www.midacbatteries.com

OPzS
Vented Lead-Acid
STANDBY POWER BATTERIES

CATALOGUE

OPzS CELLS
OPzS BLOCKS

OPzS CELLS

ADVANTAGES

√ 15+ years Design Life
√ More than 1500 deep discharge cycles
√ Extended topping-up intervals
√ Maximum charging efficiency
√ Minimal positive growth
√ Improved safety against accidental contacts

MAIN APPLICATIONS

√ Telecommunication
√ Power plants
√ Substations
√ Emergency power
√ Wind and Solar power generation
√ Railways
√ UPS units

STANDARD REF.

√ EN 60896-11
√ EN 50272-2
√ EN 61427

SPECIFICATION

√ Positive plates	Tubular plate with lead selenium grid alloy (Sb < 2%) and woven gauntlet
√ Negative plates	Fully enveloped flat pasted plate with lead selenium grid alloy (Sb < 2%)
√ Separators	Microporous plastic separators
√ Container	High-strength transparent SAN (option: available in Flame Retardant PC UL94 V0 version)
√ Lid	Opaque gray ABS (option: available in Flame Retardant UL94 V0 version)
√ Electrolyte	Dilute solution of sulfuric acid SG1.240 ±0.01 at 20°C
√ Electrolyte reserve	Maximum availability over the plates
√ Terminal Posts	Robust design d.30 mm with M10 threaded insert
√ Posts sealing	Double sealing on HQ post finishing
√ Vents	Flame arrestor ceramic vents fully tested in compliance with UL standard (option: Flip-top version)
√ Plates suspension	Bottom supported with sediment space
√ Inter-cell connectors	Fully insulated copper
√ Terminal hardware	Fully insulated steel
√ Terminal adaptor	Solid lead plated copper plates

Type	Nominal Voltage	Actual Capacity		Ri	Isc	Dimensions (mm)			Weight		Electrolyte		No. of Terminals
	V	Ah/10Hrs	Ah/120Hrs	mOhm	kA	Length	Width	Overall Height	Wet Kg	Dry Kg	Weight Kg	Volume Litres	
2 OPzS 100	2	108	151	1.55	1.29	103	206	430	16.2	9.7	6.5	5.2	2
3 OPzS 150	2	162	227	1.03	1.94	103	206	430	17.4	12.1	5.3	4.3	2
4 OPzS 200	2	216	303	0.78	2.58	103	206	430	18.6	14.5	4.1	3.3	2
5 OPzS 250	2	270	379	0.62	3.23	124	206	430	22.3	17.1	5.2	4.2	2
6 OPzS 300	2	324	454	0.52	3.87	145	206	430	25.9	19.7	6.2	5.0	2
5 OPzS 350	2	377	588	0.57	3.48	124	206	546	29.3	21.8	7.5	6.0	2
6 OPzS 420	2	452	706	0.48	4.17	145	206	546	34.5	25.5	9.0	7.3	2
7 OPzS 490	2	528	823	0.41	4.87	166	206	546	39.4	29.4	10.0	8.1	2
6 OPzS 600	2	638	973	0.44	4.53	145	210	721	47.6	35.2	12.4	10.0	2
7 OPzS 700	2	745	1135	0.38	5.29	210	191	721	56.1	41.3	14.8	11.9	4
8 OPzS 800	2	851	1297	0.33	6.04	210	191	721	63.9	47.4	16.5	13.3	4
9 OPzS 900	2	958	1459	0.29	6.80	210	233	721	71.2	52.2	19.1	15.4	4
10 OPzS 1000	2	1064	1622	0.26	7.55	210	233	721	79.5	58.5	20.5	16.5	4
11 OPzS 1100	2	1170	1784	0.24	8.31	210	275	721	84.1	61.3	22.8	18.4	4
12 OPzS 1200	2	1277	1946	0.22	9.06	210	275	721	90.3	65.7	24.6	19.8	4
12 OPzS 1500	2	1622	2394	0.27	7.93	210	275	871	113.2	85.6	27.6	22.3	4
13 OPzS 1625	2	1757	2593	0.25	8.59	214	399	847	125.2	95.3	29.9	24.1	6
14 OPzS 1750	2	1892	2793	0.23	9.25	214	399	847	137.3	103.8	33.5	27.0	6
15 OPzS 1875	2	2027	2992	0.22	9.91	214	399	847	147.4	109.6	37.8	30.5	6
16 OPzS 2000	2	2162	3192	0.20	10.57	214	399	847	156.6	117.0	39.6	31.9	6
20 OPzS 2500	2	2703	3990	0.16	13.21	212	487	847	196.4	146.7	49.7	40.1	8
24 OPzS 3000	2	3244	4788	0.14	15.86	212	576	847	229.7	167.2	62.5	50.4	8

DISCHARGE CURRENT (A) to 1.80 Vpc SG1.240 at 20°C

Type	Minutes					Hours										
	1	5	10	15	30	1	2	3	5	8	10	20	24	100	120	240
2 OPzS 100	104,2	97,4	**89,8**	82,7	66,8	**49,2**	33,2	25,6	18,0	12,7	**10,8**	6,2	5,38	**1,50**	1,26	**0,64**
3 OPzS 150	156,3	146,1	**134,7**	124,0	100,2	**73,8**	49,8	38,4	26,9	19,1	**16,2**	9,3	8,07	**2,25**	1,89	**0,97**
4 OPzS 200	208,4	194,8	**179,6**	165,3	133,6	**98,4**	66,3	51,1	35,9	25,4	**21,6**	12,5	10,76	**3,00**	2,52	**1,29**
5 OPzS 250	260,5	243,5	**224,5**	206,7	167,0	**123,0**	82,9	63,9	44,9	31,8	**27,0**	15,6	13,45	**3,74**	3,15	**1,61**
6 OPzS 300	312,6	292,2	**269,4**	248,0	200,4	**147,6**	99,5	76,7	53,9	38,1	**32,4**	18,7	16,14	**4,49**	3,79	**1,93**
5 OPzS 350	295,0	276,5	**254,0**	235,5	196,7	**153,3**	109,7	86,5	62,2	44,3	**37,7**	22,2	19,35	**5,77**	4,90	**2,50**
6 OPzS 420	354,0	331,8	**304,8**	282,6	236,0	**183,9**	131,7	103,7	74,7	53,1	**45,2**	26,6	23,22	**6,92**	5,88	**3,00**
7 OPzS 490	413,0	387,1	**355,6**	329,7	275,3	**214,6**	153,6	121,0	87,1	62,0	**52,8**	31,1	27,09	**8,08**	6,86	**3,50**
6 OPzS 600	414,0	396,0	**376,8**	358,1	313,8	**251,8**	183,3	145,6	103,9	74,8	**63,8**	36,6	31,86	**9,53**	8,11	**4,13**
7 OPzS 700	483,0	462,0	**439,6**	417,8	366,1	**293,8**	213,9	169,9	121,2	87,3	**74,5**	42,7	37,17	**11,12**	9,46	**4,82**
8 OPzS 800	552,0	528,0	**502,4**	477,5	418,4	**335,8**	244,4	194,1	138,5	99,8	**85,1**	48,8	42,47	**12,71**	10,81	**5,51**
9 OPzS 900	621,0	594,0	**565,2**	537,2	470,7	**377,7**	275,0	218,4	155,8	112,2	**95,8**	54,9	47,78	**14,30**	12,16	**6,20**
10 OPzS 1000	690,0	660,0	**628,0**	596,9	523,0	**419,7**	305,5	242,7	173,2	124,7	**106,4**	61,0	53,09	**15,89**	13,51	**6,89**
11 OPzS 1100	759,0	726,0	**690,8**	656,5	575,3	**461,7**	336,1	266,9	190,5	137,2	**117,0**	67,1	58,40	**17,48**	14,86	**7,58**
12 OPzS 1200	828,0	792,0	**753,6**	716,2	627,6	**503,7**	366,6	291,2	207,8	149,6	**127,7**	73,2	63,71	**19,07**	16,22	**8,27**
12 OPzS 1500	958,8	925,2	**884,6**	847,8	755,6	**617,4**	456,1	368,6	265,4	189,9	**162,2**	93,1	80,93	**23,52**	19,95	**10,17**
13 OPzS 1625	1038,7	1002,3	**958,4**	918,4	818,6	**668,9**	494,2	399,3	287,5	205,8	**175,7**	100,9	87,67	**25,48**	21,61	**11,02**
14 OPzS 1750	1118,6	1079,4	**1032,1**	989,1	881,6	**720,3**	532,2	430,0	309,6	221,6	**189,2**	108,6	94,42	**27,44**	23,27	**11,87**
15 OPzS 1875	1198,5	1156,5	**1105,8**	1059,7	944,5	**771,8**	570,2	460,8	331,7	237,4	**202,7**	116,4	101,16	**29,40**	24,94	**12,72**
16 OPzS 2000	1278,4	1233,6	**1179,5**	1130,4	1007,5	**823,2**	608,2	491,5	353,9	253,2	**216,2**	124,1	107,91	**31,36**	26,60	**13,57**
20 OPzS 2500	1598,0	1542,0	**1474,4**	1413,0	1259,4	**1029,0**	760,2	614,3	442,3	316,5	**270,3**	155,2	134,88	**39,19**	33,25	**16,96**
24 OPzS 3000	1917,6	1850,4	**1769,3**	1695,6	1511,3	**1234,8**	912,3	737,2	530,8	379,8	**324,4**	186,2	161,86	**47,03**	39,90	**20,35**

All the above data are actual values after the 5th cycle with a general tolerance of ±2%
8 hours capacity to 1,75 Vpc at 25°C (77°F) = 10 hours Actual Capacity to 1,80 Vpc at 20°C x corrective factor 1,01

OPzS BLOCKS

ADVANTAGES

√ 15+ years Design Life
√ More than 1500 deep discharge cycles
√ Extended topping-up intervals
√ Maximum charging efficiency
√ Minimal positive growth
√ Improved safety against accidental contacts

MAIN APPLICATIONS

√ Telecommunication
√ Power plants
√ Substations
√ Emergency power
√ Wind and Solar power generation
√ Railways
√ UPS units

STANDARD REF.

√ EN 60896-11
√ EN 50272-2
√ EN 61427

SPECIFICATION

√ Positive plates	Tubular plate with lead selenium grid alloy
√ Negative plates	Fully enveloped flat pasted plate with lead selenium grid alloy
√ Separators	Microporous plastic separators
√ Cell container	High-strength transparent SAN (option: available in Flame Retardant PC UL94 V0)
√ Cell lid	Opaque gray SAN (option: available in Flame Retardant ABS UL94 V0)
√ Electrolyte	Dilute solution of sulfuric acid SG1.240 ±0.01 at 20°C (option: different SG available on demand)
√ Electrolyte reserve	Maximum availability over the plates
√ Terminal posts	Robust design with M10 threaded insert
√ Posts sealing	Sealing bush on HQ post finishing
√ Vent caps	Flame arrestor ceramic vents fully tested in compliance with UL standard (option: Flip-top version)
√ Plate suspension	Bottom supported with sediment space
√ Inter-cell connectors	Welded lead bars with protection covers
√ Inter-block connectors	Fully insulated flexible connector
√ Terminal hardware	Stainless steel with insulating caps

Type	Nominal Voltage	Actual Capacity		Ri	Isc	Dimensions (mm)			Weight		Electrolyte		No. of Terminals
	V	Ah/10Hrs	Ah/120Hrs	mOhm	kA	Length	Width	Overall Height	Wet Kg	Dry Kg	Weight Kg	Volume Litres	
OPzS block 12/50	12	**50**	**73**	16.64	0.72	**272**	**205**	**373**	**42.9**	**31.1**	11.8	9.5	**2**
OPzS block 12/100	12	**100**	**146**	9.44	1.27	**272**	**205**	**373**	**52.8**	**41.4**	11.4	9.2	**2**
OPzS block 12/150	12	**150**	**219**	6.57	1.83	**380**	**205**	**373**	**72.3**	**57.2**	15.1	12.2	**2**
OPzS block 6/200	6	**200**	**293**	2.78	2.20	**272**	**205**	**373**	**50.7**	**38.5**	12.2	9.8	**2**
OPzS block 6/250	6	**250**	**366**	2.22	2.75	**380**	**205**	**373**	**69.5**	**54.0**	15.5	12.5	**2**
OPzS block 6/300	6	**300**	**439**	1.85	3.30	**380**	**205**	**373**	**74.3**	**59.5**	14.8	11.9	**2**

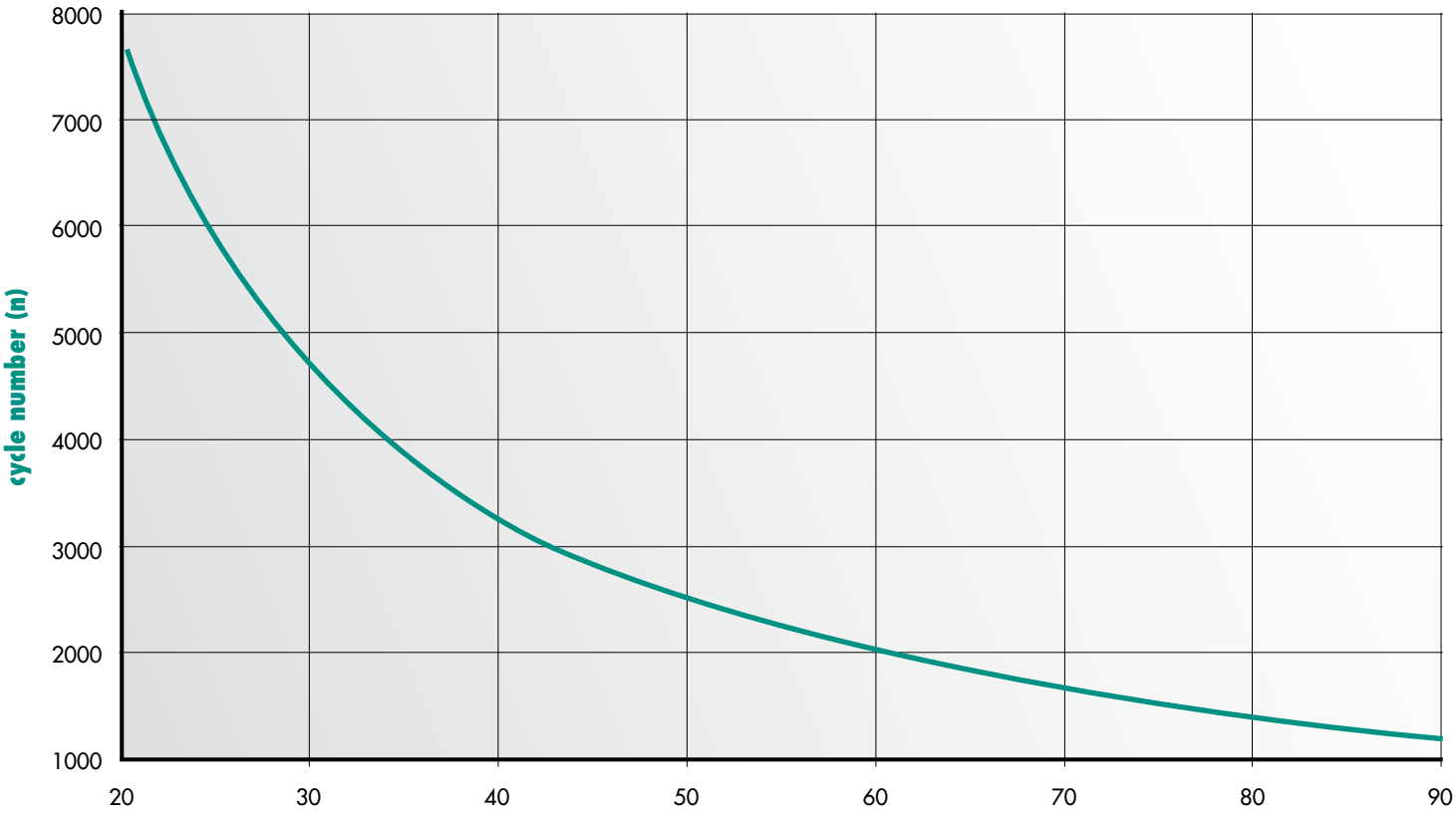
DISCHARGE CURRENT (A) to 1.80 Vpc SG1.240 at 20°C

Type	Minutes					Hours										
	1	5	10	15	30	1	2	3	5	8	10	20	24	100	120	240
OPzSblock 12/50	50,2	46,0	**41,8**	38,3	30,9	**22,8**	15,4	11,8	8,3	5,87	**5,00**	2,88	2,49	**0,72**	0,61	**0,31**
OPzSblock 12/100	100,3	92,0	**83,5**	76,6	61,9	**45,6**	30,7	23,7	16,6	11,7	**10,0**	5,77	4,99	**1,45**	1,22	**0,62**
OPzSblock 12/150	150,5	138,1	**125,3**	114,9	92,8	**68,3**	46,1	35,5	25,0	17,6	**15,0**	8,65	7,48	**2,17**	1,83	**0,93**
OPzSblock 6/200	200,6	184,1	**167,0**	153,2	123,7	**91,1**	61,4	47,4	33,3	23,5	**20,0**	11,54	9,98	**2,90**	2,44	**1,24**
OPzSblock 6/250	250,8	230,1	**208,8**	191,4	154,7	**113,9**	76,8	59,2	41,6	29,4	**25,0**	14,42	12,47	**3,62**	3,05	**1,55**
OPzSblock 6/300	301,0	276,1	**250,5**	229,7	185,6	**136,7**	92,2	71,1	49,9	35,2	**30,0**	17,31	14,96	**4,35**	3,66	**1,86**

All the above data are actual values after the 5th cycle with a general tolerance of ±2%
8 hours capacity to 1,75 Vpc at 25°C (77°F) = 10 hours Actual Capacity to 1,80 Vpc at 20°C x corrective factor 1,01

OPzS PERFORMANCE CURVES

OPZS LIFECYCLES AT 20°C VS D.O.D



OPzS Midac cells are made with lead selenium low antimony alloys that permit low water consumption and low self discharge and high resistance to corrosion to allow long life use.

Elements are mainly designed to be used in stationary equipments (energy reserve) with expected lifetime of more than 15 years in floating operation.

These products can be also used with cycling mode, with different expected life depending by D.o.D. (depth of discharge) as indicated in the curve above.

In case of use with different D.o.D. and or different cycle shapes contact our sales organisation to receive further information.

ACCESSORIES

1 - Insulated rigid copper inter-cell connectors*
2 - Insulated flex copper connectors
3 - Terminal lugs
4 - Protection caps
5 - Lead plated terminal adaptors
6 - Insulated steel bolts and post protecting bushes*
7 - Stainless steel hardware
8 - Insulated tools
9 - Flame arrestor vent plugs*
(tested according to UL standard)
10 - Flip-top flame arrestor vent plugs (in compliance with DIN N orms and tested according to UL standard)
11 - Automatic topping-up flame arrestor vent plugs
12 - Hydrometers and thermometers
13 - Funnels
14 - Jugs
15 - No-oxide grease
16 - Number stickers

* standard equipment included as scope of supply

The above picture is just an overview of the most common accessories.
Standard Racks, Seismic Racks ad all the necessary for the battery installation are available on demand.

You can complete your OPzS application by requiring the above accessories. Do not hesitate to contact our sales organisation to understand how to fit our cells and blocks using our complete range of accessories and special tools.
We will be available to provide our complete offer of products.
Our sales and technical department are at your disposal to understand your needs and to support you on the choice of the type matching the performances required.

unitedv.it - 0515_11 07/2011 - CATALOGUE

MIDAC S.p.A.
VIA A.VOLTA, 2 - Z.I. - 37038 SOAVE (VERONA) - ITALIA
TEL. +39 045 61 32 1 32 - FAX +39 045 61 32 1 33
E-mail: midac@midacbatteries.com

MIDAC TECHNOLOGIES S.p.A.
STRADA DEL FRANCESE, 80 - 10156 TORINO - ITALIA
TEL. +39 011 4502277 - FAX +39 011 4508950
E-mail: info@midactechnologies.com

MIDAC DEUTSCHLAND GMBH
INDUSTRIEGEBIET OBERE SURBACH - HEIDESTRASSE, 5 - 35625 RECHTENBACH - DEUTSCHLAND
TEL. +49 6441 679260 - FAX +49 6441 6792615
E-mail: vertrieb@midacbatteries.com

MIDAC FRANCE S.A.R.L.
Z.I. - ROUTE DE COLMAR BP 9070 68502 GUEBWILLER CEDEX - FRANCE
TEL. +33 03 89 622380 - FAX +33 03 89 622375
E-mail: contact@midacbatteries.com

MIDAC NEDERLAND BV
KEPLERLAAN 10 - 6716BS EDE - NEDERLAND
TEL. +31 318 678230 - FAX +31 318 678231
E-mail: verkoop@midacbatteries.com

www.midacbatteries.com

MIDAC SPA HEADQUARTER, SOAVE, VERONA, ITALY

Unica realtà a produrre batterie avviamento, trazione e stazionarie in un singolo stabilimento produttivo, in vent'anni è diventata una delle aziende leader in Europa con prodotti distribuiti in tutto il mondo.

The only company that produces Automotive, Motive power and Stationary batteries in the same manufacturing plant, in less than twenty years it has become one of the leading companies in Europe and its products are sold worldwide.

MIDAC'S MANAGEMENT SYSTEM IS CERTIFIED ACCORDING TO
ISO 9001:2008, ISO/TS 16949:2009, ISO 14001:2004, BS OHSAS 18001:2007, SA 8000:2008