

Adex VCB : NIRAPOD 5

Vacuum Circuit Breaker



An innovative user friendly circuit breaker

safe, reliable and economical design

Power Ratings: 630 - 3150A, 7.2kV-24kV

20kA-25kA-31.5kA

suitable for all applications in:

- > Industry
- > Infrastructures
- > Constructions
- > Utility

NIRAPOD 5

Vacuum Circuit Breaker

Adex NIRAPOD 5 series of vacuum circuit breaker is designed & made in conformity to IEC 62271-100 standards for system voltages from 7.2kV to 12kV.

Adex vacuum circuit breaker is available in two main versions:

- fixed versions
- draw-out version

Adex NIRAPOD 5 series of vacuum circuit breaker is designed for indoor applications and to protect & control MV public & industrial distribution network.

Key Features

- Complete switching device for distribution switchgear
- Made for integration in the Bitoron-12 range switchgears and in the switchgears of other manufacturers
- Available in a great spectrum of possibilities
- Vacuum interrupters of the latest generation
- Withstand extreme temperatures
- Long life of mechanical spring drive
- Maintenance free

Common characteristics according to IEC 62271-100

rated frequency	fr	(Hz)	50 & 60
short-time withstand current	I _k for t _k = 3s	(kA) rms	I _k = I _{sc}
rated peak withstand current	I _p	peak (kA)	I _p = 2.5 & 2.6 I _k
rated short circuit making current		peak (kA)	= 2.5 & 2.6 I _{sc}
operating sequence			O-3 mn - CO - 3 mn - CO
			O-0.3s - CO - 3 mn - CO
			O-0.3s - CO - 15s - CO
operating time	opening	ms	<50
	breaking	ms	<60
	closing	ms	<65
mechanical endurance	class		M2 M1
	number of operations		20000
electrical endurance	class		E2
	number of operations	20 kA	
25 kA			20/30/50/100
31.5 kA			30/50
capacitive current breaking			C1 class

Characteristics data

Electrical characteristics according to IEC 62271-100

circuit breaker type		7AV204	7AV204	7AV204	7AV204	7AV204	7AV205	7AV205
		630	1250	1600	2000	2500	630	1250
rated voltage	U _r (kV) rms	7.2	7.2	7.2	7.2	7.2	7.2	7.2
rated insulation voltage	U _d (kV) rms	20	20	20	20	20	20	20
rated insulation voltage	U _p (kV) peak	60	60	60	60	60	60	60
rated short-circuit breaking current	I _{sc} (kA) rms	20	20	20	20	20	25	25
rated normal current (-25°C + 40°C)	I _r (A) rms	630	1250	1600	2000	2500	630	1250
climatic version	-25°C + 40°C	■	■	■	■	■	■	■

Installation and connections

dimensions CB (mm)		640	640	640	640	640	640	640
	width (W)	640	640	640	640	640	640	640
	depth (D)	590	590	590	590	590	590	590
	height (H)	630	630	630	630	630	630	630

NB: Data & characteristics mentioned above are subject to change due to development / design modifications.

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Characteristics of NIRAPOD 5 TYPE AV20 range vacuum circuit breaker

- Epoxy casted housing with protected ventilation openings, developed to be used in the more severe climatic conditions
- State of the art long life vacuum interrupters
- Spring drive mechanism
- Developed and manufactured in line with QMS ISO 9001:2008 Standards
- Switching devices type tested to IEC standards



Withdrawable version

- The circuit breaker is equipped with all the components, including motorized operating system as standard, required for "ready to use" in metalclad cubicles
- Critical points such as inter-locking systems, dielectric withstand and temperature rise have been checked thoroughly during design and validated by test

7AV205	7AV205	7AV205	7AV206	7AV206	7AV206	7AV206	7AV206	12AV204	12AV204	12AV204	12AV204
1600	2000	2500	630	1250	1600	2000	2500	630	1250	1600	2000
7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	12	12	12	12
20	20	20	20	20	20	20	20	28	28	28	28
60	60	60	60	60	60	60	60	75	75	75	75
25	25	25	31.5	31.5	31.5	31.5	31.5	20	20	20	20
1600	2000	2500	630	1250	1600	2000	2500	630	1250	1600	2000
■	■	■	■	■	■	■	■	■	■	■	■

640	640	640	640	640	640	640	640	640	640	640	640
590	590	590	590	590	590	590	590	590	590	590	590
630	630	630	630	630	630	630	630	630	630	630	630

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Explanation of the used codification

Ex : 7AV204, 7AV205, 7AV206, and
12AV204, 12AV205 & 12AV206

7 : System Voltage 7.2kV

12 : System Voltage 12kV

AV20 : Circuit Breaker type

4 : Short circuit rating (Isc) 20 kA

5 : Short circuit rating (Isc) 25 kA

6 : Short circuit rating (Isc) 31.5 kA

Operation

Increased safety

Adex NIRAPOD 5 has been designed and made to provide maximum safety for operators whilst using in Bitoron 12 Switchgears guarantee the simplicity and rapidity of operations.

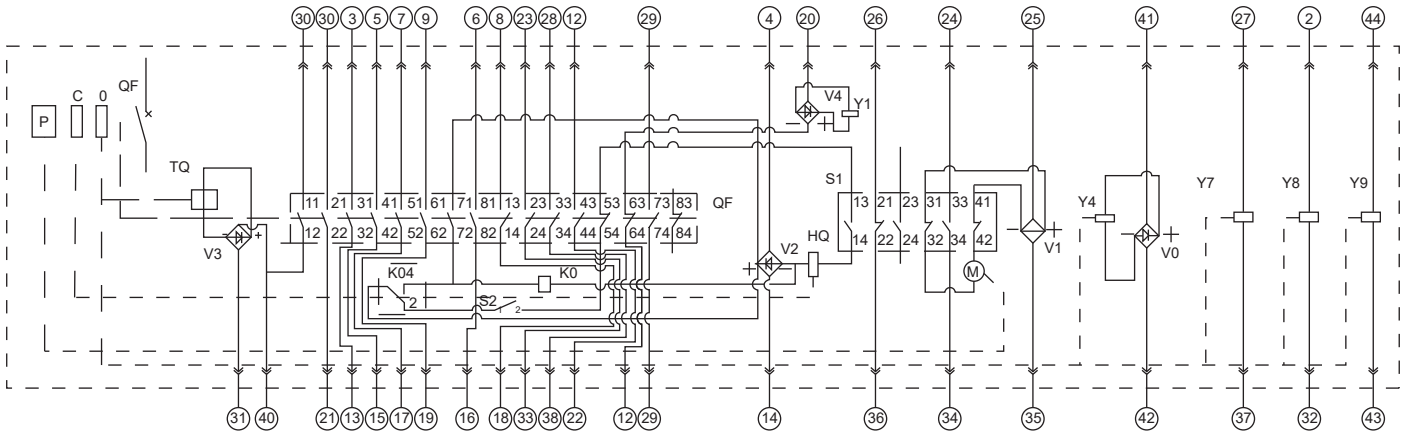
- Protective metal shutters
- Safety interlocking systems to avoid operator errors when racking in or out
- Racking in/ out possible only with the door closed
- Safety interlocking to avoid operators errors on earthing switch

12AV204	12AV205	12AV205	12AV205	12AV205	12AV205	12AV206	12AV206	12AV206	12AV206	12AV206
2500	630	1250	1600	2000	2500	630	1250	1600	2000	2500
12	12	12	12	12	12	12	12	12	12	12
28	28	28	28	28	28	28	28	28	28	28
75	75	75	75	75	75	75	75	75	75	75
20	25	25	25	25	25	31.5	31.5	31.5	31.5	31.5
2500	630	1250	1600	2000	2500	630	1250	1600	2000	2500
■	■	■	■	■	■	■	■	■	■	■

640	640	640	640	640	640	640	640	640	640	640
590	590	590	590	590	590	590	590	590	590	590
630	630	630	630	630	630	630	630	630	630	630

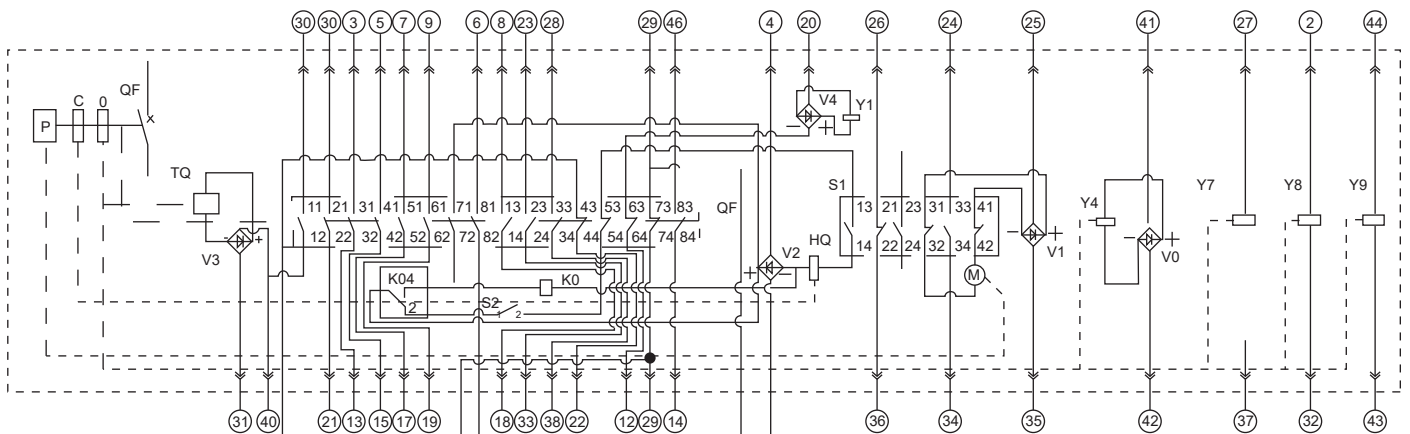
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Vacuum Circuit Breaker



Electric connection diagram of fixed circuit breaker

N0.	Code	Name	Remark
1	QF	Auxiliary switch of circuit breaker main contact	
2	S1	Sensitive switch for energy storage	
3	S2	Auxiliary switch of latching electromagnet	Optional
4	M	Energy-storage motor	
5	TQ	Opening electromagnet	
6	HQ	Closing electromagnet	
7	Y1	Latching electromagnet	Optional
8	P	Manual operating mechanism	
9	K0	Inner anti-trip relay mechanism	
10	V0-V4	Rectifier element	
11	Y4	Low voltage release	Optional
12	Y7-Y9	Indirect over current release	Optional



Electric connection diagram of draw-out circuit breaker

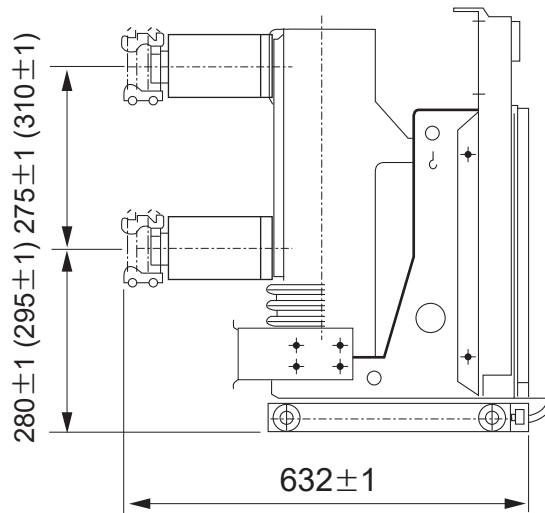
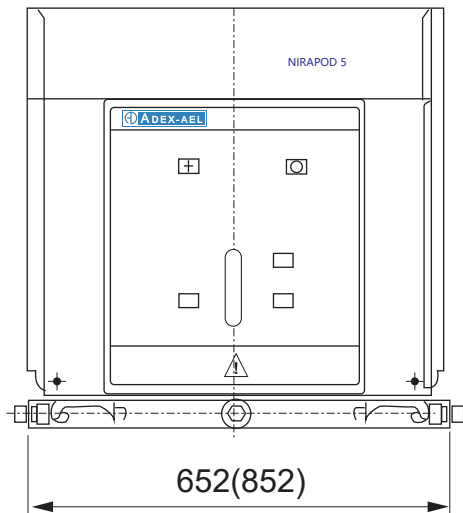
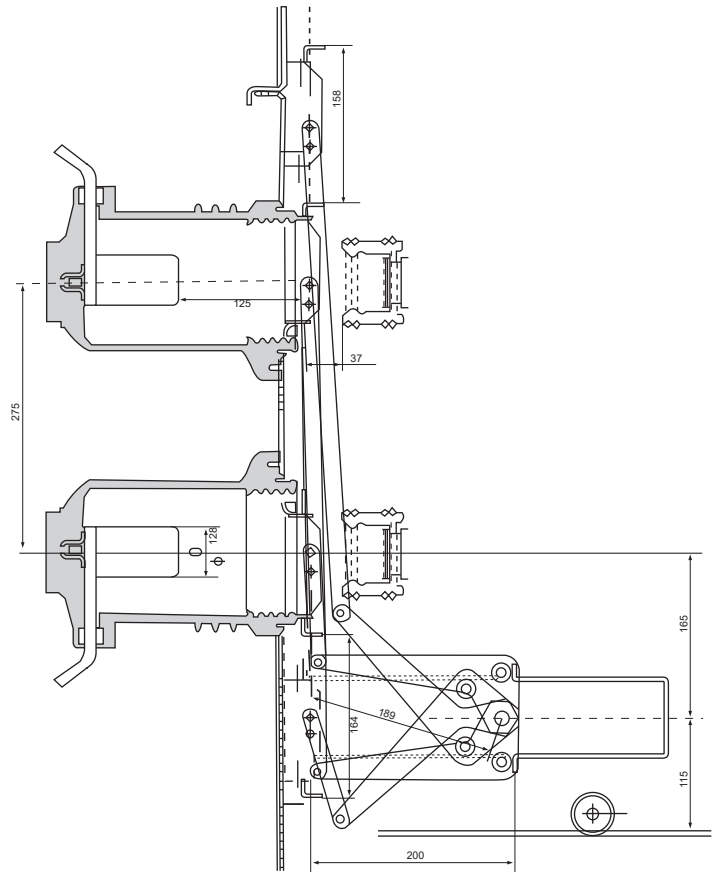
No.	Code	Name	Remark
1	QF	Auxiliary switch of circuit breaker main contact	
2	S1	Sensitive switch for energy storage	
3	S2	Auxiliary switch of latching electromagnet	Optional
4	S8	Auxiliary switch for testing position	
5	S9	Auxiliary switch for working position	
6	M	Energy - storage motor	
7	TQ	Opening electromagnet	
8	HQ	Closing electromagnet	
9	Y1	Latching electromagnet	Optional
10	P	Manual operating mechanism	
11	K0	Inner anti - trip relay mechanism	
12	V0 - V4	Rectifier element	
13	Y7 - Y9	Indirect over current release	Optional
14	Y4	Low voltage release	Optional

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Dimension of circuit breaker and cabinet of 800 width

Rated current (A)	Rated short-circuit breaking current KA	Applicable static contact size (mm)
630A	20, 25KA	φ 35 mm
1250A	20, 25, 31.5KA	φ 49 mm
1600A	31.5KA	φ 55 mm



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