



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 BAS 06.0028X	Page 1 of 5	<u>Certificate history:</u>
Status:	Current	Issue No: 8	Issue 7 (2019-03-26)
Date of Issue:	2020-05-04		Issue 6 (2017-07-13)
Applicant:	Hawke International A Division of Hubbell Ltd. A member of the Hubbell Group of Companies Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA United Kingdom		Issue 5 (2015-09-29)
Equipment:	PL6** Range of Junction Boxes		Issue 4 (2014-02-11)
Optional accessory:			Issue 3 (2012-04-30)
Type of Protection:	Increased Safety, Dust Protection by Enclosure and Intrinsic Safety		Issue 2 (2010-11-25)
Marking:	See schedule		Issue 1 (2010-07-07)
			Issue 0 (2006-08-11)

Approved for issue on behalf of the IECEx
Certification Body:

R S Sinclair

Position:

Technical Manager

Signature:
(for printed version)

M Powney
4/5/20

M POWNEY
Certification
Manager

Date:

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom





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Manufacturer: **Hawke International**
A Division of Hubbell Ltd.
A member of the Hubbell Group of Companies
Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA
United Kingdom

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 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
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 Reports:

[GB/BAS/ExTR06.0033/00](#)
[GB/BAS/ExTR12.0113/00](#)
[GB/BAS/ExTR18.0266/00](#)

[GB/BAS/ExTR10.0155/00](#)
[GB/BAS/ExTR15.0222/00](#)
[GB/BAS/ExTR20.0080/00](#)

[GB/BAS/ExTR10.0270/00](#)
[GB/BAS/ExTR17.0099/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0061/08](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The PL6** Range of Junction Boxes comprises the type ZPL6** range of empty glass filled polyester enclosures, covered by IECEx BAS 06.0027U Exe II, fitted with a variety of different terminal arrangements.

All the terminals are covered by their own component certificates and are coded Exe II. Drawing D9160, held on Baseefa General Technical File 0500, gives details of the permitted terminals, their rated conductor sizes and their maximum permitted current ratings when used in this application. Note that the ratings for junction box use may be lower than the maximum ratings given in the terminal certificate.

The actual terminals fitted to each junction box will be listed in the schedule of the instruction sheet supplied with the junction box. The method of calculating the overall rating of the junction box, according to the ambient temperature range and temperature class, is given with the full equipment description in Annexe 1 to this certificate.

Marking

Ex eb IIC T (see schedule) Gb
Ex tb IIIC T80°C Db
Tamb (see schedule)

or

Intrinsic Safety junction boxes:

Ex ib IIC T6 Gb
Ex ib IIIC T80°C Db
Tamb (see schedule)

or

Ex ia IIC T6 Ga
Ex ia IIIC T80°C Da
Tamb (see schedule)

Alternative Marking Option ~ For commercial purposes to suit the end users' application:

The Gas Group code in the marking may be changed from IIC to that of either IIA or IIB on all products.

The Dust Group code in the marking may be changed from IIIC to that of either IIIA or IIIB on all products.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Unused entry holes must be fitted with stopping plugs as listed on the ZPL6 component certificate IECEx BAS 06.0027U. The operating temperature range and Ingress Protection rating of the enclosure is limited to that of the stopping plug fitted.
2. Any breathing and draining device as listed on the ZPL6** component certificate IECEx BAS 06.0027U may be fitted. The breather/drain devices must be installed in their correct orientation in either the bottom face of the junction box. The operating temperature range and Ingress Protection rating of the junction box is limited to that of the breather/drain device fitted.
3. All terminal screws, used and unused, shall be fully tightened down by the end user.
4. Insulation of conductors must extend to within 1mm of the metal of the terminal throat unless specified otherwise on the terminal certificate.
5. No more than one single or multi-stranded lead shall be connected to either side of any terminal unless multiple conductors have been joined in a suitable manner, e.g. two conductors into a single insulated bootlace ferrule, or any method indicated on the terminal certificate.
6. Terminals and their accessories shall be installed in such a manner that the creepage distances and clearances between the terminal and adjacent components, enclosure walls and covers comply with the requirements of IEC 60079-7 and IEC 60079-11 for the rated voltage of the equipment.
7. Terminal temperatures must not exceed the operating range specified on the component certificate for the terminal.



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8.All terminals, and accessories such as cross-connectors, shall be installed in accordance with the terminal manufactures instructions. Hawke International will supply the relevant terminal manufacturer's instructions with each junction box covered by this certificate.

9.The maximum voltage, current and dissipated power shown on the rating label must not be exceeded.

10.When connecting conductors of cross section below the maximum allowed for the particular terminal then the maximum amps per pole must be reduced in-line with the maximum amps permitted for a terminal equivalent to the conductor size fitted e.g. If a terminal that can take a 10mm² conductor at 40Amps is fitted with a 4mm² conductor then the current shall be reduced to a maximum of 22Amps, or the rating marked on the apparatus label, whichever is the lower.

11. When label fixing is by screws complete with Nyloc nuts then the Ingress Protection Rating is IP66.

12. Unused entries may be fitted with alternative stopping plugs and or breather drains to those listed in the schedule. The user is responsible for ensuring that the protection concept, temperature class and relevant IP rating are maintained.

13.When fuse terminals are fitted, the low ambient temperature is limited to -25°C and the junction box becomes a defined arrangement.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 8.1

For commercial purposes to suit the end users' application, the manufacturer has requested an optional alternative Gas and Dust Group marking code.

The Gas Group code in the marking may be changed from IIC to that of either IIA or IIB on all products.

The Dust Group code in the marking may be changed from IIIC to that of either IIIA or IIIB on all products.

ExTR: **GB/BAS/ExTR20.0080/00**
(This report is held on PL6, IECEx BAS 06.0028X)

File Reference: **20/0220**

The PL6** Range of Junction Boxes comprises the type ZPL6** range of empty glass filled polyester enclosures, covered by IECEx BAS 06.0027U Ex eb IIC and Ex tb IIC, fitted with a variety of different terminal arrangements.

All the terminals are covered by their own component certificates and are coded Exe II or Ex eb II. Drawing D9160, held on Baseefa General Technical File 0500, gives details of the permitted terminals, their rated conductor sizes and their maximum permitted current ratings when used in this application. Note that the ratings for junction box use may be lower than the maximum ratings given in the terminal certificate.

The terminals are used within their relevant temperature range, voltage and current limitations, and fitted in accordance with IEC 60079-7 with regard to creepage distances and clearances by Hawke International. A specified partitioning arrangement allows for the termination of intrinsically safe (i.s.) circuits and non i.s. circuits within the same junction box. When i.s. circuits are present, an additional label is fitted to the outside of the junction box stating 'INTRINSICALLY SAFE CIRCUITS ENCLOSED'.

The maximum power dissipation within each junction box is as follows:

BOX TYPE	Maximum Power Dissipation (Watts)																		Max. Cable Length per Terminal (M)
	T _{rating}	T _{dust}	T _{amb}	T _{rating}	T _{dust}	T _{amb}	T _{rating}	T _{dust}	T _{amb}	T _{rating}	T _{dust}	T _{amb}	T _{rating}	T _{dust}	T _{amb}	T _{rating}	T _{dust}	T _{amb}	
	T6	80°C	-60 +40°C	T6	80°C	-60 +55°C	T6	80°C	-60 +65°C	T5	95°C	-60 +40°C	T5	95°C	-60 +55°C	T5	95°C	-60 +65°C	
PL612	4.1			2.5			1.5			5.6			4.1			3.0			0.127
PL615	6.4			4.0			2.4			8.8			6.4			4.8			0.175
PL620	11.4			7.1			4.2			15.6			11.4			8.5			0.240
PL626	11.4			7.1			4.2			15.6			11.4			8.5			0.275
PL630	20.8			13.0			7.8			28.6			20.8			15.6			0.365
PL642	20.8			13.0			7.8			28.6			20.8			15.6			0.432
PL644	20.8			13.0			7.8			28.6			20.8			15.6			0.528

The maximum number of terminals which may be fitted into each junction box is calculated using the following formula:

$$\text{Power} = I^2 \times N (R_t + R_c) \text{ Watts}$$

Where:

I = Actual current through the conductor up to the maximum permitted certified current of the terminal when fitted in a junction box (Amps).

N = Number of terminals

R_t = Terminal resistance (Ohms at 20 DegC)

R_c = Resistance of one conductor (Ohms at 20 DegC) when using a maximum diagonal cable length listed in the above table.

Earth facilities and cable entries are described on the component certificate for the empty enclosures IECEx BAS 06.0027U.

A suitable certified internal rail mounted earth terminal may be used. If a 'clean earth' is required a rail mounted power terminal may be used. (Earth terminals are not considered to contribute to the power dissipation.)

When required, a component certified breather, drain or breather-drain may be fitted to the junction box as specified on the component certificate IECEx BAS 06.0027U.

The certification marking may be on a label that is screwed, screws complete with Nyloc nuts, riveted, high bond tape secured, or on a self-adhesive backed label. Alternatively, the marking may be laser etched on the lid.

Junction boxes used for Intrinsically Safe applications:

When required, the Ex eb / Ex tb marked junction box may be used for intrinsically safe (I.S.) applications. It shall be fitted with an additional external label stating 'Intrinsically Safe Circuits Enclosed'. The I.S. terminals may be blue in colour to suit the application.

When required, junction boxes containing Ex e terminals may be used for both Ex e circuits and Ex i intrinsically safe (I.S.) circuits provided the relevant barrier or air gap is included and an additional external label stating 'Intrinsically Safe and Non- Intrinsically Safe circuits enclosed'. The I.S. terminals may be blue in colour to suit the application.

For commercial purposes to suit the application, the junction boxes may be marked with Intrinsically Safety (I.S.) Ex i coding. The manufacturer may opt to show both Ex eb / Ex tb and Ex i coding or just show Ex i coding on the certification label.

Marking options:

- When only Ex eb / Ex tb coding is marked on the certification label with the addition of a traffolyte label stating 'Intrinsically Safe circuits enclosed' or 'Intrinsically Safe and Non- Intrinsically Safe circuits enclosed', then the manufacturer shall show the ratings as the standard Ex eb wattage, current and voltage ratings.
- When both Ex eb / Ex tb and Ex i coding is marked on the certification label, then the manufacturer shall show the ratings as the standard Ex e wattage, current and voltage ratings.
- When only Ex i coding is marked on the junction box, then the manufacturer shall show the ratings as the reduced I.S. wattage, current and voltage ratings in-line with IEC 60079-11.

The marking is as follows:

Ex ib IIC T6 Gb
 Ex ib IIIC T80°C Db
 Tamb (see schedule)
 OR
 Ex ia IIC T6 Ga
 Ex ia IIIC T80°C Da
 Tamb (see schedule)

Optional Accessories as listed on the ZPL6 enclosures:

Manufacturer	Product	Type	Certificate Number	IP Rating
Hawke	Stopping Plug	375	IECExBAS12.0065X Baseefa12ATEX0095X -60°C to +75°C	IP66/67
Hawke	Stopping Plug	387	IECExBAS06.0029U Baseefa06ATEX0118U Nitrile o-ring: -60°C to +80°C Silicone o-ring: -60°C to +160°C	IP66/67
Hawke	Stopping Plug	390	IECExBAS11.0079X Baseefa11ATEX0157X Nitrile o-ring: -60°C to +80°C Silicone o-ring: -60°C to +160°C	IP66
Hawke	Stopping Plug	487	IECExBAS11.0071X Baseefa11ATEX0149X Nitrile o-ring: -60°C to +80°C Silicone o-ring: -60°C to +150°C	IP66/67
Hawke	Breather Drain	389 and 385	IECExBAS11.0075X Baseefa11ATEX0153X Nitrile o-ring: -60°C to +80°C Silicone o-ring: 389: -60°C to +150°C 385: -60°C to +80°C	IP66
Hawke	Int/Ext Earth	IES10, IES6/12, ES6/12	IECExBAS09.0013U Baseefa09ATEX0039U -60°C to +200°C	IP66