC® electrode structure with an active fibre length of more than 300 m per m^3 with a free volume of 90% for the active material leads to low internal resistance and thus longer free maintenance intervals, high current loads and the option of applying lower capacities in comparison to other systems.

The FNC® electrodes comprise pure active materials without any additives which makes an electrolyte change superfluous. This leads to a significant reduction in operating costs and a minimal burden on the environment. The high elasticity of the conducting material ensures a high cycle resistance as well as a long service life. The thickness of the electrodes can be varied from 0.8 to 10 mm, so all different performance types of batteries (X, H, M, L according to IEC 623) can be built based on the fibre structured electrode. Therefore the FNC® cell is the best choice for the best battery for every application.



The section of the FNC® cell clearly shows the corrugated separator between the positive and negative plate.

Recycling of old battery installations

Lead and NC battery installations are recycled in Germany by Hoppecke according to the corresponding environmental protection requirements.
The Hoppecke branches are happy to provide information.