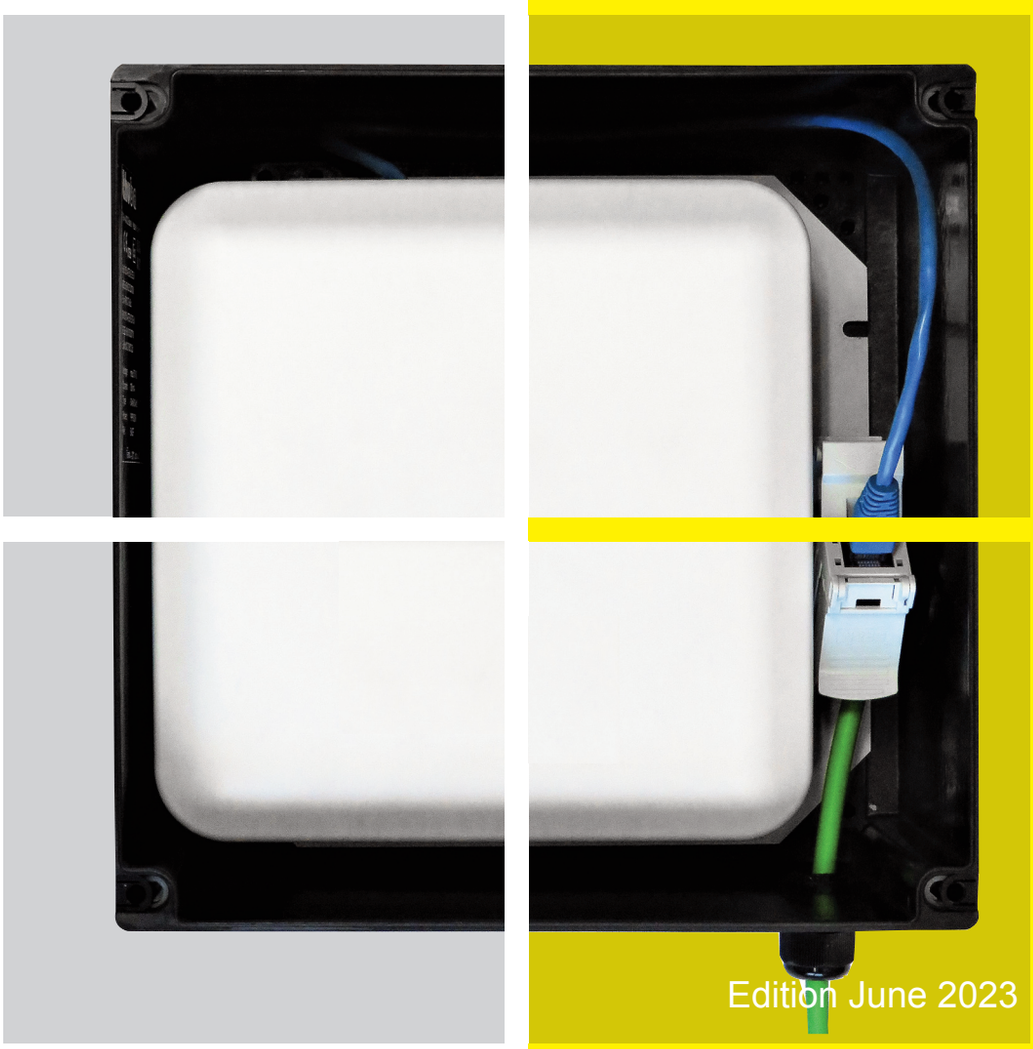
MANUAL

PESO P551125
IECEx BVS 20.0081X

Explosionproof Access Point
Type SAnR



Edition June 2023

Explosionproof switchgear combinations in the type of protection 'nR'
(Equipment without built-in components that give off arcs or sparks during normal operation)

The explosionproof switchgear combinations are intended for use in Zone 2 (EPL Gc) explosive gas atmospheres according to IEC/EN 60079-0 and IEC/EN 60079-15.

Before dispatch, each enclosure is subjected to a halftime pressure test. The test is carried out to determine the time to change to half the initial pressure value from 3 to 1.5 mbar. This shall not be less than 180 seconds. Testing of enclosures after installation is not required. For this reason, the enclosures do not feature a test port.

The restricted breathing polyester enclosures are subjected to ageing tests (thermal endurance to heat and cold, impact test followed by IP test). The test for leakage in accordance with IEC/EN 60079-15 is not carried out until after the IP test. The halftime value of the polyester enclosures is substantially higher than the requirements of the standard.

Non-explosionproof electronic components such as, for example, access points, WLAN antennas, GSM modules, can be be built into restricted breathing enclosures.

Explosionproof Access Point

Ex nR IIC T6 Gc

Type SAnR (Category 3G)

Contents:

Target group
Experienced qualified electricians in accordance with the occupational health and safety decree and trained persons.

1. Safety rules

The explosionproof access points are used for stationary installation in hazardous areas classified as zones 2 and 21 to IEC 60079-10-1 and IEC 60079-10-2.

Do not leave this Manual or any other object inside the enclosure when the unit is in service.

Operate the explosionproof access points only for their intended duty when in an undamaged and clean condition, and only where the material of the enclosure is compatible with the environment.

In the event of incorrect assembly, the minimum ingress protection IP 66 to IEC 60529 will no longer be assured.

No modifications that are not expressly specified in this Manual are allowed to the explosionproof access points.

Whenever work is done on the explosionproof access points, the national safety and accident prevention regulations and the safety instructions given in this Manual (stated in italics as in this paragraph) must always be observed!

1.1 Specific conditions of use

For the use of equipment in type of protection Intrinsic Safety „i" EN/IEC 60079-11 the distances between intrinsically safe and non-intrinsically safe circuits shall fulfil the requirements according to EN 60079-11.

2. Conformity with standards

The explosionproof access points meet the requirements of IEC 60079-0 and IEC 60079-15. They have been developed, manufactured and tested in accordance with state-of-the-art engineering practice and ISO 9001:2015.

3. Technical data

3.1 Marking

3.1.1 Areas with gas explosion hazard

Ex nR IIC T6 Gc

3.2 Certification

IECEx BVS 20.0081X

3.3 Enclosure ingress protection

Minimum degree of protection IP 66

3.4 Type code

SAnR 2 3 7 27 27 13

dimension
(length, height, depth [cm])

enclosure size 1 271 x 271 x 136 mm (standard)
enclosure size 2 542 x 271 x 136 mm (special version)

3.5 Electrical data

Rated voltage
Max. 60 V DC (see rating plate)

Conductor cross section CAT 7

3.6 Permissible ambient temperatures

The permissible ambient temperature is max. –10°C to 60°C.

The data on the type plate are binding!

4. Installation

For installation and operation it is essential to follow this Manual and the relevant national regulations in addition to generally accepted good engineering practice and IEC 60079-14 'Electrical installations design, selection and erection'.

4.1 Qualifications

The installation of the equipment may only be carried out by experienced personnel who during their training have also been instructed in the various types of explosion protection, installation processes, the relevant rules and regulations and the general principles of hazardous zone classification. Appropriate ongoing training or instruction must be given to these personnel regularly.

4.2 Network cable

Only network cables from Huber+Suhner with the designation Radox Railcat CAT7 100 Ohm, 4x(2x24AWG) XM S can be used.
The minimum cable length of 5 m must not be undercut. Other cables may only be used after being approved by the manufacturer

Batch cable (connection of the connection module to the access point

Ethernet network cable CAT6 (or higher)

4.3 Cable and conductor entries

For access points type SAnR/SAtc, only those cable and conductor entries and plugs that possess an EU type-examination certificate (according ICE Equipment Protection Level Gc or Db) issued by a European Notified Body as per IEC 60079-0, IEC 60079-7 and IEC 60079-31 may be used.

Cable and conductor entries may only be fitted in specially prepared holes that are closed off with plugs.

The cable and conductor entries must be installed so as to prevent self-loosening and ensure permanent sealing of the cable and conductor entry points.

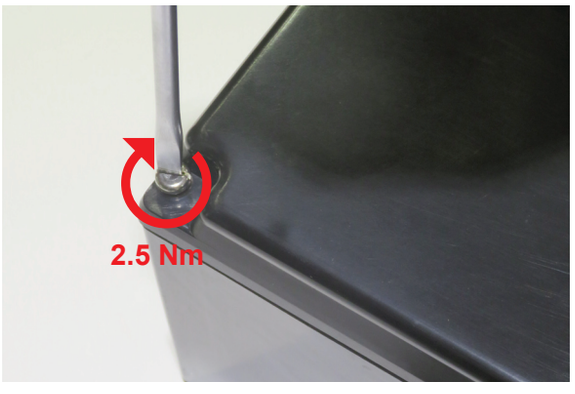
In the factory the cable and conductor entries are fitted with CEAG type GHG 960 923 P... cable glands. The dimensions, the clamping ranges for cables and wires and the torques are shown in the tables in Annex A (page 18).

If other cable and conductor entries are installed, the required torques and cable diameters will be found in the appropriate manual.

If any cable and conductor entries are not used or are no longer needed, the tapped holes and redundant gland bodies must be blanked off with suitable blind plugs or caps.

4.4 Closing enclosure

The cover screws shall be tightened with a torque of 2.5 Nm to ensure the necessary tightness.



5. Initial test

*5.1 Switch and control gear combinations **without** test port (only applies to polyester enclosures)*

In the case of explosionproof control gear combinations (with components that do not give off arcs or sparks) without a test port, the routine test was carried out with a pressure half-value time of 180 seconds. Further testing on site is not required.

If the explosionproof control gear combinations have to be opened for maintenance or repairs contrary to the above conditions, an additional pressure half-life test must be carried out.

The enclosure is tested with an overpressure of 0.3 kPa (3 mbar). The length of time needed to reach half the pressure 0.15 kPa (1,5 mbar) shall be at least 180 seconds .

In order to be able to carry out a pressure half-life test, the enclosures are equipped with a blanking element in addition to the cable entry.

Warning – Do not open, maintain or service in an area when an explosive atmosphere is present.

6. Servicing and Maintenance

The provisions of IEC 60079-17 'Inspection and maintenance of electrical installations in hazardous areas' relating to inspection, servicing and maintenance must be complied with. In the course of inspections and maintenance work, those components on which the type of explosion protection is dependent must be inspected particularly carefully.

6.1 Qualifications

The inspection, servicing and maintenance of the equipment may only be carried out by experienced personnel who during their training have also been instructed in the various types of explosion protection, installation processes, the relevant rules and regulations and the general principles of hazardous zone classification.

Appropriate ongoing training or instruction must be given to these personnel regularly.

6.2 Requirements to be met by the enclosure

Check the condition of the gaskets.

To ensure compliance with the permissible surface temperatures, ensure that the ambient temperature remains within the range indicated on rating plate. In this connection, remember to take the effects of other heat sources into account, such as exposure to sunlight or, if applicable, higher switching capacities for short periods. These effects should not be allowed to raise the enclosure temperature additionally.

6.3 Spare parts

Only genuine spare parts from the manufacturer may be installed. Make sure that the components and parts are suitable for each application (device category 3G/2D or device protection level Gc/Db). The appropriate temperature range based on the environmental temperature must also be considered when selecting the spare parts. When in doubt, please contact the manufacturer.

*6.4 Switch and control gear combinations **without** test port (only applies to polyester enclosures)*

In the case of explosionproof control gear combinations (with components that do not give off arcs or sparks) without a test port, the routine test was carried out with a pressure half-value time of 180 seconds. Further testing on site is not required.

If the explosionproof control gear combinations have to be opened for maintenance or repairs contrary to the above conditions, an additional pressure half-life test must be carried out.

The enclosure is tested with an overpressure of 0.3 kPa (3 mbar). The length of time needed to reach half the pressure 0.15 kPa (1,5 mbar) shall be at least 180 seconds .

In order to be able to carry out a pressure half-life test, the enclosures are equipped with a blanking element in addition to the cable entry.

Warning – Do not open, maintain or service in an area when an explosive atmosphere is present.

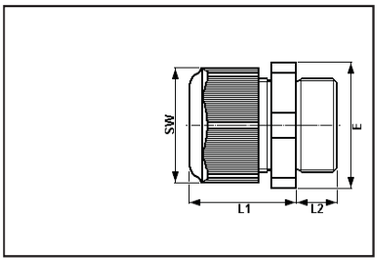
7. Disposal

When the explosionproof switchgear assemblies are eventually disposed of, the national regulations governing the disposal of waste materials in the country concerned must be rigorously observed.

Annex A

Dimension drawings and dimensions in mm

Fig. A
Pressure screw
Intermediate gland
>5 mm
Ø
M12, M16 (Ø < 9 mm), M20 ... M63
0 mm
Ø
M16 (Ø > 9 mm)



1 Technical data

1.1 Technical details for: Cable entries (KLE) **M12**x1,5 **to M63**x1,5

ATEX EU-type examination certificate:		PTB 14 ATEX 1015 X[(A)]
Marking acc. to 2014/34/EU and standard:		
	EN 60079-0	Ⓔx II 2 G Ex eb IIC Gb
		Ⓔx II 2 D Ex tb IIIC Db
IECEx type examination certificate:		IECEx PTB 14.0027X[(A)]
Category of application:	IEC60079-0	Ex eb IIC Gb
		Ex tb IIIC Db

[(A)] The EU-Type Examination Certifiate and any future suppkements thereto shall, at the same time, be regarded as supplements to the EU-Type Examination Certificate PTB 99 ATEX 3128 X und PTB 99 ATEX 3101 X.

Perm. storage temperature in original packing:	-20° C to +70° C
Degree of protection to IEC/EN 60529:	IP 66*) (when fully assembled)

*) M40, M50 und M63 with suitable flange seal

Type	SW	L1	L2	E	weight app.
M12x1,5	15 mm	19,3 mm	12 / 8 mm	16,2 mm	3,4 g
M16x1,5	20 mm	23,0 mm	12 / 8 mm	22,0 mm	6,5 g
M20x1,5	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25x1,5	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g
M40x1,5	46 mm	39,5 mm	15 / 10 mm	50,5 mm	50,3 g
M50x1,5	55 mm	44,0 mm	16 / 12 mm	60,0 mm	75,9 g
M63x1,5	68 mm	47,0 mm	16 / 12 mm	75,0 mm	117,6 g

Type	operating temperature	impact resistance	Cable diameter												Screw-in thread in enclosure	Colour of dust protection cover
			Seal 1+2+3 (1)(2)(3)				Seal 1+2 (1)(2)				Seal 1 (1)					
			min.		max.		min.		max.		min.		max.			
	°C	Joule	Ø	Nm**	Ø(1)(2)	Nm**	Ø	Nm**	Ø(1)(2)	Nm**	Ø	Nm**	Ø(2)	Nm**	Nm**	
M12x1,5	-20 - 70	4									5,0	0,8	7,0	1,0	1,2	white
M16x1,5	-20 - 70	4					5,5	1,0	7,0	1,0	7,0	1,0	10,0	1,4	3,3	white
M20x1,5	-20 - 70	7	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	13,0	1,7	2,7	white
M20x1,5	-40 - 70	4	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	11,0	1,7	2,7	green
M25x1,5	-20 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	3,0	white
M25x1,5	-55 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	3,0	green
M32x1,5	-20 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	white
M32x1,5	-55 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	green
M40x1,5	-55 - 70	7					19,0	3,3	22,0	5,5	22,0	3,3	28,0	6,7	7,5	green
M50x1,5	-55 - 70	7					24,0	6,0	28,0	7,0	28,0	5,0	35,0	7,0	7,5	green
M63x1,5	-55 - 70	7					29,0	12,0	35,0	12,0	36,0	12,0	41,0	13,0	7,5	green
additional seal							41,0	13,0	48,0	7,8						

** Test torques at 20°C

(1) The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 + 3 for the intermediate region.
(2) When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.

Fig. B Cable diameter 9 mm
e.g. for M25x1,5

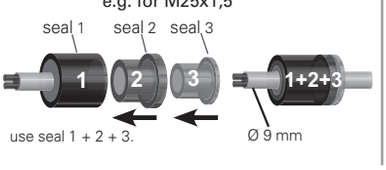


Fig. C Cable diameter 12 mm
e.g. for M25x1,5

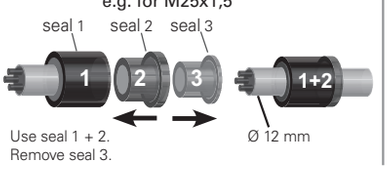
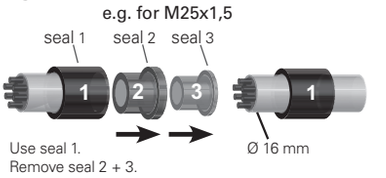


Fig. D Cable diameter 16 mm
e.g. for M25x1,5



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 BVS 20.0081X**	Page 1 of 5	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2021-01-13		
Applicant:	**thuba Ltd.** Stockbrunnenrain 9 4123 Allschwil **Switzerland**		
Equipment:	**Explosionproof switchgear assemblies type SAnR * * * ** ** ** **		
Optional accessory:			
Type of Protection:	**Intrinsic safety "i", Type of protection "n"**		
Marking:	Ex nR * IIC T6, T5, T4 Gc Ex nR * [ic] IIC T6, T5, T4 Gc Ex nR * [ib Gb] IIC T6, T5, T4 Gc Ex nR * [ia Ga] IIC T6, T5, T4 Gc Optional the marking can be amplified with the types of protection of the separately certified components, for example "d/db", "e/eb", "ma/mb" and/or "ia/ib".		

Approved for issue on behalf of the IECEx Certification Body: **Dr Michael Wittler**

Position: **Deputy Head of Certification Body**

Signature: (for printed version)

Date: 13.01.2021

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:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0081X** Page 2 of 5

Date of issue: 2021-01-13 Issue No: 0

Manufacturer: **thuba Ltd.**
Stockbrunnenrain 9
4123 Allschwil
Switzerland

Additional 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 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2017 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

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:

DE/BVS/ExTR15.0088/02

Quality Assessment Report:

DE/BVS/QAR13.0010/09

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0081X** Page 3 of 5

Date of issue: 2021-01-13 Issue No: 0

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Subject and Type

Explosionproof switchgear assemblies type Serie SAnR *1) *2) *3) ** ** **4)

1) Manufacturer code

2) Enclosure material

1 = Stainless steel

3 = Polyester

7 = Steel

3) Variant

7: controls

4) Dimensions (width, length, height [cm])

Description

The explosionproof switchgear assemblies type SanR * * * ** ** ** consist of a separately certified empty enclosure equipped with different monitoring, control and switch equipment (separately certified or industrial version) as well as terminals for intrinsically and non-intrinsically safe circuits.

The explosionproof switchgear assemblies type SAnR * * * ** ** ** is designed in type of protection "nR". The empty enclosure is made of polyester.

SPECIFIC CONDITIONS OF USE: YES as shown below:
For the use of equipment in type of protection Intrinsic Safety "i" IEC 60079-11 the distances between intrinsically safe and non-intrinsically safe circuits shall fulfil the requirements according to IEC 60079-11.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0081X** Page 4 of 5

Date of issue: 2021-01-13 Issue No: 0

Equipment (continued):

Listing of separately certified components with standard status, which can be installed at the enclosure:

Manufacturer	Subject and type	Certificate	Standards
thuba Ltd.	Empty enclosure eCam ** ** **	IECEx BVS 16.0026U	IEC 60079-0:2011 IEC 60079-7:2015[2]
Cooper Crouse-Hinds GmbH (Eaton)	Empty enclosure GHG 60 ….R…	IECEx PTB 11.0030U	IEC 60079-0:2017 IEC 60079-7:2015
Bartec-Varnost d.o.o.	Empty enclosure 07-5184-****/**** 07-5185-****/****	IECEx PTB 09.0008U	IEC 60079-0:2017 IEC 60079-7 :2017
R. Stahl AG	Rotary actuator Type 8604/1	IECEx PTB 13.0047U	IEC 60079-0:2017 IEC 60079-7:2015
Cooper Crouse-Hinds GmbH (Eaton)	Switch block GHG 41. …. R ….	IECEx IBE 14.0005U	IEC 60079-0:2011[1] IEC 60079-1:2014 IEC 60079-7:2015[2]
Cooper Crouse-Hinds GmbH (Eaton)	Signal lamp GHG 41. …. R ….	IECEx IBE 13.0031U	IEC 60079-0:2011[1] IEC 60079-1:2014 IEC 60079-7:2015 IEC 60079-11:2011
Cooper Crouse-Hinds GmbH (Eaton)	Measuring instrument AM45, AM72; VM45, VM72 GHG 41* ****R****	IECEx BVS 14.0082U	IEC 60079-0:2017 EC 60079-7:2017[2] IEC 60079-11:2011
Cooper Crouse-Hinds GmbH (Eaton)	Automation flap type GHG 610 14** R****	IECEx PTB 11.0020U	IEC 60079-0:2011[1] IEC 60079-7:2015
Cooper Crouse-Hinds GmbH (Eaton)	Switch base type Type GHG 23. …R….	IECEx BVS 13.0108U	IEC 60079-0:2011[1] IEC 60079-1:2014 IEC 60079-7:2015[2] IEC 60079-11:2011
Cooper Crouse-Hinds GmbH (Eaton)	Switch base GHG 2.. ..R….	IECEx BVS 14.0047U	IEC 60079-0:2011[1] IEC 60079-1:2007[1] IEC 60079-7:2006[2]
thuba Ltd.	Control and signalling device ZBWE.., ZBW4B…, ZBW5A…, XBW…	IECEx INE 17.0009U	IEC 60079-0:2011[1] IEC 60079-1:2014 IEC 60079-7:2015[2]
thuba Ltd.	Monitoring, control and switch equipment ZBWV/L/R.., XLW…, XAW5..	IECEx INE 17.0010U	IEC 60079-0:2011[1] IEC 60079-7:2015[2] IEC 60079-18:2009

1 No applicable technical differences

2 Fulfil the requirements according IEC 60079-15

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0081X** Page 5 of 5

Date of issue: 2021-01-13 Issue No: 0

Additional information:
Parameters

Rated voltage	max. 800 V
Rated current	max. 400 A
Rated cross-section	max. 240 mm^2
Earthing connection	max. 120 mm^2
Ambient temperature range	max. -55 °C up to +100 °C (depends on the mounting equipment)
IP protection degree	IP66

The rated values will be determinate by the manufacturer depending on the used electrical equipment and according to the relevant standard.

Government of India
Ministry of Commerce & Industry
Petroleum & Explosives Safety Organisation (PESO)
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail : **explosives@explosives.gov.in**
Phone/Fax No : **0712 -2510248, Fax-2510577**

Approval No : A/P/HQ/TN/104/6282 (P551125) Dated : **25/11/2022**

To,

M/s. thuba Ltd,
Stockbrunnenrain 9, 4123 Allschwil,Allschwil
4123 peter.thurnherr@thuba.com04161-3078000
SWITZERLAND

Sub : Approval of Non Sparking Type Electrical Equipments under Petroleum Rules 2002- Regarding.

Sir(s),

Please refer to your letter No. **OIN1198188** dated **08/11/2022** on the subject.

The following Ex electrical equipment(s) manufactured by you according to **IEC 60079-0 : 2017, IEC 60079-15: 2017,** standards and covered under **DEKRA Testing and Certification GmbH** Test reports mentioned below is/are approved for use in **Zone 2** of Gas **IIC** hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Ex-nR Enclosure type SAnR 2 3 7 27 27 21	Ex nR *IIC T6, T5, T4 Gc	**P551125/1**	DEKRA Testing and Certification GmbH	IECEx BVS 20.0081X Issue No. 0	13/01/2021	BVS2015 nR 822 100
2	Ex-nR Enclosure type SAnR 2 3 7 27 54 21	Ex nR *IIC T6, T5, T4 Gc	**P551125/2**	DEKRA Testing and Certification GmbH	IECEx BVS 20.0081X Issue No. 0	13/01/2021	BVS2015 nR 922 100
3	Ex-nR Enclosure type SAnR 2 3 7 27 27 13	Ex nR *IIC T6, T5, T4 Gc	**P551125/3**	DEKRA Testing and Certification GmbH	IECEx BVS 20.0081X Issue No. 0	13/01/2021	BVS2015 nR 821 100
4	Ex-nR Enclosure type SAnR 2 3 7 27 54 13	Ex nR *IIC T6, T5, T4 Gc	**P551125/4**	DEKRA Testing and Certification GmbH	IECEx BVS 20.0081X Issue No. 0	13/01/2021	BVS2015 nR 921 100

This Approval is granted subject to observance of the following conditions:-

1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the DEKRA Testing and Certification GmbH Test Reports referred to above.

2)The equipment shall be used only with approved type of accessories and associated apparatus.

3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
(a) Name of the manufacturer

(b) Name and number by which the equipment is identified.
(c) Number & date of the test report of the DEKRA Testing and Certification GmbH applicable to the equipment.
(d) Equipment reference number of this letter by which use of apparatus is approved.
(e) Protection level.

4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the DEKRA Testing and Certification GmbH Test report and is identical with the one tested and certified at DEKRA Testing and Certification GmbH shall be furnished with each equipment.
5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenence schedule, if any, recommended by DEKRA Testing and Certification GmbH in their test reports and copy of instructions booklet detailing operation & maintenance of the equipment so as to maintain its Flame Proof characterestics.
6) The After sales service and maintanance of subject equipment shall be looked after by your representative Baliga Lighting Equipments Private Limited, 389, Medavakkam Road, Kovilambakkam, Chennai-600 117.

This approval also covers the permissible variations as approved under the DEKRA Testing and Certification GmbH test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with . The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis.

The Approval is Valid upto **31/12/2026**

Yours faithfully,

(K. Thiagarajan)
Jt. Chief Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :
1. Jt. Chief Controller of Explosives, South Circle Office, CHENNAI
2. Baliga Lighting Equipments Private Limited,389, Medavakkam Road, Kovilambakkam, Chennai-600 117.

for Chief Controller of Explosives
Nagpur

(For more information regarding status,fees and other details please visit our website http://peso.gov.in)

This is System Generated document. Signature is not required.

Your partner for internationally certified solutions in explosion protection

Design and Production

Explosionproof switchgear assemblies

Equipment protection level EPL Gb
– flameproof enclosure ‘db’
– increased safety ‘eb’
– pressurized enclosure ‘pxb’

Equipment protection EPL level Gc
– increased safety ‘ec’
– restricted breathing enclosure ‘nR’
– pressurized enclosure ‘pzc’

Equipment protection level EPL Db and Dc for areas at risk of dust explosions
– protection by enclosure ‘tb’, ‘tc’
– pressurized enclosure ‘pxb’, ‘pzc’

Accessories
– digital displays
– disconnect amplifiers
– transmitter power packs
– safety barriers
– keyboard and mouse
– monitor
– industrial PC

Lamps

Equipment protection level EPL Ga, Gb, Gc and EPL Da, Db, Dc
– LED hand lamps and tube lights 6 to 80 W
– LED tube lights for switchgear assemblies
– LED linear luminaires 18 to 58 W (also with integrated emergency lighting)
– flameproof LED-tubes (Replacement for fluorescent tubes)
– signal towers
– reflector lamps
– safety lighting
– flashing lamps
– boiler flange lamps

Electric heaters for industrial applications

– heating of air and gases (up to 100 bar)
– heating of liquids
– reactor heating systems (HT installations)
– heating of solids
– special solutions

Pipe and tank trace heating systems

– heating cables
  · heating cables with fixed resistors
  · mineral-insulated heating cables
  · self-limiting heating cables
– site installation
– temperature monitoring systems
  · thermostats and safety temperature limiters
  · electronic temperature controllers and safety cutouts
  · remote controls for temperature controller
– resistance temperature detectors Pt-100
  Equipment protection level EPL Ga and Gb

Installation material

– temporary bonding
– earth monitoring systems
– terminals and junction boxes
– motor protecting switches up to 63 A
– safety switches 10 to 180 A (indirect and direct tripping)
– plug-and-socket devices
– clean room power outlets
– control and indicating devices
– signalling device
– customized control stations
– cable reels (max. 3 flange sockets)
– cable glands
– fastening material

Accredited inspection body (SIS 0145)

Extremely strict inspections are carried out to guarantee the correct operation and safety of installations in hazardous areas. We carry out both professional initial inspections and periodic inspections. These consist of a documentation and organisation check and a technical inspection.

Service Facilities according to IECEx Scheme

As an IECEx Scheme service facility we are qualified to carry out repairs, overhauling and regeneration work all over the world – even on equipment from other manufacturers.

thuba®

THE EXPLOSIONPROOFING COMPANY

thuba Ltd.
CH-4002 Basel

Production:
Stockbrunnenrain 9, CH-4123 Allschwil

Phone +41 61 307 80 00
Fax +41 61 307 80 10
customer.center@thuba.com
www.thuba.com