SOLAR PV-OPzS

Cycle Resistant Solar Series

NorthBatt
Power for Life

GENERAL INFORMATION

NORTHBATT Solar PV-OPzS series are flooded - low maintenance 2V cells, especially built to last, meeting and exceeding stringent customer requirements in the Solar & Power Sector. It is optimized for daily deep cycling, extreme cycle life (up to 2600 cycles @ 50% D.O.D) with minimum maintenance and highest performance reliability.
It complies to IEC 61427 and IEC 60896-11, as well as safety requirements according to IEC 62485-2 standards.
Solar PV-OPzS tubular positive plates are constructed with latest up-to-date technology, eliminate shedding, operate even at low/available charge current, ensures good capacity and long cycle life.
NORTHBATT Solar PV-OPzS series includes a full range of deep cycling, low maintenance 2V cells, designed for long life – deep discharge applications with regular charging, and medium to long duration discharges. They perform excellent for a wide range of temperatures from -20°C up to +55°C.
It's high performance make series ideal for a wide range of renewable applications, such as Remote, Residential and Commercial RES systems, smart or mini-grids, Telecom hybrid systems, Signaling and Lighting.



CONSTRUCTION FEATURES

- Positive plates are spine grids produced on High Pressure Die Casting (PDC) Machines give high energy density with fine gain structure, excellent corrosion resistance and long life.
- Low antimony alloy enhances the life of battery, minimizes water loss and reduces the topping up frequencies.
- Non - woven acid resistant polyester gauntlets ensure high capacity.
- Industry leading negative plate design.
- Optimum porosity envelope separators with low electrical resistance.
- Robust and aesthetically superior PPCP (Polypropylene Co polymer) container & lid.
- Longer heavy duty bold terminals increase the headspace of the cell resulting in greater acid volume and reduced watering intervals.
- Rigid polypropylene base prism to collect dislodged active material preventing bottom edge shorts
- High purity diluted sulfuric acid s.g 1.260 at 25 °C ensures low self- discharge rates and long design life of the cell.
- Special electrolyte level indicator.

APPLICATIONS

- Solar and Wind power On/Off Grid systems
- Renewable Energy Storage
- Grid Energy Storage / Mini Grids
- Electric / Nuclear Power Stations and sub-stations
- Railway / Marine /Airport signaling
- Telecommunication / UPS / Remote Power Networks
- Emergency lighting / Automation

DESIGN ADVANTAGES

- Excellent Cycle Life (2.600 cycles @ 50% D.O.D, 4.750 cycles @ 30% D.O.D).
- Special alloy in grids and pastes results very low water loss i.e. ultra low topping up frequency.
- Wrap around separators – Provide additional protection against internal battery short circuits.

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- Large 'top-of-plate' electrolyte reservoir.
- Better safety performance and reliability.
- Wide operation temperature range (-20 to +55 °C).
- Excellent deep discharge recovery.
- Advanced low current discharge performance.
- Capacities from 230 to 1550 AH.
- Higher ampere-hour and watt-hour efficiencies.
- Batteries are supplied in factory charged condition and thus ready to be Installed and used.
- 100% recyclable.

RANGE SUMMARY

NORTHBATT SOLAR PV-OPzS 2V CELLS SPECIFICATION TABLE

TYPES	ELECTRICAL DATA - CAPACITIES (AH@25 °C)					PHYSICAL DATA				
	C_{10}	C_{20}	C_{48}	C_{100}	C_{120}	DIMENSIONS (mm)				WEIGHT
	F.V=1,75V	F.V=1,80V	F.V=1,85V			L	W	H1	H2	(kg)
SOLAR PV-OPzS 230	142	161	187	220	232	198	65	406	433	12,22
SOLAR PV-OPzS 330	212	242	280	315	332	198	83	406	433	16,05
SOLAR PV-OPzS 420	265	294	349	405	422	198	83	480	507	19,30
SOLAR PV-OPzS 525	353	393	465	510	526	198	101	480	507	24,13
SOLAR PV-OPzS 670	441	491	582	650	670	198	119	480	507	27,40
SOLAR PV-OPzS 775	507	565	669	750	777	198	101	615	642	31,20
SOLAR PV-OPzS 930	634	705	836	900	933	198	119	615	642	38,25
SOLAR PV-OPzS 1135	761	846	1.004	1.100	1.136	198	137	615	642	44,35
SOLAR PV-OPzS 1340	888	987	1.171	1.300	1.340	198	173	615	642	53,00
SOLAR PV-OPzS 1550	1.014	1.129	1.338	1.500	1.554	198	191	615	642	57,45

CHARGING INSTRUCTIONS

- **COMMISSIONING CHARGE**

For batteries which have been supplied in a filled and charged condition, it is normal to lose charge while in transit or du-ring storage. For this reason, a freshening charge should be given before putting the battery into service. This is normally accomplished using the "equalize" voltage setting on the charger.
A lower charging voltage (down to a minimum of 2.33 Vpc) may be used, but this will extend the duration of the initial charge to as much as 100 hours. The initial charge may be terminated when the specific gravity readings of all cells have remained constant for at least 2 hours.

- **RECHARGE DURING OPERATION**

PARAMETERS	Recommended Parameters for ambient temperature of 25-30 °C
Charging Current	0.1 – 0.2 I_{10}
Bulk Voltage	2.40 ± 1%
Float Voltage	2.25 ± 1%
Equalizing Voltage	2.40 ± 1%
Max Discharge Current	0.2 I_{10}
Recharge factor	110% of discharged Ah
Temperature Correction Factor (ref. 25°C)	Float / Cyclic: - 3.5mV/°C/2V unit

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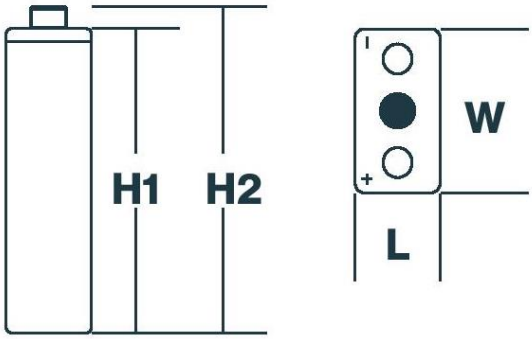
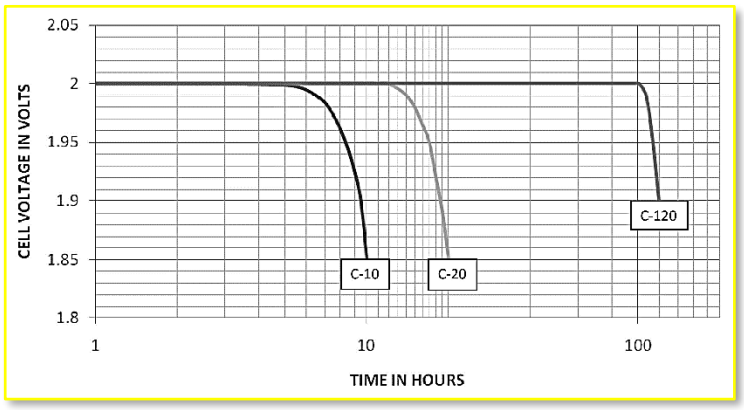
DIMENSIONS – LAYOUTS

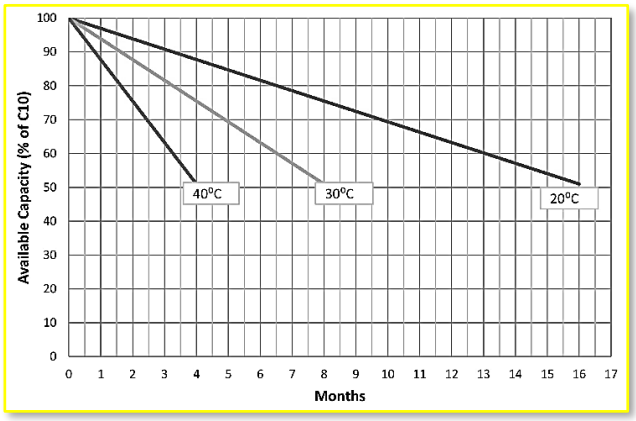


PERFORMANCE CURVES

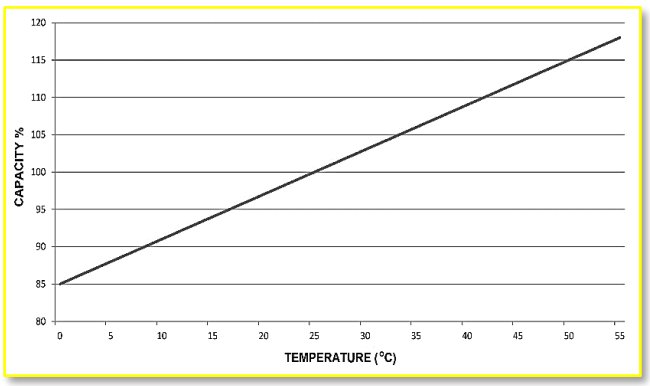
DISCHARGE CHARACTERISTIC



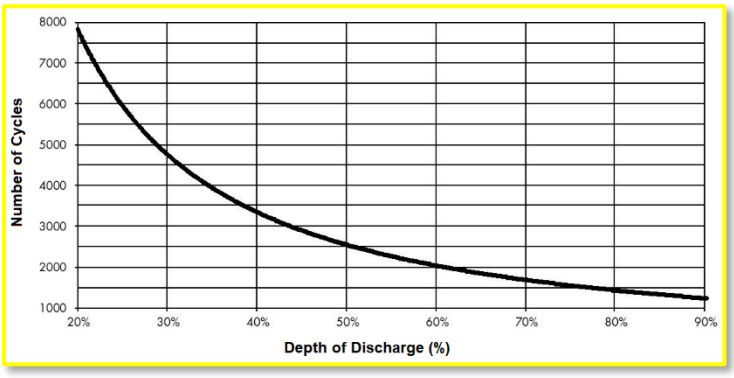
SELF DISCHARGE CHARACTERISTICS



CAPACITY vs TEMPERATURE



CYCLE LIFE vs DEPTH OF DISCHARGE



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