

TECHNICAL INFORMATION

EXCEN EXPLOSION PROOF BOX WITH BAE BATTERY PVV Series

Excen BSBAVG1 Battery Box cooperation with BAE was certified into Battery Box suitable used at explosion proof Zone 1 and 2 atmosphere. The battery boxes have the versatility to house Lead Acid battery from BAE batteries.

It is suitable to use for hazardous area applications such as oil and gas platforms, refineries, wellheads, underground mining and gas pipelines.

Application

- Zone 1 UPS Systems
- Navigation Systems
- Remote Fire & Gas Systems
- Communication Systems
- Remote Site Security Systems

BATTERY BOX

Material: 316L Stainless Steel

Internal & External painting: uncoated with standard Polish, option for coated with Epoxy Powder coating

Lid Type: Hinged

Opening Aids: (2x) Gas Struts

BOX TYPE

Box 1 : 2 PVV 140 ~ 7 PVV 770

Box 2 : 6PVV900 ~12PVV1800

Box 3 : 13PVV2470 ~16PVV3040

Box 4 : 17PVV3230~ 20PVV3800

Box 5 :22PVV4180 ~ 26PVV4940

Quantity of cell : Standard 12 or 24 cell

Customized: maximum 120 cell

CERTIFICATION

Type of Protection: Increased Safety Ex e

Marking:ATEX/IECEX Ex eb IIC T6 Gb

Operating T °C: -20°C ÷ +50°C

Degree of protection: IP 43 to IP 56



Authorized Distributor

THYTRON ENERGY SDN BHD
FORMALLY KNOWN AS THYTRON POWER PRODUCTS SDN BHD
31, Jalan Taming 10, Kawasan Perindustrian Taming Jaya,
43300 Balakong, Selangor D.E.
Tel :+603-89619005 / +603-89626353]
Fax : 03-89621469
www.thytron.com

BAE SECURA PVV SOLAR

TECHNICAL SPECIFICATION

1. APPLICATION

BAE SECURA PVV SOLAR batteries are the ideal solution for storage of renewable energy in grid-tied, off-grid, and hybrid systems for private and commercial use. The valve-regulated gel batteries allow for flexible installation (vertical or horizontal) while water-refilling is not necessary, the batteries are referred to as "maintenance-free". In addition, the use of gel batteries leads to reduced installation costs due to reduced ventilation and safety distance requirements. The sliding pole-bushing in BAE "Panzerpol" design allows post growth without risk of lid damages or leakages.

Robustness, reliability and a superior life-time are the hallmarks of our batteries.



Similar to the illustration

2. TYPES, CAPACITIES, DIMENSIONS, WEIGHTS

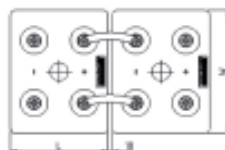
Type	C _{10h} 20 °C Ah	C _{24h} 20 °C Ah	C _{48h} 20 °C Ah	C _{72h} 20 °C Ah	C _{100h} 20 °C Ah	Length (L) mm	Width (W) mm	Height (H) mm	Weight filled kg ± 5%
U _c V/cell	1.80	1.83	1.85	1.85	1.85				
2 PVV 140	121	136	144	149	153	105	208	420	12.4
3 PVV 210	182	204	216	224	230	105	208	420	17.1
4 PVV 280	243	271	288	299	307	105	208	420	19.4
5 PVV 350	304	338	361	374	384	126	208	420	23.3
6 PVV 420	364	405	433	449	461	147	208	420	27.4
5 PVV 550	447	508	537	556	569	126	208	535	31.4
6 PVV 660	529	600	633	655	669	147	208	535	36.9
7 PVV 770	610	691	724	748	768	168	208	535	42.4
6 PVV 900	729	837	888	921	944	147	208	710	49.5
7 PVV 1050	858	986	1,046	1,087	1,110	215	193	710	60.4
8 PVV 1200	970	1,113	1,180	1,224	1,250	215	193	710	67.3
9 PVV 1350	1,090	1,260	1,339	1,382	1,420	215	235	710	75.5
10 PVV 1500	1,210	1,389	1,473	1,526	1,560	215	235	710	82.5
11 PVV 1650	1,320	1,521	1,612	1,670	1,710	215	277	710	90.8
12 PVV 1800	1,440	1,653	1,752	1,814	1,850	215	277	710	97.7
11 PVV 2090	1,580	1,785	1,900	1,965	2,020	215	277	855	108.2
12 PVV 2280	1,710	1,932	2,054	2,124	2,170	215	277	855	116.5
13 PVV 2470	1,890	2,143	2,284	2,368	2,420	215	400	815	131.4
14 PVV 2660	2,070	2,352	2,515	2,606	2,670	215	400	815	141.2
15 PVV 2850	2,170	2,448	2,611	2,700	2,770	215	400	815	147.9
16 PVV 3040	2,300	2,592	2,760	2,858	2,930	215	400	815	156.2
17 PVV 3230	2,480	2,784	2,990	3,103	3,180	215	490	815	173.6
18 PVV 3420	2,610	2,952	3,144	3,261	3,340	215	490	815	181.4
19 PVV 3610	2,740	3,096	3,297	3,420	3,500	215	490	815	189.6
20 PVV 3800	2,880	3,240	3,451	3,571	3,660	215	490	815	197.8
22 PVV 4180	3,210	3,624	3,873	4,017	4,110	215	580	815	219.1
24 PVV 4560	3,470	3,912	4,176	4,327	4,430	215	580	815	235.4
26 PVV 4940	3,650	4,080	4,344	4,492	4,590	215	580	815	248.4

On request, data of other capacities can be provided with a customised calculation by using the BAE software BEST.
All published capacities do not take into consideration the voltage drop of the connectors.
Height [H] is the maximum height between container bottom and top of the bolts in assembled condition.

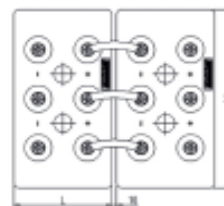
3. TERMINAL POSITIONS



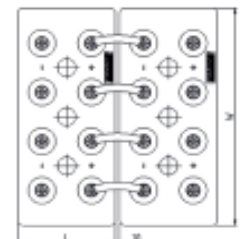
2 PVV 140 to 6 PVV 900



7 PVV 1050 to 12 PVV 2280



13 PVV 2470 to 16 PVV 3040



17 PVV 3230 to 26 PVV 4940

Terminals are designed as threaded poles with brass inlay M10 for flexible insulated copper cables with cross-section 25, 35, 50, 70, 95 or 120 mm² or insulated solid copper connectors with cross-section 90 or 150 mm².

4. DESIGN

Positive electrode
Negative electrode
Separation
Electrolyte
Container

Tubular plate made of a corrosion resistant PbCaSn alloy and a woven polyester gauntlet
Flat plate made of a PbCaSn alloy with long-life expander material
Microporous separator
Diluted sulphuric acid, fixed as gel by fumed silica
High impact ABS (Acrylonitrile butadiene styrene) in grey colour (colour may vary slightly from given image), UL-94 rating: HB, on request also in UL-94 rating: V-0
High impact ABS (Acrylonitrile butadiene styrene) or SAN (Styrene acrylonitrile) in grey colour (colour may vary slightly from given image), UL-94 rating: HB, on request also in ABS, UL-94 rating: V-0
Valve with flame arrestor, opening pressure approx. 120 mbar
100% gas- and electrolyte-tight, sliding, plastic coated BAE "Panzerpol"
IP 25 according to EN 60529, touch protection according to BGV A3
BAE special type PVV "horizontal" for horizontal operation

Lid

Valve
Pole-bushing
Kind of protection
Option

5. STANDARDS

Test standards
Safety standard, ventilation

IEC 60896-21, -22, IEC 61427-1
IEC 62485-2

6. TRANSPORT

Regulations

On land transportation (road, railway) BAE batteries are not subject to ADR/RID, if the conditions of Special Provisions 238 and 598 are observed
On sea transportation BAE cells are not subject on dangerous goods, the rules of IMDG-Code (Special Provision 238) must be followed

7. CHARGING

Initial charge current
(I or bulk phase)
Charge voltage at cyclic operation
Float voltage
Adjustment of charge voltage

Recommended: $I_{max} = 2 \times I_{10}$, permissible: up to $3 \times I_{10}$
Restricted from 2.30 V to 2.40 V per cell, BAE Operating Instructions has to be observed
2.25 V/cell
No adjustment necessary if battery temperature is between 10 °C and 45 °C (50 °F and 113 °F) in the monthly average,
 $\Delta U/\Delta T = -0.003$ V/cell per K below 10 °C (50 °F)

8. DISCHARGE CHARACTERISTICS

Reference temperature
Initial capacity

20 °C (68 °F)
According to IEC 60896-21:
95% at the 1st cycle, 100% at the 5th cycle

9. MAINTENANCE

Every 6 months
Every 12 months

Check battery voltage, pilot cell voltages and temperatures
Check connections, record battery voltage, cell voltages and temperatures

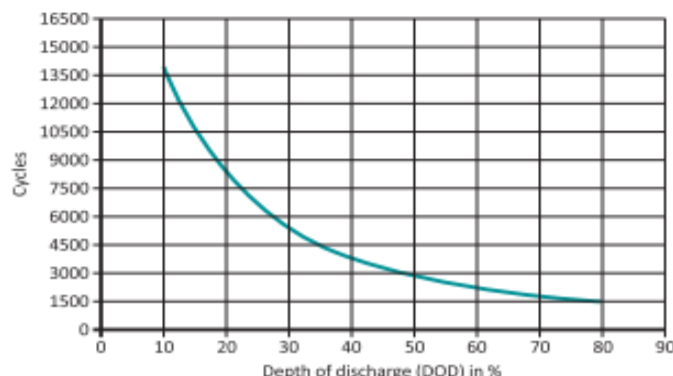
10. OPERATIONAL DATA

Depth of discharge (DOD)
Recharge to 100%
Battery temperature

Max. 80%, recommended: max. 50% DOD and for off-grid systems max. 30% DOD
At least within a period of 1 up to 2 weeks
-20 °C to 45 °C (-4 °F to 113 °F),
recommended temperature range 10 °C to 30 °C (50 °F to 86 °F)
Approx. 2% per month at 20 °C (68 °F)
> 3,150 (A+B) at 40 °C (104 °F)
> 1,500 at 20 °C (68 °F)

Self-discharge
IEC 61427-1 cycles
IEC 60896-21 cycles

11. NUMBER OF CYCLES AS FUNCTION OF DOD





Protocollo: 78349

DICHIARAZIONE DI CONFORMITÀ UE
EU DECLARATION OF CONFORMITY / UE-KONFORMITÄTSERKLÄRUNG
DECLARATION UE DE CONFORMITE / DECLARACION UE DE CONFORMIDAD

Not / Via / Wir / Nous / Nosotros

Fabbricante / Manufacturer / Hersteller / Fabricant / Fabricante :

EXCEN S.r.l.

Via Marcora, 61/69

20097 S. Donato Milanese - ITALIA

Dichiaro sotto la nostra sola responsabilità che il seguente prodotto

Declares under our sole responsibility that the following product / Erkläre in alleiniger Verantwortung, dass das folgende Produkt
Déclare sous notre seule responsabilité que le produit concerné / Declaramos bajo nuestra única responsabilidad que el siguiente producto

Apparecchio / Equipment / Geräte / Apparat / Aparato:

Batterie di accumulatori; Batteries; Batterien; Baterias; Acumuladores

Tipo / Type / Typ / Type / Tipo:

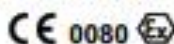
BSBAVG.. – BAE 22 PVV 4180

Matricola/Anno di costruzione:

280459-001 280459-002 / 2023

Serie/N°/Year of serial / Serien/N°/Jahr
No. de identificación de serie / N° de identificación de serie

Marcatura ATEX
ATEX Marking / ATEX Markierung / Marquage ATEX / Marcado ATEX:



II 2G Ex eb IIC T6 Gb IP56

@Tamb -20 °C ÷ +50 °C

Certificato di esame UE del tipo:

EU Type examination certificate / EU-Baumusterprüfbescheinigung
Attestation d'examen UE de type / Certificado de examen UE de tipo

SEV 15 ATEX 0163 X

È conforme alla seguente direttiva

is in conformity to the following Directive / Mit der folgenden Richtlinie übereinstimmt
Est conforme à la Directive suivante / Cumple con la Directiva siguiente

Direttiva ATEX: ATEX Directive / Richtlinie ATEX:

Directive ATEX: / Directiva ATEX: 2014/34/EU

Il rispetto dei requisiti essenziali di sicurezza e di tutela della salute è assicurato dalla conformità alle seguenti Norme: / The observance of the essential health and safety requirements is guaranteed by the compliance to the following Standards: / Die Einhaltung der Sicherheits- und Gesundheitsschutz grundlegenden Forderungen ist durch die Übereinstimmung mit den Forderungen der folgenden anwendbaren Normen, gewährt: / Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité aux suivantes Normes: / El respeto de los requisitos esenciales de seguridad y tutela de la salud es asegurado por la conformidad a las siguientes Normas:

EN IEC 60079-0:2018;

EN 60079-7:2015;

EN IEC 60079-7:2015/A1:2018;

ed al rispetto delle istruzioni per il corretto utilizzo del materiale in atmosfera esplosiva, in modo da contribuire al rispetto dei requisiti essenziali di sicurezza applicabili a tali apparecchi / and by the observance of the instructions for the correct material use in explosive atmosphere, in order to contribute to the observance of the essential safety requirement applicable to such devices / unter Berücksichtigung der vorgesehenen Sonderbetriebsbedingungen und der Einhaltung der Anweisungen zur angemessenen Anwendung und Wartung des in explosionsfähigen Atmosphären befindlichen Materials, hinsichtlich der Einhaltung der für diese Geräte anwendbaren grundlegenden Sicherheitsforderungen / et au respect des instructions pour l'utilisation correcte du matériel en atmosphères explosives, de façon à contribuer au respect des exigences essentielles de sécurité applicable aux tels appareils / y al respeto de las instrucciones por el correcto empleo del material en atmósferas explosivas, de modo que contribuy al respeto de los requisitos esenciales de seguridad aplicables a tales aparatos.

S. Donato Milanese, 09/08/2023

EXCEN Srl

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www.excen.it

Capitale Sociale Euro 100.000,00 I.v.

Società a Socio Unico

REA MI-1594233 - C.F. e P. IVA 01197070335

Marcatura IECEX:
IECEX Marking / IECEX Markierung / Marquage IECEX / Marcado IECEX:

Ex eb IIC T6 Gb IP56

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Certificato IECEX:

IECEX certificate / IECEX Zertifikat
Certificat IECEX / Certificado IECEX:

IECEX SEV 15.0022X

È conforme alle seguenti Norme:
is in conformity to the following Standards:
Mit der folgenden Normen übereinstimmt:
Est conforme aux suivantes Normes:
Cumple con las siguientes Normas:

See IECEX website for details

ed al rispetto delle istruzioni per il corretto utilizzo del materiale in atmosfera esplosiva,

and by the observance of the instructions for the correct material use in explosive atmosphere,

unter Berücksichtigung der vorgesehenen Sonderbetriebsbedingungen und der Einhaltung der Anweisungen zur angemessenen Anwendung und Wartung des in explosionsfähigen Atmosphären befindlichen Materials,

et au respect des instructions pour l'utilisation correcte du matériel en atmosphères explosives,

y al respeto de las instrucciones por el correcto empleo del material en atmósferas explosivas.

ATEX & IECEX Authorized Person

Roberto Tomasoni



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX SEV 16.0022X	Page 1 of 4	Certificate history: Issue 0 (2016-06-30)
Status:	Current	Issue No: 1	
Date of Issue:	2023-10-11		
Applicant:	Exoen S.R.L. Via Marcora 61/69 20097 San Donato Milanese (MI) Italy		
Equipment:	Increased Safety and Dust Ex Batteries B8.. and BM.. series		
Optional accessory:	---		
Type of Protection:	Flameproof "d", Increased safety "e", Enclosure "t"		
Marking:	Ex eb IIB/IC T6 / T5 Gb Ex db eb IIB/IC T6 / T5 Gb Ex eb mb IIB/IC T6 / T5 Gb Ex mb tb IIC T80 °C / T95 °C Db Ex tb IIC T80 °C / T95 °C Db Ex db eb mb IIB/IC T6 / T5 Gb Ex eb I Mb	Ex ec IIB/IC T6 / T5 Gc Ex db/dc ec IIB/IC T6 / T5 Gc Ex ec mc IIB/IC T6 / T5 Gc Ex mc tc IIB/IC T80 °C / T95 °C Dc Ex tc IIB/IC T80 °C / T95 °C Dc Ex db/dc ec mc IIB/IC T6 / T5 Gc	

Approved for Issue on behalf of the IECEx
Certification Body:

Munkra Gamma

Position:

Manager Product Certification

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

Eurofins Electric & Electronic Product Testing AG
Luppenstrasse 3
8820 FEHRALTORF
Switzerland



E&E



IECEX Certificate of Conformity

Certificate No.: **IECEX SEV 16.0022X**

Page 2 of 4

Date of Issue: **2023-10-11**

Issue No: **1**

Manufacturer: **Exoen S.R.L.
Via Marconi 61/69
20097 San Donato Milanese (MI)
Italy**

Manufacturing
Locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended.

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0
- IEC 60079-1:2014** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0
- IEC 60079-18:2017** Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1
- IEC 60079-31:2022** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0
- IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

CHUSEWExTR15.0024/01

Quality Assessment Report:

FR/INE/QAR/11.0011/11