

Moulded Case Circuit Breakers (MCCB) of VA57 series

Comply with the requirements of standards GOST R 50030.2 CU TR 004/2011 CU TR 001/2011



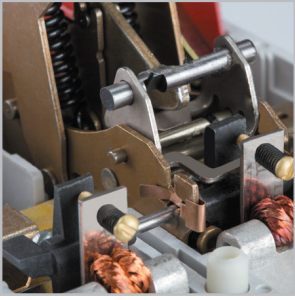
Circuit breakers of the VA57 series are intended for operation in low-voltage AC switchgears with voltages up to 690 V, frequency 50 and 60 Hz, and direct current voltages up to 440 V. Circuit breakers of the VA57 series are designed to protect electrical installations from short-circuit currents and overloads, and are used for infrequent operational switchings on and off. Circuit breakers with the acceptance of the Russian Maritime Register of Shipping (hereinafter PC) and the Russian River Register (hereinafter PPP) are designed to protect marine electrical equipment.



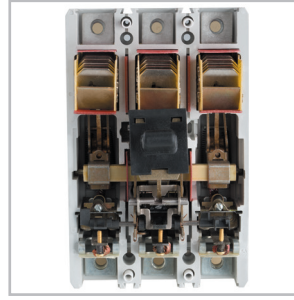
Benefits

- Implementation of any technical solutions
 - Full range of products for currents from 16 to 800 A;
 - large values of the limiting switching capacity of 110 kA (DC), 40 kA (AC);
 - a wide range of settings of electromagnetic releases;
 - a wide range of additional devices, including the presence of a zero-voltage release (RNN).
- Confidence in reliable operation
 - ability to pass a limited short-circuit current (exceptional current limiting);
 - availability of resistance to the dynamic and thermal effects of short circuit currents;
 - a guarantee of non-weldability of contacts at emergency short-circuit currents.
- Advanced applications
 - protection of electrical equipment of sea, river ships and port infrastructure, confirmed by type approval certificates of PMPC and PPP;
 - protection of electrical equipment of nuclear power plants, confirmed by a license of nuclear power plants;
 - possibility of application in harsh environments, climatic modifications of УХЛ and ОМ.

Features



The strengthened contact system with electrodynamic throw of contacts.



The use of extruded silver graphite contacts in the contact system.



Mounting upright or turning right / left 90°. Power supply from above and below.



Operation temperature from -60 to + 40 ° C.

Scope of delivery



Fasteners for mounting a circuit breaker (VA57-31, VA57-35, VA57F35)



Set of clamps for connecting copper bars and conductors with cable lugs (VA57-35, VA57F35, VA57F31)



Interphase partitions (VA57-39)



Terminal cover (VA57-31, VA57-35)



Fasteners for mounting a circuit breaker (VA57-39, VA57F31)



Set of clamps for connecting copper bars and conductors with cable lugs (VA57-39)



Set of transitional buses (VA57-39 800 A)

Structure of the designation of VA57-31, VA57-35, VA57F35, VA57-39

VA57 X₁X₂X₃ - X₄X₅X₆X₇X₈X₉ - X₁₀...A- X₁₁...-X₁₂...-X₁₃...-X₁₄...-X₁₅...-X₁₆...-KEAZ X₁₇...

VA57	- Designation of a series of circuit breakers																	
X₁	- Separator sign (-) or the letter F (for VA57F35)																	
X₂X₃	- Designation of the rated current of the circuit breaker: 31 - up to 100 A (overall dimensions WxDxH: 75x125x117); 35 - up to 250 A (overall dimensions WxDxH: 112.2x174.5x130); 39 - up to 800 A (overall dimensions WxDxH: 225x224x154)																	
X₄X₅	- Designation of the version of the circuit breaker by the number of poles, AC and DC voltage, combination of maximum current release in the protection zone:																	
	Designation of the version	Number of poles	Number of protected poles	Presence of a trip device				Presence of a version of the switch										
				thermal	electromagnetic	VA57-31	VA57Φ35	VA57-35	VA57-39									
	33	3	3	-	+	to 690AC	-	to 400AC	to 690AC	to 690AC								
	34			+	+													
	63	3	2	-	+	-	-	to 440DC	to 440DC									
64	+			+														
83	2	2	-	+	to 220DC/690AC	-	to 220DC/690AC	to 220DC/690AC	to 220DC/690AC									
84			+	+														
X₆X₇	- Designation of the version by the presence of additional assembly units and their combinations:																	
	code	00	11**	12**	13	15	18**	23	25	45	46	47	49	52	54	56	62	
	NR	-	-	+	-	-	+	-	-	-	-	+	-	-	-	-	-	+
	RMN	-	-	-	+	-	-	+	-	-	-	-	-	+	-	-	-	+
	RNN	-	-	-	-	+	-	-	+	-	-	-	-	+	-	+	-	-
	with drive	-	2«3»+1«p»*	-	-	-	1«3»+1«p»*	2«3»+1«p»*	2«3»+1«p»*	-	2«3»+1«p»*	1«3»+1«p»*	-	-	2«3»+1«p»*	2«3»+1«p»*	-	-
	without drive	-	2«3»+2«p»	-	-	-	1«3»+2«p»	2«3»+2«p»	2«3»+2«p»	-	2«3»+2«p»	1«3»+2«p»	-	-	2«3»+2«p»	2«3»+2«p»	-	-
VKS	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	
* for circuit breakers with an electromagnetic drive, only versions with auxiliary contacts are available ** versions on the presence of additional assembly units of circuit breakers VA57-31																		
X₈X₉	- Designation of the type of drive, additional mechanisms and method of installation of the circuit breaker: 10 - manual drive, stationary version; 16 - manual drive, stationary version, with a device for locking the switch in the "Off" position (only VA57-35 and VA57-39); 30 - electromagnetic drive, stationary version (only VA57-35 and VA57-39); 40 - manual drive, retractable version (only VA57-39); 50 - retractable version with manual remote drive for operating through switchgear door 51 - retractable version with manual remote drive for operating through switchgear door of reduced depth; 70 - electromagnetic drive, retractable version (only VA57-35 and VA57-39);																	
	X₁₀...A	- Rated current of the circuit breaker																
	X₁₁...	- Set point for short-circuit release																
	X₁₂...	- Rated voltage and type of main circuit current: to 690AC - for AC circuit breakers; to 440AC - for DC circuit breakers																
	X₁₃...	- Parameters of independent release (NR), undervoltage release (RMN), zero voltage release (RNN) (if any): rated voltage and type of current																
	X₁₄...	- Electromagnetic Drive (PE) Parameters (if any): rated voltage and type of current																
X₁₅...	- Designation of the climatic category and category of placement: OM4 (only for VA57-31, VA57-35, VA57-39 with acceptance of the Russian Maritime Register of Shipping); UHL3																	
X₁₆...	- Type of acceptance, terms of delivery: PEF - Acceptance of the Russian Maritime Register of Shipping or the Russian River Register (except for VA57F35); AЭC - for deliveries to NPPs (except VA57F35); in the absence - acceptance of quality control																	
KEAZ	- Trademark																	
X₁₇...	- (plug-in, without panel) - plug-in version of the automatic switch, without plug-in panel (only for VA57-35)																	




Version VA57-3X-XXXX15 is derived from the range; instead, version VA57-3X-XXXX10 + Manual remote drive VA04-36/VA51-35/VA57-35/VA57-39-UHL3 (Item number 110450).

Designation structure of VA57F31

VA57X₁X₂X₃-X₄...A- X₅...-400AC-UHL3-KEAZ

VA 57	- Designation of a series of circuit breakers
X₁	- Letter designation F
X₂X₃	- Designation of the rated current of the circuit breaker: 31 - up to 100 A (overall dimensions WxDxH: 75x130x60)
X₄...A	- Rated current of the circuit breaker
X₅...	- Electromagnetic release setting for short circuit current protection
400AC	- Rated voltage of the main AC circuit with a frequency of 50 Hz
UHL3	- Designation of the climatic category and category of placement
KEAZ	- Trademark

Specifications

Parameter name	Parameter designation																																	
Series																																		
	VA57-31								VA57F31								VA57-35																	
	VA57-31-X4				VA57-31-X3				VA57F31								VA57-35-X4																	
Rated current (I_n), A	16	20	25	31,5	40	50	63	80	100	100	16	20	25	32	40	50	63	80	100	16	20	25	31,5	40	50	63	80							
Rated voltage (U_n), V	to 690 AC; 220 DC								to 400 AC								to 690 AC; 440 DC																	
Setpoint of the electromagnetic trip device on alternating current, A	400				400	400	400	400	400	400	400	500	630	800	1000	80	125	160	200	250	320	100	125	160	250	320	400	500	630	800	1000	1250	*630	*800
Setpoint of the electromagnetic trip device on direct current, A	400	500			500	500	500	500	500	500	1000	1200	1200	1200	-	125	160	200	250	320	100	125	160	250	320	400	500	630	800	1000	1250	1250	1250	
Rated limit maximum switching capacity (I_{cu}), kA																																		
at 400 AC	4	6	25	40**				40**	6	8	10			3.5	6	9	10		15	25														
at 690 AC	3			6				6	-			3.5	5.5	6	9		12	15																
at 220 DC	20	40	75				75	-			5	6	8	15	25	35	40	60																
at 440 DC	-			-				-	-			5	6	8	15	25	35	40	60															
Rated operating switching capacity (I_{cs})																																		
% of I_{cu}	50								50								50																	
Rated maximum switching on capacity (I_{cn}), kA																																		
at 400 AC	6	9	52	84				84	9	12	17			5	9	15	17		30	52														
at 690 AC	4.5			9				9	-			5	8	9	15		20	25																
at 220 DC	20	40	75				75	-			5	6	8	15	25	35	40	60																
at 440 DC	-			-				-	-			5	6	8	15	25	35	40	60															
Wear resistance																																		
Total, on/off cycles	16000								10000								10000																	
Switching, on/off cycles	10000								1500								2500																	
Overall dimensions	75x125x117								75x130x60								112.2x174,5x130																	
Weight, kg	no more than 1.1								no more than 0.8								no more than 2.7																	

The setting of the electromagnetic release, in bold, is basic.

* Allowed to manufacture switches with a setting of 500 by special order.

** Power supply from the power source is possible without reducing the values of the nominal maximum breaking capacity I_{cu} and the rated working breaking capacity I_{cs} , both from the fixed contacts (pins 1, 3, 5) and from the moving contacts (pins 2, 4, 6) of switches.




Order Formulation.

When ordering a circuit breaker, you must specify:

- 1) Designation, type version;
- 2) Rated current of the releases;
- 3) Electromagnetic release setting for short circuit current protection;
- 4) Rated voltage and type of main circuit current;
- 5) Current type and rated voltage of U_n trip devices: independent (HP), under-voltage (RMN) or zero voltage (RNN) - if necessary;
- 6) Current type and rated voltage U_n of the electromagnetic drive (PE) - if necessary;
- 7) Climatic category and category of placement;
- 8) Type of acceptance, terms of delivery (Quality Control Department - not specified);
- 9) Trademark.

By the separate order the following is delivered:

- adapter for mounting the circuit breaker VA57-31 and VA57F31 to a DIN-rail;
- terminal cover for VA57-31, VA57-35, VA57F35, VA57-39;
- special clamps for connecting conductors for VA57F31, VA57-35, VA57F35, VA57-39;
- manual remote drive for VA57F31, VA57-35, VA57F35, VA57-39 (except for breakers with an electromagnetic drive);
- set of expansion leads VA57-35, VA57F35;
- set of inter-polar partitions VA57F31, VA57-35, VA57F35, VA57-39;
- set of transition buses for VA57-39;
- set of terminals for rear connection for VA57-39.

Parameter name	Parameter designation																												
Серии																													
	VA57-35							VA57F35							VA57-39														
	VA57-35-X4				VA57-35-X3			FA57F35-34							VA57-39-X4					VA57-39-X3									
Rated current (I_n), A	100	125	160	200	250	80	250	16	20	25	31,5	40	50	63	80	100	125	160	200	250	250	320	400	500	630	800	400	630	800
Rated voltage (U_e), V	to 690 AC; 440 DC							to 400 AC							to 690 AC; 440 DC														
Setting of the electromagnetic release for AC, A	*630 1000 1250	*630 800 1250 1600	*630 800 1000 1600 2000	*630 1000 1250 1600 2000 2500	*750 1000 1250 1600 2500	500 750 1000 1250 1600 2500	800 1000 1250 1600 2000 2500	1000 1250 1600 2000 2500	10 In							1000 1250 1600 2000 2500 3200	1000 ⁽¹⁾ 1250 1600 2000 2500 3200	1000 ⁽¹⁾ 1250 1600 2000 2500 3200	1250 ⁽²⁾ 1600 2000 2500 3200 4000 6300	2500 3200 4000 5000 6300	1000 1250 1600 2000 2500 3200	1250 ⁽²⁾ 1600 2000 2500 3200 4000 6300	1000 1250 1600 2000 2500 3200	1250 ⁽²⁾ 1600 2000 2500 3200 4000 6300	2500 3200 4000 5000 6300				
Setting of the electromagnetic release for DC, A	1000 1250	800 1250 1600	800 1000 1600 2000	1000 1250 1600 2000 2500	750 1000 1250 1600 2500	800 1000 1250 1600 2500	1000 1250 1600 2000 2500	-							1250 1600 2000 2500 3200	1250 ⁽¹⁾ 1600 2000 2500 3200	1600 ⁽¹⁾ 2000 2500 3200	2000 ⁽²⁾ 2500 3200 4000 5000	2500 3200 4000 5000 6300	1250 ⁽²⁾ 1600 2000 2500 3200 4000	1250 ⁽²⁾ 1600 2000 2500 3200 4000	2500 3200 4000 5000 6300							
Rated limit maximum switching capacity (I_{cu}), kA																													
at 400 AC	30	35	40**	40**	3,5	6	9	10							40									40					
at 690 AC	15	18			18	-							18									18							
at 220 DC	80	100	110	110	-							110									110								
at 440 DC	80	100	110	110	-							110									110								
Rated operating switching capacity (I_{cs})																													
% of I_{cu}	50							100							75														
Rated maximum switching on capacity (I_{cn}), kA																													
at 400 AC	63	73	84	84	5	9	15	17							84									84					
at 690 AC	25	30			30	-							30									30							
at 220 DC	80	100	110	110	-							110									110								
at 440 DC	80	100	110	110	-							110									110								
Wear resistance																													
Total, on/off cycles	10000							10000							5000														
Switching, on/off cycles	2500							2500							1000														
Overall dimensions	112.2x174.5x130							112.2x174.5x130							225x224x154														
Weight, kg	no more than 2.7							no more than 2.7							no more than 6.6														

The setting of the electromagnetic release, in bold, is basic.

It is possible to manufacture circuit breakers on special order with a setting of an electromagnetic release:

* - 500 A; ¹⁾ - for stationary version; ²⁾ - for a stationary version with an operating current of not more than 0.9 of the rated current ($I_e = \max 0.9$).

** Power supply from the power source is possible without reducing the values of the nominal maximum breaking capacity I_{cu} and the rated working breaking capacity I_{cs} , both from the fixed contacts (pins 1, 3, 5) and from the moving contacts (pins 2, 4, 6) of switches.

Examples of circuit breaker records for ordering and documentation of other products:






1) Circuit breaker VA57-31, three-pole with short-circuit current trip devices and overload current of rated current 100 A, with a current setting of 1200 A, with two opening and two closing auxiliary contacts: "Circuit breaker VA57-31-341110-100A-1200-690AC- UHL3-KEAZ"

2) Circuit breaker VA57-35 with trip devices of short circuit and overload current for rated current 160 A, with a setting for current of operation 2000 A, with an Independent trip device for voltage (U_e) 230 V AC at 50, 60 Hz and 220 V DC, with one open and one short auxiliary contact, electromagnetic drive for 400 V AC with current frequency of 50, 60 Hz: "Circuit breaker VA57-35-341830-160A-2000-690AC-HP230AC/220DC-PE400AC-UHL3-KEAZ"

3) Circuit breaker VA57-39 with trip devices of short circuit and overload current for rated current 400 A, with a setting for current of operation of 4000 A, with an Independent trip device for voltage (U_e) 230 V AC of 50, 60 Hz and 220 V DC, with one opening and one closing auxiliary contacts, electromagnetic drive for voltage 400 V AC, frequency 50, 60 Hz: "Circuit breaker VA57-39-341830-400A-4000-690AC-HP230AC/220DC-PE400AC-UHL3-KEAZ"

4) Circuit breaker VA57-35, for a nominal direct current of 250 A with a voltage of 440 V, with a setting for a switching current of 1600 A, with two opening and two closing auxiliary contacts: "Circuit breaker VA57-35-641110-250A-1600-440DC-UHL3-KEAZ"

Item numbers

	Name	Number of poles	Rated current, A	Rated voltage, V	Maximum rated breaking capacity at 400 V AC I_{cu} , kA	Item number
	VA57-31-340010-16A-400-690AC-UHL3	3	16	690	4	108430
	VA57-31-340010-20A-400-690AC-UHL3	3	20	690	6	108431
	VA57-31-340010-25A-400-690AC-UHL3	3	25	690	25	108432
	VA57-31-340010-31,5A-400-690AC-UHL3	3	31,5	690	40	108433
	VA57-31-340010-40A-400-690AC-UHL3	3	40	690	40	108434
	VA57-31-340010-50A-800-690AC-UHL3	3	50	690	40	108439
	VA57-31-340010-63A-800-690AC-UHL3	3	63	690	40	108440
	VA57-31-340010-80A-1200-690AC-UHL3	3	80	690	40	108428
	VA57-31-340010-100A-1200-690AC-UHL3	3	100	690	40	108427
	VA57Φ31-16A-400-400AC-UHL3	3	16	400	6	219300
	VA57Φ31-20A-400-400AC-UHL3	3	20	400	6	219302
	VA57Φ31-25A-400-400AC-UHL3	3	25	400	8	219303
	VA57Φ31-32A-400-400AC-UHL3	3	32	400	10	219304
	VA57Φ31-40A-400-400AC-UHL3	3	40	400	10	219305
	VA57Φ31-50A-500-400AC-UHL3	3	50	400	10	219306
	VA57Φ31-63A-630-400AC-UHL3	3	63	400	10	219307
	VA57Φ31-80A-800-400AC-UHL3	3	80	400	10	219308
	VA57Φ31-100A-1000-400AC-UHL3	3	100	400	10	219309
	VA57-35-340010-16A-160-690AC-UHL3	3	16	690	3,5	108581
	VA57-35-340010-20A-200-690AC-UHL3	3	20	690	6	108591
	VA57-35-340010-25A-250-690AC-UHL3	3	25	690	9	108596
	VA57-35-340010-31,5A-320-690AC-UHL3	3	31,5	690	10	108604
	VA57-35-340010-40A-400-690AC-UHL3	3	40	690	10	108606
	VA57-35-340010-50A-500-690AC-UHL3	3	50	690	15	108613
	VA57-35-340010-63A-800-690AC-UHL3	3	63	690	15	108625
	VA57-35-340010-80A-800-690AC-UHL3	3	80	690	25	108626
	VA57-35-340010-100A-1000-690AC-UHL3	3	100	690	30	108566
	VA57-35-340010-125A-1250-690AC-UHL3	3	125	690	35	108576
	VA57-35-340010-160A-1600-690AC-UHL3	3	160	690	35	108586
	VA57-35-340010-200A-2000-690AC-UHL3	3	200	690	40	108594
	VA57-35-340010-250A-2500-690AC-UHL3	3	250	690	40	108600
		VA57Φ35-340010-16A-160-400AC-UHL3	3	16	400	3,5
VA57Φ35-340010-20A-200-400AC-UHL3		3	20	400	6	109311
VA57Φ35-340010-25A-250-400AC-UHL3		3	25	400	9	109315
VA57Φ35-340010-31,5A-315-400AC-UHL3		3	31,5	400	10	151418
VA57Φ35-340010-40A-400-400AC-UHL3		3	40	400	10	109325
VA57Φ35-340010-50A-500-400AC-UHL3		3	50	400	10	109332
VA57Φ35-340010-63A-630-400AC-UHL3		3	63	400	10	151417
VA57Φ35-340010-80A-800-400AC-UHL3		3	80	400	10	109344
VA57Φ35-340010-100A-1000-400AC-UHL3		3	100	400	10	109286
VA57Φ35-340010-125A-1250-400AC-UHL3		3	125	400	10	109296
VA57Φ35-340010-160A-1600-400AC-UHL3		3	160	400	10	109307
VA57Φ35-340010-200A-2000-400AC-UHL3		3	200	400	10	109314
VA57Φ35-340010-250A-2500-400AC-UHL3		3	250	400	10	109319
		VA57-39-340010-250A-2500-690AC-UHL3	3	250	690	40
	VA57-39-340010-320A-3200-690AC-UHL3	3	320	690	40	109881
	VA57-39-340010-400A-4000-690AC-UHL3	3	400	690	40	109883
	VA57-39-340010-500A-5000-690AC-UHL3	3	500	690	40	109885
	VA57-39-340010-630A-5000-690AC-UHL3	3	630	690	40	109886
	VA57-39-340010-800A-5000-690AC-UHL3	3	800	690	40	223012

*The complete list of all versions of VA57 circuit breakers can be found at www.keaz.ru

Delivery set

Name	VA57-31	VA57F31	VA57-35	VA57-35 retractable version	VA57F35	VA57-39	VA57-39 retractable version
Circuit Breaker of VA57 Series	+	+	+	+	+	+	+
Fasteners for mounting a circuit breaker	+	+	+	+	+	+	+
Set of clamps for connecting copper bars and conductors with cable lugs	+	+	+	+	+	+	+
Interpolar partitions	-	+	-	-	-	+	-
Terminal cover	+	-	+	-	-	-	-
Key to move the circuit breakers - 2 pcs.	-	-	-	+	-	-	-
Key for locking the handle (with manual remote drive)	-	-	-	+	-	-	-
Set of transition buses - 6 pcs.	-	-	-	-	-	+	-
						(for 800 A)	
Operation manual (combined with passport)	+	+	+	+	+	+	+
Accessories Installation Instructions	-	+	-	-	-	-	-
Certificate of Conformity for a batch delivered to one address - 1 pc.	+	+	+	+	+	+	+
Key for locking the breaker handle	-	-	-	+	-	-	+

Additional devices VA57F31, VA57-31, VA57-35, VA57-39

Auxiliary contacts VK

Auxiliary contacts VK are designed for switching AC and DC control circuits.

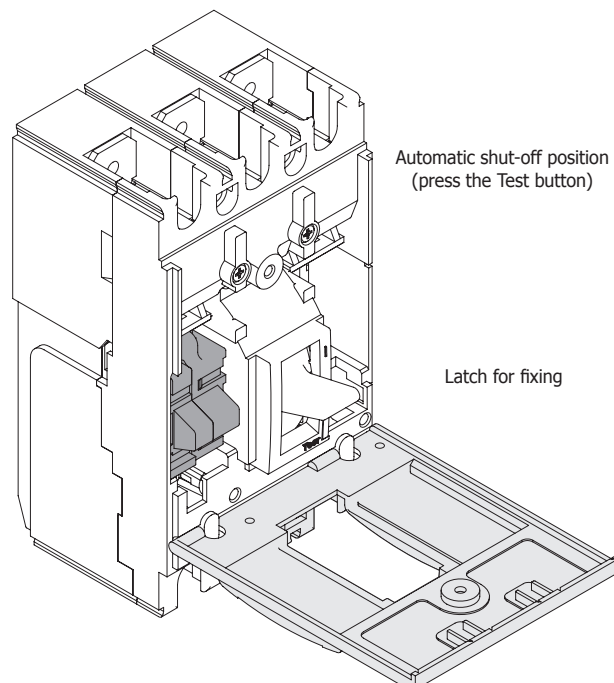
Specifications

Device type	VA57-31		
Category of use	AC15		DC15
Rated voltage, U_{gr} , V	230	400	220
Rated current, (I_e) , A	1.0	0.5	0.3
Conventional thermal current (I_{the}), A	5		

Device type	VA57F31						
Category of use	AC			DC			
Rated voltage, U_{gr} , V	125	250	30	50	75	125	220
Rated current, (I_e) , A	5	5	5	1	0.75	0.5	0.25
Conventional thermal current (I_{the}), A	5						

Device type	VA57-35, VA57-39						
Category of use	AC15			DC13			
Rated voltage, U_{gr} , V	48	110	230	400	24	110	220
Rated current, (I_e) , A	5	4.5	3	2	5	1.3	0.5
Conventional thermal current (I_{the}), A	5						

Setting VK for VA57F31



Independent trip device NR

The NR Independent trip device ensures that the circuit breaker is turned off when a DC or AC voltage is applied to the coil terminals of the trip device. Independent trip device trips in any

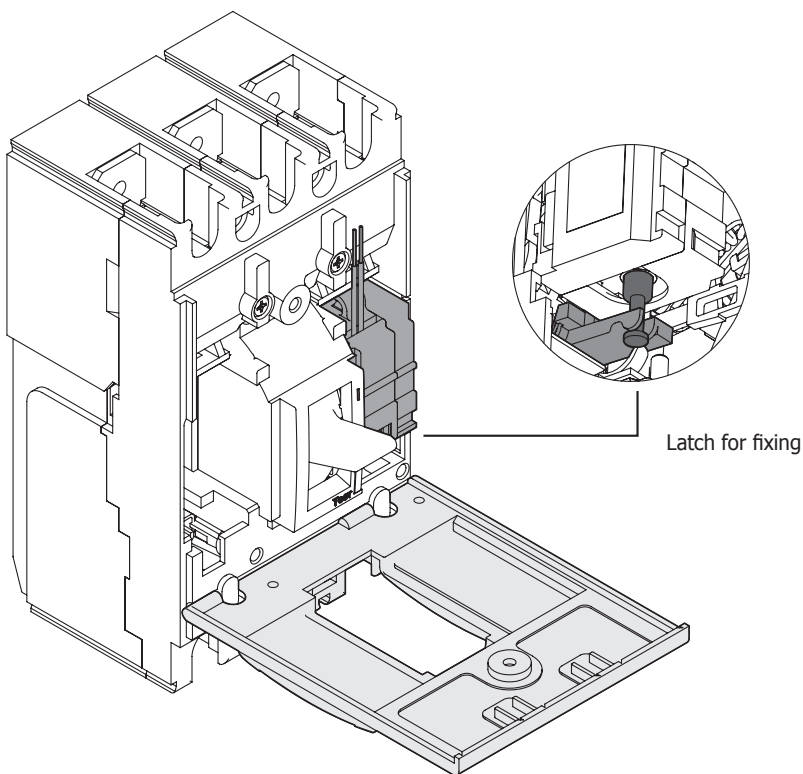
operating condition when the supply voltage of the electrical network remains in the range from 70% to 110% of the rated voltage. The rated operation mode of the Independent trip device is short-term. In devices VA57-31, VA57-35, VA57-39, an Independent trip device is connected via additional contact except for VA57F31.

The Independent trip device is installed in the VA57-31, VA57-35, VA57-39 series switches only at the factory, and in the VA57F31 switches - by the consumer independently.

Specifications

Operating voltage U_e at 50 Hz, V	110 V (except VA57F31) 230 V 400 V (except VA57F31) 24 V DC (only VA57-35, VA57-39) 110 V DC (except VA57F31) 220 V DC (except VA57F31)
Operating voltage range	$(0.7-1.1) U_e$
Power consumption, VA	400 V * A alternating current 300 W DC

Setting HP for VA57F31



Zero (RNN) and undervoltage (RMN) trip devices

RNN

- ensures disconnection of the connected automatic circuit breaker without time delay at voltages at the terminals of its coil within 45-10% of the rated;
- does not turn off the connected breaker when the voltage at the terminals of its coil is above 55% of the rated;
- does not prevent switching on of the circuit breaker at a voltage at the terminals of its coil of 85% of the rated and above;
- prevents switching on of the circuit breaker at a voltage of 10% of the rated and lower.

Except for VA57F31, VA57-31.

RMN

- ensures disconnection of the connected automatic circuit breaker without time delay at voltages at the terminals of its coil within 70-35% of the rated;
- does not turn off the connected breaker when the voltage at the terminals of its coil is above 70% of the rated;
- does not prevent switching on of the circuit breaker at a voltage at the terminals of its coil of 85% of the rated and above;
- prevents switching on of the circuit breaker at a voltage of 35% and lower.

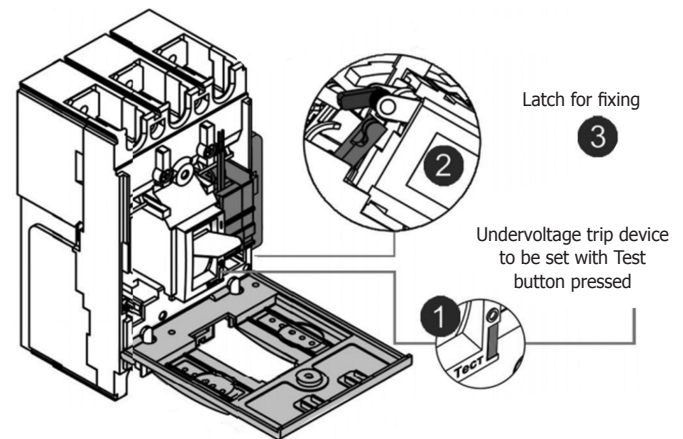
Except for VA57-31.

Zero and undervoltage releases are installed in the VA57-35, VA57-39 series breakers only at the manufacturer's factory. The undervoltage trip device in the circuit breakers VA57F31 is set by the consumer independently.

Specifications

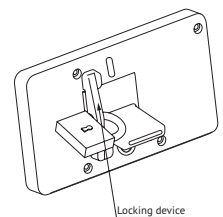
Current type	AC				DC	
	24	110	230	400	110	220
Operating voltage U_e , V						
Voltage range for switching on	$>0.85U_e$					
Switching off voltage	$<0.7U_e$					
Power consumption	10 V*A				10 W	

Setting RMN for VA57F31



VA57-35, 39 Locking device

Designed to lock the circuit breaker in the "Off" position to ensure the safety of people during the repair and maintenance of equipment. The locking device is installed on the switches VA57-35 and VA57-39 only at the factory.



Auxiliary contacts of the automatic switching off signal (VKS)

The auxiliary contacts of the automatic switching off signal are designed to indicate the switching off of the circuit breaker under the action of the trip devices (max, NR, RMN, RNN), as well as the TEST button.

Rated operating current up to 2 A at a voltage of up to 400 V AC at 50-60 Hz and 220 V DC.

Electromagnetic Drive (EP)

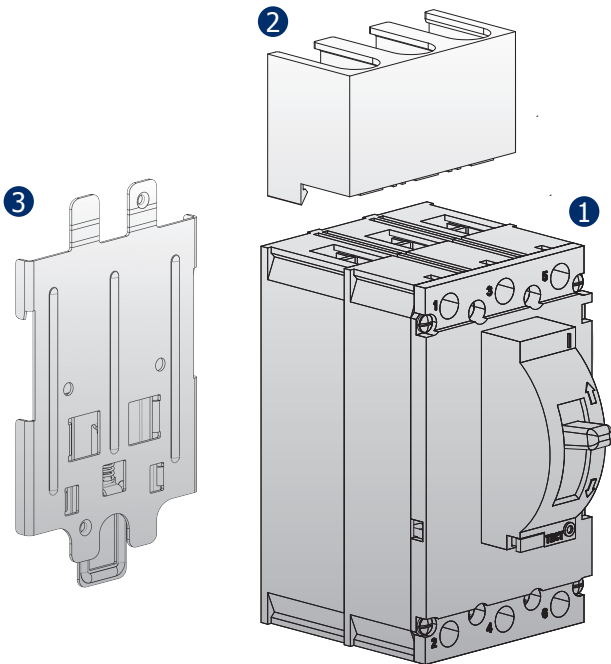
Electromechanical device for remote operation of the breaker. Electromagnetic drive allows manual switching on / off. Electromagnetic drive can be used in automation schemes, where the breaker is the actuator of any protection system (automatic backup power supply input device, etc.). The electromagnetic drive on the VA57-35 and VA57-39 breakers is installed only at the factory.
 Except for VA57F31, VA57-31.

Electromagnetic Drive Characteristics

Current type	Rated control circuit voltage, (U_e), V	Maximum drive power consumption, V A	Operating voltage range, V
AC of 50 and 60 Hz	230, 400	1000	0.85-1.1

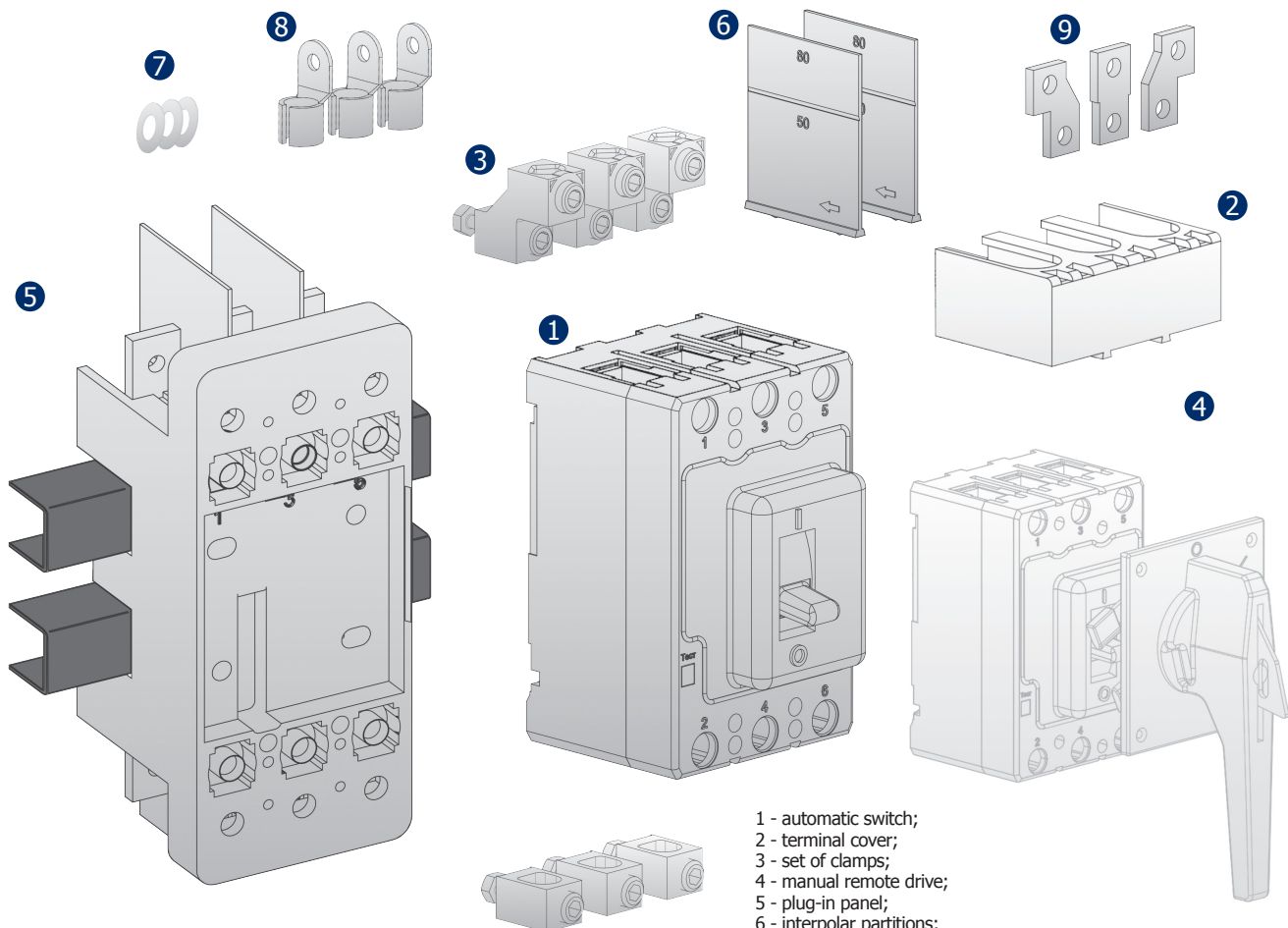
Optional accessories

VA57-31



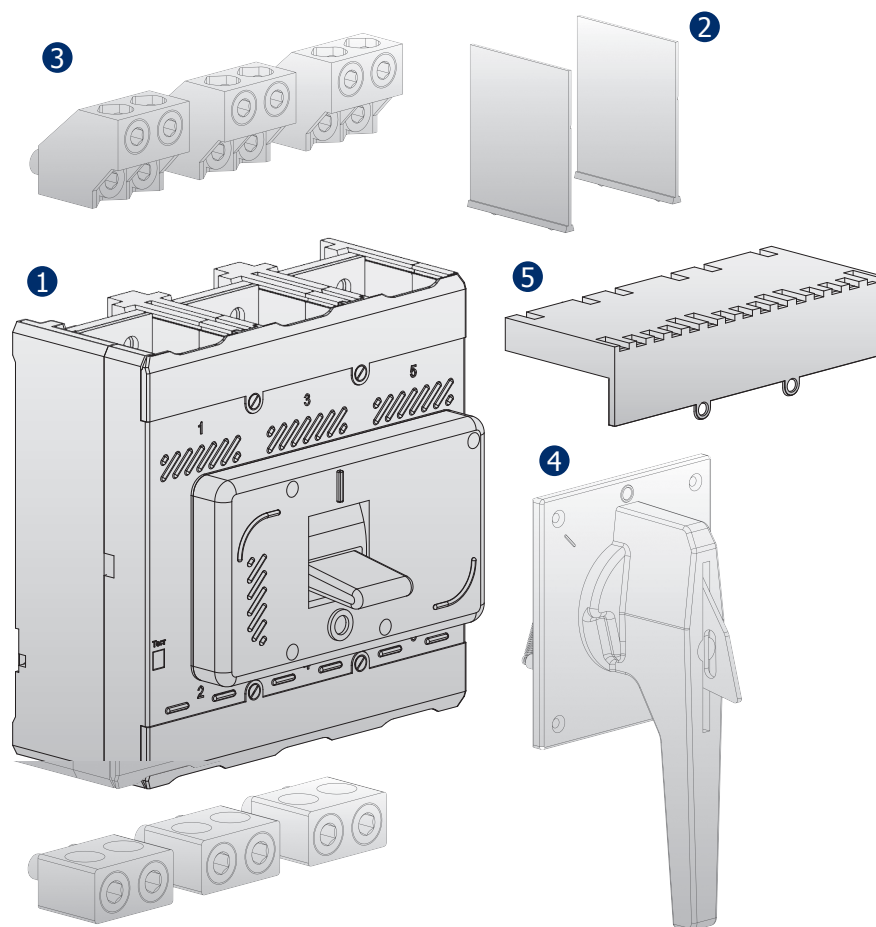
- 1 - automatic switch;
- 2 - terminal cover;
- 3 - DIN rail adapter.

VA57-35



- 1 - automatic switch;
- 2 - terminal cover;
- 3 - set of clamps;
- 4 - manual remote drive;
- 5 - plug-in panel;
- 6 - inter-polar partitions;
- 7 - disc spring;
- 8 - set of cable lugs;
- 9 - set of expansion leads.

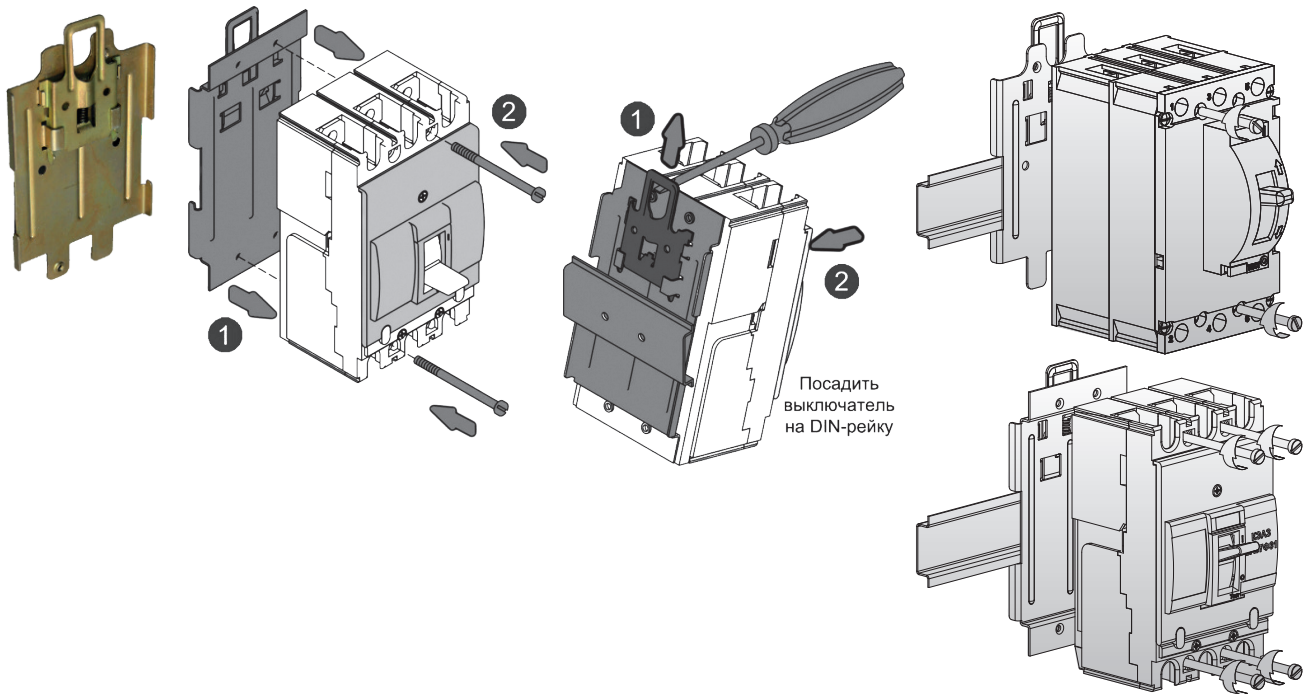
VA57-39



- 1 - automatic switch;
- 2 - inter-pole partitions;
- 3 - set of clamps;
- 4 - Remote manual drive;
- 5 - terminal cover.

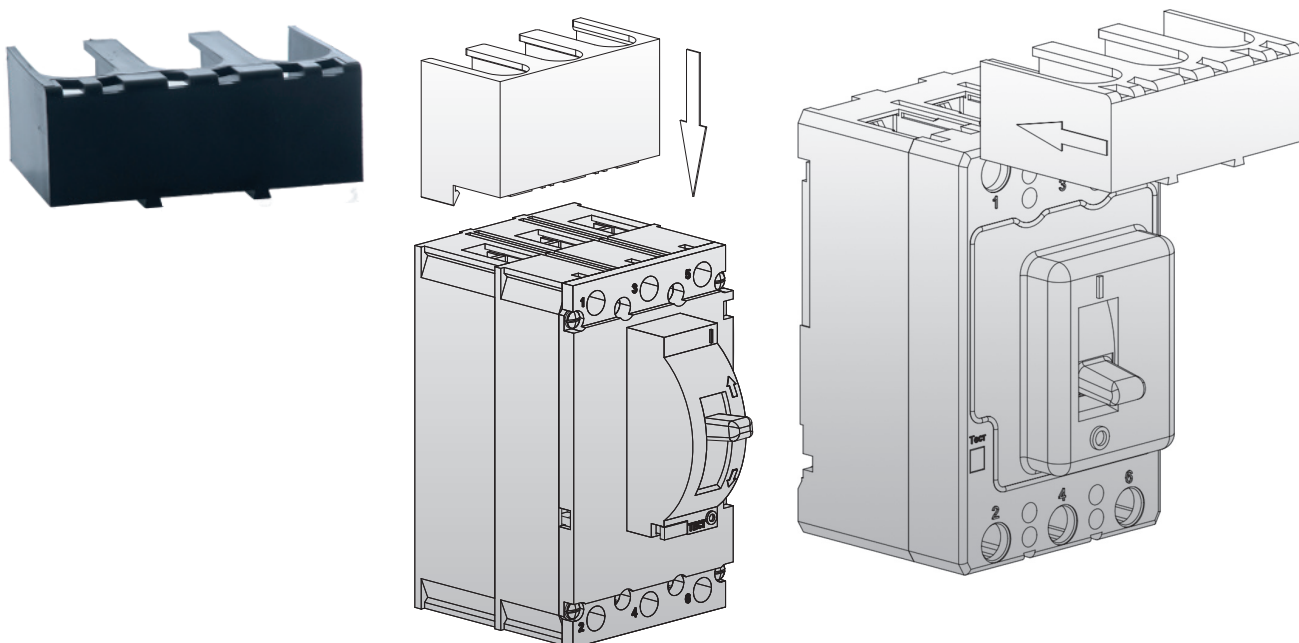
Adapter on DIN-rail VA57F31 and VA57-31

Designed for mounting a circuit breaker on a DIN rail.



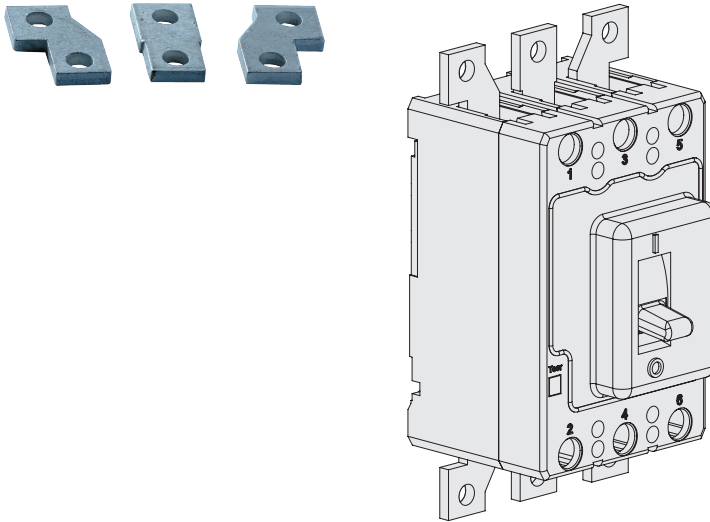
Terminal cover VA57-31 and VA57-35

Designed to protect against contact with live parts.



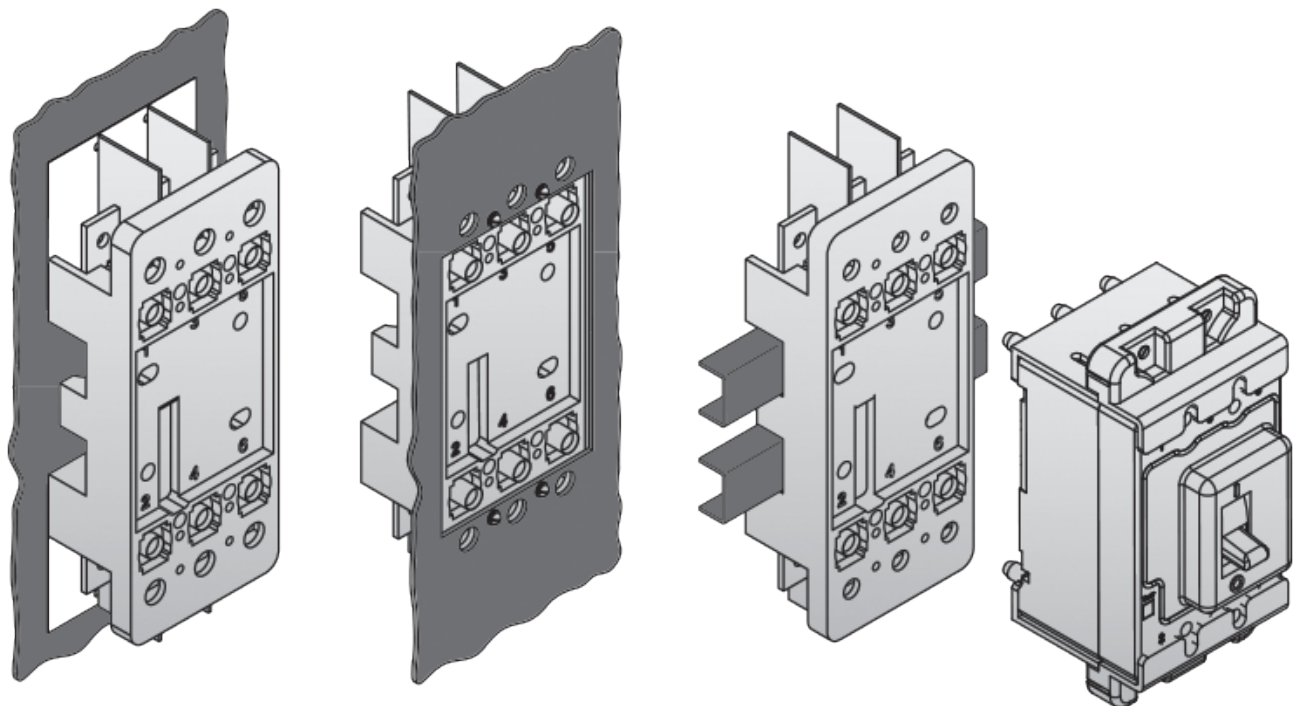
Set of expansion outputs VA57-35

Designed to increase the interpolar distance.



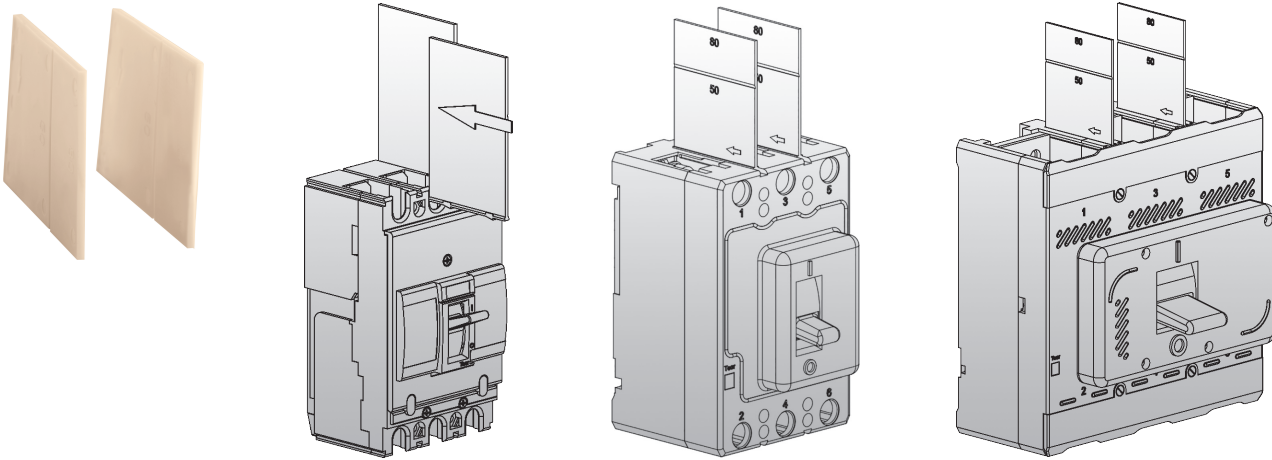
Plug-in Panel for VA57-35

The plug-in panel is used only with plug-in breakers.



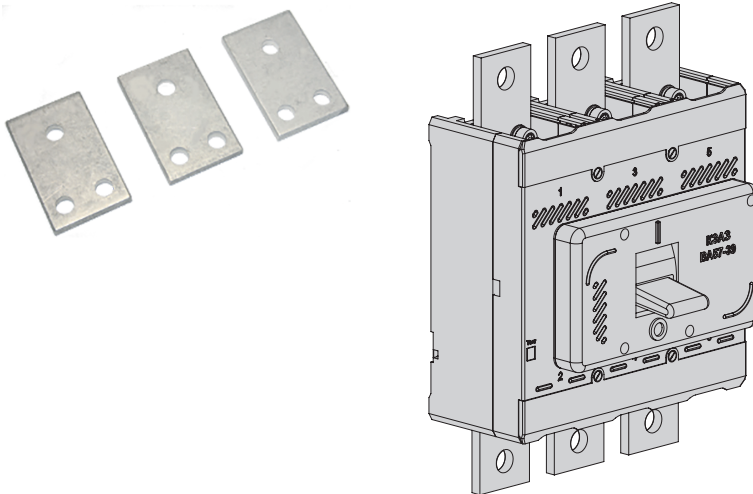
Inter-pole partitions VA57F31, VA57-35 and VA57-39

Designed to provide more reliable insulation between phases. Installed by the consumer. Can be used in conjunction with sets of clamps.



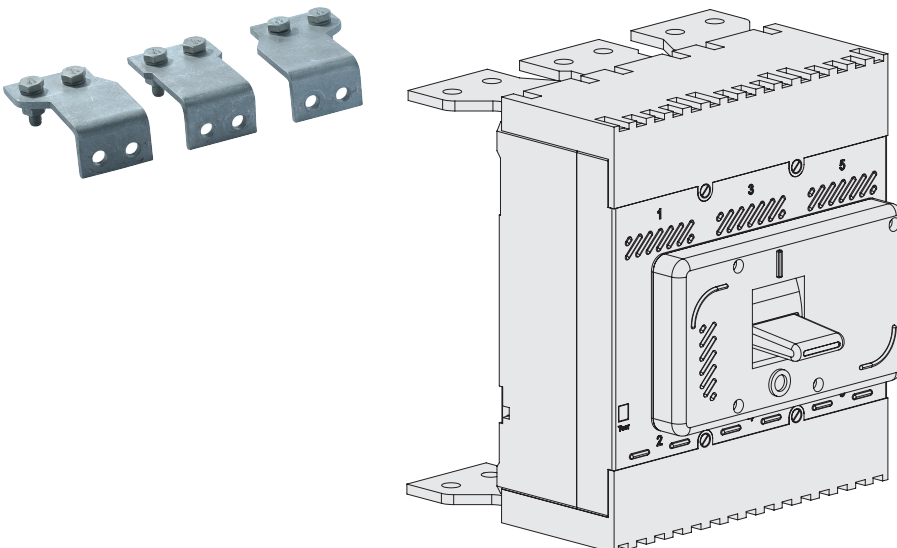
Set of transfer busbars VA57-39

Allow to connect busbars and conductors with cable lugs of larger section to the circuit breaker.



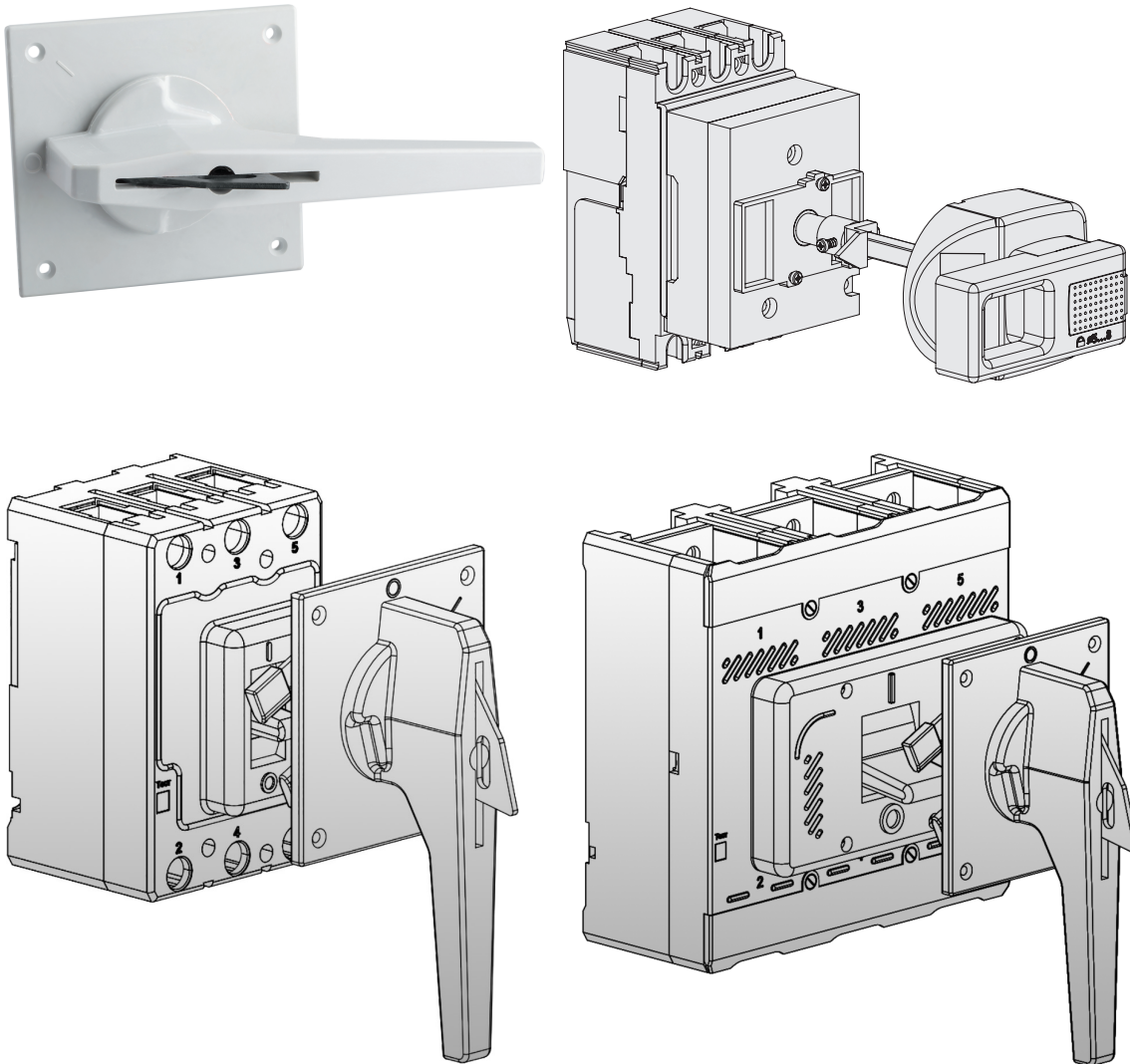
Set of outputs for rear connection for VA57-39

Allows to perform a rear connection to the circuit breaker of buses and conductors with cable lugs.



Remote manual drive VA57F31, VA57-35, VA57-39

The device attached to the switchgear door is designed to operate the automatic breaker through the door. The remote drive is equipped with a locking device in the "Off" position.



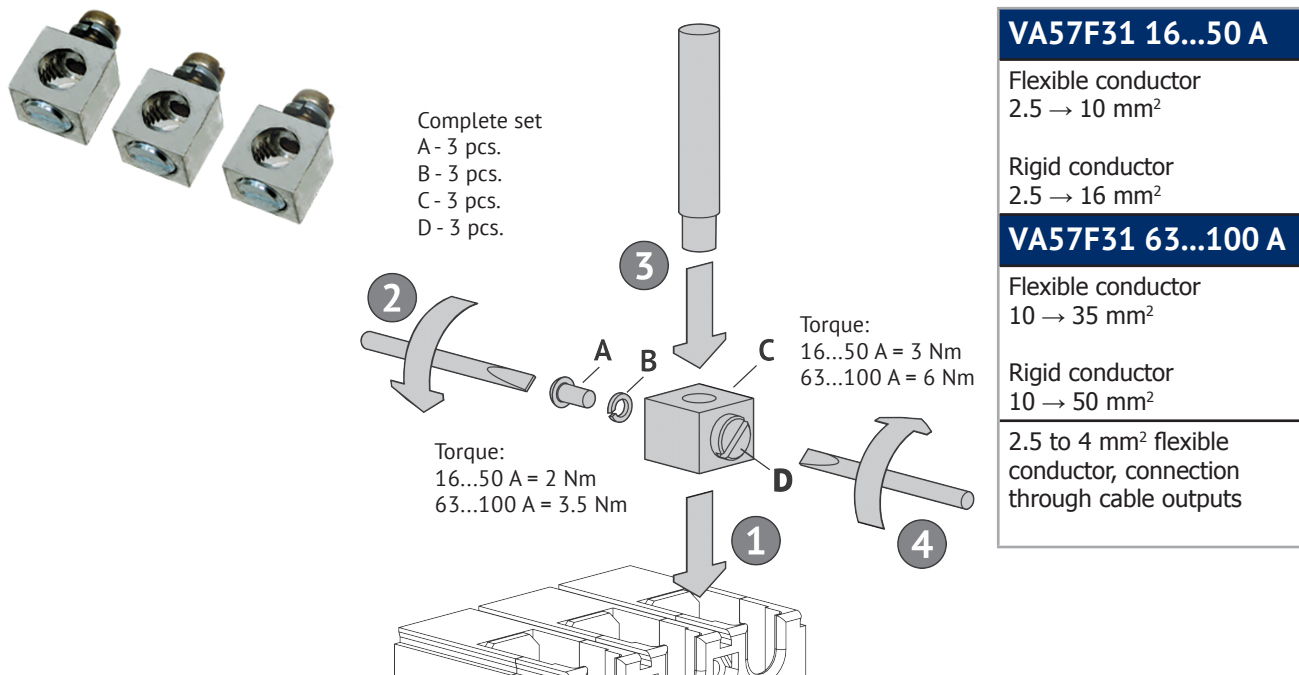
Item numbers for ordering additional accessories

Name	Item number
DIN-rail adapter VA57-31-UHL-KEAZ	110350
DIN-rail adapter VA57F31-UHL-KEAZ	220537
Terminal cover VA57-31-UHL-KEAZ	110426
Terminal cover VA57-35/VA04-36/VA51-35-UHL-KEAZ	110427
Terminal cover VA57-39/VA51-39-UHL-KEAZ	261522
Terminal cover for front connection VA57-39/VA51-39-UHL	274931
Set of expansion outputs VA04-36/VA51-35/VA57-35-UHL-KEAZ	110372
Set of inter-pole partitions VA57F31-UHL-KEAZ (number of partitions - 2 pcs.)	220546
Set of transition buses VA57-39-UHL-KEAZ (number of buses - 3 pcs.)	225574
Set of outputs for the rear connection of VA57-39-UHL-KEAZ (number of outputs 3 pcs.)	217455
Remote manual drive VA57F31-UHL-KEAZ	220536
Remote manual drive РПД-VA04-36/VA51-35/VA57-35/VA57-39-UHL-KEAZ	110450
Set of clamps VA57F31-16...50A-UHL-KEAZ (number of clamps 3 pcs.)	220544
Set of clamps VA57F31-63...100A-UHL-KEAZ (number of clamps 3 pcs.)	220545
Plug-in Panel VA57-35-UHL	256533
Plug-in Panel set VA57-35	266919
Insulating screens for plug-in panel VA57-35	256218
Plug for secondary circuits MSTB-2.5/13-OptiMat/VA57-UHL	273632
Receptacle for secondary circuits UMSTBVK-2.5/13-OptiMat/VA57-UHL	273633

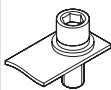
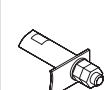
Set of clamps

VA57F31

Allow connection of conductors without cable lugs to the circuit breaker.



VA57-35, VA57F35

Ways to connect conductors		Ways of connecting conductors to the outputs of circuit breakers 1, 3, 5										
		Front connection								Rear connection		
		Busbar		Conductors with cable lugs			Conductors without cable lugs		Busbar			
		Cu	Al	70 mm	95 mm	120 mm	185 mm	2x95 mm	Cu	Al/Cu		
Ways of connecting conductors to the terminals of circuit breakers 2, 4, 6	Front connection		Cu	1 in a set				22/27 codes 110394	8/10 codes 110410	34	39	
			Al	2 codes 110392				23/28 codes 110395	9/11 codes 110411	35	40	
			70 mm		3 codes 110400			24/29 codes 110396	16/19 codes 110389	36	41	
			95 mm			4 codes 110403		25/30 codes 110397	17/20 codes 110390	37	42	
			120 mm				5 codes 110406	26/31 codes 110398	18/21 codes 110391	38	43	
			185 mm	22/27 codes 110394	23/28 codes 110395	24/29 codes 110396	25/30 codes 110397	26/31 codes 110398	6 codes 110408	32/33 codes 110401	44	45
		2x95 mm	8/10 codes 110410	9/11 codes 110411	16/19 codes 110389	17/20 codes 110390	18/21 codes 110391	32/33 codes 110401	7 codes 110409	46	47	
	Rear connection		Cu	34	35	36	37	38	44	46	12 codes 110383	
			Al/Cu	35/39	40	41	42	43	45	47		13 codes 110385

Retractable version

Designed to quickly replace the circuit breaker and provide a visible rupture of current-carrying parts. The retractable version is equipped with locks to prevent attempts to replace the circuit breaker without turning it to the "Off" position.

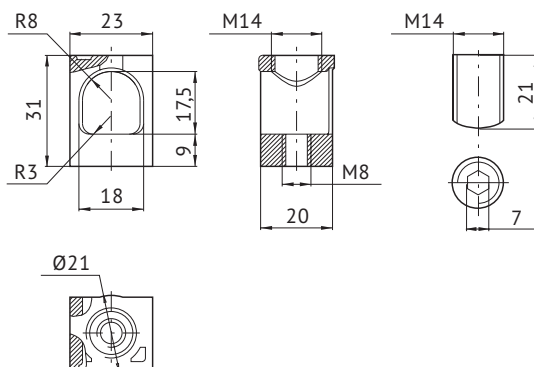
Terminal sets for retractable circuit breakers with M8 bolts:

- No. 14 - for connection with copper busbars (included in the breaker set);
- No. 15 - for connection with aluminum busbars (available on separate order).

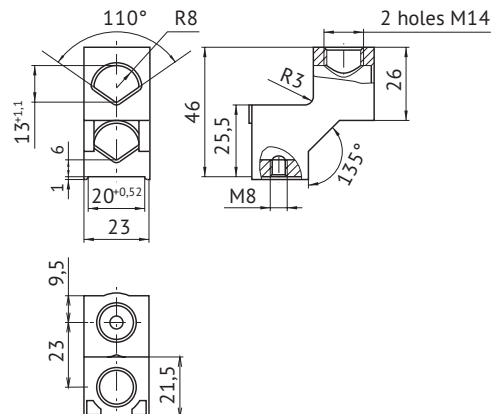
Connection options:

- copper and aluminum wires - max section 185 mm²;
- cables - max. section 185 mm²;
- busbars - max. section 4x30 mm² or 6x20 mm²;
- lugs - max. diam 17.5 mm².


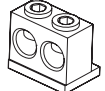
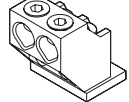
Clamp for cable connection up to 185 mm²



Clamp for connecting two cables up to 95 mm²



VA57-39

Ways to connect conductors		Ways to connect conductors to the outputs of circuit breakers 1, 3, 5				
		Busbar or two cables with cable lugs		Conductors without cable lugs		
At the intersection of the columns and rows with the selected options for connecting the conductors there are numbers of clamps to indicate in the order on the circuit breaker and item numbers for ordering clamps separately		Cu	Al	2x185, Cu/Al	4x120, Cu/Al	
Ways of connecting conductors to the terminals of circuit breakers 2, 4, 6		Cu	3 in a set	15 codes 110388	9/11 codes 110412	5/7 codes 110405
		Al	15 codes 110388	4 codes 110404	10/12 codes 110382	6/8 codes 110407
		2x185, Cu/Al	9/11 codes 110412	10/12 codes 110382	1 codes 110381	13/14 codes 110384
		4x120, Cu/Al	5/7 codes 110405	6/8 codes 110407	13/14 codes 110384	2 codes 110393

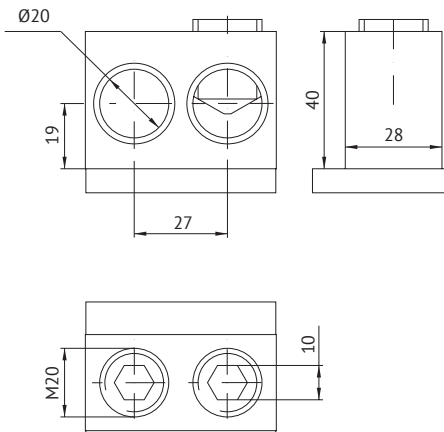
Retractable version

Designed to quickly replace the circuit breaker and provide a visible rupture of current-carrying parts. The retractable version is equipped with locks to prevent attempts to replace the circuit breaker without turning it to the "Off" position.

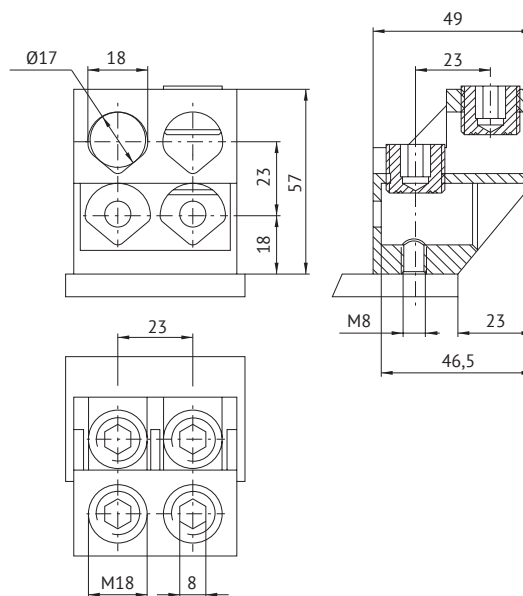
Connection options:

- copper and aluminum conductors - max. section 2x185 mm² or 4x120 mm²;
- cables - max. section 2x185 mm² or 4x120 mm²;
- busbars - max. section 12x50 mm².

Clamp for front connecting two cables up to 185 mm²

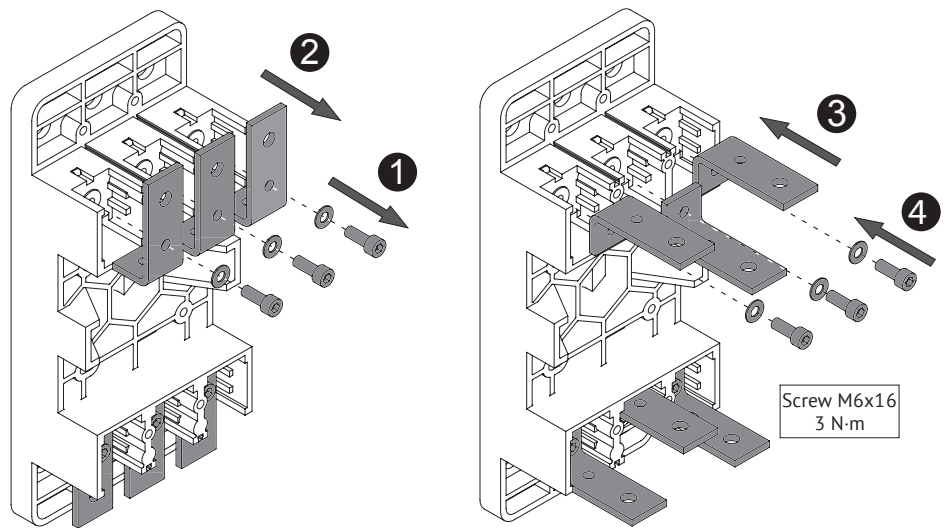


Clamp for front connecting four cables up to 120 mm²

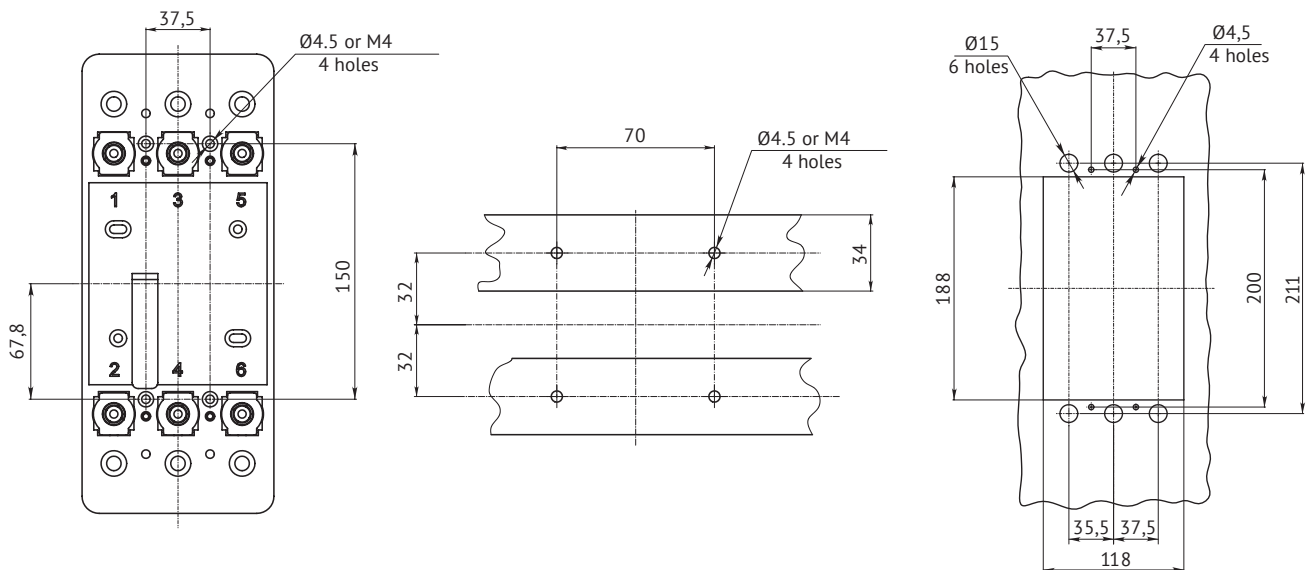


Installation of the plug-in panel VA57-35

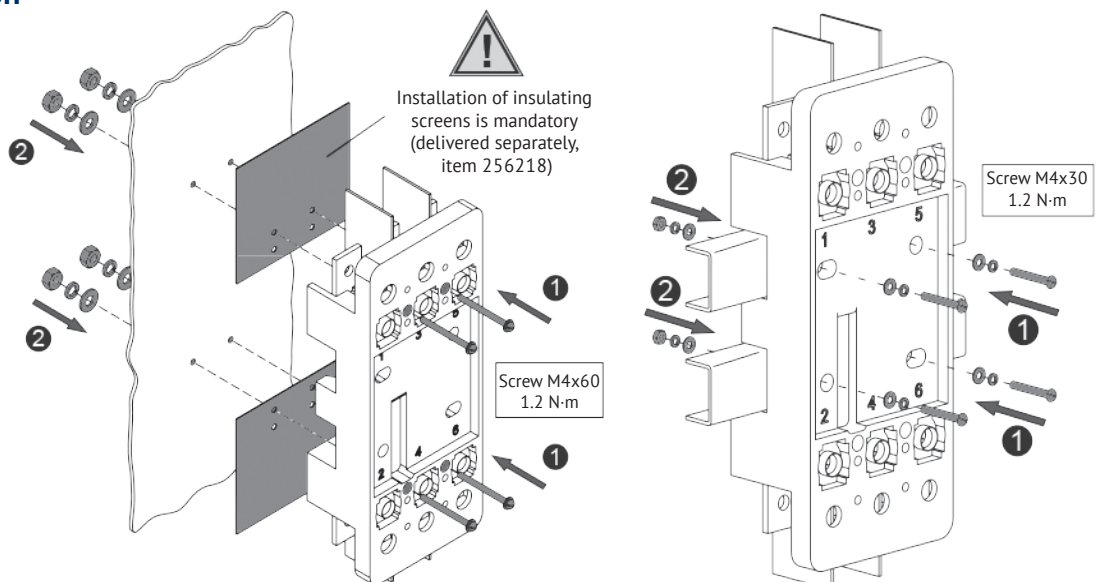
Attaching outputs

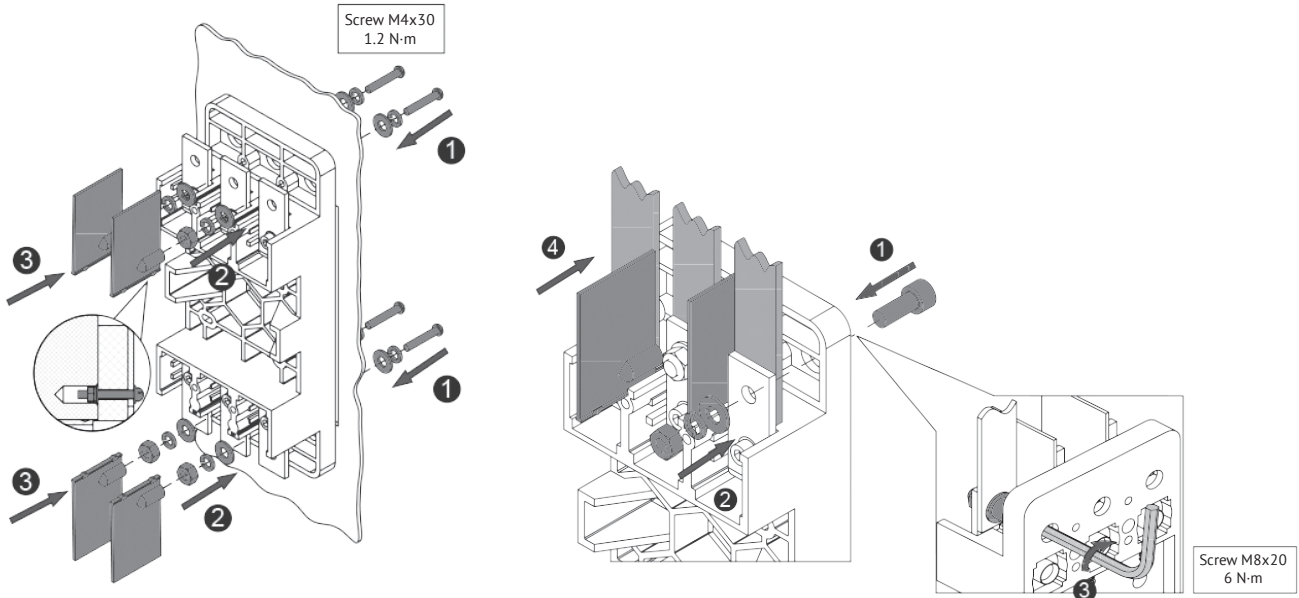


Arrangement of holes for the installation of the base

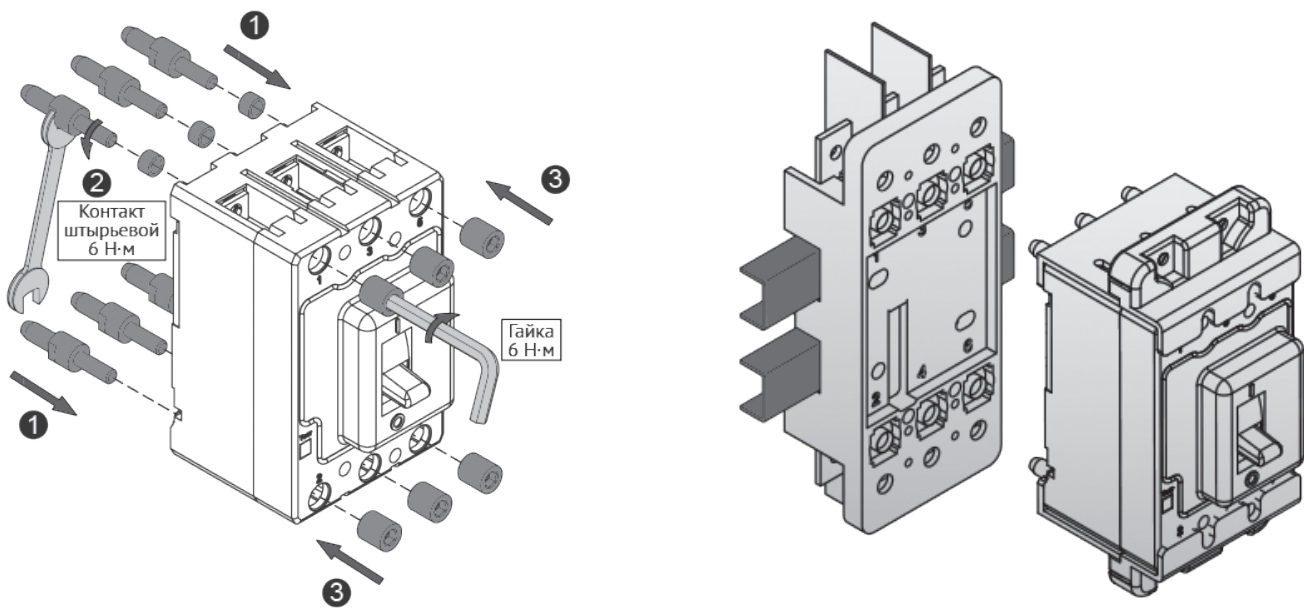


Base installation



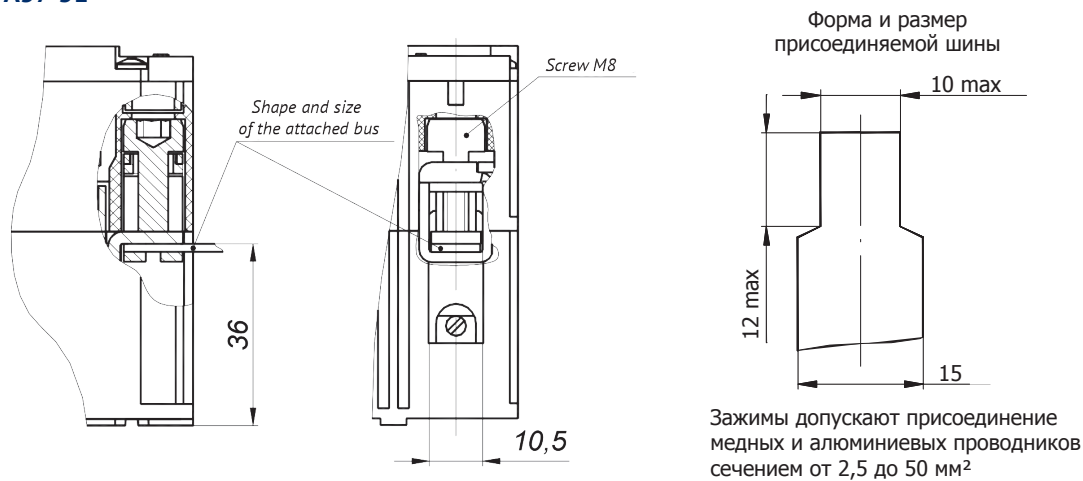


Breaker assembly



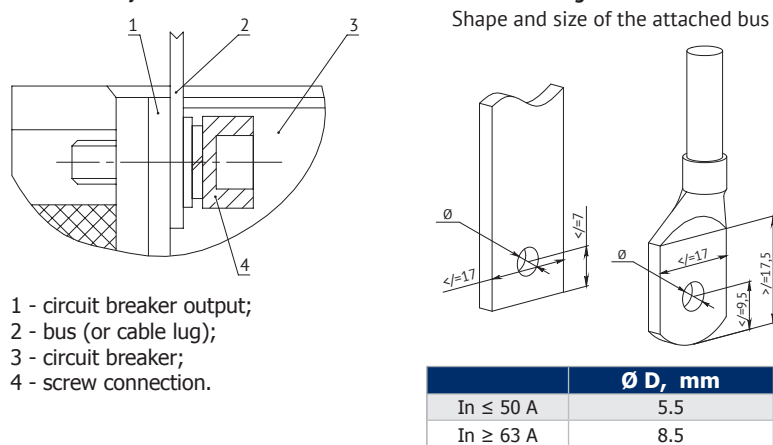
Connection of external conductors to the main circuit of the circuit breaker

VA57-31

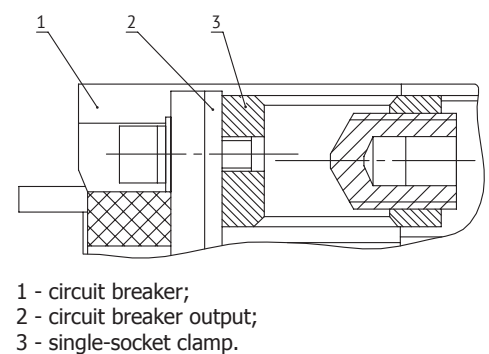


VA57F31

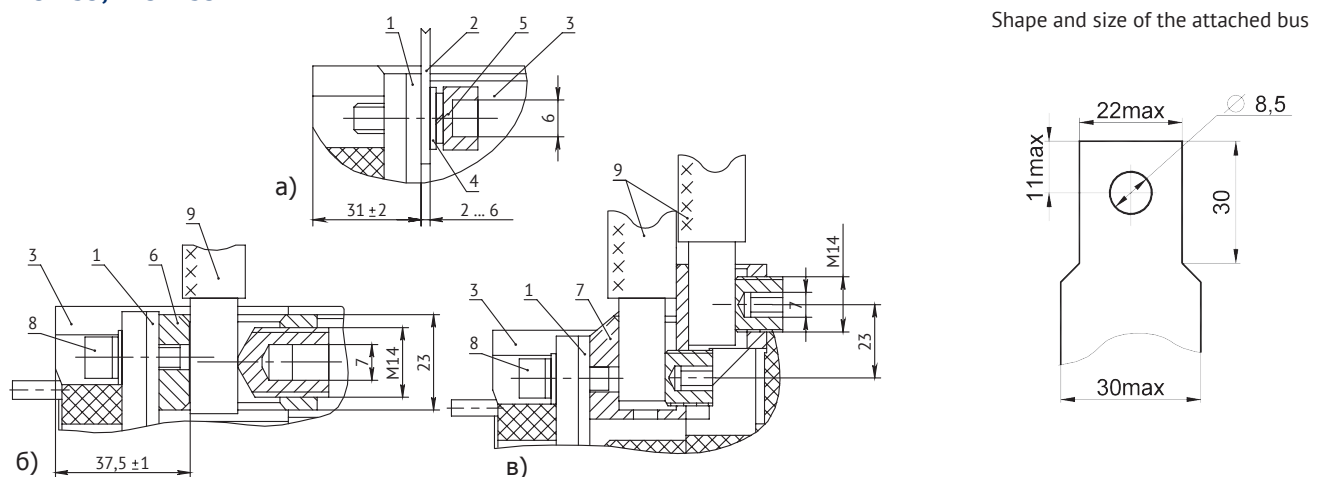
Connection by busbars or conductors of a cable with a cable lug



Connection by a cable without cable lug



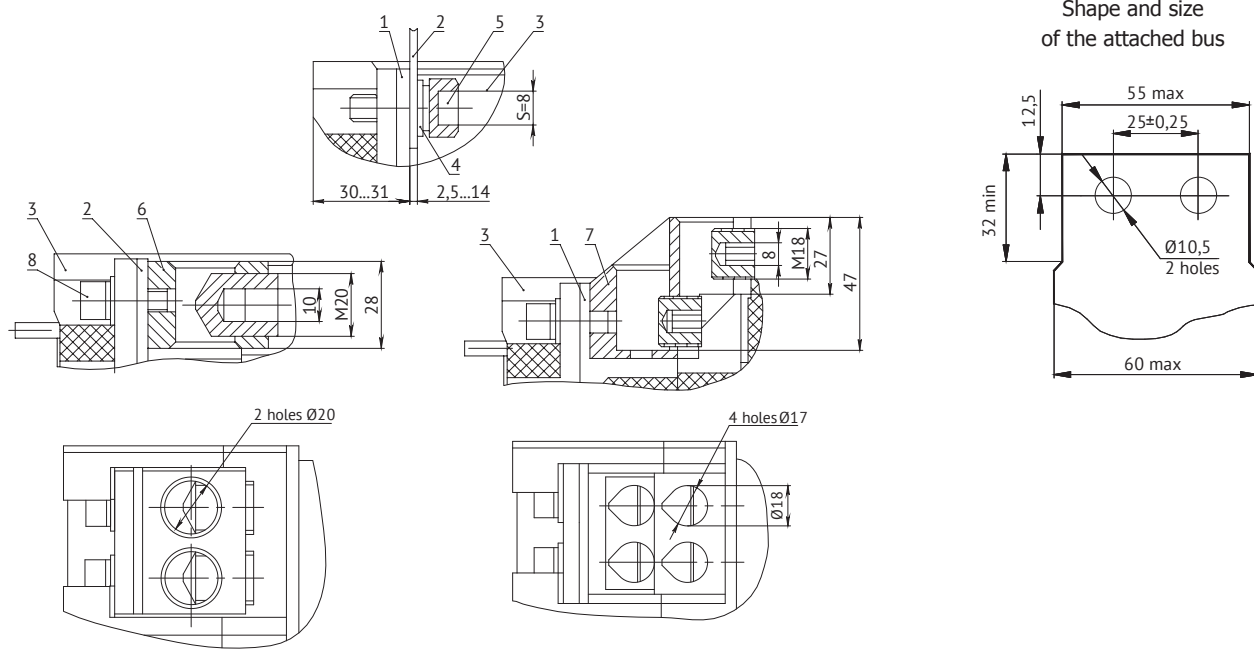
VA57-35, VA57F35



a) connection by buses or conductors of a cable with a cable lug;
b) connection by one cable with a section of 185 mm² without cable lug;
c) connection by two cables with a section of 95 mm² without cable lug;

1 - circuit breaker output;
2 - bus (or cable lug);
3 - automatic switch;
4 - washers;
5 - screw M8;
6 - single-socket clamp;
7 - two-socket clamp;
8 - bolt M8;
9 - connected conductor.

VA57-39

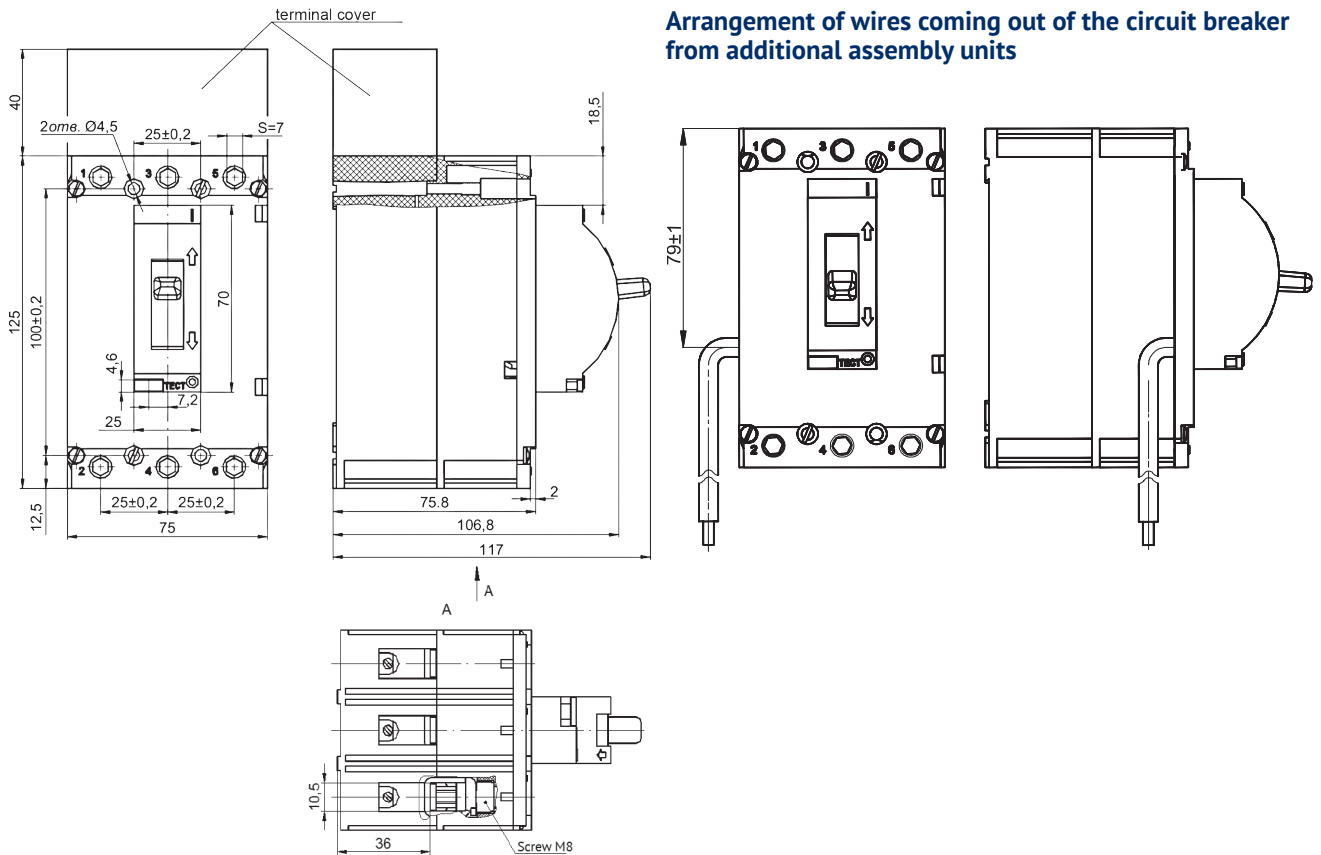


- a) connection by buses or conductors of a cable with a cable lug;
 b) connection by two cables with a section of 185 mm² without cable lug;
 c) connection by four cables with a section of 120 mm² without cable lug.

- 1 - circuit breaker output;
 2 - busbar;
 3 - automatic switch;
 4 - washer;
 5 - bolt M10x30 GOST 7796;
 6 - two-socket clamp;
 7 - four-socket clamp.

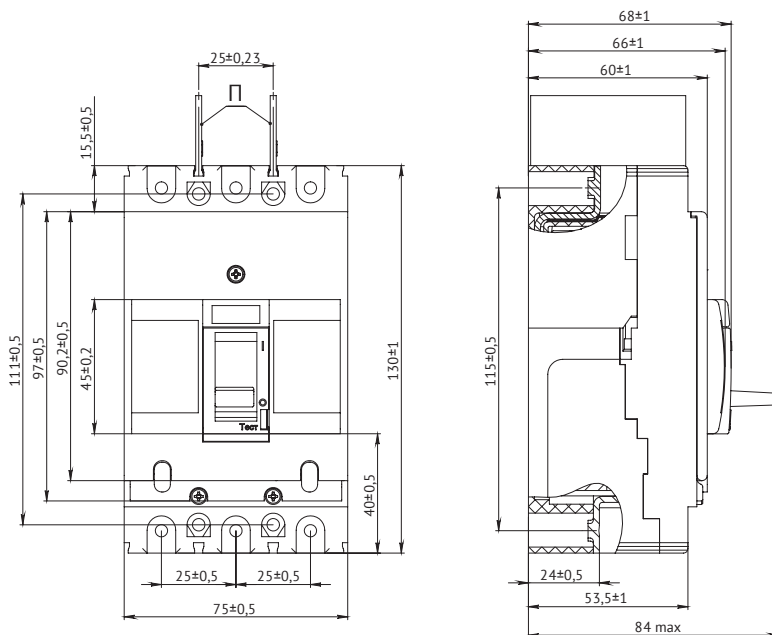
Overall, installation and mounting dimensions

VA57-31



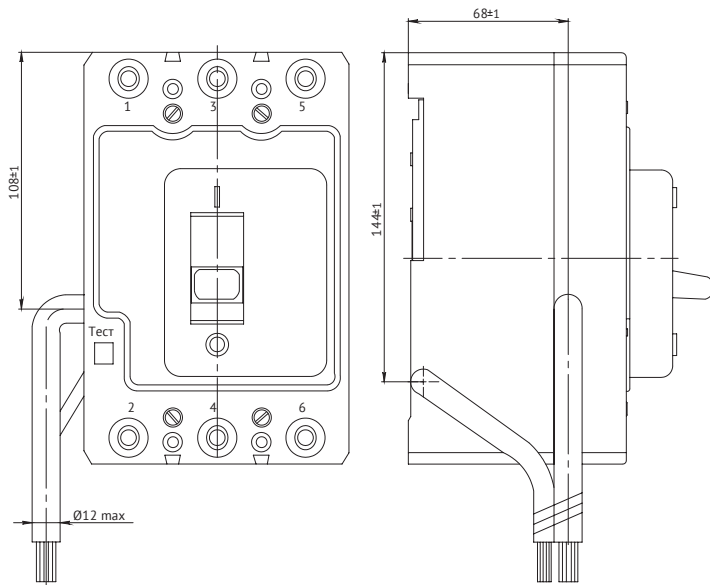
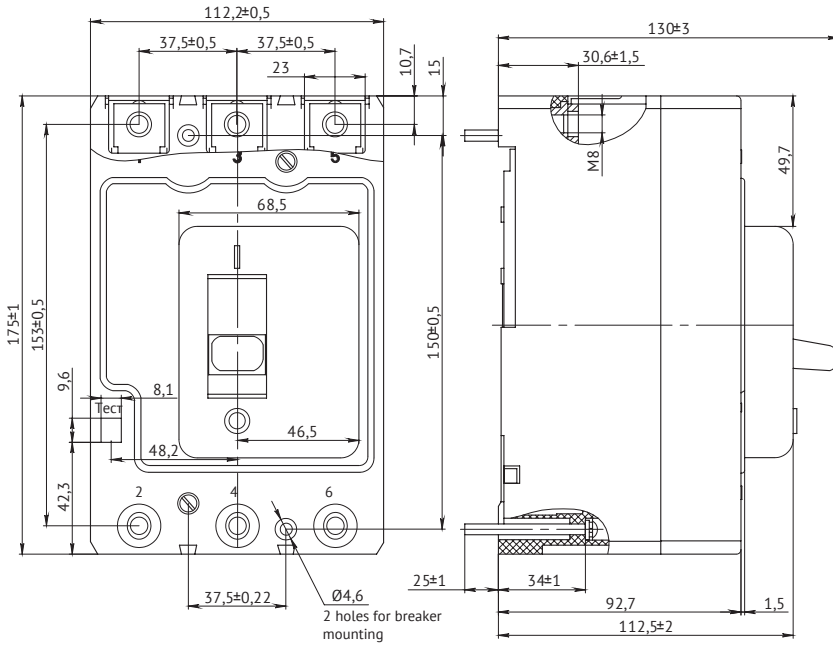
A terminal cover is installed with the circuit breaker VA57-31, which is installed on the side of the outputs 1, 3, 5. Terminal covers can be ordered separately.

VA57F31

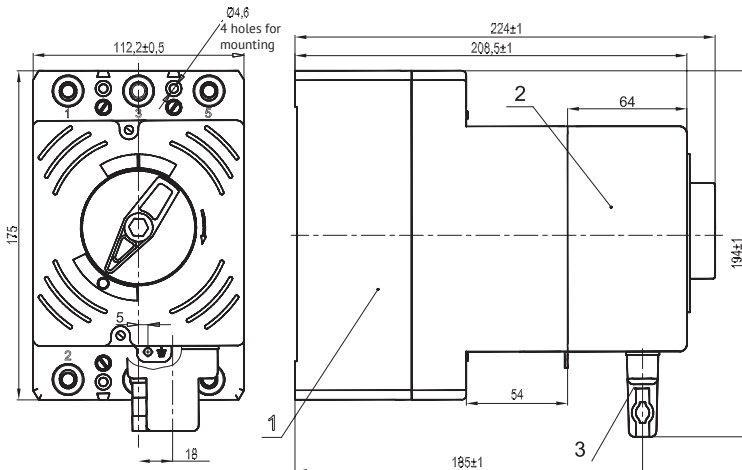


VA57-35, VA57F35

With clamps for front connection

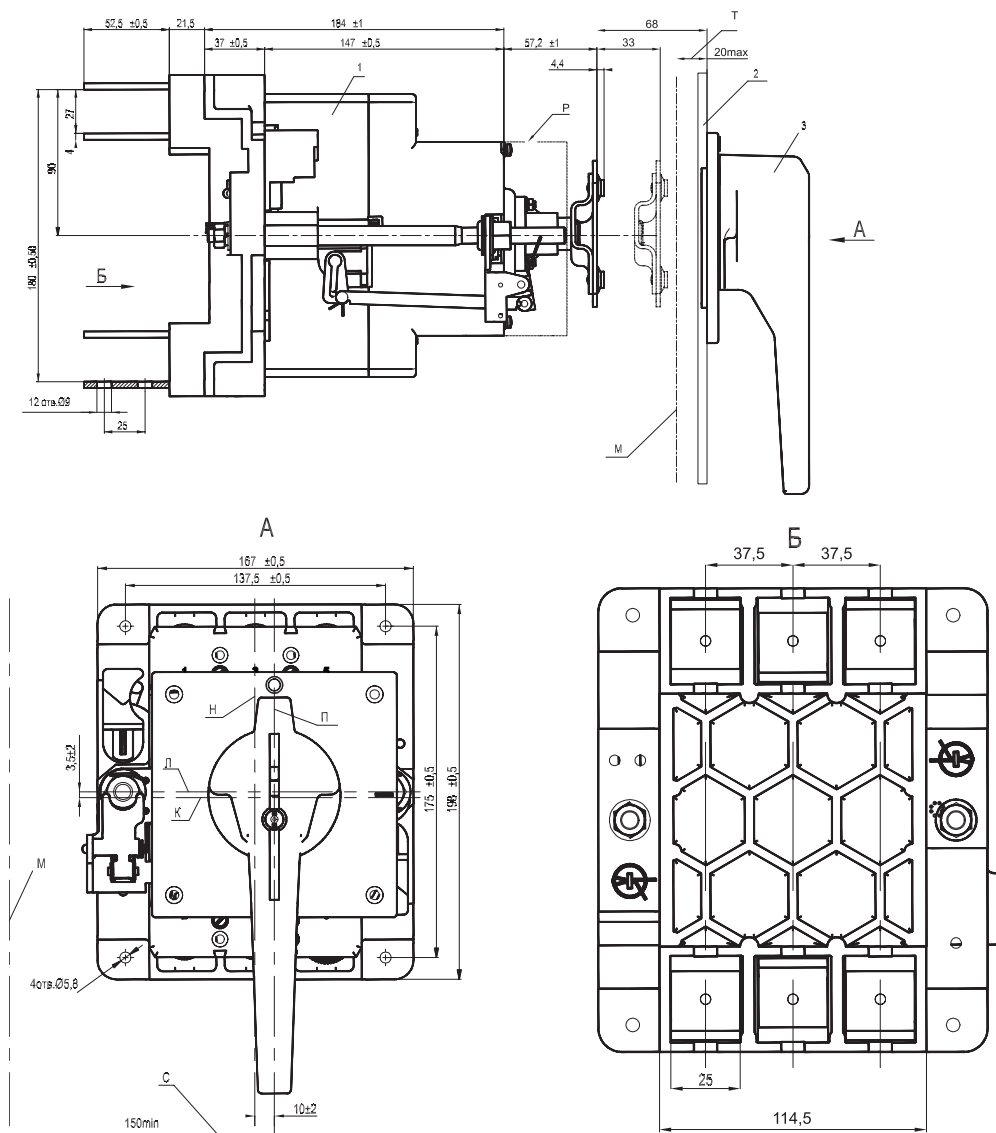


With an electromagnetic drive

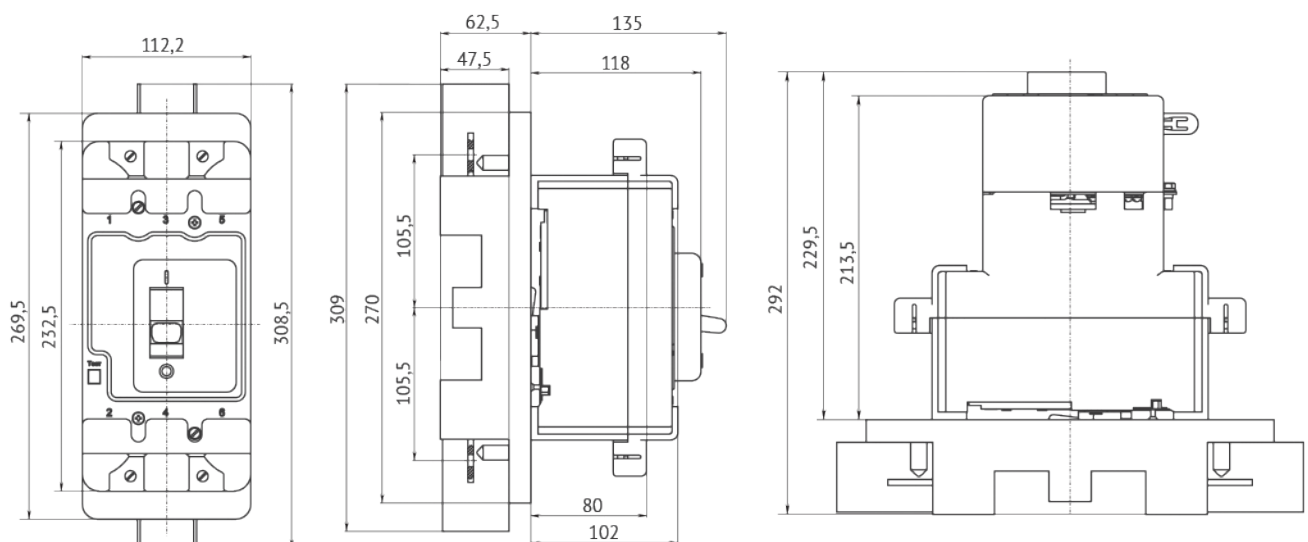


- 1 - automatic switch;
- 2 - electromagnetic drive;
- 3 - connector RP10.

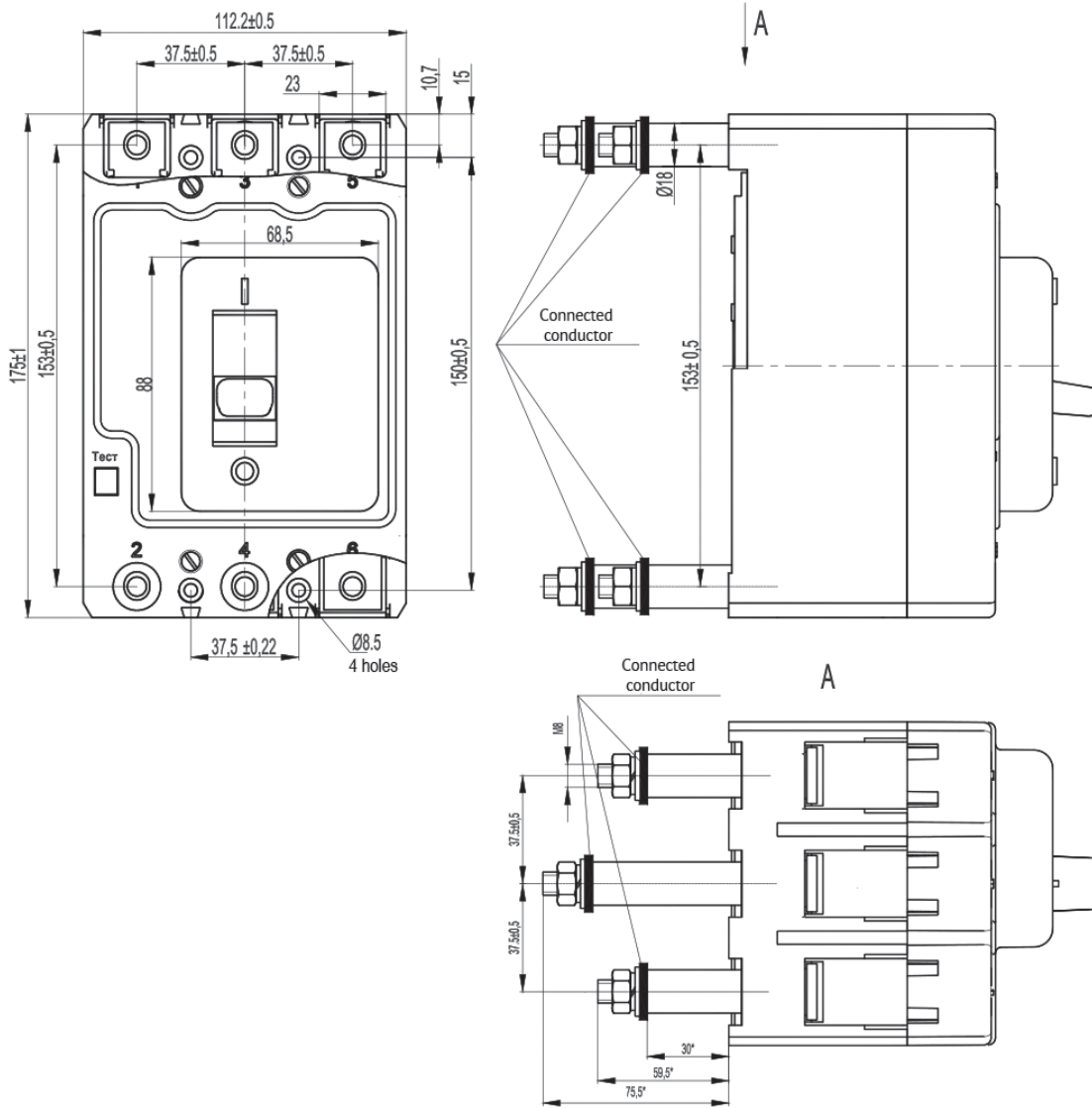
Retractable version with Remote manual drive



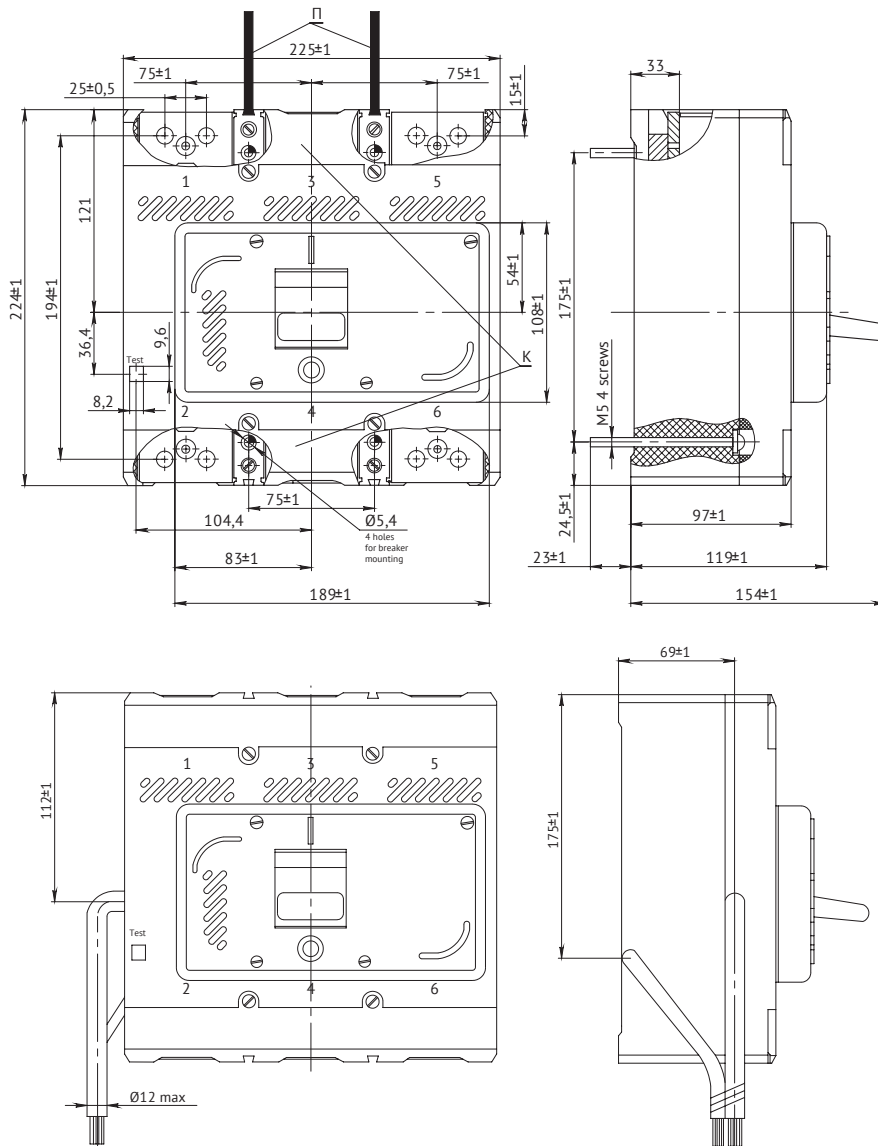
Breaker on the plug-in panel



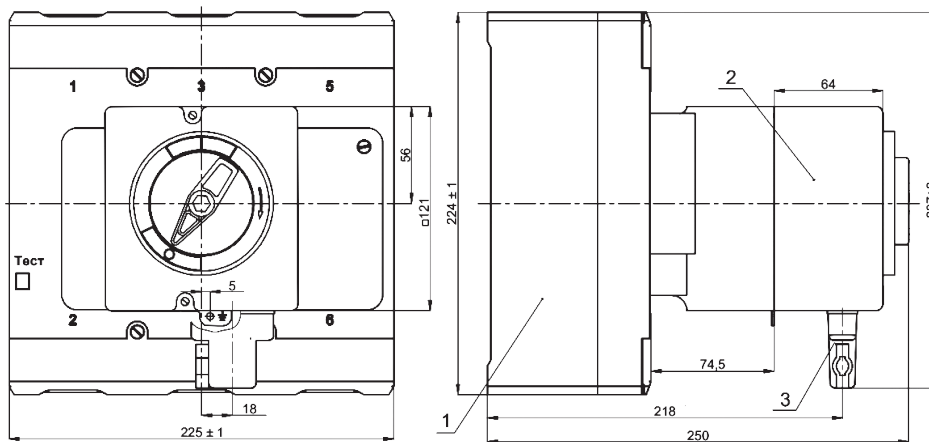
Breakers with rear connection clamps



VA57-39

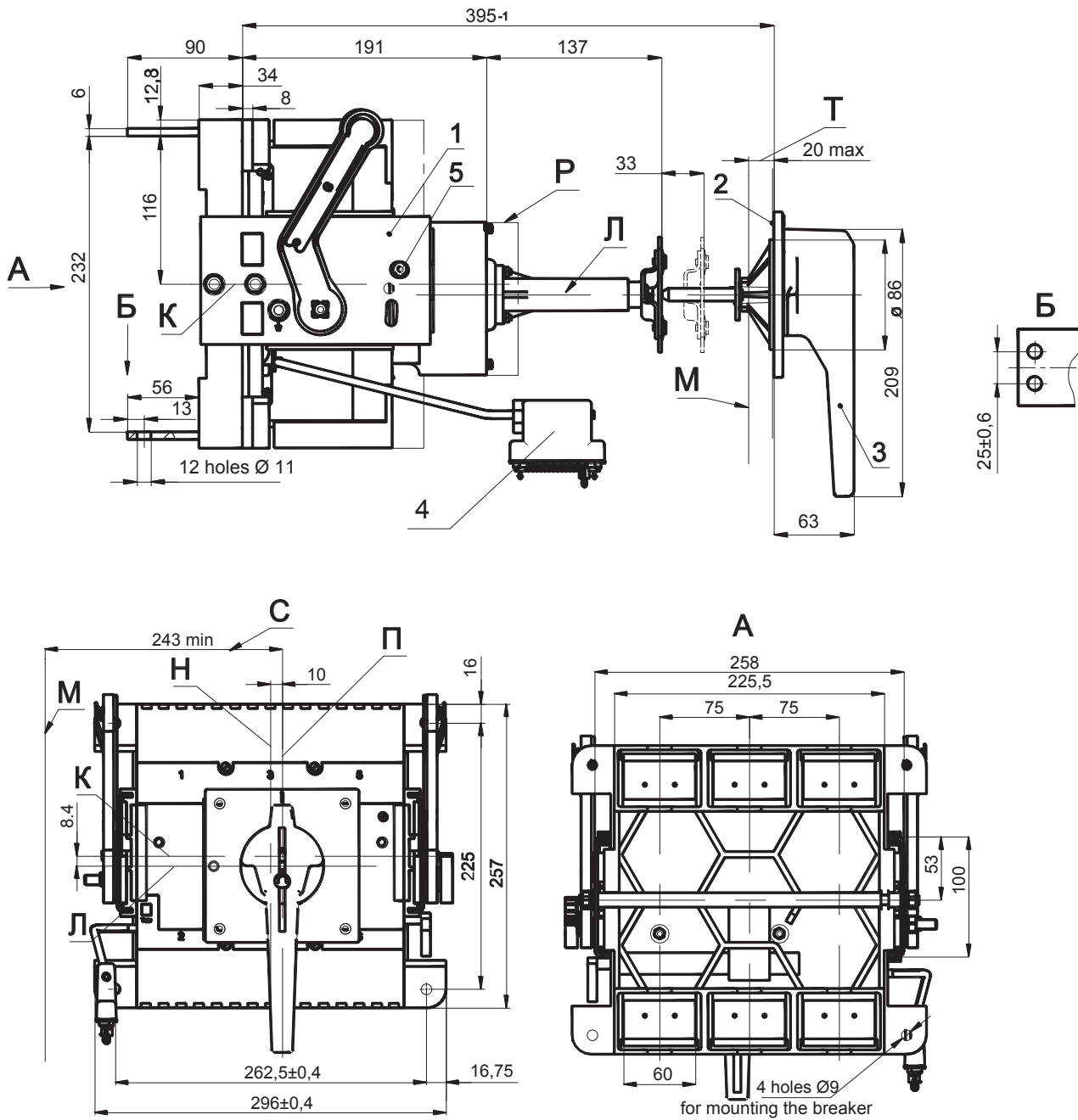


Stationary version with an electromagnetic drive

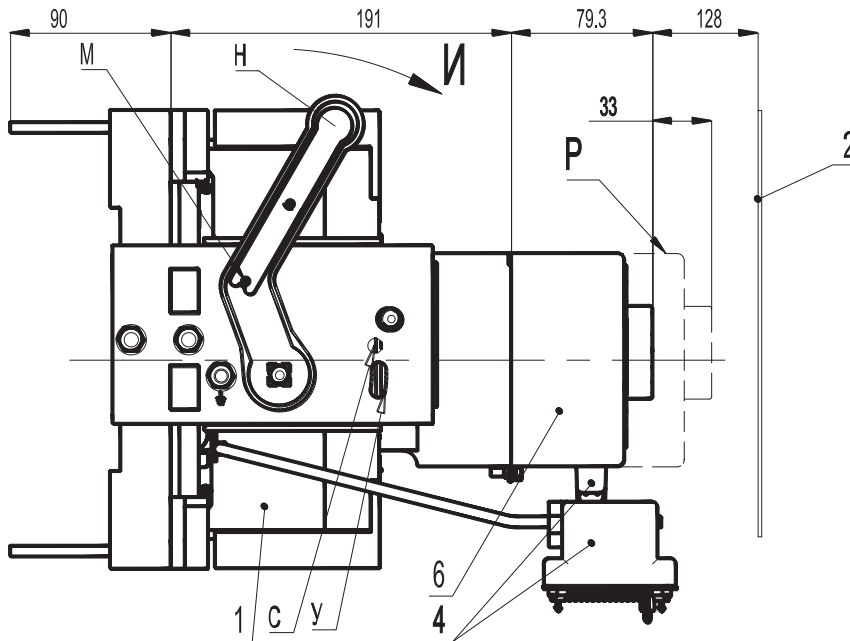


- 1 - automatic switch;
- 2 - electromagnetic drive;
- 3 - connector RP10;
- K - vertical axis of the switch;
- Л - horizontal axis of the electromagnetic drive.

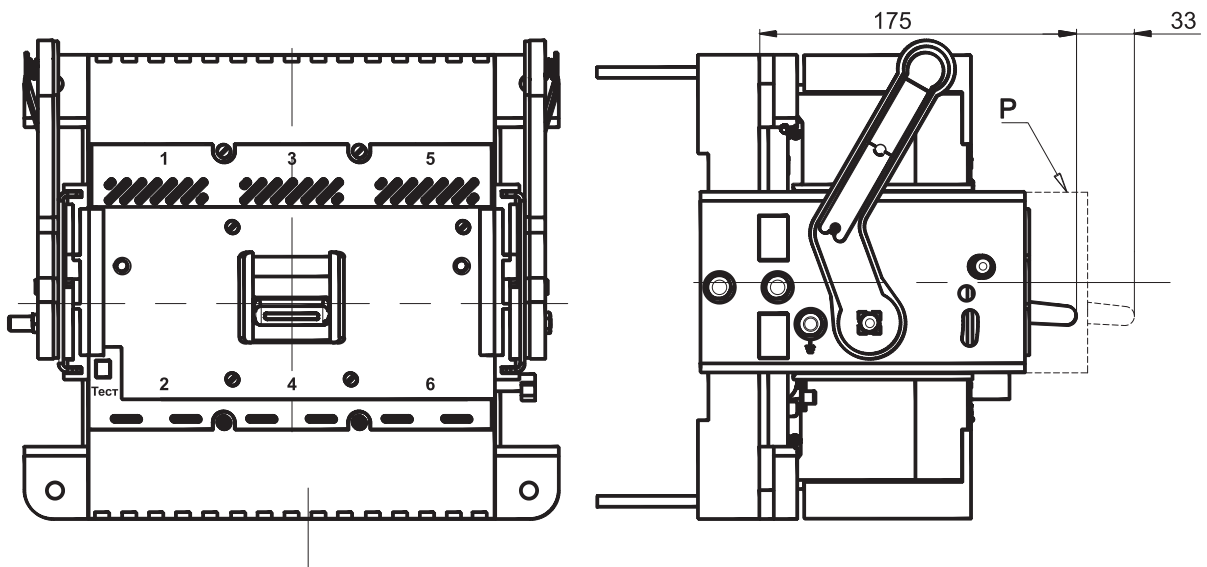
VA57-39 circuit breaker of the retractable version with the Remote manual drive



VA57-39 circuit breaker of the retractable version with the electromagnetic drive



VA57-39 circuit breaker of the retractable version with the manual drive

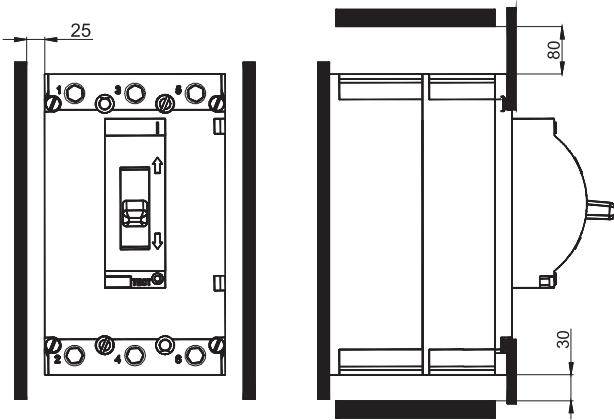


- 1 - automatic switch;
- 2 - switchgear door;
- 3 - remote manual drive;
- 4 - connector RP10;
- 5 - lock;
- 6 - electromagnetic drive.

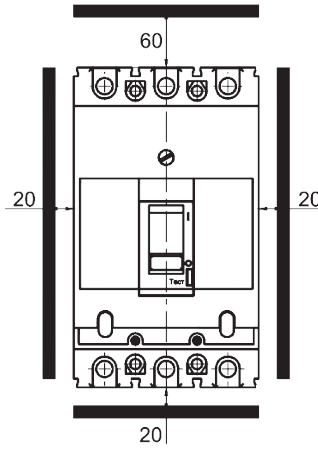
- К - horizontal axis of the circuit breaker;
- Л - horizontal axis of the Remote manual drive; М - the axis of rotation of the switchgear door; Н - vertical axis of the circuit breaker;
- П - vertical axis of the manual drive;
- Р - control position of the circuit breaker; С and Т - dimensions that determine the axis of rotation of the switchgear door.

Minimum allowed distances from circuit breaker to metal parts

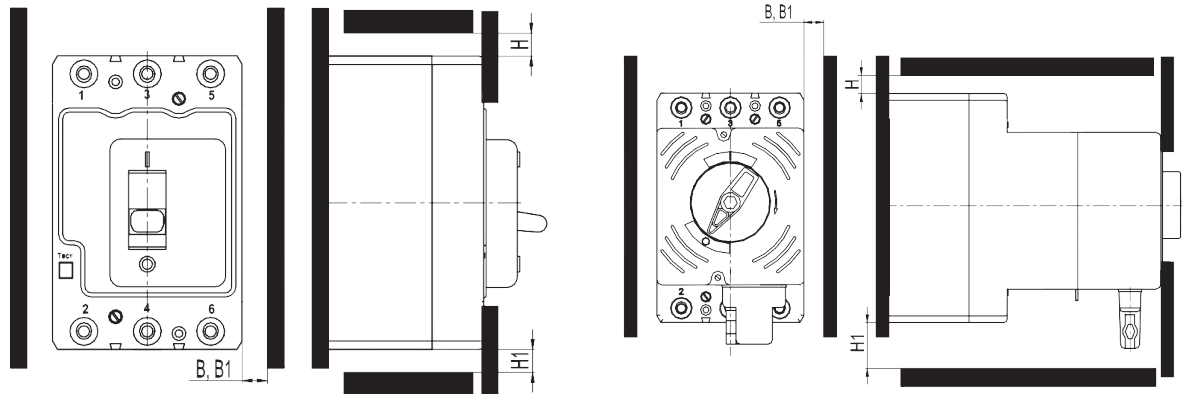
VA57-31



VA57F31



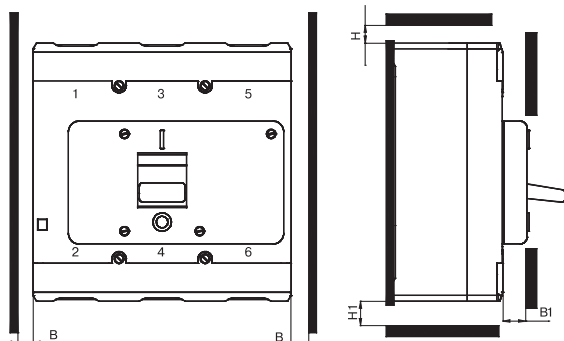
VA57-35, VA57F35



Rated voltage, V	Dimensions, mm			
	B	B1*	H	H1
400	20	40	40	20
690	40	40	80	20

* Size B1 - for withdrawable circuit breakers with manual remote or electromagnetic drive

VA57-39



Rated voltage, V	Dimensions, mm			
	B	B1	H	H1
400	20	0; 15 ¹⁾	40; 65 ²⁾	20; 45 ³⁾
690	40		80; 105 ²⁾	

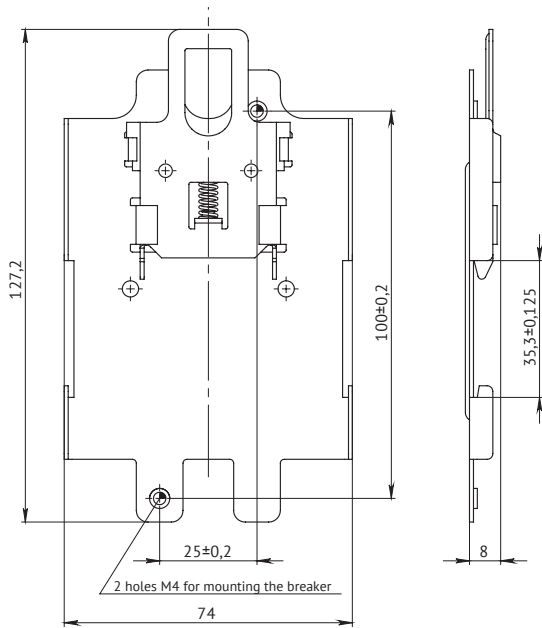
¹⁾ - for circuit breakers with a set of clamps No. 2, 5, 6, 7, 8, 13, 14;

²⁾ - for circuit breakers with a set of clamps No. 2, 7, 8, 13;

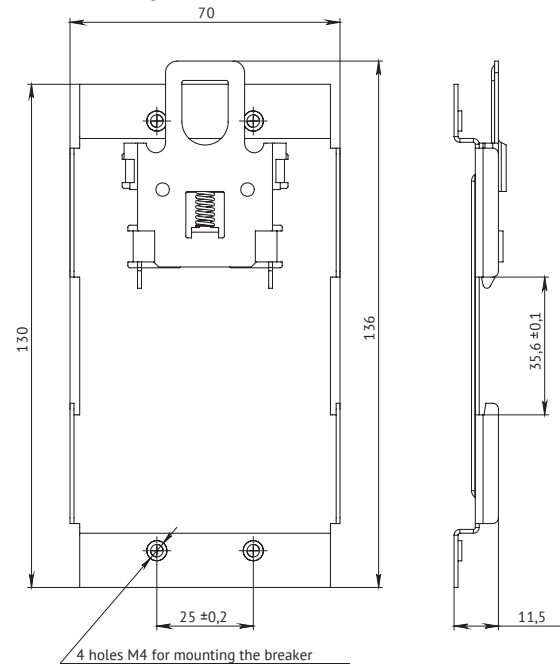
³⁾ - for circuit breakers with a set of clamps No. 2, 5, 6, 14.

Overall, installation and mounting dimensions of accessories for switches

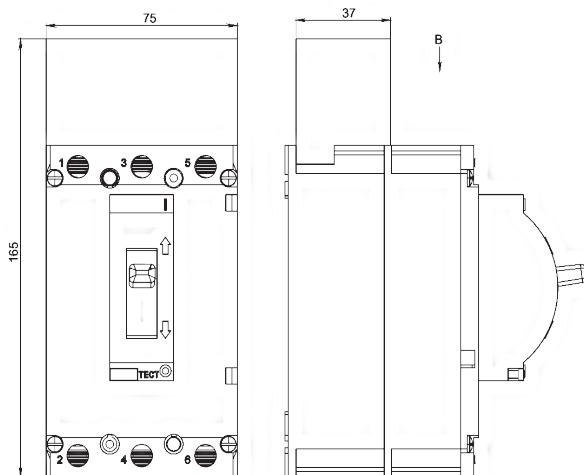
Din-rail adapter VA57-31



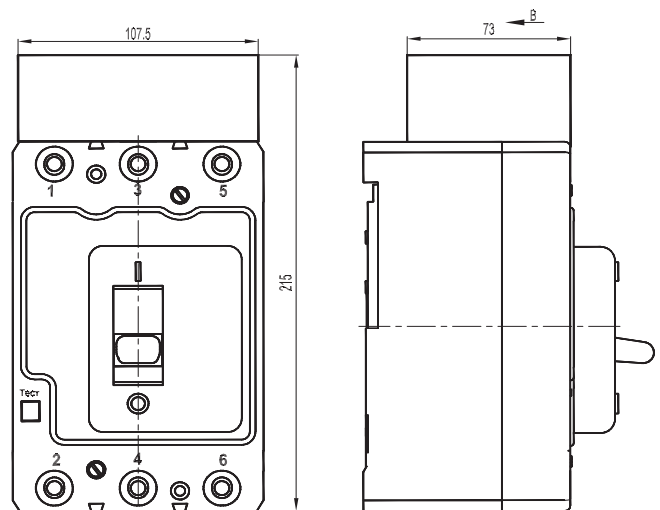
Din-rail adapter VA57F31



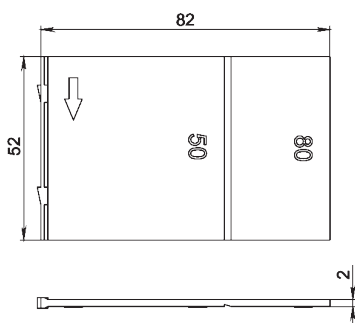
Terminal cover VA57-31



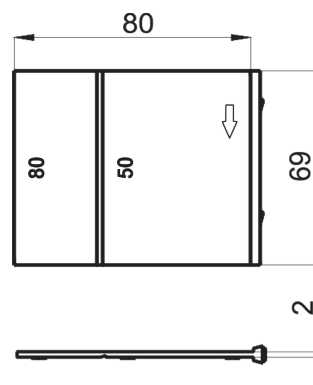
Terminal cover VA57-35



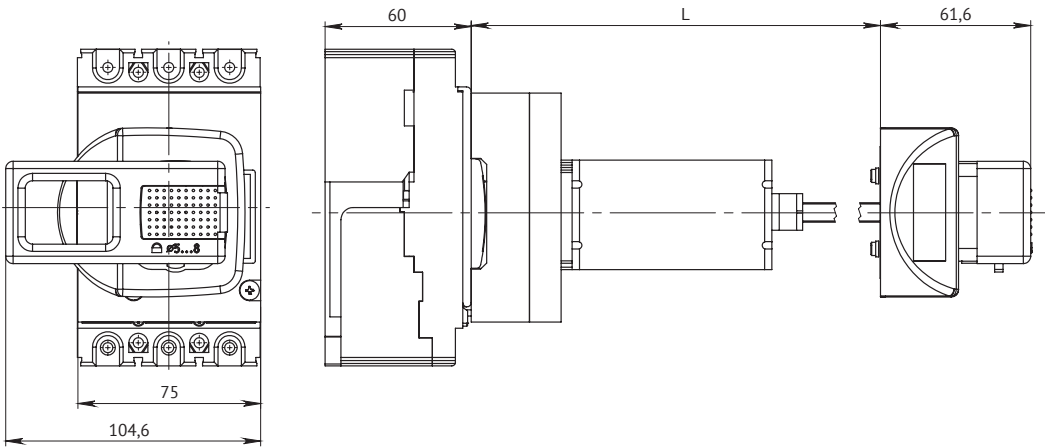
Inter-pole partition VA57F31



Inter-pole partition VA57-35, VA57-39

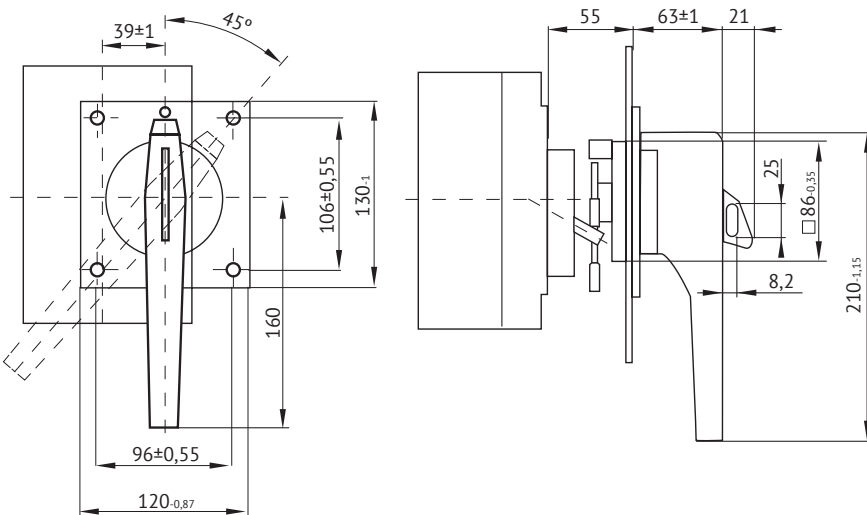


Remote manual drive VA57F31

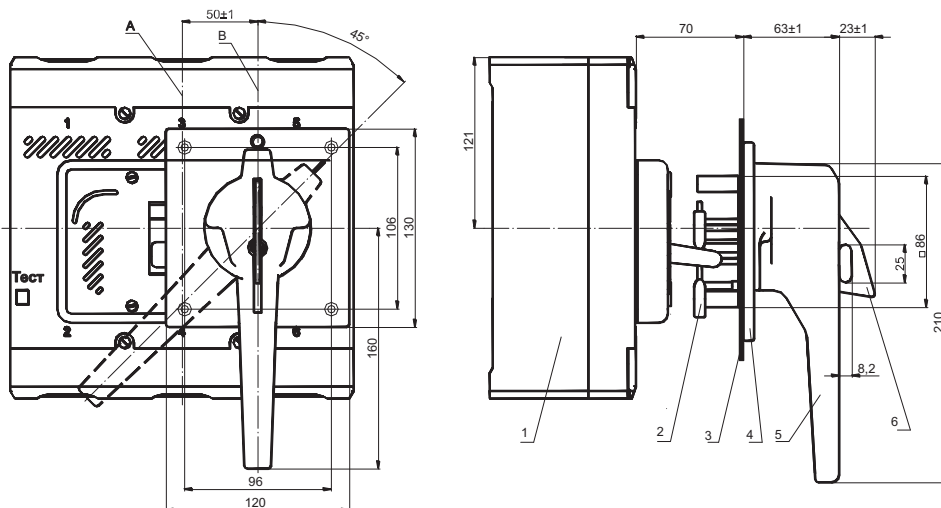


	Dimensions L, mm	
Option A	85 min	148 max
Option B	143 min	395 max

Remote manual drive VA57-35

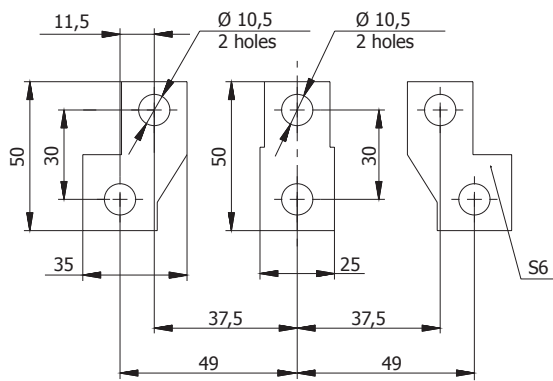


Remote manual drive VA57-39

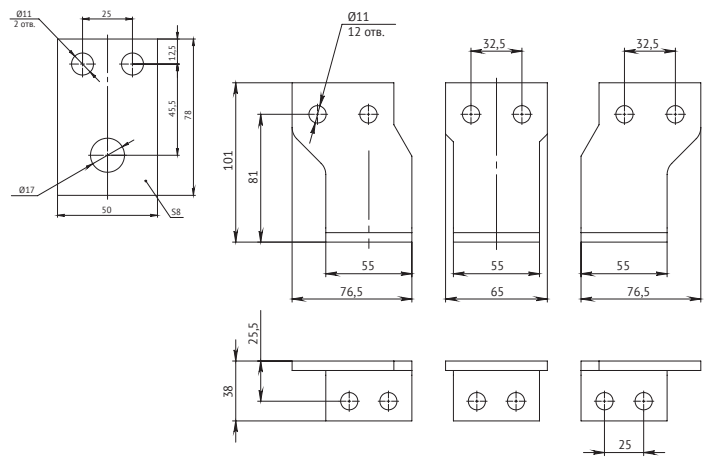


- A - vertical axis of the circuit breaker;
- B - vertical axis of the Remote manual drive;
- 1 - automatic switch;
- 2 - drive guide;
- 3 - switchgear door;
- 4 - drive VAse;
- 5 - drive handle;
- 6 - locking device.

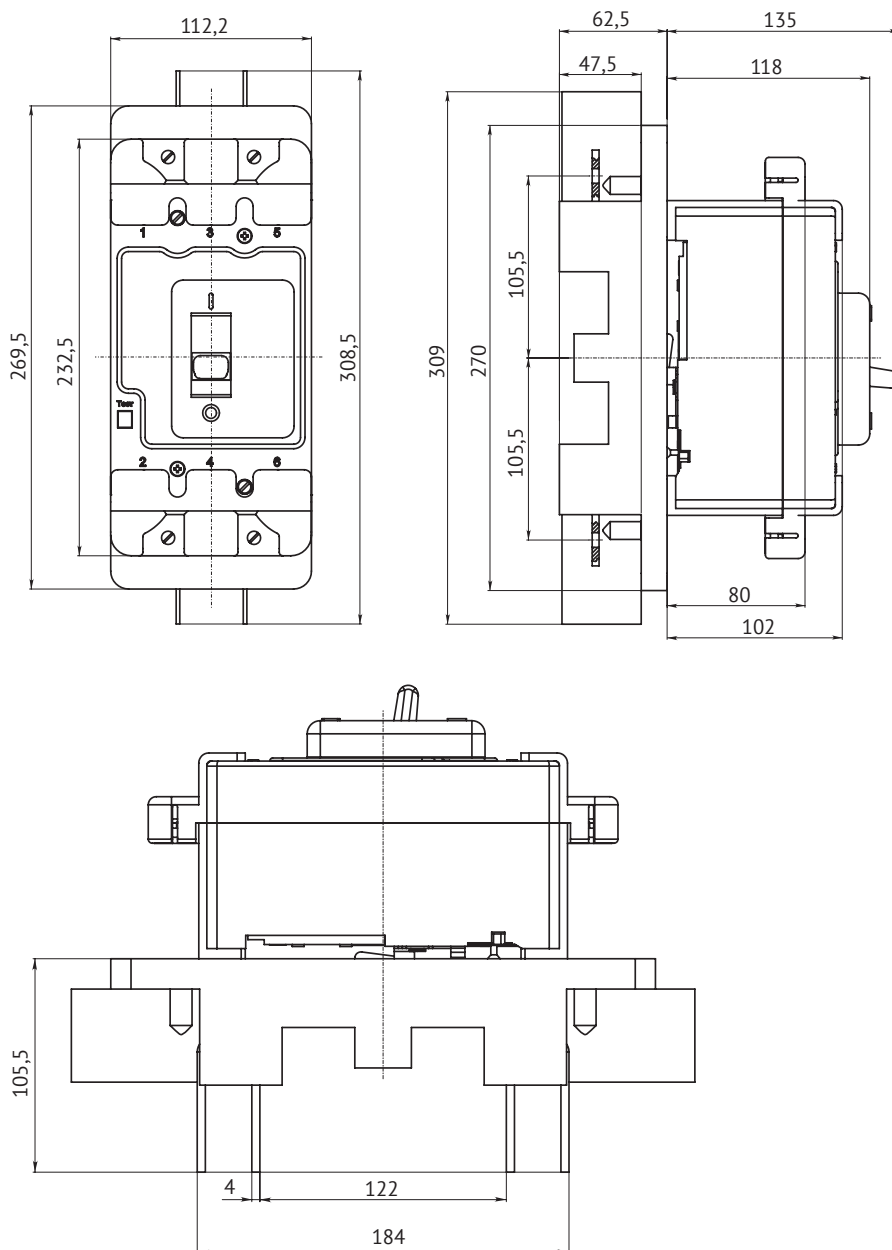
Set of extension busbars VA57-35



Set of transfer busbars VA57-39



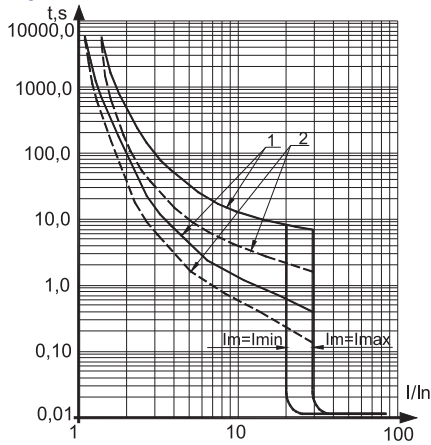
Plug-in Panel for VA57-35



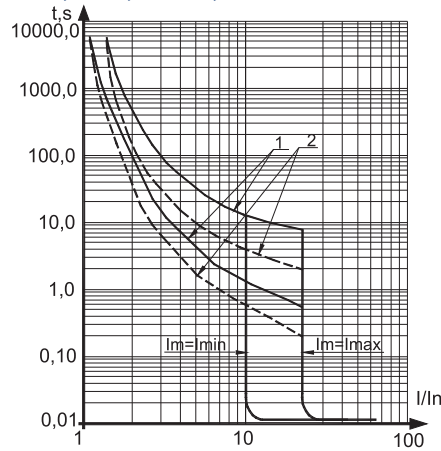
Time-current characteristics

VA57-31

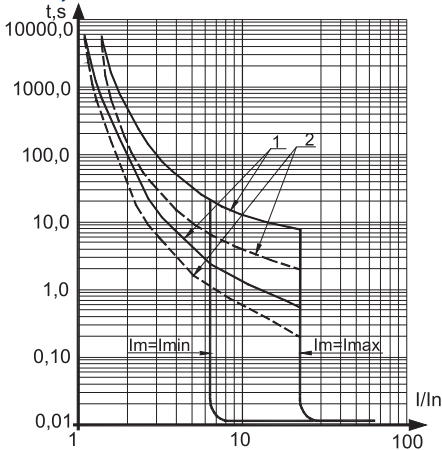
16 A



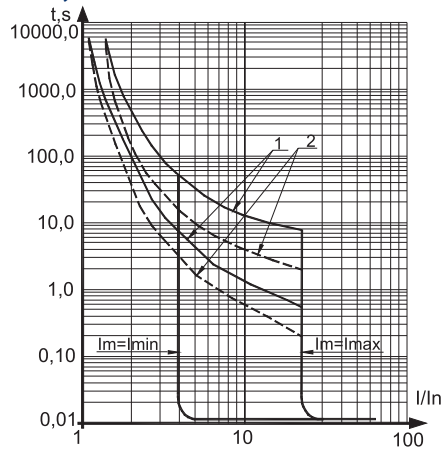
20 A, 25 A, 31.5 A, 40 A



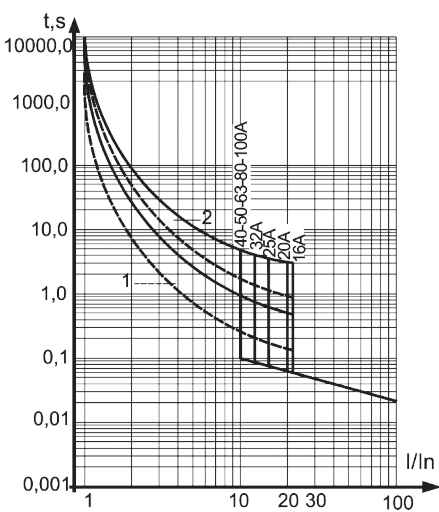
50 A, 63 A



80 A, 100 A

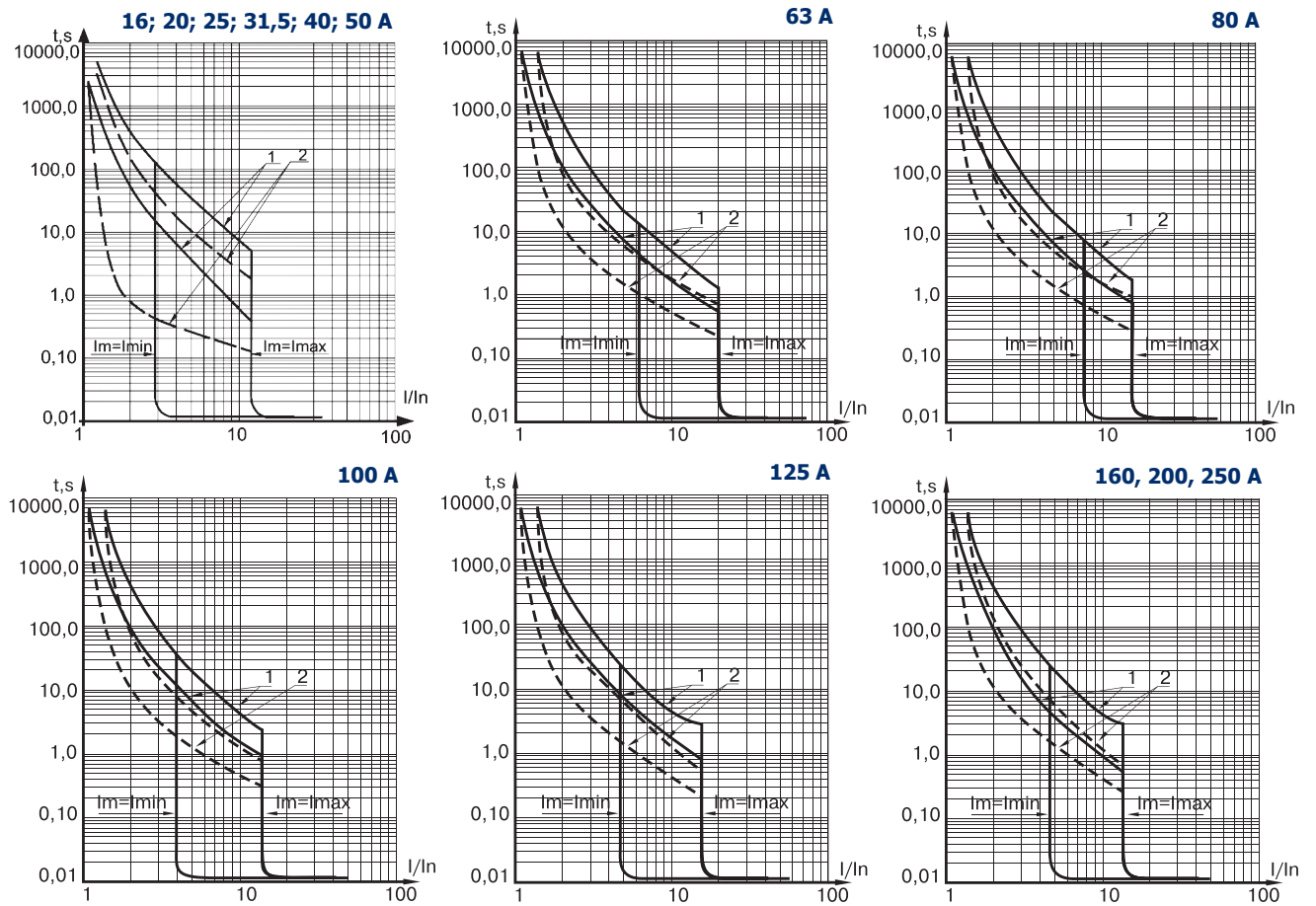


VA57F31

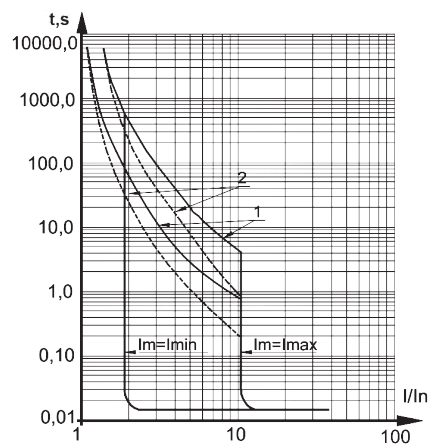


1 - zone of operation of the maximum thermal current release, taken from the cold state;
2 - zone of operation of the maximum thermal current release, taken from the hot state;
 I_m is the setting of the electromagnetic trip device.

VA57-35; VA57F35



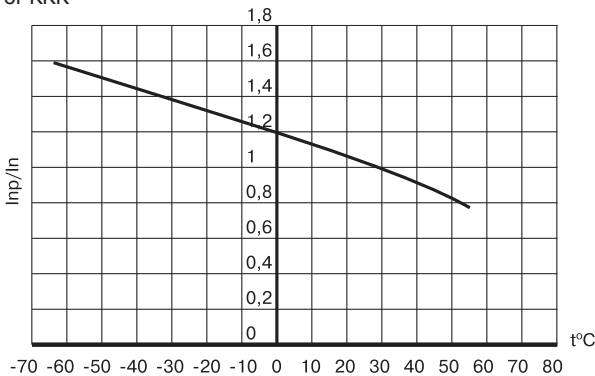
VA57-39



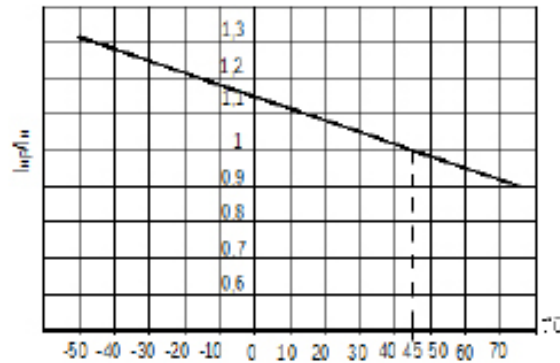
1 - zone of operation of the maximum thermal current release, taken from the cold state;
 2 - zone of operation of the maximum thermal current release, taken from the hot state;
 I_m is the setting of the electromagnetic trip device;
 t, s - response time;
 I/In - is a multiple of the rated current.

Dependence of the rated operating currents of thermal trip devices VA57 on the ambient temperature

For breakers of common industrial use and with acceptance of RRR



For breakers with PC acceptance



Temperature coefficients of the dependence of the rated operating current of circuit breakers VA57 on the ambient temperature.

Ambient temperature, °C	10-15	15-20	20-25	25-30	30-35	35-40
Inp/In	1.14	1.1	1.07	1.04	1	0.98

Circuit schematics

Marking of outputs:

- 11-12; 31-32 - S2 contacts opening;
 - 23-24; 43-44 - S2 contacts closing;
 - 51, 52, 53 - auxiliary alarm contacts of automatic shutdown;
 - C - D - independent trip device K1;
 - E - F - zero or under-voltage trip device KV1 or KV2.
- Marking with wire color according to the table is allowed:

Alphanumeric	Color	
	Indication	Wire color
C, D, E, F	C	Blue or light-blue
11, 12	K	Red or pink
23, 24	Ж	Yellow or orange
31, 32	Б	White or colorless
43, 44	Ч	Black or purple
51	З	Green
52	КЧ	Brown
53	Б	White

The pushbutton switch SB2 of the independent trip device K1 can be with double or single circuit break. The installation of the electrical circuit, indicated in the figure by dash-dotted lines, the installation of the SB2 pushbutton switch (not included in the scope of delivery) is carried out by the consumer.

Designations adopted in the schemes:

- K1 - independent trip device;
- Kp - red or pink wire;
- KV - zero or under-voltage trip device;
- KV1 - zero voltage trip device;
- KV2 - under-voltage trip device;
- S - contacts of the auxiliary circuit of the breaker;
- S1 - auxiliary contacts of the sitchinff off alarm;
- S2 - auxiliary contacts;
- SB1 - pushbutton switch of the electromagnetic drive;

- SB2 - pushbutton switch of the independent trip device;
- SQ1, SQ2 - electromagnetic drive position switches;
- U1 - supply voltage of the independent trip device;
- U2 - supply voltage of the electromagnetic drive;
- U3 - supply voltage of zero or under-voltage trip device;
- VD - semiconductor diode;
- X1 - electromagnetic drive connector;
- X2 - retractable circuit breaker connector;
- YA - electromagnetic drive;
- YA1, YA2 - electromagnets.

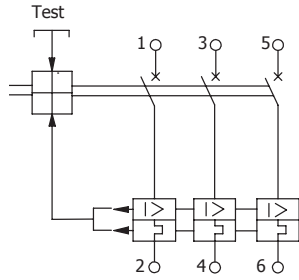
Circuits with signal contacts S1 are given for the breaker in the switching position "Disconnected automatically".

Position of auxiliary and signal contacts

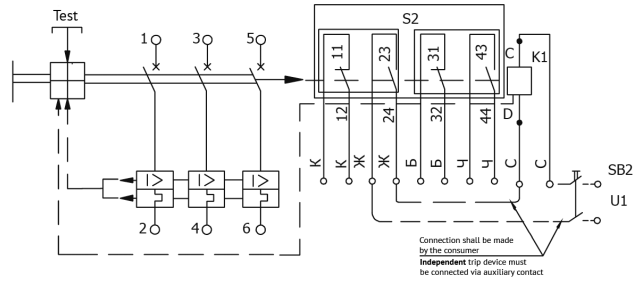
Contact	Disconnected status	Disconnected automatically status	Disconnected manually status
VA57			
S1 51-52	open	closed	open
S1 63-52	closed	open	open
S2 11-12	open	closed	closed
S2 23-24	closed	open	open
S2 31-32	open	closed	closed
S2 43-44	closed	open	open

VA57-31, 35, 39; VA57F31, F35

Three-pole AC circuit breakers

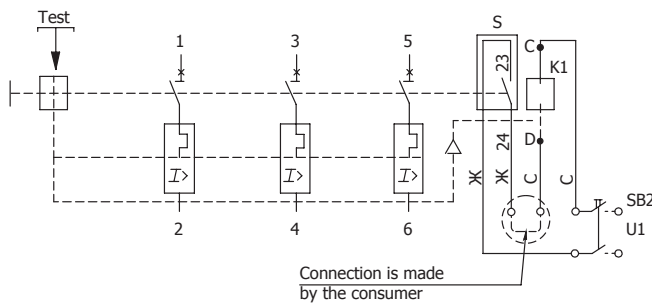


Three-pole AC circuit breakers with the independent trip device and auxiliary contacts (except VA57F31, VA57F35)



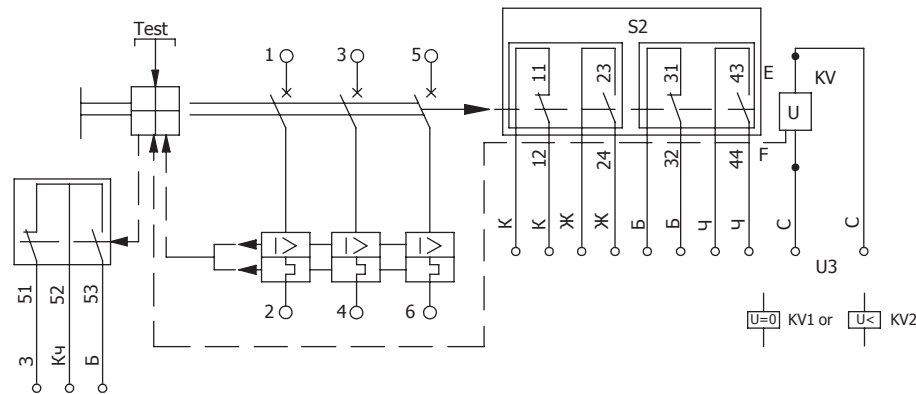
VA57-XXX-XX1210 (16)

Three-pole AC circuit breakers with the independent trip device without auxiliary contacts



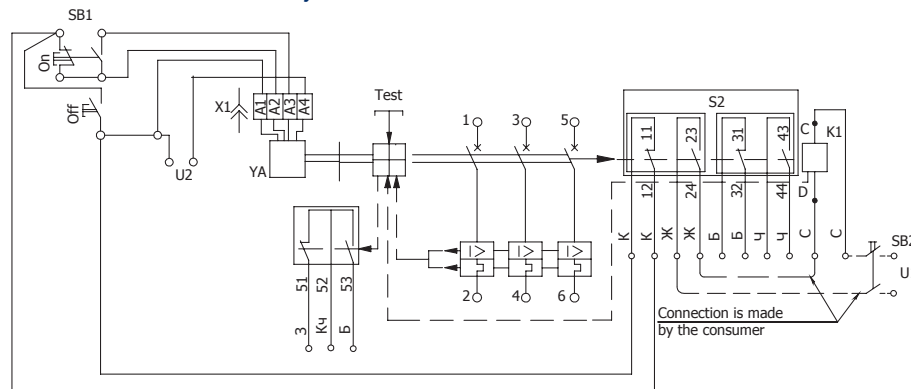
VA57-35, BA57-39

Circuit breakers with zero or undervoltage release, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



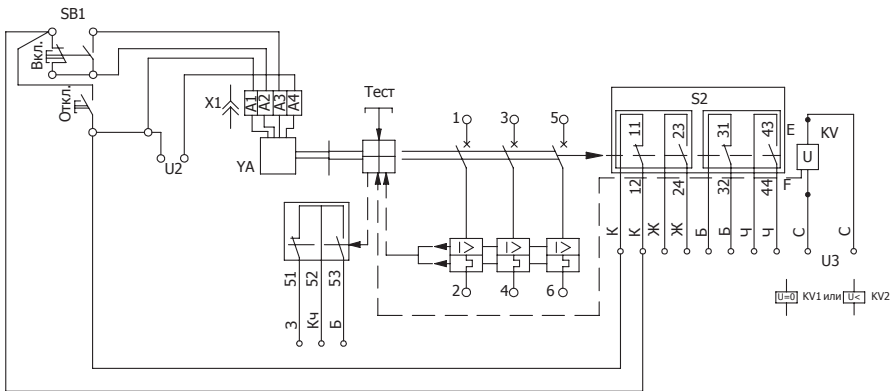
VA57-35-XX4730, VA57-39-XX4730

Scheme of stationary circuit breakers with an electromagnetic drive, independent trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



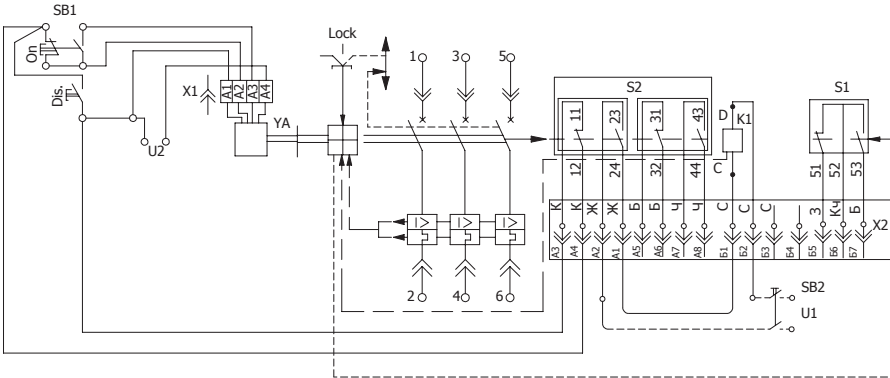
VA57-XX-XX54(56)30

Scheme of stationary circuit breakers with an electromagnetic drive, zero or under-voltage trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



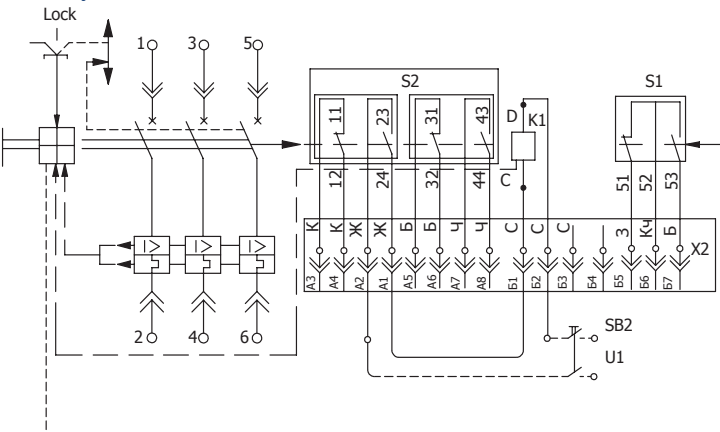
VA57-XX-XX4770

Scheme of retractable circuit breakers with an electromagnetic drive, independent trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



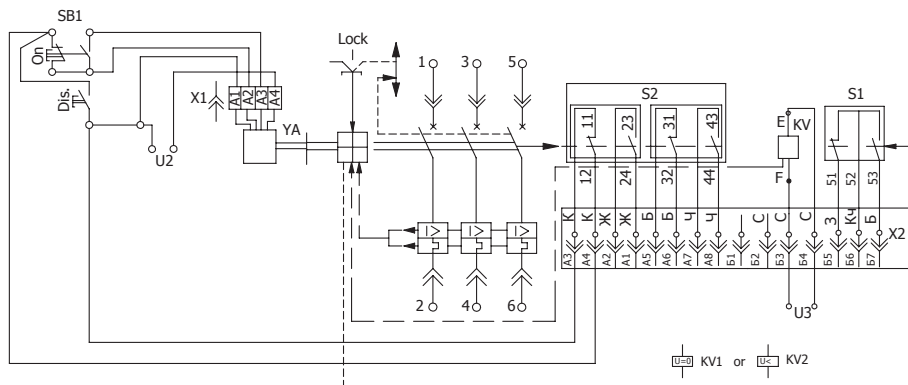
VA57-XX-XX4750

Scheme of retractable circuit breakers with independent trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



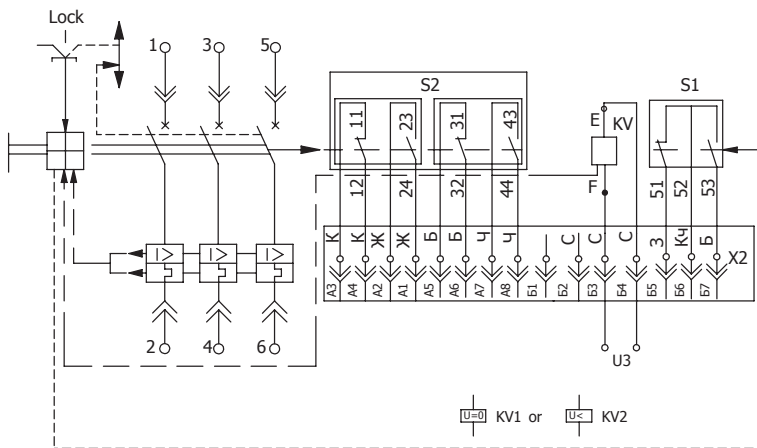
VA57-XX-XX54(56)70

Scheme of retractable circuit breakers with an electromagnetic drive, zero or under-voltage trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



VA57-XX-XX54(56)50

Scheme of retractable circuit breakers with zero or under-voltage trip device, auxiliary contacts of the automatic shutdown alarm and auxiliary contacts



Electromagnetic Drive Diagram Electromagnetic AC Drive

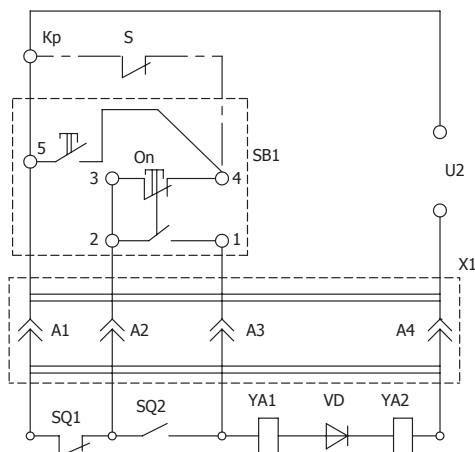
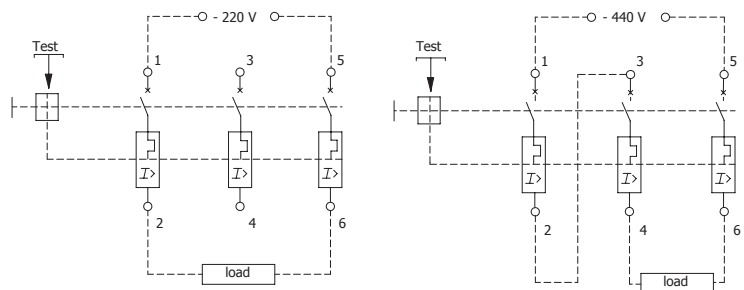


Diagram of the electromagnetic drive is shown for the circuit breaker in the off position.

Connection of external conductors to the terminals of circuit breakers in DC circuits



Connection of clamps 2-3 is carried out by the consumer