



Installation, Operating & Maintenance Sheet

Empty enclosure

> 8150/0



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2 General Information

2.1 Manufacturer

R. STAHL, INC.
9001 Knight Road
Houston, TX 77054

Tel.: +1 800 782 4357
Fax: +1 713 792 9301
Internet: r-stahl.com
E-Mail: info@r-stahl.com

R. STAHL PRIVATE LIMITED
Plot No. 5, Malrosapuram Main Road
Sengundram Ind. Area, Singaperumal Koil
Chengalpattu Dist, Tamilnadu 603 204, INDIA

Tel.: +91 446 730 060 0
Fax: +91 446 730 070 0
Internet: r-stahl.com/en/in/
E-Mail: info@r-stahl.com

2.2 Information regarding this Installation, Operation and Maintenance Sheet

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Subject to alterations.

2.3 Disclaimer

The nature of these instructions is only informative and does not cover all of the details, variations or combinations in which this equipment may be used, stored, delivered, installed, safely operated and maintained.
Since conditions of use of the product are outside of the care, custody and control of R. STAHL, INC., the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith. Technical information and illustrations are not binding and subject to change without notice.

3 Application

The terminal boxes are explosion protected equipment, certified for use in hazardous (classified) locations. They are used to distribute electrical energy. The terminal boxes are intended only for fixed mounting.

4 Safety Instructions

The terminal boxes must be used only for their intended purpose. Incorrect usage invalidates our warranty provision. Any modifications need to be done within the guidelines given in this documentation.

⚠ WARNING

Installation and maintenance of this product should only be performed by skilled and experienced personnel in accordance with the National Electrical Code (NFPA 70 - NEC) or the Canadian Electrical Code (CEC), respectively, and applicable local code regulations.

CAUTION:

- ▶ Disconnect power supply before installing or servicing these terminal boxes.
- ▶ Cable or conduit entries may be field installed in these enclosures per the instructions in section 8.4 & 8.5
- ▶ Terminals can be added within the physical limits of the enclosure (see catalog) and the thermal limits as explained in section 9.3
- ▶ For a Class I Zone 1 conduit installation, conduit seals are required, refer to NEC 505.16 (B) (1). For any cable or other conduit installation, NO seals are required.
- ▶ Use only approved wiring methods for the location, with the associated cable glands or conduit hubs.

4.1 Entry hardware

The following entry hardware can be used to insert cables and conduits into enclosures:

- X increased safety „e“ conduit hubs Series 8166/11-0.-NE or
- X for cable installation any listed cable gland for hazardous (classified) location

The cable or conduit entries must be Listed (CYMJ/CYMJ7) as Increased Safety and/or Protection by enclosure, as appropriate, and have a minimum IP66 rating and Type ratings 3, 4 and 4X, when this is marked on the end product.

To close up unused openings, use listed close-up plugs. (see section 11.2)

4.2 Additional entry holes


If additional entry holes are required, e.g. for installing additional cable glands, breather glands, conduit hubs or close-up plugs, the following has to be considered:

- ▶ Additional through holes can be punched.
- ▶ While punching please make sure that the surfaces remain even.
- ▶ When determining the position of the through holes, please consider the correct clearances.
- ▶ Choose the applicable through-hole diameter.
- ▶ Ensure gaskets are not damaged.

5 Conformity to Standards

The 8150/0 Series of terminal boxes has multiple certifications printed on the nameplate.

6 Technical Data

Explosion protection Certificates NEC and CEC	refer to the enclosure nameplate		
			
	E177642		
	NEC: Class I, Zone 1, AEx eb IIC Gb Zone 21, AEx tb IIIC Db		
	CEC: Ex eb IIC Gb U Ex tb IIIC Db		
ATEX IECEX	PTB 09 ATEX 1107 U IECEX PTB 09.0047U		
Electrical data Connection cross-section	Terminal size	Conductor size	Torque
	2.5 mm ²	0.5 to 4 mm ² /22 to 12 AWG (solid/stranded)	2.0 Nm/18 lb-in
	4 mm ²	1.5 to 6 mm ² /16 to 10 AWG (solid/stranded)	2.0 Nm/18 lb-in
	4 mm ² (w/bracket)	6 to 16 mm ² /10 to 6 AWG (solid/stranded)	2.0 Nm/18 lb-in
	10 mm ²	4 to 6 mm ² /12 to 10 AWG (solid)	2.0 Nm/18 lb-in
		4 to 16 mm ² /12 to 6 AWG (stranded)	2.0 Nm/18 lb-in
	10 mm ² (w/bracket)	16 to 50 mm ² /6 to 1/0 AWG (solid/stranded)	3.5 Nm/31 lb-in
	50 mm ²	35 to 70 mm ² /2 to 2/0 AWG (solid/stranded)	6.0 Nm/53 lb-in
	50 mm ² (w/bracket)	35 to 70 mm ² /2 to 2/0 AWG (solid/stranded)	10.0 Nm/88.5 lb-in
Ambient conditions Ambient temperature	-60 to +80 °C depending on terminal type and explosion-protected components used		
Material Enclosure	- stainless steel AISI 304 (V1.4301) or AISI 316L (V1.4404) brush finished		
Gasket	Silicone, foamed		
Flange plate Standard version	without flange plate		
Special version	with flange plate		
Rated operational voltage	refer to the enclosure nameplate		
Degree of protection	IP66 (without holes) Seal all open drilled holes by means of suitable equipment.		
Tightening torques	Cover: 4.5 Nm Flange enclosure: 2.7 Nm Sealing frame: 2.7 Nm		





⚠ WARNING

The enclosures should not be powder coated in the field because this would change the surface resistance.

7 Transport and Storage

- ▶ Transport and storage are recommended in the original packing.
- ▶ On versions with hinges secure the cover prior to transport.

8 Installation

 WARNING	
<ul style="list-style-type: none"> ▶ If the components are installed incorrectly, the explosion protection is not guaranteed. ▶ When additional terminals or cable entries are installed, make sure that they are listed for the application. 	
	Customer-specific openings in enclosure walls, bottom or cover can be shipped without blanking elements. Ingress protection must be ensured by suitable means (e.g. blanking element, cable gland or the like) and must be approved by certification body for final installation.
	US only: If ambient temperature is greater than 70°C use a conductor that is suitable for that ambient temperature. CAN only: If ambient temperature is greater than 60°C use a conductor that is suitable for that ambient temperature.
	Terminal enclosures have been evaluated as empty enclosures. Any components placed inside of the enclosures shall not be permitted unless the modified apparatus is resubmitted to Underwriters Laboratories Inc. Minimum distances for clearance/creepage for any component installed will need to be determined in the end-use application. PE rails will need to be evaluated as part of the end-use evaluation. Maximum surface temperature will need to be determined as part of the end-use evaluation. The maximum surface temperature for dust shall be determined with the apparatus covered with the maximum amount of dust that it can retain.

8.1 Enclosure mounting


Mounting brackets are provided with the enclosures which will accept up to 1/4" (6 mm) screws.

8.2 Opening the enclosure

Fully loosen the cover screws using a screwdriver.

Do not remove the captive screws from the cover.

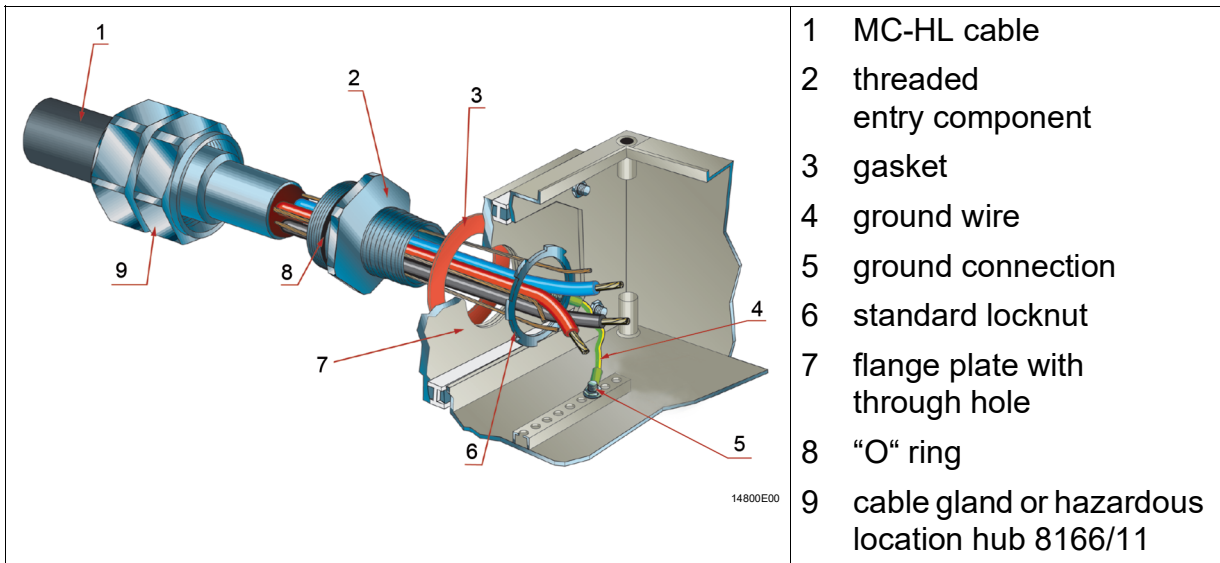
8.3 Installation of “Increased Safety“ conduit hubs or cable glands

 WARNING	
For field-installed openings, use a hand punch or pneumatic type punch. Always wear safety glasses and protective clothing when working.	

The enclosures make it necessary for the metal cable glands or conduit hubs to be bonded to the ground system. This can be accomplished by installing them either by one of the following methods.

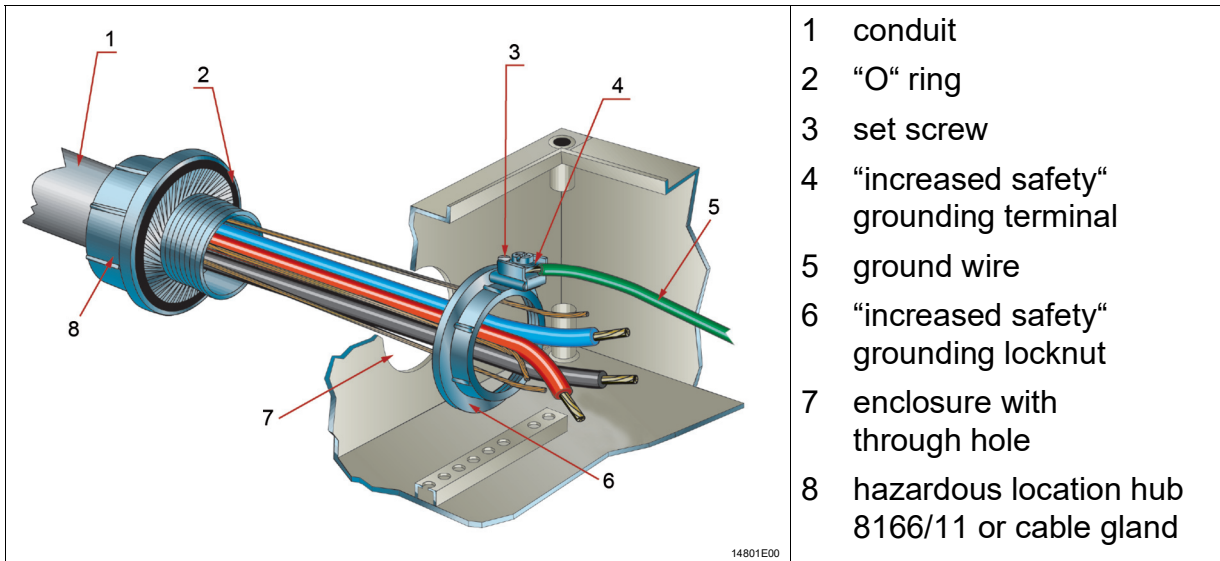
8.3.1 Enclosures with flange plates

Enclosures with flange plates utilizing through holes in the flange plate and standard locknuts. Flange plates must be connected to the internal grounding system using jumper wires.



8.3.2 Enclosures without flange plates

Enclosures without flange plates using a hole "through the enclosure" with an "increased safety" grounding locknut.



These locknuts must be bonded between each other and to the grounding system using jumper wires.

After the entry hardware is installed, connect the appropriate conduit or cable.

	<p>All unused enclosure openings must be closed using approved close-up plugs with standard locknuts. (see section 11.2)</p>
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9 Commissioning

Before commissioning into service

- ▶ Make sure that the device is not damaged.
- ▶ Make sure that the device is installed correctly.
- ▶ Remove any foreign objects from the device.
- ▶ Check the tightening torques.

WARNING

Unused openings shall be closed with suitable blanking elements, Increased Safety and/or Protection by enclosure, as appropriate, and have a minimum IP66 rating and Type ratings of 3, 4, and 4X. (see section 11.2)

10 Maintenance

WARNING

- ▶ Do not open while energized!

10.1 Cleaning

Use only a solvent-free household detergent added to the cleaning water.

10.2 Repairs and maintenance

Only authorized and trained personnel should perform repairs and maintenance work on hazardous location equipment.

The following details must be checked during maintenance:

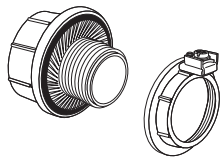
- X Damage to the enclosure, cover.

11 Accessories and Spare Parts


WARNING

- ▶ Use only the following accessories in order to maintain the environmental ratings.


11.1 Conduit hub with „Increased Safety“ ground terminal

 14795E00	Size	Ordering Code
	1/2"	8166/11-01-NE
	3/4"	8166/11-02-NE
	1"	8166/11-03-NE
	1-1/4"	8166/11-04-NE
	1-1/2"	8166/11-05-NE
	2"	8166/11-06-NE
	2-1/2"	8166/11-07-NE
	3"	8166/11-08-NE

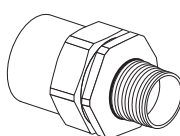
11.2 NPT close-up plugs „Increased Safety“

 12295E00	Size	Ordering Code
	1/2"	PD-E-4-0-29-00
	3/4"	PD-E-4-0-30-00
	1"	PD-E-4-0-31-00
	1-1/4"	PD-E-4-0-32-00
	1-1/2"	PD-E-4-0-33-00
	2"	PD-E-4-0-34-00
	2-1/2"	PD-E-4-0-35-00
	3"	PD-E-4-0-36-00

11.3 Cable gland locknuts with „Increased Safety“ ground terminal

 14797E00	Size	Ordering Code
	1/2"	8166/11-01-E
	3/4"	8166/11-02-E
	1"	8166/11-03-E
	1-1/4"	8166/11-04-E
	1-1/2"	8166/11-05-E
	2"	8166/11-06-E
	2-1/2"	8166/11-07-E
	3"	8166/11-08-E

11.4 MC/TEK cable glands

 14796E00	Size	Ordering Code
	1/2"	TMC050A
	3/4"	TMC075A
	1"	TMC100A
	1-1/4"	TMC125A
	1-1/2"	TMC150A
	2"	TMC20SA or TMC200A
	2-1/2"	TMC250A
	3"	TMC300A

12 Disposal

The national and local waste disposal regulations have to be observed.