



# 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](http://www.iecex.com)

Certificate No.: **IECEx PTB 20.0018X**

Page 1 of 4

Certificate history:

Status: **Current**

Issue No: 1

[Issue 0 \(2022-02-08\)](#)

Date of Issue: **2023-05-26**

Applicant: **nVent Thermal Belgium N.V**  
**Research Park Haasrode - Zone 2**  
**Romeinse Straat 14**  
**B-3001 Leuven**  
**Belgium**

Equipment: **Integrated Junction Box Connection System Type JB\*-PI-EP**

Optional accessory:

Type of Protection: **Increased safety 'eb', Protection by enclosure 'tb', Electrical resistance trace heating '60079-30-1'**

Marking: **Ex eb 60079-30-1 IIC T6...T4 Gb**

**Ex tb IIIC T85°C...T135°C Db**

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr. Ing. Detlev Markus**

Position:

**Head of Department "Explosion Protection in Energy Technology"**

Signature:  
(for printed version)

Date:  
(for printed version)

**25.05.23**

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](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**  
**Bundesallee 100**  
**38116 Braunschweig**  
**Germany**





# IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 20.0018X**

Page 2 of 4

Date of issue: **2023-05-26**

Issue No: 1

Manufacturer: **nVent Thermal Belgium N.V**  
Research Park Haasrode - Zone 2  
Romeinse Straat 14  
B-3001 Leuven  
Belgium

Manufacturing locations: **nVent Thermal Belgium N.V**  
Research Park Haasrode - Zone 2  
Romeinse Straat 14  
B-3001 Leuven  
Belgium

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 60079-31:2022-01** 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

**IEC/IEEE 60079-30-1:2015** Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements  
Edition:1.0

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/PTB/ExTR22.0002/01**

Quality Assessment Reports:

**GB/BAS/QAR06.0030/09**

**GB/BAS/QAR07.0053/09**



# IECEx Certificate of Conformity

Certificate No.: IECEx PTB 20.0018X

Page 3 of 4

Date of issue: 2023-05-26

Issue No: 1

## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The integrated junction box connection system, made up of a junction box with one or more integrated pipe stands, can be used to connect polymer insulated heating cables type XPI or XPI-S directly to the power supply cables via terminals. Alternatively, the same concept can be utilized to splice 2 identically sized and shaped sets of polymer insulated heating cables, or to form a star point in case of three-phase configurations.

The integrated junction box connection system is certified for the use in Zone 1 (21) and Zone 2 (22).

Further details about technical details and nomenclature see Annex.

## SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The circuit length, maximum allowed power levels, circuit breaker size and the maximum sheath temperature has to be verified per nVent Thermal's design software such as Trace Calc Pro.
2. To be able to use the JB\*-PI-EP connection system safely, the restrictions of power as a function of pipe temperatures and max ambient listed in the instructions has to be followed.
3. For the installation of the power supply, a power cable and a certified cable gland with a continuous temperature resistance of minimum +90 °C has to be used.
4. Only Polymer insulated cables type XPI or XPI-S with the specified cable diameter have to be installed. It is required to ensure the appropriate resistance to mechanical damage of the cable.
5. The instructions of the manufacturer have to be followed.



# IECEX Certificate of Conformity

Certificate No.: IECEx PTB 20.0018X

Page 4 of 4

Date of issue: 2023-05-26

Issue No: 1

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Correction of the type designation of the polymer-insulated heating cables and junction boxes.

**Annex:**

[COCA\\_PTB\\_200018\\_I1.pdf](#)



Applicant: nVent Thermal Belgium N.V  
Romeinse straat 14  
3001 Leuven  
Belgium

Electrical Apparatus: Integrated Junction Box Connection System  
Type JB\*-PI-EP

### Description

The integrated junction box connection system, made up of a stand and junction box, can be used to connect polymer insulated heating cables type XPI or XPI-S directly to the power supply cables via terminals. Alternatively, the same concept can be utilized to splice 2 identically sized and shaped sets of polymer insulated heating cables, or to form a star point in case of three-phase configurations.

The integrated junction box connection system is certified for the use in Zone 1 (21) and Zone 2 (22).

Based on the cable type and configuration, three different systems are covered in this certificate:

- JBS-PI-EP: a junction box with integrated pipe stand designed for the connection of the heating cables type XPI-8000 (XPI-S) up to XPI-50 (XPI-S) to a mono-phase power supply having two heating cable sections and a three core power cable inside the box (LN + PE)
- JBM-PI-EP: a junction box with integrated pipe stand designed for:
  - Creating splice arrangements of XPI-1000 (XPI-S-1000) up to XPI-1.8 (XPI-S-1.8) heating cables (hot to hot with 4 heating cable sections inside the box).
  - The power connection of XPI-1000 (XPI-S-1000) up to XPI-1.8 (XPI-S-1.8) heating cables to a mono-phase (LN + PE) or three-phase power supply having maximum three heating sections and a four core power cable inside the box (L1, L2, L3 + PE).
  - The creation of a star point (end box) for a three-phase star system with the heating cables XPI-1000 (XPI-S-1000) up to XPI-1.8 (XPI-S-1.8) having three heating cable sections inside the box.
- JB-SPLICE-PI-E: a junction box with two integrated stands designed for splicing mono phase and three-phase star systems for the heating cables XPI-1000 (XPI-S-1000) up to XPI-1.8 (XPI-S-1.8) having a total of max. six heating sections inside the box.



### Technical data

	JBS-PI-EP	JBM-PI-EP	JB-SPLICE-PI-E
Ambient temperature	-55 °C to +56 °C		
IP Rating	IP66		
Heating cables XPI or XPI-S	8000 to 50	1000 to 1.8	1000 to 1.8
Cable cross section	0.5 mm <sup>2</sup> to 16 mm <sup>2</sup> (solid) or 25 mm <sup>2</sup> (stranded)		
Max. rated voltage*	IEC 800 Vac CSA US 600 Vac		
Max. rated current**	IEC 76 A CSA US 85 A		

\*subject to protection and max. permissible rated current, max. permissible temperature of the surface to be heated; see data sheets and operating instructions of the manufacturer.

\*\*max. permissible rated current depends on the ambient temperature and the pipe temperature; see data sheets and operating instructions of the manufacturer.

### Allowed configurations

JBS-PI-EP:	Mono-phase power supply Mono-phase end box (end termination)
JBM-PI-EP:	Mono-phase power supply Three-phase power supply Three-phase star point (end termination) Mono-phase splice
JB-SPLICE-PI-E:	Mono phased splice Tri phased splice



## Nomenclature

JB	*	PI	EP
0	1	2	3

0	JB – Junction Box connection system		
1	S	for connection of 2 XPI heating cables in the range from XPI-8000 to XPI-50	
	M	with PI-JBM-S grommet. Suitable for up to 4 XPI heating cables in the range from XPI-1000 to XPI-4,4	
		with PI-JBM-L grommet. Suitable for up to 4 XPI heating cables in the range from XPI-2,9 to XPI-1,8	
	SPLICE	with PI-JBM-S grommet. Suitable for up to 4 XPI heating cables in the range from XPI-1000 to XPI-4,4	
		with PI-JBM-L grommet. Suitable for up to 4 XPI heating cables in the range from XPI-2,9 to XPI-1,8	
2	PI - Boxes designed for PI Direct		
3	EP - Boxes equipped with internal conductive earth plate (galvanized steel)		
	E – no special meaning		

## Notes for installation

1. The circuit length, maximum allowed power levels, circuit breaker size and the maximum sheath temperature has to be verified per nVent Thermal's design software such as Trace Calc Pro.
2. To be able to use the JB\*-PI-EP connection system safely, the restrictions of power as a function of pipe temperatures and max ambient listed in the instructions has to be followed.
3. For the installation of the power supply, a power cable and a certified cable gland with a continuous temperature resistance of minimum +90 °C has to be used.
4. Only Polymer insulated cables type XPI or XPI-S with the specified cable diameter have to be installed. It is required to ensure the appropriate resistance to mechanical damage of the cable.
5. The instructions of the manufacturer have to be followed.