

DRIESCHER**Indoor - Switch-Disconnecter H 27**

- Three-pole
- Rated voltage 12 kV and 24 kV
- Rated current 400 A and 630 A



H 27

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DRIESCHER - Indoor Switch-Disconnecter H 27

DIN VDE 0670, part 301 / IEC 60265-1

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Types of switch-disconnectors

- | | |
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| <p>H 27 F-EK for front-panel mounting
- without trip-free release*</p> <p>H 27 F-EA for front-panel mounting
- with trip-free release*</p> <p>H 27 F-SuT for front-panel mounting - with trip-free release, with two separat cross-rails, respectively with mounted insulators and fuse holders.
(cross-rails are not included in delivery)</p> <p>H 27 EK for wall mounting and lateral mounting
- without trip-free release*</p> <p>H 27 EA for wall mounting and lateral mounting
- with trip-free release*</p> | <p>H 27 SEA for wall mounting and lateral mounting
- with trip-free release*, with a cross-rail mounted below with mounted insulators and fuse holders.</p> <p>H 27 SuT for lateral mounting - with trip-free release*, with a cross rail mounted below and a separat cross-rail with mounted insulators and fuse holders.
(cross-rail is included in delivery)</p> <p>The devices always will be delivered with an energy storage mechanism, for quick-make and quick-break operation. For switch-disconnectors with fuse holders, you have to use only HV HBC fuse-link with pin release and a power from 80 N at least.</p> |
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* please look at page 3, energy storage mechanism

Operating conditions

The switches are designed for normal operating conditions according to DIN VDE 0670, Part 1000, class „Minus 5 Indoor“. The peak value of the ambient temperature is 40° C; the average value over 24 hours is 35° C at best.

The values of the insulating power are related to sea-level. Reduction in insulating capacity at heights up to 1000 m are negligible due to the decreasing insulating capacity of the air. At heights over 1000 m above sea-

level the values for rated withstand alternating voltage and rated impulse withstand voltage must be adjusted (e. g. at a hight of 2000 m above sea-level, the insulating power of the air gaps is reduced by a factor of 0.89).

To each switchgear an instruction for transportation, mounting and putting into service is inclosed. This instruction which we certainly would send you in advance, has to be absolutely obeyed.

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Main advantages

- Suitable dimensions
- Efficient and reliable arc extinction
- Break visible after load disconnection
- Perfect functioning, no arcing or lagging contacts
- Simple operation
- High switching rate with minimum maintenance

Energy storage mechanism

One of the robust, low-maintenance energy storage mechanisms of type EK or EA is mounted on the base frame, on which the three switch poles are installed. Many hundred thousands of these devices have already been used successfully in the H 22 switch-disconnector.

The EK energy storage mechanism operates with only a single torsion spring for quick-make and quick-break operation without trip-free release. The torsion spring is tensioned for switching ON or OFF. After tensioning, the spring energy is released for the particular switching operation (ON or OFF).

The EK energy storage mechanism operates with two torsion springs for trip-free quick-make and quick-break operation. Both torsion springs are tensioned when the switch is closed.

The ON switch spring is tripped after tensioning and releases its energy for switching ON, while the OFF

switch spring remains tensioned until it is released by the tripping device, HV HBC (high-voltage, high-breaking capacity) fuse links with striker pin, or manually for switching OFF (trip-free release*).

With non-manual release the operating shaft remains in the ON position and must be moved to the neutral position "OFF" manually for reclosing.

Wall-mounting devices can be actuated via a linkage system operated by a detachable lever or by any of the actuators in List 774 according to requirements and situation.

Lateral mounted switches can be operated directly by fixing a sleeve for D-drives with internal twelve-sided polygon 24 on the operating shaft and using the detachable lever with hexagonal attachment (see List 774). Front-panel mounted devices can be operated by means of a detachable lever via a driving pulley integrated in the switch.

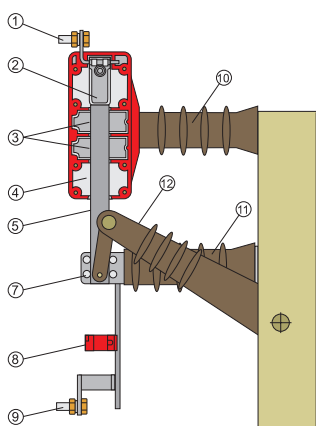
Arc extinction

When closing the switch, the switch blade (5) with the arcing tip (6) is withdrawn from the contact jaw (2). The arc which occurs is extinguished in the enclosed, four-section arcing chamber (4), comprising pressure and expansion chambers. In the pressure chamber two extinguishing plates (3) are forced into the path of the arc by lateral spring pressure.

At low currents the arc is extinguished by deionizing

action due to the cooling effect of the walls. Arc extinction is achieved in the higher current ranges by the arc extinguishing gases produced in the pressure chamber flowing out into the expansion chamber. Due to this rational combination of arc quenching principles the entire current range of the load-break switch is effectively covered.

The arcing chambers require no maintenance.

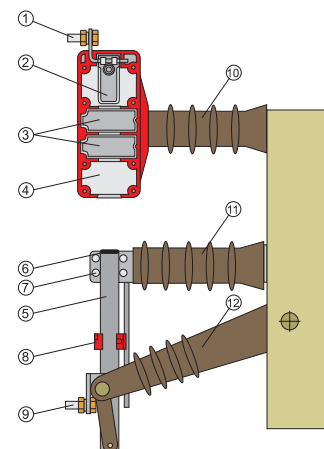


Switch-disconnector H 27

ON

- 1 Upper connecting contact
- 2 Contact jaw
- 3 Extinguishing plates
- 4 Arcing chamber
- 5 Switch blade
- 6 Arcing tip
- 7 Roller guide contact
- 8 Guide lug
- 9 Lower connecting contact

OFF



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Additional possibilities of mounting

All models with the exception of H 27 SuT and H 27 F-SuT are available with or without integrated high-speed earthing switch in the switch frame.

In case of load-break switch H 27 SuT the earthing switch is mounted on the separate insulator cross-rail (this can be fitted subsequently).

A separate earthing switch with built-in driving pulley (same fixing level as load-break switch) is available for load-break switch H 27 F-SuT for switching by means of a detachable lever.

Shunt releases can only be mounted on switches with trip-free release (not H 27 EK or H 27 F-EK); signalling contacts can be mounted on all switches including earthing switches.

- see 774 Indoor actuating mechanisms and drive accessories
- see 773 Switch sticks and fuse tongs (equipment accessories)

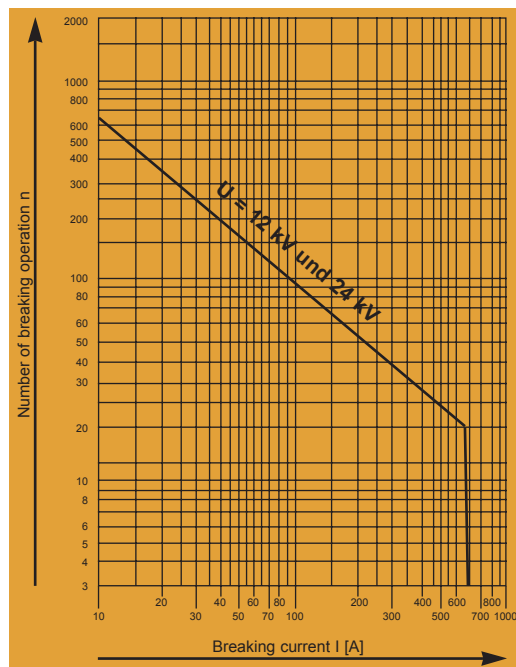
Technical Data

Insulation levels to VDE 0670, part 301 and part 1000

Rated voltage	U_r	kV	12	24
Rated frequency	f_r	Hz	50	50
Rated-(operating)-current	I_r	A	630	400 630
Rated-peak withstand current	I_p	kA	50 ¹⁾	40 ¹⁾ 50 ¹⁾
Rated-short-time current	I_k	kA	20 ¹⁾	16 ¹⁾ 20 ¹⁾
Rated-making current	I_{ma}	kA	50 ¹⁾	40 ¹⁾ 40 ¹⁾
Rated-breaking current	I_1	A	630	400 630
Rated-loop breaking current	I_2	A	630	400 630
Rated-transformer off-load breaking current	I_3	A		10
Rated-cable charging breaking current	I_{4a}	A		35
Rated-earth fault off-load breaking current	I_{6a}	A	300	250
Rated-cable charging breaking current below earth fault conditions	I_{6b}	A	18	45
Rated-impulse withstand voltage	U_w	kV		
Conductor - Conductor / Conductor - Earth			75	125 ²⁾
Break			85	145
Rated-power frequency withstand voltage	U_d	kV		
Conductor - Conductor / Conductor - Earth			28	50
Break			32	60

1) These values also apply to earthing switches

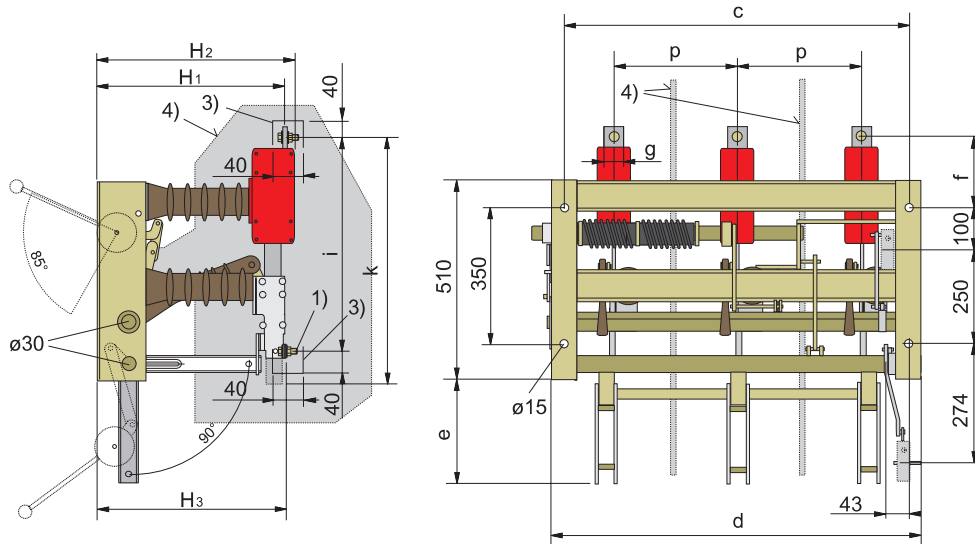
2) 95 kV for clearance between phases $p = 170$ mm without phase barrier



Maintenance-free load breaking operations as a function of the breaking current at $\cos \varphi \geq 0,7$

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Indoor switch H 27 F-EA and F-EK for front-panel mounting



- 1) hexagonal screw M12x40 with two span washers and nut
 3) outside this zone, the connecting bar have to be insulated
 4) phase barriers (24 kV : p = 170 mm)
 insulation level with phase barriers: Uw 125 kV
 insulation level without phase barriers: Uw 95 kV

Type H 27 F-EA, with earthing switch mounted below earthing switch, with or without mechanical interlocking

Rated voltage	Type	Rated current	p	c	d	e	f	g	i	k	H ₁	H ₂	H ₃	Drawing-no.
12 kV	H 27 F-EK	630 A	155	465	500	117	103	40	493	545	310	324	314	LN3-093700
12 kV	H 27 F-EA	630 A	155	465	500	117	103	40	493	545	310	324	314	LN3-093699
24 kV	H 27 F-EK	400 A	170	495	530	202	156	30	586	658	401	385	388	LN4-41923
24 kV	H 27 F-EK	400 A	225	605	640	202	156	30	586	658	401	385	388	LN4-67887
24 kV	H 27 F-EK	630 A	170	495	530	202	161	40	591	663	406	390	394	LN4-091398
24 kV	H 27 F-EK	630 A	225	605	640	202	161	40	591	663	406	390	394	LN3-091278
24 kV	H 27 F-EA	400 A	170	495	530	202	156	30	586	658	401	385	388	LN4-41924
24 kV	H 27 F-EA	400 A	225	605	640	202	156	30	586	658	401	385	388	LN4-67888
24 kV	H 27 F-EA	630 A	170	495	530	202	161	40	591	663	406	390	394	LN3-091399
24 kV	H 27 F-EA	630 A	225	605	640	202	161	40	591	663	406	390	394	LN3-091286

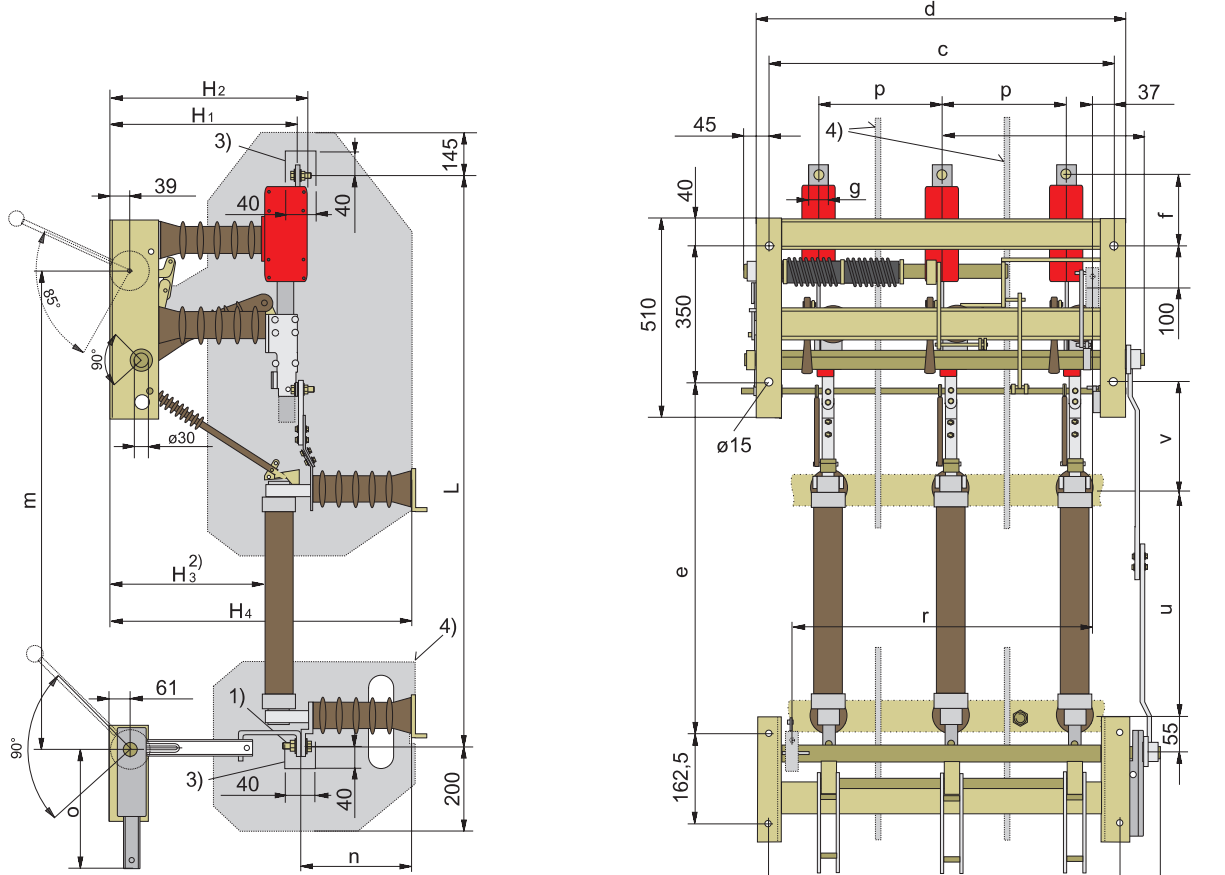
without earthing switch

with earthing switch mounted below

Rated voltage	Type	Rated current	p	Drawing-no.	Weight approx. kg	Part-no. without mechanical interlocking	Part-no. with mechanical interlocking	Weight approx. kg
12 kV	H 27 F-EK	630 A	155	727 45100	38	727 45111	727 45114	42
12 kV	H 27 F-EA	630 A	155	727 46100	38	727 46111	727 46114	42
24 kV	H 27 F-EK	400 A	170	727 25101	46	727 25102	727 25114	44
24 kV	H 27 F-EK	400 A	225	727 25301	44	727 25302	727 25314	44
24 kV	H 27 F-EK	630 A	170	727 55000	46	727 55111	727 55114	51
24 kV	H 27 F-EK	630 A	225	727 55300	49	727 55311	727 55314	51
24 kV	H 27 F-EA	400 A	170	727 26101	46	727 26111	727 26114	46
24 kV	H 27 F-EA	400 A	225	727 26301	48	727 26311	727 26314	54
24 kV	H 27 F-EA	630 A	170	727 56100	48	727 56111	727 56114	46
24 kV	H 27 F-EA	630 A	225	727 56300	51	727 56311	727 56314	53

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Indoor switch H 27 F-SuT for front-panel mounting



- 1) hexagonal screw with two span washers and nut
- 2) max. fuse diametral (88 mm) after DIN 43625
- 3) outside this zone, the connecting bar have to be insulated
- 4) phase barriers (24 kV : p = 170 mm)
insulation level with phase barriers: Uw 125 kV
insulation level without phase barriers: Uw 95 kV

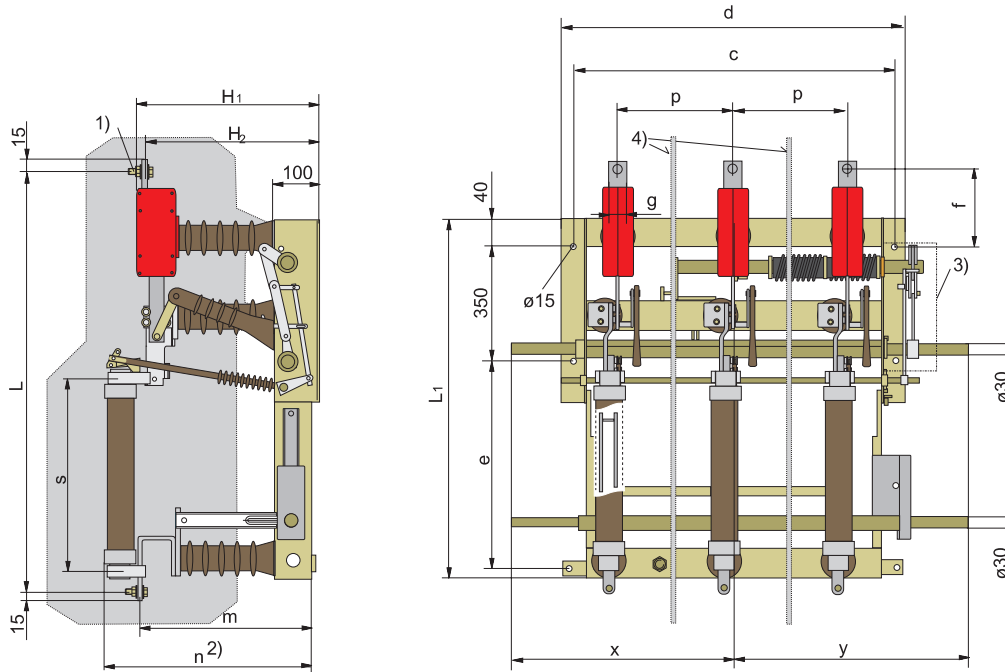
Type H 27 F-SuT, with earthing switch mounted below earthing switch, with or without mechanical interlocking

Rated voltage	Type	Rated current	p	c	c ₁	d	e	f	g	H ₁	H ₂	H ₃	H ₄	L	m	n	o	r	s	u	v
12 kV	H 27 F-SuT	630 A	155	465	471	500	567	103	40	310	324	225	472	1047	843	147	204	382	74	325	214
24 kV	H 27 F-SuT	400 A	170	495	501	530	751	156	30	385	401	299	626	1286	1027	227	280	412	42	475	250
24 kV	H 27 F-SuT	400 A	225	605	611	640	751	156	30	385	401	299	626	1286	1027	227	280	412	42	475	250

Rated voltage	Type	Rated current	p	without earthing switch		with earthing switch mounted below		Weight approx. kg	Drawing-no.
				Part-no.	Weight approx. kg	Part-no. without mechanical interlocking	Part-no. with mechanical interlocking		
12 kV	H 27 F-SuT	630 A	155	727 74100	58	727 47111	727 47114	64	LN3-093701
24 kV	H 27 F-SuT	400 A	170	727 27101	64	727 27111	727 27114	70	LN3-41925
24 kV	H 27 F-SuT	400 A	225	727 27301	69	727 27311	727 27314	75	LN3-67889

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Indoor switch H 27 SEA for wall mounting



- 1) hexagonal screw with two span washers and nut
2) max. fuse diameter (88 mm) after DIN 43625

- 3) covering
4) phase barriers (24 kV : p = 170 mm)
insulation level with phase barriers: Uw 125 kV
insulation level without phase barriers: Uw 95 kV

Type H 27 SEA^{a)}, with earthing switch mounted below earthing switch, with or without mechanical interlocking

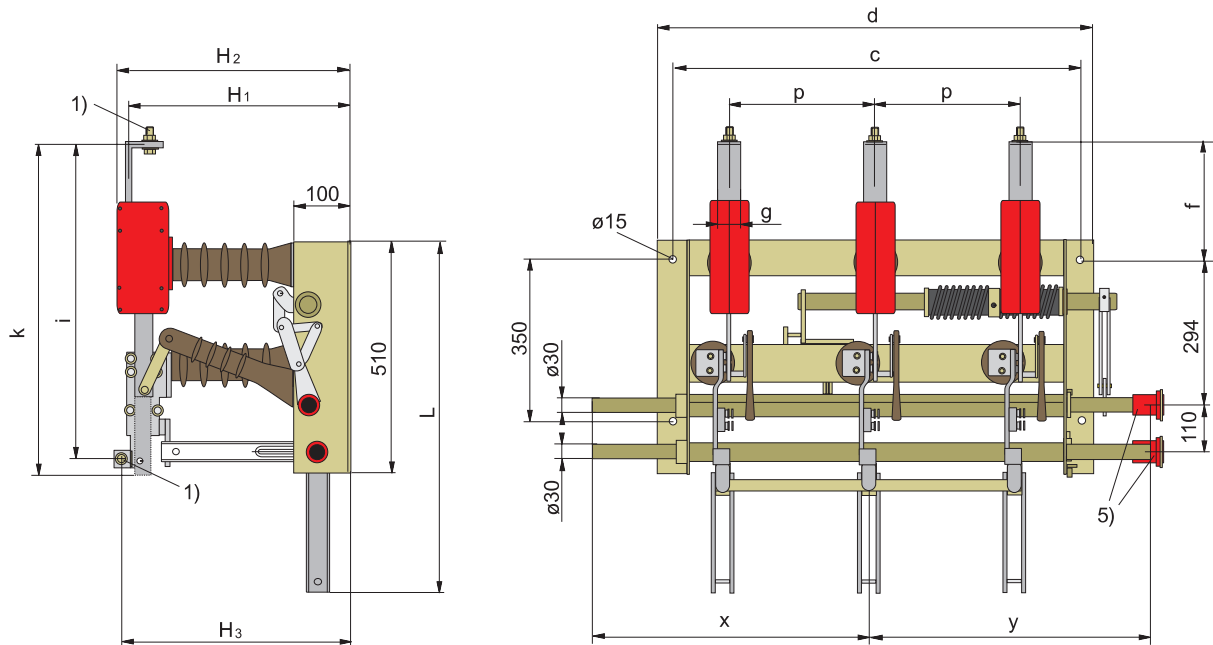
Rated voltage	Type	Rated current	p	c	d	e	f	g	H ₁	H ₂	L	L ₁	m	n	s	x	y
12 kV ^{a)}	H 27 SEA	630 A	155	465	500	500	103	40	310	324	1013	925	254	354	325	290	340
12 kV ^{b)}	H 27 SEA	630 A	155	465	500	-	103	40	310	324	693	755	335	434	325	290	290
12 kV ^{a)}	H 27 SEA	630 A	210	575	610	610	103	40	310	324	1013	925	254	354	325	450	450
12 kV ^{b)}	H 27 SEA	630 A	210	575	610	-	103	40	310	324	693	755	335	434	325	450	450
24 kV	H 27 SEA	400 A	170	495	530	-	156	30	385	401	1330	903	388	488	475	460	460
24 kV	H 27 SEA	400 A	225	605	640	-	156	30	385	401	1040	903	388	488	475	440	440
24 kV	H 27 SEA	400 A	275	705	740	-	156	30	385	401	1040	903	388	488	475	565	565

Rated voltage	Type	Rated current	without earthing switch		with earthing switch mounted below			Drawing-no.
			Part-no.	Weight approx. kg	Part-no. without mechanical interlocking	Part-no. with mechanical interlocking	Weight approx. kg	
12 kV ^{a)}	H 27 SEA	630 A	727 43300	44	727 43311	727 43314	51	LN3-095549
12 kV ^{b)}	H 27 SEA	630 A	727 43100	44	727 43111	727 43114	51	LN3-093698
12 kV ^{a)}	H 27 SEA	630 A	727 43490	51	727 43411	727 43414	60	LN3-095849
12 kV ^{b)}	H 27 SEA	630 A	727 43400	51	727 43491	727 43494	60	LN3-093704
24 kV	H 27 SEA	400 A	727 23551	61	727 23552	727 23553	68	LN3-090676
24 kV	H 27 SEA	400 A	727 23351	64	727 23352	727 23353	74	LN4-67885
24 kV	H 27 SEA	400 A	727 23151	68	727 23152	727 23153	79	LN4-39598

- a) = long type
b) = short type

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Indoor switch H 27 EA and EK for lateral mounting



- 1) hexagonal screw with two span washers and nut
5) drive box and clamping washer with ON / OFF indicator

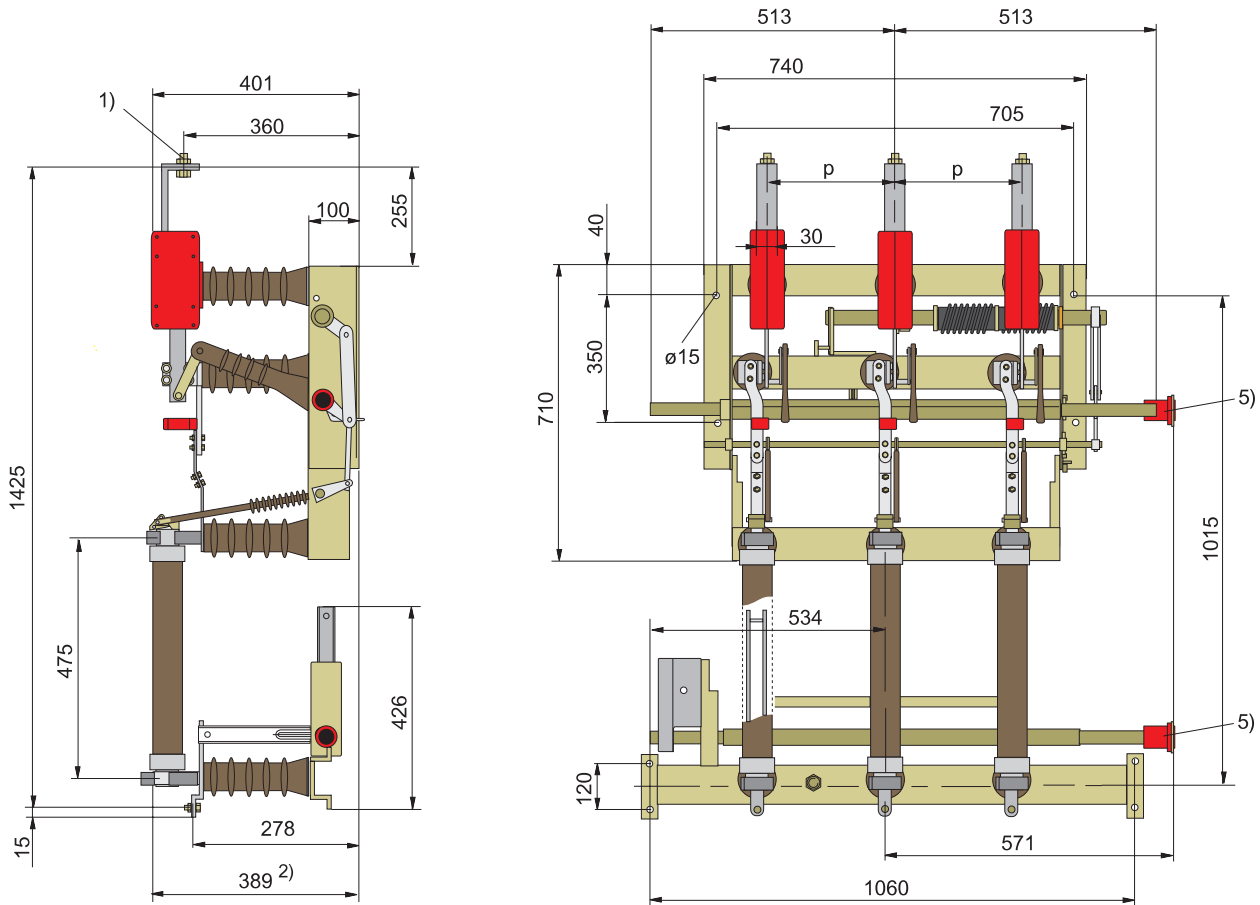
Type H 27 EA, with earthing switch mounted below earthing switch, with or without mechanical interlocking

Rated voltage	Type	Rated current	p	c	d	f	g	H ₁	H ₂	H ₃	i	k	L	x	y	Drawing-no.
12 kV	H 27 EK	630 A	155	575	610	197	30	310	310	314	493	545	627	287	398	LN3-095031
24 kV	H 27 EK	400 A	275	705	740	255	30	360	401	358	685	757	712	513	513	LN4-44330
24 kV	H 27 EK	630 A	275	705	740	255	40	360	406	375	685	757	712	513	513	LN4-091499
24 kV	H 27 EA	400 A	275	705	740	255	30	360	401	358	685	757	712	513	513	LN4-44887
24 kV	H 27 EA	630 A	275	705	740	255	40	360	406	375	685	757	712	513	513	LN3-091500

Rated voltage	Type	Rated current	p	without earthing switch		with earthing switch mounted below		Drawing-no.
				Part-no.	Weight approx. kg	Part-no. without mechanical interlocking	Part-no. with mechanical interlocking	
12 kV	H 27 EK	630 A	155	727 41295	42	727 41297	727 41290	53
24 kV	H 27 EK	400 A	275	727 21201	51	727 21203	727 21204	62
24 kV	H 27 EK	630 A	275	727 51200	48	727 51211	727 51214	59
24 kV	H 27 EA	400 A	275	727 22200	50	727 22211	727 22214	61
24 kV	H 27 EA	630 A	275	727 52200	53	727 52211	727 52214	64

DRIESCHER - Indoor Switch-Disconnecter H 27

Indoor switch-fuse combination H 27 SuT for lateral mounting



- 1) hexagonal screw with two span washers and nut
- 2) max. fuse diametral (88 mm) after DIN 43625
- 5) drive box and clamping washer with ON / OFF indicator

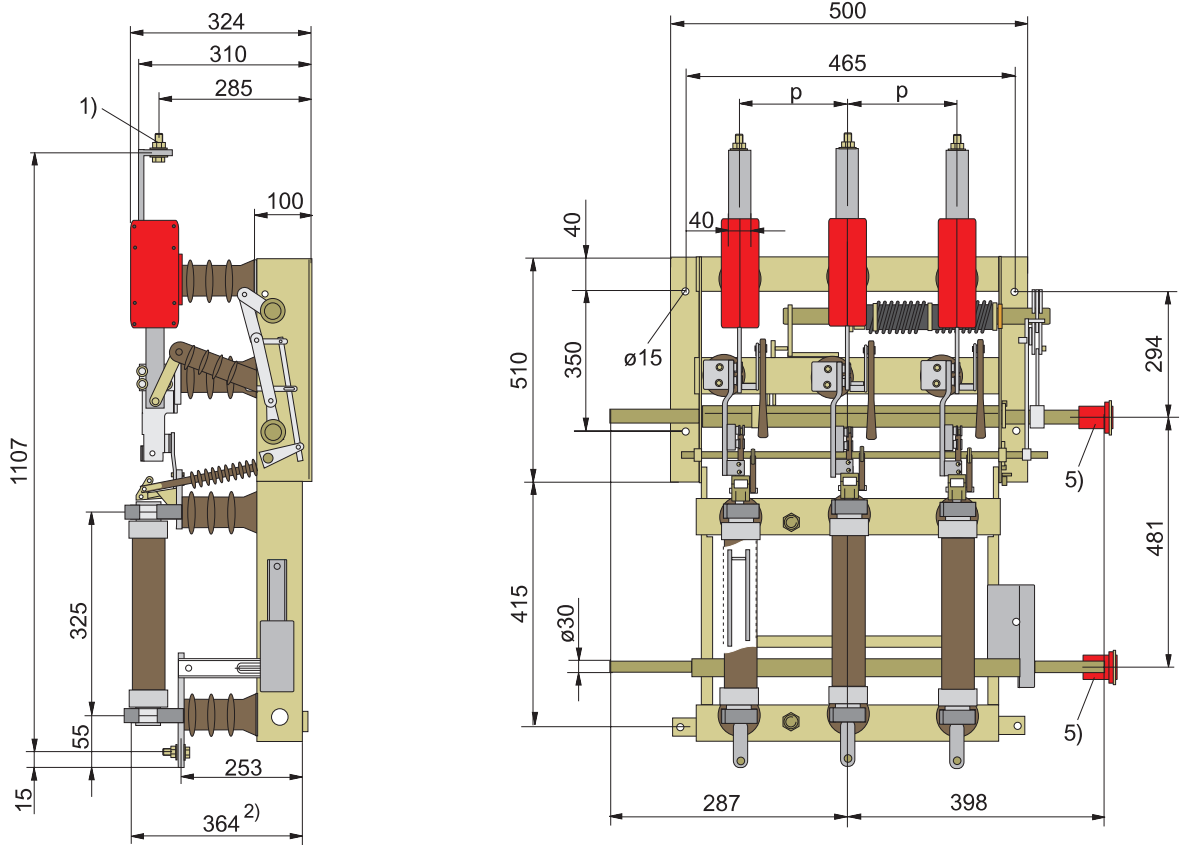
Type H 27 SuT , with earthing switch mounted below
earthing switch, with or without mechanical interlocking
HV HBC-fuses to take out laterally !

Rated voltage	Type	Rated current	p	without earthing switch		
				Part-no.	Weight approx. kg.	Drawing-no.
24 kV	H 27 SuT	400 A	275	727 23210	74	LN4-44233

Rated voltage	Type	Rated current	p	with earthing switch mounted below		
				Part-no. without mechanical interlocking	Part-no. with mechanical interlocking	Weight approx. kg
24 kV	H 27 SuT	400 A	275	727 23212	727 23211	88

DRIESCHER - Indoor Switch-Disconnecter H 27

Indoor switch-fuse combination H 27 SEA for lateral mounting



- 1) hexagonal screw with two span washers and nut
 2) max. fuse diameter (88 mm) after DIN 43625
 5) drive box and clamping washer with ON / OFF indicator

**Type H 27 SEA, with earthing switch mounted below
 earthing switch, with or without mechanical interlocking
 HV HBC-fuses to take out lateral !**

Rated voltage	Type	Rated current	p	without earthing switch		Drawing-no.
				Part-no.	Weight approx. kg	
12 kV	H 27 SEA	630 A	155	727 43295	61	LN3-094869

Rated voltage	Type	Rated current	p	with earthing switch mounted below		Weight approx. kg
				Part-no. without mechanical interlocking	Part-no. with mechanical interlocking	
12 kV	H 27 SEA	630 A	155	727 43297	727 43290	77

Our range of products includes:

Medium-voltage systems

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- Non-withdrawable, withdrawable, and truck-type units
- Compact switchgear assemblies
- Custom-made models
- Industrial systems

Medium-voltage switchgear

- Indoor switches, disconnectors, and earthing switches (single and triple pole)
- Indoor circuit breakers (low oil content and vacuum)
- Outdoor switches (low oil content and vacuum)
- High-voltage high-breaking-capacity fuses

Low-voltage systems

- Open-framework design
- Enclosed break devices (up to 6,000 A)
- Cable and fixed-station distribution cabinets

Low-voltage switchgear

- Switch disconnectors
- Switch and fuse blocks
- Low-voltage high-breaking-capacity fuses

Driving gear

- Hand-operated and motor-operated mechanisms
- Indoor and outdoor driving gear

Accessories

- For medium and low voltages
- For station equipment
- Insulators (0.5 kV - 38.5 kV)
- Plastic and glass-reinforced plastic screening

Dimensions, weights, diagrams and descriptions in the list are non-binding. Subject to change without notice.

switching • electricity • safely

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