



Operating Instructions

Terminal box

> 8118



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2 General Information

2.1 Manufacturer

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2.2 Information about the Operating Instructions

ID NO.: 8118609300
Publication Code: S-BA-8118-02-en-15/06/2007
We reserve the right to make technical changes without notice.

2.3 Purpose of these instructions

Working in hazardous areas, the safety of personnel and plant depends on complying with all relevant safety regulations.

Assembly and maintenance staff working on installations therefore have a particular responsibility. They require precise knowledge of the applicable standards and regulations.

This introduction gives a brief summary of the most important safety measures. It supplements the corresponding regulations which the staff responsible must study.

3 Safety instructions

Use the device only for its intended purpose.

Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision.

Any alterations and modifications to the device impairing its explosion protection are not permitted.

Fit and operate the terminal box only if it is clean and undamaged.

Observe the following during installation and operation:

- ▶ National safety regulations
- ▶ National accident prevention regulations
- ▶ National installation regulations
- ▶ Generally recognized technical regulations
- ▶ Safety guidelines in these operating instructions
- ▶ Characteristic values and rated operating conditions on the rating and data plates
- ▶ Additional instruction plates fixed directly to the device

Any damage can invalidate the Ex-protection.

4 Conformity to standards

Each device complies with the following standards and regulations:






- ▶ Directive 94/9/EC
- ▶ EMC Directive No.: 89/336/EEC
- ▶ EN/IEC 60079-0, EN/IEC 60079-7, EN/IEC 60079-11, EN/IEC 60079-18, EN/IEC 61241-0, EN/IEC 61241-1

Device type 8118 is suitable for use in hazardous areas, zones 1, 2 and zones 21, 22.

5 Function

The polyester resin terminal boxes are used for the transfer and distribution of electrical energy.

6 Technical Data

Type	8118/..2	8118/..4
Version	Terminal box with equipment fuse	Terminal box without equipment fuse
Explosion protection		
Gas explosion protection	Ex e  II 2 G Ex em II T6 / T5 / T4 Ex i  II 2 G Ex ia/ib IIA / IIB / IIC T6 / T5	Ex e  II 2 G Ex em II T. 1) 1) Fuse ≤ 2 A T6 > 2 A to ≤ 5 A T5 $\leq 6,3$ A T4
Gas explosion protection (IECEX)	Ex em II T6, T5 or T4 Ex ia/ib IIA, IIB, IIC T6 or T5	
Dust explosion protection	 II 2 D Ex tD A21 IP 66 T80 °C, T95 °C	 II 2 D Ex td A21 IP 66 T80 °C, T95 °C, T130 °C
Dust explosion protection (IECEX)	Ex tD A21 IP66 T 80 °C, T 95 °C or T 130 °C	
Certificates		
Gas explosion protection	PTB 99 ATEX 3103	
Dust explosion protection	LCIE 02 ATEX 6240	
IECEX certification	IECEX PTB 06.0026	
Housing	Polyester resin, dark grey ~ RAL 7012, impact strength > 7 Nm, material self-extinguishing and flame resistant IEC 92-1, UL 94, ASTM D 635-77	
Gaskets	Polyurethan, foam	
Cover fixing	4 x M 4 cheese head screw, stainless steel	
Degree of protection	IP 66 / IP 67	
Rated voltage	max.1100 V AC/DC with special cable glands	max. 550 V AC/DC with special cable glands
Ambient temperature	- 50 °C ... + 55 °C	

Fitting in terminal boxes

Maximum number of cables related to conductor cross-section and number of terminals under load for temperature class T6 when $T_a \leq 40$ °C or T5 when $T_a \leq 55$ °C:

Types 8118/112 and 8118/114

Rated operating current	max. number of cables *) for conductor cross-section		
	1.5 mm ²	2.5 mm ²	4 mm ²
3 A	16 **)	any	any
6 A	16 **)	12 **)	any
10 A	16 **)	12 **)	12 **)
16 A	6 **)	12 **)	12 **)
20 A	-	6 **)	12 **)
25 A	-	-	8 **)

Types 8118/122 and 8118/124

Rated operating current	max. number of cables ^{*)} for conductor cross-section			
	1.5 mm ²	2.5 mm ²	4 mm ²	6 mm ²
3 A	26 ^{**)}	any	any	any
6 A	26 ^{**)}	26 ^{**)}	any	any
10 A	26 ^{**)}	26 ^{**)}	22 ^{**)}	any
16 A	6 ^{**)}	14 ^{**)}	22 ^{**)}	20 ^{**)}
20 A	-	6 ^{**)}	22 ^{**)}	20 ^{**)}
25 A	-	-	8 ^{**)}	20 ^{**)}
35 A	-	-	-	4 ^{**)}

Types 8118/132 and 8118/134

Rated operating current	max. number of cables ^{*)} for conductor cross-section				
	1.5 mm ²	2.5 mm ²	4 mm ²	6 mm ²	10 mm ²
3 A	36 ^{**)}	any	any	any	any
6 A	36 ^{**)}	36 ^{**)}	any	any	any
10 A	26 ^{**)}	36 ^{**)}	32 ^{**)}	any	any
16 A	6 ^{**)}	18 ^{**)}	32 ^{**)}	24 ^{**)}	any
20 A	-	6 ^{**)}	22 ^{**)}	24 ^{**)}	20 ^{**)}
25 A	-	-	8 ^{**)}	24 ^{**)}	20 ^{**)}
35 A	-	-	-	6 ^{**)}	20 ^{**)}
50 A	-	-	-	-	4 ^{**)}

^{*)} Each cable brought in and each internal connecting cable counts as a conductor. Jumpers and earthing conductors are not counted.

^{**)} When using these table values, account may be taken of the simultaneity factor or load factor to IEC 439. The use of a mixture of fittings with circuits of different cross-sections is possible by pro rata use of the different table values.

Example (8118/122):

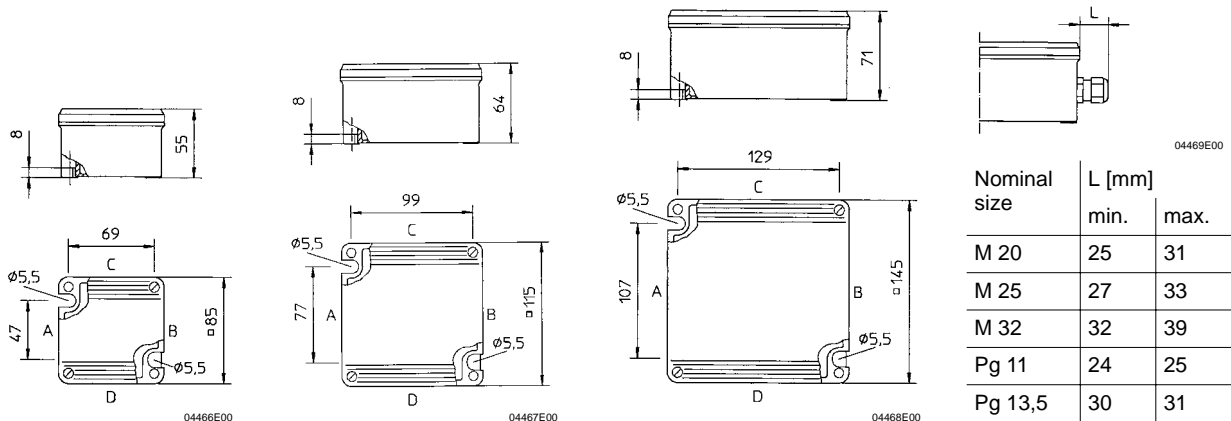
Cross-section	Current	No. of cables	Loading
1.5 mm ²	10 A	10 (of 16)	63 %
2.5 mm ²	16 A	4 (of 12)	33 %
Sum			96 % < 100 %

Installing fuses (8118/1.3 and 8118/1.4)

Fuse-base	Temperature class	T _a	Max. permissible surface temperature
≤ 2 A	T6	40 °C	T80 °C
> 2 A ... ≤ 4 A	T5	55 °C	T95 °C
> 4 A ... ≤ 5 A	T5	40 °C	T95 °C
> 5 A ... < 6.3 A	T4	55 °C	T130 °C

7 Fitting

Dimension drawings (all dimensions in mm) - subject to alterations



8118/1.
Terminal box

8118/2.
Terminal box

8118/3.
Terminal box

Additional dimensions for
cable entries 8161

When explosion-protected equipment is exposed to the weather, it is advisable to provide a protective cover or wall.

8 Installation

Mains connection

- ▶ The conductors must be carefully connected.
- ▶ The conductor insulation must reach to the terminal. The conductor itself must not be damaged (nicked) when removing the insulation.
- ▶ Ensure that the maximum permissible conductor temperatures are not exceeded by suitable selection of cables and means of running them.
- ▶ Please also refer to the terminal details in the technical data.

Earth connection:

The earth connection must be made in all circumstances.

9 Commissioning

Before commissioning the device, ensure that

- ▶ it has been correctly installed
- ▶ it is not damaged
- ▶ it contains no foreign bodies
- ▶ the connection area is clean
- ▶ the connection is correctly made
- ▶ the cables have been correctly brought in
- ▶ all screws and nuts are fully tightened
- ▶ the cable glands are securely tightened
- ▶ unused cable glands are sealed with plugs certified to Directive 94/9/EC, and unused holes are sealed by stopping plugs certified to Directive 94/9/EC.

10 Repairs and Maintenance

Repairs and maintenance work on the devices may only be carried out by appropriately authorized and trained personnel.

Before work commences, the devices must be disconnected from the mains.

⚠ WARNING

Observe the relevant national regulations for your country!

The following points must be tested during maintenance:

- ▶ Clamping screw holding the cables is securely seated
- ▶ Operating temperature (by EN/IEC 60079-0)
- ▶ Cracks in plastic enclosures
- ▶ Damage to the gaskets

⚠ WARNING

The device may only be cleaned with a damp cloth!

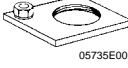

11 Accessories and spare parts

⚠ WARNING

Use only original spare parts as well as original accessories made by R. STAHL Schaltgeräte GmbH.

⚠ WARNING

The fuses fitted may only be replaced by fuses with matching characteristics. Any infringements can change the **temperature class** of the whole box.

Designation	Illustration	Description	Ordering code	Weight kg	
Brass plate with thread		For earth continuity when using metal glands drillings are drilled to order;		--	
		for glands can be fitted into enclosure			
		size 1 size 2 size 3			
		1 x M 20 x 1,5 Side C/D Side C/D Side C/D	8118013550	0,030	
		1 x M 25 x 1,5 1 x M 32 x 1,5 1 x M 20 x 1,5	Side C/D Side C/D	8118010550	0,060
		2 x M 25 x 1,5 2 x M 32 x 1,5	Side C/D Side C/D Side C/D	8118011550 8118012550	0,080 0,140
Fuse-base		Type 8560 see current catalogue		--	

12 Disposal

⚠ WARNING

- ▶ Observe the national standard for refuse disposal.

13 Type examination certificate (Page 1)

UNCERTIFIED TRANSLATION

Physikalisch-Technische Bundesanstalt

Braunschweig and Berlin

(1) EC-TYPE-EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC Type Examination Certificate Number



PTB 99 ATEX 3103

(4) Equipment: Junction and Terminal Boxes Type 8118/...-...

(5) Manufacturer: R. Stahl Schaltgeräte GmbH

(6) Address: Bergstraße 2, D-74653 Künzelsau

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 99-30041.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50 014:1997

EN 50 019:1994

EN 50 020:1994

(10) If "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:



II 2 G EEx e II T6/T5 or EEx ia/ib IIA/IIB/IIC T6/T5

Zertifizierungsstelle Explosionsschutz

Braunschweig, 19 April 1999

By order:

signed: U. Engel

L.S.

Dr.-Ing. U. Engel
Regierungsdirektor

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.




Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

14 Declaration of conformity

EG-Konformitätserklärung
 EC-Declaration Of Conformity
 CE-Déclaration De Conformité



PTB 99 ATEX 3103

<p>Wir (we; nous)</p> <p>R. STAHL SCHALTGERÄTE GMBH, Bergstraße 2, D-74653 Künzelsau</p>	
<p>erklären in alleiniger Verantwortung, daß das Produkt</p> <p>hereby declare in our sole responsibility, that the product</p> <p>déclarons de notre seule responsabilité, que le produit</p>	<p>Abzweigdose und Klemmenkasten Typ 8118/...-... Junction Box and Terminal Box Type 8118/...-... Boîte de Dérivation et de Raccordement Type 8118/...-...</p>
<p>auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder normativen Dokumenten übereinstimmt</p> <p>which is the subject of this declaration, is in conformity with the following standard(s) or normative documents</p> <p>auquel cette déclaration se rapporte, est conforme aux norme (s) ou aux documents normatifs suivants</p>	
<p>Bestimmungen der Richtlinie terms of the directive prescription de la directive</p>	<p>Titel und/oder Nr. sowie Ausgabedatum der Norm title and/or No. and date of issue of the standard titre et/ou No. ainsi que date d'émission des normes</p>
<p>94/9 EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen 94/9 EC: Equipment and protective systems intended for use in potentially explosive atmospheres 94/9 CE: Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles</p>	<p>EN 50014:1997 EN 50019:1994 EN 50020:1994 EN 60529:1991</p>
<p>89/336 EWG: Elektromagnetische Verträglichkeit 89/336 EEC: Electromagnetic compatibility 89/336 CEE: Compatibilité électromagnétique</p>	<p>EN 60947-1:1997</p>
<p>Künzelsau, 07.12.1999</p> <p>Ort und Datum Place and date lieu et date</p>	<p> Geschäftsbereichsleiter Divisional Director Directeur de Division</p>
	<p> Leiter Qualitätsmanagement Head of quality management dept. Chef du dept.assurance de qualité</p> <p></p>

TXV 07/98



