



IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0012X

Date of Issue: 2012-05-16

Issue No.: 0

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Manufacturer: **iLECSYS**
Unit 4 Tring Industrial Estate
Upper Ickenfield Way
Tring
HP23 4JX
United Kingdom

Manufacturing location(s):

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 electrical apparatus 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 : 2007-10 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 5
IEC 60079-31 : 2008 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
Edition: 1
IEC 60079-7 : 2006-07 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition: 4

This Certificate does not indicate compliance with electrical 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:

GB/BAS/ExTR12.0075/00

Quality Assessment Report:

GB/BAS/QAR12.0007/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The range of stainless steel terminal boxes is full described in the Annex to this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. All unused cable entries shall be fitted with a blanking element. The permitted component certified blanking elements for this terminal box are listed on this certificate above.
2. The end user must ensure that a minimum ingress protection of IP66/67 is achieved at each entry to the enclosure by use of a suitable IECEx/ATEX certified blanking element or cable entry device. The blanking element or cable entry device must be fitted with a sealing washer. If the ingress protection of the device fitted has a rating lower than IP66/67, then the overall rating of the enclosure will be restricted to the lowest rating. A minimum rating of IP54 is required for gas applications and a minimum of IP6X is required for dust applications.
3. When used in dust atmospheres any dust layers occurring shall have a maximum depth of no greater than 5mm.
4. The user may only drill entry holes into the terminal box faces and gland plates in the permitted positions verified by the manufacturer.
5. All terminal screws, used or unused, shall be fully tightened down by the end user.
6. The insulation of installed conductors must extend to within 1mm of the metal part of the given terminal throat, unless otherwise specified on the terminal component certificate.
7. All terminals and associated accessories i.e. cross-connectors shall be installed in accordance with the instructions of the terminal manufacturer and the terminal box.
8. Only one single or stranded conductor shall be connected to either side of any terminal fitted within the terminal box, unless otherwise indicated on the relating terminal component certificate.
9. The maximum current, voltage and dissipated power specified on the rating label must not be exceeded for the terminal box. When there is more than one type of terminal fitted the maximum current and voltage shown on the internal label given for each terminal must not be exceeded.
10. If a conductor is installed with a cross-sectional-area less than the rated cross-sectional-area for the given terminal (as shown on the terminal component certificate) then the maximum current value for the terminal shall be de-rated accordingly. Guidance should be taken from the manufacturer in this situation.



The range of stainless steel terminal boxes consists of a range of empty enclosures that are component certified under certificates IECEx DNV 11.0005U/DNV11ATEX98909U. The range of terminal boxes is listed in the table below;

Box Type	Dimensions
CuboX 121209	120 x 120 x 90mm
CuboX 151509	150 x 150 x 90mm
CuboX 152010	150 x 200 x 100mm
CuboX 202010	200 x 200 x 100mm
CuboX 252512	250 x 250 x 120mm
CuboX 203012	200 x 300 x 120mm
CuboX 204015	200 x 400 x 150mm
CuboX 303015	300 x 300 x 150mm
CuboX 403015	400 x 300 x 150mm
CuboX 404020	400 x 400 x 200mm
CuboX 406020	400 x 600 x 200mm
CuboX 508020	500 x 800 x 200mm

The ambient temperature range of the terminal boxes is -55°C to +40°C...+65°C dependant on the wattage rating, see below. The terminal boxes are rated IP66/67. When the enclosures are fitted with gland plates the boxes are rated IP66.

The enclosure is constructed with mounting feet on each side of the enclosure which are accessible with the lid in place.

Various entries can be put into the enclosures these can be clearance holes; each enclosure has permitted entry sizes and positions for each face. The terminal boxes may also be supplied with un-drilled walls and gland plates.

The following components below are permitted to be installed in the terminal boxes. The corresponding operating temperature range and IP rating of the components is taken into account when marking the certification plate of the equipment and thus affects the overall IP rating and ambient temperature range of the terminal boxes accordingly.

Component Description / Manufacturer	Component Type	Certificate No.	Operating Temperature Range / IP rating
Terminal Block / Weidmuller	SAK 2.5	IECEx KEM 06.0014U / KEMA97ATEX1798U	-50°C to +130°C (Melamine, KrG) -50°C to +80°C (Polyamide, PA 66)
	SAK 4		
	SAK 6N		
	SAK 10		
	SAK 16		
	SAK 35		

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Protective conductor Terminal Block / Weidmuller	EK 4 EK 10 EK 35	IECEX KEM 06.0014U / KEMA97ATEX1798U	-50°C to +130°C (Melamine, KrG) -50°C to +80°C (Polyamide, PA 66)
Terminal Block / Weidmuller	WDU 2.5 WDU 4 WDU 6 WDU 10 WDU 16 WDU 35 WDU 50N WDU 70N	IECEX ULD 05.0008U / KEMA98ATEX1683U	-50°C to +100°C
Protective conductor Terminal Block / Weidmuller	WPE 2.5 WPE 4 WPE 6 WPE 10		
Terminal Block / Weidmuller	WDK 2.5 WDK 2.5V WDK 2.5N WDK 2.5N V WDK 4N WDK 4N V	IECEX ULD 05.0008U / KEMA00ATEX2061U	
Protective conductor Terminal Block / Weidmuller	WDK 2.5DU/PE WDK 2.5N DU/PE WDK 4N DU/PE		
Terminal Block / Wieland	WK 4/D 1/2U WK 4/D 2/2U WK 4/D E/U WK 4 E/U WK 4 E/U V/B		-40°C to +80°C
Protective conductor Terminal Block / Wieland	WK 4/D 2/2 SL U		
Terminal Block / Wieland	WK 2.5/U WK 4/U WK 6/U WK 10/U WK 16/U WKN 35/U WKN 70/U WKN 150/U	KEMA02ATEX2114U	

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Protective conductor Terminal Block / Wieland	WK 4 SL/U	KEMA02ATEX2114U	-40°C to +80°C
	WK 6 SL/U		
	WK 10 SL/U		
	WK 16 SL/U		
	WK 35 SL/U		
	WK 70 SL/U		
Terminal Block / Weidmuller	BK 2/E	IECEX SIR 05.0035U / SIRA01ATEX3247U	-50°C to +130°C
	BK 3/E		
	BK 4/E		
	BK 6/E		
	BK 12/E		
Terminal Block / Weidmuller	MK 6	IECEX SIR 05.0037U / SIRA01ATEX3249U	-50°C to +130°C
Terminal Block / Weidmuller	AKZ 1.5	IECEX SIR 05.0038U / SIRA02ATEX3001U	-50°C to +130°C (Melamine, KrG) -50°C to +90°C (Polyamide, PA 66) -50°C to +110°C (Wemid) -50°C to +130°C (Stamin, KrS)
	AKZ 2.5		
	AKZ 4		
Protective conductor Terminal Block / Weidmuller	AKE		
Terminal Block / Weidmuller	DK 4	IECEX SIR 05.0041U / SIRA02ATEX3316U	-50°C to +90°C
	DK 4Q		
	DK 4QV		
Protective conductor Terminal Block / Weidmuller	DK 4Q / EN		
	DK 4QV / EN		
Terminal Block / Weidmuller	WFF 35	IECEX KEM 07.0053U / KEMA98ATEX1684U	-50°C to +80°C
	WFF 70		
	WFF 120		
	WFF 185		
	WFF 300		
<i>Protective conductor Secured Mantle Terminal * / WECO</i>	DFG-1-E-EN	PTB 03 ATEX 1117U	-20°C to +130°C
	DFG-2-E-EN		
	DFG-3-E-EN		
	DFG-5-E-EN		
Breather Drains / Raxton	CT range	IECEX SIR 08.0127U / Sira08ATEX1288U	-30°C to +80°C (Nitrile o-ring) / IP66
Breather Drains / Raxton	CV type	IECEX SIR 09.0096U / Sira10ATEX3279U	-20°C to +40°C / IP66

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Blanking elements / Redapt	PD-U and PD-E-4 type	IECEx SIR 05.0042U	PD-U -30°C to +180°C / IP66 PD-E -20°C to +40°C (Nitrile o-ring) / IP66
Adaptors and reducers / Redapt	AD-E-4 and RD-E-4	Sira99ATEX3116U	-20°C to +40°C / IP66
Breather Drains / Redapt	DP-E range	Sira99ATEX3050U	-50°C to +85°C / IP66
Reducer and adaptors / R.Stahl	Type 8295	PTB02ATEX1067U	-55°C to +130°C / IP54 (Gas atmospheres only)
Reducer and adaptors / Raxton	Type AR and BR, and AU and AX	Sira10ATEX1226U	-20°C to +40°C / IP66

* This terminal has a component certificate and is assessed only to EN 60079-0:2006 and EN 60079-7:2007. The terminal is only used as an earth connection facility.

Terminals can be mounted on horizontal rails, these are then in turn mounted to the base of the enclosure via a base plate secured to standoff pillars welded to the enclosure wall.

Various combinations of the terminals listed may be fitted within the terminal box, subject to calculation of the power dissipated within the enclosure. Power dissipated is calculated based on the actual rated currents, actual cable and terminal resistance values listed on the terminal schedule and with a cable length equal to the maximum diagonal length of the enclosure per terminal. These values are then used in 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 de-rated current of the terminal(Amps).

N = Number of terminals

R_t = Terminal resistance (Ohms at 20°C)

R_c = Resistance of one conductor (Ohms at 20°C) when using the maximum diagonal cable length

The maximum allowed power dissipation within the range of terminal boxes is as follows:

Enclosure Type	Maximum Wattage (W)		
	Ta +40°C	Ta +55°C	Ta +65°C
CuboX 121209	2.5	1.5	0.9
CuboX 151509	3.7	2.3	1.3
CuboX 152010	4.8	3.0	1.8
CuboX 202010	5.9	3.6	2.2
CuboX 252512	9.0	5.6	3.3
CuboX 203012	8.9	5.5	3.3
CuboX 204015	12.5	7.8	4.6
CuboX 303015	13.3	8.3	4.9
CuboX 403015	16.6	10.3	6.2
CuboX 404020	23.6	14.7	8.8
CuboX 406020	32.5	20.3	12.1
CuboX 508020	23.9	14.9	8.9

When more than one type or size of terminal is fitted (i.e. terminals of different rated currents) then an adhesive label is fixed to the inside of the terminal box which states each type of terminal fitted with its corresponding maximum current allowed. When this optional label is fitted the current rating on the main certification plate is replaced with a '-' marking.

In addition to the power terminals at least one earth terminal is fitted of a size equal to or greater than the largest size of live terminals.

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The following enclosure options are available:-

- internal/external M6 or M10 earth connection facilities can be fitted through any side face of the enclosure.
- Trade Agency markings can be incorporated into the certification plate, as per the relevant scheduled drawing.
- the enclosures can be constructed from mild steel and painted.