

## Load and Motor Switches, Load-Break Switches Series 8544

STAHL



- > Innovative switch concept
- > State-of-the-art contact arrangement
- > Easy and clear connection technology
- > Wiring channel for auxiliary contacts
- > Retrofittable:
  - alligator clip
  - auxiliary contacts
  - Ex i separation body
  - N terminal
  - PE terminal
  - adapter plate for cable connection
- > Isolating characteristics according to IEC/EN 60947-1



12123E00

The load and motor switch of type 8544/1 is an explosion-protected electrical device in a flameproof enclosure. It is used for the separation or activation of electrical circuits in hazardous areas of Zone 1, Zone 2 or in the safe area.

The load and motor switch 8544/1 is available in versions 8544/1-3. (3 poles) and 8544/1-4. (3 poles + N).

The switches are actuated by means of an actuator insert which is connected to the switch by means of a selector shaft.

Up to two certified contact elements of the type 8080/1 can be mounted at the load and motor switch 8544/1.

The switching function of the contact elements is defined by the contact version and their position in the load and motor switch (left-hand: delayed (ON), advanced (OFF); right-hand: synchronising).

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	ATEX / IECEx							Class I (NEC 505)			(NEC 506)				Class I		Class II		Class III	
Zone	0	1	2	20	21	22	Zone	0	1	2	20	21	22	Division	1	2	1	2	1	2
For use in		x	x		x	x	For use in		x					For use in		x				

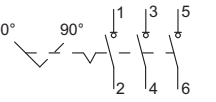
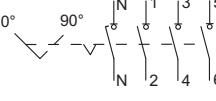
WebCode 8544A



# Load and Motor Switches, Load-Break Switches

## Series 8544

Selection Table

Version	Circuit diagram	Ambient temperature	Art. no.	Weight kg
8544/1-3., 3-pole		- 30 ... + 80 °C	<b>165675</b>	2.200
		- 50 ... + 80 °C	<b>171154</b>	2.200
8544/1-4., 3-pole + N		- 30 ... + 80 °C	<b>167240</b>	2.800
		- 50 ... + 80 °C	<b>171156</b>	2.800

### Explosion Protection

#### Marking

IECEX	Ex d e IIC Gb Ex d e I Mb
Europe (ATEX)	Ex II 2 G Ex d e IIC Gb Ex I M 2 Ex d e I Mb
NEC	Class I, Zone 1, AEx de IIC T6 Class I, Div. 2, Groups A, B, C, D T6
CEC	Class I, Zone 1, Ex de IIC T6 Class I, Div. 2 per CEC J18-150

#### Certificates

IECEX	IECEX PTB 09.0011 U
Europe (ATEX)	PTB 08 ATEX 1060 U
NEC/CEC	3037662



### Technical Data

#### Electrical data

##### Main contacts

Rated isolation voltage 800 V

Rated operational voltage

ATEX/IECEX 690 V AC, 50 / 60 Hz

NEC/CEC 600 V AC

Rated operational current max. 80 A

Switching capacity

ATEX/IECEX acc. to IEC/EN 60947-3:

AC-3

690 V, 63 A

500 V, 80 A

DC-23

220 V, 80 A<sup>3)</sup>

120 V, 80 A<sup>2)</sup>

60 V, 80 A<sup>1)</sup>

DC-1

220 V, 80 A<sup>3)</sup>

120 V, 80 A<sup>2)</sup>

60 V, 80 A<sup>1)</sup>

<sup>1)</sup> 1 flow path of current

<sup>2)</sup> 2 flow paths of current connected in series

<sup>3)</sup> 3 flow paths of current connected in series

NEC/CEC

Rated voltage up to

AC-ratings

600 V

480 V

240 V

120 V

DC-ratings

240 V<sup>3)</sup>

125 V<sup>2)</sup>

62.5 V<sup>1)</sup>

Rated current up to

63 A

80 A

<sup>1)</sup> 1 flow path of current

<sup>2)</sup> 2 flow paths of current connected in series

<sup>3)</sup> 3 flow paths of current connected in series



# Load and Motor Switches, Load-Break Switches

## Series 8544

STAHL

### Technical Data

#### Electrical data

Main contacts

Motor switching capacity

ATEX/IECEx

690 V

500 V

400 V

240 V

55 kW

55 kW

37 kW

22 kW

NEC/CEC

Rated voltage up to

AC-ratings

DC-ratings

600 V

480 V

240 V

120 V

240 V

125 V

62.5 V

Horse Power

60

30

10

20

10

n/a

Short-circuit

20 kA

Back-up fuse - Class J

≤150 A

Service life

Mechanical

40.000 switching cycles

Electrical

20.000 switching cycles

Max. short circuit protection

ATEX/IECEx

160 A, tripping characteristic: gG according to IEC/EN 60269-1

NEC/CEC

150 A, Fuse-Class J according to ANSI/UL 248-8

Short circuit protection

20 kA (IEC/EN 60947-3; ANSI/UL 489)

Type of assignment

2 (according to IEC/EN 60947-4-1)

Rated short-time

2.2 kA (IEC/EN 60947-3)

withstand current I<sub>cw</sub>

Max. power dissipation

3.8 W per path

Auxiliary contacts

Possible auxiliary contacts

max. 2 auxiliary contact blocks of type 8080/1

8080/1-1: slow-action contacts, 1 NC + 1 NO,

(normally open contact opens > 20 ms before opening of the main contact)

8080/1-3: slow-action contacts, 2 NC

8080/1-4: slow-action contacts, 2 NO

Rated operational voltage

ATEX/IECEx

250 V AC / DC

400 V AC, for equal potential of both contacts

500 V AC, when 1 NC + 1 NO and the same potential of both contact is used

NEC/CEC

250 V AC

Rated operational current

ATEX/IECEx

6 A

NEC/CEC

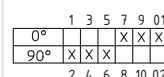
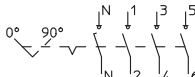
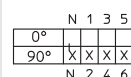
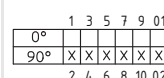
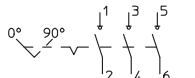
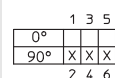
10 A

Short-circuit protection

10 A, tripping characteristic: gG according to IEC/EN 60291-1

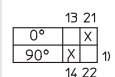
Schematic

**Main contacts**



**Auxiliary contacts**

mounted in left mounting slot



mounted in right mounting slot



1) load-shedding contact (delayed ON, advanced OFF, acc. to IEC/EN 60947-1)

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# Load and Motor Switches, Load-Break Switches

## Series 8544

### Technical Data

#### Ambient conditions

Ambient temperature  
ATEX/IECEX

8544/1-1: - 30 ... + 80 °C  
8544/1-2: - 50 ... + 80 °C

depending on the rated operational current and the temperature class:

80 A

T6

T5

T4

$T_a \leq 60\text{ °C}$

$T_a \leq 75\text{ °C}$

$T_a \leq 80\text{ °C}$

63 A

T6

T5

$T_a \leq 60\text{ °C}$

$T_a \leq 75\text{ °C}$

NEC/CEC

T6: - 50 ... + 40 °C

#### Mechanical data

Degree of protection

Material

Switching chamber

Upper enclosure parts

Contacts

Weight

Switching torque

Main contacts

Connection

cross-section

Main terminals

IP20 (IEC/EN 60529, finger touch-safe from the top)

epoxy resin

PA

silver stannic oxide

3-pole: 2.2 kg

3-pole + N: 2.8 kg

approx. 3.5 Nm

Conductor connection:

one conductor,  
finely stranded

6 ... 10 mm<sup>2</sup> (AWG 10 ... AWG 8)

only with insertion prism

stranded:

16 ... 50 mm<sup>2</sup> (AWG 6 ... AWG 1/0)

finely stranded:

16 ... 50 mm<sup>2</sup> (AWG 6 ... AWG 1/0)

with cable lug:

max. 50 mm<sup>2</sup> (max. AWG 1/0)

The degree of protection IP20 is not reached!

with clamping plate and  
insertion prism

Connection using several conductors (only within ATEX/IECEX permitted):

one conductor,  
finely stranded

2 x 6 mm<sup>2</sup> (AWG 10) \*)

only with insertion prism

one or more conduc-

tors, finely stranded:

2 x 10 mm<sup>2</sup> ... 2 x 16 mm<sup>2</sup>

(2 x AWG 8 ... 2 x AWG 6) \*)

with cable lug:

max. 2 x 50 mm<sup>2</sup> (max. 2 x AWG 1/0) \*\*)

with clamping plate and  
insertion prism

\*) Only conductors with the same cross-section are allowed!

\*\*) Conductors with different cross-sections are allowed! For cross-sections < 25 mm<sup>2</sup> / AWG 4, the degree of protection IP20 is not reached!

Alligator clips

ATEX/IECEX

Conductor connection:

one conductor,  
finely stranded

0.5 ... 10 mm<sup>2</sup> (AWG 20 ... AWG 8)

If several conductors must be connected (only conductors with the same cross-section):

one conductor,  
finely stranded

max. 2 x 6 mm<sup>2</sup> (max. 2 x AWG 10)

NEC/CEC

Conductor connection:

one conductor,  
finely stranded

AWG 24 ... AWG 6

If several conductors must be connected (only conductors with the same cross-section):

one conductor,  
finely stranded

Not permitted!

Auxiliary contacts

Connection

cross-section

ATEX/IECEX

NEC/CEC

1.5 ... 2.5 mm<sup>2</sup> (AWG 16 ... AWG 14), solid, finely stranded

AWG 22 ... AWG 12

#### Mounting / Installation

Installation position


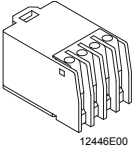

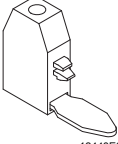
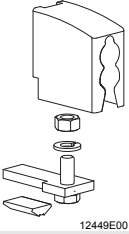
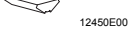
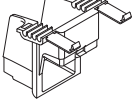
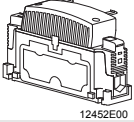

arbitrary



## Load and Motor Switches, Load-Break Switches

### Series 8544



Accessories and Spare Parts				
Designation	Illustration	Description	Art. no.	Weight kg
Selector shaft		52 mm for 8146/...2	<b>168354</b>	0.031
		71 mm for 8146/...3 or 8125/...3	<b>168355</b>	0.046
		111 mm for 8146/...5 or 8125/...5	<b>168357</b>	0.077
Auxiliary contact		2 NC contacts (8080/1-3) <sup>2)</sup>	<b>168356</b>	0.026
		1 NC contact + 1 NO contact (8080/1-1) <sup>1)</sup>	<b>168351</b>	0.026
		2 NO contact (8080/1-4) <sup>2)</sup>	<b>168353</b>	0.026
		The switching function of the auxiliary contact depends on the installation slot used. <sup>1)</sup> left: delayed (ON), advanced (OFF); right: synchronising <sup>2)</sup> left and right: synchronising		
Designation labels		qr: 1      10 pieces	<b>168286</b>	0.053
		qr: 2      10 pieces	<b>168287</b>	0.053
		qr: 3      10 pieces	<b>168288</b>	0.053
		qr: 4      10 pieces	<b>168289</b>	0.053
		qr: 5      10 pieces	<b>168290</b>	0.053
		qr: 6      10 pieces	<b>168291</b>	0.053
		qr: N      10 pieces	<b>168285</b>	0.053
		qr: PE      10 pieces	<b>168292</b>	0.053
Alligator clip		AGK 10-UKH 50	<b>168543</b>	0.014
Connection for cable lug		Mounting kit for the connection of conductors with cable lug	<b>171292</b>	0.032
Insertion prism		for connection of conductors with cross-sections $\leq 10 \text{ mm}^2$ (conductor connection) or $\leq 6 \text{ mm}^2$ (connection of several conductors) to the main terminals	<b>171324</b>	0.012
Ex i separation body		to ensure the required distance of 50 mm between the connection points of intrinsically safe and non-intrinsically safe circuits	<b>169683</b>	0.008
PE/N terminal		for subsequent assembly	<b>168347</b>	0.600
Parallel drive		to actuate simultaneously 2 combined load and motor switches	<b>171330</b>	0.327







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### Series 8544

#### Accessories and Spare Parts

Designation	Illustration	Description	Art. no.	Weight kg
Auxiliary contact key		for removing the mounted auxiliary contact	<b>201909</b>	0.035
Knob lever		14151E00 Ø 122.5 mm; can be padlocked in 0 position using max. 3 padlocks		
		Handle: black 8604A1-21-1-01-1-2 Protective collar: black Designation label: 0/OFF - I/ON	<b>201436</b>	0.325
		Handle: red 8604A1-21-1-01-2-2 Protective collar: yellow Designation label: 0/OFF - I/ON	<b>201437</b>	0.325
		Handle: red 8604A1-21-1-01-3-2 Protective collar: black Designation label: 0/OFF - I/ON	<b>201438</b>	0.325
		Ø 122.5 mm; can be padlocked in 0 position using max. 3 padlocks for safety switch; cover can only be removed in I/ON position!		
		Handle: black 8604A1-22-1-01-1-2 Protective collar: black Designation label: 0/OFF - I/ON	<b>201439</b>	0.325
		Handle: red 8604A1-22-1-01-2-2 Protective collar: yellow Designation label: 0/OFF - I/ON	<b>201451</b>	0.325
		Handle: red 8604A1-22-1-01-3-2 Protective collar: black Designation label: 0/OFF - I/ON	<b>201453</b>	0.325
		for switch with 6 poles: Ø 180 mm; can be padlocked in 0 position using max. 3 padlocks		
		handle: black 8604A1-31-1-01-1-1 protective collar: black designation label: 0/OFF - I/ON	<b>201454</b>	0.830
		handle: red 8604A1-31-1-01-2-1 protective collar: yellow designation label: 0/OFF - I/ON	<b>201456</b>	0.830
		handle: red 8604A1-31-1-01-3-1 protective collar: black designation label: 0/OFF - I/ON	<b>201457</b>	0.830
		for switch with 6 poles: Ø 180 mm; can be padlocked in 0 position using max. 3 padlocks for safety switch; cover can only be removed in I/ON position!		
		handle: black 8604A1-32-1-01-1-1 protective collar: black designation label: 0/OFF - I/ON	<b>201459</b>	0.830
		handle: red 8604A1-32-1-01-2-1 protective collar: yellow designation label: 0/OFF - I/ON	<b>201460</b>	0.830
		handle: red 8604A1-32-1-01-3-1 protective collar: black designation label: 0/OFF - I/ON	<b>201461</b>	0.830



# Load and Motor Switches, Load-Break Switches Series 8544



## Dimensional Drawings (All Dimensions in mm) - Subject to Alterations

