

Safety Switches

Series 8146/5-V37 8150/5-V37



www.stahl.de



00653E00

- > 3- and 6-pole safety switches
10, 12 / 16, 20, 25, 40, 63 / 80,
125 / 160, 180 A
- > Motor switching capacity AC-3 and
AC-23 acc. to IEC 60947-3,
EN 60947, DIN VDE 0660 Part 107
- > With or without load-shedding
contact
- > Positive opening operation of the
main contacts
- > Isolating characteristics acc. to
IEC/EN 60947-1 / -3
- > Padlockable in "OFF" position with
padlocks
- > Rotary actuator with clear
switching position
- > High level of corrosion resistance in
external components
- > Marked with signal orange label
"Safety Switch"



Safety switches ensure the obligatory isolation of electrical power during cleaning, maintenance and repair of the equipment. Other methods of isolation, e.g. removal of fuses or disconnection of motors, which require qualified electricians, are unnecessary.

E7

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

Explosion Protection

Global (IECEx)	
Gas and dust	8146/5: IECEx PTB 06.0090 8150/5: IECEx PTB 09.0049 8146/5: Ex d e ia/ib [iaGa] mb q IIA, IIB, IIC T6, T5, T4 Gb 8150/5: Ex d e ia/ib [iaGa] mb q IIA, IIB, IIC T6, T5, T4, T3 Gb 8146/5: Ex tb IIA, IIB, IIC T80°C, T95°C, T130°C Db 8150/5: Ex tb IIIC T80°C, T95°C, T130°C, T135°C Db

Europe (ATEX)	
Gas and dust	8146/5: PTB 01 ATEX 1024 8150/5: PTB 09 ATEX 1109 8146/5: Ⓢ II 2 G Ex d e ia ib [ia Ga] mb q IIA, IIB, IIC T6, T5, T4 Gb 8150/5: Ⓢ II 2 G Ex d e ia/ib [ia Ga] mb q IIA, IIB, IIC T6, T5, T4, T3 Gb 8146/5: Ⓢ II 2 D Ex tb IIIA, IIIB, IIIC T80°C, T95°C, T130°C Db IP66 8150/5: Ⓢ II 2 D Ex tb IIIC T80°C, T95°C, T130°C, T135°C Db IP66 (marking on rating plate possible)

Certifications and certificates	
Certificates	IECEx, ATEX

WebCode 8146L

Safety Switches 10 A

Series 8146/5-V37 8150/5-V37

Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight
		Colour	Additional device				
10 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-300-50-0050	1.700
	Polyester resin	red handle, yellow protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-300-50-1050	1.700

Technical Data

Design		Safety switch 10 A																														
Mechanical data																																
Degree of protection	IP66 acc. to IEC/EN 60529																															
Enclosure cover	In ON position removable, in OFF position lockable																															
Handle	Can be locked with 3 padlocks in 0-position																															
Mounting / Installation																																
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																															
Main contacts																																
Electrical data																																
Rated operational voltage	690 V AC																															
Rated insulation voltage	750 V																															
Rated impulse withstand voltage	6 kV																															
Rated operational current	10 A																															
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																															
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> </tr> <tr> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>10 A</td> <td>3.0 kW</td> </tr> <tr> <td>400 V ~</td> <td>10 A</td> <td>4.0 kW</td> </tr> <tr> <td>440 V ~</td> <td>10 A</td> <td>4.0 kW</td> </tr> <tr> <td>500 V ~</td> <td>10 A</td> <td>5.5 kW</td> </tr> <tr> <td>690 V ~</td> <td>10 A</td> <td>7.5 kW</td> </tr> </tbody> </table>			U _e	AC-3		I	P	230 V ~	10 A	3.0 kW	400 V ~	10 A	4.0 kW	440 V ~	10 A	4.0 kW	500 V ~	10 A	5.5 kW	690 V ~	10 A	7.5 kW									
U _e	AC-3																															
	I	P																														
230 V ~	10 A	3.0 kW																														
400 V ~	10 A	4.0 kW																														
440 V ~	10 A	4.0 kW																														
500 V ~	10 A	5.5 kW																														
690 V ~	10 A	7.5 kW																														
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-1</th> <th colspan="2">DC-13 (L/R = 300 ms)</th> </tr> <tr> <th>I</th> <th></th> <th>U_e</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>6 A³⁾</td> <td></td> <td>230 V</td> <td>0.4 A</td> </tr> <tr> <td>110 V</td> <td>6 A²⁾</td> <td></td> <td></td> <td></td> </tr> <tr> <td>60 V</td> <td>6 A¹⁾</td> <td></td> <td></td> <td></td> </tr> <tr> <td>24 V</td> <td>10 A¹⁾</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			U _e	DC-1		DC-13 (L/R = 300 ms)		I		U _e	I	220 V	6 A ³⁾		230 V	0.4 A	110 V	6 A ²⁾				60 V	6 A ¹⁾				24 V	10 A ¹⁾			
U _e	DC-1		DC-13 (L/R = 300 ms)																													
	I		U _e	I																												
220 V	6 A ³⁾		230 V	0.4 A																												
110 V	6 A ²⁾																															
60 V	6 A ¹⁾																															
24 V	10 A ¹⁾																															
	1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series																															
Service life of electrical / mechanical parts	> 10 ⁵ operations																															
Max. short-circuit protection	16 A, tripping characteristic: gG according to IEC/EN 60291-1																															
Auxiliary contacts																																
Electrical data																																
Rated operating voltage	400 V AC																															
Rated operational current	6 A																															
Mechanical data																																
Switch	1 NO (ON delayed - OFF advanced)																															
Mounting / Installation																																
Terminals	1.5 / 1.5 mm ² finely stranded / solid																															

Safety Switches 12 / 16 A

Series 8146/5-V37 8150/5-V37



Ambient conditions Safety switches 10 A						
Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main contacts	Auxiliary contacts		Min.	Max.	
300-...	3	1	10	2.5	4	T6: -40 ... +51 °C T6: -40 ... +54 °C ²⁾ T5: -40 ... +69 °C ²⁾

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
12 / 16 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-301-50-0050	0.962
	Polyester resin	black handle, black protective collar	with N-terminal	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-301-50-0150	0.982
	Polyester resin	red handle, yellow protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-301-50-1050	0.958
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-301-50-1150	0.978

Technical Data

Design	Safety switch 12 / 16 A																																																															
Mechanical data																																																																
Degree of protection	IP66 acc. to IEC/EN 60529																																																															
Enclosure cover	In ON position removable, in OFF position lockable																																																															
Handle	Can be locked with 3 padlocks in 0-position																																																															
Mounting / Installation																																																																
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																																																															
Main contacts																																																																
Electrical data																																																																
Rated operational voltage	690 V AC																																																															
Rated insulation voltage	750 V																																																															
Rated impulse withstand voltage	6 kV																																																															
Rated operational current	12 / 16 A																																																															
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																																																															
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> <th colspan="2">AC-3</th> </tr> <tr> <th>I</th> <th>P</th> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>12 A</td> <td>3.0 kW</td> <td>16 A</td> <td>4.0 kW</td> </tr> <tr> <td>400 V ~</td> <td>12 A</td> <td>5.5 kW</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>440 V ~</td> <td>12 A</td> <td>5.5 kW</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>500 V ~</td> <td>12 A</td> <td>5.5 kW</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>690 V ~</td> <td>12 A</td> <td>7.5 kW</td> <td>16 A</td> <td>11.0 kW</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-1</th> <th colspan="2">DC-13 (L/R = 300 ms)</th> </tr> <tr> <th>I</th> <th></th> <th>U_e</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>6 A³⁾</td> <td></td> <td>230 V</td> <td>0.4 A</td> </tr> <tr> <td>110 V</td> <td>6 A²⁾</td> <td></td> <td></td> <td></td> </tr> <tr> <td>60 V</td> <td>6 A¹⁾</td> <td></td> <td></td> <td></td> </tr> <tr> <td>24 V</td> <td>10 A¹⁾</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series</p>	U _e	AC-3		AC-3		I	P	I	P	230 V ~	12 A	3.0 kW	16 A	4.0 kW	400 V ~	12 A	5.5 kW	16 A	7.5 kW	440 V ~	12 A	5.5 kW	16 A	7.5 kW	500 V ~	12 A	5.5 kW	16 A	7.5 kW	690 V ~	12 A	7.5 kW	16 A	11.0 kW	U _e	DC-1		DC-13 (L/R = 300 ms)		I		U _e	I	220 V	6 A ³⁾		230 V	0.4 A	110 V	6 A ²⁾				60 V	6 A ¹⁾				24 V	10 A ¹⁾			
U _e	AC-3		AC-3																																																													
	I	P	I	P																																																												
230 V ~	12 A	3.0 kW	16 A	4.0 kW																																																												
400 V ~	12 A	5.5 kW	16 A	7.5 kW																																																												
440 V ~	12 A	5.5 kW	16 A	7.5 kW																																																												
500 V ~	12 A	5.5 kW	16 A	7.5 kW																																																												
690 V ~	12 A	7.5 kW	16 A	11.0 kW																																																												
U _e	DC-1		DC-13 (L/R = 300 ms)																																																													
	I		U _e	I																																																												
220 V	6 A ³⁾		230 V	0.4 A																																																												
110 V	6 A ²⁾																																																															
60 V	6 A ¹⁾																																																															
24 V	10 A ¹⁾																																																															
Service life of electrical / mechanical parts	> 10 ⁵ operations																																																															

E7

Safety Switches 12 / 16 A

Series 8146/5-V37 8150/5-V37

Technical Data

Max. short-circuit protection	25 A ($I_e = 16$ A); 16 A ($I_e = 12$ A), triggering characteristics: gG acc. to IEC/EN 60291-1
Auxiliary contacts	
Electrical data	
Rated operating voltage	400 V AC
Rated operational current	6 A
Mechanical data	
Switch	1 NO (ON delayed - OFF advanced)
Mounting / Installation	
Terminals	1.5 / 1.5 ... 2.5 / 4 mm ² finely stranded / solid wire

Ambient conditions Safety switches 12 / 16 A

Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main contacts	Auxiliary con- tacts		Min.	Max.	
301-...	3	1	12/16	2.5	4	T6: -40 ... +51 °C T6: -40 ... +54 °C ²⁾ T5: -40 ... +69 °C ²⁾

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Safety Switches 16 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight
		Colour	Additional device				
16 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-302-50-0050	1.590
		red handle, yellow protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-302-50-1050	1.590
		red handle, yellow protective collar	with N-terminal	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-302-50-1150	1.590
	stainless steel 1.4404	black handle, black protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8150/5-V37-302-50-0010	3.250
		red handle, yellow protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8150/5-V37-302-50-1010	3.250
16 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 7... 17 (M25), 1 x 6 ... 13 (M20)	2 NO (1 x ON delayed - OFF leading)	8146/5-V37-602-60-0010	2.640
		red handle, yellow protective collar	--	4 x 7... 17 (M25), 1 x 6 ... 13 (M20)	2 NO (1 x ON delayed - OFF leading)	8146/5-V37-602-60-1010	2.640

Technical Data

Design	Safety switch 16 A																								
Mechanical data																									
Degree of protection	IP66 acc. to IEC/EN 60529																								
Enclosure cover	In ON position removable, in OFF position lockable																								
Handle	Can be locked with 3 padlocks in 0-position																								
Mounting / Installation																									
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																								
Main contacts																									
Electrical data																									
Rated operational voltage	690 V AC																								
Rated insulation voltage	690 V																								
Rated operational current	16 A																								
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																								
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> </tr> <tr> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>16 A</td> <td>4.0 kW</td> </tr> <tr> <td>400 V ~</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>440 V ~</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>500 V ~</td> <td>16 A</td> <td>7.5 kW</td> </tr> <tr> <td>690 V ~</td> <td>16 A</td> <td>11.0 kW</td> </tr> </tbody> </table>	U _e	AC-3		I	P	230 V ~	16 A	4.0 kW	400 V ~	16 A	7.5 kW	440 V ~	16 A	7.5 kW	500 V ~	16 A	7.5 kW	690 V ~	16 A	11.0 kW				
U _e	AC-3																								
	I	P																							
230 V ~	16 A	4.0 kW																							
400 V ~	16 A	7.5 kW																							
440 V ~	16 A	7.5 kW																							
500 V ~	16 A	7.5 kW																							
690 V ~	16 A	11.0 kW																							
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-1, DC-23</th> <th colspan="2">DC-13 (L/R = 300 ms)</th> </tr> <tr> <th>I</th> <th></th> <th>U_e</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>16 A³⁾</td> <td></td> <td>250 V</td> <td>1.1 A</td> </tr> <tr> <td>120 V</td> <td>16 A²⁾</td> <td></td> <td>125 V</td> <td>2.2 A</td> </tr> <tr> <td>60 V</td> <td>16 A¹⁾</td> <td></td> <td>60 V</td> <td>5.0 A</td> </tr> </tbody> </table>	U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)		I		U _e	I	220 V	16 A ³⁾		250 V	1.1 A	120 V	16 A ²⁾		125 V	2.2 A	60 V	16 A ¹⁾		60 V	5.0 A
U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)																						
	I		U _e	I																					
220 V	16 A ³⁾		250 V	1.1 A																					
120 V	16 A ²⁾		125 V	2.2 A																					
60 V	16 A ¹⁾		60 V	5.0 A																					
Service life of electrical / mechanical parts	> 10 ⁵ operations																								
Max. short-circuit protection	25 A, triggering characteristics: gG acc. to IEC/EN 60291-1																								

E7

Safety Switches 16 A

Series 8146/5-V37 8150/5-V37

Technical Data

Auxiliary contacts

Electrical data

Rated operating voltage 500 V AC

Rated operational current 10 A

Mechanical data

Switch

3-pole: 1 NO (ON delayed - OFF advanced)
6-pole: 2 NO (1 x ON delayed - OFF advanced / 1 x switching normally)

Mounting / Installation

Terminals 1.5 / 1.5 ... 4 / 6 mm² finely stranded / solid wire

Ambient conditions Safety switches 16 A

Type 8146/5-V37-/	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main contacts	Auxiliary con- tacts		Min.	Max.	
302-...	3	1	16	2.5	6	T6: -40 ... +51 °C T6: -40 ... +54 °C ²⁾ T5: -40 ... +69 °C ²⁾
302-...-5	3	0	16	2,5	10	T4: -40 ... +60 °C
602-...	6	2	16	2.5	6	T6: -40 ... +47 °C T5: -40 ... +62 °C ²⁾
Type 8150/5-V37-						
302-...	3	1	16	2.5	6	T6: -40 ... +40 °C T6: -40 ... +65 °C ²⁾

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Safety Switches 20 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
20 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-303-50-0010	2.020
	Polyester resin	red handle, yellow protective collar	--	2 x 7... 17 (M25), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-303-50-1010	2.020

Technical Data

Design	Safety switch 20 A																								
Mechanical data																									
Degree of protection	IP66 acc. to IEC/EN 60529																								
Enclosure cover	In ON position removable, in OFF position lockable																								
Handle	Can be locked with 3 padlocks in 0-position																								
Mounting / Installation																									
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																								
Main contacts																									
Electrical data																									
Rated operational voltage	690 V AC																								
Rated insulation voltage	690 V																								
Rated operational current	20 A																								
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																								
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> </tr> <tr> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>20 A</td> <td>5.5 kW</td> </tr> <tr> <td>400 V ~</td> <td>20 A</td> <td>7.5 kW</td> </tr> <tr> <td>440 V ~</td> <td>20 A</td> <td>11.0 kW</td> </tr> <tr> <td>500 V ~</td> <td>20 A</td> <td>11.0 kW</td> </tr> <tr> <td>690 V ~</td> <td>20 A</td> <td>18.5 kW</td> </tr> </tbody> </table>	U _e	AC-3		I	P	230 V ~	20 A	5.5 kW	400 V ~	20 A	7.5 kW	440 V ~	20 A	11.0 kW	500 V ~	20 A	11.0 kW	690 V ~	20 A	18.5 kW				
U _e	AC-3																								
	I	P																							
230 V ~	20 A	5.5 kW																							
400 V ~	20 A	7.5 kW																							
440 V ~	20 A	11.0 kW																							
500 V ~	20 A	11.0 kW																							
690 V ~	20 A	18.5 kW																							
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-1, DC-23</th> <th colspan="2">DC-13 (L/R = 300 ms)</th> </tr> <tr> <th>I</th> <th>U_e</th> <th>I</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>20 A³⁾</td> <td>250 V</td> <td>1.1 A</td> <td>1.1 A</td> </tr> <tr> <td>120 V</td> <td>20 A²⁾</td> <td>125 V</td> <td>2.2 A</td> <td>2.2 A</td> </tr> <tr> <td>60 V</td> <td>20 A¹⁾</td> <td>60 V</td> <td>5.0 A</td> <td>5.0 A</td> </tr> </tbody> </table>	U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)		I	U _e	I	I	220 V	20 A ³⁾	250 V	1.1 A	1.1 A	120 V	20 A ²⁾	125 V	2.2 A	2.2 A	60 V	20 A ¹⁾	60 V	5.0 A	5.0 A
U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)																						
	I	U _e	I	I																					
220 V	20 A ³⁾	250 V	1.1 A	1.1 A																					
120 V	20 A ²⁾	125 V	2.2 A	2.2 A																					
60 V	20 A ¹⁾	60 V	5.0 A	5.0 A																					
	<p>1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series</p>																								
Service life of electrical / mechanical parts	> 10 ⁵ operations																								
Max. short-circuit protection	35 A, triggering characteristics: gG acc. to IEC/EN 60291-1																								
Auxiliary contacts																									
Electrical data																									
Rated operating voltage	500 V AC																								
Rated operational current	10 A																								
Mounting / Installation																									
Terminals	1.5 / 1.5 ... 4 / 6 mm ² finely stranded / solid wire																								

Ambient conditions Safety switches 20 A

Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main con- tacts	Auxiliary contacts		Min.	Max.	
303-...	3	1	20	4	6	T6: -40 ... +40 °C T5: -40 ... +55 °C ²⁾

E7

Safety Switches 20 A

Series 8146/5-V37 8150/5-V37

403-...	4	0	20	4	6	T5: -40 ... +51 °C ²⁾
	4	0	20	6	6	T6: -40 ... +44 °C T5: -40 ... +52 °C T5: -40 ... +59 °C ²⁾
	4	2	20	4	6	T6: -40 ... +49 °C T5: -40 ... +64 °C ²⁾ T5: -40 ... +53 °C
	4	2	20	4	6	T6: -40 ... +42 °C T5: -40 ... +48 °C T5: -40 ... +57 °C ²⁾
	4	2	20	4	6	T5: -40 ... +45 °C T5: -40 ... +51 °C ²⁾
	4	2	20	6	6	T6: -40 ... +43 °C T5: -40 ... +49 °C T5: -40 ... +58 °C ²⁾
603-...	6	2	20	4	6	T6: -40 ... +41 °C T5: -40 ... +56 °C ²⁾
	6	2	20	4	6	T5: -40 ... +49 °C ²⁾
	6	2	20	6	6	T6: -40 ... +42 °C T5: -40 ... +50 °C T5: -40 ... +57 °C ²⁾
	6	0	20	4	6	T6: -40 ... +46 °C T5: -40 ... +61 °C ²⁾ T5: -40 ... +52 °C
	6	0	20	4	6	T5: -40 ... +53 °C ²⁾ T5: -40 ... +48 °C
	6	0	20	4	6	T5: -40 ... +45 °C
	6	0	20	6	6	T5: -40 ... +52 °C ²⁾ T5: -40 ... +48 °C
Type 8150/5-V37-						
303-...	3	1	20	4	6	T6: -40 ... +42 °C T5: -40 ... +57 °C ²⁾
	3	1	20	4	6	T5: -40 ... +50 °C ²⁾
	3	1	20	6	6	T6: -40 ... +43 °C T5: -40 ... +58 °C ²⁾ T5: -40 ... +53 °C
403-...	4	0	20	4	6	T5: -40 ... +52 °C ²⁾ T5: -40 ... +43 °C
	4	0	20	4	6	T5: -40 ... +46 °C ²⁾ T5: -40 ... +40 °C
	4	0	20	6	6	T6: -40 ... +45 °C T5: -40 ... +60 °C ²⁾
	4	0	20	6	6	T5: -40 ... +53 °C ²⁾ T5: -40 ... +51 °C

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Safety Switches 25 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
25 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 13 ... 21 (M32), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-304-50-0010	1.960
	Polyester resin	red handle, yellow protective collar	--	2 x 13 ... 21 (M32), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-304-50-1010	2.020
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 13 ... 21 (M32), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8146/5-V37-304-50-1110	2.020
	stainless steel 1.4404	black handle, black protective collar	--	2 x 13 ... 21 (M32), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8150/5-V37-304-50-0010	3.300
	stainless steel 1.4404	red handle, yellow protective collar	--	2 x 13 ... 21 (M32), 1 x 6 ... 13 (M20)	1 NO (ON delayed - OFF leading)	8150/5-V37-304-50-1010	3.300
25 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 7... 17 (M25), 1 x 6 ... 13 (M20)	2 NO (1 x ON delayed - OFF leading)	8146/5-V37-604-60-0010	2.790
	Polyester resin	red handle, yellow protective collar	--	4 x 7... 17 (M25), 1 x 6 ... 13 (M20)	2 NO (1 x ON delayed - OFF leading)	8146/5-V37-604-60-1010	2.790

Technical Data

Design	Safety switch 25 A																																		
Mechanical data																																			
Degree of protection	IP66 acc. to IEC/EN 60529																																		
Enclosure cover	In ON position removable, in OFF position lockable																																		
Handle	Can be locked with 3 padlocks in 0-position																																		
Mounting / Installation																																			
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																																		
Main contacts																																			
Electrical data																																			
Rated operational voltage	690 V AC																																		
Rated insulation voltage	690 V																																		
Rated operational current	25 A																																		
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																																		
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> <th colspan="2">AC-23</th> </tr> <tr> <th>I</th> <th>P</th> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>25 A</td> <td>5.5 kW</td> <td></td> <td></td> </tr> <tr> <td>400 V ~</td> <td>25 A</td> <td>11.0 kW</td> <td></td> <td></td> </tr> <tr> <td>440 V ~</td> <td>25 A</td> <td>11.0 kW</td> <td></td> <td></td> </tr> <tr> <td>500 V ~</td> <td>25 A</td> <td>15.0 kW</td> <td></td> <td></td> </tr> <tr> <td>690 V ~</td> <td></td> <td></td> <td>25 A</td> <td>22,0 kW</td> </tr> </tbody> </table>	U _e	AC-3		AC-23		I	P	I	P	230 V ~	25 A	5.5 kW			400 V ~	25 A	11.0 kW			440 V ~	25 A	11.0 kW			500 V ~	25 A	15.0 kW			690 V ~			25 A	22,0 kW
U _e	AC-3		AC-23																																
	I	P	I	P																															
230 V ~	25 A	5.5 kW																																	
400 V ~	25 A	11.0 kW																																	
440 V ~	25 A	11.0 kW																																	
500 V ~	25 A	15.0 kW																																	
690 V ~			25 A	22,0 kW																															
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-1, DC-23</th> <th colspan="2">DC-13 (L/R = 300 ms)</th> </tr> <tr> <th>I</th> <th></th> <th>U_e</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>25 A³⁾</td> <td></td> <td>250 V</td> <td>1.1 A</td> </tr> <tr> <td>120 V</td> <td>25 A²⁾</td> <td></td> <td>125 V</td> <td>2.2 A</td> </tr> <tr> <td>60 V</td> <td>25 A¹⁾</td> <td></td> <td>60 V</td> <td>5.0 A</td> </tr> </tbody> </table>	U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)		I		U _e	I	220 V	25 A ³⁾		250 V	1.1 A	120 V	25 A ²⁾		125 V	2.2 A	60 V	25 A ¹⁾		60 V	5.0 A										
U _e	DC-1, DC-23		DC-13 (L/R = 300 ms)																																
	I		U _e	I																															
220 V	25 A ³⁾		250 V	1.1 A																															
120 V	25 A ²⁾		125 V	2.2 A																															
60 V	25 A ¹⁾		60 V	5.0 A																															
Service life of electrical / mechanical parts	> 10 ⁵ operations																																		
Max. short-circuit protection	35 A, triggering characteristics: gG acc. to IEC/EN 60291-1																																		
Auxiliary contacts																																			
Electrical data																																			
Rated operating voltage	500 V AC																																		
Rated operational current	10 A																																		
Mounting / Installation																																			
Terminals	1.5 / 1.5 ... 4 / 6 mm ² finely stranded / solid wire																																		

E7

Safety Switches 25 A

Series 8146/5-V37 8150/5-V37

Ambient conditions Safety switches 25 A						
Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main contacts	Auxiliary contacts		Min.	Max.	
304-...	3	1	25	4	6	T6: -40 ... +40 °C T5: -40 ... +55 °C ²⁾
404-...	4	0	25	4	6	T5: -40 ... +51 °C ²⁾
	4	0	25	6	6	T6: -40 ... +44 °C T5: -40 ... +52 °C T5: -40 ... +59 °C ²⁾
	4	2	20	4	6	T6: -40 ... +49 °C T5: -40 ... +64 °C ²⁾ T5: -40 ... +53 °C
	4	2	22.5	4	6	T6: -40 ... +42 °C T5: -40 ... +48 °C T5: -40 ... +57 °C ²⁾
	4	2	25	4	6	T5: -40 ... +45 °C T5: -40 ... +51 °C ²⁾
	4	2	25	6	6	T6: -40 ... +43 °C T5: -40 ... +49 °C T5: -40 ... +58 °C ²⁾
604-...	6	2	22.5	4	6	T6: -40 ... +41 °C T5: -40 ... +56 °C ²⁾
	6	2	25	4	6	T5: -40 ... +49 °C ²⁾
	6	2	25	6	6	T6: -40 ... +42 °C T5: -40 ... +50 °C T5: -40 ... +57 °C ²⁾
	6	0	20	4	6	T6: -40 ... +46 °C T5: -40 ... +61 °C ²⁾ T5: -40 ... +52 °C
	6	0	22.5	4	6	T5: -40 ... +53 °C ²⁾ T5: -40 ... +48 °C
	6	0	25	4	6	T5: -40 ... +45 °C
	6	0	25	6	6	T5: -40 ... +52 °C ²⁾ T5: -40 ... +48 °C
Type 8150/5-V37-						
303-...	3	1	22.5	4	6	T6: -40 ... +42 °C T5: -40 ... +57 °C ²⁾
	3	1	25	4	6	T5: -40 ... +50 °C ²⁾
	3	1	25	6	6	T6: -40 ... +43 °C T5: -40 ... +58 °C ²⁾ T5: -40 ... +53 °C
404-...	4	0	22.5	4	6	T5: -40 ... +52 °C ²⁾ T5: -40 ... +43 °C
	4	0	25	4	6	T5: -40 ... +46 °C ²⁾ T5: -40 ... +40 °C
	4	0	22.5	6	6	T6: -40 ... +45 °C T5: -40 ... +60 °C ²⁾
	4	0	25	6	6	T5: -40 ... +53 °C ²⁾ T5: -40 ... +51 °C

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Safety Switches 40 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
40 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	--	8146/5-V37-305-00-0010-K	5.560
	Polyester resin	black handle, black protective collar	--	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-305-51-0010-K	5.560
	Polyester resin	red handle, yellow protective collar	--	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-305-51-1010-K	4.620
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-305-51-1110-K	18.500
	stainless steel 1.4404	black handle, black protective collar	--	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8150/5-V37-305-51-0010-K	8.360
	stainless steel 1.4404	red handle, yellow protective collar	--	2 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8150/5-V37-305-51-1010-K	8.360
40 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	--	8146/5-V37-605-00-0010-K	10.960
	Polyester resin	black handle, black protective collar	--	4 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-605-51-0010-K	10.960
	Polyester resin	red handle, yellow protective collar	--	4 x 17 ... 28 (M40), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-605-51-1010-K	10.960

Technical Data

Design	Safety switch 40 A																						
Mechanical data																							
Degree of protection	IP66 acc. to IEC/EN 60529																						
Enclosure cover	In ON position removable, in OFF position lockable																						
Handle	Can be locked with 3 padlocks in 0-position																						
Mounting / Installation																							
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																						
Main contacts																							
Electrical data																							
Rated operational voltage	690 V AC																						
Rated insulation voltage	750 V																						
Rated operational current	40 A																						
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																						
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">AC-3</th> </tr> <tr> <th>I</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>240 V ~</td> <td>40 A</td> <td>11.0 kW</td> </tr> <tr> <td>400 V ~</td> <td>40 A</td> <td>22.0 kW</td> </tr> <tr> <td>440 V ~</td> <td>40 A</td> <td>22.0 kW</td> </tr> <tr> <td>500 V ~</td> <td>40 A</td> <td>22.0 kW</td> </tr> <tr> <td>690 V ~</td> <td>40 A</td> <td>37.0 kW</td> </tr> </tbody> </table>			U _e	AC-3		I	P	240 V ~	40 A	11.0 kW	400 V ~	40 A	22.0 kW	440 V ~	40 A	22.0 kW	500 V ~	40 A	22.0 kW	690 V ~	40 A	37.0 kW
U _e	AC-3																						
	I	P																					
240 V ~	40 A	11.0 kW																					
400 V ~	40 A	22.0 kW																					
440 V ~	40 A	22.0 kW																					
500 V ~	40 A	22.0 kW																					
690 V ~	40 A	37.0 kW																					
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-23, DC-1</th> </tr> <tr> <th>I</th> <th></th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>40 A³⁾</td> <td></td> </tr> <tr> <td>120 V</td> <td>40 A²⁾</td> <td></td> </tr> <tr> <td>60 V</td> <td>40 A¹⁾</td> <td></td> </tr> </tbody> </table>			U _e	DC-23, DC-1		I		220 V	40 A ³⁾		120 V	40 A ²⁾		60 V	40 A ¹⁾							
U _e	DC-23, DC-1																						
	I																						
220 V	40 A ³⁾																						
120 V	40 A ²⁾																						
60 V	40 A ¹⁾																						
	1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series																						

E7

Safety Switches 40 A

Series 8146/5-V37 8150/5-V37

Technical Data

Service life of electrical / mechanical parts	> 10 ⁵ operations
Max. short-circuit protection	80 A, triggering characteristics: gG acc. to IEC / EN 60291-1
Auxiliary contacts	
Electrical data	
Rated operating voltage	500 V AC
Rated operational current	6 A
Mounting / Installation	
Terminals	1.5 ... 2.5 mm ² finely stranded / solid

Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section 1) [mm ²]		Temperature class / Perm. ambient temperature
	Main con- tacts	Auxiliary con- tacts		Min.	Max.	
305-...-K	3	2	40	10	25	T6: -40 ... +48 °C T6: -40 ... +51 °C T5: -40 ... +66 °C ²⁾
305-...-5	3	0	40	10	35	T4: -40 ... +60 °C
605-...-K	6	2	40	10	25	T6: -40 ... +47 °C T5: -40 ... +51 °C ²⁾ T5: -40 ... +62 °C ²⁾
Type 8150/5-V37-						
305-...-K	3	2	40	10	25	T6: -40 ... +45 °C T5: -40 ... +49 °C T5: -40 ... +60 °C ²⁾
605-...-K	6	2	40	10	25	T6: -40 ... +46 °C T5: -40 ... +48 °C T5: -40 ... +61 °C ²⁾

1) Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

2) only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

Safety Switches 63 / 80 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
63 / 80 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	--	8146/5-V37-306-00-0010	8.060
	Polyester resin	black handle, black protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-0010	7.960
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M50, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-0040	11.800
	Polyester resin	red handle, yellow protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-1010	7.550
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-1110	7.550
	stainless steel 1.4404	black handle, black protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8150/5-V37-306-51-0010-K	12.600
	stainless steel 1.4404	red handle, yellow protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8150/5-V37-306-51-1010-K	12.600
63 / 80 A, 3-pole, compact ³⁾	Polyester resin	black handle, black protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	--	8146/5-V37-306-00-0010-K	5.680
	Polyester resin	black handle, black protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-0010-K	5.680
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M50, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-0040-K	5.680
	Polyester resin	red handle, yellow protective collar	--	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-1010-K	5.680
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-306-51-1110-K	5.680
63 / 80 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	--	8146/5-V37-606-00-0010	10.100
	Polyester resin	black handle, black protective collar	--	4 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-606-51-0010	10.100
	Polyester resin	red handle, yellow protective collar	--	4 x 23 ... 35 (M50), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-606-51-1010	10.100

Note

³⁾ 8146/-...-...-K and 8150/-...-...-K versions with lower height; see dimensional drawings

E7

Safety Switches 63 / 80 A

Series 8146/5-V37 8150/5-V37

Technical Data

Design	Safety switch 63 / 80 A				
Mechanical data					
Degree of protection	IP66 acc. to IEC/EN 60529				
Enclosure cover	In ON position removable, in OFF position lockable				
Handle	Can be locked with 3 padlocks in 0-position				
Mounting / Installation					
Cable entries	Standard: In polyamide, Series 8161 Special: In metal				
Main contacts					
Electrical data					
Rated operational voltage	500 V AC (80 A) / 690 V AC (63 A)				
Rated insulation voltage	750 V				
Rated operational current	63 / 80 A				
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107				
	U _e	AC-3 I	P	AC-3 I	P
	230 V ~	63 A	18.5 kW	80 A	22.0 kW
	400 V ~	63 A	30.0 kW	80 A	45.0 kW
	440 V ~	63 A	37.0 kW	80 A	45.0 kW
	500 V ~	63 A	37.0 kW	80 A	55.0 kW
	690 V ~	63 A	55.0 kW		
	U _e	DC-23, DC-1 I			
	220 V	80 A ³⁾			
	120 V	80 A ²⁾			
	60 V	80 A ¹⁾			
	1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series				
Service life of electrical / mechanical parts	> 10 ⁵ operations				
Max. short-circuit protection	63 A: 125 A, triggering characteristics: gG acc. to IEC/EN 60291-1 80 A: 160 A, triggering characteristics: gG acc. to IEC/EN 60291-1				
Auxiliary contacts					
Electrical data					
Rated operating voltage	500 V AC				
Rated operational current	6 A				
Mounting / Installation					
Terminals	1.5 ... 2.5 mm ² finely stranded / solid				

Ambient conditions Safety switches 63 / 80 A

Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main contacts	Auxiliary contacts		Min.	Max.	
306-...-K	3	2	50	10	25	T6: -40 ... +43 °C
	3	2	63	16	25	T6: -40 ... +42 °C T5: -40 ... +57 °C ²⁾
	3	2	80	25	25	T6: -40 ... +40 °C T5: -40 ... +44 °C T5: -40 ... +55 °C ²⁾
306-...	3	2	63	35	50	T6: -40 ... +58 °C T5: -40 ... +73 °C ²⁾
	3	2	63	50	50	T6: -40 ... +60 °C T5: -40 ... +76 °C ²⁾
	3	2	80	35	50	T6: -40 ... +48 °C T5: -40 ... +53 °C T5: -40 ... +63 °C ²⁾
	3	2	80	50	50	T6: -40 ... +53 °C T5: -40 ... +57 °C T5: -40 ... +68 °C ²⁾
306-...-5	3	0	63	25	95	T4: -40 ... +60 °C

Safety Switches 63 / 80 A

Series 8146/5-V37 8150/5-V37



606-...	6	2	50	10	50	T6: -40 ... +41 °C T5: -40 ... +56 °C ²⁾
	6	2	63	16	50	T6: -40 ... +41 °C T5: -40 ... +56 °C ²⁾
	6	2	63	25	50	T6: -40 ... +47 °C T5: -40 ... +62 °C ²⁾
	6	2	80	25	50	T5: -40 ... +51 °C ²⁾
	6	2	80	35	50	T6: -40 ... +43 °C T5: -40 ... +58 °C ²⁾
Type 8150/5-V37-						
306-...-K	3	2	63	16	50	T5: -40 ... +50 °C ²⁾ T5: -40 ... +46 °C
	3	2	63	25	50	T6: -40 ... +42 °C T5: -40 ... +51 °C T5: -40 ... +57 °C ²⁾
606-...	6	2	50	16	50	T6: -40 ... +45 °C T5: -40 ... +60 °C ²⁾
	6	2	63	16	50	T5: -40 ... +46 °C ²⁾ T5: -40 ... +42 °C
	6	2	63	25	50	T6: -40 ... +43 °C T5: -40 ... +47 °C T5: -40 ... +58 °C ²⁾
Type 8150/5-V37-						
306-...-K	3	2	80	25	50	T6: -40 ... +47 °C²⁾ T5: -40 ... +43 °C
	3	2	80	35	50	T6: -40 ... +40 °C T5: -40 ... +51 °C T5: -40 ... +55 °C ²⁾
307-...-5	0	0	80	50	150	T4: -40 ... +60 °C
606-...	6	2	80	25	50	T5: -40 ... +41 °C

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

E7

Safety Switches 125 / 160 / 180 A

Series 8146/5-V37 8150/5-V37

Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
125 / 160 A, 3-pole	Polyester resin	black handle, black protective collar	--	for 2 x M63, 1 x M20	--	8146/5-V37-308-00-0010	18.500
	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-0010	18.500
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M63, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-0040	22.770
	Polyester resin	red handle, yellow protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-1010	18.500
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-1110	23.200
125 / 160 A, 3-pole, compact *)	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	--	8146/5-V37-308-00-0010-K	14.350
	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-0010-K	14.350
	stainless steel 1.4404	black handle, black protective collar	--	∅ ∅	2 NO (1 x ON delayed - OFF leading)	8150/5-V37-308-51-0010-K	25.625
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M63, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-0040-K	21.260
	Polyester resin	red handle, yellow protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-1010-K	14.350
	stainless steel 1.4404	red handle, yellow protective collar	∅ ∅	∅ ∅	1 NO (1 x ON delayed - OFF leading), 1 NC	8150/5-V37-308-51-1010-K	25.625
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-308-51-1110-K	14.350
125 / 160 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	--	8146/5-V37-608-00-0010	22.760
	Polyester resin	black handle, black protective collar	--	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-608-51-0010	22.760
	Polyester resin	red handle, yellow protective collar	---	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-608-51-1010	22.760
	Polyester resin	red handle, yellow protective collar	with N-terminal	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-608-51-1110	22.760

Safety Switches 125 / 160 / 180 A

Series 8146/5-V37 8150/5-V37



Selection Table

Version	Enclosure material	Equipment		Cable dia. range [mm]	Switch	Order number	Weight kg
		Colour	Additional device				
180 A, 3-pole	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	--	8146/5-V37-310-00-0010	19.560
	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-0010	19.560
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M63, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-0040	22.770
	Polyester resin	red handle, yellow protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-1010	19.560
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-1110	19.560
180 A, 3-pole, compact ¹⁾	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	--	8146/5-V37-310-00-0010-K	14.360
	Polyester resin	black handle, black protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-0010-K	14.360
	Polyester resin	black handle, black protective collar	with brass plate	for 2 x M63, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-0040-K	15.140
	Polyester resin	red handle, yellow protective collar	--	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-1010-K	14.360
	Polyester resin	red handle, yellow protective collar	with N-terminal	2 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-310-51-1110-K	14.360
180 A, 6-pole	Polyester resin	black handle, black protective collar	--	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	--	8146/5-V37-610-00-0010	37.360
	Polyester resin	black handle, black protective collar	--	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-610-51-0010	37.360
	Polyester resin	black handle, black protective collar	with brass plate	for 4 x M63, 1 x M20	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-610-51-0040	0.000
	Polyester resin	red handle, yellow protective collar	--	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-610-51-1010	37.360
	Polyester resin	red handle, yellow protective collar	with N-terminal	4 x 31 ... 48 (M63), 1 x 6 ... 13 (M20)	1 NO (1 x ON delayed - OFF leading), 1 NC	8146/5-V37-610-51-1110	37.360

Note *) 8146/-...-...-K and 8150/-...-...-K versions with lower height; see dimensional drawings

E7

Safety Switches 125 / 160 / 180 A

Series 8146/5-V37 8150/5-V37

Technical Data

Design		Safety switch 125 / 160 / 180 A																																																			
Mechanical data																																																					
Degree of protection	IP66 acc. to IEC/EN 60529																																																				
Enclosure cover	In ON position removable, in OFF position lockable																																																				
Handle	Can be locked with 3 padlocks in 0-position																																																				
Mounting / Installation																																																					
Cable entries	Standard: In polyamide, Series 8161 Special: In metal																																																				
Main contacts																																																					
Electrical data																																																					
Rated operational voltage	400 V AC (180 A) / 500 V AC (150 A) / 690 V AC (125 A)																																																				
Rated insulation voltage	750 V																																																				
Rated operational current	125 / 160 / 180 A																																																				
Switching capacity	acc. to IEC/EN 60947-3; DIN VDE 0660, Part 107																																																				
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="3">AC-3</th> <th rowspan="2">I</th> <th rowspan="2">P</th> <th rowspan="2">I</th> <th rowspan="2">P</th> </tr> <tr> <th>I</th> <th>P</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>230 V ~</td> <td>180 A</td> <td>55.0 kW</td> <td>150 A</td> <td>45.0 kW</td> <td>125 A</td> <td>55.0 kW</td> <td></td> </tr> <tr> <td>400 V ~</td> <td>180 A</td> <td>90.0 kW</td> <td>150 A</td> <td>75.0 kW</td> <td>125 A</td> <td>55.0 kW</td> <td></td> </tr> <tr> <td>440 V ~</td> <td>180 A</td> <td></td> <td>150 A</td> <td>90.0 kW</td> <td>125 A</td> <td>75.0 kW</td> <td></td> </tr> <tr> <td>500 V ~</td> <td>180 A</td> <td></td> <td>150 A</td> <td>90.0 kW</td> <td>125 A</td> <td>75.0 kW</td> <td></td> </tr> <tr> <td>690 V ~</td> <td>180 A</td> <td></td> <td>150 A</td> <td></td> <td>125 A</td> <td>110.0 kW</td> <td></td> </tr> </tbody> </table>		U _e	AC-3			I	P	I	P	I	P	I	230 V ~	180 A	55.0 kW	150 A	45.0 kW	125 A	55.0 kW		400 V ~	180 A	90.0 kW	150 A	75.0 kW	125 A	55.0 kW		440 V ~	180 A		150 A	90.0 kW	125 A	75.0 kW		500 V ~	180 A		150 A	90.0 kW	125 A	75.0 kW		690 V ~	180 A		150 A		125 A	110.0 kW	
U _e	AC-3			I	P	I					P																																										
	I	P	I																																																		
230 V ~	180 A	55.0 kW	150 A	45.0 kW	125 A	55.0 kW																																															
400 V ~	180 A	90.0 kW	150 A	75.0 kW	125 A	55.0 kW																																															
440 V ~	180 A		150 A	90.0 kW	125 A	75.0 kW																																															
500 V ~	180 A		150 A	90.0 kW	125 A	75.0 kW																																															
690 V ~	180 A		150 A		125 A	110.0 kW																																															
	<table border="1"> <thead> <tr> <th rowspan="2">U_e</th> <th colspan="2">DC-23, DC-1</th> </tr> <tr> <th>I</th> <th></th> </tr> </thead> <tbody> <tr> <td>220 V</td> <td>180 A³⁾</td> <td></td> </tr> <tr> <td>120 V</td> <td>180 A²⁾</td> <td></td> </tr> <tr> <td>60 V</td> <td>180 A¹⁾</td> <td></td> </tr> </tbody> </table>		U _e	DC-23, DC-1		I		220 V	180 A ³⁾		120 V	180 A ²⁾		60 V	180 A ¹⁾																																						
U _e	DC-23, DC-1																																																				
	I																																																				
220 V	180 A ³⁾																																																				
120 V	180 A ²⁾																																																				
60 V	180 A ¹⁾																																																				
	1) 1 conducting path 2) 2 conducting paths connected in series 3) 3 conducting paths connected in series																																																				
Service life of electrical / mechanical parts	> 10 ⁵ operations																																																				
Max. short-circuit protection	max. 200 A / 690 V max. 250 A / 500 V																																																				
Auxiliary contacts																																																					
Electrical data																																																					
Rated operating voltage	500 V AC																																																				
Rated operational current	6 A																																																				
Mounting / Installation																																																					
Terminals	1.5 ... 2.5 mm ² finely stranded / solid																																																				

Ambient conditions Safety switches 125 / 160 / 180 A

Type 8146/5-V37-	No. of poles		max. current [A]	Conductor cross-section ¹⁾ [mm ²]		Temperature class / Perm. ambient temperature
	Main con- tacts	Auxiliary contacts		Min.	Max.	
308-...-K	3	1	125	95	120	T6: -40 ... +47 °C T5: -40 ... +52 °C ²⁾ T5: -40 ... +62 °C ²⁾
	3	1	125	120	120	T6: -40 ... +51 °C T5: -40 ... +66 °C ²⁾
308-...	3	1	125	95	150	T6: -40 ... +48 °C T5: -40 ... +63 °C ²⁾
608-...	6	2	125	95	150	T6: -40 ... +41 °C T5: -40 ... +56 °C ²⁾
Typ 8150/5-V37-						
308-...-K	3	1	125	95	120	T5: -40 ... +51 °C T5: -40 ... +54 °C ²⁾
	3	1	125	120	120	T5: -40 ... +45 °C T5: -40 ... +60 °C ²⁾

Safety Switches 125 / 160 / 180 A

Series 8146/5-V37 8150/5-V37



Typ 8146/5-V37-						
308-...-K	3	1	160	95	120	T5: -40 ... +40 °C T5: -40 ... +45 °C ²⁾ T4: -40 ... +80 °C ²⁾
	3	1	160	120	120	T5: -40 ... +51 °C ²⁾ T4: -40 ... +86 °C ²⁾
308-...	3	1	160	95	150	T5: -40 ... +47 °C T4: -40 ... +84 °C ²⁾
	3	1	160	120	150	T5: -40 ... +52 °C T4: -40 ... +88 °C ²⁾
608-...	6	2	160	95	150	T4: -40 ... +70 °C ²⁾
	6	2	160	120	150	T5: -40 ... +44 °C T4: -40 ... +79 °C ²⁾
Typ 8150/5-V37-						
308-...-K	3	1	160	95	120	T4: -40 ... +47 °C
	3	1	160	120	120	T5: -40 ... +41 °C T5: -40 ... +44 °C ²⁾
Typ 8146/5-V37-						
310-...-K	3	1	180	95	120	T4: -40 ... +68 °C ²⁾
	3	1	180	120	120	T5: -40 ... +40 °C T4: -40 ... +75 °C ²⁾
310-...	3	1	180	95	150	T4: -40 ... +74 °C ²⁾
	3	1	180	120	150	T5: -40 ... +45 °C T4: -40 ... +80 °C ²⁾
610-...	6	2	180	120	150	T4: -40 ... +68 °C ²⁾

¹⁾ Engineering note:

The maximum conductor cross-sections given were determined using the H07V.

The minimum bending radius was assumed to be 4 x outer diameter in accordance with VDE 0298-3.

²⁾ only with heat-resistant cable > 70 °C on cable entries or/and > 85 °C on clamping points

Bold: specifications on the type plate

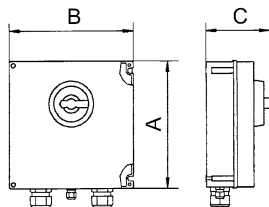
We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice.
The illustrations cannot be considered binding.

E7

Safety Switches 125 / 160 / 180 A

Series 8146/5-V37 8150/5-V37

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



04120E00

Safety switches			Dimensions [mm]		
			A	B	C
3-pole	10, 12 / 16 A	8146/5-V37-300-50-...	112,5	112,5	131
		8146/5-V37-301-50-...	112,5	112,5	131
	16 A	8146/5-V37-302-50-...	170	112,5	132
		8146/5-V37-302-...-5..	340,5	170	132
		8150/5-V37-302-50-...	176,5	176,5	132
		8146/5-V37-302-50-0250	227	112,5	172
	20 A	8146/5-V37-303-50-...	170	170	132
	25 A	8146/5-V37-304-50-...	170	170	132
		8150/5-V37-304-50-...	176,5	176,5	132
	40 A	8146/5-V37-305-...-K	340,5	170	176,5
8146/5-V37-305-...-5..		340,5	340,5	195	
8150/5-V37-305-...-K		360	176,5	194	
63 / 80 A	8146/5-V37-306-...-K	340,5	170	195	
	8146/5-V37-306-...	340,5	340,5	195	
	8146/5-V37-306-...-5..	681,5	340,5	195	
	8150/5-V37-306-S1-...	360	360	196	
80 A	8146/5-V37-307-...-5..	681,5	340,5	195	
125 / 160 A	8146/5-V37-308-...-K	681,5	340,5	205	
	8146/5-V37-308-...	681,5	681,5	205	
180 A	8146/5-V37-310-...-K	681,5	340,5	205	
	8146/5-V37-310-...	681,5	681,5	205	
6-pole	16 A	8146/5-V37-602-60-...	170	170	172
	25 A	8146/5-V37-604-60-...	227	170	172
	40 A	8146/5-V37-605-...-K	340,5	340,5	205
	63 / 80 A	8146/5-V37-606-...	681,5	340,5	205
	125 / 160 A	8146/5-V37-608-...	1023	681,5	243
	180 A	8146/5-V37-610-...	1023	681,5	243

Enclosure and sealing material

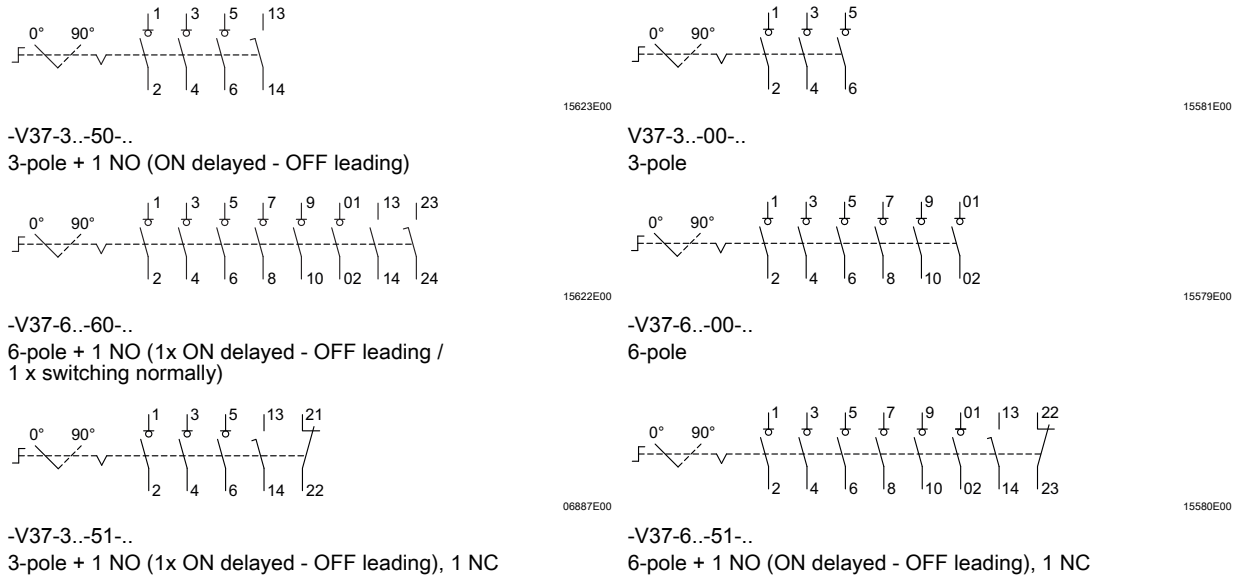
Type	8146/5-V37	8150/5-V37
Enclosure	Polyester resin, glass-fibre-reinforced, dark-grey, similar to RAL 7024 stance ≥ 7 J surface resistance $\leq 10^9 \Omega$ flame retardant acc. IEC/EN 60695, UL 94, ASTM D635	stainless steel 1.4404 (AISI 316L), brush finished
Seal	silicone, foamed, optional EPDM	silicone, foamed

Safety Switches 125 / 160 / 180 A


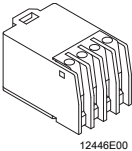
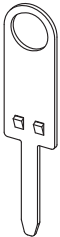
Series 8146/5-V37 8150/5-V37



Circuit diagrams



Accessories and Spare Parts

Designation	Figure	Description	Art. no.	Weight kg	
Brass plate		for 8146/5-V37-302-50-0040	Gr. 041 A 1xM20 2xM25x1,5	202079	0.081
		for 8146/5-V37-305-51-0040-K	Gr. 071 A 1xM20x1,5 2xM40x1,5	200215	0.190
		for 8146/5-V37-306-51-0040-K	Gr. 073 A 1xM20 2xM50x1,5	201948	0.370
Auxiliary contact		2 NC contacts (8080/1-3) ²⁾	168356	0.026	
		1 NC contact + 1 NO contact (8080/1-1) ¹⁾	168351	0.026	
		2 NO contacts (8080/1-4) ²⁾	168353	0.026	
		The switching function of the auxiliary contact depends on the installation slot used. ¹⁾ left: delayed (ON), advanced (OFF); right: synchronising ²⁾ left and right: synchronising			
Auxiliary contact key		for removing the mounted auxiliary contact	201909	0.035	

E7