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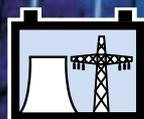
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Sonnenschein Solar

Reliable Energy Storage for Solar
and Wind Power.



Sonnenschein Solar Batteries:

Solar power is varied and You only need to make use

With suitable solar units and battery systems the free energy from the sun produces power independently. This is especially advantageous in all regions where there is no wide coverage by the electrical grid infrastructure or where the connection to the grid is uneconomical.

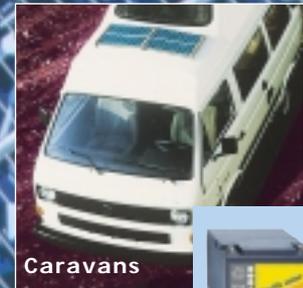
Solar power can supply the most varied applications flexibly and reliably. dryfit Solar Batteries cover a versatile spectrum of possible applications such as solar power stations, telecommunications systems, measurement stations, traffic light systems, street lighting, alarm systems, week-end and holiday homes, hunting lodges, mobile site offices, caravans, ships and maritime buoys. Also, wind-power systems, which feed energy into batteries, can benefit from the use of Sonnenschein solar batteries.

The world-wide availability and the extent to which technology has advanced in exploiting solar power together with diminishing reserves of primary energy sources and an increased environmental awareness render solar applications with up-to-date dryfit technology a reliable, safe and economical power supply. Solar energy is the energy of the future.

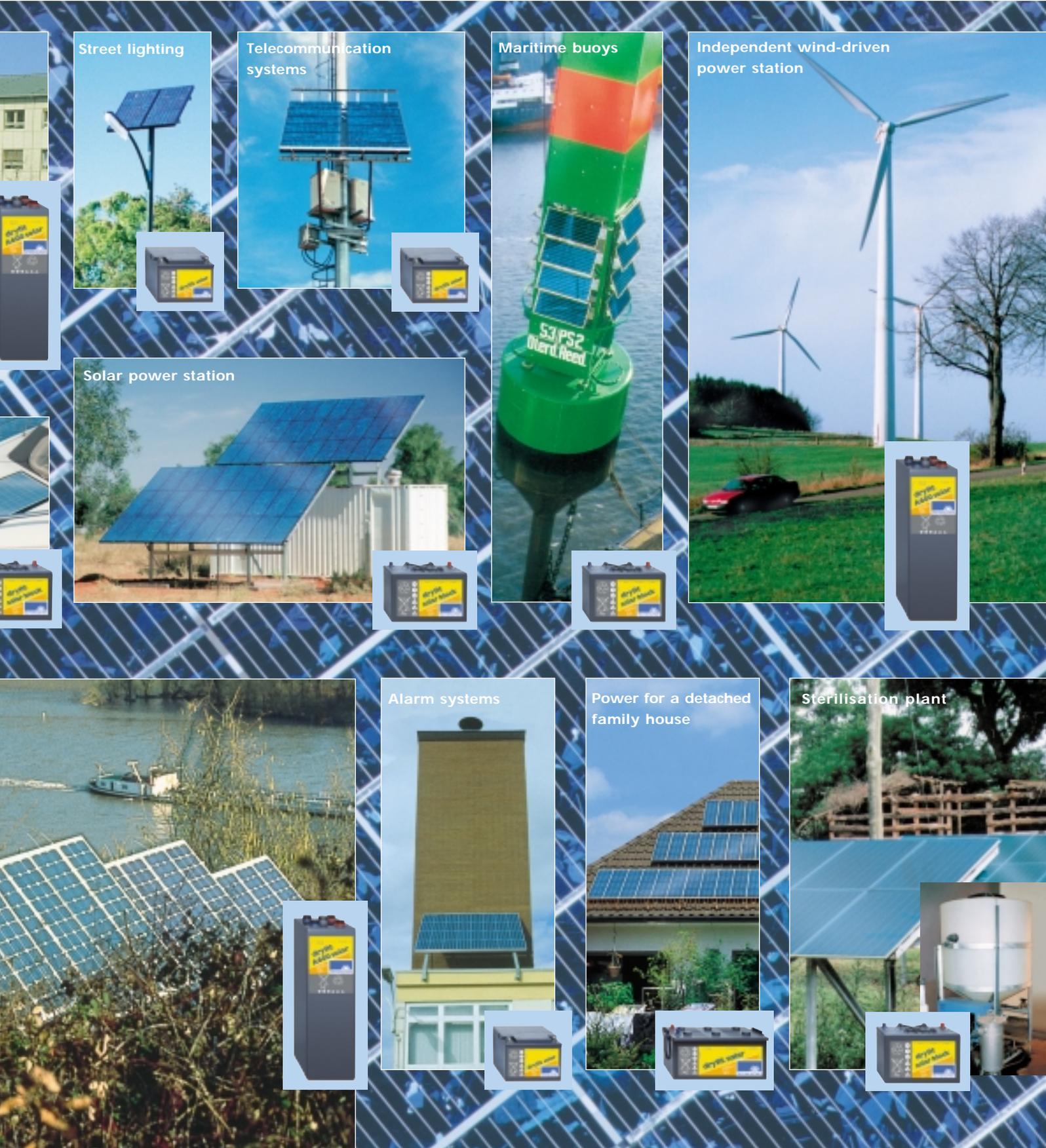
Pictures courtesy of:

Wagner & Co, Solartechnik, Regenwassernutzung,
Colbe/Marburg

Angewandte Solarenergie – ASE GmbH, Alzenau 1



available everywhere.
of it.



Street lighting

Telecommunication systems

Maritime buoys

Independent wind-driven power station

Solar power station

Alarm systems

Power for a detached family house

Sterilisation plant

Sonnenschein Solar Batteries:

It all depends on the right

dryfit Solar Batteries are a Sonnenschein development. And the high performance features provided by dryfit technology have still not yet been matched by any other comparable product.

The dryfit VRLA (Valve Regulated Lead Acid) Solar Batteries incorporating a lead-acid electrochemical system give the operator the highest reliability: Set the battery in position, connect up and you are ready to go. dryfit Solar Batteries are maintenance-free over their complete service life. This means that mistakes in maintenance leading to a shortened service life or to irreparable battery damage cannot occur. Expensive, suitably equipped battery rooms are no longer needed.

dryfit Solar Batteries offer a multitude of other advantages. The batteries are very long-lived, have very good cycling and extremely reliable depth of discharge characteristics. They are also low gassing which means that dryfit batteries can be sited without any problems in living areas. Due to their low level of self-discharge, they

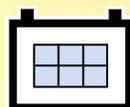
are also ready for operation without charging after up to two years of being stored at 20 °C.

Since the electrolyte is contained in gel form, even damage due to case fracture through improper handling (e.g. during loading) represents no hazard to man and the environment. In contrast to conventional wet batteries, no acid can leak out. dryfit batteries can be transported without problem and are classed as non-hazardous goods for air (according to IATA), road/rail and sea transport. And they can be almost completely recycled.

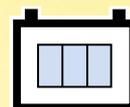
With the dryfit batteries solar, solar block and the A 600 solar you have reliable and powerful energy storage available to suit your application and the capacity that you need.



Valve regulated lead-acid batteries



Grid plate (solar, solar block)



Tubular plate (A 600 solar)



Nominal capacity
6.6 - 230 Ah (solar)
60 - 330 Ah (solar block)
240 - 3500 Ah
(A 600 solar)

battery technology.



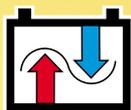
Sonnenschein is the world's only manufacturer of sealed lead-acid batteries adapted to Solar applications.



Block battery
(solar, solar block)



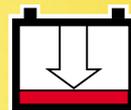
Single cell
(A 600 solar)



Cycles acc. to IEC 896 P2
400 (solar)
1200 (solar block)
1600 (A 600 solar)



Completely
maintenance-free



Proof against
deep discharge
acc. to
DIN 43 539 P5



Recyclable

dryfit solar:

Compact and powerful for

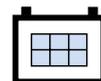
dryfit solar:

Completely maintenance-free, sealed VRLA batteries (Valve Regulated Lead-Acid) in dryfit technology.

dryfit solar batteries have been specially designed for low power demands in the leisure and consumer fields. Typical applications include: Solar systems with few loads (e.g. lighting and refrigerator) in week-end or holiday homes, roadside solar stations, information signs, parking machines, radio emergency telephones.



Valve regulated lead-acid batteries



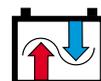
Grid plate



Nominal capacity 6.6 - 230 Ah



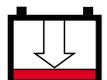
Block battery



400 cycles acc. to IEC 896 P2



Completely maintenance-free



Proof against deep discharge acc. to DIN 43 539 P5



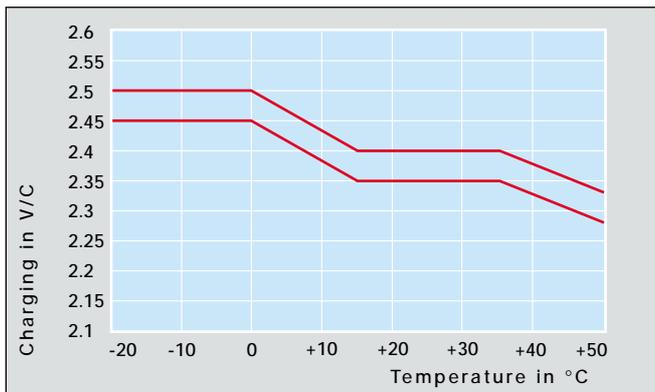
Recyclable



small solar applications.

Part No.	Type designation (standard model)	Nominal Capacity (C 100)	Discharge current (I 100)	Length (l)	Width (w)	Height to top of cover (h1)	Height over terminals / cover (h2)	Weight with electrolyte approx.	Terminals
		Ah	A	max. in mm	max. in mm	max. in mm	max. in mm	in kg	
07 1 98523 00	S 06/11.0 S	11.0	0.11	152.0	50.5	94.5	98.4	2.10	S
07 1 98432 00	S 12/6.6 S	6.6	0.066	151.7	65.5	94.5	98.4	2.40	S
07 1 98525 00	S 12/11.0 S	11.0	0.11	152.0	98.0	94.5	98.4	3.70	S
08 1 98560 00	S 12/17.0 SR	17.5	0.175	181.0	76.0	152.0	156.4	6.70	SR *
08 1 98610 00	S 12/27.0 G5	27.0	0.27	176.0	167.0	126.0	126.0	8.80	M5
08 1 98625 00	S 12/32.0 G6	32.0	0.32	197.0	132.0	160.0	184.0	11.70	M6
08 1 98640 00	S 12/41.0 A	41.0	0.41	210.0	175.0	175.0	175.0	14.80	A *
08 1 98660 00	S 12/60.0 A	60.0	0.60	261.0	135.0	208.0	230.0	18.70	A
08 1 98707 00	S 12/80.0 A	80.0	0.80	381.0	175.0	190.0	190.0	24.50	A *
08 1 98722 00	S 12/90.0 A	90.0	0.90	330.0	171.0	214.0	235.5	33.00	A
08 1 98750 00	S 12/130.0 A	130.0	1.30	284.0	267.0	208.0	230.0	40.30	A
08 1 98900 00	S 12/230.0 A	230.0	2.30	518.0	291.0	216.0	242.0	70.00	A

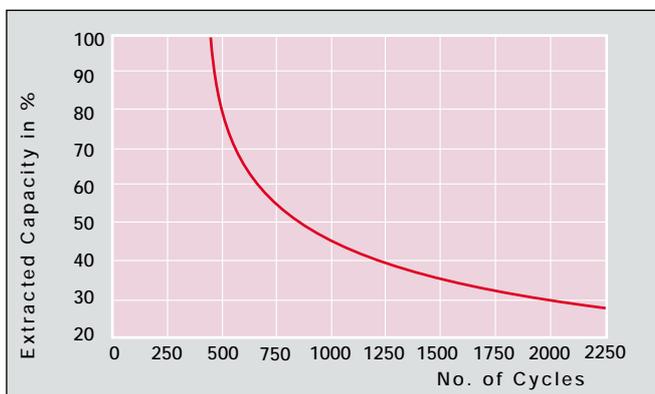
Types of contact: A = Tapered terminal post to DIN EN 60 095 P2, M = Screw connection, S = Plug contact 4.8 mm, SR = Plug contact 6.3 mm
 * Available as G terminal on request.



Charging voltage in relationship to temperature

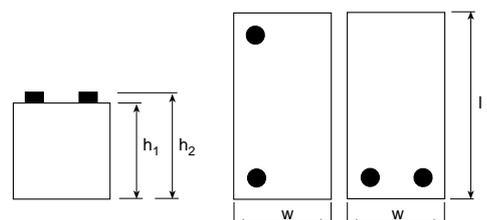
Recommended charging characteristic: Charge until 2.40 V per cell is reached at 20 °C and then switch over to the continuous charging voltage of 2.35 V per cell at 20 °C. The charging voltage must be compensated according to the curve for continuously different battery ambient temperature.

Type	Capacities C ₁ - C ₁₀₀				
	C ₁ 1.70 V/C	C ₅ 1.70 V/C	C ₁₀ 1.70 V/C	C ₂₀ 1.75 V/C	C ₁₀₀ 1.80 V/C
S 06/11.0	4.8	7.6	8.6	9.5	11.0
S 12/6.6	2.9	4.6	5.1	5.7	6.6
S 12/11.0	4.8	7.6	8.6	9.5	11.0
S 12/17.0	10.0	13.5	14.3	15.0	17.5
S 12/27	13.2	12.5	14.0	24.0	27.0
S 12/32	14.0	22.4	25.2	28.0	32.0
S 12/41	21.6	30.6	34.2	36.0	41.0
S 12/60	30.0	42.5	47.5	50.0	60.0
S 12/80	35.0	52.0	58.0	63.0	80.0
S 12/90	40.0	64.0	72.0	80.0	90.0
S 12/130	66.0	93.5	104.5	110.0	130.0
S 12/230	120.0	170.0	190.0	200.0	230.0



Endurance in cycles according to IEC 896 P2.

Dimensions and connections



dryfit solar block:

Reliable energy for medium

dryfit solar block:

Completely maintenance-free, sealed VRLA batteries (Valve Regulated Lead-Acid) in dryfit technology.

dryfit solar block batteries have been designed for medium power requirements. Typical applications include: Weekend or holiday homes with a large number of electrical loads (lighting, refrigerator, TV, radio, burglar alarm, water pump, etc.), medium solar systems for industrial applications, small solar and wind-driven power plants, offshore buoys, yachts, measurement stations.



Valve regulated lead-acid batteries



Grid plate



Nominal capacity 60 - 330 Ah



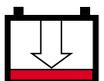
Block battery



1200 cycles acc. to IEC 896 P2



Completely maintenance-free



Proof against deep discharge acc. to DIN 43 539 P5



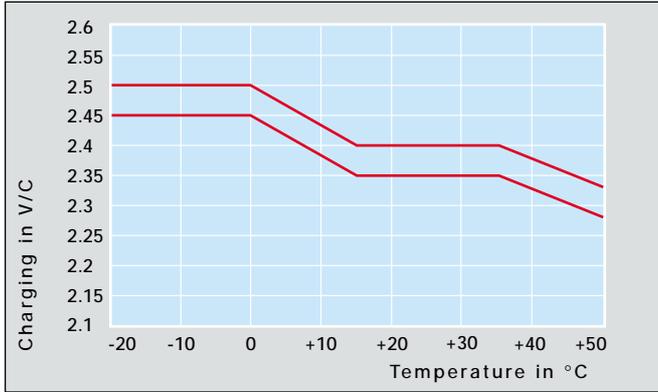
Recyclable



range duties.

Part No.	Type designation (standard model)	Nominal Capacity (C 100)	Discharge current (I 100)	Length (l)	Width (w)	Height to top of cover (h1)	Height over terminals / cover (h2)	Weight with electrolyte approx.	Terminals
		Ah	A	max. in mm	max. in mm	max. in mm	max. in mm	in kg	
01 1 98060 00	SB 12/60 A	60	0.60	306	175	190.0	190.0	20.0	A
01 1 98075 00	SB 12/75 A	75	0.75	330	171	214.0	235.5	28.0	A
01 1 98100 00	SB 12/100 A	100	1.00	513	189	195.0	223.0	39.0	A
01 1 98130 00	SB 12/130 A	130	1.30	513	223	195.0	223.0	48.0	A
01 1 98185 00	SB 12/185 A	185	1.85	518	291	216.0	242.0	65.0	A
01 1 98200 00	SB 6/200 A	200	2.00	244	190	253.0	275.0	31.0	A
01 1 98300 00	SB 6/330 A	330	3.30	312	182	336.0	359.0	48.0	A

Types of contact: A = Tapered terminal post to DIN EN 60 095 P2



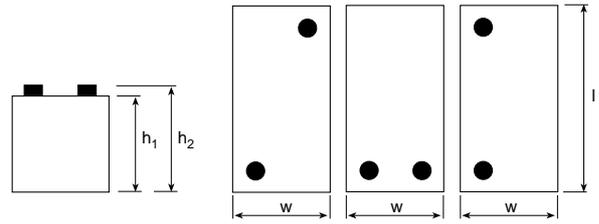
Charging voltage in relationship to temperature
 Recommended charging characteristic: Charge until 2.40 V per cell is reached at 20 °C and then switch over to the continuous charging voltage of 2.35 V per cell at 20 °C. The charging voltage must be compensated according to the curve for continuously different battery ambient temperature.

Capacities C1 - C100					
Type	C1 1.70 V/C	C5 1.70 V/C	C10 1.70 V/C	C20 1.75 V/C	C100 1.80 V/C
SB 12/60	34	45	52	56	60
SB 12/75	48	60	66	70	75
SB 12/100	57	84	89	90	100
SB 12/130	78	101	105	116	130
SB 12/185	103	150	155	165	185
SB 6/200	104	153	162	180	200
SB 6/330	150	235	260	280	330



Endurance in cycles according to IEC 896 P2.

Dimensions and connections



dryfit A 600 solar: Sonnenschein's pion

Packed energy for more po

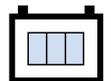
dryfit A 600 solar:

Completely maintenance-free, sealed VRLA batteries (Valve Regulated Lead-Acid) in dryfit technology.

dryfit A 600 solar batteries are designed for medium to large power requirements. Typical applications include: Solar and wind-driven power plants, power supply utilities, postal applications, solar stations, radio telecommunications, railway operations.



Valve regulated lead-acid batteries



Tubular plate



Nominal capacity
240 - 3500 Ah



Single cell



1600 cycles
acc. to
IEC 896 P2



Completely
maintenance-
free



Proof against
deep discharge
acc. to
DIN 43 539 P5

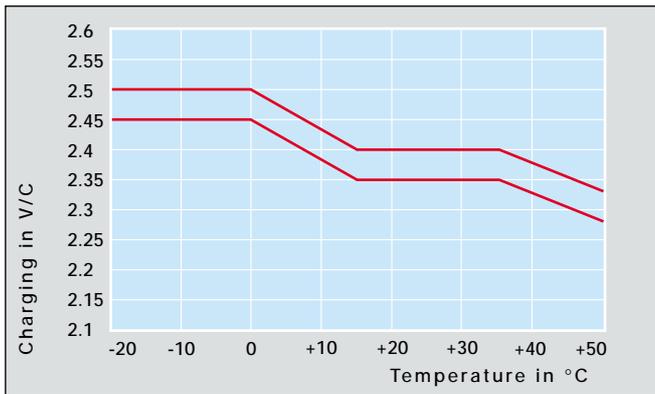


Recyclable

engineering lead:

number.

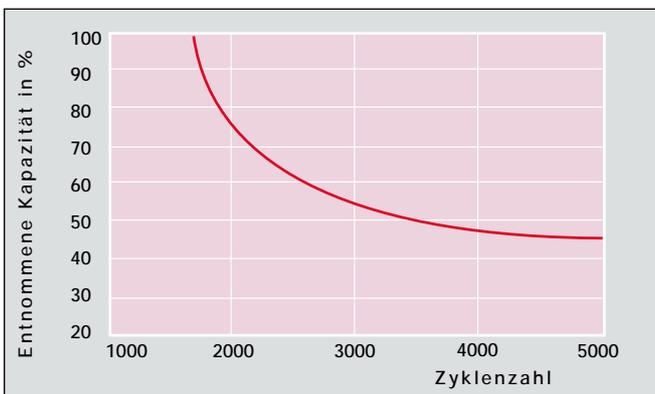
Part No.	Type designation (standard model)	Nominal Capacity	Discharge current	Length	Width	Height to top of cover	Height over terminals / cover	Installed length	Weight with electrolyte approx.	Pole pairs
		(C 100) Ah	(I 100) A	(l) max. in mm	(w) max. in mm	(h1) max. in mm	(h2) max. in mm	(L) max. in mm	in kg	
01 1 81165 00	4 OPzV 240	240	2.4	105	208	360	398	112	19.5	1
01 1 81166 00	5 OPzV 300	300	3.0	126	208	360	398	135	23.5	1
01 1 81167 00	6 OPzV 360	360	3.6	147	208	360	398	155	28.0	1
01 1 81168 00	5 OPzV 400	400	4.0	126	208	475	513	135	31.0	1
01 1 81169 00	6 OPzV 500	500	5.0	147	208	475	513	155	36.5	1
01 1 81170 00	7 OPzV 600	600	6.0	168	208	475	513	175	42.0	1
01 1 81171 00	6 OPzV 720	720	7.2	147	208	650	688	155	50.0	1
01 1 81172 00	8 OPzV 960	960	9.6	215	193	650	688	220	68.0	2
01 1 81173 00	10 OPzV 1200	1200	12.0	215	235	650	688	220	82.0	2
01 1 81174 00	12 OPzV 1400	1400	14.0	215	277	650	688	220	97.0	2
01 1 81175 00	12 OPzV 1700	1700	17.0	215	277	800	838	220	120.0	2
01 1 81161 00	16 OPzV 2300	2300	23.0	215	400	775	815	220	160.0	3
01 1 81162 00	20 OPzV 2900	2900	29.0	215	490	775	815	220	200.0	4
01 1 81163 00	24 OPzV 3500	3500	35.0	215	580	775	815	220	240.0	4



Charging voltage in relationship to temperature

Recommended charging characteristic: Charge until 2.40 V per cell is reached at 20 °C and then switch over to the continuous charging voltage of 2.35 V per cell at 20 °C. The charging voltage must be compensated according to the curve for continuously different battery ambient temperature.

Type	Capacities C1 - C100				
	C1 1.67 V/C	C3 1.75 V/C	C5 1.77 V/C	C10 1.80 V/C	C100 1.85 V/C
4 OPzV 240	108	151	175	200	240
5 OPzV 300	135	189	219	250	300
6 OPzV 360	162	227	263	300	360
5 OPzV 400	180	252	292	350	400
6 OPzV 500	225	315	365	420	500
7 OPzV 600	270	378	438	490	600
6 OPzV 720	324	454	526	600	720
8 OPzV 960	432	605	701	800	960
10 OPzV 1200	540	756	876	1000	1200
12 OPzV 1400	630	882	1022	1200	1400
12 OPzV 1700	765	1071	1241	1500	1700
16 OPzV 2300	1035	1449	1679	2000	2300
20 OPzV 2900	1305	1827	2117	2500	2900
24 OPzV 3500	1575	2205	2555	3000	3500



Endurance in cycles according to IEC 896 P2.

Dimensions and connections

