

BA57 series molded case circuit breakers

Complies with the requirements of ГOCT P 50030.2 TP TC 004/2011 TP TC 001/2011



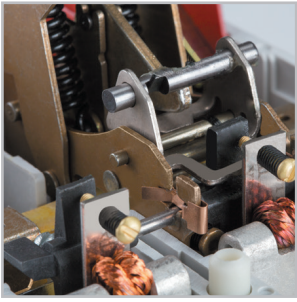
Automatic circuit breakers of the BA57 series are designed for operation in low-voltage switchgears of alternating current with voltage up to 690 V, frequency of 50 and 60 Hz and direct current with voltage up to 440 V. Circuit breakers of the BA57 series are designed to protect electrical installations from short-circuit currents and overloads, and are designed for infrequent operational switching on and off. 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.



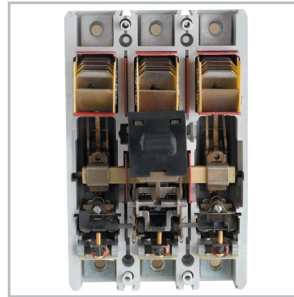
Benefits

- Implementation of any technical solutions
 - full range of nomenclature for operating currents from 12,5 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, modernize power supply systems (increase the load), adjust the selectivity of protection;
 - a wide range of additional devices, including the presence of a zero voltage release (ZVR).
- Confidence in reliable performance
 - the ability to carry a limited short-circuit current (exclusive current limitation);
 - availability of a margin of resistance to dynamic and thermal action of short-circuit currents;
 - guarantee of non-weldability of contacts in case of emergency short-circuit currents.
- Advanced applications
 - protection of electrical equipment of sea and river vessels, port infrastructure, offshore fixed platforms, floating drilling rigs, confirmed by RS and RRR type approval certificates;
 - NPP electrical equipment protection, confirmed by the NPP license;
 - the possibility of using in harsh operating conditions, climatic versions UHL - temperate and cold climate and OM - general climatic marine version.

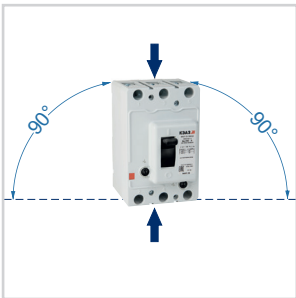
Distinctive features



Reinforced contact system with electrodynamic contact rejection.



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



Mount vertically or rotate right/left 90°. Top and bottom power supply.



Operating temperature from -60 to + 45°C.

Equipment



Fasteners for circuit breaker installation
(BA57-31, BA57-35, BA57Φ35)



Set of clamps for connecting copper busbars and conductors with cable lugs
(BA57-35, BA57Φ35)



Interpole barriers
(BA57-39)



Terminal cover
(BA57-31, BA57-35, BA57Φ35)



Fasteners for circuit breaker installation
(BA57-39)



Set of clamps for connecting copper busbars and conductors with cable lugs
(BA57-39)



Set of lead-over busbars
(BA57-39 800 A)

The structure of the symbol BA57-31, BA57-35, BA57Φ35, BA57-39

BA57 X₁X₂X₃ - X₄X₅X₆X₇X₈X₉ - X₁₀...A - X₁₁...-X₁₂...-X₁₃...-X₁₄...-X₁₅...-X₁₆...-KEAZ X₁₇...

BA57	- Circuit breaker series designation																		
X₁	- Separating mark (-) or letter designation Φ (for BA57Φ35)																		
X₂X₃	- Circuit breaker rated current designation: 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 according to the number of poles, voltage on alternating and direct current, combination of overcurrent releases in the protection zone:																		
	Designation designation	Number of poles	Number of protected poles	Availability of release				Availability of the circuit breaker											
				thermal	electromagnetic	BA57-31	BA57Φ35	BA57-35	BA57-39										
	33	3	3	-	+**	up to 690AC	-	up to 690AC											
	34			+**	+**	up to 400AC													
	36			-	+ (5...10In)*	-	-	up to 690AC											
	37			+ (0,8...1In)*	+**	-	-												
	38			+**	+ (5...10In)*	-	-												
	39			+ (0,8...1In)*	+ (5...10In)*	-	-												
	63	3	2	-	+**	-	-	up to 440DC	up to 440DC										
	64			+**	+**	-	-												
	83			-	+**	-	-	up to 220DC/690AC	-	up to 220DC/690AC	up to 220DC/690AC								
	84	2	2	+**	+**	up to 220DC/690AC	-	up to 220DC/690AC	up to 220DC/690AC										
* - adjustable setting of the release ** - fixed setting of the release																			
X₆X₇	- Designation fulfilment for the presence of additional assembly units *** and their combinations:																		
	the code	00	11**	12**	13	15	18**	23	25	45	46	47	49	52	54	56	62		
	HP	-	-	+	-	-	+	-	-	-	-	+	-	-	-	-	-	+	
	UVR	-	-	-	+	-	-	+	-	-	-	-	-	+	-	-	-	+	-
	ZVR	-	-	-	-	+	-	-	+	-	-	-	-	+	-	+	-	-	-
	with drive	-	2«z»+1«p»*	-	-	-	1«z»+1«p»*	2«z»+1«p»*	2«z»+1«p»*	-	2«z»+1«p»*	1«z»+1«p»*	-	-	2«z»+1«p»*	2«z»+1«p»*	-	-	-
	without drive	-	2«z»+2«p»	-	-	-	1«z»+2«p»	2«z»+2«p»	2«z»+2«p»	-	2«z»+2«p»	1«z»+2«p»	-	-	2«z»+2«p»	2«z»+2«p»	-	-	-
air-oxygen mixture	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	
* for circuit breakers with an electromagnetic drive are available to order only with auxiliary contacts ** according to the availability of additional assembly units BA57-31 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.																			
X₈X₉	Conventional designation of the type of drive, additional mechanisms and installation method of the circuit breaker:																		
	10 - manual drive, stationary design;																		
	16 - manual drive, stationary design, there is a device for locking the circuit breaker in the "Off" position (only BA57-35 and BA57-39);																		
	30 - electromagnetic drive, stationary version (only BA57-35 and BA57-39);																		
	40 - manual drive, withdrawable version (only BA57-39);																		
50 - withdrawable version with a manual remote drive for operating through the switchgear door (only for BA57-35, BA57-39)																			
51 - retractable design with a manual remote drive for operating through the switchgear door of reduced depth (only for BA57-39);																			
70 - electromagnetic drive, withdrawable design (only BA57-35 and BA57-39)																			
X₁₀...A	- Circuit breaker rated current																		
X₁₁...	- Setting of short-circuit releases (only for circuit breakers with fixed setting)																		
X₁₂...	- Rated voltage and type of current of the main circuit: up to 690AC - for AC circuit breakers; up to 440DC - for DC circuit breakers																		
X₁₃...	- Parameters of shunt release (HP), undervoltage release (UVR), zero voltage release (ZVR) (if any): rated voltage and current type																		
X₁₄...	- Parameters of the electromagnetic drive (ED) (if any): rated voltage and current type																		
X₁₅...	- Climatic designation and placement category: OM4 (only for BA57-31, BA57-35, BA57-39 with the acceptance of the Russian Maritime Register of Shipping); UHL 3																		
X₁₆...	- Acceptance type, delivery terms: REG - acceptance of the Russian Maritime Register of Shipping or the Russian River Register (except for BA57Φ35); NPP - for supplies to NPPs (except for BA57Φ35); in the absence - acceptance by quality control department																		
	KEAZ	- Trademark																	
X₁₇...	- (Plug-in, without panel) - plug-in version of the circuit breaker, without plug-in panel (only for BA57-35)																		

The BA57-3X-XXXX15 version has been removed from the assortment, instead it is the BA57-3X-XXXX10 version + Remote hand drive BA04-36/BA51- 35/BA57-35/BA57-39- UHL 3 (art. 110450).

Formulation of the order.



When ordering a circuit breaker, you must specify:

- 1) Name, standard performance;
- 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) Kind of current and rated voltage U_c of releases: independent (HP), minimum voltage (UVR) or zero voltage (ZVR) - if necessary;
- 6) Type of current and nominal voltage U_s of the electromagnetic drive (ED) - if necessary;
- 7) Climatic modification and category of placement;
- 8) Acceptance type, delivery conditions (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 BA57-35). - if necessary.

Supplied upon separate order:

- adapter for mounting the BA57-31 circuit breaker on a DIN-rail;
- terminal cover for BA57;
- terminal cover for front connection BA57-39;
- special clamps for connecting conductors for BA57-35, BA57Φ35, BA57-39;
- manual remote drive for BA57-35, BA57Φ35, BA57-39 (except for switches with an electromagnetic drive);
- set of expansion terminals BA57-35, BA57Φ35;
- set of interpole partitions BA57-35, BA57Φ35, BA57-39;
- set of adapter busbars for BA57-39;
- set of leads for rear connection for BA57-39;
- plug-in panel BA57-35;
- a set for a switch for installation on a plug-in panel BA57-35;
- insulating screens for plug-in panel BA57-35;
- plug for secondary circuits MSTB-2.5/13 for BA57;
- socket for secondary circuits UMSTBVK-2.5/13 for BA57.

Specifications

Parameter name	Parameter designation																						
Series																							
	BA57-31										BA57Φ35												
	BA57-31-X3					BA57-31-X4					BA57Φ35-34					BA57Φ35-34							
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 (Ue), V	up to 690 AC; 220 DC																						
Thermal release	is absent					fixed					fixed												
Setting of the electromagnetic release on alternating current, A	400	400					400	400	10 In														
	800						800	800															
	1200																						
Setting of the electromagnetic release on direct current, A	500	500					500	500	-														
	1000						1000	1000															
	1200						1200	1200															
Rated ultimate short-circuit breaking capacity (Icu), 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 (Ics)																							
% of Icu	50										100					75							
Rated short-circuit making capacity (Icm), 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																							
General, VO cycles	16000										10000												
Switching, VO cycles	10000										2500												
Dimensions	75x125x117										112,2x174,5x130												
Weight, kg	no more than 1,1										no more than 2,7												



The set point of the magnetic release in bold is the basic setting.

The voltage supply from the power source is possible both from the side of fixed contacts (terminals 1, 3, 5) and from the side of moving contacts (terminals 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) Circuit breaker BA57-31, 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 break and two make auxiliary contacts:
 «Automatic circuit breaker BA57-31-341110-100A-1200-690AC-UHL3-KEAZ»

2) Circuit breaker of BA57Φ35 type, 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:
 «Automatic switch BA57F35-340010-200A-2000-400AC-UHL3-KEAZ»

Parameter name	Parameter designation																			
Series	 																			
	BA57-35-X3			BA57-35-X4											BA57-35-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
Rated voltage (Ue), V	up to 690 AC; 440 DC																			
Thermal release	is absent			fixed											is absent					
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	100 125 320 400 630	125 160 400 500 630	160 250 500 630	250 320 630	*630 800 1250	*630 1000 1250	*630 800 1250 1600	*630 800 1000 1600 2000	*630 1000 1250 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	160 250 400 630	250 400 500 630	500 630	800 1250	800 1000 1250	1000 1250	800 1250 1600 2000	800 1000 1250 1600 2000 2500	1000 1250 1600 2000 2500	750 1000 1250 1600 2500	5...10In				
Rated ultimate short-circuit breaking capacity (Icu), 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												
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 (Ics)																				
% of Icu	100																			
Rated short-circuit making capacity (Icm), 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												
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																				
General, VO cycles	10000																			
Switching, VO cycles	2500																			
Dimensions	112,2x174,5x130																			
Weight, kg	no more than 2,7																			

* It is allowed to manufacture switches with a setting of 500 A for special order.
The setting of the electromagnetic release in bold is the basic setting.

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

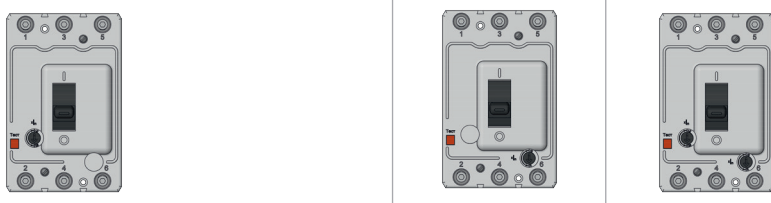
Examples of entries for circuit breakers when ordering and in documentation for other products:

1) Circuit breaker type BA57-35, 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 release for a voltage (Uc) 230 V AC, frequency 50, 60 Hz and 220 V DC, with one NC and one NC auxiliary contacts, electromagnetic drive for voltage 230 V AC with a frequency of 50, 60 Hz, plug-in version, without plug-in panel:

«Automatic switch BA57-35-341830-250A-2000-690AC-HP230AC/220DC-ПЭ230AC-UHL3-KEAZ (plug-in, without panel)»

2) Circuit breaker type BA57-35, 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 break and two make auxiliary contacts:

«Automatic switch BA57-35-641110-250A-1600-440DC-UHL3-KEAZ»

Parameter name	Parameter designation																								
Series																									
	BA57-35																								
	BA57-35-X7								BA57-35-X8				BA57-35-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 (Ue), 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	80	100	100	125	125	160	160	160	*630	*630	*630	*630	*630	*750									5...10In	5...10In
Setting of the electromagnetic release on direct current, A	125	100		125	160	160	250	250	250	800	800	1000	800	800	1000	1250	1000	1000	1250	1000	1250	1000	1250	5...10In	5...10In
Rated ultimate short-circuit breaking capacity (Icu), kA	at 400 AC																								
at 400 AC	3,5	6	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		80	100	110	
at 440 DC	5	6	15		35	40	60	80			100	110		80	100	110		80	100	110		80	100	110	
Rated service breaking capacity (Ics)	% of Icu																								
	100																								
Rated short-circuit making capacity (Icm), kA	at 400 AC																								
at 400 AC	5	9	17		30	40	52,5				92,4			92,4				92,4				92,4			
at 690 AC	5	8,2	15,3		24		30				36			36				36				36			
at 220 DC	5	6	15		35	40	60	80			100	110		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		80	100	110	
Wear resistance	General, VO cycles																								
	10000																								
	Switching, VO cycles																								
	2500																								
Dimensions	112,2x174,5x130																								
Weight, kg	no more than 2,7																								

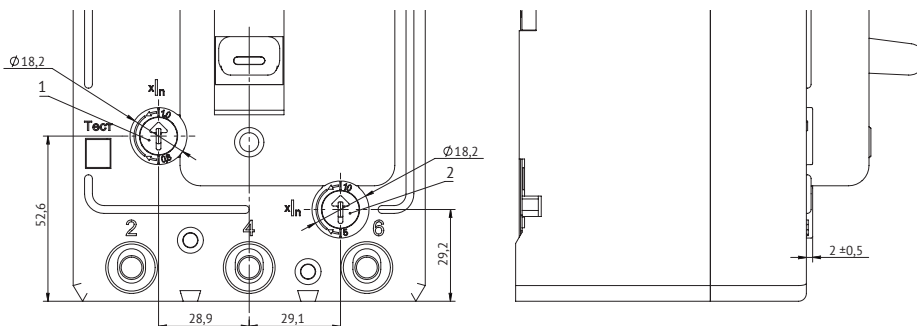
It is allowed to manufacture switches with a setting of 500 A according to spec. order.
The setting of the electromagnetic release in bold is the basic setting.

Examples of entries for circuit breakers when ordering and in documentation for other products:

1) Circuit breaker type BA57-35, 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 release for voltage (Uc) 230 VAC, frequency 50, 60 Hz and 220 VDC, with two NC and one NC auxiliary contacts and auxiliary contacts for signaling automatic shutdown:
«Automatic switch BA57-35-374710-63A-630-690AC-HP230AC/220DC-UHL3»


2) Circuit breaker of type BA57-35, 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 release for voltage (Uc) 230 VAC, frequency 50, 60 Hz and 220 VDC, with two NC and one NC auxiliary contacts:
«Automatic switch BA57-35-391810-160A-690AC-HP230AC/ 220DC-UHL3-KEAZ»

Circuit breakers with adjustable overcurrent releases have current setting regulators.



Breaker with adjustable overcurrent releases.
1 - regulator of current settings of maximum overload current releases;
2 - regulator of current settings of overcurrent releases.

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

Parameter name	Parameter designation									
Series										
	BA57-39									
	BA57-39-X3			BA57-39-X4						
Rated current (In), A	400	630	800	250	320	400	500	630	800	
Rated voltage (Ue), V	up to 690 AC; 440 DC									
Thermal release	is absent			fixed						
Setting of the electromagnetic release on alternating current, A	1000	1000 ⁽²⁾							1250 ⁽²⁾	
	1250	1250 ⁽²⁾							1600	2500
	1600	1600	2500	1000	1000	1000 ⁽¹⁾	1000 ⁽¹⁾	1000 ⁽¹⁾	2000	3200
	2000	2000	3200	1250	1250	1250	1600	1600	2500	4000
	2500	2500	4000	1600	1600	2000	2000	2000	3200	5000
	3200	3200	5000	2500	2500	2500	2500	2500	4000	6300
	4000	4000	6300	2500	3200	4000	5000	5000	6300	6300
Setting of the electromagnetic release on direct current, A	1250	1250 ⁽²⁾							2000	2500
	1600	1600 ⁽²⁾			1250	1600	1600	2000	2500	3200
	2000	2000	3200	1250	1600	2000	2000	2500	3200	4000
	2500	2500	4000	1600	2000	2500	2500	2500	4000	5000
	3200	3200	5000	2500	2500	2500	2500	2500	4000	5000
	4000	4000	5000	2500	3200	4000	5000	5000	5000	5000
	5000	5000	6300	2500	3200	4000	5000	5000	5000	5000
Rated ultimate short-circuit breaking capacity (Icu), 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 (Ics)										
% of Icu	100									
Rated short-circuit making capacity (Icm), 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										
General, VO cycles	8000 (up to 630A) 5000 (up to 800A)									
Switching, VO cycles	1500									
Dimensions	225x224x154									
Weight, kg	no more than 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 ($I_R = \max 0,9I_n$).

An example of recording circuit breakers when ordering and in the documentation of other products:

Circuit breaker BA57-39 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 release for a voltage (Uc) of 230 VAC, frequencies of 50, 60 Hz and 220 VDC, with one NC and one NC auxiliary contacts, electromagnetic drive for 400 V AC with a frequency of 50, 60 Hz:

«Automatic circuit breaker BA57-39-341830-400A-4000-690AC-HP230AC/ 220DC-ED400AC-UHL3-KEAZ»

Item numbers

Appearance	Name	Number of poles	Rated current, A	Rated voltage, V	Rated ultimate short-circuit breaking capacity at 400 V AC Icu, kA	Article
	BA57-31-340010-16A-400-690AC-UHL3	3	16	690	4	108430
	BA57-31-340010-20A-400-690AC-UHL3	3	20	690	6	108431
	BA57-31-340010-25A-400-690AC-UHL3	3	25	690	25	108432
	BA57-31-340010-31,5A-400-690AC-UHL3	3	31,5	690	40	108433
	BA57-31-340010-40A-400-690AC-UHL3	3	40	690	40	108434
	BA57-31-340010-50A-800-690AC-UHL3	3	50	690	40	108439
	BA57-31-340010-63A-800-690AC-UHL3	3	63	690	40	108440
	BA57-31-340010-80A-1200-690AC-UHL3	3	80	690	40	108428
	BA57-31-340010-100A-1200-690AC-UHL3	3	100	690	40	108427
	BA57-35-340010-16A-160-690AC-UHL3	3	16	690	3,5	108581
	BA57-35-340010-20A-200-690AC-UHL3	3	20	690	6	108591
	BA57-35-340010-25A-250-690AC-UHL3	3	25	690	10	108596
	BA57-35-340010-31,5A-320-690AC-UHL3	3	31,5	690	10	108604
	BA57-35-340010-40A-400-690AC-UHL3	3	40	690	15	108606
	BA57-35-340010-50A-500-690AC-UHL3	3	50	690	15	108613
	BA57-35-340010-63A-800-690AC-UHL3	3	63	690	20	108625
	BA57-35-340010-80A-800-690AC-UHL3	3	80	690	25	108626
	BA57-35-340010-100A-1000-690AC-UHL3	3	100	690	30	108566
	BA57-35-340010-125A-1250-690AC-UHL3	3	125	690	35	108576
	BA57-35-340010-160A-1600-690AC-UHL3	3	160	690	35	108586
	BA57-35-340010-200A-2000-690AC-UHL3	3	200	690	40	108594
	BA57-35-340010-250A-2500-690AC-UHL3	3	250	690	40	108600
		BA57-35-370010-16A-160-690AC-UHL3	3	16	690	3,5
BA57-35-370010-25A-250-690AC-UHL3		3	25	690	10	293570
BA57-35-370010-31,5A-320-690AC-UHL3		3	32	690	10	293565
BA57-35-370010-40A-400-690AC-UHL3		3	40	690	15	293564
BA57-35-370010-63A-630-690AC-UHL3		3	63	690	20	293563
BA57-35-370010-80A-800-690AC-UHL3		3	80	690	25	296378
	BA57-35-390010-100A-690AC-UHL3	3	100	690	44	293562
	BA57-35-390010-125A-690AC-UHL3	3	125	690	44	296379
	BA57-35-390010-160A-690AC-UHL3	3	160	690	44	293561
	BA57-35-390010-200A-690AC-UHL3	3	200	690	44	296380
	BA57-35-390010-250A-690AC-UHL3	3	250	690	44	293548
	BA57Φ35-340010-16A-160-400AC-UHL3	3	16	400	3,5	109301
	BA57Φ35-340010-20A-200-400AC-UHL3	3	20	400	6	109311
	BA57Φ35-340010-25A-250-400AC-UHL3	3	25	400	10	109315
	BA57Φ35-340010-31,5A-315-400AC-UHL3	3	31,5	400	10	151418
	BA57Φ35-340010-40A-400-400AC-UHL3	3	40	400	10	109325
	BA57Φ35-340010-50A-500-400AC-UHL3	3	50	400	10	109332
	BA57Φ35-340010-63A-630-400AC-UHL3	3	63	400	15	151417
	BA57Φ35-340010-80A-800-400AC-UHL3	3	80	400	15	109344
	BA57Φ35-340010-100A-1000-400AC-UHL3	3	100	400	15	109286
	BA57Φ35-340010-125A-1250-400AC-UHL3	3	125	400	15	109296
	BA57Φ35-340010-160A-1600-400AC-UHL3	3	160	400	15	109307
	BA57Φ35-340010-200A-2000-400AC-UHL3	3	200	400	15	109314
	BA57Φ35-340010-250A-2500-400AC-UHL3	3	250	400	15	109319
	BA57-39-340010-250A-2500-690AC-UHL3	3	250	690	40	109876
	BA57-39-340010-320A-3200-690AC-UHL3	3	320	690	40	109881
	BA57-39-340010-400A-4000-690AC-UHL3	3	400	690	40	109883
	BA57-39-340010-500A-5000-690AC-UHL3	3	500	690	40	109885
	BA57-39-340010-630A-5000-690AC-UHL3	3	630	690	40	109886
	BA57-39-340010-800A-5000-690AC-UHL3	3	800	690	40	223012

You can find a complete list of all versions of BA57 circuit breakers on the website www.keaz.ru

Contents of delivery

Name	BA57-31	BA57-35	BA57-35 retractable design	BA57Φ35	BA57-39	BA57-39 retractable design
Circuit breaker series BA57	+	+	+	+	+	+
Fasteners for circuit breaker installation	+	+	+	+	+	+
Set of clamps for connecting copper busbars and conductors with cable lugs	+	+	+	+	+	+
Interpole partitions	-	-	-	-	+	-
Terminal cover	+	+	-	+	-	-
Key for moving the circuit breakers - 2 pcs.	-	-	+	-	-	-
Key for locking the handle (with manual remote control)	-	-	+	-	-	+
Set of adapter bars - 6 pcs.	-	-	-	-	+	-
Operation manual (combined with the passport)	+	+	+	+	+	+

Additional devices BA57-31, BA57-35, BA57-39

Shunt trip HP

The HP shunt trip will trip the closed circuit breaker when AC or DC voltage is applied to the release coil terminals. 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 release is short-time. In the BA57-31, BA57-35, BA57-39 devices, the shunt release is connected via add. contact. The shunt release is installed in circuit breakers of the BA57-31, BA57- 35, BA57-39 series only at the factory.

Specifications

Operating voltage U_c	110 V, 50Hz 230 V, 50Hz 400 V, 50Hz 24 V DC (only BA57-35, BA57-39) 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

Releases of zero (ZVR) and minimum (UVR) voltage

ZVR

- provides disconnection of the closed circuit breaker without time delay at voltages at the terminals of its coil within 45-10% of the nominal;
- does not turn off the closed switch when the voltage at the terminals of its coil is higher than 55% of the nominal;
- does not prevent the circuit breaker from turning on when the voltage at the terminals 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 BA57-31.

UVR

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

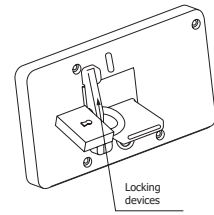
Zero and undervoltage releases are installed in circuit breakers of the BA57-35, BA57-39 series only at the factory.

Specifications

Current type	AC				DC	
	24	110	230	400	110	220
Operating voltage U_e , V						
Switch-on voltage range	$>0,85U_e$					
Cut-off voltage	$<0,7U_e$					
Power consumption	10 V*A				10 W	

BA57-35, 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 BA57-35 and BA57-39 switches only at the factory.



Auxiliary contacts (AC)

Auxiliary contacts are designed to signal the switching position 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 (U_i), V: 400.

Conventional thermal current (I_{the}), 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 operational current, A	Circuit power factor, $\cos\phi$	Rated operating voltage, V	Rated operational 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 (maximum, HP, UVR, ZVR), 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 (ED)

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 switch is an executive mechanism of any protection system (device for automatic input of backup power ATS, etc.). The electromagnetic drive on the BA57-35 and BA57-39 switches is installed only at the factory.

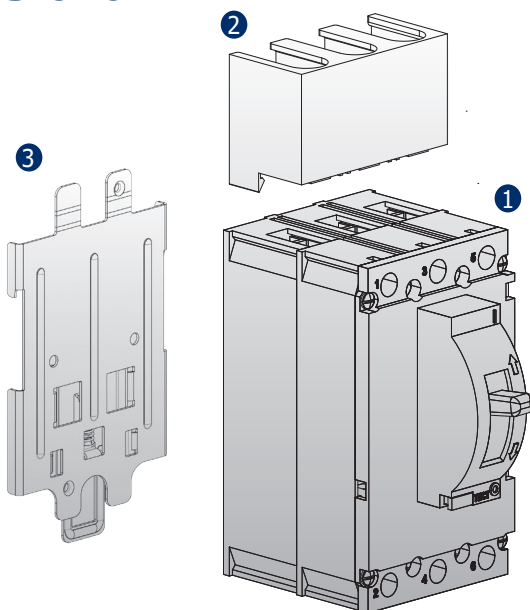
Except BA57-31.

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, V
Alternating current with a frequency of 50 and 60 Hz	230, 400	1000	0,85-1,1

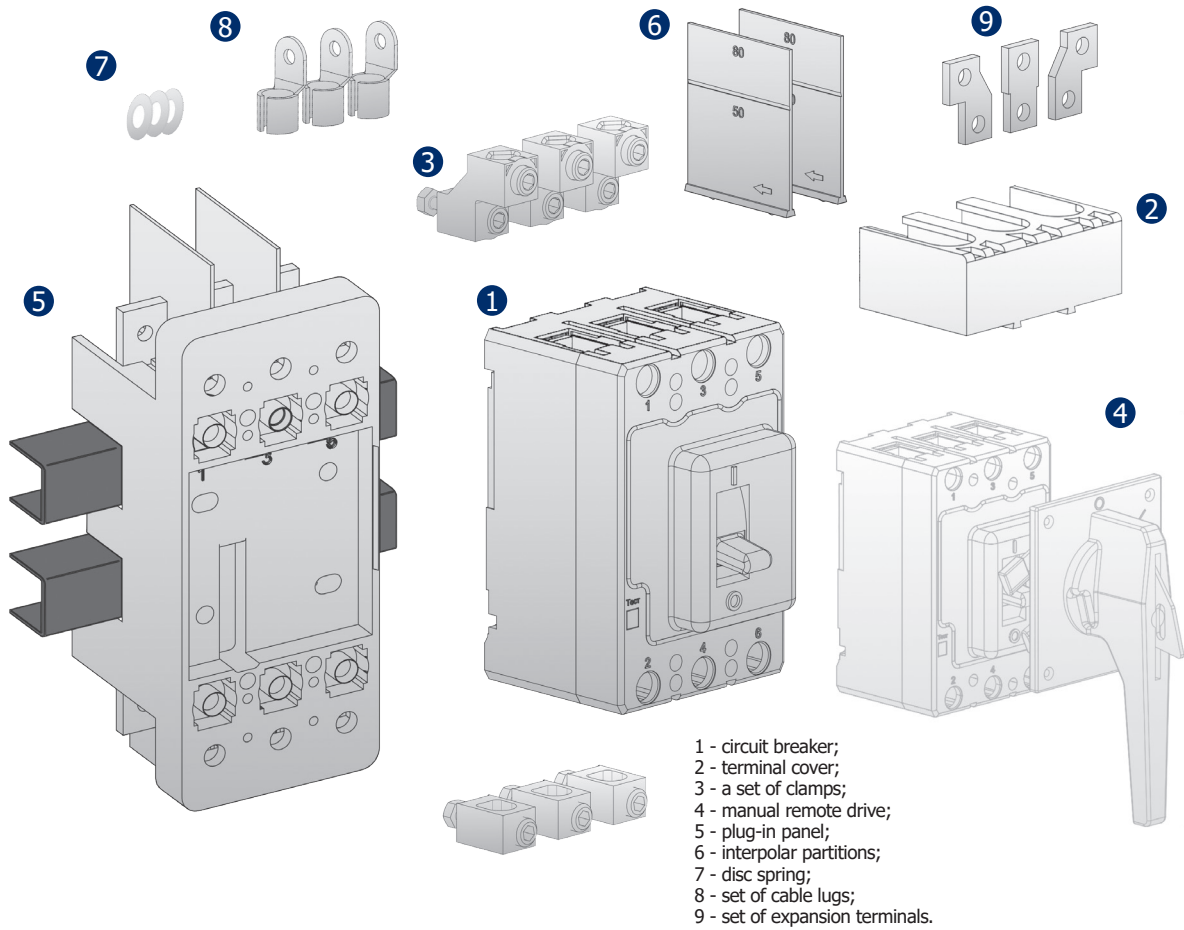
Optional accessories

BA57-31

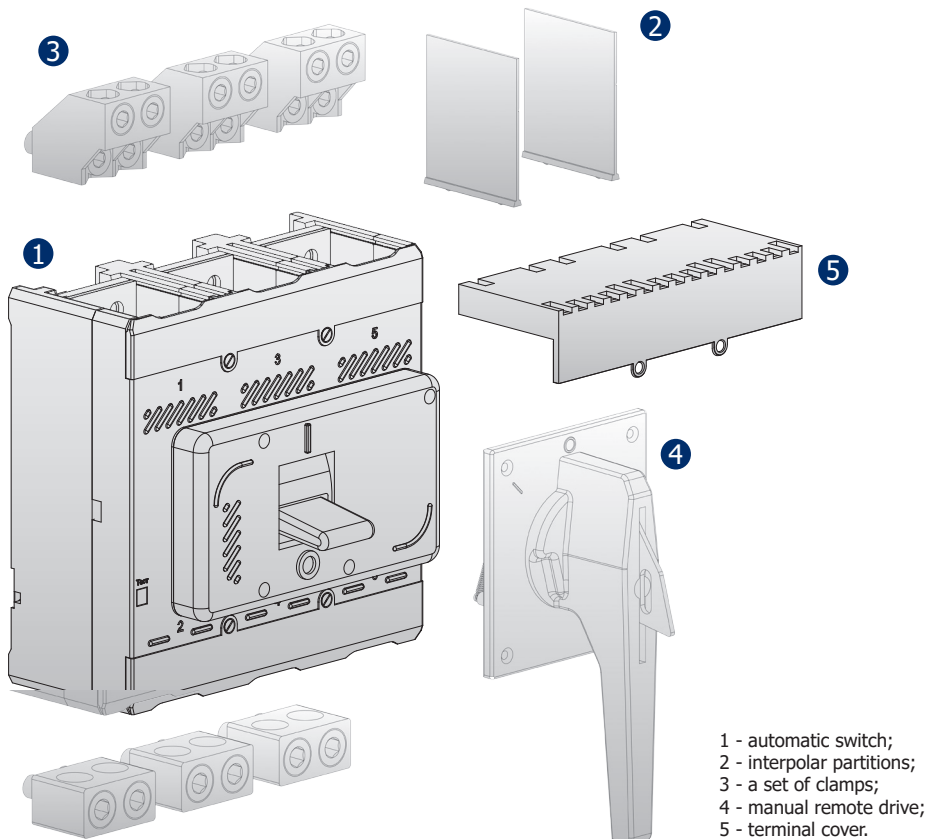


- 1 - circuit breaker;
- 2 - terminal cover;
- 3 - DIN-rail adapter.

BA57-35

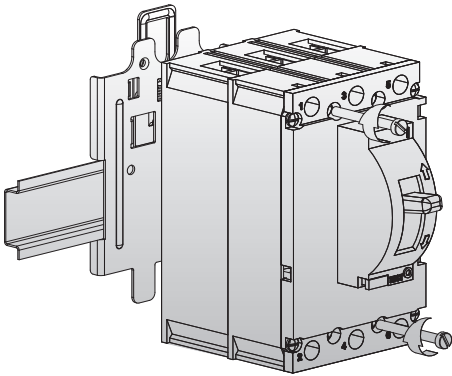


BA57-39



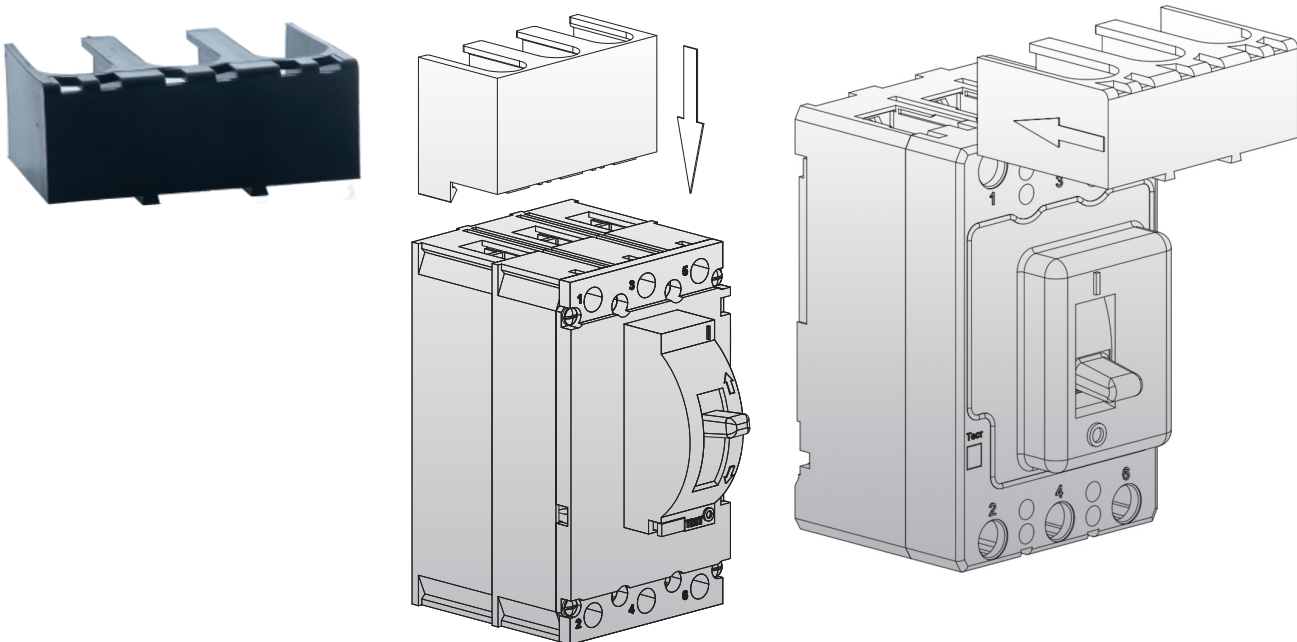
Adapter for DIN-rail BA57-31

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



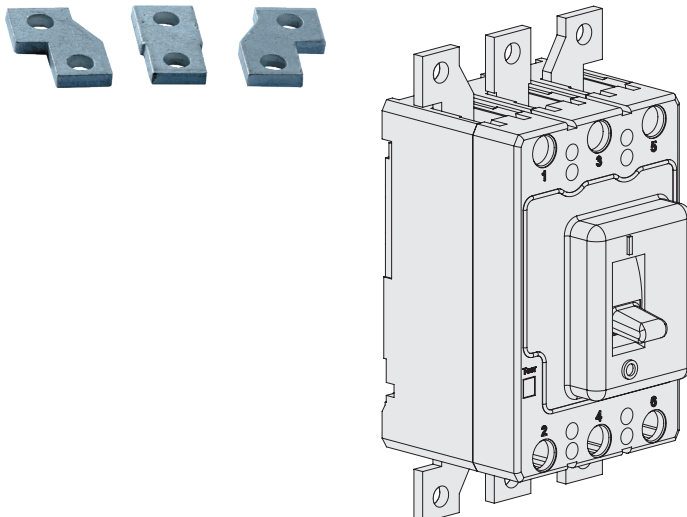
Terminal cover BA57-31 and BA57-35

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



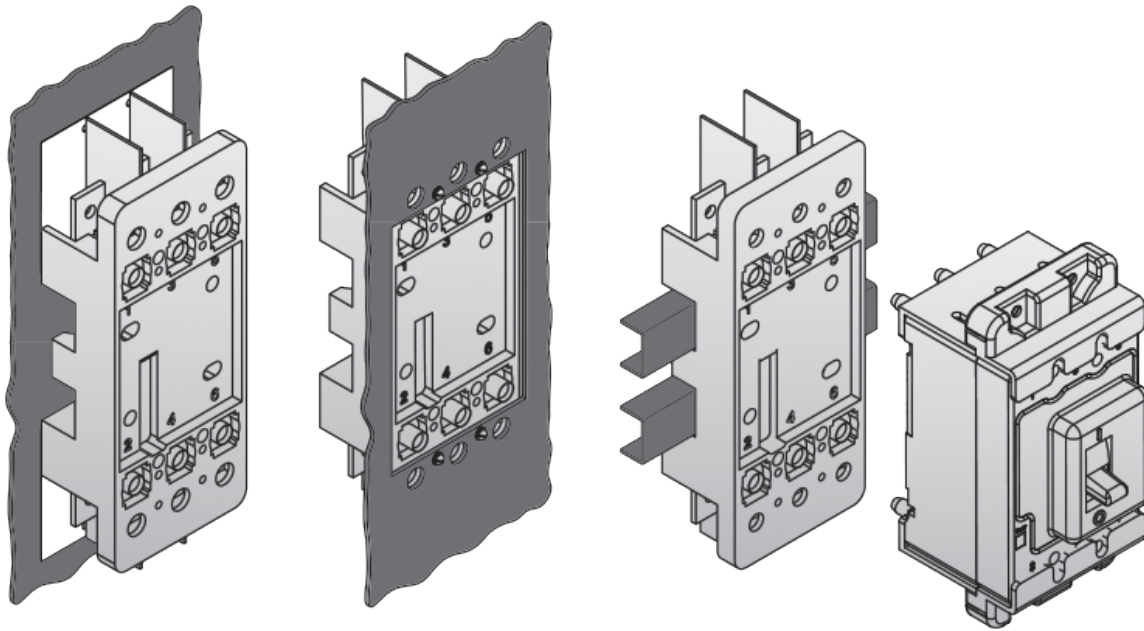
Set of expansion leads BA57-35

Designed to increase the pole-to-pole distance.



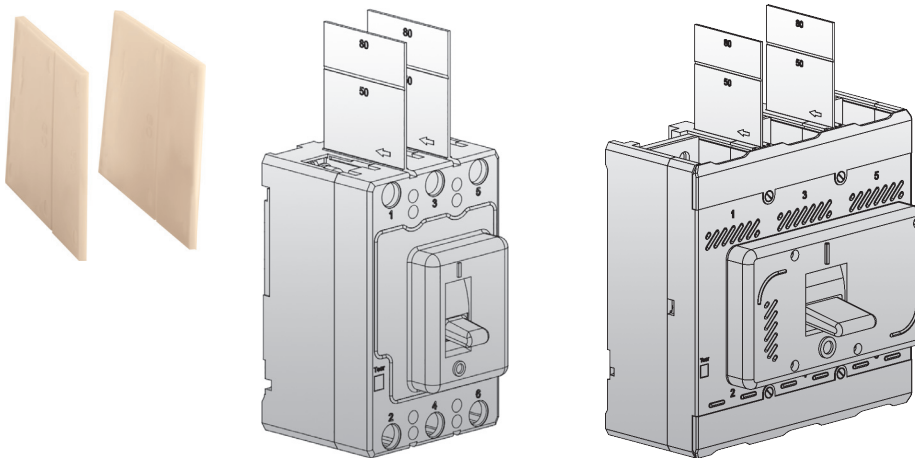
Plug-in panel for BA57-35

The plug-in panel is used only in conjunction with plug-in switches.



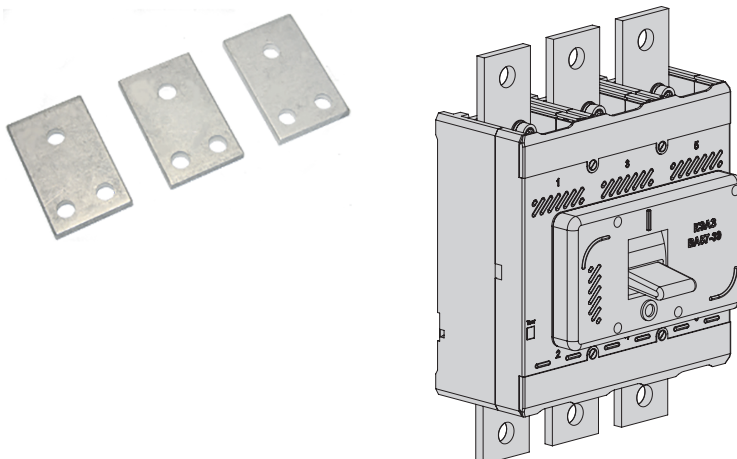
Interpole partitions BA57-35 and BA57-39

Designed to provide more reliable isolation between phases. Installed by the consumer independently. Can be used in conjunction with clamp sets.



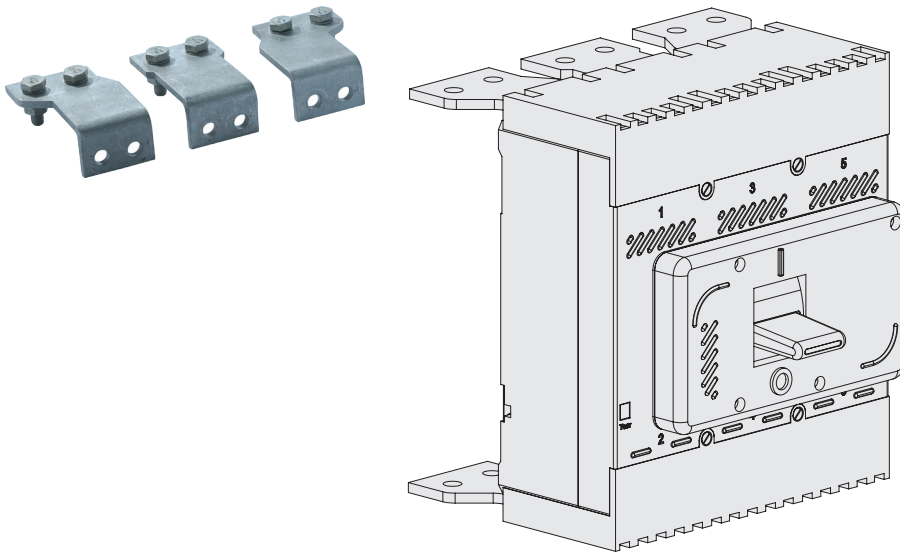
Set of adapter rails BA57-39

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



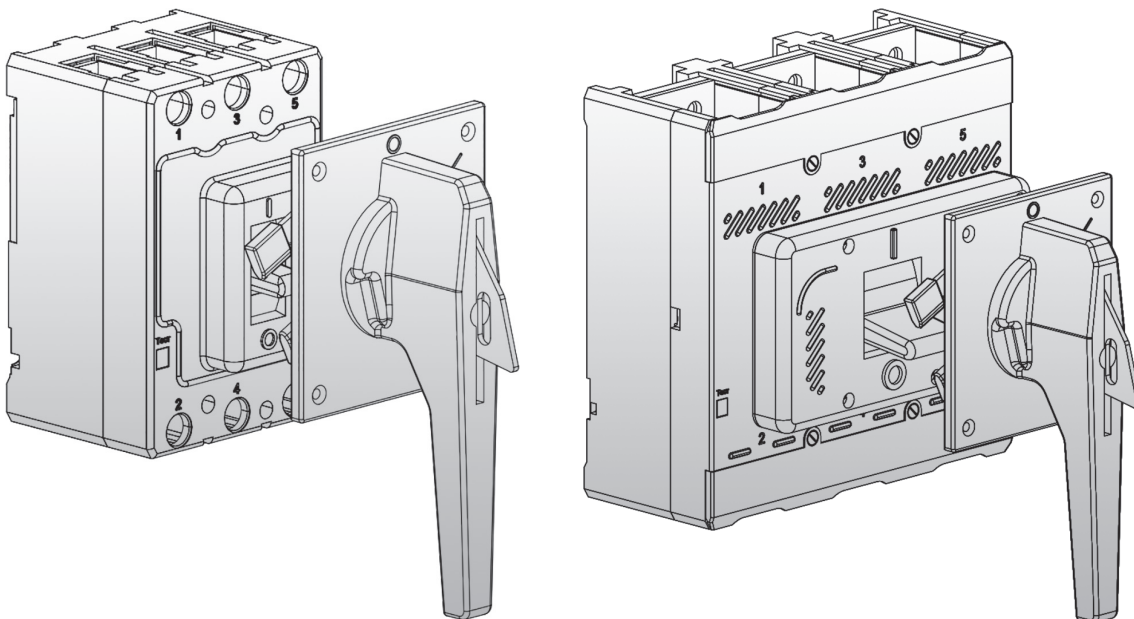
Set of leads for rear connection BA57-39

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



Manual remote actuator BA57-35, BA57-39

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

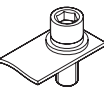
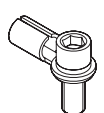
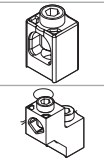
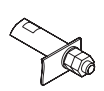


References for ordering additional accessories

Name	Article
Adapter for DIN-rail BA57-31-UHL3-KEAZ	110350
Terminal cover BA57-31-UHL3-KEAZ	110426
Terminal cover BA57-35/BA04-36/BA51-35-UHL3-KEAZ	110427
Terminal cover BA57-39/BA51-39-UHL3-KEAZ	261522
Terminal cover for front connection BA57-39/BA51-39-UHL3	274931
Set of expansion leads BA04-36/BA51-35/BA57-35- UHL3-KEAZ	110372
Set of adapter buses BA57-39-UHL3-KEAZ (number of busbars 3 pcs.)	225574
Set of leads for rear connection BA57-39-UHL3-KEAZ (number of leads 3 pcs.)	217455
Remote manual actuator RMA-BA04-36/BA51-35/BA57-35/BA57-39-UHL3-KEAZ	110450
Plug-in panel BA57-35-UHL3	256533
A set for a switch for installation on a plug-in panel BA57-35-UHL3-KEAZ	266919
Insulating screens for plug-in panel BA57-35	256218
Plug for secondary circuits MSTB-2.5/13-OptiMat/BA57-UHL3	273632
Socket for secondary circuits UMSTBVK-2.5/13-OptiMat/BA57-UHL3	273633

Clamp kit

BA57-35, BA57Φ35

Ways to connect conductors		Ways of connecting conductors to the terminals of automatic switches 1, 3, 5									
		Front attachment							Rear attachment		
		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	
Front attachment		Cu	1 included				22/27 article 110394	8/10 article 110410	34	39	
		Al		2 article 110392			23/28 article 110395	9/11 article 110411	35	40	
		70 mm			3 article 110400			24/29 article 110396	16/19 article 110389	36	41
		95 mm				4 article 110403		25/30 article 110397	17/20 article 110390	37	42
		120 mm					5 article 110406	26/31 article 110398	18/21 article 110391	38	43
		185 mm	22/27 article 110394	23/28 article 110395	24/29 article 110396	25/30 article 110397	26/31 article 110398	6 article 110408	32/33 article 110401	44	45
2x95 mm		8/10 article 110410	9/11 article 110411	16/19 article 110389	17/20 article 110390	18/21 article 110391	32/33 article 110401	7 article 110409	46	47	
Rear connection		Cu	34	35	36	37	38	44	46	12 article 110383	
		Al/Cu	35/39	40	41	42	43	45	47	13 article 110385	

Withdrawable design

Designed for quick replacement of a circuit breaker and ensuring visible rupture of live parts. The withdrawable version is equipped with interlocks to prevent an attempt to replace the circuit breaker without putting it in the "Off" position.

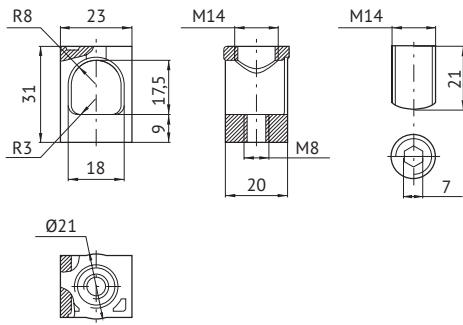
Clamp sets for withdrawable circuit breakers with M8 bolts:

- № 14 - for connection with copper buses (included in the circuit breaker);
- № 15 - for connection with aluminum busbars (supplied by separate order).

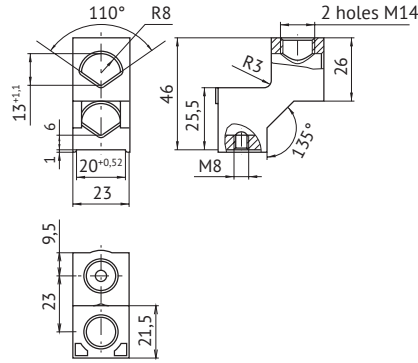
Connection options:

- copper and aluminum wires - max section 185 mm²;
- cables - max. section 185 mm²;
- busbars - max. section 4x30 mm² or 6x20 mm²;
- tips - max. diameter 17,5 mm².

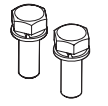
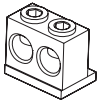
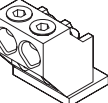
Clamp for connecting cables up to 185 mm²



Clamp for connecting two cables up to 95 mm²



BA57-39

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

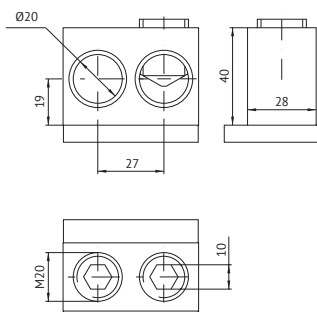
Withdrawable design

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

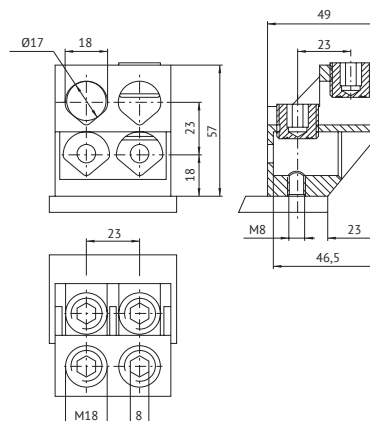
Connection options:

- 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

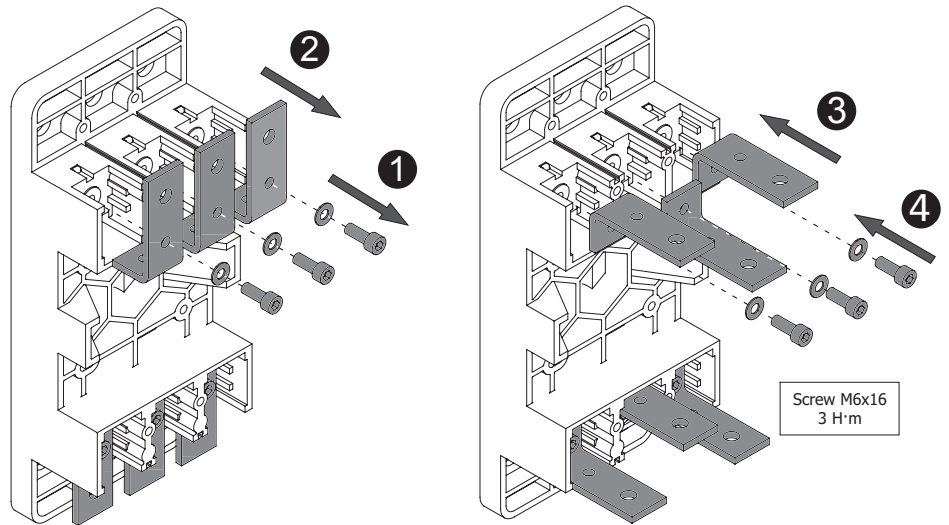


Clamp for front connection of four cables up to 120 mm²

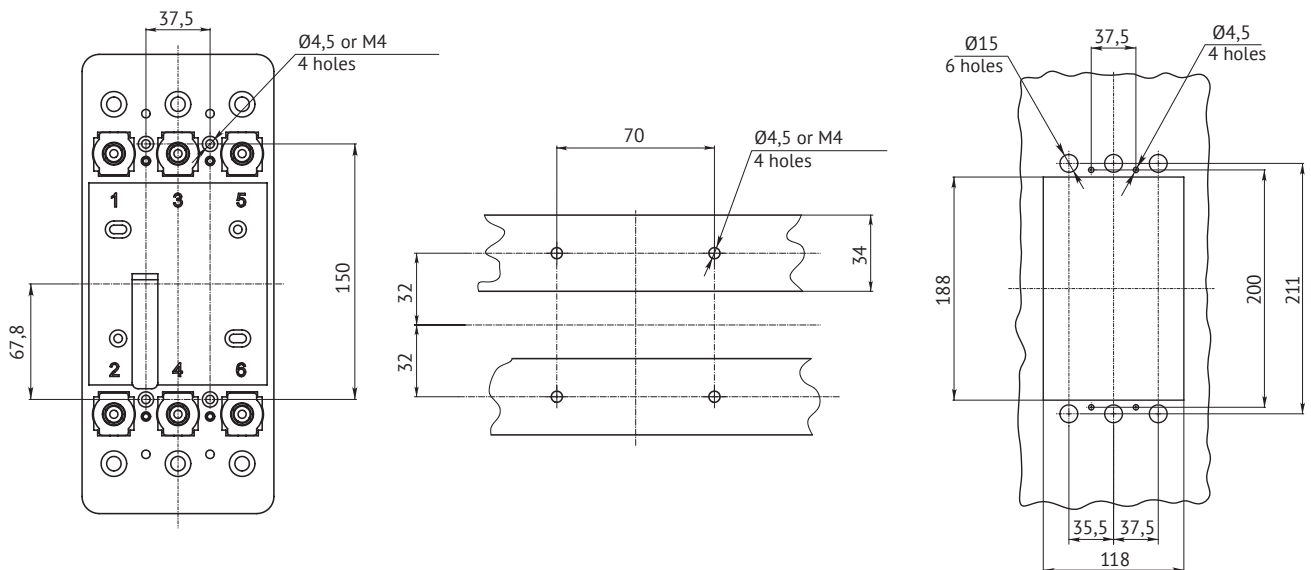


Installation of the plug-in panel BA57-35

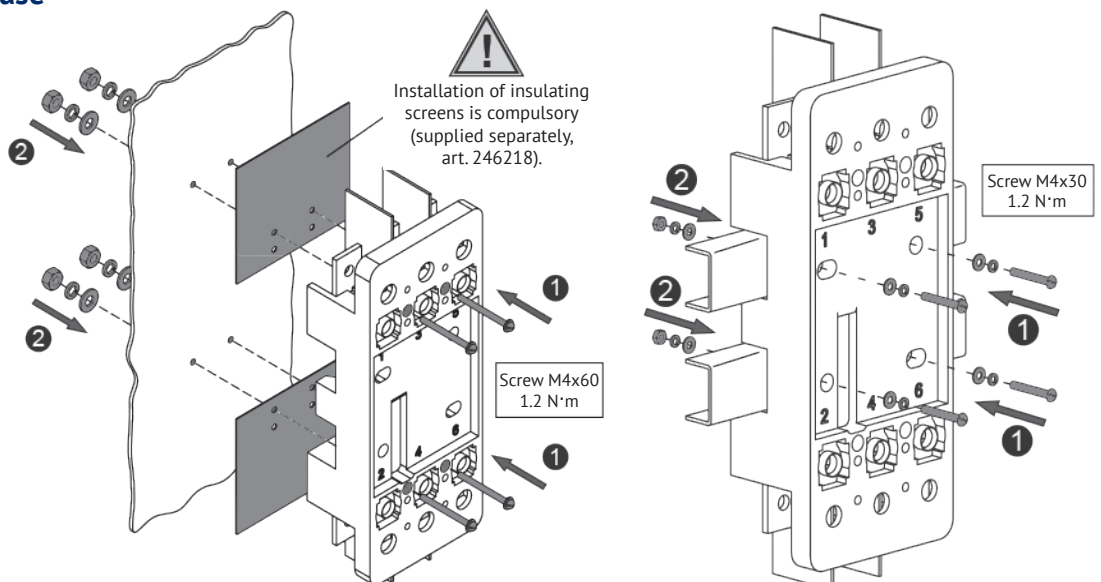
Connecting leads

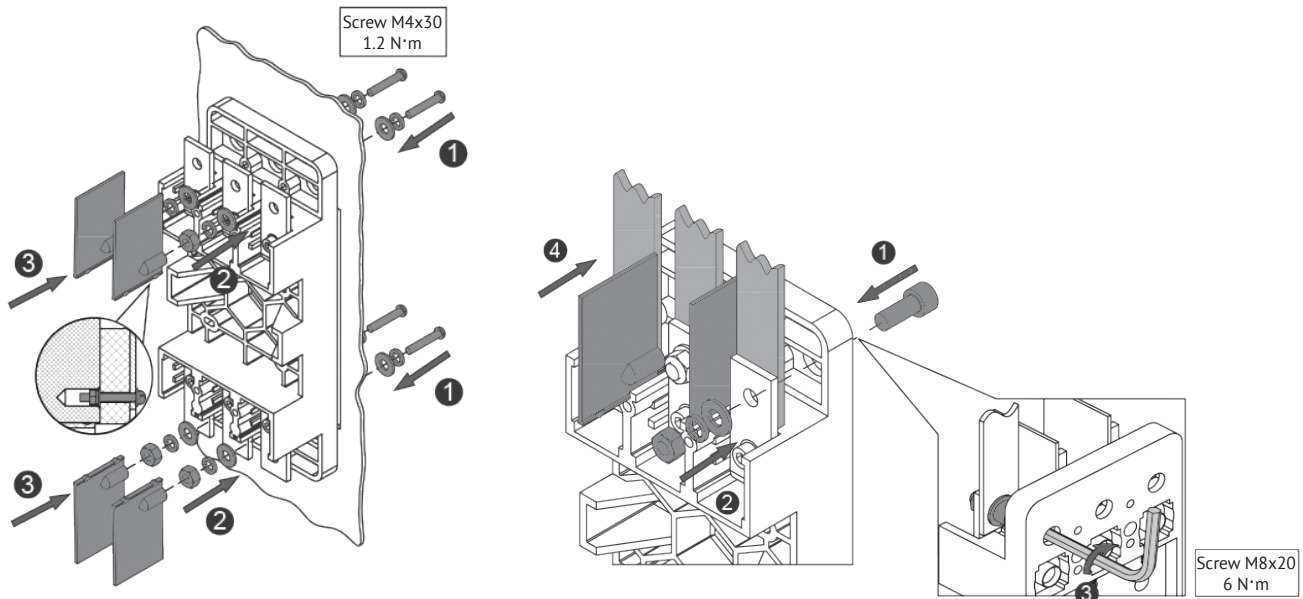


Hole locations for base installation

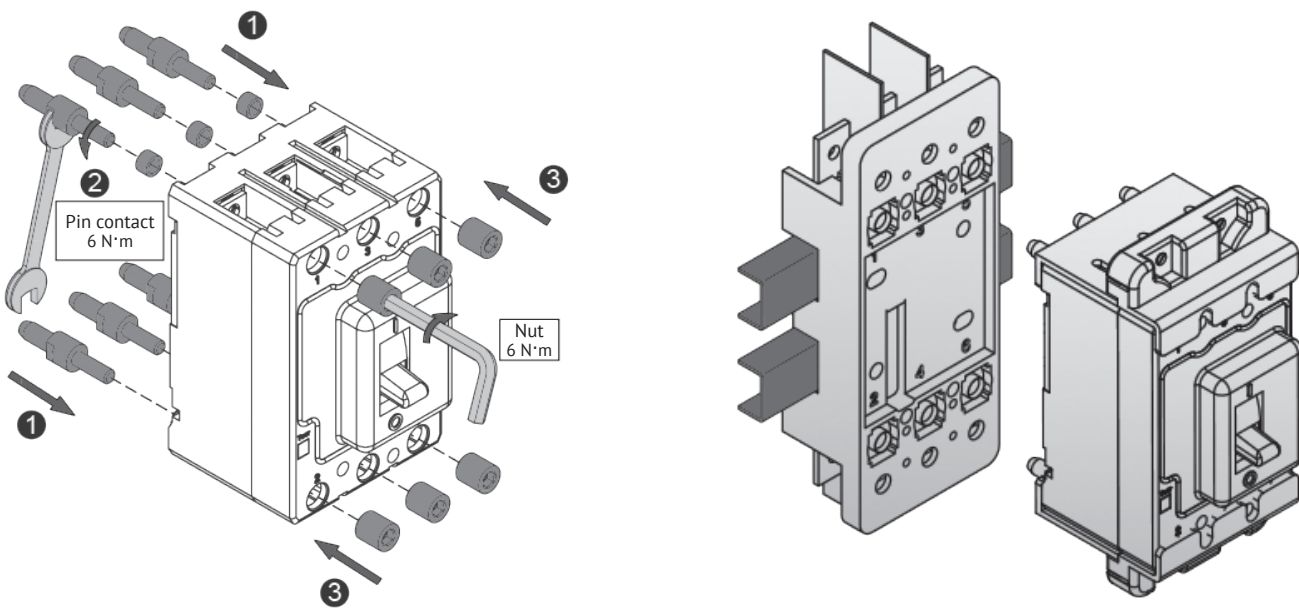


Installing the base





Switch mounting



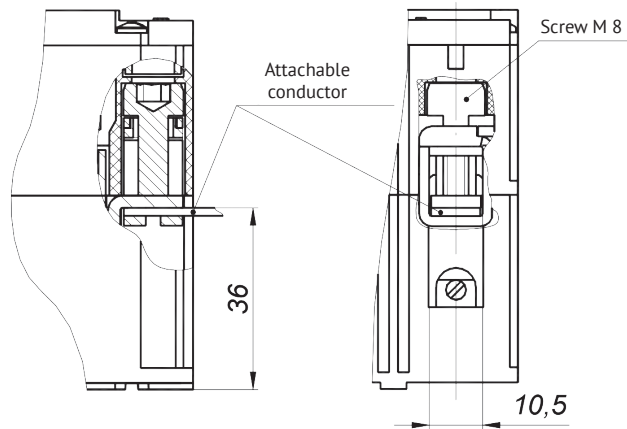
The plug-in panel BA57-35- UHL3 - KEAZ (for currents 63 ÷ 250 A) includes sets of mounting parts 1, 2 and 3.

The «Kit for the switch for installation on the BA57-35- UHL3-KEAZ plug-in panel» includes kits of mounting parts 2 and 3 (see «Instructions for mounting the panel of plug-in circuit breaker BA57-35 ГЖИК.305636.223ИМ»).

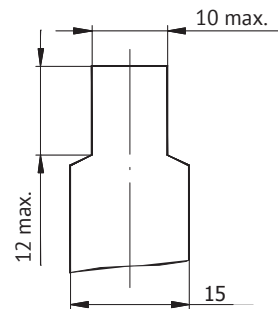
If it is necessary to quickly replace the circuit breaker, it is recommended to use an additional circuit breaker (plug-in, without a panel) with the parts from the «Kit for a circuit-breaker for installation on a plug-in panel» installed on it.

Connection of external conductors to the main circuit of the switch

BA57-31

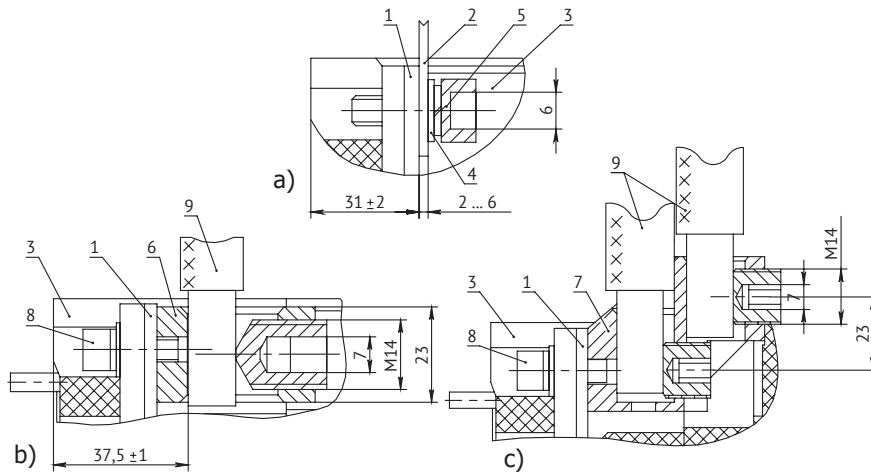


Shape and size of the busbar to be connected

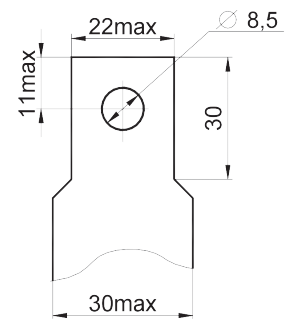


The clamps allow the connection of copper and aluminum conductors with a cross section of 2,5 to 50 mm²

BA57-35, BA57Φ35

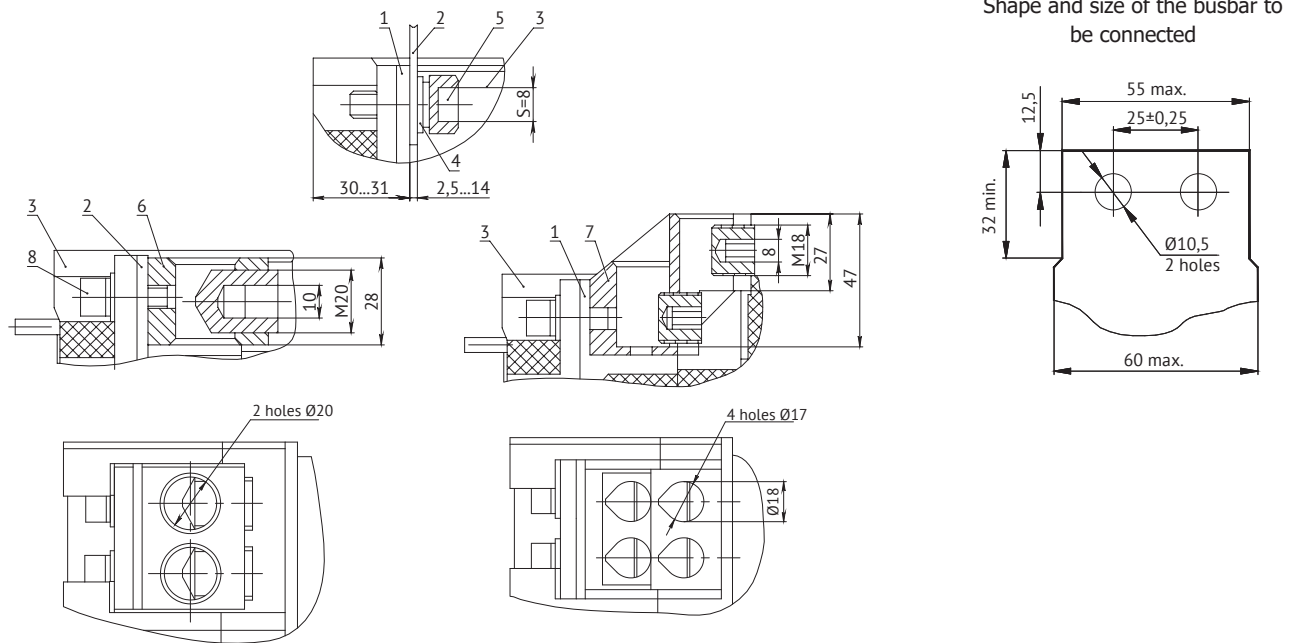


Shape and size of the busbar to be connected



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

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

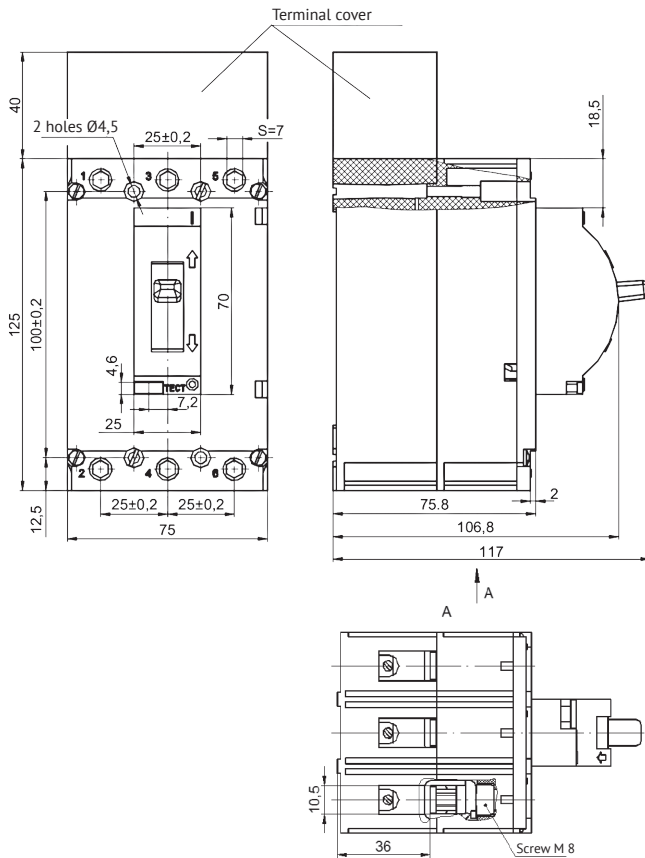
BA57-39


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

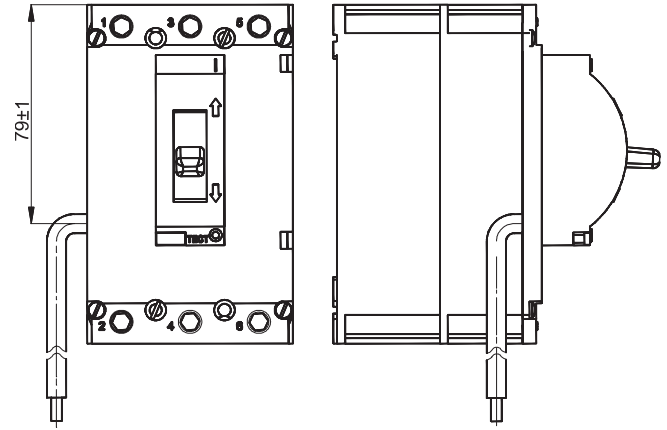
- 1 - output of the circuit breaker;
 2 - busbar;
 3 - automatic switch;
 4 - washer;
 5 - bolt M10x30 ГОСТ 7796;
 6 - two-socket clamp;
 7 - four-way clamp.

Overall, installation and connection dimensions

BA57-31



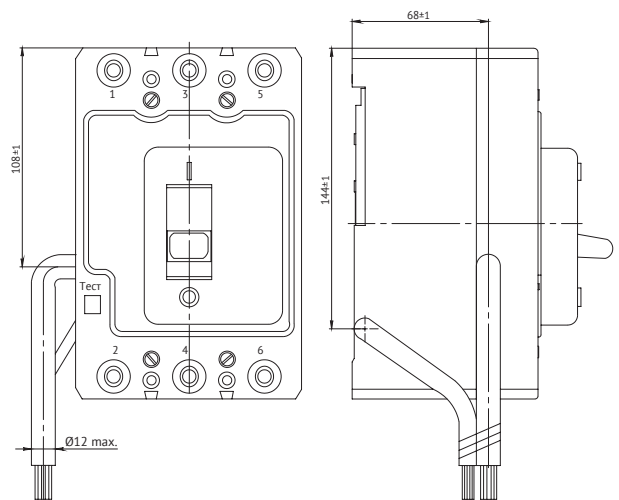
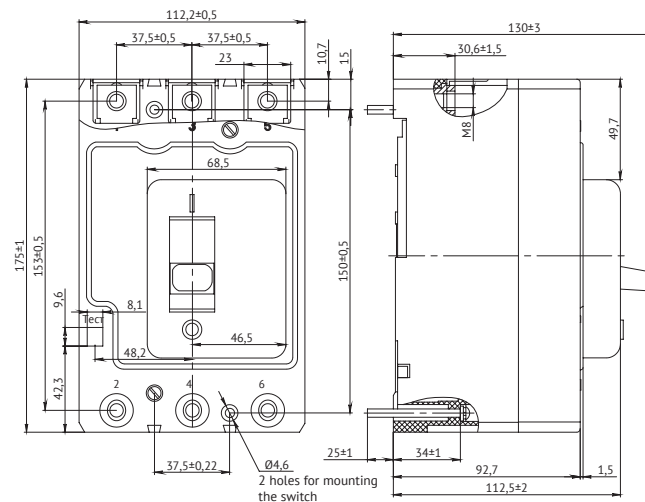
Location of wires coming out of the circuit breaker from additional assembly units



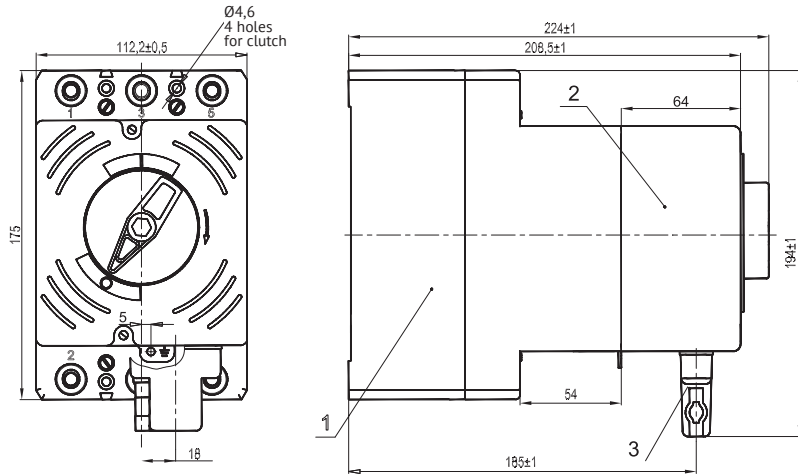
A terminal cover installed on the side of terminals 1, 3, 5 is supplied complete with the BA57-31 circuit breaker. Terminal covers can be ordered separately.

BA57-35, BA57Φ35

With clamps for front attachment

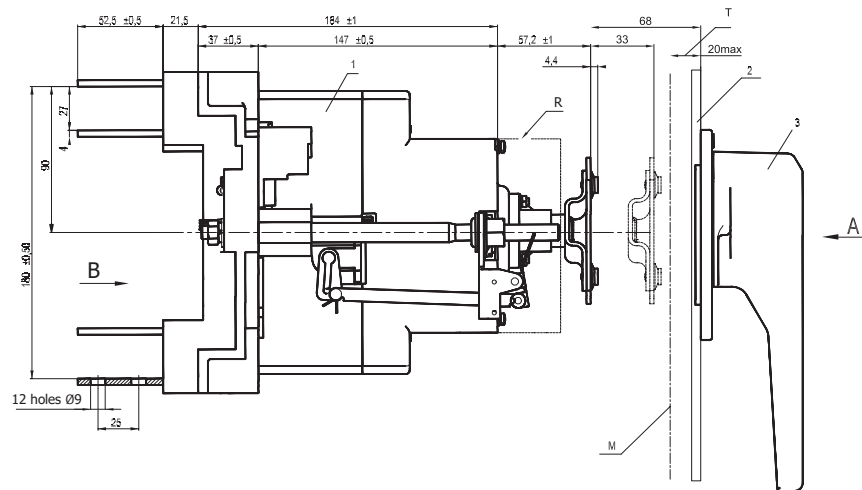


Electromagnetic drive

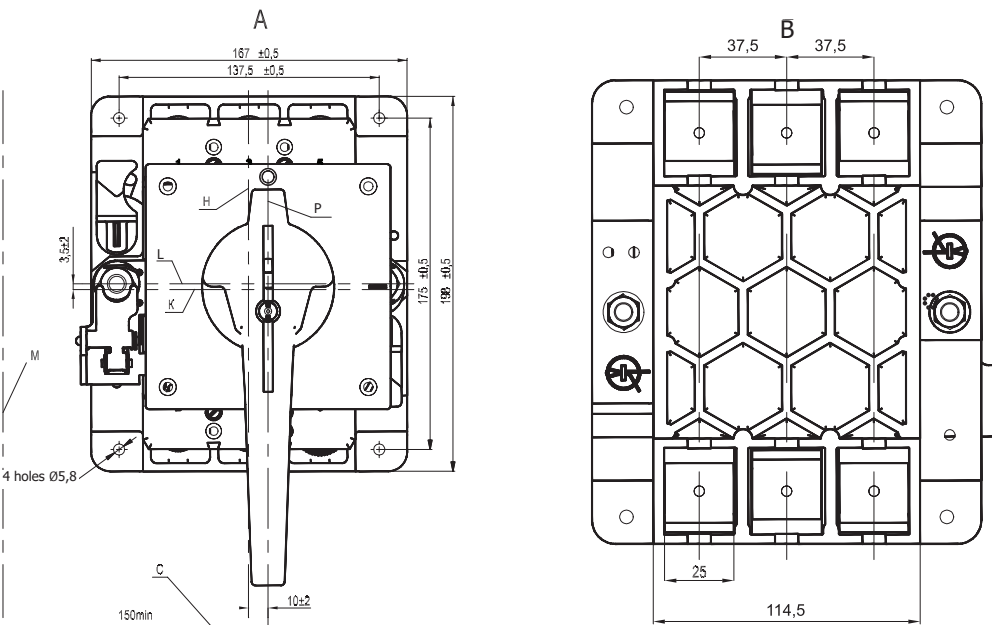


- 1 - circuit breaker;
- 2 - electromagnetic drive;
- 3 - connector of PП10 type.

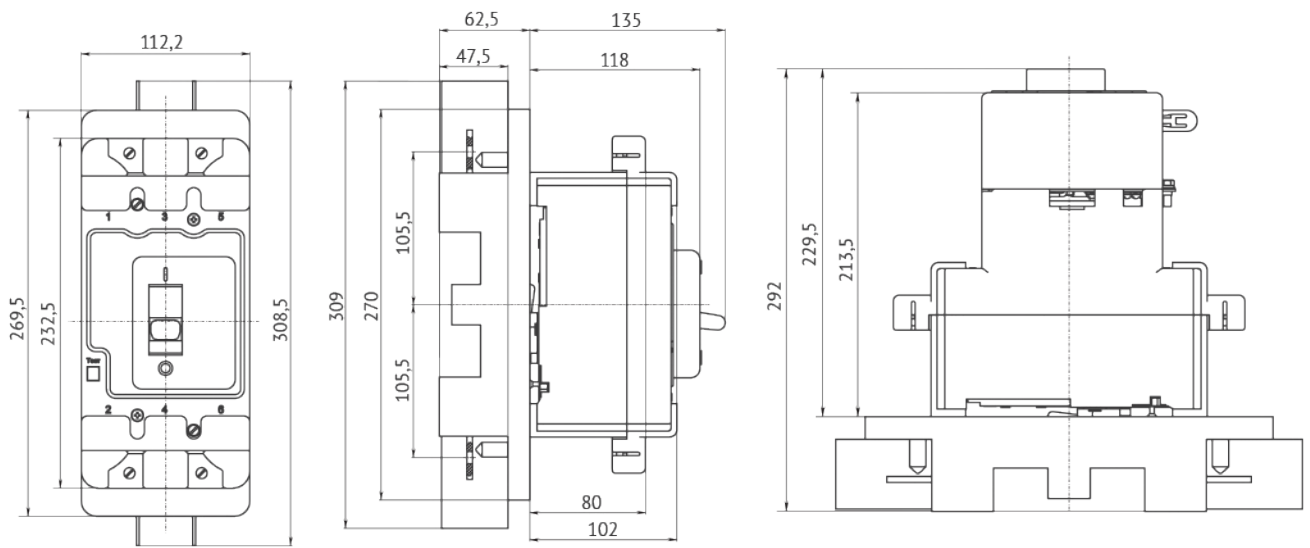
Withdrawable version with manual remote control



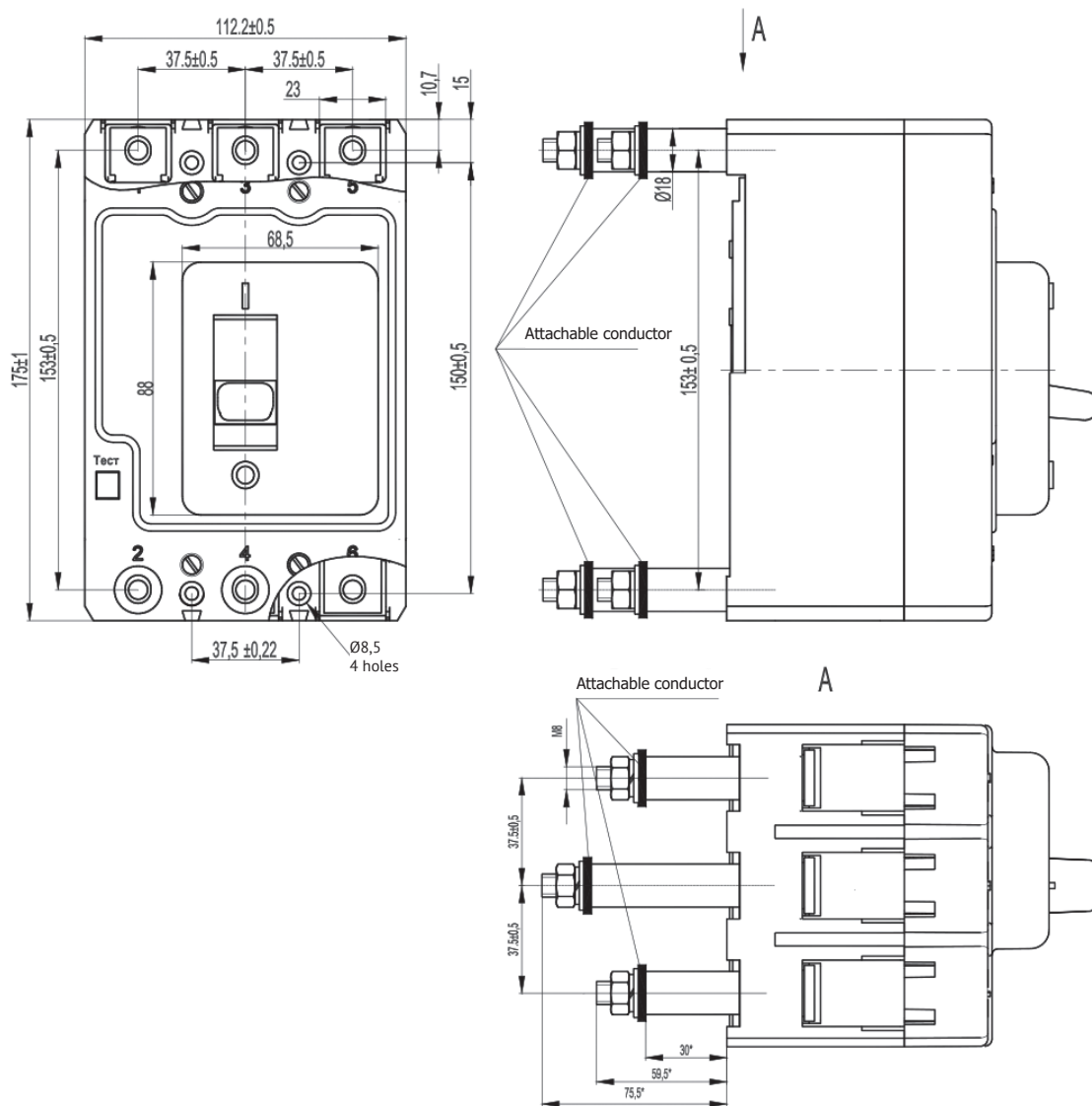
- 1 - switch;
- 2 - switchgear door;
- 3 - manual remote drive;
- 4 - PП10 type connector;
- 5 - blocking;
- 6 - electromagnetic drive;
- K - horizontal axis of the circuit breaker;
- L - horizontal axis of the manual remote drive;
- M - axis of rotation of the switchgear door;
- H - vertical axis of the switch;
- P - vertical axis of the manual drive;
- R - «control» position of the switch;
- C and T - dimensions that define the axis rotation.



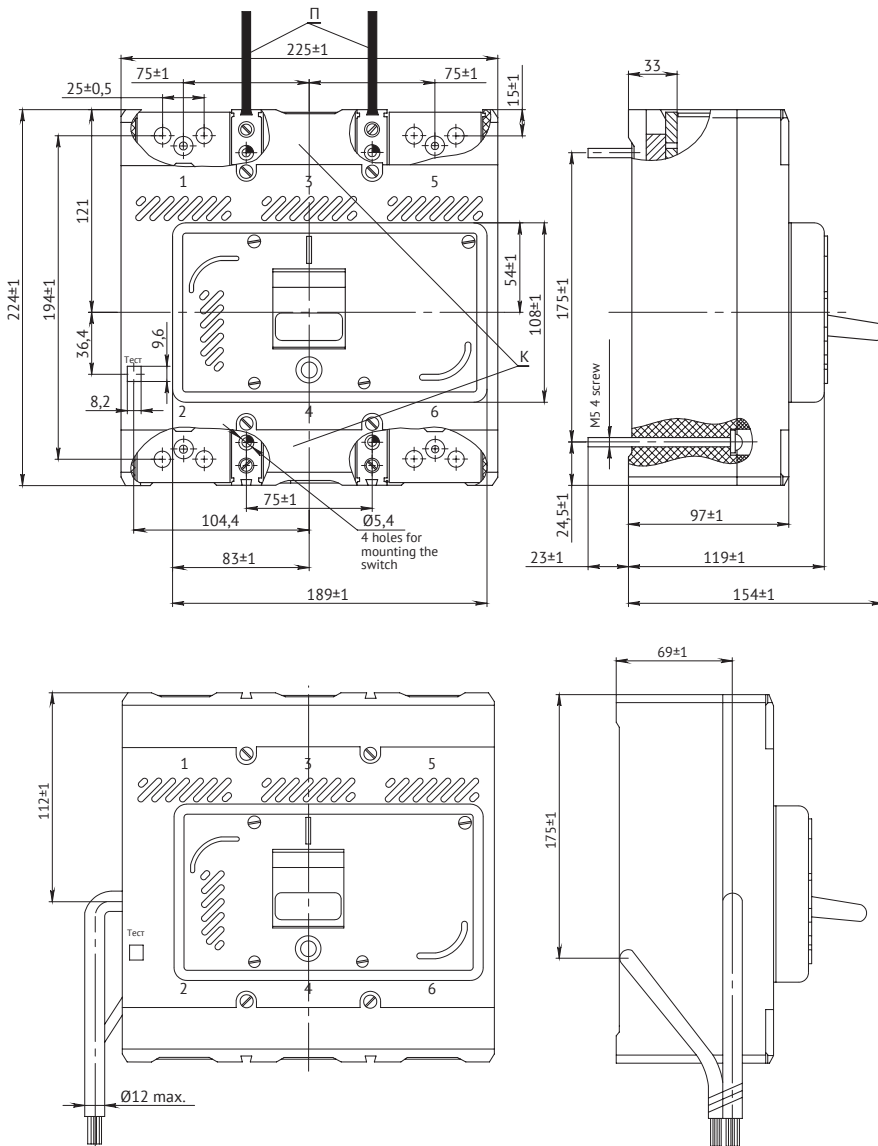
Plug-in switch



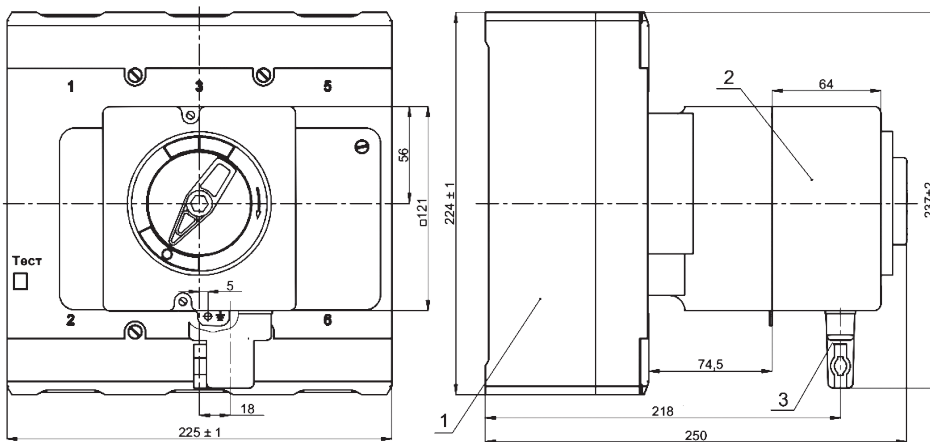
Switches with rear connection terminals



BA57-39

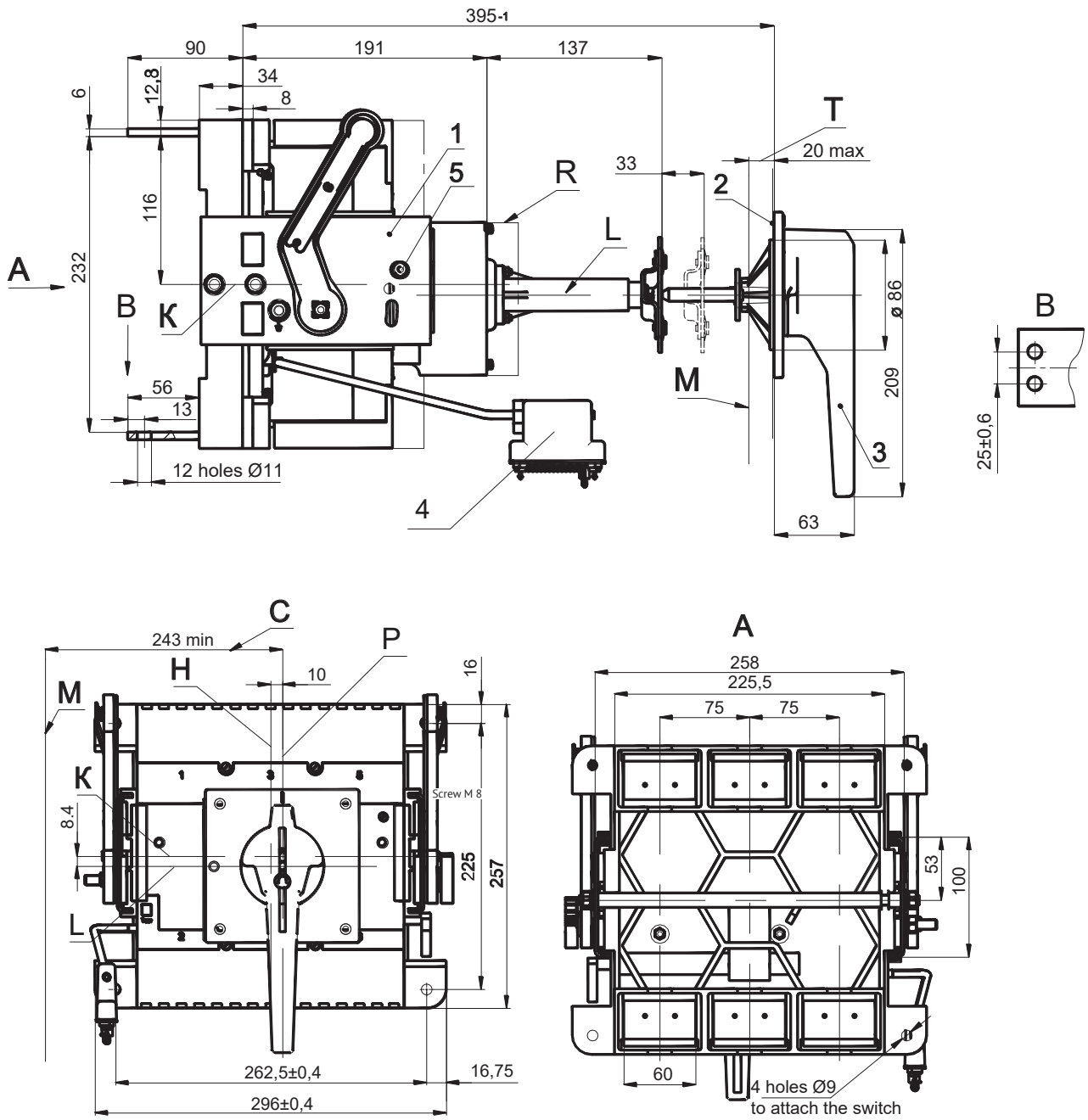


Fixed design with electromagnetic drive

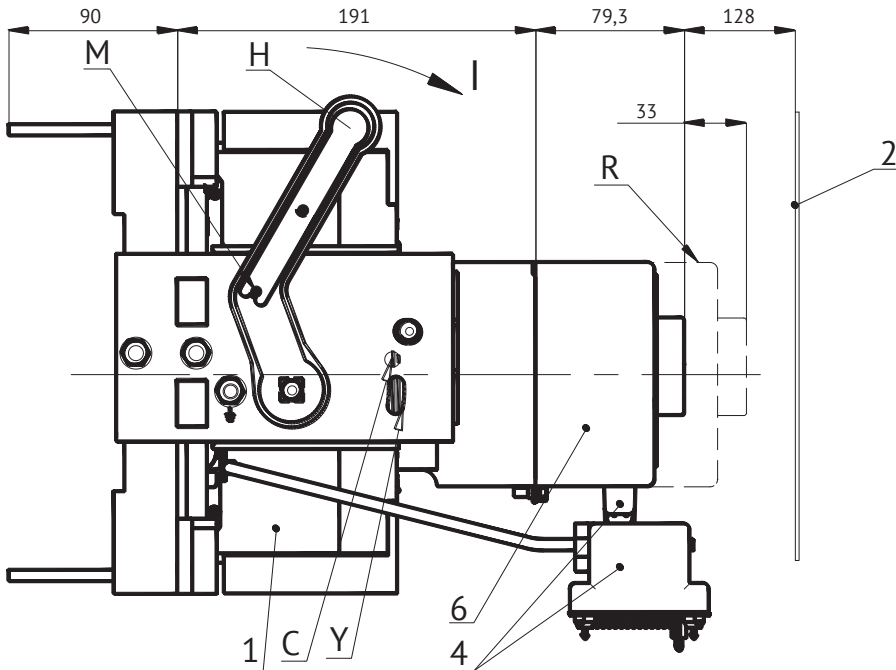


- 1 - automatic switch;
- 2 - electromagnetic drive;
- 3 - PF10 type connector;
- K - vertical axis of the switch;
- L - horizontal axis of the electromagnetic drive.

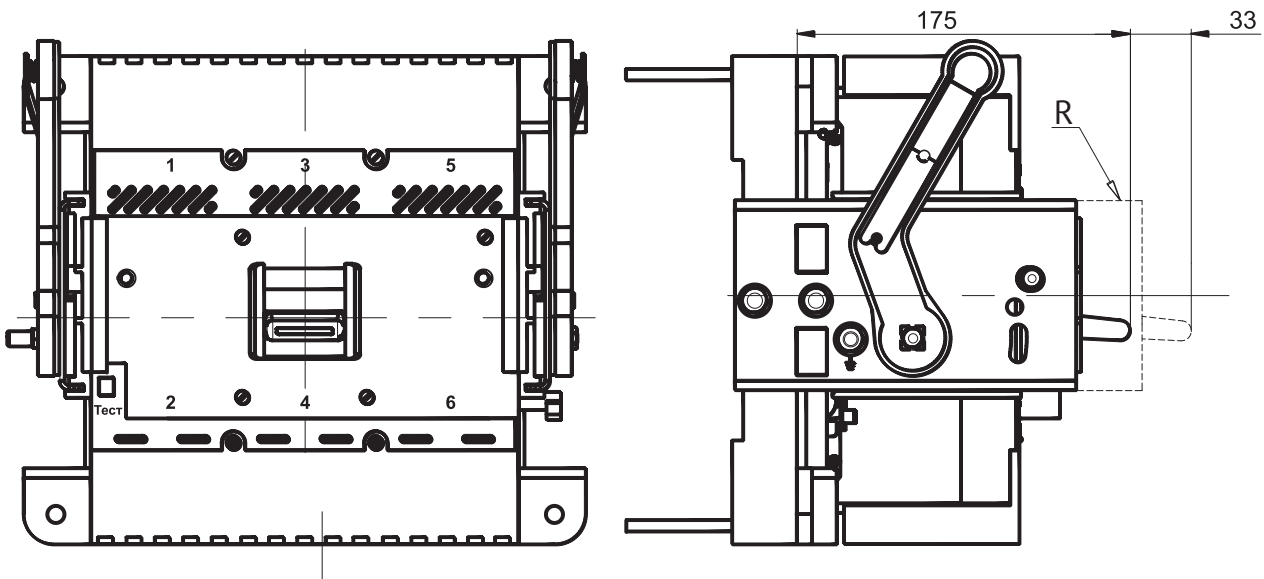
Drawer BA57-39 circuit breaker with manual remote drive



Circuit breaker BA57-39 withdrawable version with electromagnetic drive



Drawer type automatic circuit breaker VA57-39 with manual drive

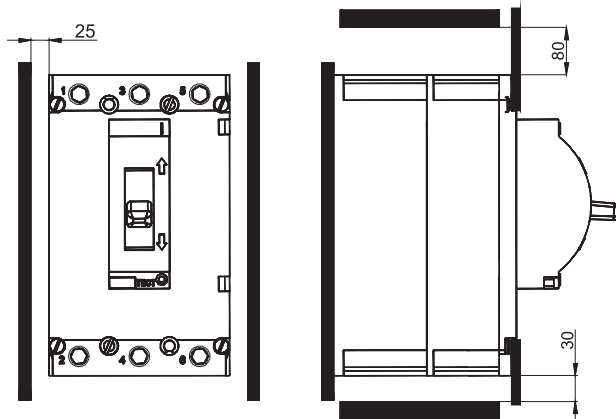


- 1 - circuit breaker;
- 2 - switchgear door;
- 3 - manual remote drive;
- 4 - connector of ПП10 type;
- 5 - blocking;
- 6 - electromagnetic drive.

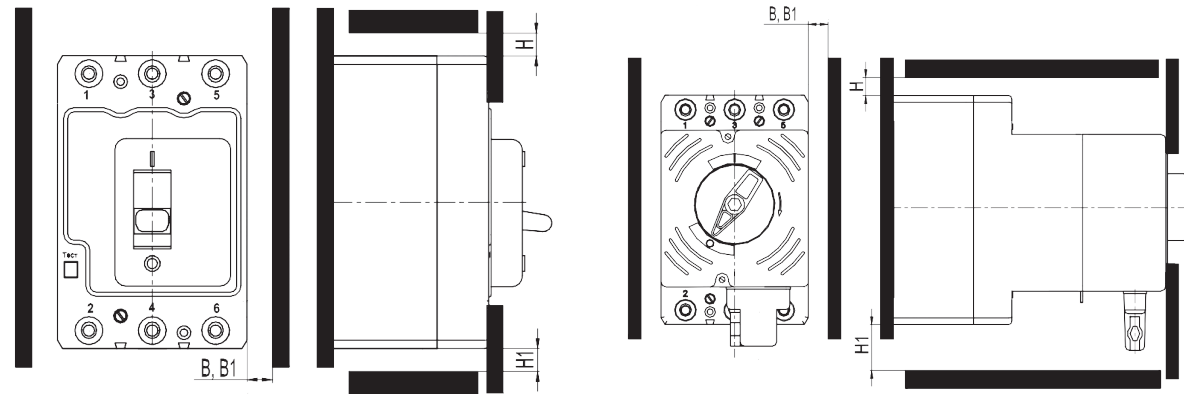
- K - horizontal axis of the circuit breaker;
- L - horizontal axis of the manual remote drive;
- M - axis of rotation of the switchgear door;
- H - vertical axis of the circuit breaker;
- P - vertical axis of the manual drive;
- R - control position of the circuit breaker;
- C and T are dimensions that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

Minimum distances from the circuit breaker to metal parts

BA57-31



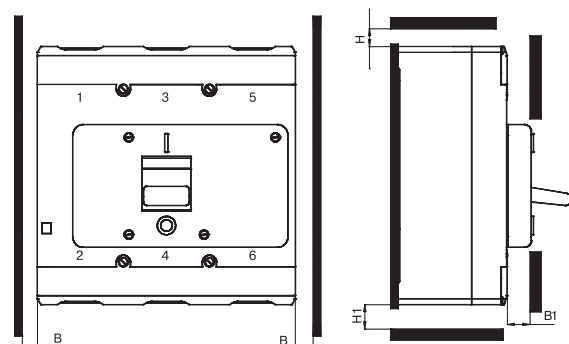
BA57-35, BA57Φ35



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.

BA57-39



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⁾	

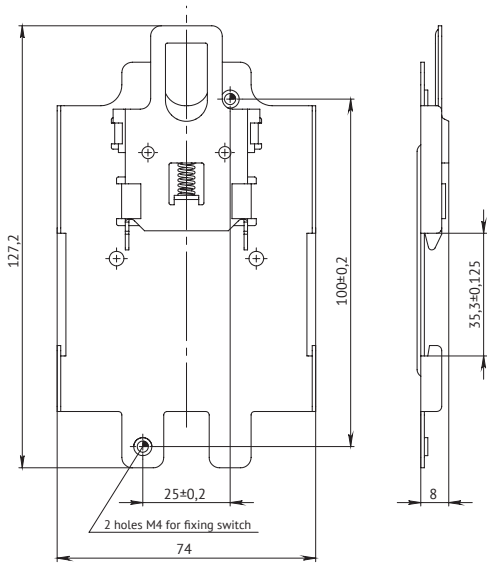
¹⁾ - for automatic switches with a set of clamps No. 2, 5, 6, 7, 8, 13, 14;

²⁾ - for automatic switches with clamps No. 2, 7, 8, 13;

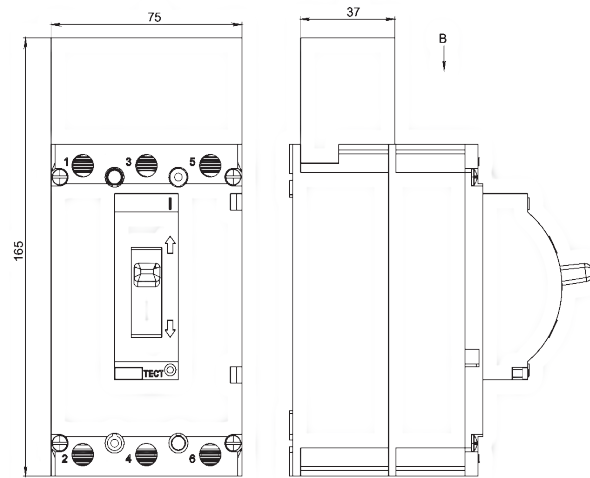
³⁾ - for circuit breakers with a set of clamps No. 2, 5, 6, 14.

Overall, mounting and connection dimensions of accessories for switches

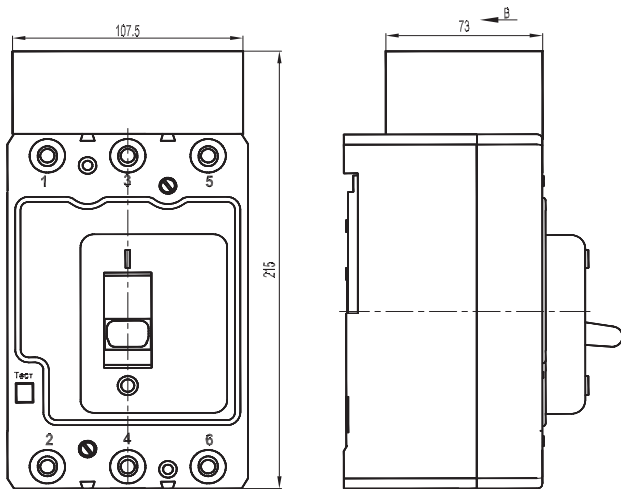
Din-rail adapter BA57-31



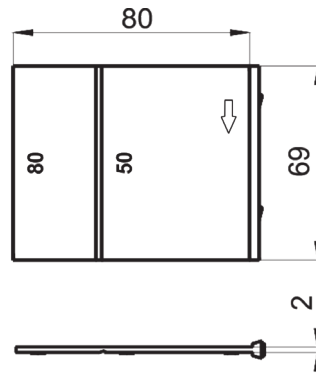
Terminal cover BA57-31



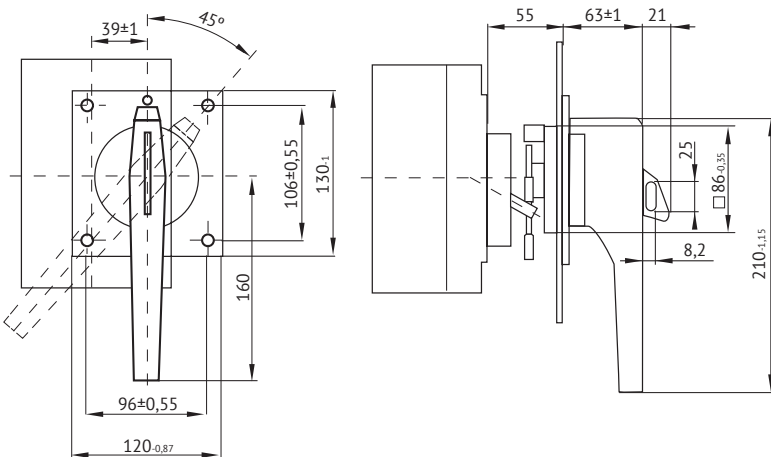
Terminal cover BA57-35



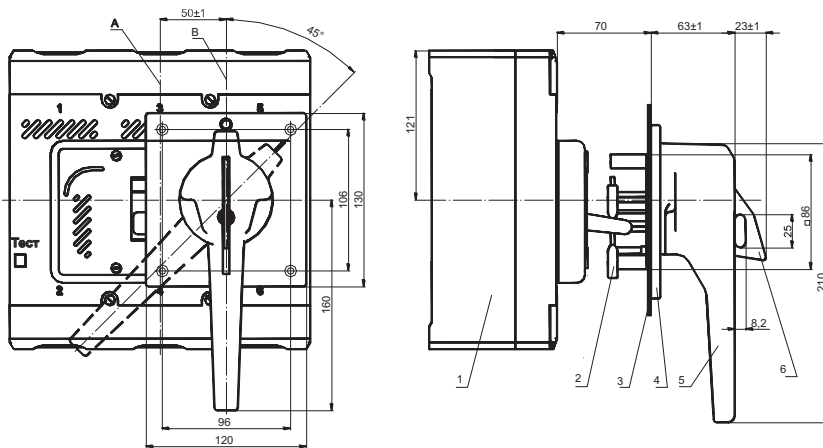
Pole partition BA57-35, BA57-39



Manual remote control BA57-35

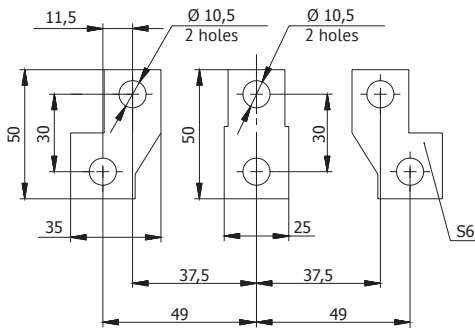


Manual remote actuator BA57-39

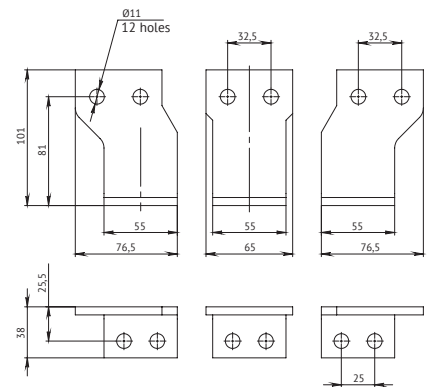
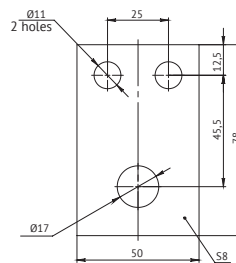


- A - vertical axis of the circuit breaker;
- B - vertical axis of the manual remote drive;
- 1 - automatic switch;
- 2 - drive leash;
- 3 - switchgear door;
- 4 - drive base;
- 5 - drive handle;
- 6 - locking device.

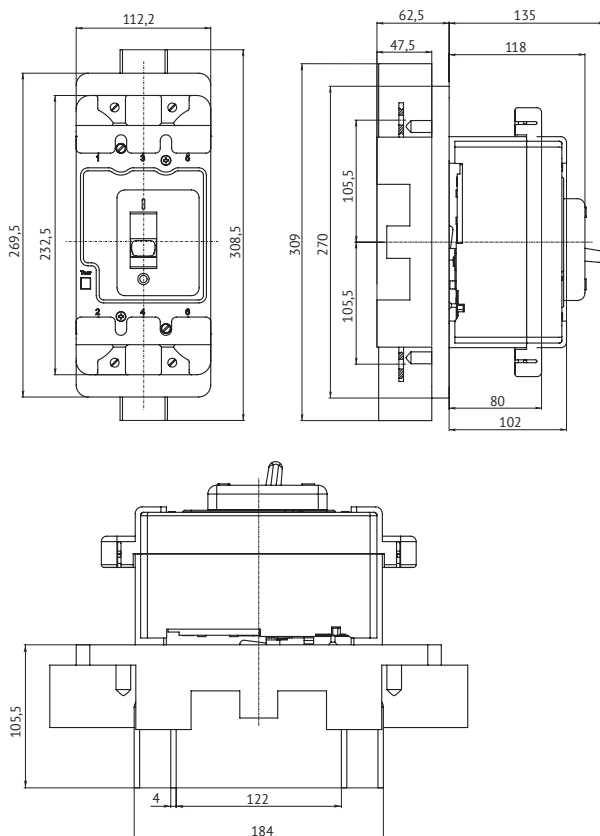
Set of expansion rails BA57-35



Set of adapter rails BA57-39 for rear connection



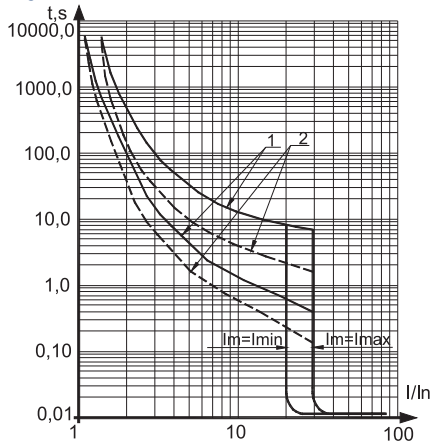
Plug-in panel BA57-35



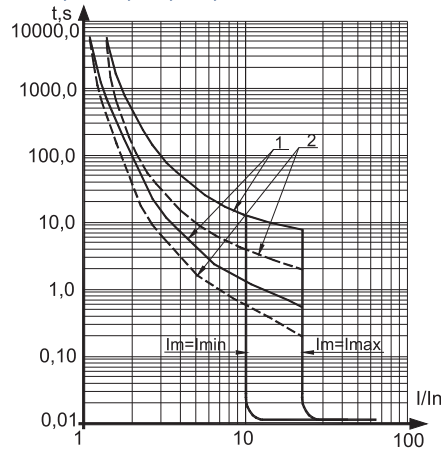
Time-current characteristics

BA57-31

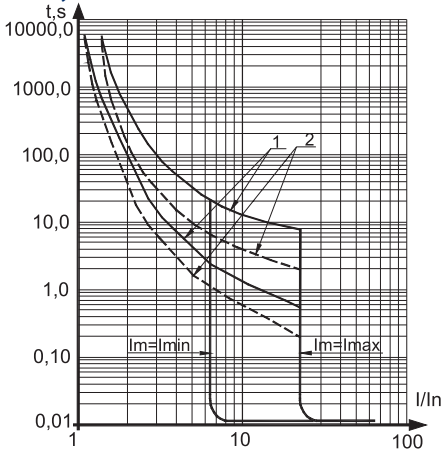
16 A



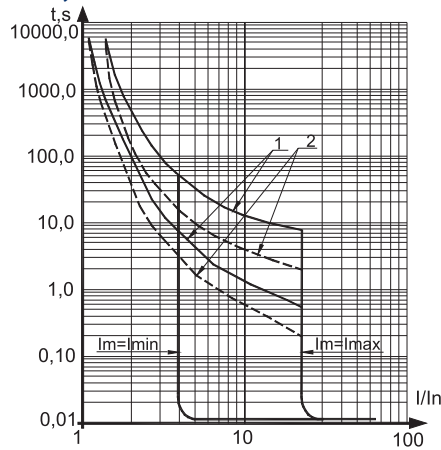
20 A, 25 A, 31,5 A, 40 A



50 A, 63 A

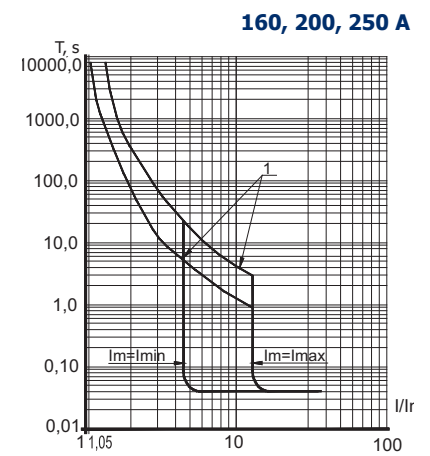
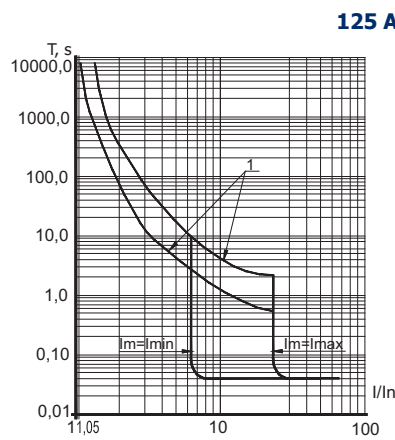
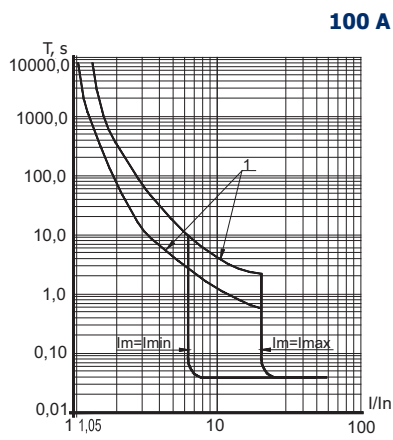
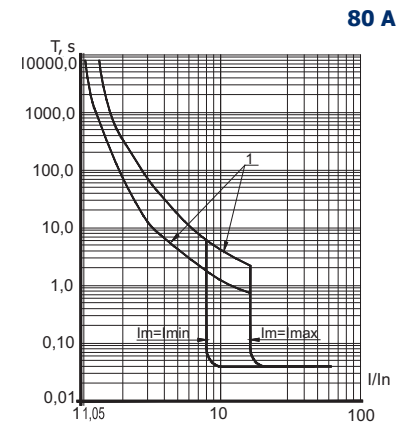
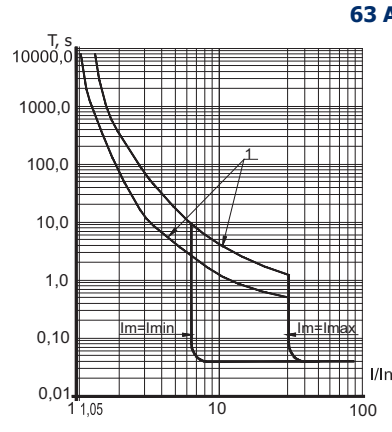
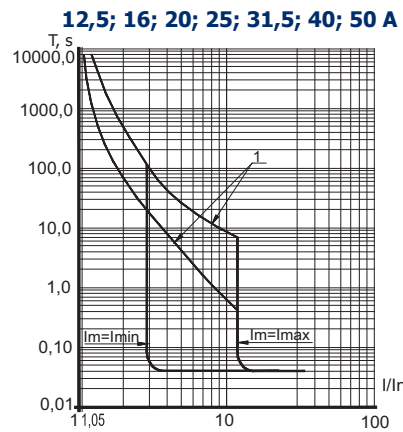


80 A, 100 A

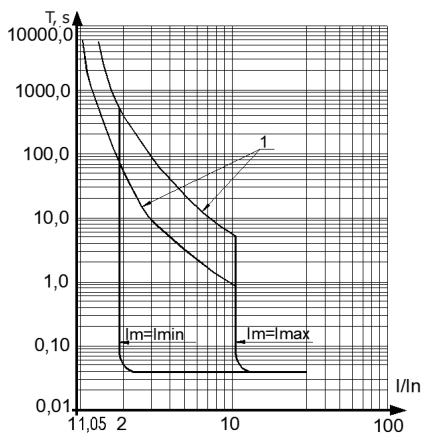


1 - operating zone of the thermal overcurrent release, removed from the cold state;
2 - operating area of the thermal overcurrent release, removed from the heated state;
 I_m is the setting of the electromagnetic release.

BA57-35; BA57Φ35



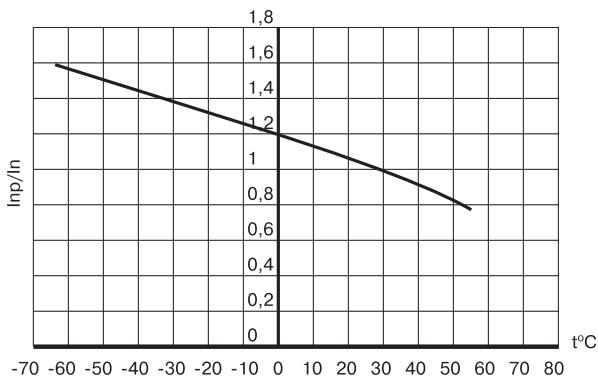
BA57-39



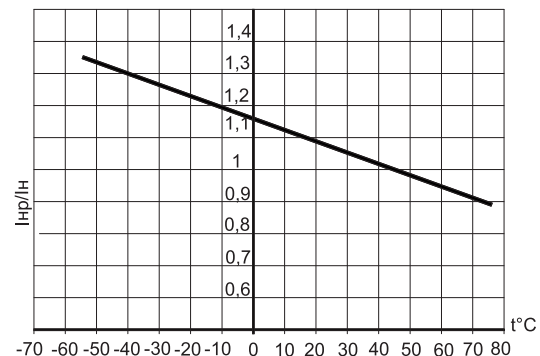
1 - operating zone of the thermal overcurrent release, removed from the cold state;
 2 - operating area of the thermal overcurrent release, removed from the heated state;
 I_m - setting of the electromagnetic release;
 t , s - response time;
 I/I_n is a multiple of the rated current.

Dependence of the rated operating currents of BA57 thermal releases on the ambient temperature

For general purpose circuit breakers with RRR acceptance



For switches with PC 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

Basic electrical diagrams

Pin 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 release;
 - E - F - zero or undervoltage release KV1 or KV2.
- Color marking of the wire is allowed according to the table:

Alphanumeric	Color	
	Designation	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

Pushbutton switch SB2 of the K1 shunt release 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) is carried out by the consumer.

Designations used in the diagrams:

- A1-A4 - connector contacts;
- K1 - shunt release;
- Kp - red or pink wire;
- KV - zero or minimum voltage release;
- KV1 - zero voltage release;
- KV2 - minimum voltage release;
- S - contacts of the auxiliary circuit of the circuit breaker;
- S1 - auxiliary contacts for automatic shutdown alarm;
- S2 - auxiliary contacts;
- SB1 - push-button switch of the electromagnetic drive;

- SB2 - push-button switch of the shunt release;
- SQ1, SQ2 - electromagnetic travel switches;
- U1 - supply voltage of the shunt release;
- U2 - supply voltage of the electromagnetic drive;
- U3 - supply voltage of zero or undervoltage release;
- VD - semiconductor diode;
- X1 - connector of the electromagnetic drive;
- X2 - connector for withdrawable circuit breaker;
- YA - electromagnetic drive;
- YA1, YA2 - electromagnets.

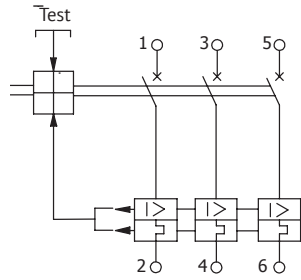
The diagrams with signaling contacts S1 are shown for the circuit breaker in the switching position «Automatically switched off».

Position of auxiliary and signal contacts

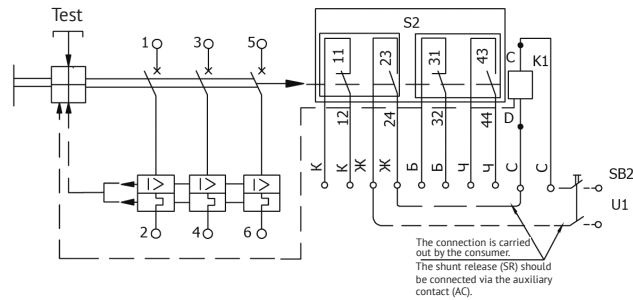
Contact	State «On»	State «Disabled automatically»	State «Manual shutdown»
BA57			
S1 51-52	open	closed	open
S1 63-52	closed	open	open
S2 11-12	open	closed	closed
S2 23-24	closed	open	open
S2 31-32	open	closed	closed
S2 43-44	closed	open	open

BA57-31, 35, 39; BA57Φ35

Three-pole AC circuit breakers

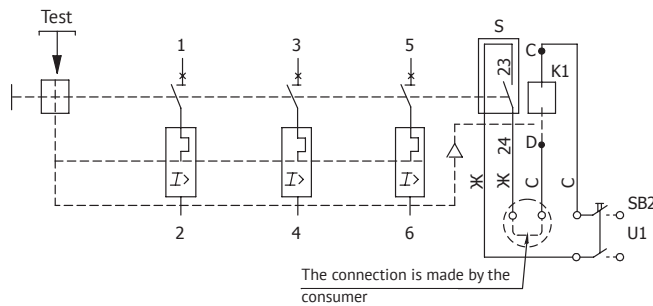


Three-pole AC circuit breakers with shunt release and auxiliary contacts (except for BA57F35)



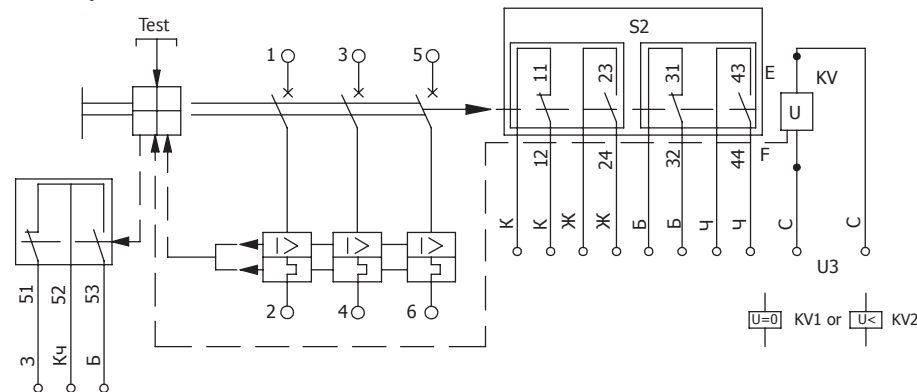
BA57-XXX-XX1210 (16)

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



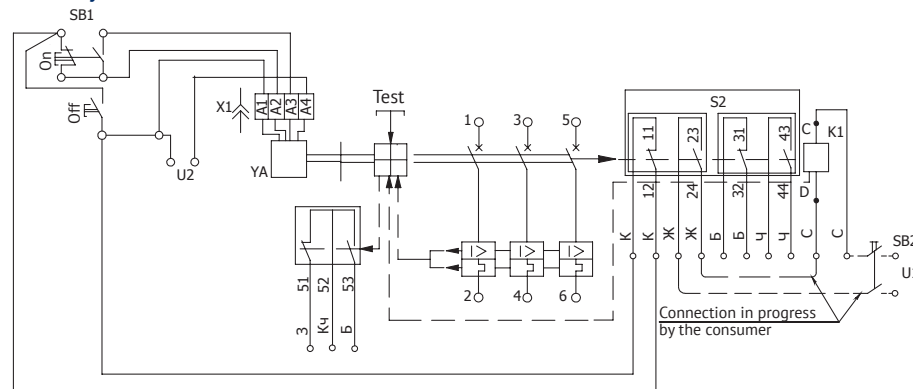
BA57-35, BA57-39

Miniature circuit breakers with undervoltage release or undervoltage release, automatic trip signaling auxiliary contacts and auxiliary contacts



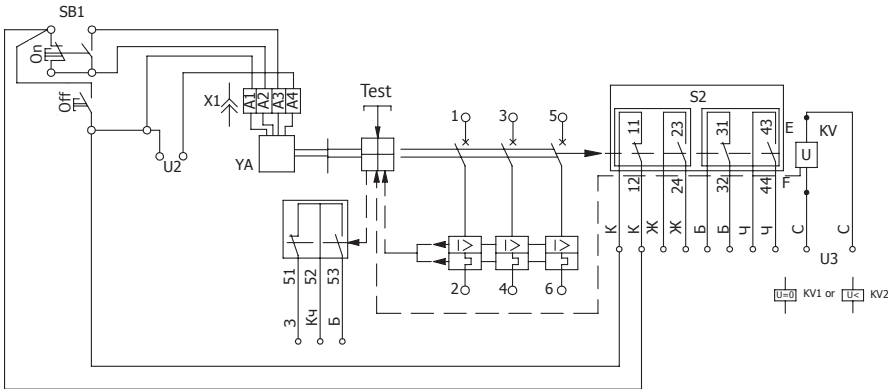
BA57-35-XX4730, BA57-39-XX4730

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



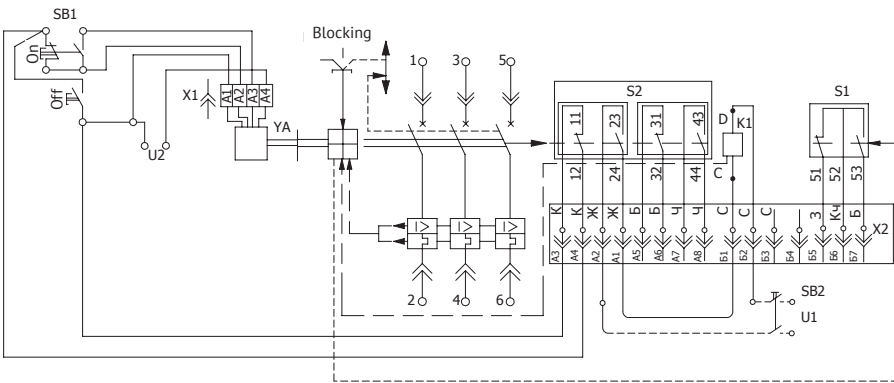
BA57-XX-XX54(56)30

Schematic of fixed circuit breakers with an electromagnetic drive, zero or undervoltage release, auxiliary contacts for signaling automatic tripping and auxiliary contacts



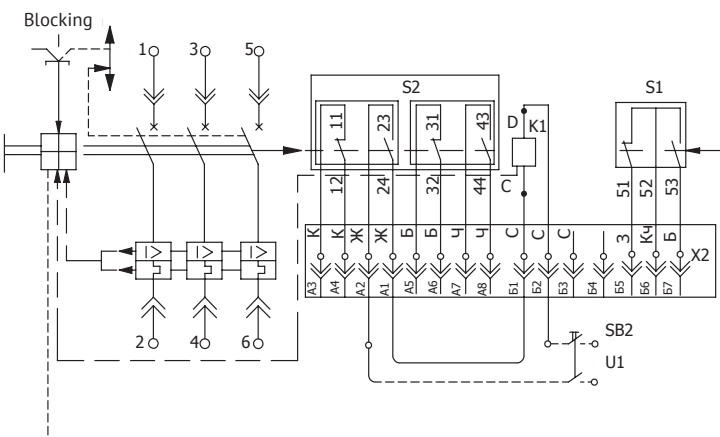
BA57-XX-XX4770

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



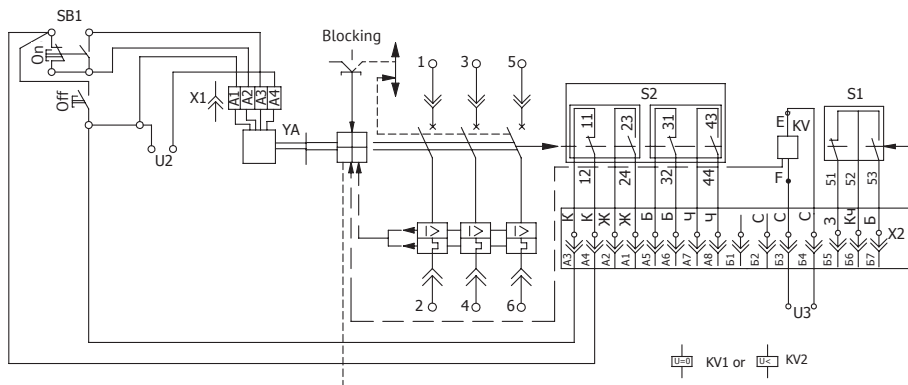
BA57-XX-XX4750

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



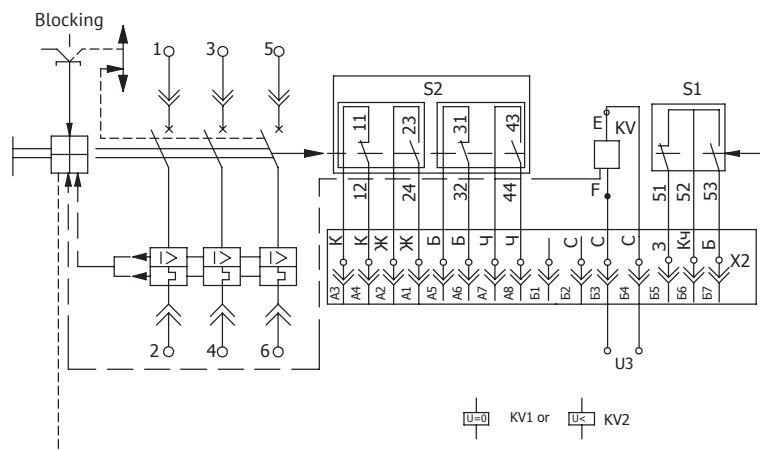
BA57-XX-XX54(56)70

Scheme of withdrawable circuit breakers, with zero or undervoltage release, auxiliary contacts for signaling automatic tripping, auxiliary contacts and an electromagnetic drive

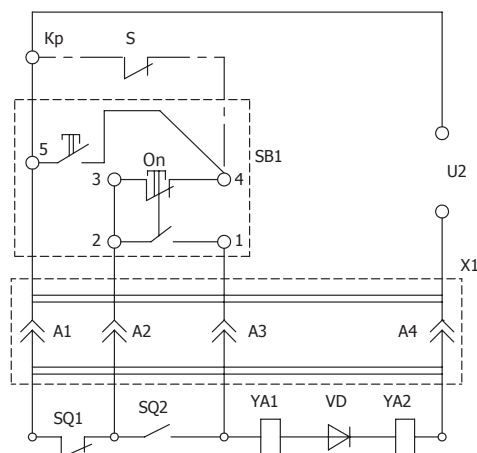


BA57-XX-XX54(56)50

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

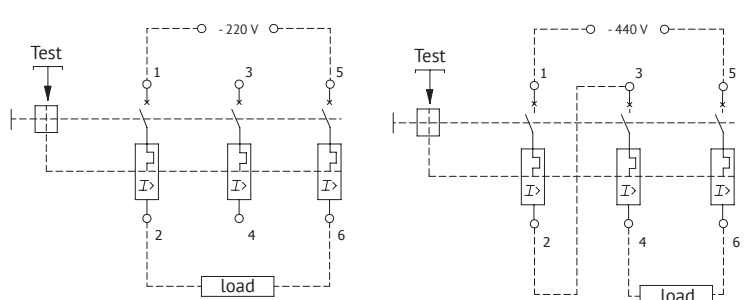


Solenoid drive circuit AC solenoid drive



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

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



Clamps 2-3 are connected by the consumer