



Documentation

EX Junction Box EXJB

TÜV-A 18ATEX0051 X





Read the instructions prior to commencing any work As of: 06/2020 Item no.: 648202





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1. General

1.1 Information

These instructions provide important notes on using the junction box. Workplace safety requires all the safety and handling instructions specified in this manual to be adhered to.

Furthermore, any local regulations for preventing accidents at the site where the junction box is used and general safety instructions must be complied with.

1.2 Explanation of Symbols



In these instructions, warnings are marked with the adjacent symbol.

The signal word expresses the level of hazard.

DANGER:

Imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING:

Potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION:

Potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



INFORMATION:

Highlights useful tips, recommendations, and information.

1.3 Limitation of Liability

All information and instructions in this documentation have been compiled with consideration given to the applicable standards and regulations, the state of the art, and our longstanding experience.

SGB does not assume any liability in the case of:

- Noncompliance with these instructions
- Improper use
- Use by unqualified personnel
- Unauthorized modifications
- Connection to systems not approved by SGB

1.4 Copyright



The contents, texts, drawings, images, and other representations are copyrighted and subject to industrial property rights. Any misuse is punishable.

General



1.5 Warranty Conditions

We provide warranty for the junction box for a period of 24 months from the day of installation on site in accordance with our General Terms & Conditions.

The maximum warranty period is 27 months from our date of sale.

Warranty is subject to submission of the functional/test report on initial commissioning by qualified personnel.

The serial number of the junction box must be stated.

The obligation of warranty shall cease to exist in the case of - inadequate or improper installation

- improper use
- modifications/repairs without consent of the manufacturer

No liability is accepted for delivery parts that wear or are consumed prematurely due to their material properties or application (e.g., pumps, valves, seals, etc.). We do not assume responsibility for corrosion damage due to a humid installation site.

1.6 Customer Service

Our customer service is available for any inquiries.

For information on contacts please refer to our website <u>sgb.de</u> or the label of the leak detector.





- 2. Safety
- 2.1 Intended Use



- Operation of the junction box only in Zone 1, Zone 2 or outside of the EX area. As standard in the access chamber.
- Grounding and equipotential bonding in accordance with applicable regulations¹
- The device housing must be closed when in operation and the cable glands correctly tightened.
- Line cross sections and cable diameters must comply with the specifications of the documentation or the Agreement.

2.2 Obligation of the Operating Company



The EXJB junction box is used in a commercial environment. The operating company is therefore subject to statutory occupational safety obligations.

In addition to the safety instructions in this documentation, all applicable safety, accident prevention, and environmental regulations must be adhered to. In particular:

- Compiling a risk assessment and implementing its results in a directive
- Performing regular checks as to whether the directive is in compliance with the current standards
- The directive includes information on how to react to an alarm that might arise
- Arranging for an annual functional check

2.3 Qualification



WARNING!

Danger to humans and the environment in the case of inadequate qualification The personnel must be capable of independently recognizing and avoiding potential risks based on their qualifications.

Companies commissioning leak detectors should have completed relevant training with SGB, through SGB, or through its authorized representative.

National guidelines must be adhered to.

For Germany:

Technical service qualification for mounting, commissioning, and maintenance of leak detection systems.

¹ For example, in accordance with EN 1127

Safety



2.4 Personal Protective Equipment (PPE)

Personal protective equipment must be worn during work.

- Wear the necessary protective equipment for the work in question
- Note and comply with on-site PPE signs



Wear HV vest

Wear safety footwear

Entry in the "Safety Book"

Wear hard hat



Wear gloves - where necessary



Wear safety goggles - where necessary

2.4.1 Personal Protective Equipment for Systems that may be Subject to a Risk of Explosion

(i)

systems that may be subject to a risk of explosion. If work is performed in areas in which an explosive atmosphere must

The points listed here refer exclusively to safety when working with

- be expected, the <u>minimum</u> required equipment is as follows:
- Suitable clothing (risk of electrostatic charge)
- Suitable tools (in accordance with EN 1127)
- Suitable combustible gas indicator calibrated to the existing vaporair mixture (work should be performed only at a concentration of 50 % below the lower explosion limit²)
- Measuring equipment to determine the oxygen content of the air (Ex/O meter)

² Other countries' or companies' regulations may provide different percentages.



2.5 Fundamental Hazards



DANGER

From electric current

When working on the junction box, it must be disconnected from the power supply unless stated otherwise in the documentation.

Comply with relevant regulations regarding electrical installation, explosion protection (e.g., EN 60 079-17), if necessary, and accident prevention.



DANGER

From explosive vapor-air mixtures

Ensure there is no gas present prior to performing work

Comply with explosion regulations, e.g., German Ordinance on Industrial Safety and Health (Betriebssicherheitsverordnung, BetrSichV) (and/or Directive 1999/92/EC and the laws of the respective member states resulting from this) and/or others.



DANGER

From working in chambers

The leak detectors are mounted outside the access chambers. Pneumatic connection is usually performed inside the access chamber. The junction box described in this documentation is also usually mounted in the access chamber. Therefore, the chamber must be entered in order to complete the mounting process.

Before entering, the appropriate protective measures should be taken. Ensure no gas is present and that sufficient oxygen is available.

Technical Data



3. Technical Data

3.1 General Data

3.2 Electrical

	Dimensions and drilling pattern	see Appendix, section 9.1
	Weight	0.8 kg
	Storage temperature range	-40°C to +60°C
	Operating temperature range	-40°C to +60°C
	Housing protection class	IP 54
Data		
	Power supply Ex (e):	max. 275 V, 50 Hz, 10 A
	Cable diameter	5 10 mm
	Cable diameter equipotential bonding:	4 7 mm
	Conductor cross section max.	2.5 mm ²
	Overvoltage category	2
	Degree of soiling	II

3.3 Field of Application

Extension or distribution of max 2 power circuits to different consumers or participants.



Design 4.

4.1 Junction box Design



Interior view, shown here with the combination Ex(e) and Ex(i)

- 30 Housing
- 31 Terminals Ex(e)
- Terminals Ex(i) 32
- Separating element (here: folding hinge) Gore valve for housing ventilation 172
- 173

Design variations 4.2

The following designs are exemplary. Other combinations are possible.



Combination of 5 x Ex(i) and 3 x Ex(e) - e.g. VIMS





Distribution 6 x Ex(i)



Combination of 2 different circuits Ex(i), 3 each





Distribution 8 x Ex(i)



Combination of 2 different circuits Ex(i), 3 each

Mounting



5. Mounting of the junction box

5.1 Basic Instructions

- Prior to commencing work, the documentation must be read and understood. In case of ambiguities, please ask the manufacturer.
- Comply with the safety instructions in this documentation.
- Only qualified service companies may carry out the mounting.
- Comply with relevant regulations for prevention of accidents.
- Comply with explosion regulations (if required), e.g., BetrSichV (and/or Directive 1999/92/EC and the laws of the respective member states resulting therefrom) and/or others.
- Before entering inspection chambers, the oxygen content must be tested and the inspection chamber flushed if necessary.
- It must be ensured that the grounding network (if available) is set to the same potential as the equipotential bonding of the junction box.
- Follow the instructions regarding personal protective equipment (PPE) in sections 2.4 and 2.4.1.

5.2 Junction box

- (1) Wall mounting usually with screw anchors and plugs or mounting on a mounting plate with cylindrical screws.
- (2) Can be mounted in access or inspection chambers
- (3) For housing dimensions and drilling patterns, see section 9.1.
- (4) Check the integrity and cleanliness of the lid seal prior to closing the housing lid.
- (5) Tighten the lid screws with a torque from 1 to 2 Nm.
- (6) The cable gland may only be used when undamaged and clean.
- (7) It is not permitted to exert tensile strain on the cable gland.

5.3 Electrical Connection

- (1) Voltage specifications may not be exceeded
- (2) Lay the cables permanently
- (3) Observe the instructions of the power supply companies, national safety and accident prevention regulations, as well as mounting and set-up regulations (e.g. EN 60 079-14), along with established technology standards.



- (5) The equipotential bonding must be connected, i.e. the junction box must be integrated into the equipotential bonding on location. A clamp with the associated cable gland is provided for that.
- (6) Comply with cable diameters in the 5 to 10 mm range.
- (7) After insertion of the cable and completion of the connection, the nut of the cable gland must be tightened with 4 Nm.



5.3.1 Connecting the wires

- (1) Insert a screwdriver into the opening above the point where the cable should be inserted. This opens the tension spring of the terminal.
- (2) Insert the cable into the open terminal.
- (3) Hold the cable and remove the screwdriver.
- (4) Check cable for a tight fit and install more cables to the terminals using the same process.

Commissioning/Maintenance/Disposal



6. Commissioning



- (1) Only perform commissioning once the steps in chapter 5 "Mounting" have been fulfilled.
- (2) Only commission if
 - neither the cables nor the cable duct are damaged.
 - The cable gland is tightened with the specified torques.
 - Unused inputs are either replaced by a blind plug or cable replacement plugs are placed in the screw connection.
 - The cables are inserted correctly.

7. Maintenance

- (1) Visual inspection of integrity of the junction box.
- (2) Check for tears in the cable or the cable gland.
- (3) Visual inspection of damage to the seals.

8. Disposal

Observe national waste disposal regulations.

Properly dispose of contaminated components (possibility of gas release).

Properly dispose of electronic components.



9. Appendix

9.1 Dimensions and Drilling Pattern



Diameter of fixing screws:	≤ 4.0 mm
Head diameter of fixing screws:	≤ 7.5 mm

Appendix



9.2 EU Declaration of Conformity

We,

SGB GmbH

Hofstr. 10

57076 Siegen, Germany,

hereby declare in sole responsibility that the junction box

EXJB

is in conformity with the essential requirements of the EU directives listed below.

If the device is modified or used in a way that was not agreed with us, this declaration shall lose its validity.

Number/short title	Satisfied regulations
2014/34/EU Equipment for EX Areas	TÜV-A 19ATEX0117 with: EN 60 079-0: 2019 EN 60 079-7: 2015
	PTB 04 ATEX 1112 X (cable gland) with: EN 60 079-0: 2012 + A11: 2013 EN 60 079-31: 2014 EN 63 444: 2013
	Marking of the components: $\langle \widehat{fx} \rangle$ II 2 G Ex ib ie IIB T4 Gb
Named location with identi- fier	TÜV Austria Services GmbH 0408

Conformity is declared by:

1 ding

ppa. Martin Hücking (Technical Director)

As of: 10/2019



9.3 EX Certificate

						τū√	
				Certifica	ate	AUSTRIA	
III.	(1)	E	EU - TYPE	EEXAMINATIO	N CERTIFICAT		
	(2)	Equipment or Protective System Intended for use in potentially Explosive Atmospheres - Directive 2014/34/EU				(EX)	
	(3)	Certificate Number	er:	TÜV-A 18A1	TEX0051 X		
	(4)	Product: Serial no.:		Pressure sens Type EXDS	or	Online Verificatio	
	(5)	Manufacturer:		SGB GmbH			
-	(6)	Address:		Hofstraße 10 57076 Siegen GERMANY			
	(7)	This product and the documents th	This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.				
	(8)	TÜV AUSTRIA SERVICES GMBH, Notified Body number 0408, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.					
		The examination No. TUV-A 2018-	and test results TAD_000028.	are recorded in confider	ntial report		
	(9)	Compliance with with:	the Essential H	ealth and Safety Require	ments has been assured	by compliance	
		EN 60079-0:2012	2/corr. 2013	EN 60079-18:2015			
	(40)	except in respect	of those require	ements listed at item 18	of the Schedule.		
	(10)	Conditions of Use	e specified in the	e schedule to this certific	tes that the product is su ate.	bject to the Specifi	
	(11)	This EU - TYPE specified product supply of this prod	This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.				
	(12)	The marking of th	e product shall	include the following:			
		⟨Ēx⟩II 1/2 G Ex ma	a IIC T4 Ga/Gb		N	0	
		Filderstadt Ort <i>Place</i>		15.06.2018 Datum Date	Michael Re freigegeben approved	durch by	
	FM-INE-EX Rev. 06 ZTFK TÜV- 18ATEX00	S-ExG-0200f A A 51_2364_EN.docx "7	TÜV AUSTRI uszugsweise Vervielfä TÜV AUSTRIA S The duplication of this approval by TÜV A	A SERVICES GMBH Itigung nur mit Genehmigung des ERVICES GMBH gestattet focument in parts is subject to the USTRIA SERVICES GMBH"	Deutschstraße 10 AT-1230 Vienna Phone: + 49 711 722 336-18 Email: explosionsschutz@	tuv.at	
	Dere 44				Moh: www.tww.od.do	1000274201	

Appendix







Appendix





Legal notice

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