



# Operating Instructions

## Cable glands

- > 8161/5
- > 8161/6



## 1 Contents

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1	Contents .....	2
2	General Information .....	2
3	Safety instructions .....	3
4	Conformity to Standards .....	3
5	Function .....	3
6	Technical Data .....	4
7	Assembly .....	5
8	Commissioning .....	5
9	Maintenance .....	5
10	Accessories and Spare Parts .....	6
11	Disposal .....	7
12	CE prototype test certificate (current supplement) .....	8
13	CE Declaration of Conformity .....	9

## 2 General Information

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### 2.1 Manufacturer

R. STAHL Schaltgeräte GmbH  
 Am Bahnhof 30  
 74638 Waldenburg, Germany

Phone: +49 7942 943-0  
 Fax: +49 7942 943-4333  
 Internet: [www.stahl.de](http://www.stahl.de)

### 2.2 Information regarding the Operating Instructions

ID NO.: 138558 / 8161605300  
 Publication Code: S-BA-8161/5/6-08-en-19/01/2009  
 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. These instructions give a brief summary of the most important safety measures. They supplement the corresponding regulations which the staff responsible must study.

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### 3 Safety instructions

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Use the cable gland only for its intended purpose.

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

No changes to the device impairing its explosion protection are permitted.

Use the cable glands only if they are clean and undamaged.

**Observe the following during installation and operation:**

- ▶ national safety regulations
- ▶ national accident prevention regulations
- ▶ national installation regulations (e. g. EN 60079-14)
- ▶ generally recognized technical regulations
- ▶ safety guidelines in these operating instructions
- ▶ characteristic values given on the cable glands

Any damage can invalidate the Ex-protection.

This cable gland is only suitable for 'fixed' installation because no tensile load may be applied to the screw joint.

Cable glands fitted with a 'blue cover nut' are for use with the cables of intrinsically safe circuits.

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### 4 Conformity to Standards

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The cable gland complies with the following regulations and standards:

- ▶ Directive 94/9/EC
- ▶ IEC/EN 60079-0, IEC/EN 60079-7
- ▶ IEC/EN 61241-0, IEC/EN 61241-1

Cable gland type 8161 is suitable for use in hazardous areas, zones 1, 2 and zones 21, 22.

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### 5 Function

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The cable gland is used to bring cables and leads into electrical equipment with explosion protection type "e" - Increased Safety.

## 6 Technical Data

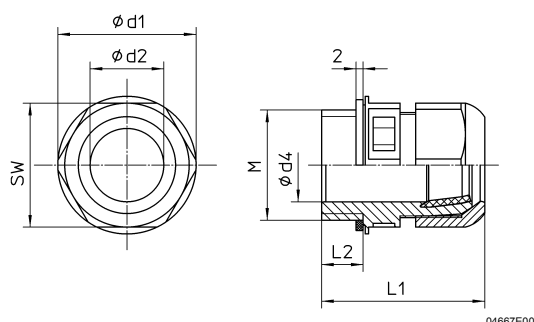
Explosion protection					
Gas explosion protection					
ATEX	⊕ II 2 G Ex e II				
IECEX	Ex e II				
Dust explosion protection					
ATEX	⊕ II 2 D Ex tD A21 IP66				
IECEX	Ex tD A21 IP66				
Ambient temperature	- 40 °C ... + 75 °C				
Certificates					
Gas explosion protection					
ATEX	PTB 00 ATEX 3119 X				
IECEX	IECEX PTB 05.0016X				
Dust explosion protection					
ATEX	PTB 00 ATEX 3119 X				
IECEX	IECEX PTB 05.0016X				
Material					
Screw connection	Polyamide, glass fibre reinforced, flame resistant, self-extinguishing				
Impact strength	Impact energy high, 7 J				
Ingress Protection	IP66 IP68 at 6 bar 24 h				
Colour	8161/5: black (Ex e) 8161/6: nozzle black, cap nut blue (Ex i)				
Assembly	Wall resp. flange thickness for installation cable glands				
		Wall resp. flange thickness			
		for mounting		for mounting	
		in threaded holes		with locknuts in though holes	
Thread size	Wall in plastic	Wall in metal	Wall in plastic	Wall in metal	Minimum nut depth (metal)
	[mm]	[mm]	[mm]	[mm]	[mm]
M 16 x 1.5 M 20 x 1.5 M 25 x 1.5	≥ 5	≥ 3	2 ... 6.5	1 ... 6.5	3,0
M 32 x 1.5 M 40 x 1.5 M 50 x 1.5 M 63 x 1.5	≥ 5	≥ 3	2 ... 8	1 ... 8	3,5 4,0 5,5 5,5
Tightening torque	Cable gland size	Connection thread	Pressing screw		
		Md <sub>1</sub> [Nm] *)	Md <sub>2</sub> [Nm] *)		
	M 16 x 1.5	1.8	1.3		
	M 20 x 1.5	2.3	1.5		
	M 25 x 1.5	3.0	2.0		
	M 32 x 1.5	4.5	3.0		
	M 40 x 1.5	10.0	10.0		
	M 50 x 1.5	12.0	12.0		
	M 63 x 1.5	16.0	16.0		
	Multi-entries				
	M 25 x 1.5	5.0	2.0		
	M 32 x 1.5	7.0	3.0		
	*) at 20 °C				

**⚠ WARNING**

Please consult the manufacturer if operating conditions are non-standard.

## 7 Assembly

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



Thread size M	SW	Dimensions [mm]				Cable dia. range	d2	d4
		d <sub>1</sub>	l <sub>1</sub>		l <sub>2</sub>			
			min.	max.				
M 16 x 1.5	20	22	31	37	9	4 ... 9	10.3	9.3
M 20 x 1.5	24	27	36	45	10	6 ... 13	13.3	13.3
M 25 x 1.5	29	32	38	47	10	10 ... 17 7 ... 12* 4 x 3 ... 6	17.3	17.3
M 32 x 1.5	36	40	42	51	12	13 ... 21 4 x 5 ... 7	21.3	21.3
M 40 x 1.5	46	51	52	65	12	17 ... 28	28.3	30
M 50 x 1.5	55	61	59	72	14	23 ... 35	35.3	40
M 63 x 1.5	68	75	64	78	15	31 ... 48	48.3	53

\* Terminal capacity 7 ... 12 mm: with additional gasket.

The disc fitted to prevent the ingress of dust must be removed during installation.

Transport and storage is permitted only in the original packaging.

## 8 Commissioning

Before commissioning equipment fitted with cable glands, ensure that

- ▶ the cable gland is not damaged
- ▶ the O-ring/gasket for M 40 x 1.5 to M 63 x 1.5 is available
- ▶ the cable glands have been tightened to the recommended torque values
- ▶ unused cable glands are sealed with plugs and unused holes sealed by stopping plugs - both of which are certified to Directive 94/9/EC.
- ▶ the cables have been correctly brought in
- ▶ the gasket bearing areas are flat

## 9 Maintenance

### ⚠ WARNING

Observe the relevant national regulations for your country!


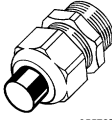

The following points must be checked during maintenance:


- ▶ compliance with permitted temperatures (to IEC/EN 60079-0)
- ▶ cracks in the cable gland
- ▶ damage to the gaskets

## 10 Accessories and Spare Parts

**⚠ WARNING**


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

Designation	Illustration	Description	Order number	Weight kg		
Special key	 05263E00	For tightening cable glands and cap nuts				
		For cable glands				
		Thread size	Packing unit			
		M 16 x 1.5	1	114207	0.120	
		M 20 x 1.5	1	114208	0.132	
		M 25 x 1.5	1	114205	0.163	
		M 32 x 1.5	1	114209	0.237	
Plug	 05572E00	in polyamide, red				
		For closing unused cable entries				
		for cable entries				
		Thread size	kind of entry	Packing unit		
		M 16 x 1.5	single	50	138406	0.061
		M 20 x 1.5	single	50	138394	0.140
		M 25 x 1.5	single	25	138382	0.130
Flat gasket	 04968E00	as additional gasket for onerous mounting conditions				
		for cable entries				
		Thread size	Type	Packing unit		
		M 16 x 1.5	8161/-M16-9	50	138384	0.017
		M 20 x 1.5	8161/-M20-13	50	138390	0.022
		M 25 x 1.5	8161/-M25-..	50	138396	0.023
		M 32 x 1.5	8161/-M32-..	25	138402	0.014
M 40 x 1.5	8161/-M40-28	10	138408	0.012		
M 50 x 1.5	8161/-M50-35	4	138414	0.007		
M 63 x 1.5	8161/-M63-48	1	138419	0.003		

Designation	Illustration	Description	Order number	Weight kg
Locknut		To fasten the cable glands on the passage For cable glands		
		Type      Thread size      Packaging unit in units		
		Brass, nickel-plated      M16 x 1.5      50	138383	0.135
		Brass, nickel-plated      M20 x 1.5      50	138389	0.241
		Brass, nickel-plated      M25 x 1.5      50	138395	0.348
		Brass, nickel-plated      M32 x 1.5      25	138401	0.267
		Brass, nickel-plated      M40 x 1.5      10	138407	0.218
		Brass, nickel-plated      M50 x 1.5      4	138413	0.109
		Brass, nickel-plated      M63 x 1.5      1	138418	0.054

## 11 Disposal

Observe the national standard for refuse disposal.

	We are pleased to answer any special questions you may have. Please contact your nearest R. STAHL representative.
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**12 CE prototype test certificate (current supplement)**

**Physikalisch-Technische Bundesanstalt**  
Braunschweig und Berlin



**4. SUPPLEMENT**

according to Directive 94/9/EC Annex III.6

**to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3119 X**

**(Translation)**

Equipment: Cable entry of types 8161/5 and 8161/6

Marking: II 2 G EEx e II, II 2 D IP66

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30  
74638 Waldenburg (Württ.), Germany

Description of supplements and modifications

The cable entries of types 8161/5 and 8161/6 has been re-evaluated in accordance with the Standards EN 60079-0, EN 60079-7, EN 61241-0 and EN 61241-1

The marking is, therefore, changed to:

II 2 G Ex e II II 2 D IP 66

The ambience temperature range is extended to -40 °C to 75 °C

Alternative materials which are suitable for the temperature range can be used optionally

Instructions for installation and use

The instructions for installation and use apply as before.

Applied standards

EN 60079-0:2004      EN 60079-7:2003      prEN 61241-0:200X      EN 61241-1:2004  
(IEC 61241-0:2004)

Test report: PTB Ex 06-16364

Zertifizierungsstelle: Explosionsschutz

Braunschweig, November 22, 2006

By order:

Dr.-Ing. M. Heddergott  
Regierungsrat



Sheet 1/1

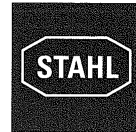
EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany



## 13 CE Declaration of Conformity

**EG-Konformitätserklärung**  
*EC-Declaration of Conformity*  
*Déclaration de Conformité CE*



<b>Wir (we; nous)</b>	
R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany	<b>8161/5, 8161/6</b>
<b>erklären in alleiniger Verantwortung, dass das Produkt</b> <i>hereby declare in our sole responsibility, that the product</i> <i>déclarons, sous notre seule responsabilité, que le produit</i>	<b>Kabel- und Leitungseinführung</b> <i>Cable gland</i> <i>Entrée de câbles</i>
<b>mit der EG-Baumusterprüfbescheinigung:</b> <i>(under; EC-Type Examination Certificate:</i> <i>avec) Attestation d'examen CE de type:</i>	<b>PTB 00 ATEX 3119 X</b>
<b>auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt</b> <i>which is the subject of this declaration, is in conformity with the following standards or normative documents</i> <i>auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants</i>	
<b>Bestimmungen der Richtlinie</b> <i>terms of the directive</i> <i>prescriptions de la directive</i>	<b>Nummer sowie Ausgabedatum der Norm</b> <i>Number and date of issue of the standard</i> <i>Numéro ainsi que date d'émission de la norme</i>
<b>94/9/EG: ATEX-Richtlinie</b> <i>94/9/EC: ATEX Directive</i> <i>94/9/CE: Directive ATEX</i>	EN 60079-0:2004 EN 60079-7:2003 EN 61241-0:2006 EN 61241-1:2004
<b>2004/108/EG: EMV-Richtlinie</b> <i>2004/108/EC: EMC Directive</i> <i>2004/108/CE: Directive CEM</i>	
<b>Qualitätssicherung Produktion:</b> <i>Production Quality Assessment:</i> <i>Assurance Qualité Production:</i>	
PTB 96 ATEX Q006-4	
<b>Kenn-Nr. der benannten Stelle / Notified Body number / N° de l'organisme de certification:</b> 0102	
Waldenburg, 13. Jan. 2009	i.V.
<b>Ort und Datum</b> <i>Place and date</i> <i>Lieu et date</i>	<b>B. Limbacher</b> <b>Leiter Entwicklung</b> <i>Head of Development</i> <i>Directeur Développement</i>
	i.V.
	<b>Dr. S. Jung</b> <b>Leiter Qualitätsmanagement</b> <i>Director Quality Management Dept.</i> <i>Directeur Dept. Assurance de Qualité</i>







