

Reserve Power Systems Product Overview



Motive Power Systems

Reserve Power Systems

Special Power Systems

Service

Your benefits with HOPPECKE standby batteries

- **Highest safety** - more than 80 years experience in manufacturing first-class energy storage systems
- **Maximum project flexibility** - optimized product range fulfills requirements of various applications
- **German quality standard** - equal product quality around the world
- **Comprehensive competence** - one source for planning, installation, operation, service and training
- **Individual support** - worldwide distribution- and service network

Typical applications of HOPPECKE standby batteries

- IT/Telecom
- UPS
- Power Generation
- Emergency Lighting
- Signaling systems
- Engine start
- Solar



Similar to the illustrations



HOPPECKE
POWER FROM INNOVATION

Type range - vented products

Short description

GroE



OSP.HC



OSP.XC



Standards

DIN 40738, IEC 60896-11

IEC 60896-11

IEC 60896-11

Capacity range in Ah

75 - 2.600**

105 - 3.780**

120 - 4.140**

Nominal voltage range

2 V

2 V

2 V

Container material (UL 94-V0 on request)

SAN, clear

SAN, clear

SAN, clear

Grid alloy

Positive

pure lead

Pb + <2% Sb

Pb + <2% Sb

Negative

Pb + <2% Sb

Pb + <2% Sb

Pb + <2% Sb

Positive plate

Planté

Grid

Grid

Negative plate

Grid

Grid

Grid

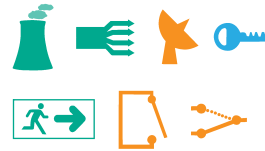
Electrolyte

H₂SO₄, liquid

H₂SO₄, liquid

H₂SO₄, liquid

Applications



Connector design

Fully insulated bolted connector

Fully insulated bolted connector

Fully insulated bolted connector

Current behaviour



Design life up to (in years)

25

20

18

Cycles up to

Charging voltage in V/cell

Float charge

2.23

2.23

2.25

Boost charge

2.40

2.40

2.40

Float charging current/100 Ah nominal capacity (20°C, U_{float} = 2.23 / 2.25 V/cell)

20 - 40 mA

20 - 50 mA

20 - 50 mA

Position independent operation possible

No

No

No

Water-refilling intervals in years at permanent float-charging/with AquaGen®

> 5/not necessary

> 3/not necessary

> 3/not necessary

Self discharge of nominal capacity at 20°C ambient temperature/per month

~ 3%

~ 3%

~ 3%

Operating temperature range in °C

-20 - +40

-20 - +40

-20 - +40

Ventilation requirement

with AquaGen® similar to VRLA

with AquaGen® similar to VRLA

with AquaGen® similar to VRLA

Storage time at 20°C before refreshing charge

3 months

3 months

3 months

Type of thread for all types M8

Key:

Emergency Power



Engine Start



Power Plant



Power Supply



Rail



Signal tower



Solar



Reserve Power Systems

OPzS



DIN 40736-1, IEC 60896-11

OPzS solar.power



IEC 60896-11, IEC 61427
Design according to DIN 40736-1

OGi bloc



DIN 40739, IEC 60896-11

OGi bloc HC



IEC 60896-11

200 - 3.000**

2 V

SAN, clear

Pb + <2% Sb
Pb + <2% Sb

Tubular
Grid

H₂SO₄, liquid



Fully insulated bolted connector



20

1.500

2.23
2.40

20 - 50 mA

No

> 3/not necessary

~ 3%

-20 - +40

with AquaGen® similar to VRLA

3 months

280 - 4.340***

2 V

SAN, clear

Pb + <2% Sb
Pb + <2% Sb

Tubular
Grid

H₂SO₄, liquid



Fully insulated bolted connector



1.500

2.23
2.40

20 - 50 mA

No

> 3/not necessary

~ 3%

-20 - +40

with AquaGen® similar to VRLA

3 months

18 - 256**

4 V, 6 V, 12 V

PP, high translucent

Pb + <2% Sb
Pb + <1% Ca

Grid
Grid

H₂SO₄, liquid



Fully insulated bolted connector



15

2.23
2.40

20 - 50 mA

No

> 3/not necessary

~ 3%

-20 - +40

with AquaGen® similar to VRLA

3 months

140 - 364**

4 V, 6 V

PP, high translucent

Pb + <2% Sb
Pb + <1% Ca

Grid
Grid

H₂SO₄, liquid



Fully insulated bolted connector



≥ 12

2.23
2.40

20 - 50 mA

No

> 3/not necessary

~ 3%

-20 - +40

with AquaGen® similar to VRLA

3 months

* C₅ = Capacity at 5 h discharge

** C₁₀ = Capacity at 10 h discharge

*** C₁₀₀ = Capacity at 100 h discharge

Reserve Power Systems

power.bloc OPzS



DIN 40737-3, IEC 60896-11

OPzS bloc solar.power



IEC 60896-11, IEC 61427
Design according to DIN 40737-3

FNC®



DIN 40763, IEC 60623

AquaGen® premium.top

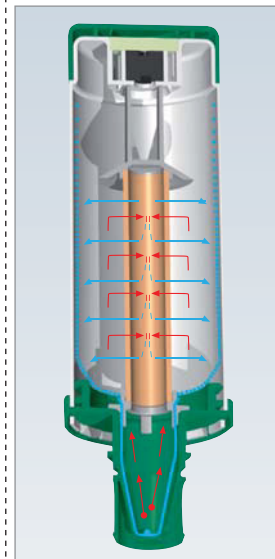


New patented technology

50 - 300**	70 - 400***	12 - 1100*
6 V, 12 V	6 V, 12 V	1.2 V
PP, high translucent	PP, high translucent	PP translucent, PP-VO, Grilon
Pb + <2% Sb Pb + <2% Sb	Pb + <2% Sb Pb + <2% Sb	
Tubular Grid	Tubular Grid	metallized fibre electrode (Ni) metallized fibre electrode (Ni)
H ₂ SO ₄ , liquid	H ₂ SO ₄ , liquid	KOH, liquid
Fully insulated bolted connector 	Fully insulated bolted connector 	
18		25
1.400	1.400	>2.000
2.23 2.40	2.23 2.40	1.40 - 1.50 (type depending) 1.55 - 1.60 (type depending)
20 - 50 mA	20 - 50 mA	30 - 180 mA (type depending) at 1.45 V/C, 20°C
No	No	No
> 3/not necessary	> 3/not necessary	>3 (type depending) >10 with AquaGen®
~ 3%	~ 3%	<7%
-20 - +40	-20 - +40	-50 - +60
with AquaGen® similar to VRLA	with AquaGen® similar to VRLA	with AquaGen® similar to VRLA
3 months	3 months	>3 years, see operating instructions

Advantages of AquaGen® premium.top

- Extends maintenance intervals up to the level of maintenance free
- No possibility of damage to the battery due to accidental topping up with polluted water
- Reduction of ventilation requirements
- Reduced costs for ventilation requirements
- Reduced explosion risk through integrated arc-back protection
- No significant escape of gas or of electrolyte fumes



Recombination principle in the AquaGen® premium.top

- Gas
- Water vapour
- Water

Type range - sealed (VRLA) products

OPzV





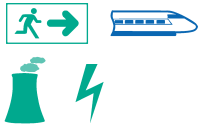




OPzV solar.power



power.bloc OPzV



Short description

Standards	DIN 40742, IEC 60896-21/22	IEC 60896-21/22, IEC 61427 Design according to DIN 40742	DIN 40744, IEC 60896-21/22
Capacity range in Ah	200 - 3.000**	250 - 3.500***	50 - 300**
Nominal voltage range	2 V	2 V	6 V, 12 V
Container material (UL 94-V0 on request)	ABS	ABS	PP, talcum
Grid alloy			
Positive	Pb + <1% Ca	Pb + <1% Ca	Pb + <1% Ca
Negative	Pb + <1% Ca	Pb + <1% Ca	Pb + <1% Ca
Positive plate	Tubular	Tubular	Tubular
Negative plate	Grid	Grid	Grid
Electrolyte	H ₂ SO ₄ -Gel	H ₂ SO ₄ -Gel	H ₂ SO ₄ -Gel
Applications			
Connector design	Fully insulated bolted connector	Fully insulated bolted connector	Fully insulated bolted connector
Current behaviour	 $\hat{=}$ excellent  $\hat{=}$ good		
Design life up to (in years)	18		15
Cycles up to	1.200	1.600	1.000
Charging voltage in V/cell			
Float charge	2.25	2.25	2.25
Boost charge	2.40	2.40	2.40
Float charging current/100 Ah nominal capacity (20°C, U _{float} = 2.25 / 2.27 V/cell)	20 - 50 mA	20 - 50 mA	20 - 50 mA
Position independent operation possible	up to 1500 Ah (optional)	up to 1500 Ah (optional)	Yes (optional)
Water-refilling intervals in years at permanent float-charging/with AquaGen®	-	-	-
Self discharge of nominal capacity at 20°C ambient temperature/per month	2 - 3%	2 - 3%	2 - 3%
Operating temperature range in °C	-20 - +40	-20 - +40	-20 - +40
Ventilation requirement	VRLA regulation; EN 50272-2	VRLA regulation; EN 50272-2	VRLA regulation; EN 50272-2
Storage time at 20°C before refreshing charge	6 months	12 months	6 months

Type of thread for all types M8

Key:

Emergency Power  Engine Start  Power Plant  Power Supply  Rail 

Signal tower  Solar  Switch Gear  Telecom  Transformer Station  UPS 

Reserve Power Systems

OPzV bloc solar.power

 IEC 60896-21/22, IEC 61427
 Design according to DIN 40744

70 - 370***

6 V, 12 V

PP, talcum

 Pb + <1% Ca
 Pb + <1% Ca

 Tubular
 Grid

 H_2SO_4 -Gel


Fully insulated bolted connector



1.300

 2.25
 2.40

20 - 50 mA

Yes (optional)

-

2 - 3%

-20 - +40

VRLA regulation; EN 50272-2

12 months

power.com SB/HC


IEC 60896-21/22

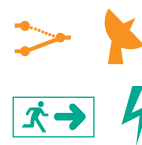
50 - 400**/35 - 330**

2 V, 6 V, 12 V/2 V, 12 V

PP, talcum

 Pb + <1% Ca
 Pb + <1% Ca

 Grid
 Grid

 H_2SO_4 , AGM


Fully insulated bolted connector


 $\geq 12/10 - 12$

 2.25
 2.40

10 - 40 mA

Yes

-

2 - 3%

-20 - +40

VRLA regulation; EN 50272-2

6 months

net.power


IEC 60896-21/22, BS 6290-4

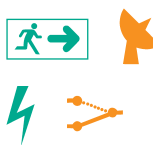
85 - 166**

12 V

ABS, UL 94-V0

 Pb + <1% Ca
 Pb + <1% Ca

 Grid
 Grid

 H_2SO_4 , AGM


Fully insulated bolted connector


 ≥ 12

 2.25/2.27
 2.40

10 - 40 mA

Yes

-

2 - 3%

-20 - +40

VRLA regulation; EN 50272-2

6 months

solar.bloc


IEC 60896-21/22

58 - 250***

6 V, 12 V

PP

 Pb + <1% Ca
 Pb + <1% Ca

 Grid
 Grid

 H_2SO_4 , AGM


cramp connector, bolted connector



750

 2.25
 2.40

10 - 40 mA

Yes

-

2 - 3%

-20 - +40

VRLA regulation; EN 50272-2

6 months