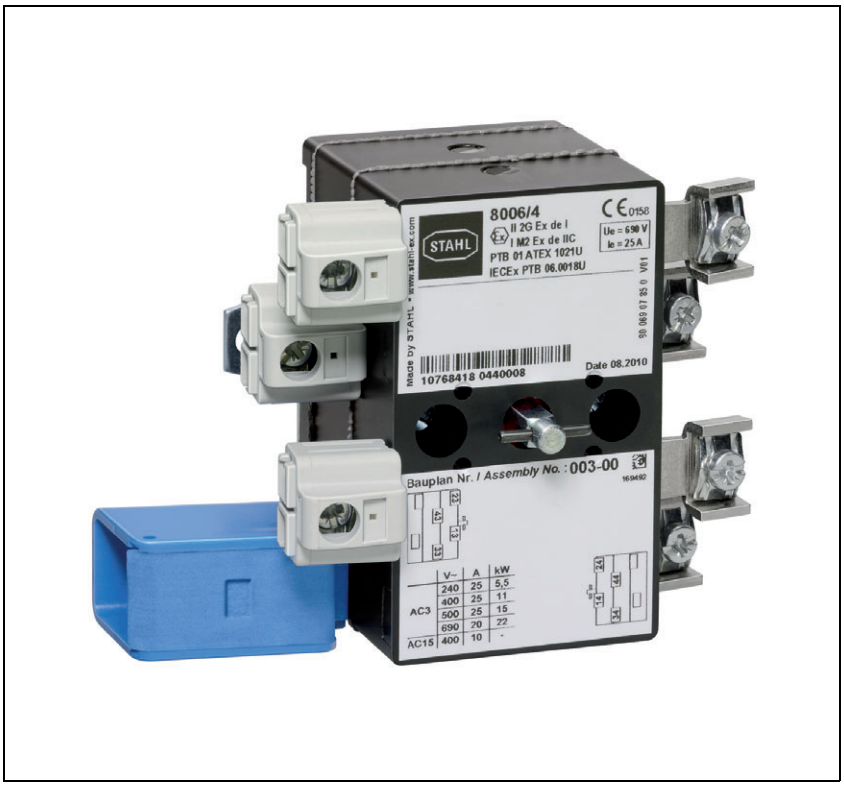


Operating instructions

Additional languages www.stahl-ex.com

EN

Load and Motor Switch / Control Switch

Series 8006/4

STAHL

EN

Contents

EN

1 General Information

1.1 Manufacturer

R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
74638 Waldenburg
Germany

Phone: +49 7942 943-0
Fax: +49 7942 943-4333
Internet: www.stahl-ex.com

1.2 Information Regarding the Operating Instructions

ID-No.:	224910 / 8006609300
Publication Code:	2014-05-06·IOM00·III·en·03
Hardware version:	n/a
Software version:	n/a

The original instructions are the English edition.
They are legally binding in all legal affairs.

1.3 Further Documents

- Data sheet 8006/4

For further languages, see www.stahl-ex.com.

1.4 Conformity with Standards and Regulations

See certificates and EC Declaration of Conformity: www.stahl-ex.com.

2 Explanation of the Symbols

2.1 Symbols in these Operating Instructions

Symbol	Meaning
	Tips and recommendations on the use of the device
	General danger
	Danger due to explosive atmosphere
	Danger due to energised parts

2.2 Warning Notes

EN

Warning notes must be observed under all circumstances, in order to minimize the risk due to construction and operation. The warning notes have the following structure:

- Signalling word: DANGER, WARNING, CAUTION, NOTICE
- Type and source of danger/damage
- Consequences of danger
- Taking countermeasures to avoid the danger/damage

	**DANGER** Danger for persons Non-compliance with the instruction results in severe or fatal injuries to persons.
	**WARNING** Danger for persons Non-compliance with the instruction can result in severe or fatal injuries to persons.
	**CAUTION** Danger for persons Non-compliance with the instruction can result in minor or light injuries to persons.
	NOTICE Avoiding material damage Non-compliance with the instruction can result in material damage to the device and/or its environment.

EN

2.3 Symbols on the Device or in the Circuit Diagrams

Symbol	Meaning
NB 0158 16338E00	NB marking according to DEKRA EXAM GmbH certification authority.
 02198E00	According to marking, device approved for hazardous areas.
 15649E00	Input
 15648E00	Output

3 Safety Notes

3.1 Operating Instructions Storage

- Read the operating instructions carefully and store them at the mounting location of the device.
- Observe applicable documents and operating instructions of the devices to be connected.

3.2 Safe Use

- Read and observe the safety notes in these operating instructions!
- Use the device in accordance with its intended and approved purpose only.
- We cannot be held liable for damage caused by incorrect or unauthorized use or by non-compliance with these operating instructions.
- Before installation and commissioning, make sure that the device is not damaged.
- Work on the device (installation, maintenance, overhaul, repair) may only be carried out by appropriately authorized and trained personnel.
- During installation and operation observe the information (characteristic values and rated operating conditions) on the rating, data and information plates located on the device.
- Always consult with R. STAHL Schaltgeräte GmbH in case of operating conditions which deviate from the technical data.
- Replace the switch after each short circuit in the main circuit, since with hermetically sealed equipment the state of the switching contacts cannot be checked.

3.3 Modifications and Alterations

WARNING

Danger due to modifications and alterations to the device!
Explosion protection is impaired!

- Do not modify or change the device.
- No liability or warranty for damage resulting from modifications and alterations.

4 Function and Device Design

WARNING

Danger due to improper use!
Explosion protection is impaired!

- The device may only be used according to the operating conditions described in these operating instructions.
- Use the device in hazardous areas only according to these operating instructions.

4.1 Function

The Load and Motor Switch 8006 is used for switching electric and electronic components that are used for controlling, switching and monitoring electric machines and installations.

5 Technical data

EN

Explosion Protection

USA (UL)/Canada (UL)

Gas	c UL us LISTED 4R27 US: Class I, Zone 1, AEx d e IIC T6 ... T5 (Class I, Div. 2, Groups ABCD) C: Class I, Zone 1, Ex d e IIC T6 ... T5 Gb (Class I, Div. 2 per CEC J18-150) T6 (Ta = -50 ... +50 °C) T5 (Ta = -50 ... +65 °C) T4 (Ta = -50 ... +70 °C)

Certifications and certificates

Certificates	IECEx, ATEX

Technical Data

Electrical data

Rated insulation voltage	max. 690 V AC
Rated operational voltage	max. 600 V AC / 240 V DC min. 24 V AC / DC
Rated impulse withstand voltage	6 kV
Rated operational current	max. 25 A (load and motor switch) max. 10 A (control switch) min. 100 mA (recommended for contact safety: min. one switching operation per week)

EN

Switching capacity

AC	DC
600 V, 20 A	240 V, 25 A[3)]
120 V ... 480 V, 25 A	125 V, 25 A[2)]
	62.5 V, 25 A[1)]

[1)] 1 contact
[2)] 2 contacts in series
[3)] 3 contacts in series

Motor switching capacity

600 V, 15 HP	240 V, 5 HP
480 V, 15 HP	125 V, 3 HP
240 V, 7.5 HP	
208 V, 7.5 HP	

	Single Phase			
Voltage	227 V	240 V	208 V	120 V
Current	25 A	25 A	25 A	25 A
Horse Power	5	3	3	2

Control Switch Ratings (UL 508):
A600 (AC)
N300 (DC)

Short circuit protection	≤ 40 A Class J

EN

Explosion Protection

USA (FM)/Canada (FM)

Gas	FM APPROVED 3044997 US: Class I, Zone 1, AEx d e IIC T6 ... T5 (Class I, Div. 2, Groups ABCD) C: Class I, Zone 1, Ex d e IIC T6 ... T5 Gb (Class I, Div. 2 per CEC J18-150) T6 (Ta = -50 ... +40 °C) T5 (Ta = -50 ... +55 °C)

Technical Data

Electrical data

Rated insulation voltage	max. 690 V AC
Rated operational voltage	max. 600 V AC / 125 V DC min. 24 V AC / DC
Rated impulse withstand voltage	6 kV
Rated operational current	T6 max. 40°C up to 4 pole: max. 25 A; Field wiring. Use 75 °C copper conductors. up to 8 pole: max. 15 A; Field wiring. Use 75 °C copper conductors. up to 12 pole: max. 10 A; Field wiring. Use 75 °C copper conductors. T5 max. 55°C up to 4 pole: max. 25 A; Factory wiring. Use 90 °C copper conductors. up to 8 pole: max. 15 A; Factory wiring. Use 90 °C copper conductors. up to 12 pole: max. 10 A; Factory wiring. Use 90 °C copper conductors. max. 25 A (load and motor switch) max. 10 A (control switch) min. 100 mA (recommended for contact safety: min. one switching operation per week)

Switching capacity

AC	DC
600 V, 20 A	125 V, 25 A[2)]
120 V ... 480 V, 25 A	62.5 V, 25 A[1)]

[1)] 2 contacts in series
[2)] 3 contacts in series

Motor switching capacity

600 V, 15 HP
480 V, 15 HP
240 V, 7.5 HP
208 V, 7.5 HP
125 V, 3 HP

	Single Phase			
Voltage	227 V	240 V	208 V	120 V
Current	25 A	25 A	25 A	25 A
Horse Power	5	3	3	2

Control Switch Ratings (UL 508):
A600 (AC)
N300 (DC)

Short circuit protection: ≤ 40 A Class J

EN

Technical Data	
Electrical data	
Short-circuit strength	20 kA
Contacts	max. 12 pole / 6 switching levels *)
	*) The switches have two switching chambers per level. Individual switching levels with 1 or 2 contacts each to form a unit provide an optimal solution for individual applications. The contact chambers are being operated by the ratched wheels in a staggered fashion, thus enabling all around switching without interference.
Service life	mechanical: 200,000 operating cycles electric: 20,000 operating cycles
Mechanical data	
Material	
Enclosure	Epoxy resin
Contacts	Silver-tin oxide, silver-tin oxide gold plated

For further technical data, see www.stahl-ex.com.

6 Transport and Storage

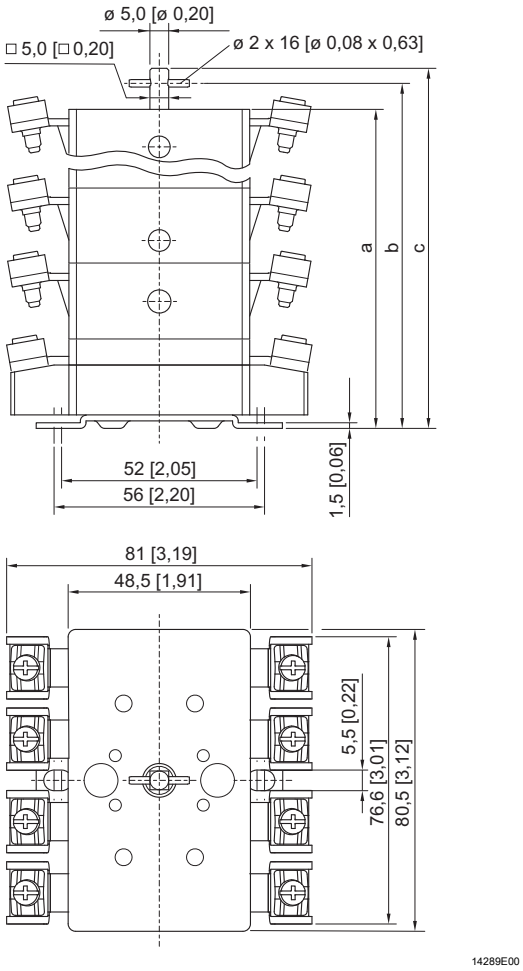
- Transport and store the device only in the original packaging.
- Store the device in a dry place (no condensation) and vibration-free.
- Do not drop the device.

EN

7 Mounting and Installation

7.1 Dimensions / Fastening Dimensions

Dimensional Drawings (All Dimensions mm [inches]) – Subject to Alterations



Switching chamber levels	Dimensions (mm) [inches]		
	a	b	c
1	44 [1.73]	52 [2.05]	56 [2.20]
2	64 [2.52]	72 [2.83]	76 [2.99]
3	84 [3.31]	92 [3.62]	96 [3.78]
4	105 [4.13]	112 [4.41]	116 [4.57]
5	125 [4.92]	132 [5.20]	136 [5.35]
6	145 [5.71]	152 [5.98]	156 [6.14]

Load and motor switch / control switch 25 A Series 8006/4

7.2 Mounting / Dismounting, Operating Position

EN

	**WARNING** Danger due to live components! Risk of severe injuries! • A minimum distance of 12.7 mm or 1/2 inch has to be kept between live parts and further components (at 600 V AC).
	When mounting the component, ensure presence of a flat surface.
	The operating position is optional.

Mounting the covers

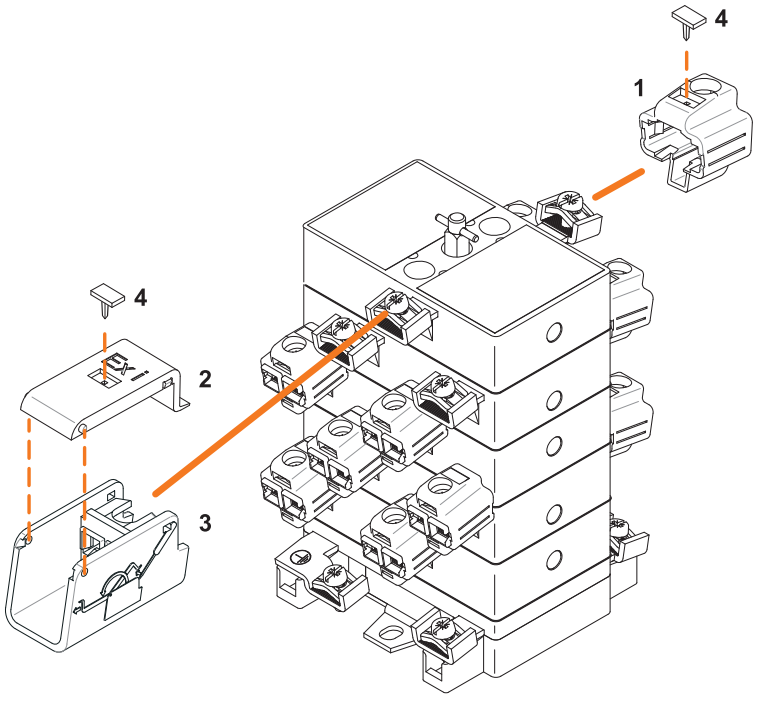
IP20 cover:

Engage the IP20 covers (1) in the contact. Insert the designation plate (4) in the groove of the IP20 covers (1).

Ex i cover:

Engage the Ex i cover (3) in the contact. Engage the Ex i lid (2) in the Ex i cover (3). Insert the designation plate (4) in the groove of the Ex i lid (2).

EN



15088E00

7.3 Installation

WARNING

Danger due to live components!
Risk of severe injuries!
- All connections and wiring must be disconnected from the power supply.
- Secure the connections against unauthorized switching.

WARNING

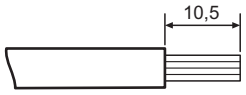
Install the device in an enclosure!
Explosion protection is impaired !
- The device must be installed in an enclosure that fulfills the requirements of a recognized type of protection according to IEC/EN 60079-0.

WARNING

Observe clearance and creepage distances!
Explosion protection is impaired !
- During installation of the devices in an enclosure of the protection type increased safety "e" according to IEC/EN 60079-7 and UL 508, the clearance and creepage distances must be adhered to.

Electrical Connection

- The information given in chapter "Technical Data" must be observed.
- The conductor connection must be made with particular care.
- The conductor insulation must reach to the clamping points.
- Do not damage the conductor (nicking) when removing the insulation.
- Select suitable cables to be used and appropriate way of installing them to ensure that the maximum permitted conductor temperatures and the maximum permitted surface temperature are not exceeded.



14288E00

Connection type	Terminals
Connection cross-section	
solid / finely-stranded	14 AWG to 10 AWG (2.5 ... 6.0 mm^2) One or two conductors can be installed to a connection terminal. In case of solid conductors, both conductors must have the same cross-section and must be made of the same material. The conductors can be connected without previous measures.
Tightening torque	17.7 in-lbs (2 Nm)

If core end sleeves are used, they must be attached using a suitable tool.

EN

8 Commissioning

	**WARNING**
	Check the device before commissioning! Explosion protection is impaired! • Observe the inspection requirements in the current national regulations before commissioning in order to maintain the explosion protection. • Check the device for proper installation and function before commissioning.

Before commissioning, ensure the following:
- Check the mounting and installation.
- Inspect enclosure for damage.
- If necessary, remove foreign objects.
- If necessary, clean the connection chamber.
- Check whether all screws and nuts have been tightened firmly.
- Check the tightening torques.

9 Operation

The switch is driven via an axis, thus actuating the contacts.

10 Maintenance and Repair

EN

	**WARNING**
	Unauthorized work being performed on the device! Risk of injuries and material damage! • Work performed on the device must only be carried out by appropriately authorized and trained personnel.

10.1 Maintenance

- Consult the relevant national regulations to determine the type and extent of inspections.
- Adapt inspection intervals to the operating conditions.

10.2 Maintenance

	**WARNING**
	Danger due to live components! Risk of severe injuries! • All connections and wiring must be disconnected from the power supply. • Secure the connections against unauthorized switching.

	Observe the relevant national regulations in the country of use.

10.3 Repair

	**DANGER**
	Danger due to improper maintenance/repair! Explosion protection is impaired! • Repair work on the device must be performed only by R. STAHL Schaltgeräte GmbH.

10.4 Returning the Device

Use the "Service form" to return the device when repair/service is required.
On the internet site "www.stahl-ex.com" under "Downloads > Customer service":

- Download the service form and fill it out.
- Send the device along with the service form in the original packaging to R. STAHL Schaltgeräte GmbH.

11 Cleaning

- Clean the device only with a cloth, brush, vacuum cleaner or similar items.
- When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.
- Do not use aggressive detergents or solvents.

12 Disposal

- Observe national and local regulations and statutory regulation regarding disposal.
- Separate materials when sending it for recycling.
- Ensure environmentally friendly disposal of all components according to the statutory regulations.

13 Accessories and Spare Parts

NOTICE
Use only original accessories and spare parts by R. STAHL Schaltgeräte GmbH.

	For accessories and spare parts, see data sheet on our homepage www.stahl-ex.com.