

Air Circuit Breakers Ex9A16



- Air circuit breakers, frame size A16
- Rated current up to 1600 A
- Rated operating voltage 690 V AC
- Breaking capacity Icu 55 and 65 kA
- Rated impulse voltage withstand Uimp 12 kV
- Fixed and withdrawable versions
- Utilization category B acc. to EN 60947-2
- Arbitrary selection of tripping unit SU
- Compact and modular design
- Wide range of accessories

Air Circuit Breakers from Ex9A series are designed for power distribution protection on high demand installations such as industrial and commercial among others. Testing according IEC / EN 60947-2 standards ensures the required functionality and reliability for the higher power applications.

The Ex9A series are divided in four frame sizes according the characteristics of the installation, the divisions are as follow:

Ex9A16: from 630 A to 1600 A with breaking capacities from 55 kA to 65 kA.

Ex9A25: from 1600 A to 2500 A with breaking capacities from 65 kA to 85 kA.

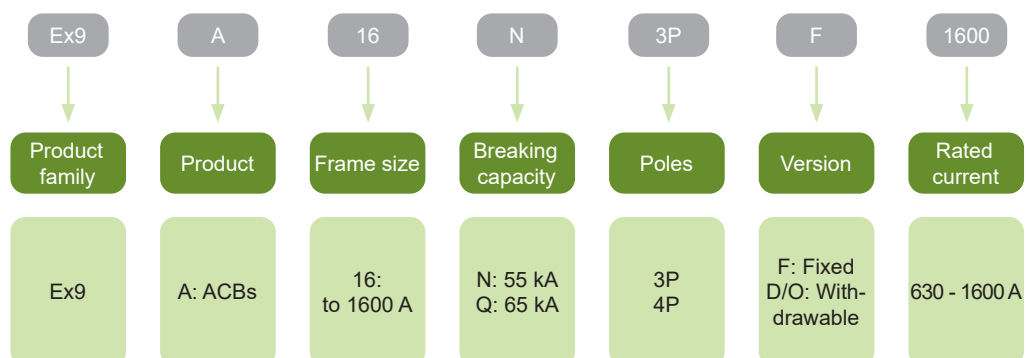
Ex9A32: from 2500 A to 3200 A with breaking capacities from 65 kA to 100 kA.

Ex9A40: from 3200 A to 4000 A with breaking capacities from 65 kA to 100 kA.

Ex9A devices are compatible with all the variants of Smart Units, giving the possibility to perfectly fit the smart functionalities to any current range, ACB construction and installation requirements.

Utilization category B circuit breakers.

Type Key



Air Circuit Breakers Ex9A16

- Fixed version
- Frame size A16
- Rated current up to 1600 A
- Rated short-circuit breaking capacity I_{cu} 55 and 65 kA
- Device body only, tripping unit must be selected separately
- In the scope of delivery: fixed Air Circuit Breaker body, full set of secondary terminals, tripping unit (according to the selection), door frame, main terminals mounted in horizontal position, alarm contacts
- Basic parameters setting range of tripping units SU (all versions):

$$I_r = 0.4 - 1 \times I_n$$

$$I_{sd} = 1.5 - 10 \times I_r$$

$$I_i = 2 - 15 \times I_n$$

Fixed version, $I_{cu} = 55$ kA at 415 V AC



Poles	Rated current I_n	Overcurrent release I_r	Instant. release I_i	Article No.	Type	Packing
3P	630 A	252-630 A	1260-9450 A	112121	Ex9A16N 3P F 630	1
3P	800 A	320-800 A	1600-12000 A	112122	Ex9A16N 3P F 800	1
3P	1000 A	400-1000 A	2000-15000 A	112123	Ex9A16N 3P F 1000	1
3P	1250 A	500-1250 A	2500-18750 A	112124	Ex9A16N 3P F 1250	1
3P	1600 A	640-1600 A	3200-24000 A	112125	Ex9A16N 3P F 1600	1
4P	630 A	252-630 A	1260-9450 A	112131	Ex9A16N 4P F 630	1
4P	800 A	320-800 A	1600-12000 A	112132	Ex9A16N 4P F 800	1
4P	1000 A	400-1000 A	2000-15000 A	112133	Ex9A16N 4P F 1000	1
4P	1250 A	500-1250 A	2500-18750 A	112134	Ex9A16N 4P F 1250	1
4P	1600 A	640-1600 A	3200-24000 A	112135	Ex9A16N 4P F 1600	1

Fixed version, $I_{cu} = 65$ kA at 415 V AC



Poles	Rated current I_n	Overcurrent release I_r	Instant. release I_i	Article No.	Type	Packing
3P	630 A	252-630 A	1260-9450 A	112141	Ex9A16Q 3P F 630	1
3P	800 A	320-800 A	1600-12000 A	112142	Ex9A16Q 3P F 800	1
3P	1000 A	400-1000 A	2000-15000 A	112143	Ex9A16Q 3P F 1000	1
3P	1250 A	500-1250 A	2500-18750 A	112144	Ex9A16Q 3P F 1250	1
3P	1600 A	640-1600 A	3200-24000 A	112145	Ex9A16Q 3P F 1600	1
4P	630 A	252-630 A	1260-9450 A	112151	Ex9A16Q 4P F 630	1
4P	800 A	320-800 A	1600-12000 A	112152	Ex9A16Q 4P F 800	1
4P	1000 A	400-1000 A	2000-15000 A	112153	Ex9A16Q 4P F 1000	1
4P	1250 A	500-1250 A	2500-18750 A	112154	Ex9A16Q 4P F 1250	1
4P	1600 A	640-1600 A	3200-24000 A	112155	Ex9A16Q 4P F 1600	1

Air Circuit Breakers Ex9A16

- Withdrawable version
- Frame size A16
- Rated current up to 1600 A
- Rated short-circuit breaking capacity I_{cu} 55 and 65 kA
- Device body only, tripping unit must be selected separately
- Cassette must be selected separately (ordered as premounted or separate delivery)
- Cassette equipped with full set of secondary terminals, mechanical device position indicator, safety shutters of main terminals
- In the scope of delivery: withdrawable Air Circuit Breaker body, Air Circuit Breaker cassette (according to selection), tripping unit (according to the selection), door frame, alarm contacts
- Setting range of tripping units SU (all versions):

$$I_r = 0.4 - 1 \times I_n$$

$$I_{sd} = 1.5 - 10 \times I_r$$

$$I_i = 2 - 15 \times I_n$$

Withdrawable version, $I_{cu} = 55 \text{ kA at } 415 \text{ V AC}$



Poles	Rated current I_n	Overcurrent release I_r	Instant. release I_i	Article No.	Type	Packing
3P	630 A	252-630 A	1260-9460 A	112116	Ex9A16N 3P D/O 630	1
3P	800 A	320-800 A	1600-12000 A	112117	Ex9A16N 3P D/O 800	1
3P	1000 A	400-1000 A	2000-15000 A	112118	Ex9A16N 3P D/O 1000	1
3P	1250 A	500-1250 A	2500-18750 A	112119	Ex9A16N 3P D/O 1250	1
3P	1600 A	640-1600 A	3200-24000 A	112120	Ex9A16N 3P D/O 1600	1
4P	630 A	252-630 A	1260-9450 A	112126	Ex9A16N 4P D/O 630	1
4P	800 A	320-800 A	1600-12000 A	112127	Ex9A16N 4P D/O 800	1
4P	1000 A	400-1000 A	2000-15000 A	112128	Ex9A16N 4P D/O 1000	1
4P	1250 A	500-1250 A	2500-18750 A	112129	Ex9A16N 4P D/O 1250	1
4P	1600 A	640-1600 A	3200-24000 A	112130	Ex9A16N 4P D/O 1600	1

Withdrawable version, $I_{cu} = 65 \text{ kA at } 415 \text{ V AC}$



Poles	Rated current I_n	Overcurrent release I_r	Instant. release I_i	Article No.	Type	Packing
3P	630 A	252-630 A	1260-9450 A	112136	Ex9A16Q 3P D/O 630	1
3P	800 A	320-800 A	1600-12000 A	112137	Ex9A16Q 3P D/O 800	1
3P	1000 A	400-1000 A	2000-15000 A	112138	Ex9A16Q 3P D/O 1000	1
3P	1250 A	500-1250 A	2500-18750 A	112139	Ex9A16Q 3P D/O 1250	1
3P	1600 A	640-1600 A	3200-24000 A	112140	Ex9A16Q 3P D/O 1600	1
4P	630 A	252-630 A	1260-9450 A	112146	Ex9A16Q 4P D/O 630	1
4P	800 A	320-800 A	1600-12000 A	112147	Ex9A16Q 4P D/O 800	1
4P	1000 A	400-1000 A	2000-15000 A	112148	Ex9A16Q 4P D/O 1000	1
4P	1250 A	500-1250 A	2500-18750 A	112149	Ex9A16Q 4P D/O 1250	1
4P	1600 A	640-1600 A	3200-24000 A	112150	Ex9A16Q 4P D/O 1600	1

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Cassette for Ex9A16 withdrawable ACBs

- Safety shutters of main terminals connectors in the scope of delivery
- Equipped with full set of secondary terminals and mechanical device position indicator
- Delivered with main terminals in horizontal position



Version	Poles	Rated current I_n	Article No.	Type	Packing
Premounted	3P	630 A	112156	+CAS 11 3P 630 — 800	1
Premounted	3P	1600 A	112157	+CAS 11 3P 1000 — 1600	1
Premounted	4P	630 A	112158	+CAS 11 4P 630 — 800	1
Premounted	4P	1600 A	112159	+CAS 11 4P 1000 — 1600	1
Separately orderable	3P	630 A	112160	CAS 11 3P 630 — 800	1
Separately orderable	3P	1600 A	112161	CAS 11 3P 1000 — 1600	1
Separately orderable	4P	630 A	112162	CAS 11 4P 630 — 800	1
Separately orderable	4P	1600 A	112163	CAS 11 4P 1000 — 1600	1

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Air Circuit Breakers up to 1600 A

General parameters

Arbitrary choice of tripping unit +SU

Suitable for commercial as well as industrial applications

I_r can be set in range $(0.4 — 1.0) \times I_n$

I_{sd} can be set in range $(1.5 — 10) \times I_r$

I_i can be set in range $(2 — 15) \times I_n$

Internal accessories

Smart Unit - basic analysis Current measurement	+SU30A	112288 — 112380
	+SU40A	112291 — 112383
Smart Unit - Power measurement Current, voltages and power measurement	+SU30P	112294 — 112386
	+SU40P	112297 — 112389
Smart Unit - Advanced analysis Current, voltage, power, Harmonics analyzer	+SU30H	112300 — 112392
	+SU40H	112303 — 112395
Auxiliary contact unit	AX11	112396 — 112399
Signal contact unit	Premounted	Premounted
Closing releases	XF11	112424 — 112430
Shunt trip releases	SHT11	112404 — 112413
Undervoltage releases	UVT11	112438 — 112445
Motor drive operator	MD11	112454 — 112459
Key lock	KLK11	112472 — 112474
Position indicator	+EF11	112507
Pushbutton lock	+VBP11	112509

External accessories

Phase barriers - Fixed	PHS11	112494, 112495
Phase barriers - Withdrawable	DPS11	112488, 112489
Connection terminal plates	TEX11	112478 — 112485
Mechanical interlocks	IPA11	112500, 112501

Accessories marked with " + " in this list must be preordered together with the circuit breaker, since separate purchase is not allowed due to mechanical / software adaptation requirements

In any case, it is recommended to directly communicate with the technical support or your representative sales engineer in order to confirm all the possible configurations and additional personalizations of the selected product

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Air Circuit Breakers up to 1600 A

Electrical parameters

	Ex9A16N	Ex9A16Q
Tested according to	IEC / EN 60947-2	
Rated operational voltage U_e	380 / 400 / 415 / 660 / 690 V AC	
Rated insulation voltage U_i	1000 V	
Rated impulse withstand voltage U_{imp}	12 kV	
Rated current I_n at 40°C	630 / 800 / 1000 / 1250 / 1600 A	
Rated frequency f	50 / 60 Hz	
Rated ultimate short-circuit breaking capacity I_{cu}	55 kA / 415 V 30 kA / 690 V	65 kA / 415 V 30 kA / 690 V
Rated service short-circuit breaking capacity I_{cs}	42 kA / 415 V 30 kA / 690 V	50 kA / 415 V 30 kA / 690 V
Rated short-circuit making capacity I_{cm}	121 kA / 415 V 63 kA / 690 V	121 kA / 415 V 63 kA / 690 V
Rated short-circuit withstand current I_{cw} for 1s	42 kA / 415 V 25 kA / 690 V	42 kA / 415 V 25 kA / 690 V
Poles	3P / 4P	
Breaking operation time	20 — 30 ms	
Closing operation time	< 60 ms	
Electrical service life	8000 operation cycles / 415 V 3000 operation cycles / 690 V	
Mechanical service life	15000 operation cycles without maintenance	
Utilization category	B	
Line voltage connection	arbitrary above or below (with external power supply for SU)	

Mechanical parameters

	fixed	withdrawable
Device width (3P / 4P)	254 mm / 324 mm	282 mm / 352 mm
Device height	323 mm	352 mm
Device depth	213 mm	303 mm
Degree of protection	IP40	
Ambient temperature	-25°C — +60°C	
Storage temperature	-40°C — +85°C (without SU) -25°C — +75°C (with SU)	
Altitude without derating	< 2000 m	
Relative humidity	< 50 %	
Average relative humidity	< 90 %	
Installation category	IV (main circuit) / III (secondary circuit)	
Pollution degree	3	
Main terminals surface coating	silver	
Weight (3P / 4P)	22 kg / 26.5 kg	38 kg / 55 kg (including cassette)

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Air Circuit Breakers up to 1600 A

Power dissipation at 3P device

Rated current [A]	Fixed version	Withdrawable version
630 A	100 W	161 W
800 A	110 W	215 W
1000 A	120 W	230 W
1250 A	130 W	250 W
1600 A	220 W	460 W

Temperature derating

$T [^{\circ}\text{C}]$	$I_u(T) [\text{A}]$				
	$I_n = 630 \text{ A}$	$I_n = 800 \text{ A}$	$I_n = 1000 \text{ A}$	$I_n = 1250 \text{ A}$	$I_n = 1600 \text{ A}$
-25 — +40	630	800	1000	1250	1600
45	630	800	1000	1250	1550
50	630	800	1000	1250	1500
55	630	800	950	1150	1450
60	550	700	900	1050	1350

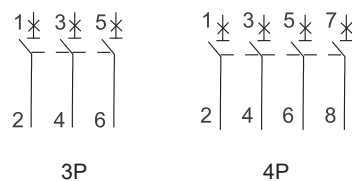
Altitude derating

Altitude	2000 m	3000 m	4000 m	5000 m
Impulse withstand voltage U_{imp}	3500 V	3000 V	2500 V	2000 V
Insulation voltage U_i	1000 V AC	800 V AC	700 V AC	600 V AC
Rated voltage U_e	690 V AC	580 V AC	500 V AC	400 V AC
Rated uninterrupted current I_u	$1 \times I_u(T)$	$0.96 \times I_u(T)$	$0.91 \times I_u(T)$	$0.87 \times I_u(T)$

Secondary terminals

Secondary terminals	screw type
Terminals capacity	0.5 — 1.2 mm ²

Main terminals wiring diagrams



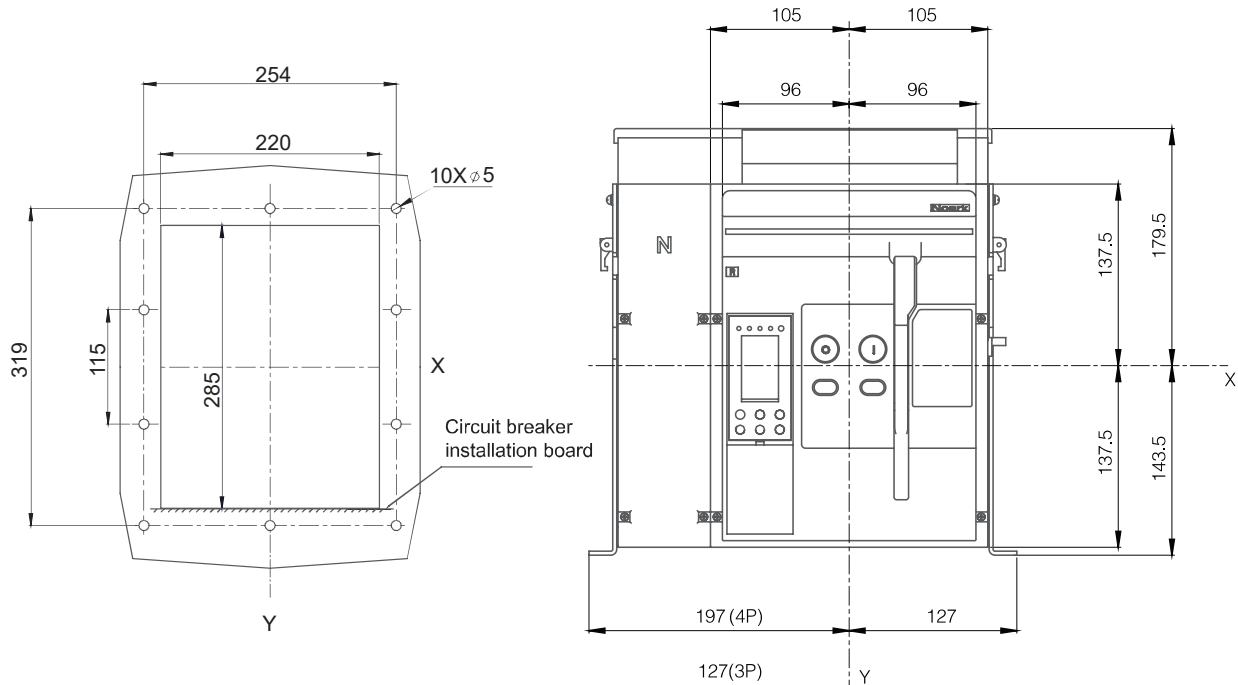
Technical Data Ex9A16

Air Circuit Breakers up to 1600 A

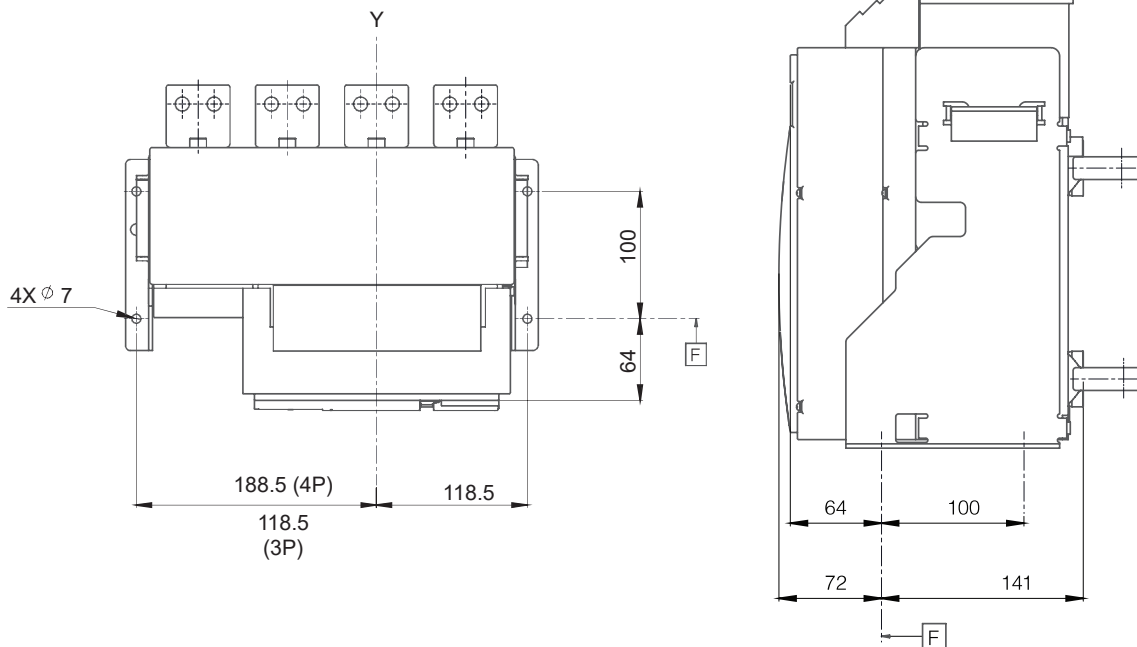
Dimensions - fixed version

Front dimensions

mm



Installation dimensions



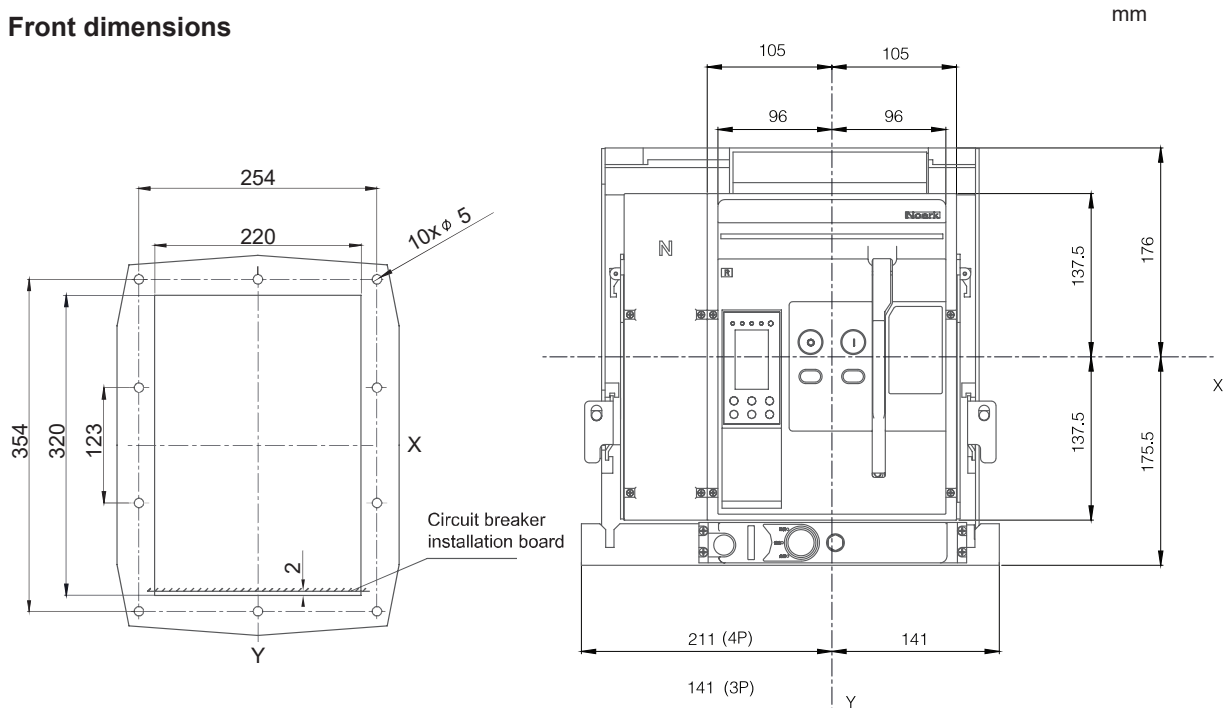
X, Y - door cut-out centering
F - Mounting screw reference point

Technical Data Ex9A16

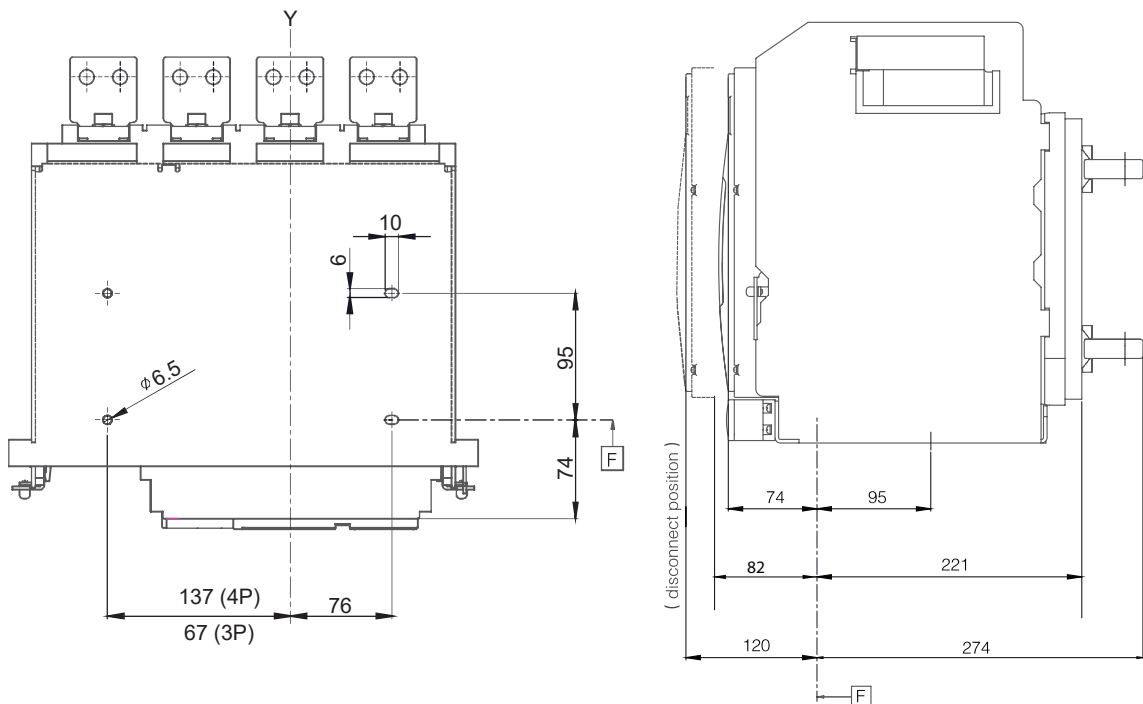
Air Circuit Breakers up to 1600 A

Dimensions - withdrawable version

Front dimensions



Installation dimensions



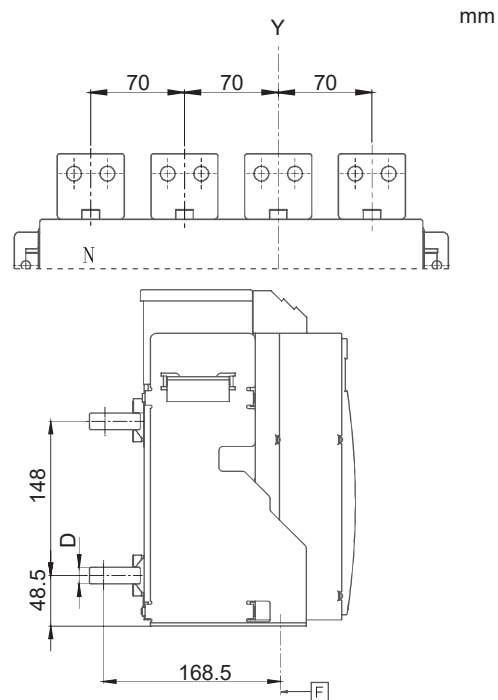
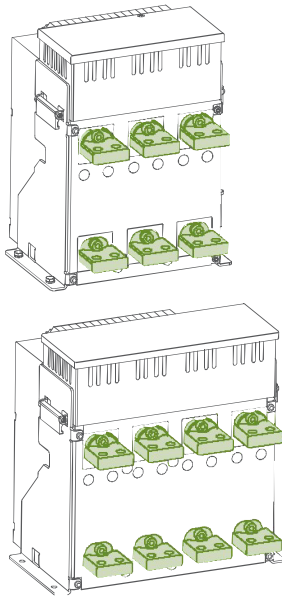
X, Y - door cut-out centering
F - Mountings screw reference point

Technical Data Ex9A16

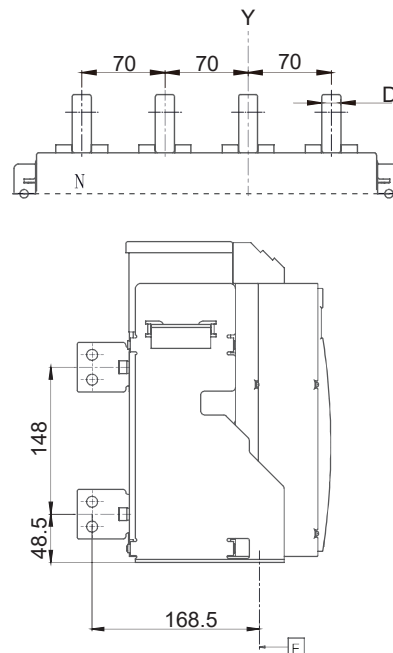
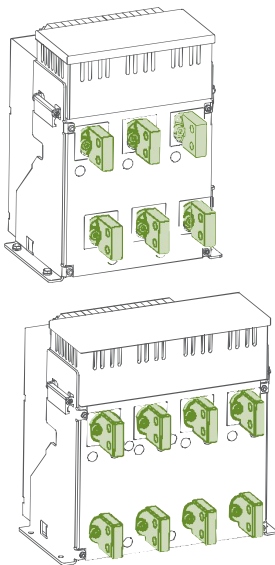
Air Circuit Breakers up to 1600 A

Power connectors- Fixed 3 and 4 pole versions

Horizontal connection

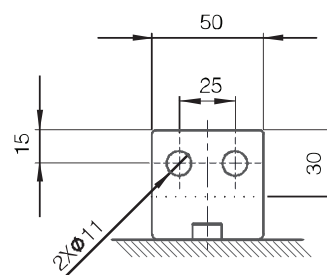


Vertical connection



Horizontal / Vertical Power connector

Rated current	D Thickness
630A — 800A	10
1000A — 1600A	16

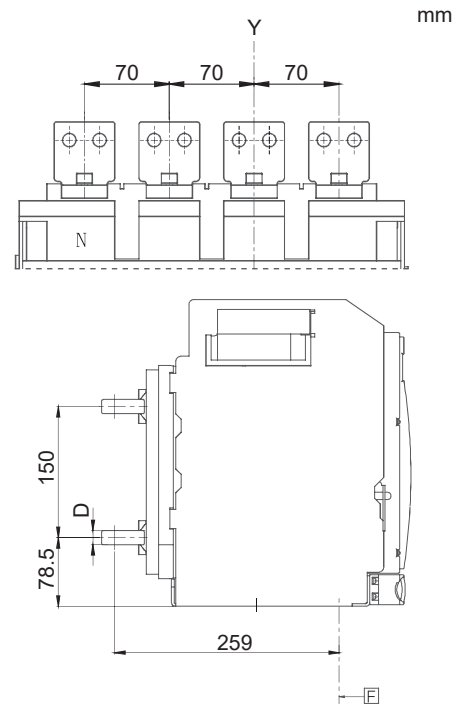
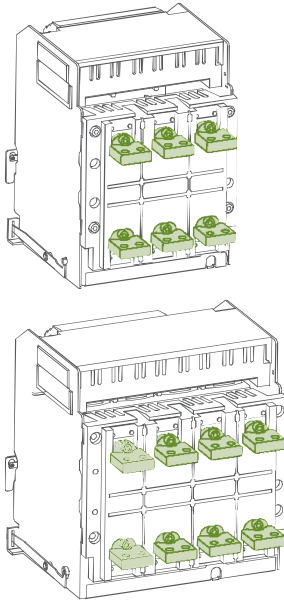


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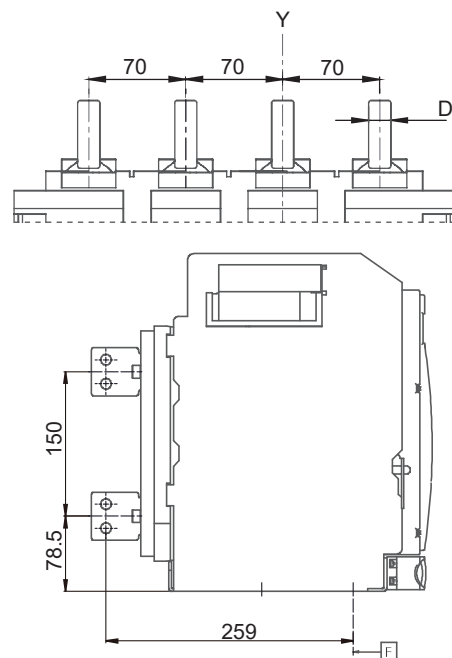
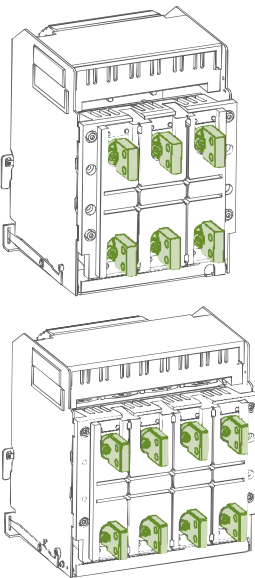
Air Circuit Breakers up to 1600 A

Power connectors- Withdrawable 3 and 4 pole versions

Horizontal connection

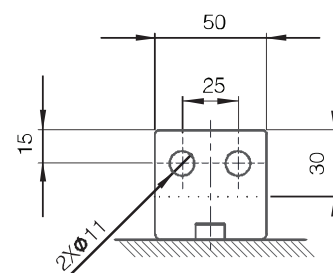


Vertical connection



Horizontal / Vertical Power connector

Rated current	D Thickness
630A — 800A	10
1000A — 1600A	16

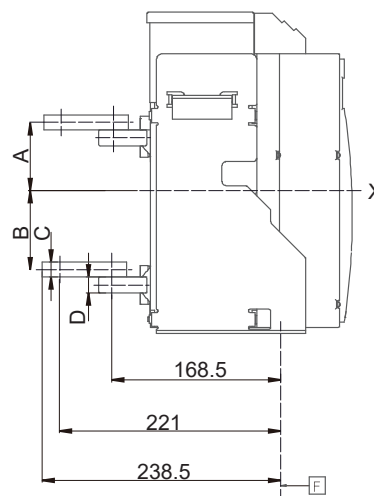
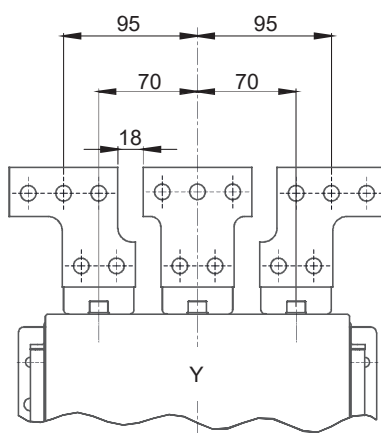
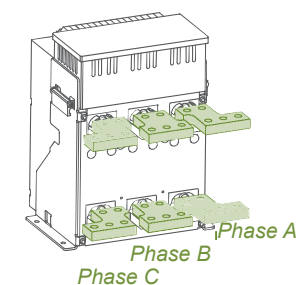


Technical Data Ex9A16

Air Circuit Breakers up to 1600 A

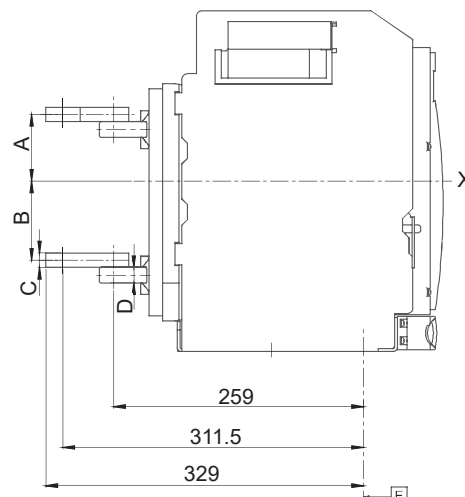
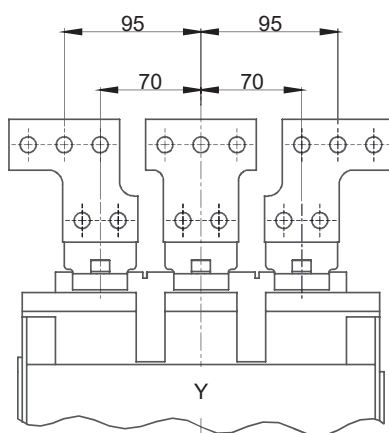
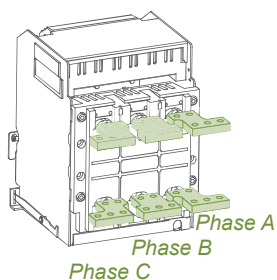
Horizontal connection with spreaders TEX - 3P

Fixed type

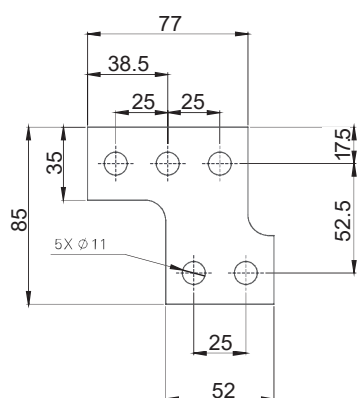


mm

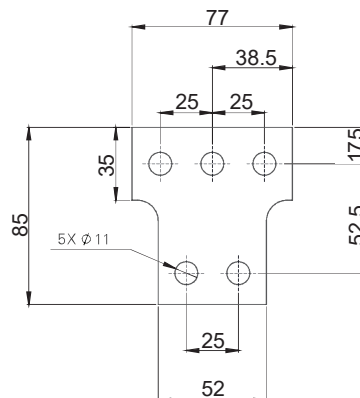
Withdrawable type



Fixed / Withdrawable TEX dimensions



Phase A and phase C



Phase B

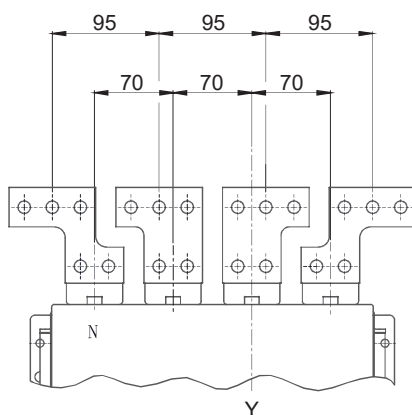
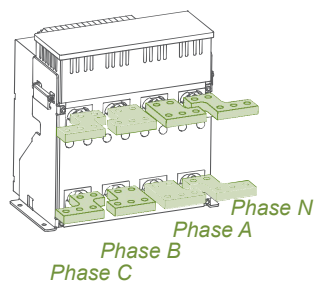
Rated current	A (mm)	B (mm)	C (mm)	D (mm)
630 — 800 A	63	85	10	10
1000 — 1600 A	68.5	79.5	15	16

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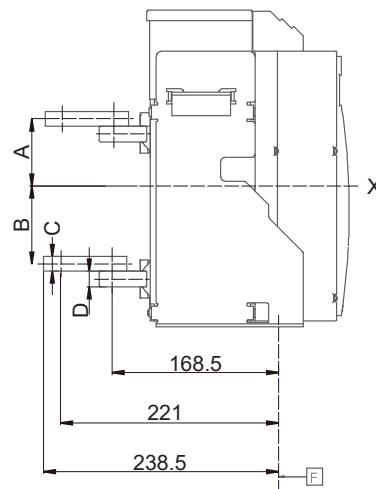
Air Circuit Breakers up to 1600 A

Horizontal connection with spreaders TEX - 4P

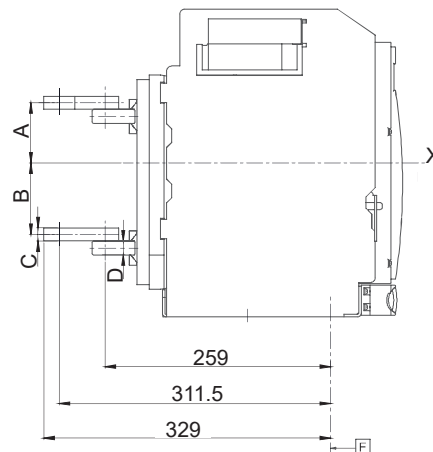
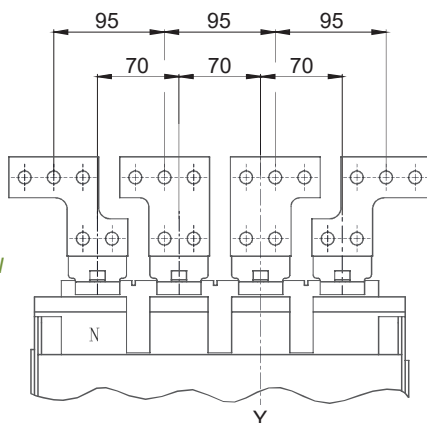
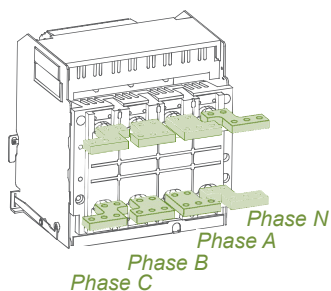
Fixed type



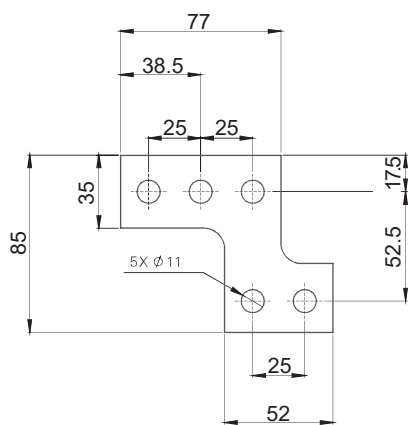
mm



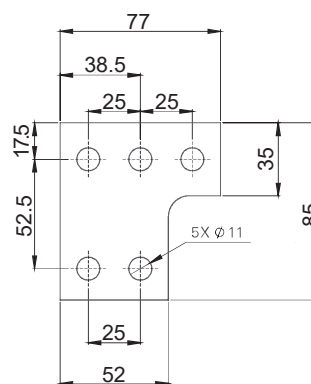
Withdrawable type



Fixed / Withdrawable TEX dimensions



Phase N and phase C



Phase A and phase B

Rated current	A (mm)	B (mm)	C (mm)	D (mm)
630 — 800 A	63	85	10	10
1000 — 1600 A	68.5	79.5	15	16