VA57 Molded case circuit breakers

Compliant with GOST R 50030.2, TR CU 004/2011, TR CU 001/2011

from 12,8 A to 800 A | 110 kA Icu | -60 °C +45 °C | ±90° | FLAME-RETARDANT | NPP | RIVER RECISTER | MARITIME RECISTER | EAC | RUSSIAN RAILWAYS

VA57 Series circuit breakers are designed for operation in low-voltage switchgears of alternating current with voltage up to 690 V, frequency of 50 and 60 Hz, and direct current with voltage up to 440 V. VA57 Series circuit breakers are designed to protect electrical installations from short-circuit currents and overloads, and are designed for infrequent on/off switching. Circuit breakers approved by the Russian Maritime Register of Shipping (hereinafter RS) and the Russian River Register (hereinafter RRR) are designed to protect electrical equipment on ships, offshore fixed platforms and floating drilling rigs.

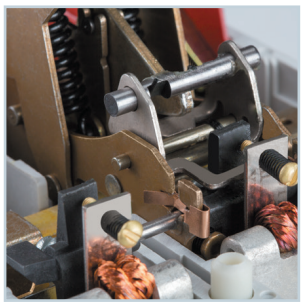
Advantages

- Implementation of any engineering solutions
  - full range of products for operating currents from 12.8 to 800 A;
  - high values of the limiting switching capacity 110 kA (DC), 44 kA (AC);
  - a wide range of fixed settings for electromagnetic releases;
  - versions with adjustable thermal and electromagnetic releases allow adjustments under load during commissioning and operation, upgrading of power supply systems (increase the load), adjusting the selectivity of protection;
  - a wide range of additional devices, including the presence of a zero voltage release (RNN).

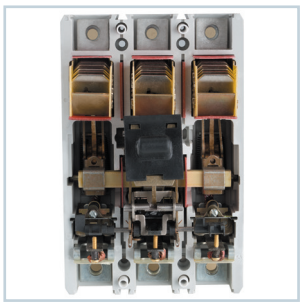
- Confidence in reliable operation
  - ability to carry a limited short-circuit current (exclusive current limitation);
  - safety margin in resistance to dynamic and thermal impact from short-circuit currents;
  - contacts are not welded by accident short-circuit currents.

- Advanced applications
  - protection of electrical equipment of marine and river vessels, port infrastructure, offshore fixed platforms, floating drilling rigs, confirmed by RS and RRR type approval certificates;
  - protection of NPP electrical equipment protection, confirmed by the NPP license (AES);
  - use in severe operating conditions, climatic versions UHL (moderately cold climate version) and OM (general climatic marine version).

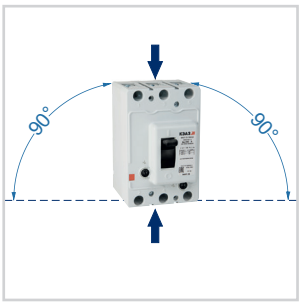
Design features



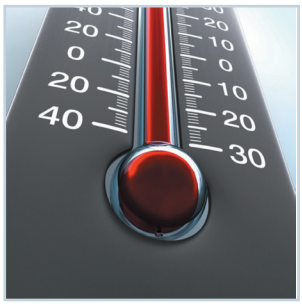
Reinforced contact system with electrodynamic contact rejection.



Use of extruded silver-graphite contacts in the contact system.



Mounted vertically or in 90° right/ left positions. Top and bottom power entry.



Operating temperature -60 to +45 °C.

Delivery package

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

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

Inter-pole partitions (VA57-39)

Terminal cover (VA57-31, VA57-35, VA57F35)

Fasteners for circuit breaker installation (VA57-39)

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

Set of adapter rails (VA57-39 800 A)

Designation VA57-31, VA57-35, VA57F35, VA57-39

VA57 $X_1X_2X_3$ - $X_4X_5X_6X_7X_8X_9$ - X_{10}...A- X_{11}...-X_{12}...-X_{13}...-X_{14}...-X_{15}...-X_{16}...-KEAZ X_{17}...

VA57	- Circuit breaker series code
X_1	- Separating mark (-) or letter F (for VA57F35)
X_2X_3	- Circuit breaker rated current codes: 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)
X_4X_5	- Circuit breaker version code by number of poles, alternating and direct current voltage, combination of overcurrent releases in the protection zone:

Version code	Number of poles	Number of protected poles	Availability of release		Availability of the circuit breaker			
			thermal	electromagnetic	VA57-31	VA57F35	VA57-35	VA57-39
33	3	3	-	+**	up to 690AC	-	up to 690AC	up to 690AC
34			+**	+**		up to 400AC		
36			-	+ (5...10In)*	-	-		-
37			+ (0,8...1In)*	+**	-	-		-
38			+**	+ (5...10In)*	-	-		-
39			+ (0,8...1In)*	+ (5...10In)*	-	-		-
63	3	2	-	+**	-	-	up to 440DC	up to 440DC
64			+**	+**	-	-		
83	3	2	-	+**	up to 220DC/690AC	-	up to 220DC/690AC	up to 220DC/690AC
84			+**	+**		-		

*- adjustable tripping setting; **- fixed tripping setting

X_6X_7	- Version code by additional assemblies and combinations:

code	00	11**	12**	13	15	18**	23	25	45	46	47	49	52	54	56	62
NR	-	-	+	-	-	+	-	-	-	-	+	-	-	-	-	+
RMN	-	-	-	+	-	-	+	-	-	-	-	-	+	-	+	-
RNN	-	-	-	-	+	-	-	+	-	-	-	+	-	+	-	-
motorized	-	2NO+1NC*	-	-	-	1NO+1NC*	2NO+1NC*	2NO+1NC*	-	2NO+1NC*	1NO+1NC*	-	-	2NO+1NC*	2NO+1NC*	-
non-motorized	-	2NO+2NC	-	-	-	1NO+2NC	2NO+2NC	2NO+2NC	-	2NO+2NC	1NO+2NC	-	-	2NO+2NC	2NO+2NC	-
air-oxygen mixture	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+

* for circuit breakers with an electromagnetic drive are available to order only with auxiliary contacts;
** based on availability of additional assemblies of VA57-31 there can be only 11, 12, 18 versions;
*** additional assembly units, including an electromagnetic drive (EMI), a pull-out basket are installed only at the factory manufacturer.

X_8X_9	- Circuit breaker drive type and installation method: 10 — manual drive, fixed version; 16 — manual drive, stationary design, a device for locking the switch in «Off» position is available (only VA57-35 and VA57-39); 30 — electromagnetic drive, stationary design (only VA57-35 and VA57-39); 40 — manual drive, withdrawable version (only VA57-39); 50 — withdrawable version with a remote manual drive for operating through the switchgear door (only for VA57-35, VA57-39); 51 — retractable design with a manual remote drive for operating through the switchgear door of reduced depth (only for VA57-39); 70 — electromagnetic drive, withdrawable design (only VA57-35 and VA57-39).
X_{10}...A	- Circuit breaker rated current
X_{11}...	- Setting of short-circuit releases (only for circuit breakers with fixed setting)
X_{12}...	- Rated voltage and type of current of the main circuit: up to 690AC — for AC circuit breakers; up to 440DC — for DC circuit breakers.
X_{13}...	- Parameters of shunt trip (NR), under-voltage release (RMN), zero voltage release (RNN) (if any): rated voltage and type of current
X_{14}...	- Parameters of the electromagnetic drive (PE) (if any): rated voltage and current type
X_{15}...	- Climatic version and environmental class: OM4 (only for VA57-31, VA57-35, VA57-39 with the acceptance of the Russian Maritime Register of Shipping); UHL3
X_{16}...	- Acceptance type, delivery terms: REC — acceptance by the Russian Maritime Register of Shipping or the Russian River Register (except VA57F35); AES — for deliveries to NPPs (except VA57F35); if absent — acceptance by the Quality Control Department
КЭАЗ	- Trademark
X_{17}...	- (Plug-in, without panel) — plug-in version of the circuit breaker, without plug-in panel (only for VA57-35)

The VA57-3X-XXXX15 version has been removed from the assortment, instead it is the VA57-3X-XXXX10 version + Remote hand drive VA04-36/VA51- 35/ VA57-35/VA57-39-UHL3 (code 110450).

Formulation of the order:
When ordering a circuit breaker, specify:
1) Name, design type;
2) Rated current of the releases;
3) The setting of the electromagnetic release for short-circuit current protection (only for circuit breakers with a fixed setting);
4) Rated voltage and type of current of the main circuit;
5) Type of current and rated voltage Uc of releases: shunt trip (NR), under-voltage release (RMN) or zero voltage (RNN) — if necessary;
6) Type of current and nominal voltage Us of the electromagnetic drive (PE) — if necessary;
7) Climatic version and placement category;
8) Type of acceptance, delivery terms (Quality Control Department — not specified);
9) Trademark;
10) Mounting type — (plug-in, without panel) — plug-in version of the circuit breaker, without plug-in panel (only VA57-35) — if necessary.

Supplied by separate order:
- adapter for mounting the VA57-31 circuit breaker on a DIN-rail;
- terminal cover for VA57;
- terminal cover for front connection VA57-39;
- special clamps for connecting conductors for VA57-35, VA57F35, VA57-39;
- remote manual drive for VA57-35, VA57F35, VA57-39 (except for switches with an electromagnetic drive);
- set of expansion leads VA57-35, VA57F35;
- set of inter-pole partitions VA57-35, VA57F35, VA57-39;
- set of adapter busbars for VA57-39;
- set of leads for rear connection for VA57-39;
- plug-in panel VA57-35;
- a set for a switch for installation on a plug-in panel VA57-35;
- insulating screens for plug-in panel VA57-35;
- plug for secondary circuits MSTB-2.5 / 13 for VA57;
- socket for secondary circuits UMSTBVK-2.5 / 13 for VA57.

Technical specification

Parameter	Parameter code																							
Series																								
	VA57-31										VA57F35													
	VA57-31-X3	VA57-31-X4									VA57F35-34													
Rated current (In), A	100	16	20	25	31,5	40	50	63	80	100	16	20	25	31,5	40	50	63	80	100	125	160	200	250	
Rated voltage (U_e), V	up to 690 AC; 220 DC										up to 400 AC													
Thermal release	none	fixed									fixed													
Setting of the electromagnetic release on alternating current, A	400 800 **1200**	**400**					400 **800**		400 800 **1200**		**10 In**													
Setting of the electromagnetic release on direct current, A	500 1000 1200	500					500 1000		500 1000 1200		-													
Rated ultimate short-circuit breaking capacity (I_{cu}), kA																								
at 400 AC	40	4	6	25	40						3,5	6	10				15							
at 690 AC	6	3			6						-													
at 220 DC	75	20		40	75						-													
at 440 DC	-	-									-													
Rated service breaking capacity (I_{cs})																								
% of I_{cu}	50										100						75							
Rated short-circuit making capacity (I_{cm}), kA																								
at 400 AC	84	6	9	52	84						5	9	17				30							
at 690 AC	9	4,2			9						-													
at 220 DC	75	20		40	75						-													
at 440 DC	-	-									-													
Wear resistance																								
Total, on/off cycles	16000										10000													
Switching, on/off cycles	10000										2500													
Overall dimensions	75x125x117										112,2x174,5x130													
Weight, kg	max 1,1										max 2,7													

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

The voltage supply from the power supply is possible both from the side of fixed contacts (leads 1, 3, 5) and from the side of moving contacts (leads 2, 4, 6), while the values of the rated ultimate short-circuit breaking capacity Icu and the rated operating breaking capacity Ics remain unchanged.

Examples of entries for circuit breakers when ordering and in documentation for other products:
1) Circuit breaker VA57-31, three-pole with fixed short-circuit current and overload current releases for rated current 100 A, with a setting for operating current 1200 A, with two NC and two NO auxiliary contacts: «VA57-31-341110-100A-1200-690AC-UHL3-KEAZ circuit breaker»

2) VA57F35 type circuit breaker, three-pole with fixed short-circuit current and overload current releases for rated current 200 A, with setting for operating current 2000 A, without additional devices: «VA57F35-340010-200A-2000-400AC-UHL3-KEAZ circuit breaker»

Parameter	Parameter code																				
Series																					
	VA57-35																				
	VA57-35-X3		VA57-35-X4														VA57-35-X6				
Rated current (In), A	80	250	16	20	25	31,5	40	50	63	80	100	125	160	200	250	100	125	160	200	250	
Rated voltage (U_e), V	up to 690 AC; 440 DC																				
Thermal release	none		fixed													none					
Setting of the electromagnetic release on alternating current, A	500 **800** 1000 1250	500 750 1000 1250 1600 **2500**	80 125 **160** 200 320	80 100 **200** 250 320	100 125 **250** 320	100 125 160 **320** 400 630	125 160 250 **400** 500 630	160 250 **500** 630	*630 **800** 1250	*630 **800** 1000 1250	*630 **1000** 1250	*630 800 **1250** 1600	*630 800 1000 **1600** 2000	*630 1000 1250 1600 **2000** 2500	*750 1000 1250 1600 **2500**	5...10In					
Setting of the electromagnetic release on direct current, A	800 1000 1250	750 1000 1250 1600 2500	125 160 200 320	100 200 250 320	125 250 320	125 160 320 400 630	160 250 400 500 630	250 500 630	800 1250	800 1000 1250	1000 1250	800 1250 1600	800 1000 1600 2000	1000 1250 1600 2000 2500	750 1000 1250 1600 2500	5...10In					
Rated ultimate short-circuit breaking capacity (I_{cu}), kA																					
at 400 AC	40		3,5	6	10		15		20	25	30	35		40		44					
at 690 AC	18		3,5	5,5	9		12			15		18				18					
at 220 DC	110		5	6	15		35		40	60	80	100		110		80	100		110		
at 440 DC	110		5	6	15		35		40	60	80	100		110		80	100		110		
Rated service breaking capacity (I_{cs})																					
% of I_{cu}	100																				
Rated short-circuit making capacity (I_{cm}), kA																					
at 400 AC	84		5	9	17		30		40	52,5	63	73,5		84		92,4					
at 690 AC	36		5	8,2	15,3		24			30		36				36					
at 220 DC	110		5	6	15		35		40	60	80	100		110		80	100		110		
at 440 DC	110		5	6	15		35		40	60	80	100		110		80	100		110		
Wear resistance																					
Total, on/off cycles	10000																				
Switching, on/off cycles	2500																				
Overall dimensions	112,2x174,5x130																				
Weight, kg	max 2,7																				

* Circuit breakers with custom 500 A setting can be optionally supplied
The setting of the electromagnetic release marked in bold is the basic setting.

The voltage supply from the power supply is possible both from the side of fixed contacts (leads 1, 3, 5) and from the side of moving contacts (leads 2, 4, 6), while the values of the rated ultimate short-circuit breaking capacity Icu and the rated working breaking capacity Ics remain unchanged.

Examples of entries for circuit breakers when ordering and in documentation for other products:
1) VA57-35 type circuit breaker, three-pole with fixed short-circuit and overload current releases for a rated current of 250 A, with a tripping current setting of 2000 A, with a shunt trip for a voltage (Uc) 230 V AC, frequency 50, 60 Hz and 220 V DC, with one NC and one NO auxiliary contacts, electromagnetic drive for voltage 230 V AC with a frequency of 50, 60 Hz, plug-in version, without plug-in panel:
«VA57-35-341830-250A-2000-690AC-NR230AC/220DC-PE230AC-UHL3-KEAZ circuit breaker (plug-in, without panel)»

2) VA57-35 type circuit breaker, three-pole, with two protected poles, with fixed short-circuit current and overload current releases, rated direct current 250 A, voltage 440 V, with a setting for operating current 1600 A, with two NC and two NO auxiliary contacts:
«VA57-35-641110-250A-1600-440DC-UHL3-KEAZ circuit breaker»

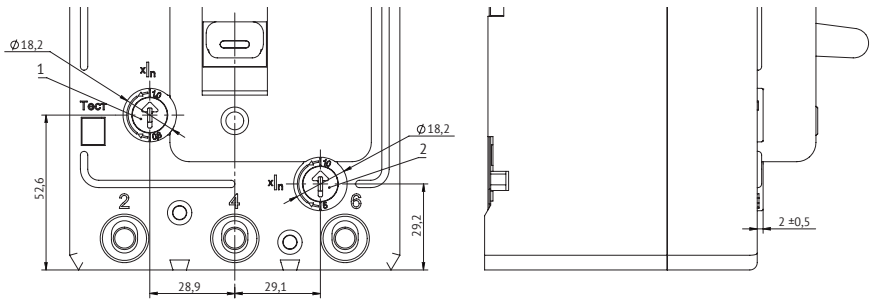
Parameter	Parameter code																					
Series																							
	VA57-35																					
	VA57-35-X7													VA57-35-X8					VA57-35-X9				
Rated current (In), A	16	20	25	31,5	40	50	63	80	100	125	160	200	250	100	125	160	200	250	100	125	160	200	250
Rated voltage (U_e), V	up to 690 AC; 440 DC																						
Thermal release	adjustable (0.8...1In)													fixed					adjustable (0.8...1In)				
Setting of the electromagnetic release on alternating current, A	80 125 **160** 200 320	80 100 **200** 250 320	100 125 **250** 320	100 125 160 **320** 400 630	125 160 250 **400** 500 630	160 250 **500** 630	*630 **800** 1250	*630 **800** 1000 1250	*630 **1000** 1250	*630 800 **1250** 1600	*630 800 1000 **1600** 2000	*630 1000 1250 1600 **2000** 2500	*750 1000 1250 1600 **2500**	5...10In					5...10In				
Setting of the electromagnetic release on direct current, A	125 160 200 320	100 200 250 320	125 250 320	125 160 320 400 630	160 250 400 500 630	250 500 630	800 1250	800 1000 1250	1000 1250	800 1250 1600	800 1000 1600 2000	1000 1250 1600 2000 2500	750 1000 1250 1600 2500	5...10In					5...10In				
Rated ultimate short-circuit breaking capacity (I_{cu}), kA																							
at 400 AC	10			15		20	25	44						44					44				
at 690 AC	3,5	5,5	9	12			15	18						18					18				
at 220 DC	5	6	15	35		40	60	80	100		110			80	100		110		80	100		110	
at 440 DC	5	6	15	35		40	60	80	100		110			80	100		110		80	100		110	
Rated service breaking capacity (I_{cs})																							
% of I_{cu}	100																						
Rated short-circuit making capacity (I_{cm}), kA																							
at 400 AC	17			30		40	52,5	92,4						92,4					92,4				
at 690 AC	3,5	5,5	9	24			30	36						36					36				
at 220 DC	5	8,2	15,3	35		40	60	80	100		110			80	100		110		80	100		110	
at 440 DC	5	6	15	35		40	60	80	100		110			80	100		110		80	100		110	
Wear resistance																							
Total, on/off cycles	10000																						
Switching, on/off cycles	2500																						
Overall dimensions	112,2x174,5x130																						
Weight, kg	max 2,7																						

It is allowed to manufacture switches with a setting of 500 A according to spec. order.
The setting of the electromagnetic release marked in bold is the basic setting.

Examples of entries for circuit breakers when ordering and in documentation for other products:
1) VA57-35 type circuit breaker, three-pole with fixed short-circuit releases and adjustable overcurrent releases for rated current 63 A, with setting for operating current 630 A and overload current adjustment range 50.4 ... 63 A, with shunt trip for voltage (Uc) 230 VAC, frequency 50, 60 Hz and 220 VDC, with two NC and one NO auxiliary contacts and auxiliary contacts for signaling automatic shutdown:
«VA57-35-374710-63A-630-690AC-NR230AC/220DC-UHL3-KEAZ circuit breaker»

2) VA57-35 type circuit breaker, three-pole with adjustable short-circuit current releases and adjustable overload releases for rated current 160 A, with setting for operating current adjustable in the range 800 ... 1600A and overload current adjustment range 125 ... 160A with shunt trip for voltage (Uc) 230 VAC, frequency 50, 60 Hz and 220 VDC, with two NC and one NO auxiliary contacts:
«VA57-35-391810-160A-690AC-NR230AC/ 220DC-UHL3-KEAZ circuit breaker»

Circuit breakers with adjustable overcurrent releases have current setting regulators



Circuit breaker with adjustable overcurrent releases.
1 - regulator of current settings of current overload releases
2 - regulator of current settings of overcurrent releases.

The rotation sector of the regulators and the adjustment limits are indicated by the marking.

Parameter	Parameter code								
Series									
	VA57-39								
	VA57-39-X3			VA57-39-X4					
Rated current (In), A	400	630	800	250	320	400	500	630	800
Rated voltage (U_e), V	up to 690 AC; 440 DC								
Thermal release	none			fixed					
Setting of the electromagnetic release on alternating current, A	1000 1250 1600 2000 2500 3200 **4000**	1000(2) 1250(2) 1600 2000 2500 3200 4000 5000 **6300**	2500 3200 4000 5000 **6300**	1000 1250 1600 **2500**	1000 1250 1600 2000 2500 **3200**	1000(1) 1250 1600 2000 2500 **4000**	1000(1) 1600 2000 2500 **5000**	1250(2) 1600 2000 2500 3200 4000 5000 **6300**	2500 3200 4000 5000 **6300**
Setting of the electromagnetic release on direct current, A	1250 1600 2000 2500 3200 **4000**	1250(2) 1600(2) 2000 2500 3200 4000 **5000**	3200 4000 **5000**	1250 1600 **2500**	1250 1600 2000 2500 **3200**	1250(1) 1600 2000 2500 **4000**	1600(1) 2000 2500 **5000**	2000 2500 3200 4000 **5000**	2500 3200 4000 **5000**
Rated ultimate short-circuit breaking capacity (I_{cu}), kA, with voltage supply from sides 1, 3, 5/2, 4, 6									
at 400 AC	40/35	40/15		40/35			40/15		
at 690 AC	18/18	18/7,5		18/18			18/7,5		
at 220 DC	110/40	110/25		110/40			110/25		
at 440 DC	110/40	110/25		110/40			110/25		
Rated service breaking capacity (I_{cs})									
% of I_{cu}	100								75
Rated short-circuit making capacity (I_{cm}), kA, with voltage supply from sides 1, 3, 5/2, 4, 6									
at 400 AC	84/73,5	84/30		84/73,5			84/30		
at 690 AC	36/36	36/12,7		36/36			36/12,7		
at 220 DC	110/40	110/25		110/40			110/25		
at 440 DC	110/40	110/25		110/40			110/25		
Wear resistance									
Total, on/off cycles	8000 (up to 630A) 5000 (up to 800A)								
Switching, on/off cycles	1500								
Overall dimensions	225x224x154								
Weight, kg	max 6,6								

It is allowed to manufacture special circuit breakers. on order with the setting of the electromagnetic release:
1) - for stationary execution;
2) - for a stationary version with an operating current not exceeding 0.9 of the rated current (IR = max 0.9In).

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

An example of recording circuit breakers when ordering and in the documentation of other products:
Circuit breaker VA57-39 with fixed short-circuit and overload current releases for a rated current of 400 A, with a tripping current setting of 4000 A, with a shunt trip for a voltage (Uc) of 230 VAC, frequencies of 50, 60 Hz and 220 VDC, with one NC and one NO auxiliary contacts, electromagnetic drive for 400 V AC with a frequency of 50, 60 Hz: «VA57-39-341830-400A-4000-690AC-NR230AC/ 220DC-PE400AC-UHL3-KEAZ circuit breaker»

Items

Appearance	Product name	Number of poles	Rated current, A	Rated voltage, V	Rated ultimate short-circuit breaking capacity at 400 VAC I_{cu}, kA	Code
	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
	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	10	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	15	108606
	VA57-35-340010-50A-500-690AC-UHL3	3	50	690	15	108613
	VA57-35-340010-63A-800-690AC-UHL3	3	63	690	20	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
	VA57-35-370010-16A-160-690AC-UHL3	3	16	690	3,5	293571
	VA57-35-370010-20A-200-690AC-UHL3	3	20	690	6	304044
	VA57-35-370010-25A-250-690AC-UHL3	3	25	690	10	293570
	VA57-35-370010-31,5A-320-690AC-UHL3	3	31,5	690	10	293565
	VA57-35-370010-40A-400-690AC-UHL3	3	40	690	15	293564
	VA57-35-370010-50A-500-690AC-UHL3	3	50	690	15	303876
	VA57-35-370010-63A-630-690AC-UHL3	3	63	690	20	293563
	VA57-35-370010-80A-800-690AC-UHL3	3	80	690	25	296378
	VA57-35-370010-100A-1000-690AC-UHL3	3	100	690	44	303994
	VA57-35-370010-125A-1250-690AC-UHL3	3	125	690	44	303753
	VA57-35-370010-160A-1600-690AC-UHL3	3	160	690	44	303997
	VA57-35-370010-200A-2000-690AC-UHL3	3	200	690	44	298504
	VA57-35-370010-250A-2500-690AC-UHL3	3	250	690	44	303993
	VA57-35-390010-100A-690AC-UHL3	3	100	690	44	293562
	VA57-35-390010-125A-690AC-UHL3	3	125	690	44	296379
	VA57-35-390010-160A-690AC-UHL3	3	160	690	44	293561
	VA57-35-390010-200A-690AC-UHL3	3	200	690	44	296380
	VA57-35-390010-250A-690AC-UHL3	3	250	690	44	293548
	VA57F35-340010-16A-160-400AC-UHL3	3	16	400	3,5	109301
	VA57F35-340010-20A-200-400AC-UHL3	3	20	400	6	109311
	VA57F35-340010-25A-250-400AC-UHL3	3	25	400	10	109315
	VA57F35-340010-31,5A-315-400AC-UHL3	3	31,5	400	10	151418
	VA57F35-340010-40A-400-400AC-UHL3	3	40	400	10	109325
	VA57F35-340010-50A-500-400AC-UHL3	3	50	400	10	109332
	VA57F35-340010-63A-630-400AC-UHL3	3	63	400	15	151417
	VA57F35-340010-80A-800-400AC-UHL3	3	80	400	15	109344
	VA57F35-340010-100A-1000-400AC-UHL3	3	100	400	15	109286
	VA57F35-340010-125A-1250-400AC-UHL3	3	125	400	15	109296
	VA57F35-340010-160A-1600-400AC-UHL3	3	160	400	15	109307
	VA57F35-340010-200A-2000-400AC-UHL3	3	200	400	15	109314
	VA57F35-340010-250A-2500-400AC-UHL3	3	250	400	15	109319
	VA57-39-340010-250A-2500-690AC-UHL3	3	250	690	40	109876
	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

You can find a complete list of all versions of VA57 circuit breakers on the website www.keaz.ru

Delivery package

Product name	VA57-31	VA57-35	VA57-35 with a withdrawable design	VA57Ф35	VA57-39	VA57-39 with a withdrawable design
Circuit breaker series VA57	+	+	+	+	+	+
Fasteners for circuit breaker installation	+	+	+	+	+	+
Set of clamps for connecting copper busbars and conductors with cable lugs	+	+	+	+	+	+
Inter-pole partitions	-	-	-	-	+	-
Terminal cover	+	+	-	+	-	-
Key for moving the circuit breakers — 2 pcs.	-	-	+	-	-	-
Key for locking the handle (with manual remote control)	-	-	+	-	-	+
Set of adapter busbars - 6 pcs.	-	-	-	-	+ (for 800 A)	-
Operation manual (combined with the datasheet)	+	+	+	+	+	+

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

Shunt trip NR

The NR shunt trip will trip the closed circuit breaker when AC or DC voltage is applied to the release coil leads. The shunt trip will trip in all operating conditions when the mains supply voltage remains between 70% and 110% of the rated voltage. The rated operating mode of the shunt trip is short-time.
In the VA57-31, VA57-35, VA57-39 devices, the shunt trip is connected via add. contact. The shunt trip is installed in circuit breakers of the VA57-31, VA57- 35, VA57-39 series only at the factory.

Specifications	
Operating voltage U_c	110 V, 50 Hz 230 V, 50 Hz 400 V, 50 Hz 24 V DC (only VA57-35, VA57-39) 110 V DC 220 V DC
Operating voltage range	(0,7-1,1) U_e
Power consumption, VA	250 V*A AC 300 W DC

Zero voltage release (RNN) and under-voltage release (RMN)

RNN
- provides disconnection of the closed circuit breaker without time delay at voltages at the leads of its coil within 45-10% of the nominal;
- does not turn off the closed switch when the voltage at the leads of its coil is higher than 55% of the nominal;
- does not prevent the circuit breaker from turning on when the voltage at the leads of its coil is 85% of the nominal and higher;
- prevents the circuit breaker from closing at a voltage of 10% of the nominal and below.

Except VA57-31.

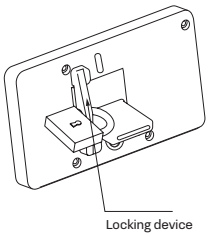
RMN
- provides disconnection of the closed circuit breaker without time delay when the voltage at the leads of its coil is within 70-35% of the nominal;
- does not turn off the closed switch when the voltage at the leads of its coil is higher than 70% of the nominal;
- does not prevent the circuit breaker from turning on when the voltage at the leads of its coil is 85% of the nominal and higher;
- prevents the circuit breaker from closing at 35% or less.

Zero voltage release and under-voltage release are installed in breakers of the VA57-35, VA57-39 series only at the manufacturing plant.

Specifications						
Current type	AC				DC	
Operating voltage U_e, V	24	110	230	400	110	220
Switch-on voltage range	>0,85U_e					
Trip voltage	<0,7U_e					
Input power	10 V*A				10 W	

VA57-35, 39 Locking device

Designed to lock the circuit breaker in the «off» position to ensure the safety of people when repairing and maintaining equipment. The locking device is installed on the VA57-35 and VA57-39 switches only at the factory.



Auxiliary contacts (AC)

The auxiliary contacts are designed for notification of the switching state of the main contacts (closed/open).
Auxiliary contacts comply with GOST IEC 60947-5-1. The letter of the shape of the contact element Za (double break contact element with four leads in two directions).
Rated insulation voltage (Ui), V: 400.
Conventional thermal current (Ithe), A: 5.
Minimum making capacity on alternating current: 5 mA at 17 V.

Circuit parameters in the AC-15 utilization category			Circuit parameters in the category of use DC-13		
Rated operating voltage, V	Rated operating current, A	Circuit power factor, cosφ	Rated operating voltage, V	Rated operating current, A	Circuit time constant, ms
48	5	0,7	24	5	15
110	4,5		110	1,3	
230	3		220	0,5	
400	2				

Auxiliary contacts for automatic shutdown alarm (ACA)

Auxiliary contacts of automatic trip signaling are intended for indication of circuit breaker tripping under the influence of releases (over, NR, RMN, RNN), as well as the TEST button. Rated operating current up to 2 A at voltages up to 400 V AC with a frequency of 50-60 Hz and 220 V DC.

Electromagnetic drive (PE)

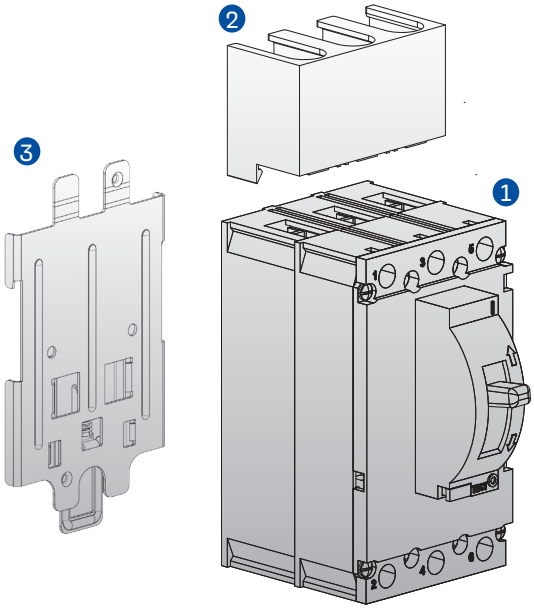
Electromechanical device for remote operation of a circuit breaker. The electromagnetic drive allows manual switching on and off. The electromagnetic drive can be used in automation circuits where the breaker is the actuator of any protection system (automatic backup power supply device (ALT), etc.).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

Electromagnetic drive characteristics

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

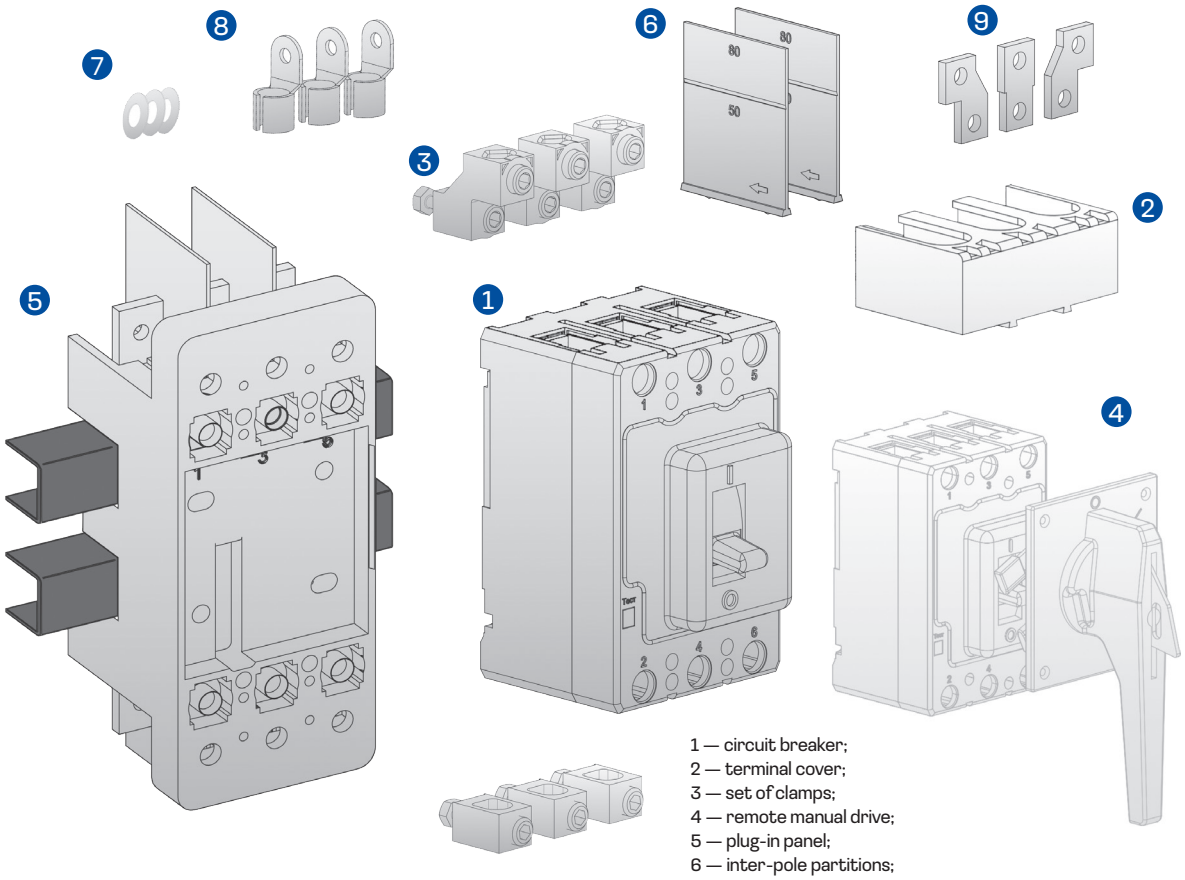
Additional accessories

VA57-31



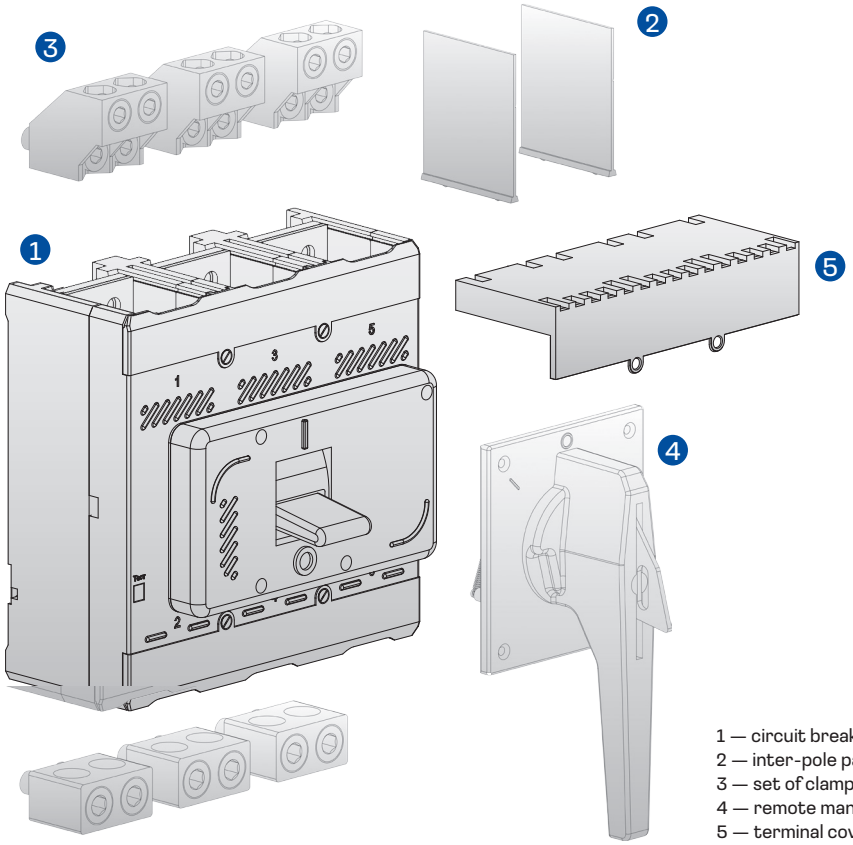
1 — circuit breaker;
2 — terminal cover;
3 — DIN-rail adapter.

VA57-35



1 — circuit breaker;
2 — terminal cover;
3 — set of clamps;
4 — remote manual drive;
5 — plug-in panel;
6 — inter-pole partitions;
7 — cup spring;
8 — set of cable lugs;
9 — set of expansion leads.

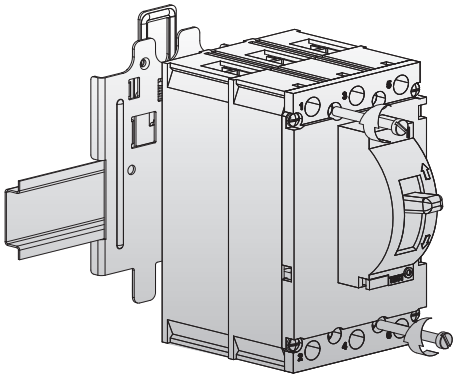
VA57-39



1 — circuit breaker;
2 — inter-pole partitions;
3 — set of clamps;
4 — remote manual drive;
5 — terminal cover.

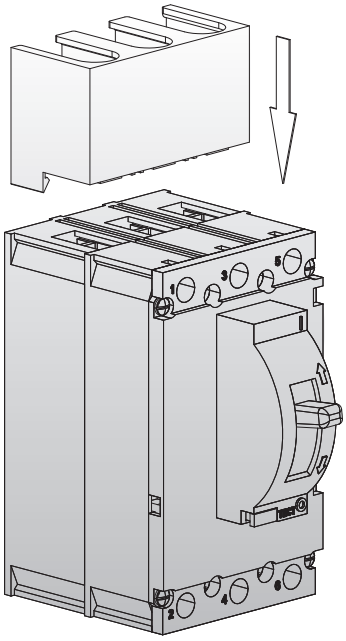
Din-rail adapter VA57-31

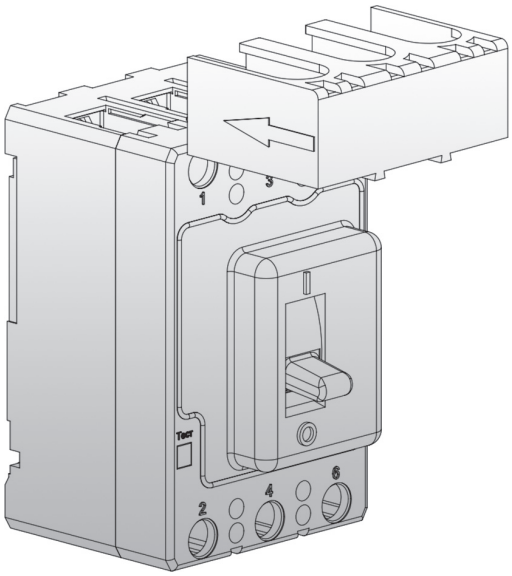
Designed for mounting the circuit breaker on a DIN-rail.



Terminal cover VA57-31 and VA57-35

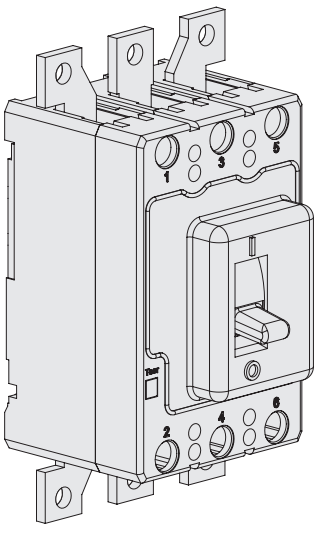
Designed to protect against touching live parts, increases the IP protection degree.





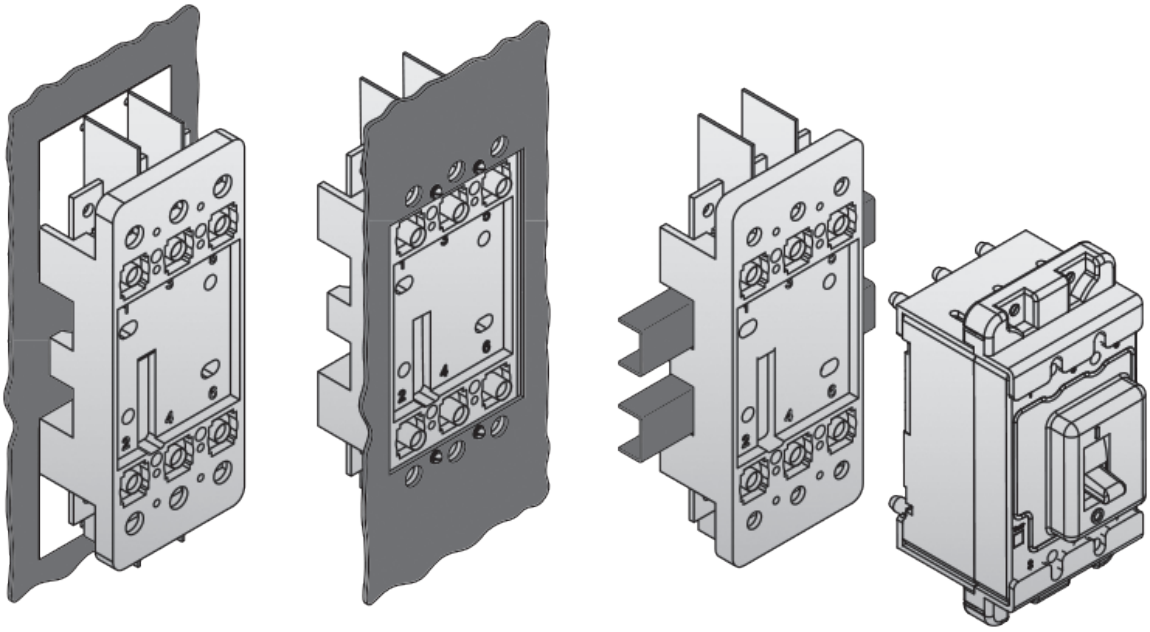
Extension lead kit VA57-35

Designed to increase the pole-to-pole distance.



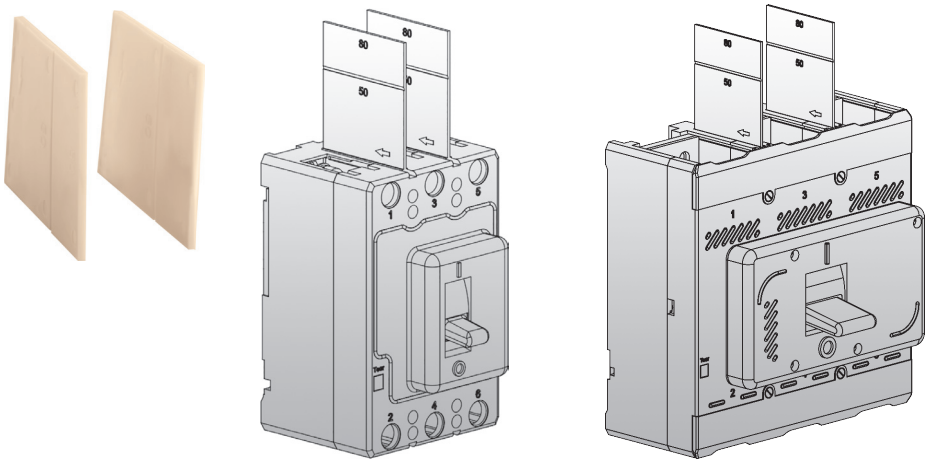
Plug-in panel for VA57-35

The plug-in panel is used only in conjunction with plug-in circuit breaker.



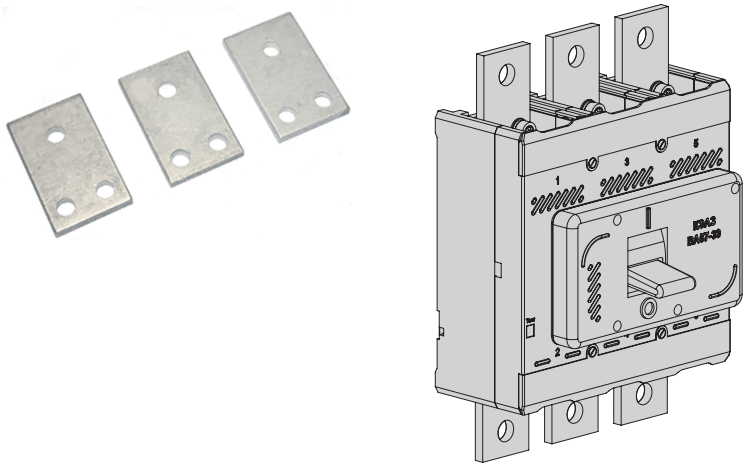
VA57-35 and VA57-39 inter-pole partitions

Designed to provide more reliable isolation between phases. To be installed by the customer. Can be used in conjunction with clamp sets.



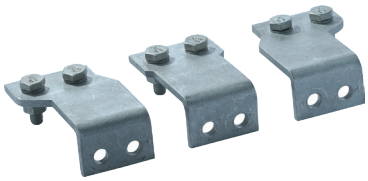
Set of adapter rails VA57-39

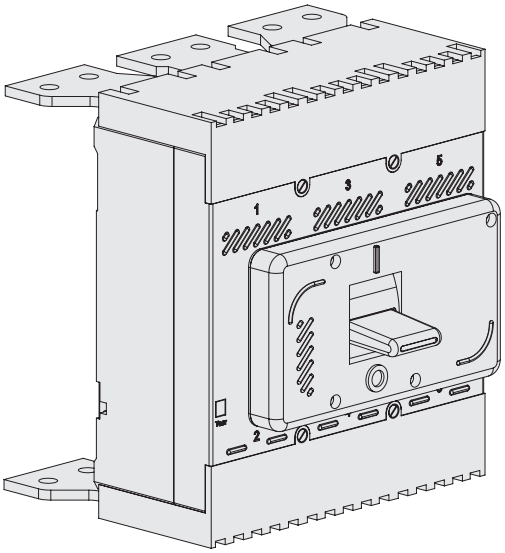
Enables the connection of busbars and conductors with cable lugs with a larger cross section to the circuit breaker.



Lead kit for rear connection VA57-39

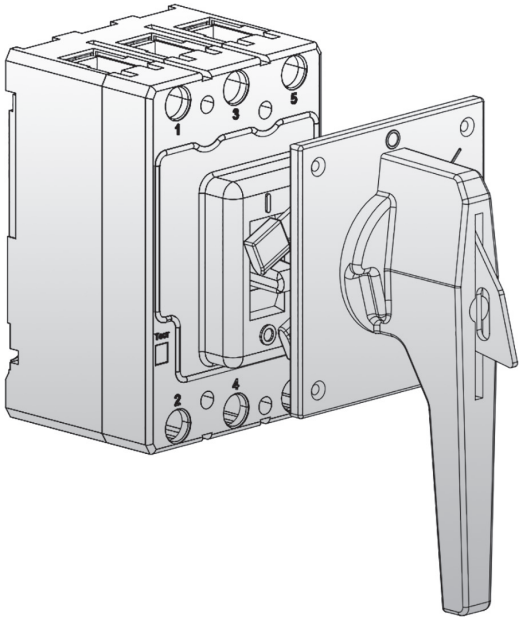
Enables rear connection to a bus and conductor circuit breaker with cable lugs.

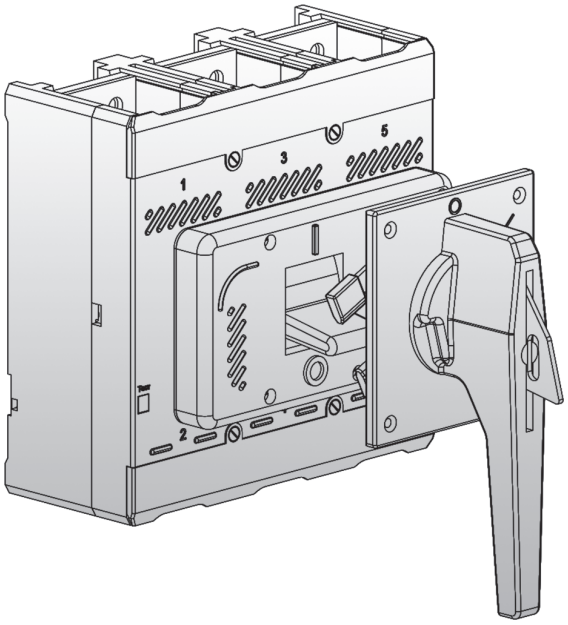




Remote manual drive VA57-35, VA57-39

The device, fixed on the switchgear door, is designed to operate the circuit breaker through the door. The remote drive is equipped with a device for locking in «off» position.



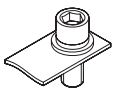
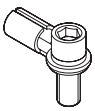
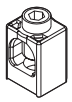
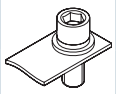
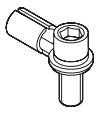


Item codes for ordering additional accessories

Product name	Code
Adapter for DIN-rail VA57-31-UHL3-KEAZ	110350
Terminal cover VA57-31-UHL3-KEAZ	110426
Terminal cover VA57-35/VA04-36/VA51-35-UHL3-KEAZ	110427
Terminal cover VA57-39/VA51-39-UHL3-KEAZ	261522
Terminal cover for front connection VA57-39/VA51-39-UHL3	274931
Extension lead kit VA04-36/VA51-35/VA57-35-UHL3-KEAZ	110372
Set of transfer busbars VA57-39-UHL3-KEAZ (number of busbars 3 pcs.)	225574
Lead kit for rear connection VA57-39-UHL3-KEAZ (number of leads 3 pcs.)	217455
Remote manual drive RPD-VA04-36/VA51-35/VA57-35/VA57-39-UHL3-KEAZ	110450
Plug-in panel VA57-35-UHL3	256533
Set for a circuit breaker for installation on a plug-in panel VA57-35-UHL3-KEAZ	266919
Insulating screens for plug-in panel VA57-35	256218
Plug for secondary circuits MSTB-2.5/13-OptiMat/VA57-UHL3	273632
Socket for secondary circuits UMSTBVK-2.5/13-OptiMat/VA57-UHL3	273633

Set of clamps

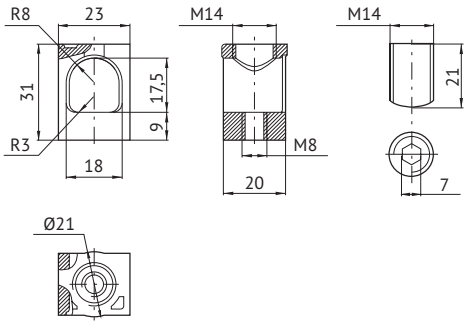
VA57-35, VA57F35

Conductor connection methods At the intersection of columns and rows with the selected options for connecting conductors, the clamp numbers are given to indicate in the order for the circuit breaker and the article numbers for ordering the clamps separately.				Methods of connecting conductors to the leads 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
Methods of connecting conductors to the leads of the circuit breaker 2, 4, 6	Front connection		Cu	1 included					22/27 code 110394	8/10 code 110410	34	39
			Al		2 code 110392				23/28 code 110395	9/11 code 110411	35	40
			70 mm			3 code 110400			24/29 code 110396	16/19 code 110389	36	41
			95 mm				4 code 110403		25/30 code 110397	17/20 code 110390	37	42
			120 mm					5 code 110406	26/31 code 110398	18/21 code 110391	38	43
			185 mm	22/27 code 110394	23/28 code 110395	24/29 code 110396	25/30 code 110397	26/31 code 110398	6 code 110408	32/33 code 110401	44	45
			2x95 mm	8/10 code 110410	9/11 code 110411	16/19 code 110389	17/20 code 110390	18/21 code 110391	32/33 code 110401	7 code 110409	46	47
	Rear connection		Cu	34	35	36	37	38	44	46	12 code 110383	
			Al/Cu	35/39	40	41	42	43	45	47		13 code 110385

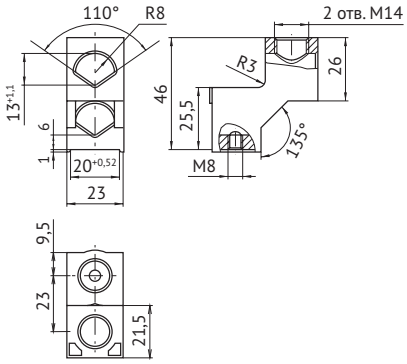
Withdrawable version
Designed for quick replacement of a circuit breaker and ensuring visible rupture of live parts. The withdrawable version is equipped with interlocks to prevent attempts to replace the circuit breaker without switching it to the «Off» position.
Clamp sets for withdrawable circuit breakers with M8 bolts:
- № 14 — for connection with copper busbars (included in the circuit breaker);
- № 15 — for connection with aluminum busbars (supplied by 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. diameter 17.5 mm².

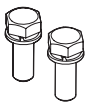
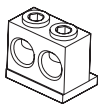
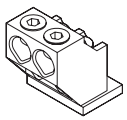
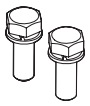
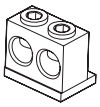
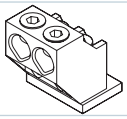
Clamp for connecting cables up to 185 mm²



Clamp for connecting two cables up to 95 mm²



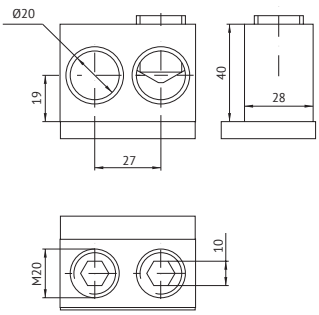
VA57-39

Conductor connection methods At the intersection of columns and rows with the selected options for connecting conductors, the numbers of clamps are given to indicate in the order for the circuit breaker and the article numbers for ordering the clamps separately.			Methods of connecting conductors to the leads of the circuit breaker 1, 3, 5			
			 Bus or two cables with cable lugs		  Conductors without cable lugs	
			Cu	Al	2x185, Cu/Al	4x120, Cu/Al
Methods of connecting conductors to the leads of the circuit breaker 2, 4, 6		Cu	3 included	15 code 110388	9/11 code 110412	5/7 code 110405
		Al	15 code 110388	4 code 110404	10/12 code 110382	6/8 code 110407
		2x185, Cu/Al	9/11 code 110412	10/12 code 110382	1 code 110381	13/14 code 110384
		4x120, Cu/Al	5/7 code 110405	6/8 code 110407	13/14 code 110384	2 code 110393

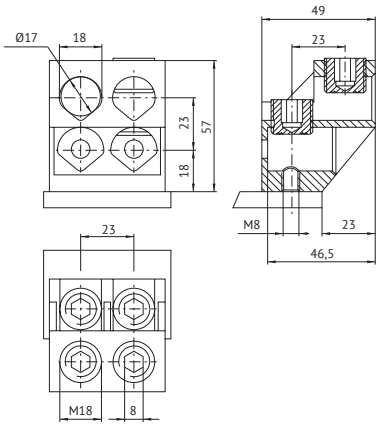
Withdrawable version
Designed for quick replacement of a circuit breaker and ensuring visible rupture of live parts. The withdrawable version is equipped with interlocks to prevent attempts to replace the circuit breaker without switching it to the «Off» position.

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 connection of two cables up to 185 mm²

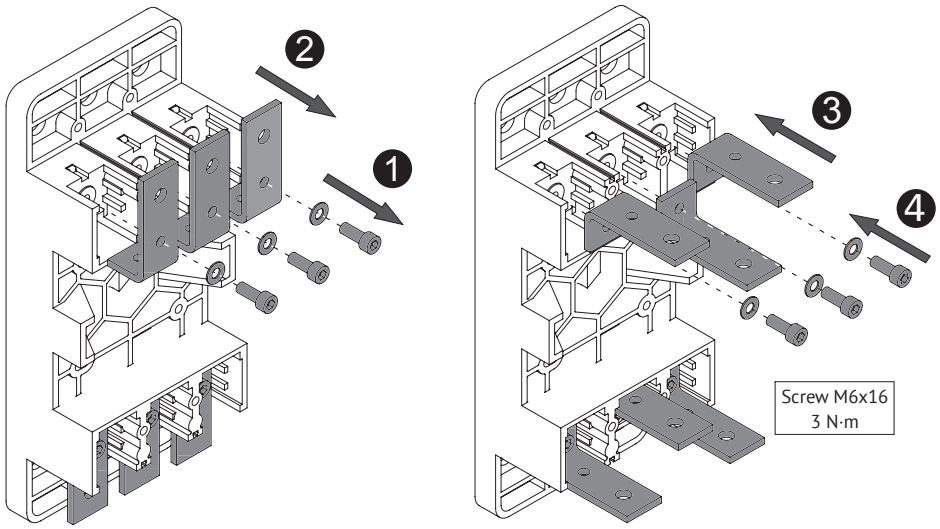


Clamp for front connection of four cables up to 120 mm²

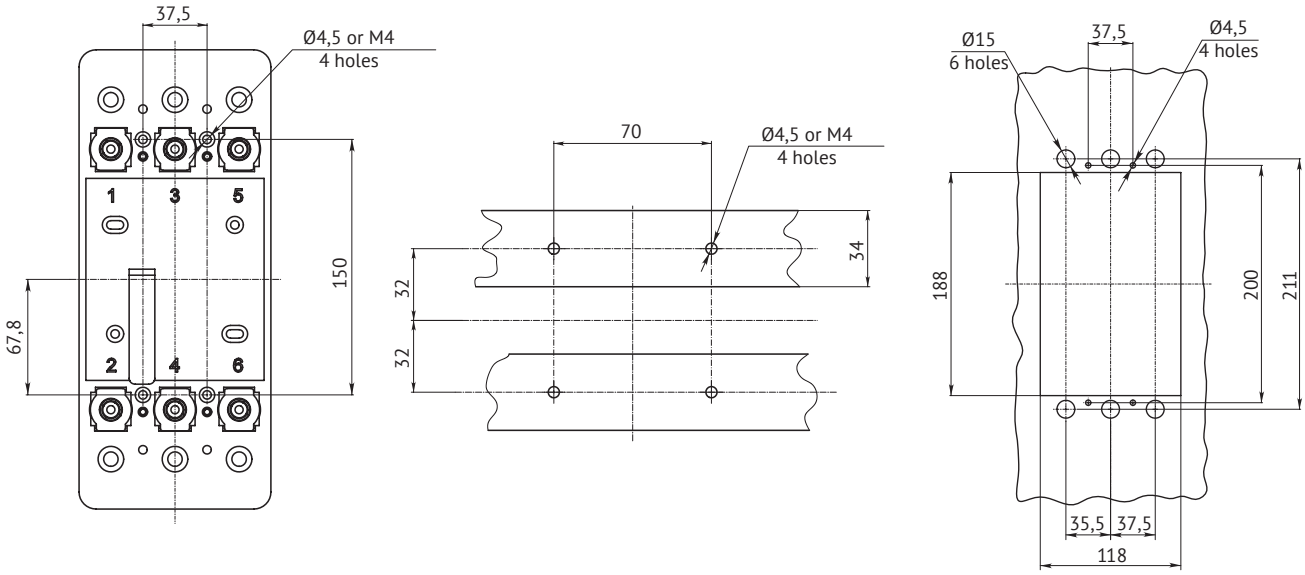


Installation of the plug-in panel VA57-35

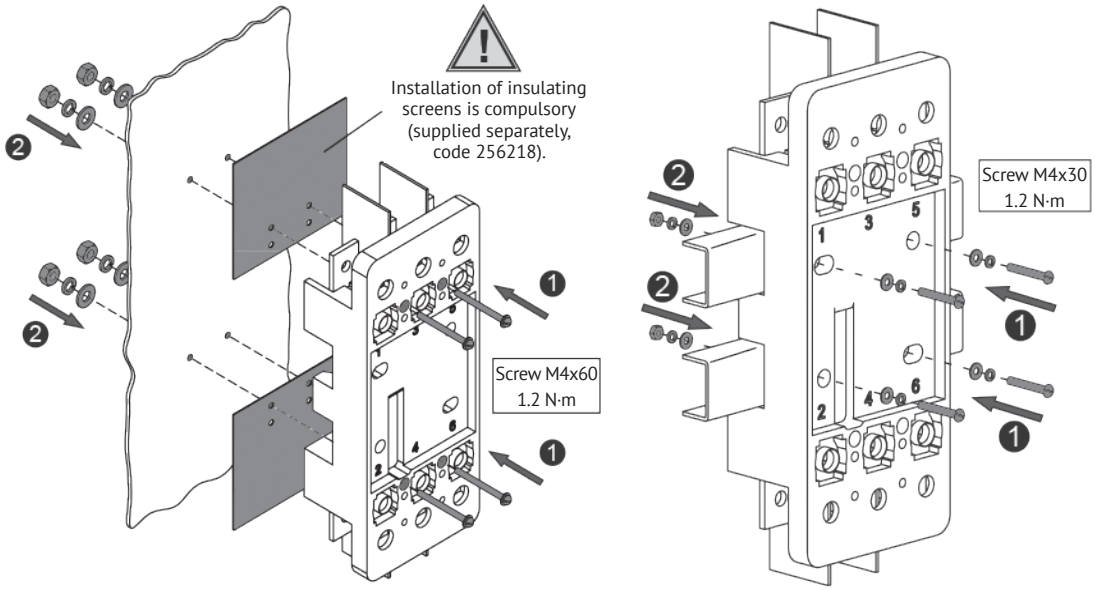
Connecting leads

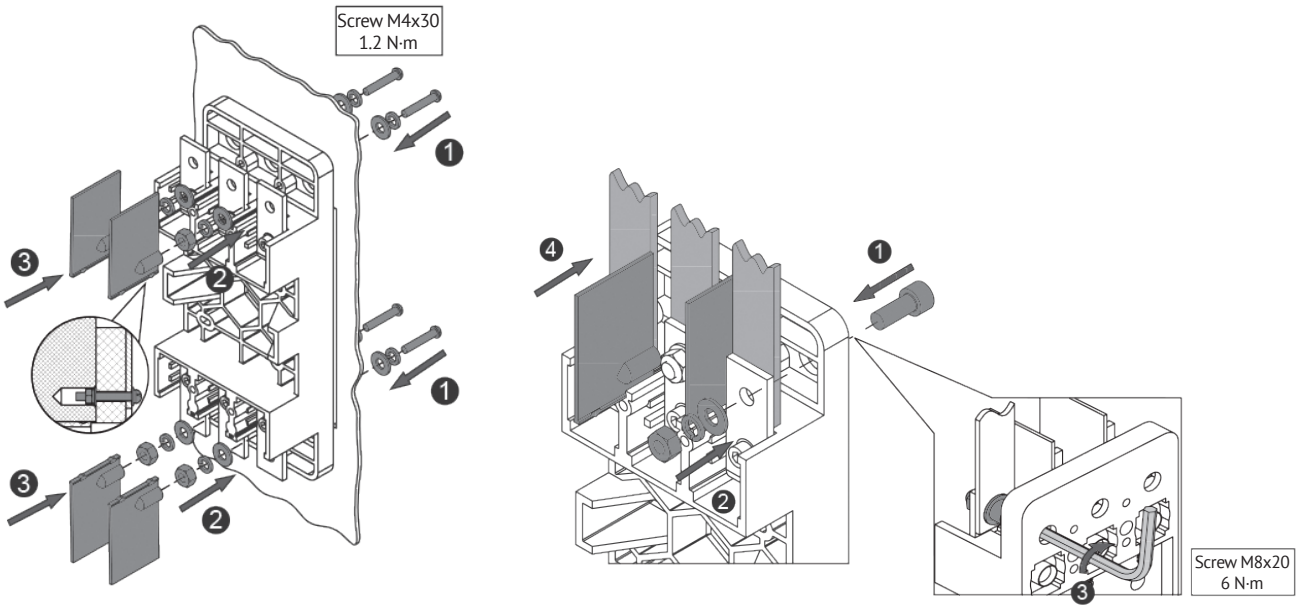


Hole locations for base installation

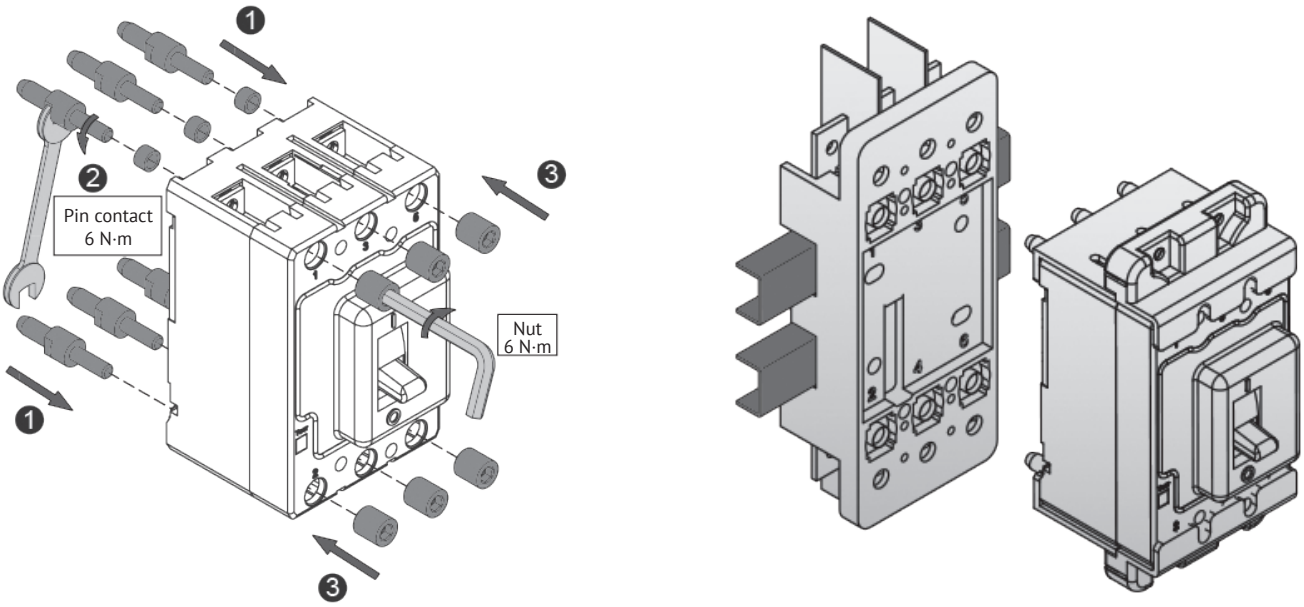


Installing the base





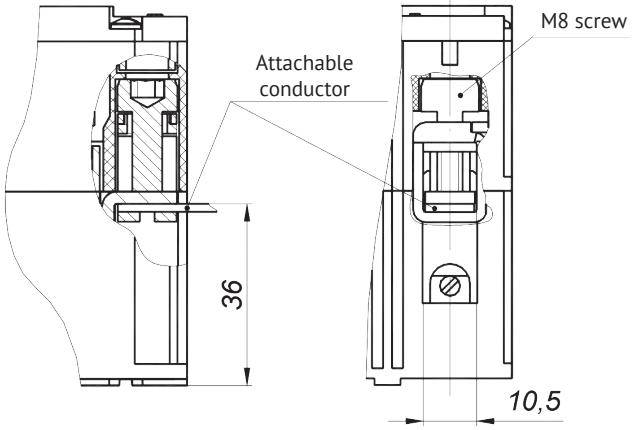
Circuit breaker mounting



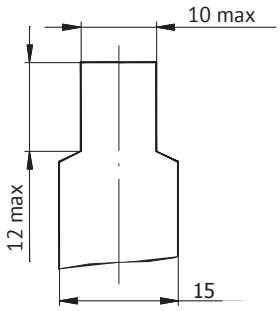
The «plug-in panel VA57-35-UHL3 - KEAZ (for currents 63 ÷ 250 A)» includes sets of mounting parts 1, 2 and 3.
The «Set for circuit breaker for installation on a plug-in panel VA57-35-UHL3» includes kits of mounting parts 2 and 3 (ref. «Instructions for mounting the panel of plug-in circuit breaker VA57-35 ГЖИК.305636.223ИМ»).
If it is necessary to quickly replace the circuit breaker, it is recommended to use an additional circuit breaker (plug-in, without a panel) with the parts from the «Set for circuit breaker for installation on a plug-in panel» installed on it.

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

VA57-31

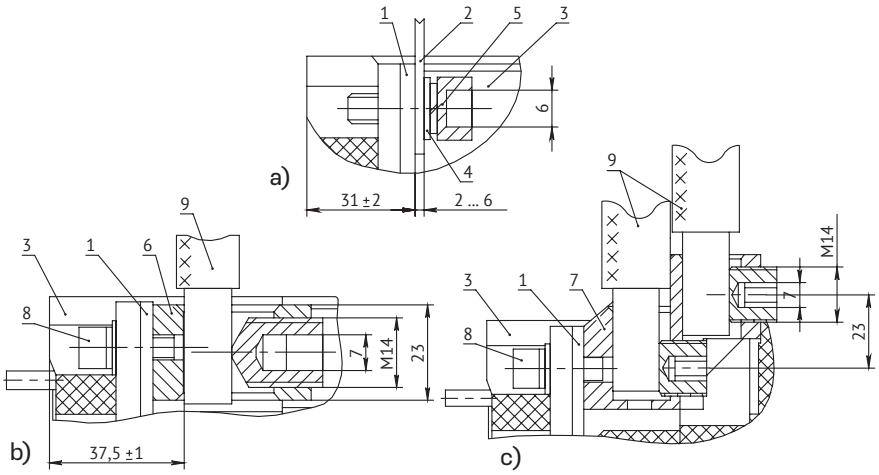


Shape and size of the busbar to be connected

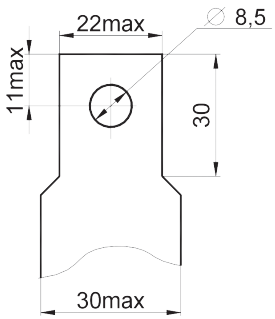


The clamps allow the connection of copper and aluminum conductors with a cross section of 2.5 to 50 mm²

VA57-35, VA57F35



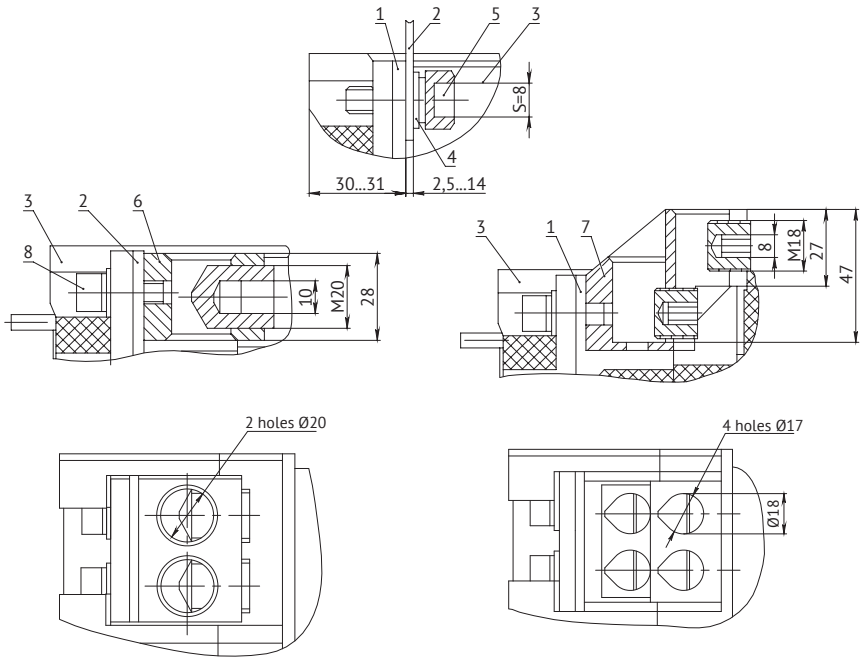
Shape and size of the busbar to be connected



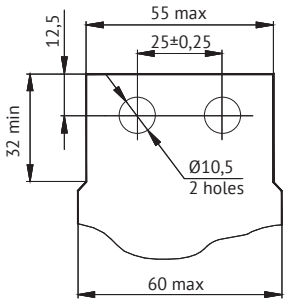
a) connection by busbars or conductors of a cable with a cable lug;
b) connection with one 185 mm² cable without a cable lug;
c) connection with two 95 mm² cables without a cable lug.

1 — circuit breaker lead;
2 — busbar (or a cable lug);
3 — circuit breaker;
4 — washers;
5 — M8 screw;
6 — one-socket clamp;
7 — two-socket clamp;
8 — M8 bolt;
9 — attachable conductor.

VA57-39



Shape and size of the busbar to be connected

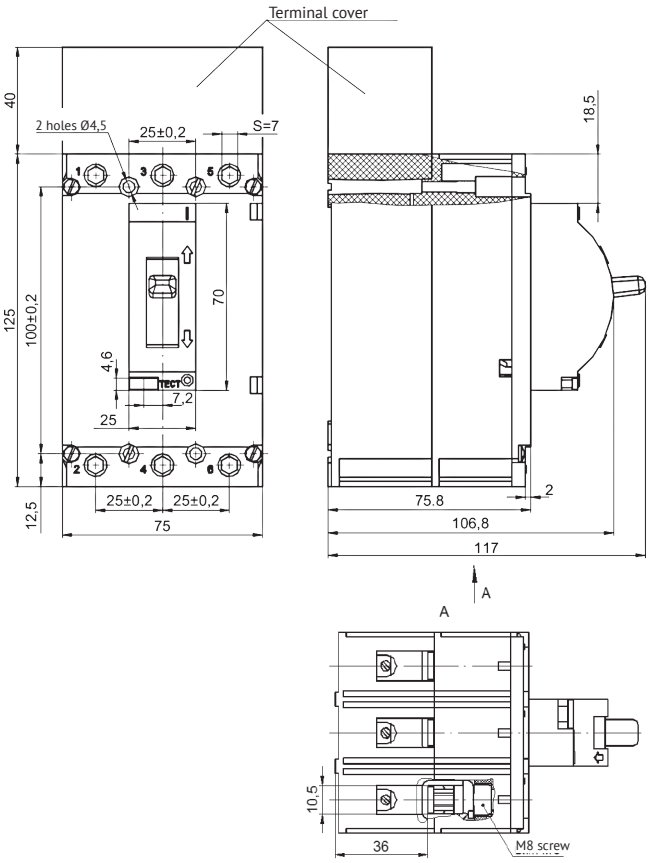


a) connection by busbars or conductors of a cable with a cable lug;
b) connection with two cables with a cross-section of 185 mm^2 each without a cable lug;
c) connection with four cables with a cross-section of 120 mm^2 without a cable lug.

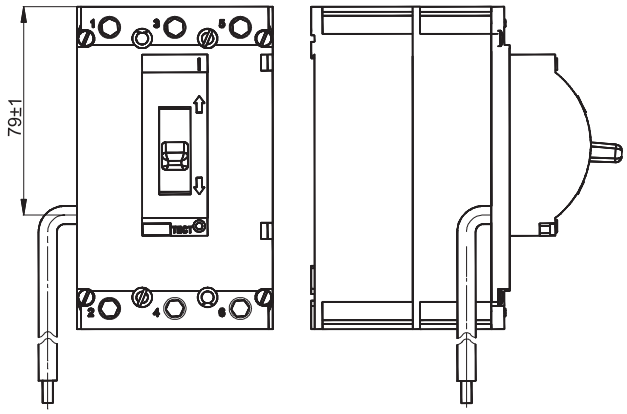
1 — circuit breaker lead;
2 — busbar;
3 — circuit breaker;
4 — washer;
5 — bolt M10x30 GOST 7796;
6 — two-socket clamp;
7 — four-way clamp.

Overall, mounting and connection dimensions

VA57-31



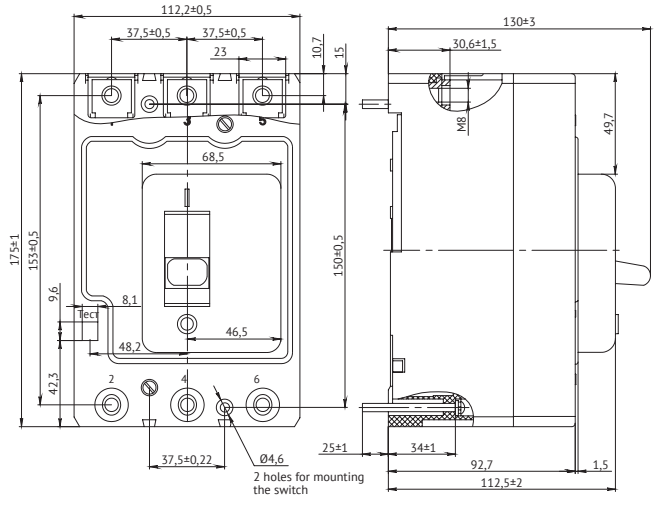
Location of wires coming out of the circuit breaker from additional assembly units

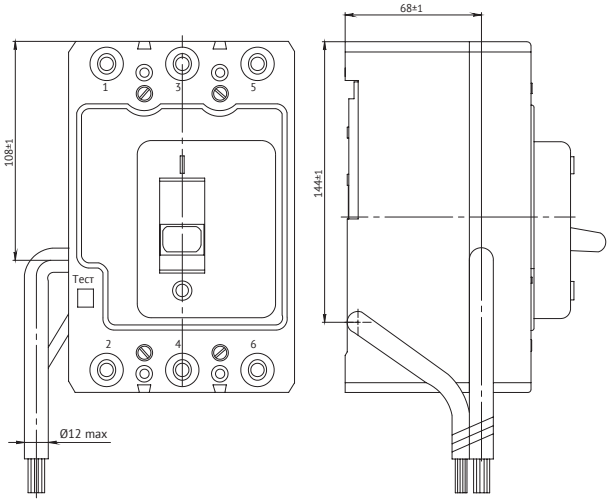


A terminal cover installed on the side of leads 1, 3, 5 is supplied complete with the VA57-31 circuit breaker.
Terminal covers can be ordered separately.

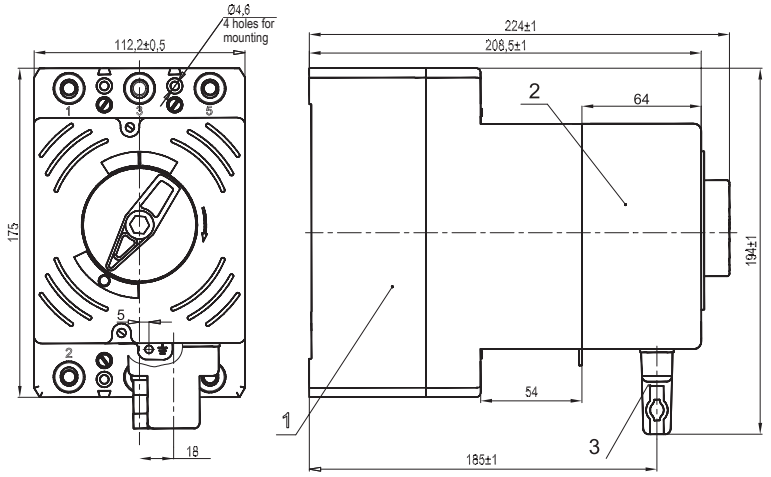
VA57-35, VA57F35

With clamps for front attachment



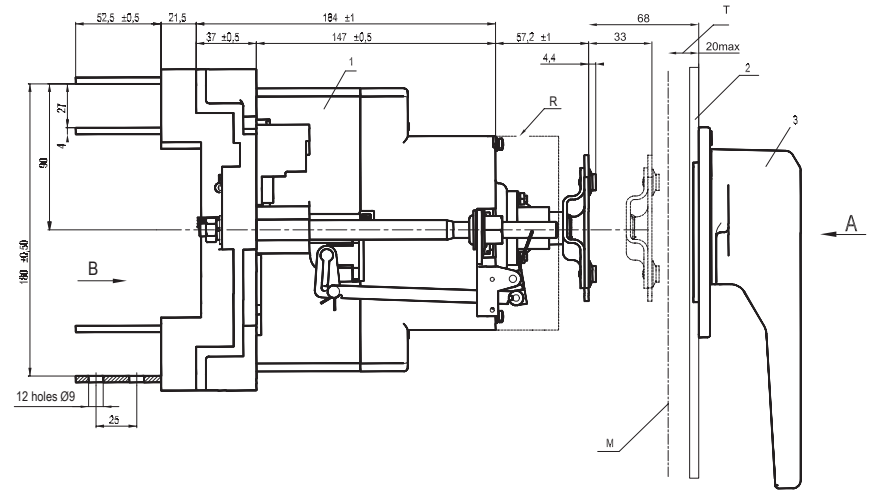


With electromagnetic drive

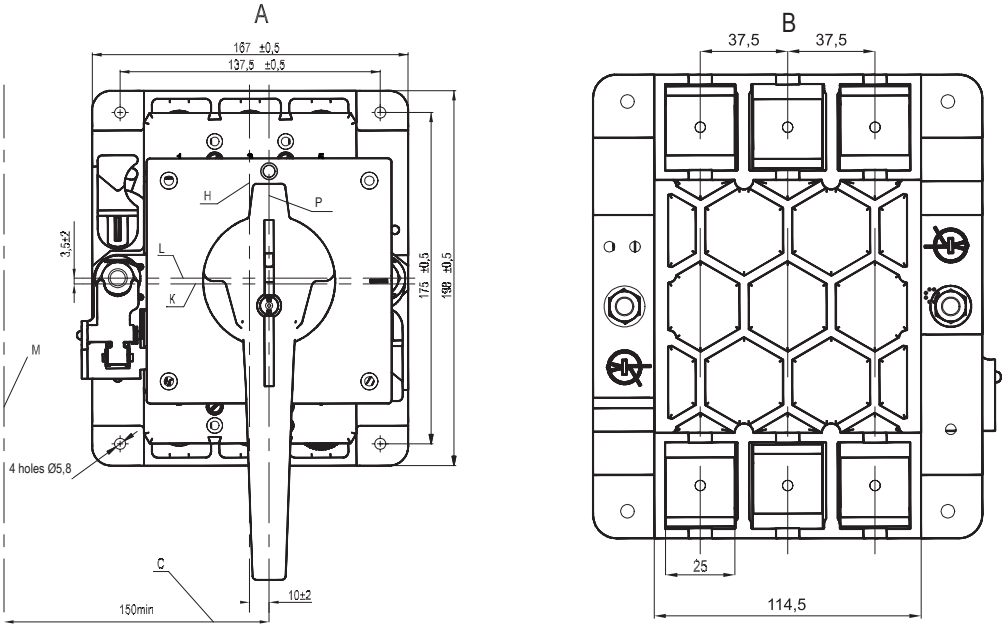


1 — circuit breaker;
2 — electromagnetic drive;
3 — RP10 type connector.

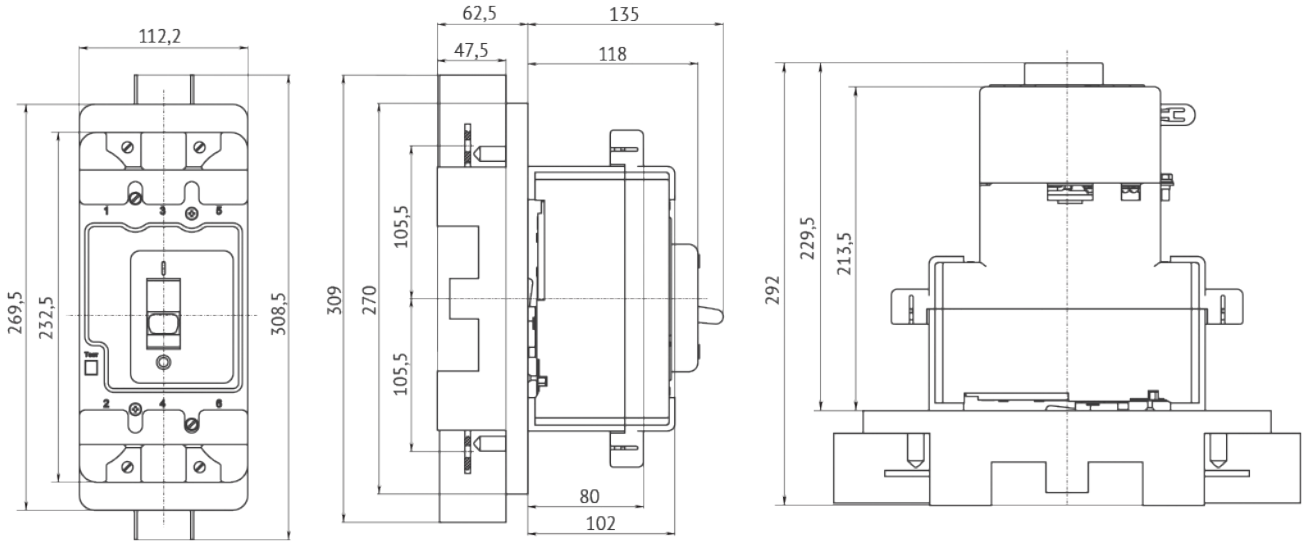
Withdrawable version with manual remote control



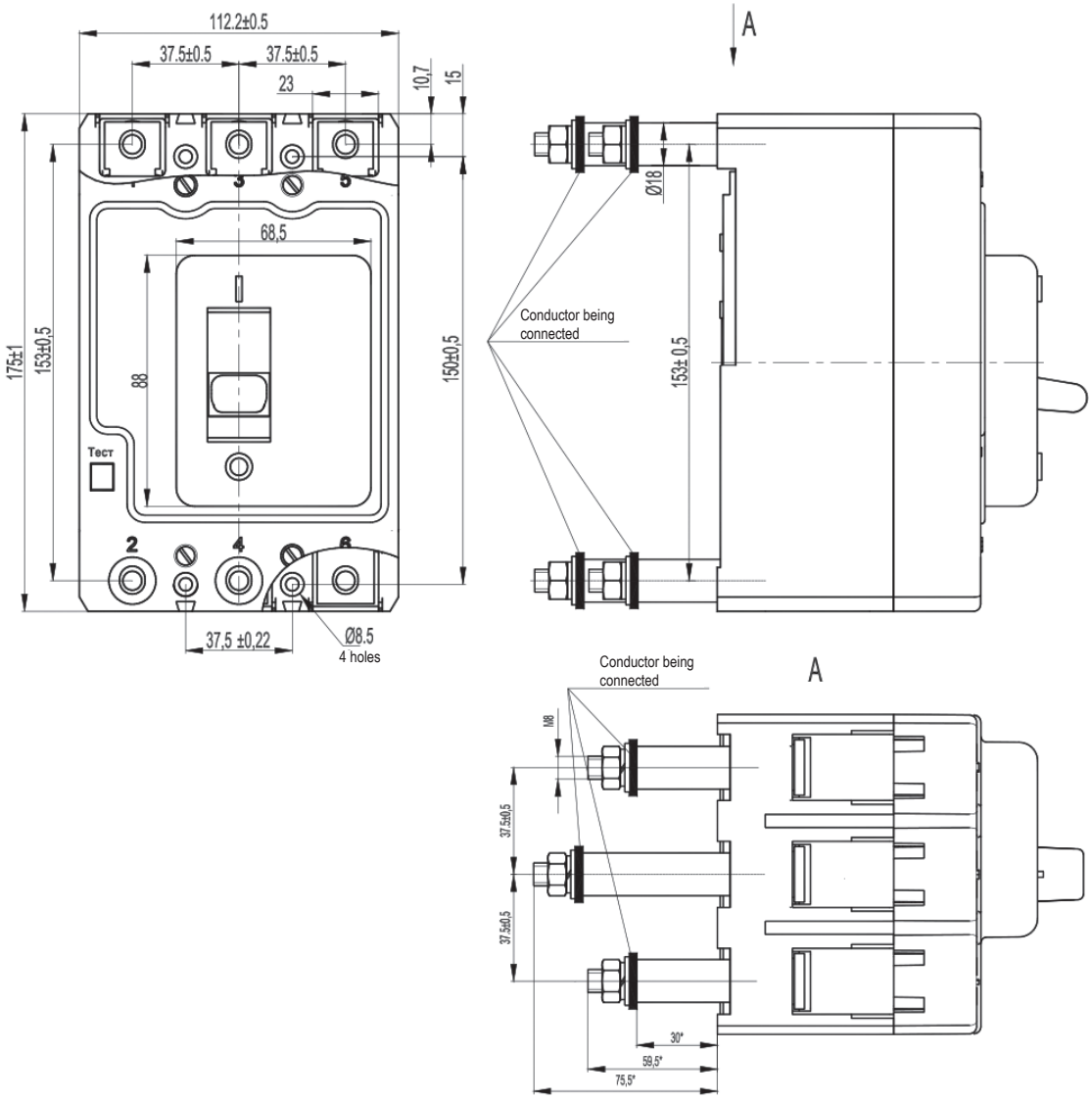
1 — circuit breaker;
2 — switchgear door;
3 — remote manual drive;
4 — RP10 type connector;
5 — interlock;
6 — electromagnetic drive;
K — horizontal axis of the breaker;
L — horizontal axis of the manual remote drive;
M — axis of rotation of the switchgear door;
H — vertical axis of the circuit breaker;
P — vertical axis of the manual drive;
R — «control» position of the breaker;
C and T — dimensions that define the axis of rotation.



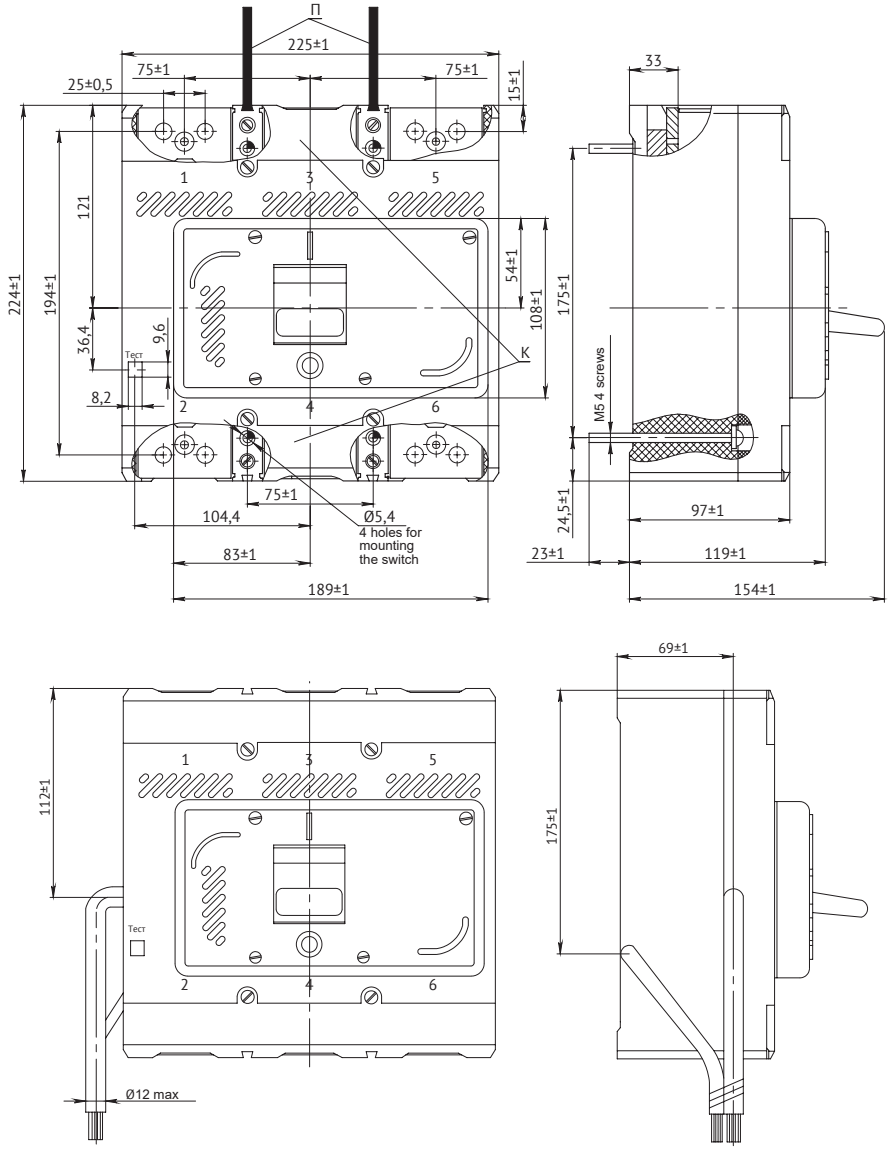
Plug-in circuit breaker



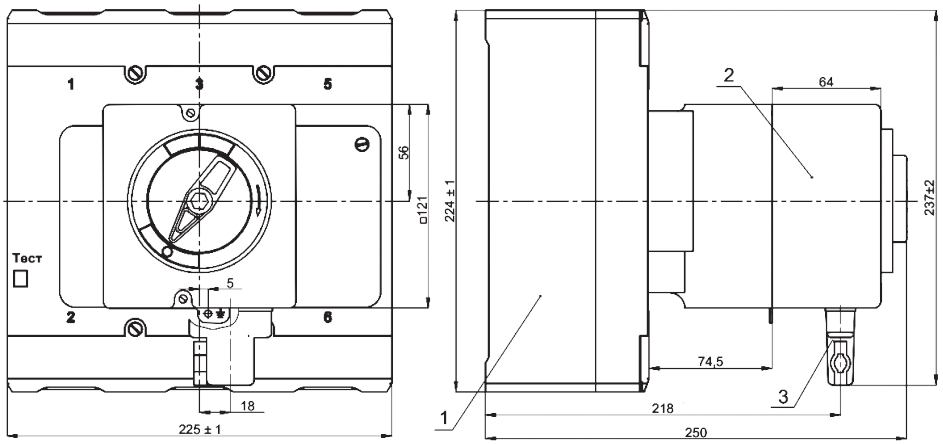
Circuit breaker with rear connection clamps



VA57-39

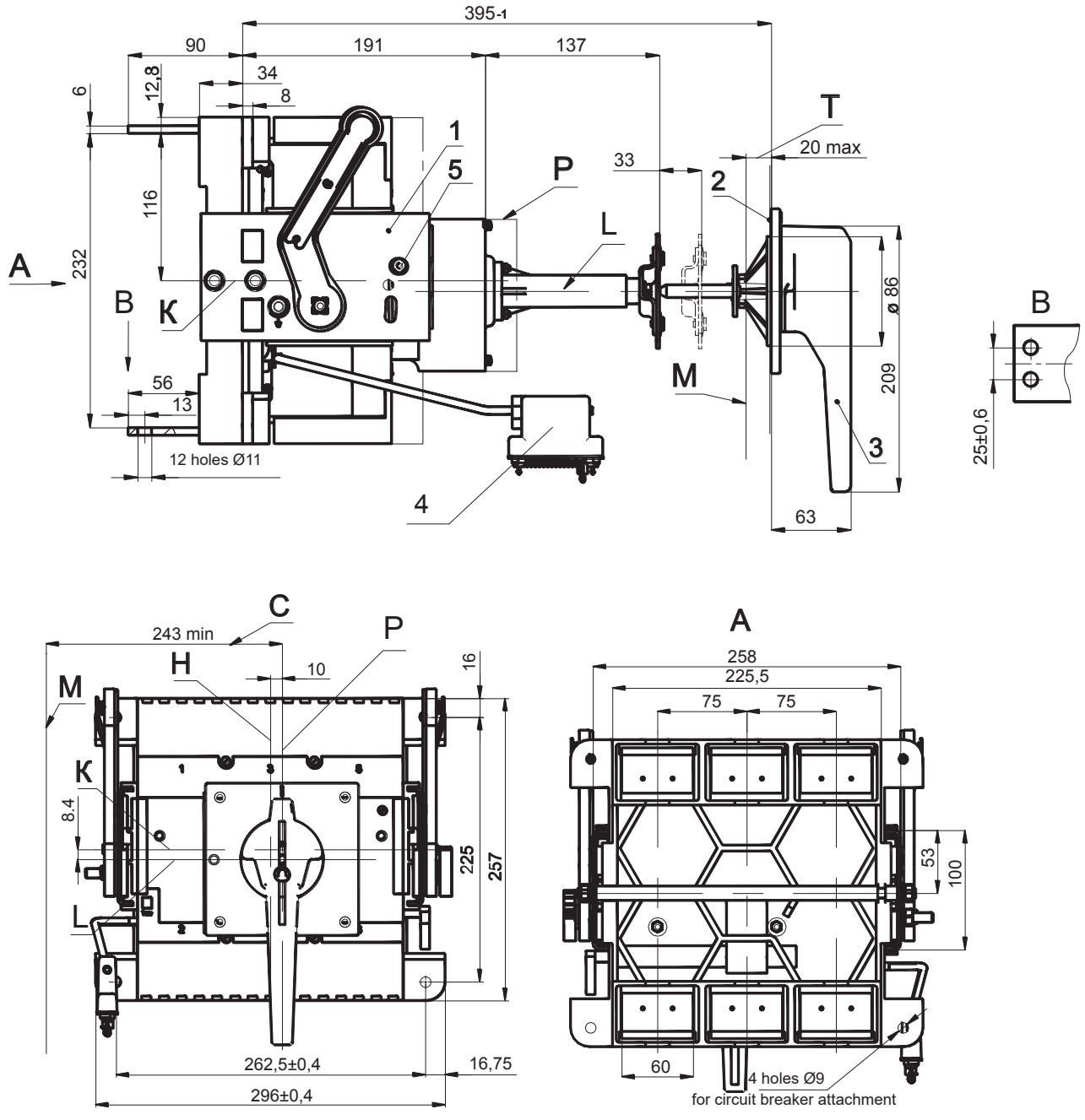


Fixed design with electromagnetic drive

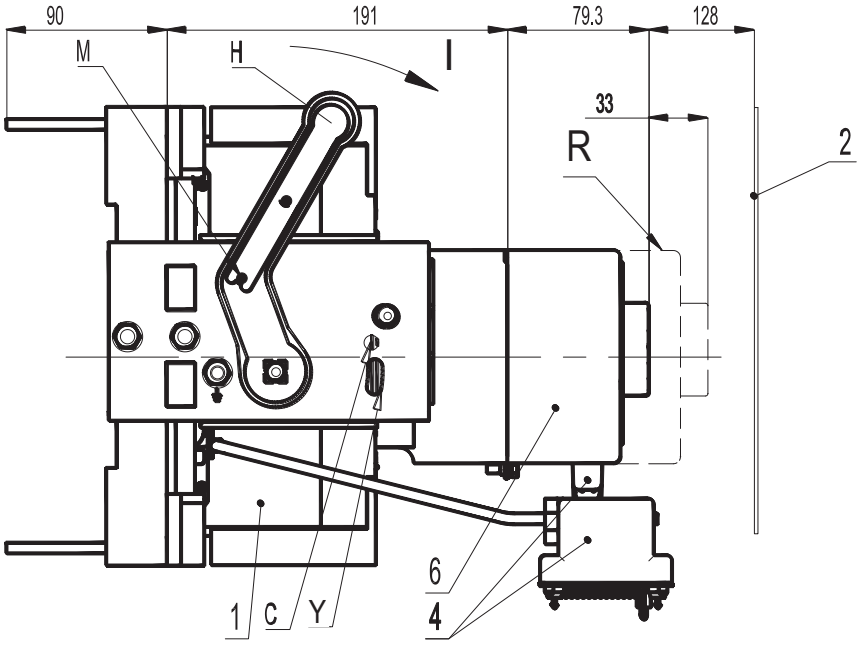


1 — circuit breaker;
2 — electromagnetic drive;
3 — RP10 type connector;
K — vertical axis of the circuit breaker;
L — horizontal axis of the electromagnetic drive.

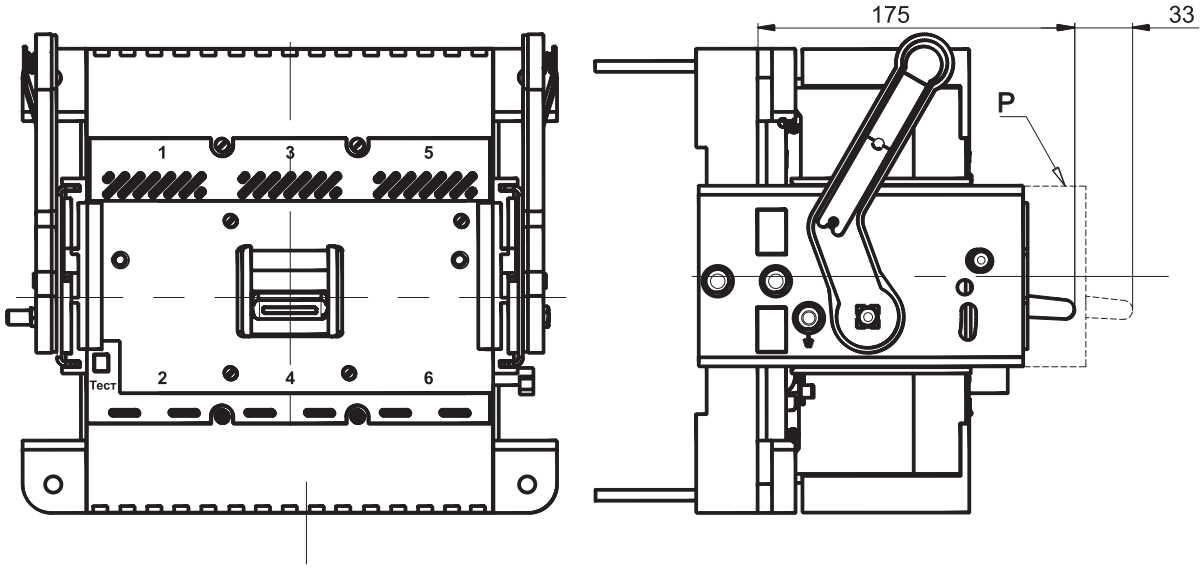
Withdrawable circuit breaker VA57-39 with manual remote drive



Circuit breaker VA57-39, withdrawable version with electromagnetic drive



VA57-39 circuit breaker, withdrawable, with manual drive

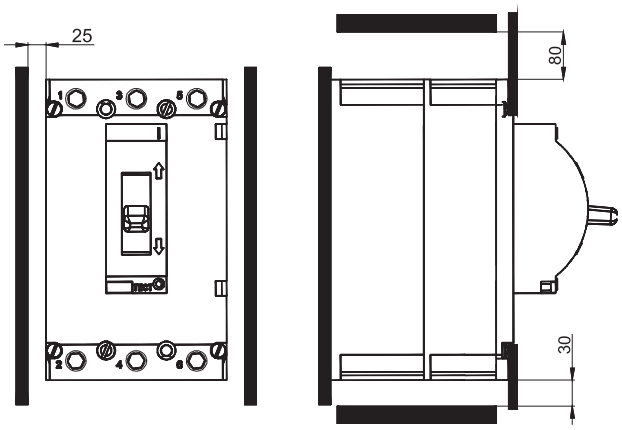


1 — circuit breaker;
2 — switchgear door;
3 — manual remote drive;
4 — RP10 type connector;
5 — interlock;
6 — electromagnetic drive.

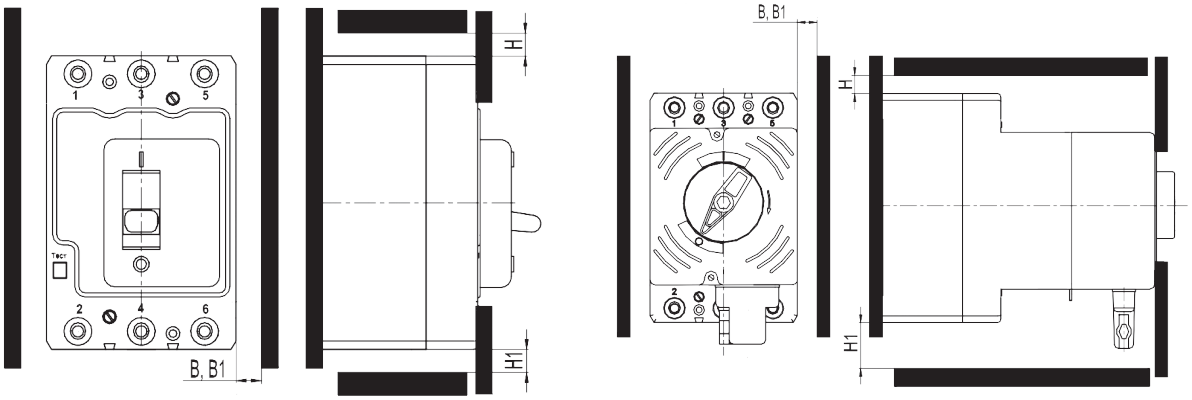
K — horizontal axis of the circuit breaker;
L — horizontal axis of the manual remote drive;
M — axis of rotation of the switchgear door;
H — vertical axis of the circuit breaker;
P — vertical axis of the manual drive;
R — «control» position of the circuit breaker;
C and T — dimensions that determine the axis of rotation of the switchgear door.

Minimum distances from the circuit breaker to metal parts

VA57-31



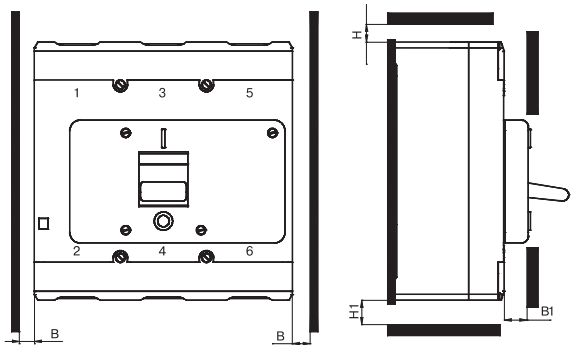
VA57-35, VA57F35



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

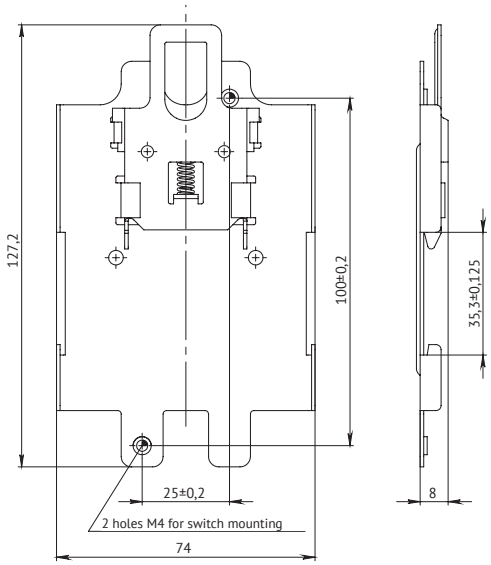


Rated voltage, V	Dimensions, mm			
	B	B1	H	H1
400	20	0; 15[1)]	40; 65[2)]	20; 45[3)]
690	40		80; 105[2)]	

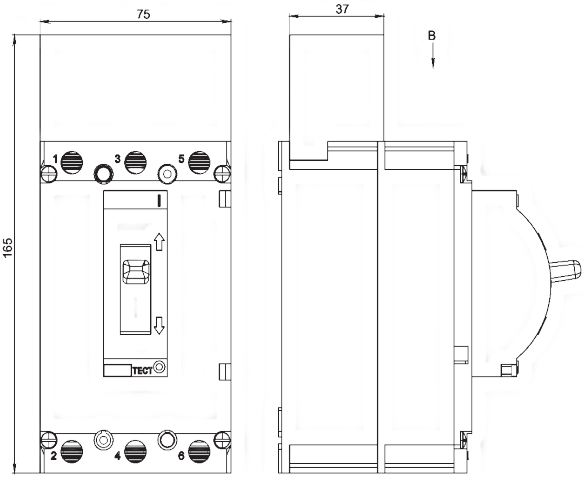
[1)] - for circuit breakers with a set of clamps № 2, 5, 6, 7, 8, 13, 14;
[2)] - for circuit breakers with clamps № 2, 7, 8, 13;
[3)] - for circuit breakers with a set of clamps № 2, 5, 6, 14.

Overall, mounting and connection dimensions of accessories

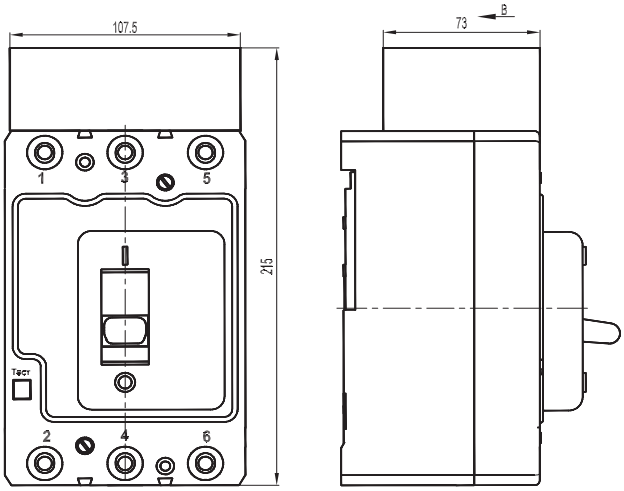
Din-rail adapter VA57-31



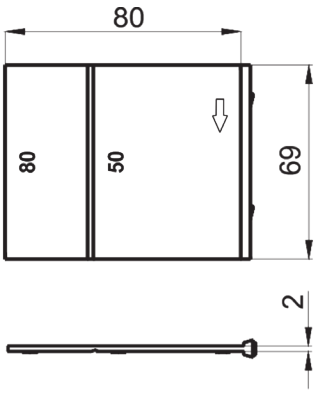
Terminal cover VA57-31



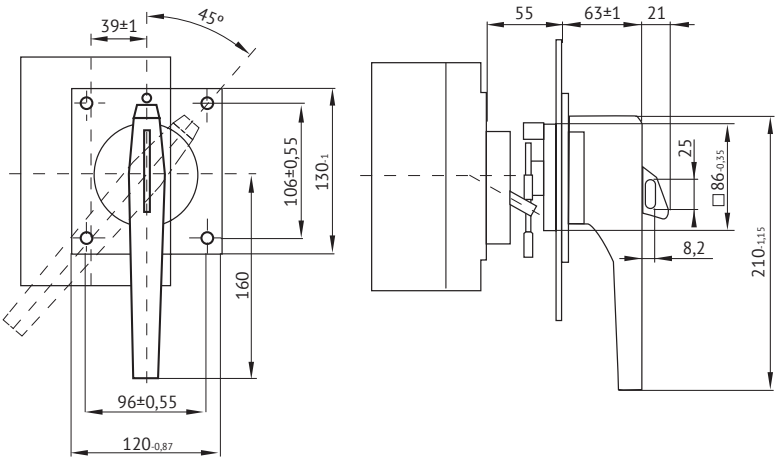
Terminal cover VA57-35



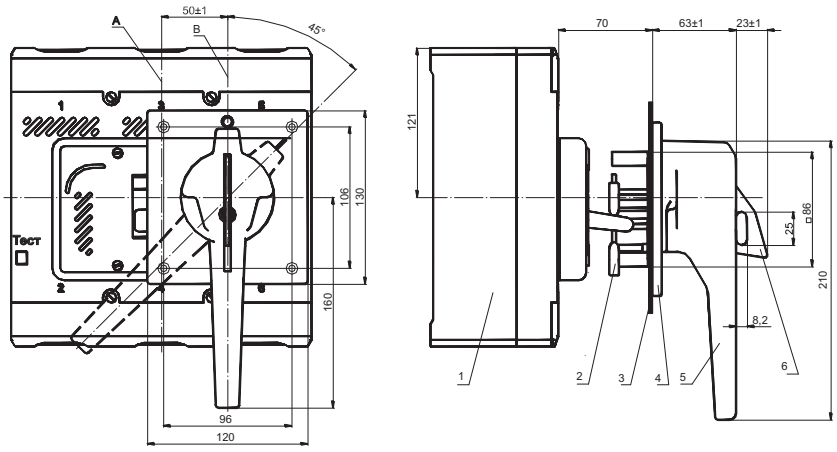
Inter-pole partition VA57-35, VA57-39



Manual remote drive VA57-35

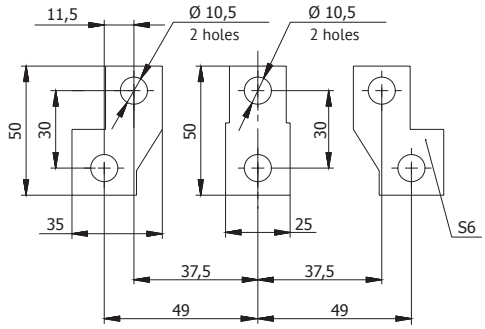


Manual remote drive VA57-39

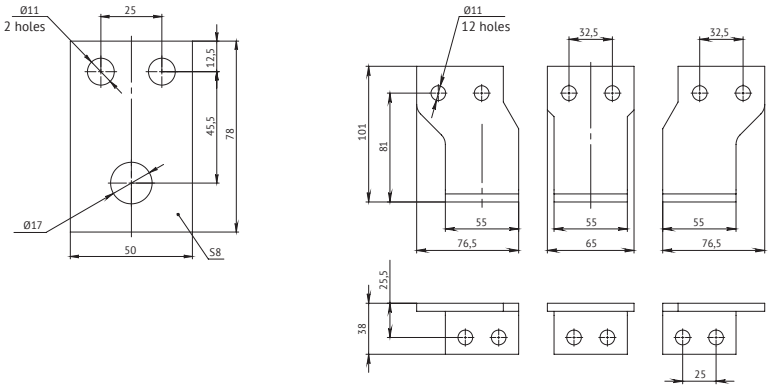


A — vertical axis of the circuit breaker;
B — vertical axis of the manual remote drive;
1 — circuit breaker;
2 — drive guide;
3 — switchgear door;
4 — drive base;
5 — drive handle;
6 — locking device.

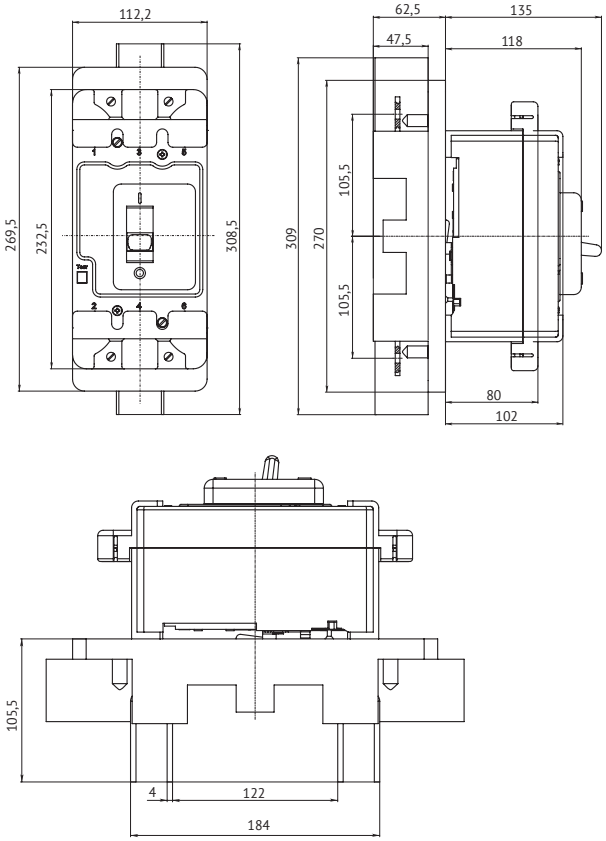
Set of expansion rails VA57-35



Set of adapter rails VA57-39 for rear connection



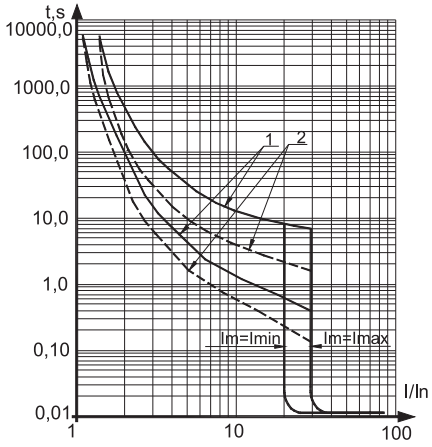
Plug-in panel VA57-35



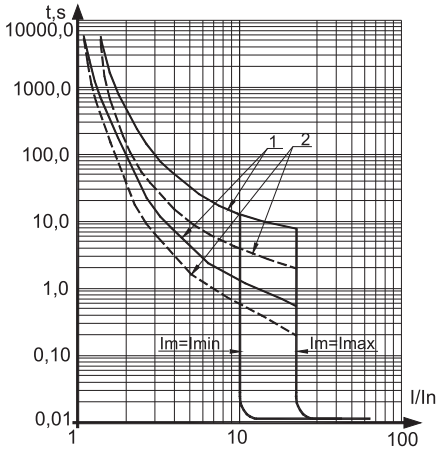
Current and time characteristics

VA57-31

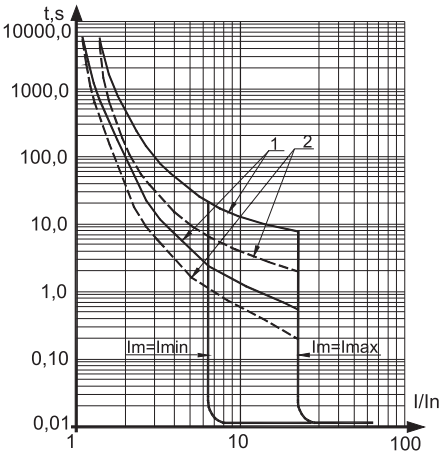
16 A



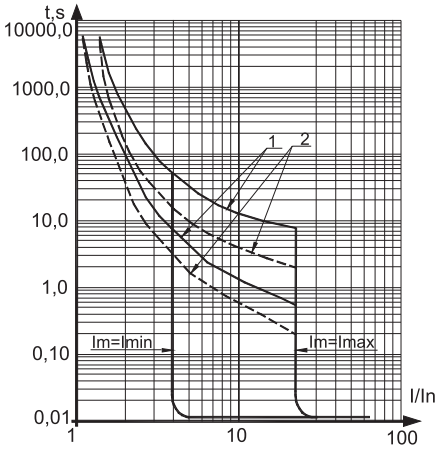
20 A, 25 A, 31,5 A, 40 A



50 A, 63 A



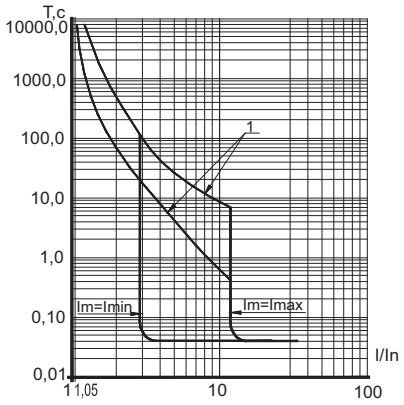
80 A, 100 A



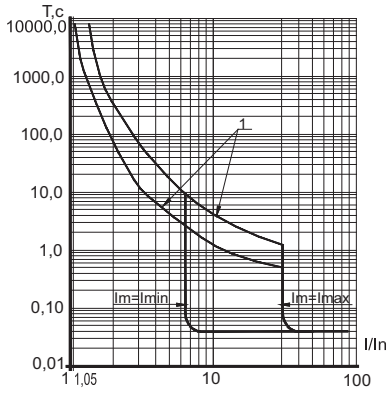
1 — working zone of an overcurrent thermal release, measured in cold state;
2 — working zone of an overcurrent thermal release, measured in hot state;
Im — electromagnetic release setpoint.

VA57-35; VA57F35

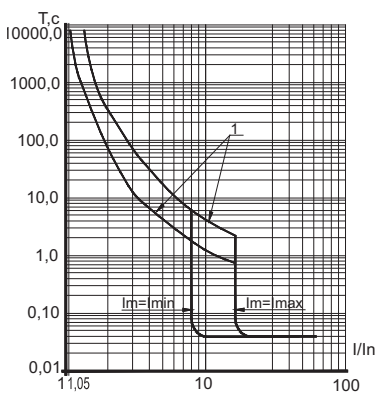
12,8; 16; 20; 25; 31,5; 40; 50 A



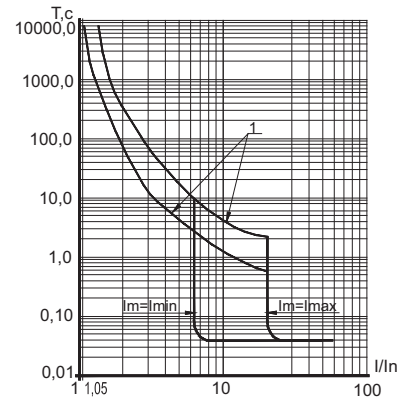
63 A



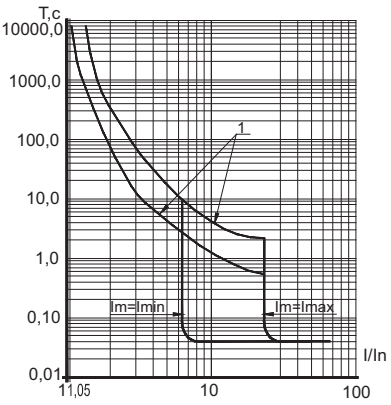
80 A



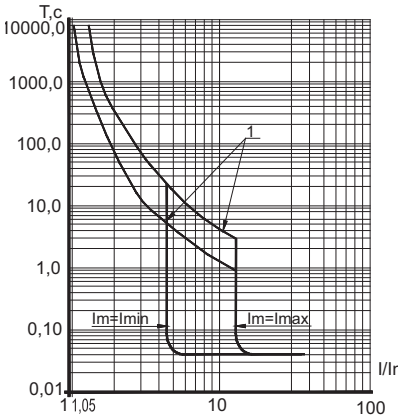
100 A



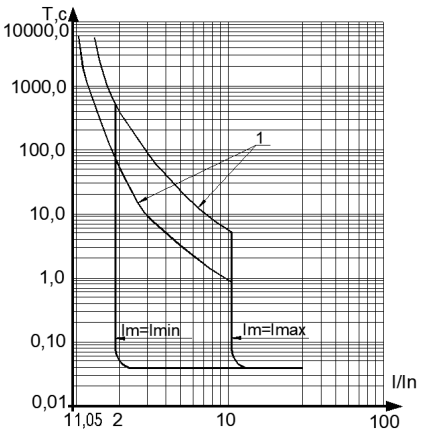
125 A



160, 200, 250 A



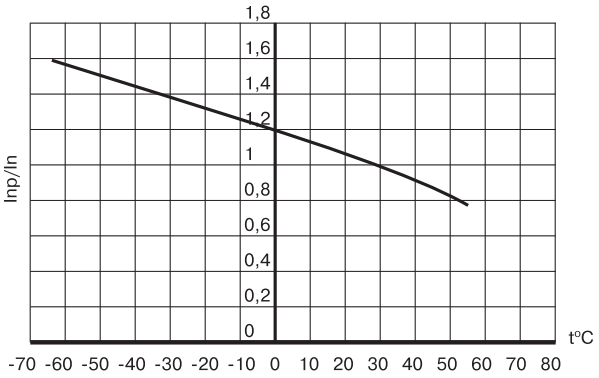
VA57-39



1 — working zone of an overcurrent thermal release, measured in cold state;
2 — working zone of an overcurrent thermal release, measured in hot state;
Im — electromagnetic release setpoint;
t,s — trip time;
I/In — is a multiple of the rated current.

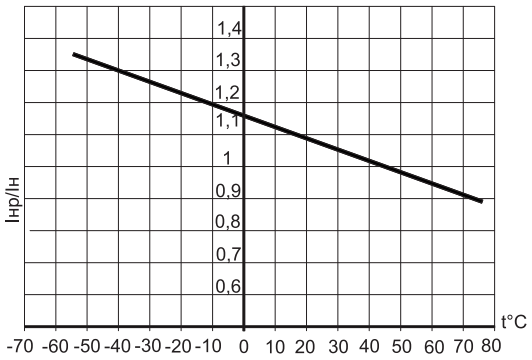
Dependence of the rated operating currents of VA57 thermal releases on the ambient temperature

For general purpose circuit breakers with RRR acceptance



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

For switches with PC acceptance



Circuit diagrams

Lead marking:
11-12; 31-32 — open contacts S2;
23-24; 43-44 — closing contacts S2;
51, 52, 53 — auxiliary alarm contacts for automatic shutdown;
C - D — K1 shunt trip;
E - F — zero or under-voltage release KV1 or KV2.
Color marking of the wire is allowed according to the table:

Alphanumeric	Color	
	Code	Wire color
C, D, E, F	B	Blue or light blue
11, 12	R	Red or pink
23, 24	Y	Yellow or orange
31, 32	C	White or colorless
43, 44	Bl	Black or purple
51	G	Green
52	Br	Brown
53	W	White

Pushbutton switch SB2 of the K1 shunt trip can be with double or single open circuit. The installation of the electrical circuit, indicated in the figure by the dash-dot line, the installation of the SB2 pushbutton switch (not included in the delivery set) to be provided by the customer.

Symbols used in diagrams:
A1-A4 — connector contacts;
K1 — shunt trip;
Kp — red or pink wire;
KV — zero voltage release or under-voltage release;
KV1 — zero voltage release;
KV2 — under-voltage release;
S — contacts of the auxiliary circuit of the circuit breaker;
S1 — auxiliary alarm contacts for automatic shutdown;
S2 — auxiliary contacts;
SB1 — push-button switch of the electromagnetic drive;
SB2 — push-button breaker of shunt trip;
SQ1, SQ2 — electromagnetic drive limit breakers;
U1 — supply voltage of shunt trip;
U2 — supply voltage of the electromagnetic drive;
U3 — supply voltage of zero or under-voltage release;
VD — semiconductor diode;
X1 — connector of the electromagnetic drive;
X2 — connector for withdrawable circuit breaker;
YA — electromagnetic drive;
YA1, YA2 — electromagnets.

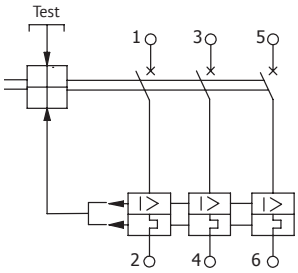
The diagrams with signaling contacts S1 are shown for the circuit breaker in the switching position «Auto off».

Position of auxiliary and signal contacts

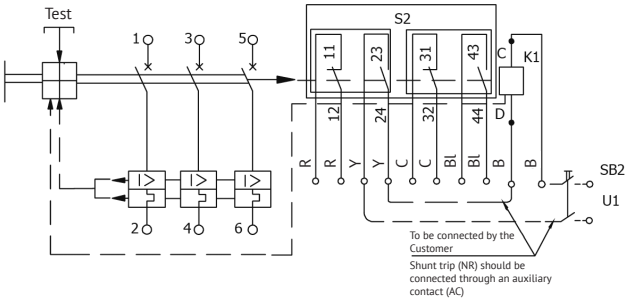
Contact		«On» state	«Disabled automatically» state	«Manual tripping» state
VA57				
S1	51-52	open	closed	open
S1	63-52	closed	open	open
S2	11-12	open	closed	closed
S2	23-24	closed	open	open
S2	31-32	open	closed	closed
S2	43-44	closed	open	open

VA57-31, 35, 39; VA57F35

Three-pole AC circuit breakers

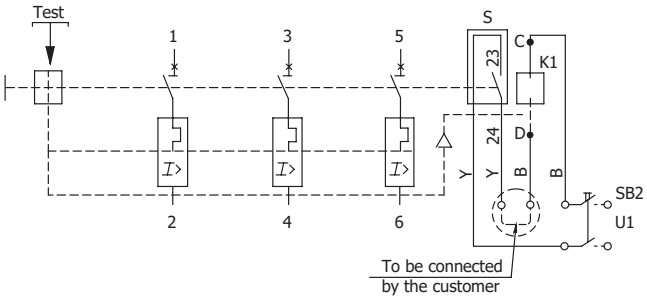


Three-pole AC circuit breakers with shunt trip and auxiliary contacts (except for VA57F35)



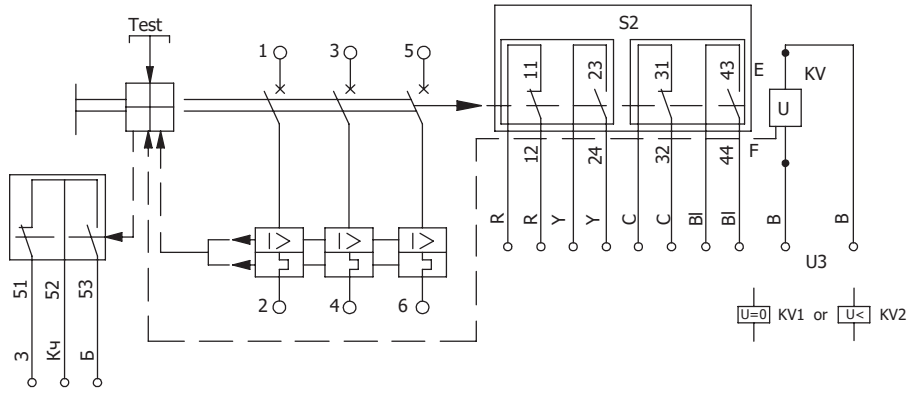
VA57-XXX-XX1210 (16)

AC circuit breakers of three-pole design with shunt trip without auxiliary contacts



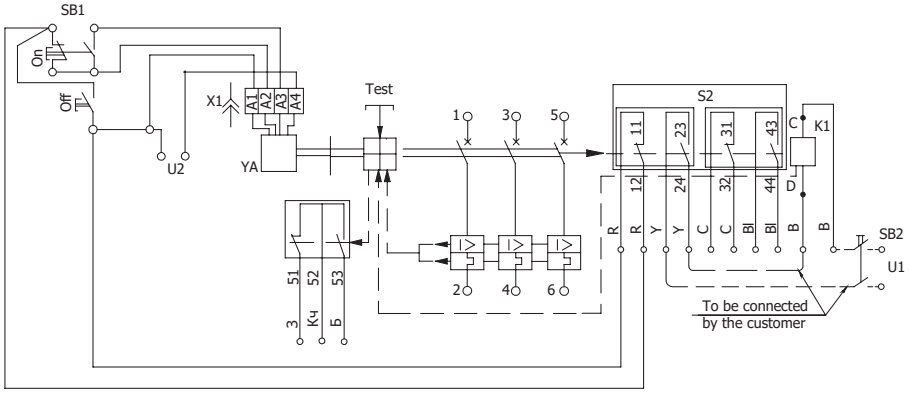
VA57-35, VA57-39

Miniature circuit breakers with under-voltage release or under-voltage release, automatic trip signaling auxiliary contacts and auxiliary contacts



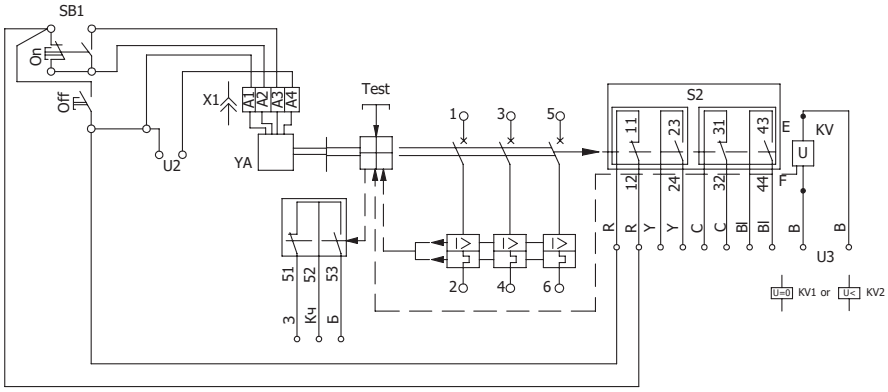
VA57-35-XX4730, VA57-39-XX4730

Diagram of fixed circuit breakers with electromagnetic drive, shunt trip, automatic trip signaling auxiliary contacts and auxiliary contacts



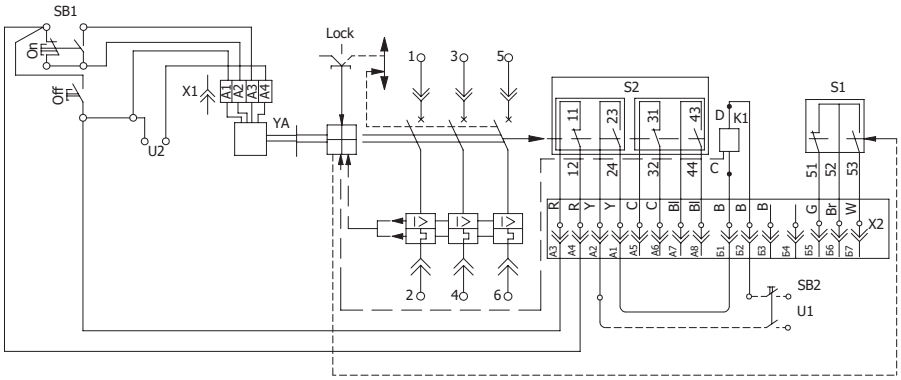
VA57-XX-XX54(56)30

Diagram of fixed circuit breakers with an electromagnetic drive, zero or under-voltage release, auxiliary contacts for signaling automatic tripping and auxiliary contacts



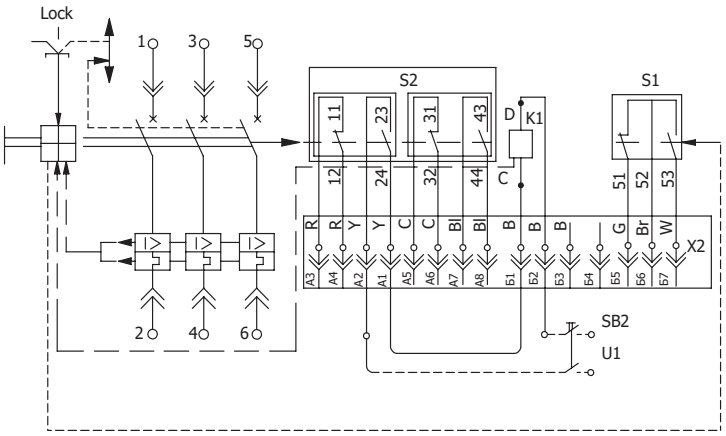
VA57-XX-XX4770

Diagram of withdrawable circuit breakers with shunt trip, auxiliary contacts, auxiliary contacts for signaling automatic shutdown and an electromagnetic drive



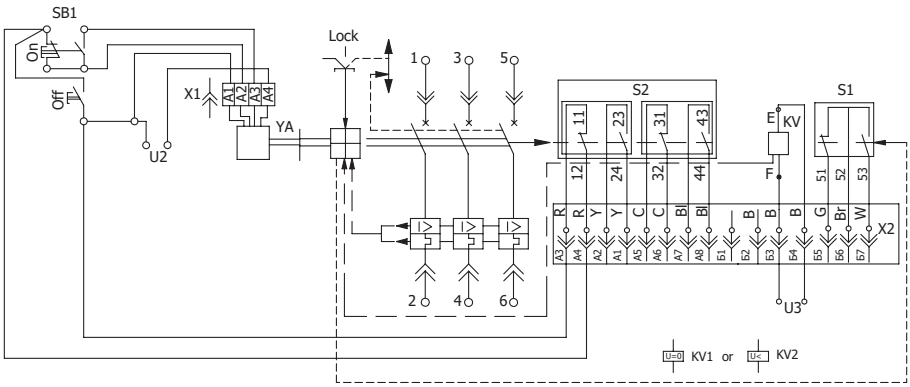
VA57-XX-XX4750

Diagram of withdrawable circuit breakers, with shunt trip, auxiliary contacts, auxiliary automatic shutdown alarm contacts



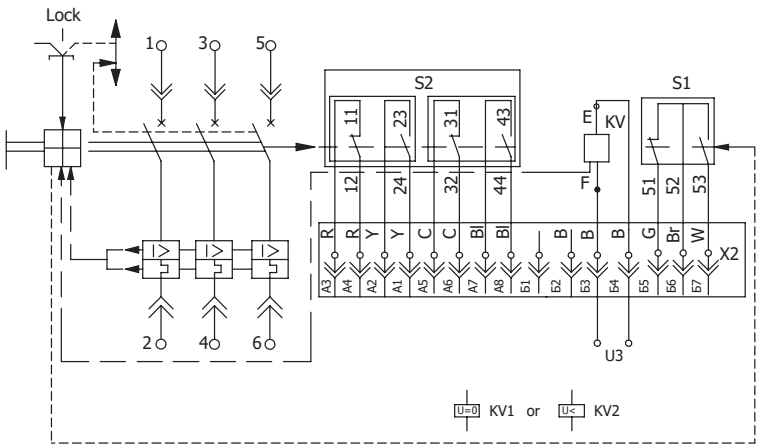
VA57-XX-XX54(56)70

Diagram of withdrawable circuit breakers, with zero or under-voltage release, auxiliary contacts for signaling automatic tripping, auxiliary contacts and an electromagnetic drive

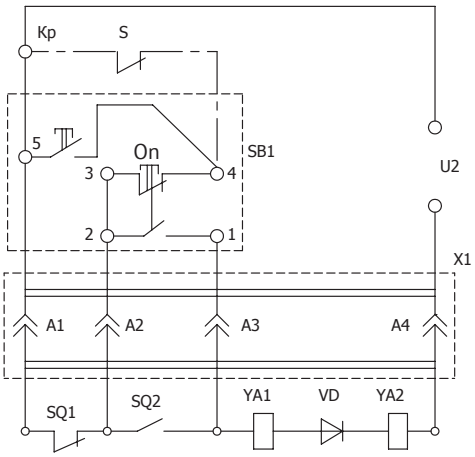


VA57-XX-XX54(56)50

Diagram of withdrawable circuit breakers, with zero or undervoltage release, auxiliary automatic shutdown signaling contacts, auxiliary contacts

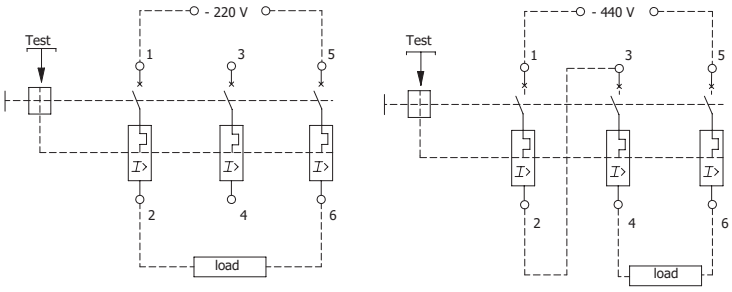


Solenoid drive circuit - AC solenoid drive



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

Connecting external conductors to the clamps of circuit breakers in DC circuits



Clamps 2-3 to be connected by the customer