

# IA - CERTIFICATE



## SA Explosion Prevention CC

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT INCORPORATED IN THE MINE HEALTH AND SAFETY ACT) AND REGULATION 8(2) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT



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1620

**IA CERTIFICATE: SAEX S/07-086X**  
**JUNCTION BOXES**  
**31 July 2007**  
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**EXPIRY DATE: 31 July 2017**

### Description

The black junction box is manufactured from DMC. It is cylindrically shaped with a screw on lid on the top. Threaded gland entry holes are provided for on the sides of the box according to layouts indicated in the table below. Metallic inserts, internally bonded together, are used for the threaded part of the gland entry. External lugs, moulded as part of the main body, are provided for mounting the junction box. An 'O'-ring is used between the lid and main body of the enclosure to maintain the IP rating.

The box comes in two different options from a locking perspective.

The range of junction boxes consists of:

Type	Dimensions (Diameter x height) (mm)	Gland entries	Maximum allowed size of terminal block	Further description
Posifit 0	100 x 75	Four, positioned orthogonal around the side ( 4 x M20)	4mm <sup>2</sup>	---
Posifit Y Box 0	100 x 78	Three: two on one side specifically flattened underneath the lid. One on the opposite side ( 3 x M20)	4mm <sup>2</sup>	Only two mounting lugs are provided.
Posifit 1	120 x 80	Four, positioned orthogonal around the side ( 4 x M20)	16mm <sup>2</sup>	---
Posifit TX 1 / Lid	---	---	16mm <sup>2</sup>	The base of the box is similar to other Posifit 1 boxes. The lid is extended to add additional height.
Posifit H Box 1	120 x 80	Four: two on one side specifically flattened underneath the lid. Two on the other side specifically flattened underneath the lid. (4 x M20)	16mm <sup>2</sup>	Only two mounting lugs are provided.
Posifit Y Box 1	120 x 80	Three: two on one side specifically flattened underneath the lid. One on the opposite side ( 3 x M20)	16mm <sup>2</sup>	Only two mounting lugs are provided.
Posifit 2	140 x 100	Four, positioned orthogonal around the side ( 4 x M25)	50mm <sup>2</sup>	---

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Type	Dimensions (Diameter x height) (mm)	Gland entries	Maximum allowed size of terminal block	Further description
Posifit TX 2 / Lid	---	---	50mm <sup>2</sup>	The base of the box is similar to other Posifit 1 boxes. The lid is extended to add additional height.
Posifit Y Box 2	140 x 100	Three: two on one side specifically flattened underneath the lid. One on the opposite side ( 3 x M25)	50mm <sup>2</sup>	Only two mounting lugs are provided.
Posifit H Box 2	140 x 100	Four: two on one side specifically flattened under the highest side of the lid ( 2 x M25) Two, on opposite ends, orthogonal with the flat side (2 x M20)	50mm <sup>2</sup>	The lid is elevated on one side to approximately 30mm. The base plate is separately moulded and fixed with three Allan cap screws to the base of the box.
Posifit 3	210 x 150	Four, positioned orthogonal around the side (4 x M32)	70mm <sup>2</sup>	-
Posifit Y Box 3	210 x 150	Three: two on one side specifically flattened underneath the lid. One on the opposite side ( 3 x M25)	70mm <sup>2</sup>	Only two mounting lugs are provided.
20mm Three Way BE Box	105 x 110	Three on one side specifically flattened underneath the lid. (3 x M20)	4mm <sup>2</sup>	Only two mounting lugs are provided.
Posifit Angle Box	140 x angled	Two from bottom and two from side (M20 or M25)	35mm <sup>2</sup>	Base is angled

Only the following certified terminal blocks may be utilised in the junction boxes.

Manufacturer	Certificate number	Ex Rating	Type	Size
Cabur	CESI 03ATEX 073U	EEx e II	RP -.4	4 mm <sup>2</sup>
Weidmuller	SIRA 02ATEX3001U	EEx e II	AKZ 4	4 mm <sup>2</sup>
Weidmuller	KEMA 98ATEX1683U	EEx e II	WDU 2.5, 4, 6, 10, 16, 35 and 70	2,5 mm <sup>2</sup> , 4 mm <sup>2</sup> , 6 mm <sup>2</sup> , 10 mm <sup>2</sup> , 16 mm <sup>2</sup> , 35 mm <sup>2</sup> and 70 mm <sup>2</sup>
Cabur	CESI 01ATEX073U	EEx e II	CBD .2, .4, .6, .10, .16, .35, .50 and .70	2,5 mm <sup>2</sup> , 4 mm <sup>2</sup> , 6 mm <sup>2</sup> , 10 mm <sup>2</sup> , 16 mm <sup>2</sup> , 35 mm <sup>2</sup> and 70 mm <sup>2</sup>

The restriction on the installation of terminal blocks is not the amount of terminal blocks, but the current rating of conductors used, as the physical limitations of the junction box(es) restrict the amount of terminal blocks that may be installed.

**Marking**

The marking is moulded with the lid / cover, as follows:

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<b>Manufacturer</b>	:	CCG	
<b>Type</b>	:	(As in the table above)	
<b>IA No</b>	:	SAEx S/07-086X	
<b>Rating</b>	:	Term. ** mm <sup>2</sup> *** ET **** MAX 550V	
<b>Serial No.</b>	:	(See conditions of certification)	
<b>Standard and Ex Rating</b>	:	IEC / SANS 60529	IP66/68 (2m cont.)
		IEC / SANS 60079-0/7	Ex e II T6
		IEC / SANS 60079-15	Ex nA II T6
		IEC / SANS 61241-0/1	Ex tD A21 IP66/68 T70°C
		(-55°C ≤ Tamb ≤ 55°C)	
		Zones 1, 2, 21 & 22	
<b>Warning</b>	:	Wipe with damp cloth only.	
		Isolate elsewhere before opening.	

\*\* (Engraving of amount of terminal blocks incorporated)

\*\*\* (Engraving of size of terminal block(s) and applicable conductor to be used)

\*\*\* Amount of earth terminals.

On the inside of the lid a sticker is applied with the following information:

**HAZARDOUS AREA WARNING**

- Only Ex e II terminals as per type and current limitation allowed in special conditions of use (see certificate).
- Layout to be as per CCG instruction manual.

The serial number is engraved on the cover / lid and on the base of the enclosure to ensure traceability between parts.

**X - Special conditions of use**

- For units without the locking screw on the cover / lid the CCG supplied tool must be used to close and open the cover / lid.
- Terminal blocks may only be utilized on the applicable rail and must allow for sufficient space to make connections and to close the cover / lid.
- The clearance between terminal blocks and from the terminal blocks to any earthed / bonded metallic part must comply with IEC / SANS 60079-7 requirements for the applicable voltage of the terminal blocks. This requirement includes the use of the applicable partitions and end plates for the terminal blocks.
- The size of the conductor must comply with the approval / marking of the terminal block
- The current per circuit in the junction box is limited by the size of the conductor, as follows:

Conductor / terminal block size	Max. Current
2,5 mm <sup>2</sup>	11,90 A
4 mm <sup>2</sup>	15,86 A
6 mm <sup>2</sup>	20,33 A
10 mm <sup>2</sup>	28,26 A
16 mm <sup>2</sup>	37,68 A
35 mm <sup>2</sup>	61,98 A

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50 mm <sup>2</sup>	74,88 A
70 mm <sup>2</sup>	95,21 A

**Compliance:** The unit as described above and tested / examined in Test Report No.: **SAE<sub>x</sub> 07-086** is hereby certified Explosion Protected, Ex e II T6, Ex nA II T6, Ex tD A21 IP66/68 T70°C and is suitable for use in hazardous locations as stated below, as determined during tests and inspections conducted in accordance with the relevant requirements of SANS Standards:

**SANS (IEC) 60079-: “Electrical apparatus for explosive gas atmospheres”**

- Part 0 : 2005, edition 3 “General requirements”,
- Part 7 : 2007, edition 3 “Increased Safety ‘e’” and
- Part 15: 2001, edition 2 “Type of Protection ‘n’”.

**SANS (IEC) 61241: “Electrical apparatus for use in the presence of combustible dust”**

- Part 0: 2005, edition 1 “General requirements” and
- Part 1: 2005, edition 1 “Protection by enclosures ‘tD’”.

Locations	Zone1, 2, 21 and 22	Surface industry
Hazardous Frequency		Intermittent as could occur under normal / abnormal operations
Environment	Group II / gases and vapours Dust	Propane to Hydrogen Metallic and non-metallic dust
Limiting Temperature	T6 / T70°C	
Ambient temperature	-55°C to 55°C	

***The use of the apparatus in hazardous locations is subject to the following provision, which shall be adhered to:***

- i) SANS 10086 parts 1 and 2 requirements;
- ii) Any relevant requirements of the MHS Act or the OHS Act;
- iii) Codes of Practice enforced in terms of Regulations 21.17/2 of the Minerals Act, by the Chief Inspector of Mines;
- iv) Any restrictions and conditions enforced by the Chief Inspector of Mines, Principal Inspector (Group I equipment) or Chief Inspector of Factories (Group II equipment); and
- v) Any conditions mentioned in the above test report.

**Conditions of certification**

**According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).**



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SA EXPLOSION PREVENTION**