

DISTRIBUTION SOLUTIONS

Gerapid

Product catalogue



**High speed DC circuit breaker
designed for DC traction power
substations & industrial
applications.**

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Introduction

Gerapid high speed DC circuit breakers are a separate class of circuit breakers dedicated to protect high power, low & medium voltage DC distribution systems. Their unique feature is its ability to break and clear highest short circuit currents within several milliseconds after fault happens. The speed of operation, which results in a limiting ability for a prospective peak short circuit current, is a main distinguish feature compared to AC power circuit breaker. The speed of breaking, very high breaking capacity and ability to operate above 1500 V level, gives to Gerapid an exclusive position in many demanding DC applications, where standard air circuit breakers cannot be used.

The biggest segment where Gerapid are used is railway transport as main protection device in power substations. Typical ratings used in this segment are up to 8 kA 3600V. Gerapid covers complete rating needs.

Other important segments that are:

- **Heavy industry** - especially metal works & metal processing plants, for power distribution and protection.
- **Power generation** - as a main protection device for high power, energy storage system (ESS) used together with renewables sources of energy. Also, obligatory used in Static Excitation Systems (SES), where operate as so-called Field Discharge Breaker. FDB protects & disconnects field winding in the excitation circuit of the power generator.
- Other applications – used in High Density Data centers, where DC power distribution is needed. In specialized labs & testing facilities, where HSCBS are protecting the superconductive coils. In unique marine propulsion systems, where DC power distribution is in use.

Key Benefits



Enclosed construction

Designed for heaviest metro & rail applications with 200 kA IC, 800 V (ANSI) & 178 kA IC, 900 V (EN/IEC). Isolated & enclosed construction ensures highest safety against flashover faults.



Higher ratings

EN 50123-2 / IEC 61992-2 breaking capacity of 125 kA / 178 kA in peak at 900 V and $T_{nc}=100$ ms is now available for 2600 A and 4200 A frames.



Unique & proven design

A mechanical latching mechanism provides stable contacts force & does not require any holding circuits. The double contact system eliminates maintenance of main contacts.



Improved immunity against EMI

A version of Gerapid without control cards is available now for cost effectiveness & with improved immunity against external EMI.



Ease of use & service

Same footprint up to 6 000 A and embedded control circuits makes it cost effective & easy for integration.



Retrofit solutions

Withdrawable retrofits for AEG's GEA Rapid SE power DC breakers (GEA SE).

Technical data table

IEC Breakers

Breaker type	Gerapid 2607						
Conventional free-air thermal current I _{th} [A] (IEC/EN)	2600						
Arc chute type	1X2	1X4	2X2	2X3	2X4		
Rated voltage U _{Ne} [V]	900	1000	2000	1800	2000	3000	3600
Rated short circuit making capacity Î _{Nss} [kA]	178	70	50	114	100	50	42
Rated insulation voltage U _{Nm} [V]	1800	2000	2000	3000	3000	3000	4800
Rated operational voltage U _e [V]	-	1000	2000	-	2000	3000	3600
Rated service short circuit breaking current I _{cs} [kA] acc. to IEC 60947-2	-	60	40	-	50	40	40
Weight ca. [kg]	125	120	120	160	160	160	160
Weight ca. [lbs]	270	265	265	352	352	352	352

(¹) Rating tests on customer request

EN Breakers

Breaker type	Gerapid 2607						
Conventional free-air thermal current I _{th} [A] (IEC/EN)	2600						
Arc chute type	1X2	1X4	2X2	2X3	2X4		
Rated voltage U _{Ne} [V]	900	1000	2000	1800	2000	3000	3600
Rated short circuit making capacity Î _{Nss} [kA]	178	70	50	114	100	50	42
Rated short circuit breaking capacity Î _{Nss} [kA] acc. to EN 50123-2	125	50	33	80	71	35	30
Rated insulation voltage U _{Nm} [V]	1800	2000	2000	3000	3000	3000	4800
Power frequency withstand voltage 50 Hz U _a [kVeff] acc. to EN 50124-1	10	10	12	12	12	17	17
Impulse withstand voltage 1,2/50 µs UNi [kV] acc. to EN 50124-1	18	18	24	24	24	30	36
Rated operational voltage U _e [V]	-	1000	2000	-	2000	3000	3600
Weight ca. [kg]	125	120	120	160	160	160	160
Weight ca. [lbs]	270	265	265	352	352	352	352

(¹) Rating tests on customer request

ANSI/IEEE Breakers

Breaker type	Reference	Gerapid 2508	Gerapid 4008	Gerapid 5008	Gerapid 6008
Rated continuous current [A]	ANSI C37.14 p.5.3	2500	4000	5000	6000
Arc chute type	N/A	1x2	1x2	1X2	1x2
Rated maximum voltage [V]	ANSI C37.14 p.5.2	800	800	800	800
Rated short circuit peak/sustained current [kA]	ANSI C37.14 p.5.4	200/120	200/120	200/120	200/120
Short-circuit characteristics	Tests a, b, c, d ANSI C37.14	High-speed	High-speed	High-speed	High-speed
Power frequency withstand voltage [V]	ANSI C37.14 Table 3	3700	3700	3700	3700
Mechanical endurance [cycles]	N/A	20000	20000	20000	20000
Maximum arc voltage [V]	N/A	1500	1500	1500	1500
Mass ca. for fixed/OEM version [lbs]	N/A	270/310	270/310	420/480	420/480

Values valid up to 2000 m asl, in case of installation in higher altitudes, please contact ABB

Gerapid 4207								Gerapid 6007						Gerapid 8007		
4200								6000						8000		
1X2		1X4	2X2		2X3	2X4		1X2		1X4	2X2	2X3	2X4	1X2		2X2
900	1000	2000	1800	2000	3000	3600		900	1000	2000	2000	3000	3600	900	1000	2000
178	70	50	114	100	50	42		142	70	50	80	50	(¹)	178	70	(¹)
1800	2000	2000	3000	3000	3000	4800		1800	2000	2000	2000	3000	4800	1800	2000	2000
-	1000	2000	-	2000	3000	3600		-	1000	2000	2000	3000	(¹)	-	1000	2000
-	60	40	-	50	40	40		-	60	40	50	40	(¹)	-	60	50
125	120	120	160	160	160	160		150	150	150	165	165	165	190	190	210
270	265	265	352	352	352	352		331	331	331	364	364	364	419	419	463

Gerapid 4207								Gerapid 6007						Gerapid 8007		
4200								6000						8000		
1X2		1X4	2X2		2X3	2X4		1X2		1X4	2X2	2X3	2X4	1X2		2X2
900	1000	2000	1800	2000	3000	3600		900	1000	2000	2000	3000	3600	900	1000	2000
178	70	50	114	100	50	42		142	70	50	80	50	(¹)	178	70	(¹)
125	50	33	80	71	35	30		100	50	35	56	35	(¹)	125	50	50
1800	2000	2000	3000	3000	3000	4800		1800	2000	2000	2000	3000	4800	1800	2000	2000
10	10	12	12	12	17	17		10	10	12	12	17	(¹)	10	10	12
18	18	24	24	24	30	36		18	18	24	24	30	(¹)	18	18	18
-	1000	2000	-	2000	3000	3600		-	1000	2000	2000	3000	(¹)	-	1000	2000
125	120	120	160	160	160	160		150	150	150	165	165	165	190	190	210
270	265	265	352	352	352	352		331	331	331	364	364	364	419	419	463

ANSI/IEEE Rectifier Breakers

Breaker type	Reference	Gerapid 6008R		Gerapid 8008R	
Arc chute type	N/A	1x2	1x3	1X2	1X3
Rated continuous current [A]	ANSI C37.14 p.5.3	6.000	6.000	8.000	8.000
Rated short-time current (250ms) [kA]	ANSI C37.14 p.5.5	90	90	60	60
Rated maximum voltage [V]	ANSI C37.14 p.5.2	800	1.200	800	1.200
Rated insulation voltage U _{nm} [V]	EN 50124-1 p.1.3.2.4	2.000	2.000	2.000	2.000
Rated impulse voltage U _{ni} [kV]	EN 50124-1 p.1.3.2.7	18 [1,2/50µs]	18 [1,2/50µs]	18 [1,2/50µs]	18 [1,2/50µs]
Power frequency voltage U _a [kV]	EN 50124-1 a. B 2.2	10 [1 minute 50Hz]	10 [1 minute 50Hz]	10 [1 minute 50Hz]	10 [1 minute 50Hz]
Mechanical endurance [cycles] °)	N/A	10.000	10.000	10.000	10.000
Rated short circuit peak/sustained current [kA] °)	ANSI C37.14 p.5.4	200/120	132/80	200/120	132/80
Short-circuit characteristics	Tests a, b, c, d ANSI C37.14 Annex A	High-speed	High-speed	High-speed	High-speed
Mass ca [kg]	N/A	220	220	220	220

Gerapid is fully described by an 18 – Digit smartcode following the below table for compatibility between digit selections
please contact ABB:

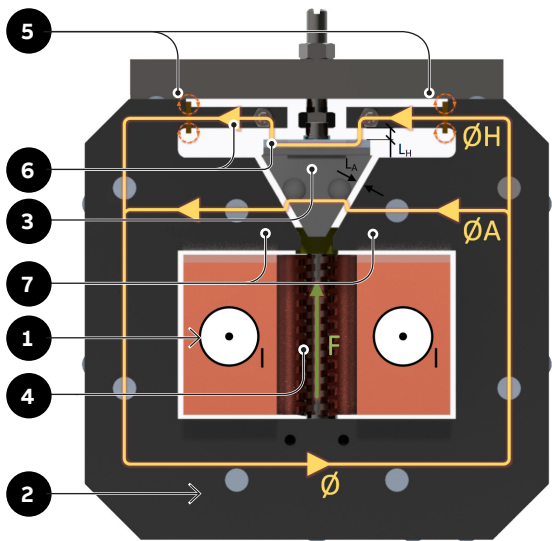
Breaker Type										Code 1										1	2	3	4	5	6	7	8	9	10	11	12	13								
1	Gerapid 2607										A	Gerapid 2508 (IEEE/ANSI C37.14)																												
2	Gerapid 4207										B	Gerapid 4008 (IEEE/ANSI C37.14)																												
3	Gerapid 6007										C	Gerapid 5008 (IEEE/ANSI C37.14)																												
4	Gerapid 8007										D	Gerapid 6008 (IEEE/ANSI C37.14)																												
E	Gerapid 2607 (change over)										5	Gerapid 6008R (IEEE/ANSI C37.14)																												
F	Gerapid 4207 (change over)										6	Gerapid 8008R (IEEE/ANSI C37.14)																												
G	Gerapid 6007 (change over)																																							
Arc Chute Type										Code 2																														
1	1X2 (1000 V)										4	2X2 (2000 V)										5	2X3 (3000 V)																	
H	1x2H (900 V)										D	2x2D (1800 V; cells<600mm)										6	2X4 (3600 V)																	
2	1X3 (1500 V)										P	2x2P (1800V; upgradable to 3600 V)										7	2X4D (3600 V; (cells<800 mm)																	
3	1X4 (2000 V)																																							
Closing Solenoid Voltage										Code 3																														
1	48 V DC										5	220 V DC										9	125 V AC																	
2	60 V DC										6	250 V DC										A	230 V AC																	
3	110 V DC										7	110 V AC										B	240 V AC																	
4	125 V DC										8	120 V AC																												
Main Terminals Layout (Top / Bottom)										Code 4																														
STANDARD LAYOUTS										SPECIAL LAYOUTS																														
TOP / BOTTOM terminals layout										U For use with ABB's DC OEM module																														
1	Horizontal / Horizontal										7	Retrofit for breakers with SEL system																												
2	Horizontal / Vertical																																							
3	Vertical / Horizontal																																							
4	Vertical / Vertical																																							
Main Terminals Polarization										Code 5																														
1	Top connector '+'										2	Top connector '-'										0	Not required																	
Over Current Release (OCT)										Code 6																														
STANDARD TRIPPING BANDS										SWITCH DISCONNECTOR																														
W	Overcurrent release OCT, 1-3 kA										0	Without O.C. Release																												
A	Overcurrent release OCT, 1.5-2.5 kA																																							
B	Overcurrent release OCT, 1.5-3 kA																																							
C	Overcurrent release OCT, 1.5-4 kA																																							
D	Overcurrent release OCT, 1.5-5 kA																																							
E	Overcurrent release OCT, 2-6 kA																																							
F	Overcurrent release OCT, 2-7kA																																							
G	Overcurrent release OCT, 2-8kA																																							
H	Overcurrent release OCT, 2.5-5.5kA																																							
J	Overcurrent release OCT, 3-7kA																																							
K	Overcurrent release OCT, 3-8kA																																							
L	Overcurrent release OCT, 3-9kA																																							
M	Overcurrent release OCT, 3-12kA																																							
N	Overcurrent release OCT, 5-10kA																																							
P	Overcurrent release OCT, 6-14kA																																							
Q	Overcurrent release OCT, 7-15kA																																							
S	Overcurrent release OCT, 8-18kA																																							
T	Overcurrent release OCT, 10-16kA																																							
U	Overcurrent release OCT, 12-24kA																																							
Auxiliary Control Voltages										Code 7										Code 8																				
BREAKERS WITH CONTROL CARDS										BREAKERS W/O CONTROL CARDS																														
											N	24 V DC ±5% (filtered)																												
1	24 V DC ±5% (filtered)										P	60 V DC																												
2	24 V DC ±20% (unfiltered)										S	110 V DC																												
3	48 V/60 V DC										T	125 V DC																												
4	110 V/125 V DC										U	220 V DC																												
5	220 V/250 V DC & 115 V/120 V/230 V/240 V AC										W	250 V DC																												

12	13	14	15	16	17	18	Code 18	Nameplates & Standards Designation
GENERAL PURPOSE IEC STANDARD FOR DC CIRCUIT BREAKERS IEC/EN 60947-2 for general DC application 4 OTHER STANDARDS FOR DC CIRCUIT BREAKERS (ANSI) IEEE C37.14 2 UL listed breaker + (ANSI) IEEE C37.14 U GB 14048.2 with CCC mark for China. 3								EN STANDARDS FOR TRACTION POWER SUBSTATIONS EN 50123-2 & IEC 61992-2 ed 2.1 1
Code 17								Control Connectors Type Standard Phoenix Contact plugs and sockets included 1 GEA Rapid SE retrofit (front access) 3
Code 16								Operation Counter With 1 Without 0
Code 15								Arc Chute Options Standard w/ lifting handles & ACP presence interlock 1 Standard w/ lifting handles 0
Code 14								Manual Operation Lever With 1 Without 0
Code 13								Special Options 100 mm height rodent proofing 2 OC release adjusting knob only 3 Without 0 Sidewalls protection panels incl. adjusting knob 1
Code 12								Interlocking Options FT & TL 4 FT & CS 5 TL & CS 6 FT & TL & CS 7 Without 0 (FT) Forced Tripping 1 (TL) Trip-Free Linkage 2 (CS) Close-Stop Interlock 3
Code 11								Impulse Release (ED) & C-bank (NEKO) Without 0 Impulse ED Coil w/o Internal C-bank (NEKO) 1 Impulse ED Coil & Internal C-bank (NEKO) 2
STANDARD ZVR/ST RELEASE Standard Shunt Trip (24VDC) 2 Standard Zero Voltage Release (24VDC) 6 EXTERNALLY SUPPLIED 1-COIL STs Shunt Trip - external 60 Vdc B Shunt Trip - external 110 Vdc 3 Shunt Trip - external 125 Vdc 4 Shunt Trip - external 220/250 Vdc 5								Auxiliary Tripping Devices EXTERNALLY SUPPLIED 2-COIL STs Dual Winding Shunt Trip - external 60 Vdc A Dual Winding Shunt Trip - external 110 Vdc 7 Dual Winding Shunt Trip - external 125 Vdc 8 Dual Winding Shunt Trip - external 220/250 Vdc 9
O.C. Trip Target included (N.O. dry contact). 1 O.C. Trip Target included (N.C. dry contact). 2								Trip Target (OTT) Without 0
Standard wiring with 3 invertible contacts 3 Standard wiring with 5 invertible contacts 5 Standard wiring with 6 invertible contacts 6 Standard wiring with 7 invertible contacts 7 Standard wiring with 8 invertible contacts 8 Standard wiring with 9 invertible contacts 9 Standard wiring with 10 invertible contacts A								Wiring scheme Customer specific wiring scheme R

Accessories

Overcurrent Release (OCT)

The OCT release is a magnet with two magnetic circuits, optimizing the twin magnetic field principle.



This technology ensures equally fast tripping in both current directions. This system does not require an auxiliary control voltage to operate. It is a direct acting and instantaneous tripping device. The OCT consists of the holding circuit [6], the movable armature [3] and the tripping circuit [7]. The holding and the tripping magnetic circuits are both excited by load current [1]. Until the static overload release's response threshold has been reached, the armature [3] is held in position by the holding flux (Φ_H) [2] and the counter spring's force [4]. Once the load current exceeds the set static response threshold, the attraction flux (Φ_A) [2] takes over and rapidly pulls down the flexible armature [3]. During this operation, the armature hits the seesaw, which releases the quick latch in the mechanism. The latch and contacts are opened immediately. The response threshold can be easily adjusted by turning the adjustment nut with a SW6 hexagon wrench. The available ranges are described in the following table.

IEC/EN Breakers

OCT Band	Frame	Digit 6	Thresholds
1,0-3,0 kA	2607	W	1,00 kA; 1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA
1,5-2,5 kA	2607	A	1,50 kA; 1,80 kA; 2,00 kA; 2,20 kA; 2,50 kA
1,5-3,0 kA	2607	B	1,50 kA; 1,80 kA; 2,00 kA; 2,20 kA; 2,50 kA; 2,80 kA; 3,00 kA
1,5-4,0 kA	2607	C	1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA
1,5-5,0 kA	2607	D	1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA; 4,50 kA;
2,0-6,0 kA	2607	E	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA
2,0-7,0 kA	2607;4207	F	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA
2,0-8,0 kA	2607;4207	G	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA
2,5-5,5kA	2607;4207	H	2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA; 4,50 kA; 5,00 kA; 5,50 kA
3,0-7,0 kA	2607;4207;6007	J	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA
3,0-8,0 kA	2607;4207;6007	K	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA
3,0-9,0 kA	2607;4207;6007	L	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA
3,0-12,0 kA	2607;4207;6007	M	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA
5,0-10,0 kA	2607;4207; 6007;8007	N	5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA
6,0-14,0 kA	4207;6007;8007	P	6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA
7,0-15,0 kA	4207;6007;8007	Q	7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA; 15,00 kA
8,0-18,0 kA	4207;6007;8007	S	8,00 kA; 10,00 kA; 12,00 kA; 14,00 kA; 16,00 kA; 18,00 kA
10,0-16,0 kA	6007;8007	T	10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA; 15,00 kA; 16,00 kA
12,0-24,0 kA	6007;8007	U	12,00 kA; 14,00 kA; 16,00 kA; 18,00 kA; 20,00 kA; 22,00 kA; 24,00 kA

Tripping accuracy ±10%

ANSI/IEEE Breakers

OCT Band	Frame	Digit 6	Thresholds
1,0-3,0 kA	2508	W	1,00 kA; 1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA
1,5-2,5 kA	2508	A	1,50 kA; 1,80 kA; 2,00 kA; 2,20 kA; 2,50 kA
1,5-3,0 kA	2508	B	1,50 kA; 1,80 kA; 2,00 kA; 2,20 kA; 2,50 kA; 2,80 kA; 3,00 kA
1,5-4,0 kA	2508	C	1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA
1,5-5,0 kA	2508	D	1,50 kA; 2,00 kA; 2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA; 4,50 kA;
5,00 kA	2607	E	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA
2,0-6,0 kA	2508;4008	E	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA
2,0-7,0 kA	2508;4008	F	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA
2,0-8,0 kA	2508;4008	G	2,00 kA; 3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA
2,5-5,5kA	2508;4008	H	2,50 kA; 3,00 kA; 3,50 kA; 4,00 kA; 4,50 kA; 5,00 kA; 5,50 kA
3,0-7,0 kA	2508;4008	J	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA
3,0-8,0 kA	2508;4008	K	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA
3,0-9,0 kA	2508;4008	L	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA
3,0-12,0 kA	2508;4008	M	3,00 kA; 4,00 kA; 5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA
5,0-10,0 kA	2508;4008; 5008;6008	N	5,00 kA; 6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA
6,0-14,0 kA	2508;4008;	P	6,00 kA; 7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA
7,0-15,0 kA	4008;5008; 6008	Q	7,00 kA; 8,00 kA; 9,00 kA; 10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA; 15,00 kA
6,0-14,0 kA	4008;5008;	S	8,00 kA; 10,00 kA; 12,00 kA; 14,00 kA; 16,00 kA; 18,00 kA
10,0-16,0 kA	4008;5008; 6008	T	10,00 kA; 11,00 kA; 12,00 kA; 13,00 kA; 14,00 kA; 15,00 kA; 16,00 kA
7,0-15,0 kA	4008;5008;	U	12,00 kA; 14,00 kA; 16,00 kA; 18,00 kA; 20,00 kA; 22,00 kA; 24,00 kA

Tripping accuracy ±10%

ANSI/IEEE Rectifier Breakers

POCT Band	Frame	Digit 6	Thresholds
0,8kA-2,5kA	6008R;8008R	6	0,80 kA; 1,14 kA; 1,48 kA; 1,82 kA; 2,16 kA; 2,50 kA
2kA-6kA	6008R;8008R	7	2,00 kA; 2,80 kA; 3,60 kA; 4,40 kA; 5,20 kA; 6,00 kA
4kA-8kA	6008R;8008R	8	4,00 kA; 4,80 kA; 5,60 kA; 6,40 kA; 7,20 kA; 8,00 kA

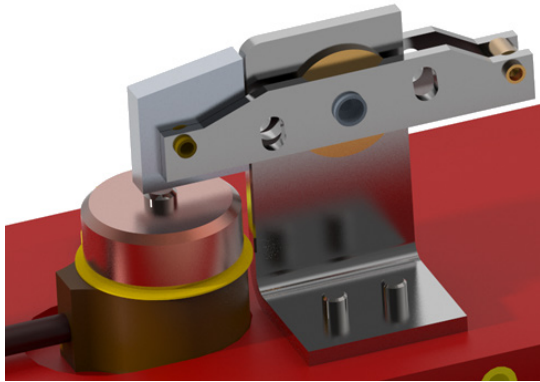
Tripping accuracy ±10%

No	OCT band	2607/2508	4207/4008	6007	5008/6008/8007
W	1 kA - 3 kA				
A	1.5 kA - 2.5 kA				
B	1.5 kA – 3 kA				
C	1.5 kA – 4 kA				
D	1.5 kA – 5 kA				
E	2 kA – 6 kA				
F	2 kA – 7 kA				
G	2 kA – 8 kA				
H	2.5 kA - 5.5 kA				
J	3 kA – 7 kA				
K	3 kA – 8 kA				
L	3 kA – 9 kA				
M	3 kA – 12 kA				
N	5 kA – 10 kA				
P	6 kA – 14 kA				
Q	7 kA – 15 kA				
S	8 kA – 18 kA				
T	10 kA – 16 kA				
U	12 kA – 24 kA				

Accessories

ED impulse coil release (Digit 11)

ED impulse release requires an external protective relay for monitoring a current increase. This relay must be provided and installed by the customer. If a fault occurs, an external relay signal wired into the capacitors' control unit (internal NEKO or external capacitor), causes NEKO unit to discharge its energy into ED coil



The coil trips the breaker's quick latch and opens breaker's contacts in less 3ms. ED impulse release is an optional accessory. Complete set consists of ED coil and electronic control unit with capacitor called NEKO. The external release signal shall be 8 V to 24 V DC and shall be connected at terminals (-X2 :10 / :11) in standard wiring scheme. Customer supplied capacitor trip unit may be used. Rated voltage of 300 V and capacity of 2.000 μ F is required. In this case only ED coil will be installed in the breaker.

Shunt trip release (ST) (Digit 10)

Gerapid breaker can be equipped with shunt trip release for remote actuation tripped by a potential free contact. In standard configuration, internal voltage converter transforms external voltage into 24 V DC, which is the one required by ST. Optionally, ST can be connected directly to external voltage. In this case board with extinguish capacitors and diode is used to improve switching of the shunt trip's coil. Double winding shunt trip is available with this option for 110/125/220 V DC external control supply. Optionally, it's possible to supply both devices directly to external 24 V DC (5%). In this case the release signal for ST shall not be longer 100 ms.

NOTE: This accessory is not compatible with zero voltage release.

Zero Voltage Release (ZVR) (Digit 10)

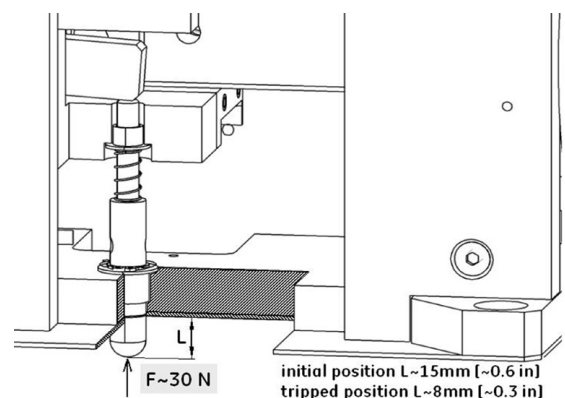
Is used for remote actuation and, in combination with an internal electronic control, for voltage control. The ZVR releases at voltage interruption or supply voltage drop below 20V. In these cases, ZVR trips the breaker. It is therefore possible to use this device in combination with the electronic trip unit for voltage monitoring, where an unintended re-start of machines after a temporary voltage breakdown is to be prevented. The ZVR is intended for continuous operation. Its rated power is 10 W.

NOTE: This accessory is not compatible with shunt trip release.

Forced tripping interlock (FT) (Digit 12)

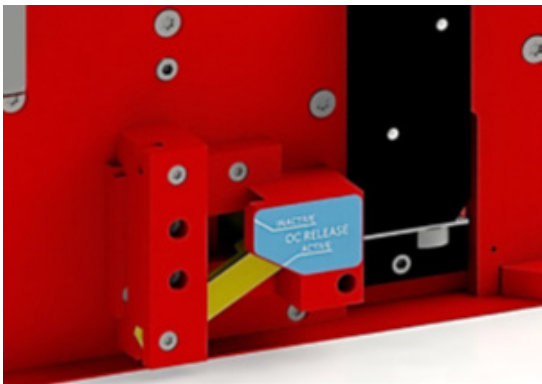
This is a mechanical plunger mounted in the breaker base plate, when pressed upward, directly releases the trip latch and causes breaker to open.

The FT interlock can be used with the OEM module, for draw out breaker applications FT interlock can also be used to provide a front door accessible trip interlock, such as tripping of the breaker before a crank handle can be inserted for racking or serving as a mechanical tripping device accessible for operator.

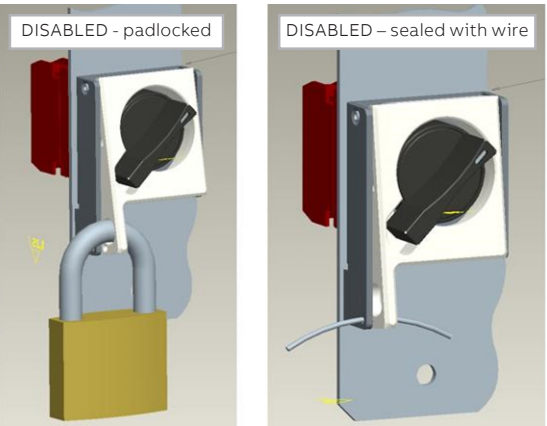


Trip-Free linkage (TL) (Digit 12)

This device provides for mechanically locking the breaker in “trip-free” position. In this position the breaker closing mechanism can release, but main contacts do not touch. This is referred to “kiss-free” ability in a “trip-free” position. Additionally, the TL linkage can be used for tripping the breaker either by mechanical or remote high-speed actuator. TL device is especially useful as a safety interlock for LOTO procedures.



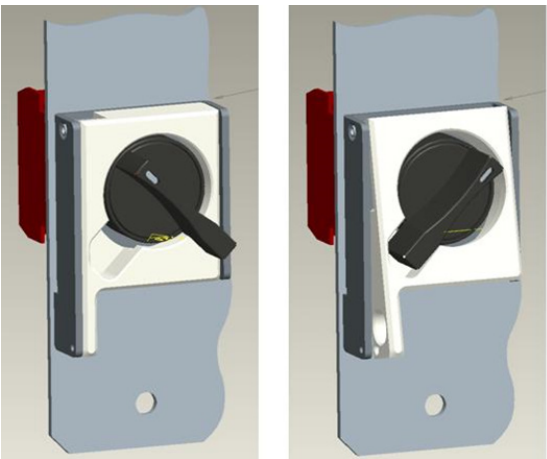
Interlock can be activated either manually or remotely. Manual activation by means of selector switch; remote activation is by use of external dry N.C. contact.



Disabled/sealed with wire

Close-Stop Interlock (CS)

This is an electrical interlock consisting of a two-position switch and internal stop close circuit. CS interlock allows remote or local blocking of breaker’s closing operation. It is a feature required by IEEE/ANSI C37.14 standard for DC power circuit breakers. This interlock system provides enhanced safety for operators, by eliminating unintended breaker closing operation if activated.

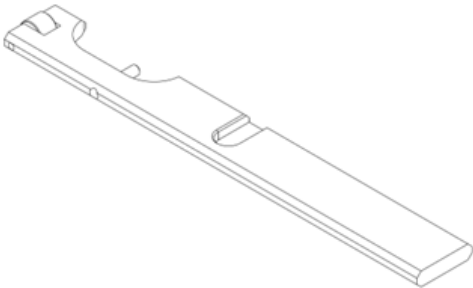


Enable/Unlocked

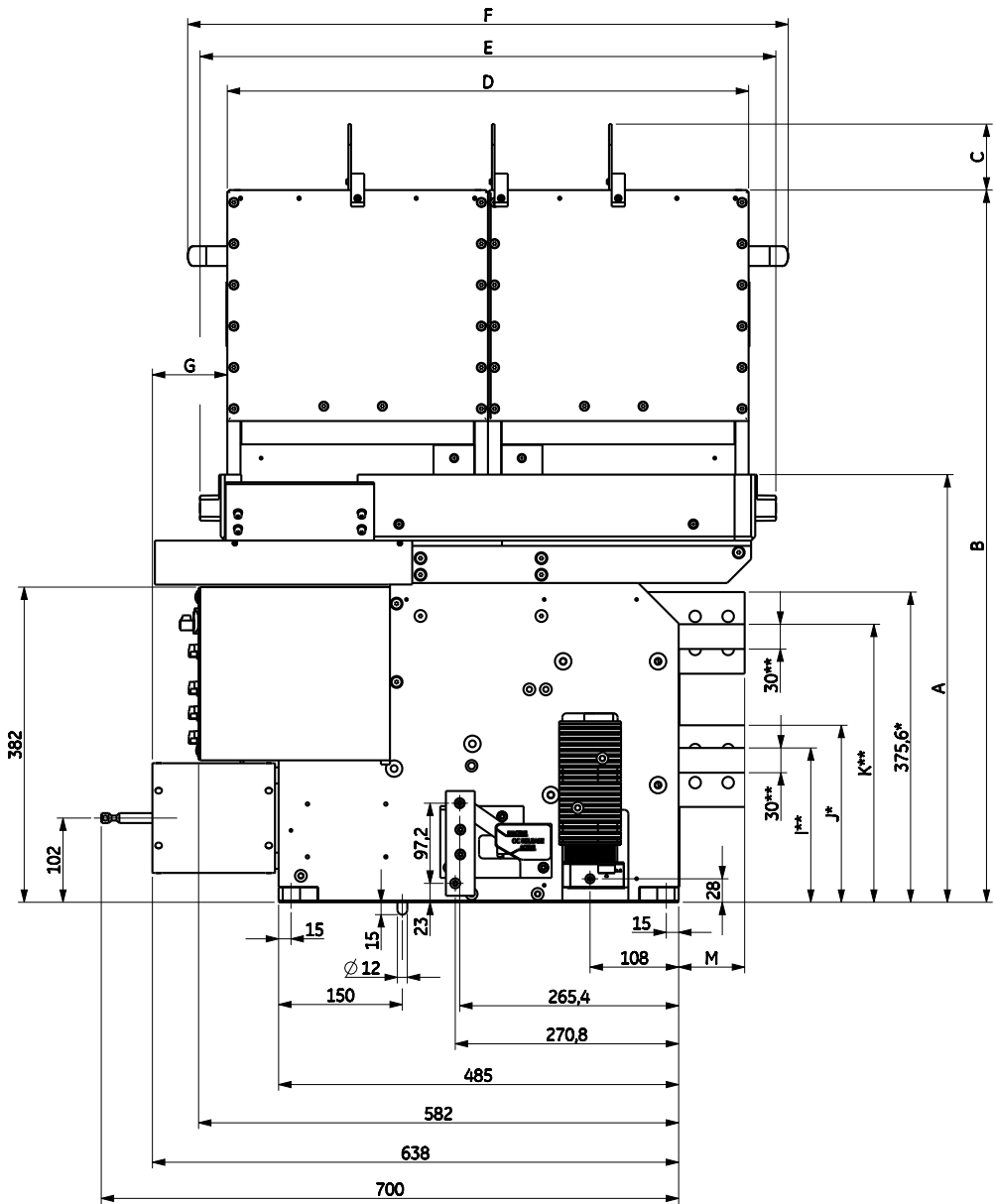
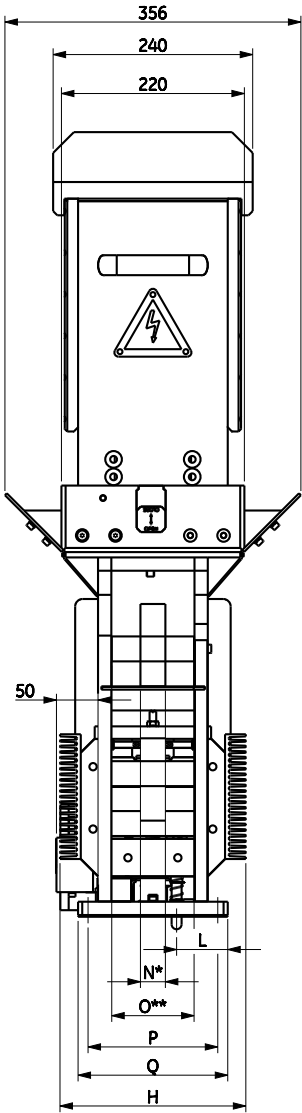
Disabled/locked
Disabled/Padlocked

Lever for manual operating

The lever useful for manual closing and opening operation during maintenance operations. This tool must not be used while breaker is energized. To close the contacts, install hand lever on the drive’s rod, and pull it out smoothly until latches snap.



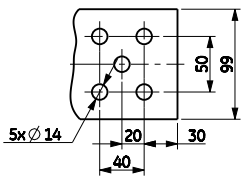
Dimensions



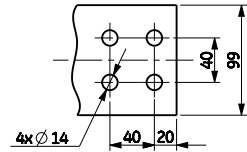
* -for vertical terminals only
** -for horizontal terminals only

* -for vertical terminals only
** -for horizontal terminals only

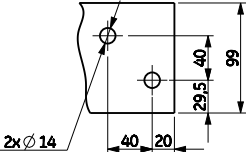
Gerapid 6007, 8007, 5008, 6008 terminals
(vertical only)



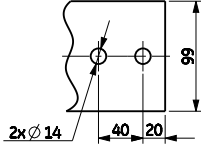
Gerapid 4207, 4008 terminal H & V
(horizontal and vertical)



Gerapid 2607, 2508 terminal V
(vertical)



Gerapid 2607, 2508 terminal H
(horizontal)

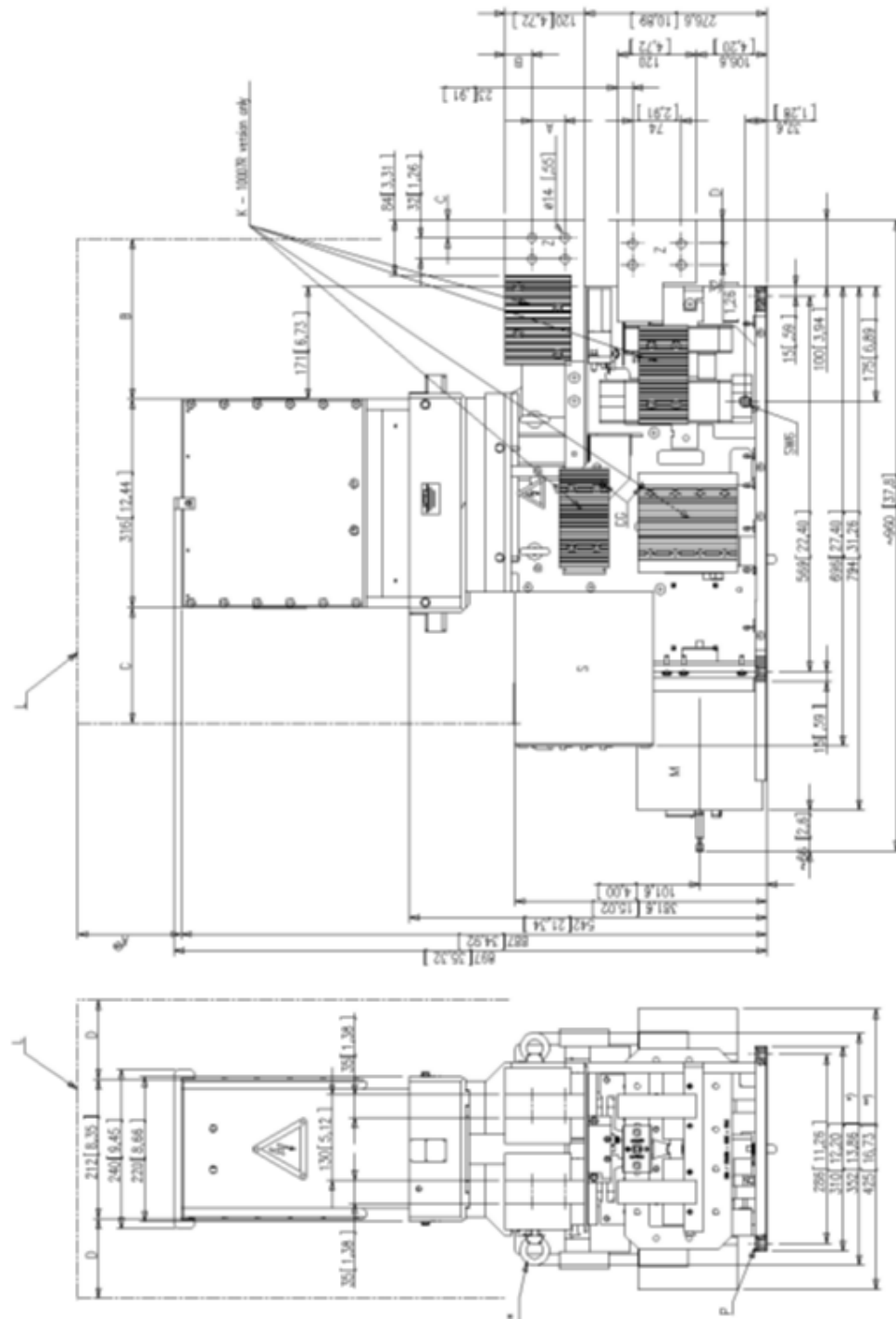


Gerapid Type	Arc Chute Type	Parameter values																	
		A	B	C	D	E	F	G	H	I**	J**	K**	L	M	N*	O**	P	Q	
2607	1x2	473	818	10	316	382	412	265	N/A	186.6	214.1	336.6	61.5	80	30	99	156	180	
2508																			
4207																			
4008																			
6007																			
2607	1x4	473	818	150	316	382	412	265	N/A	186.6	214.1	336.6	61.5	80	30	80	156	180	
4207																			
6007																			
2607																			
6007																			
2607	1x2H	518	863	10	316	382	412	265	N/A	186.6	214.1	336.6	61,5	80	30	99	156	180	
4207																			
6007																			
2607																			
6007																			
2607	2x2 2x3	518	863	80	632	698	728	91	N/A	186.6	214.1	336.6	61.5	80	30	99	156	180	
4207																			
6007																			
2607																			
6007																			
2607	2x4	518	863	150	632	698	728	91	N/A	186.6	214.1	336.6	61.5	80	30	99	156	180	
4207																			
6007																			
2607																			
6007																			
8007	1x2	473	818	10	316	382	412	265	270	N/A	225.6	N/A	100.5	174	100	N/A	234	258	
5008																			
6008																			
8007																			
8007																			
8007	2x...	518	863	80	632	698	728	91											

* -for vertical terminals only
** -for horizontal terminals only

Dimensions

Gerapid 6008R and 8008R with arc chute 1xtype; dimensions in mm [in]



Electrical Diagrams

Wiring Code

The main circuits are not shown in the wiring diagrams. The control circuit is presented as a typical circuit diagram and is a combination of numbered basic diagrams for drives, trips and indicators. Using the key numbers of the basic plan, you can derive the number of the complete diagram.

The wiring diagram is completely described by 8-digit code:

Key Position	1	/	2	3	4	5	6	7	8	9
Breaker Type	←									
Auxiliary Voltage	←									
High speed impulse release	←									
Control circuits	←									
Auxiliary tripping device	←									
Indication devices	←									
Auxiliary contacts	←									
Accessories	←									
Revision	←									

The code is reported also on nameplate:

ABB	
HIGH SPEED DC CIRCUIT BREAKER Gerapid 4207	
Standard	EN 50123-2 IEC 61992-2 Ed. 2.1
SN 1VC1CB00000055	Pr. year 2021
Catogue number	24A 40S 5A1 220 000 111
Type H/LB	Arc Chute Type 2x2
I _{Ne}	4200 A
U _{Ne}	1800 V DC
U _{Nm}	3000 V DC
T _{Nc}	31,5 ms
I _{Nss}	80 kA
	8,0 – 18,0 kA
Diagram Number	36 / 1 2 20 10 20 A 100 09
	230 V AC
or	24 V DC
Auxiliary Control Voltage	220-250 V DC / 115-240 V AC
Auxiliary Contacts	10 x Type C Changeover
Utilization Category	AC-13 DC-13
Rated Operational Voltage	230 V AC 110 V DC
Rated Operational Current	5 A 0,5 A
Made by ABB, Italy	

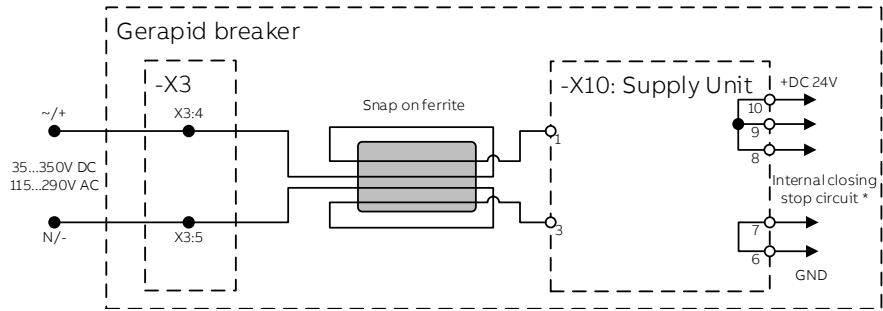
Key Position	36	/	1	2	20	20	20	A	100	09
Gerapid	←									
With voltage converter	←									
With ED and NEKO	←									
Standard breaker	←									
With 24 V DC ZVR release	←									
With N.O. OTT trip target	←									
With 10 aux. contacts	←									
Operations counter	←									
Revision	←									

Key position	Description	Key No.
Breaker Type		
	Rectifier circuit breaker	37
1	Gerapid	36
Auxiliary Voltage		
2	Voltage converter to internal 24 V dc	1
	External 24 V dc supply for control circuits	2
	Other external supply for breaker without SU control board	3
High speed impulse release		
3	Without	0
	ED-trip coil w/o internal C-bank (NEKO)	1
	ED-trip coil with internal C-bank (NEKO)	2
Control circuits		
4	Breaker (w/o SU control board)	00
	Standard breaker (with SU control board)	20
Auxiliary tripping device		
5	Shunt Trip 24 V DC	
	Shunt Trip 110 V DC	11
	Shunt Trip 125 V DC	12
	Shunt Trip 220 V DC	13
	Dual winding Shunt Trip 110 V DC	14
	Dual winding Shunt Trip 125 V DC	15
	Dual winding Shunt Trip 220 V DC	16
	Shunt Trip 60 V DC	18
	Dual winding Shunt Trip 60 V DC	17
	Zero Voltage Release 24 V DC	20
	-	21
Indication devices		
6	Without	00
	Overcurrent Trip Target indicator N.O.	2x
	Overcurrent Trip Target indicator N.C.	4x
	Arc Chute Presence (ACP) indicator	x2
Auxiliary contacts		
7	3 auxiliary contacts	3
	5 auxiliary contacts	5
	6 auxiliary contacts	6
	7 auxiliary contacts	7
	8 auxiliary contacts	8
	9 auxiliary contacts	9
	10 auxiliary contacts	A
Accessories		
8	Without	000
	Operations counter (OC)	1xx
	Remote Closing STOP (CS) interlock	x1x
	Trip-Free Linkage (TL)	xx1
Revision		
9	Revision	xx

Electrical Diagrams

IEC drawings

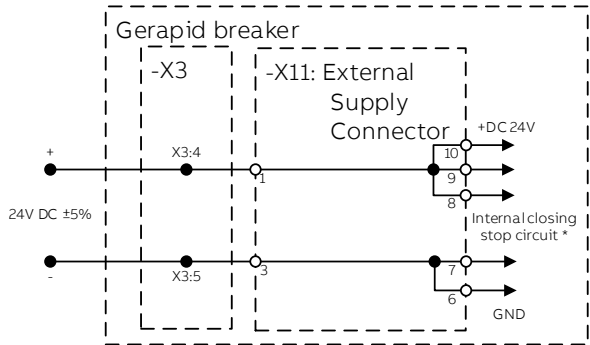
Breaker with internal Voltage Converter



* Connected only for breakers with SU control board.

36/ X _ _ _ _ _ 09
→ Key no. 1 - Voltage converter 35...75V DC; 50...150V DC; 115...290V AC

Breaker without internal Voltage Converter

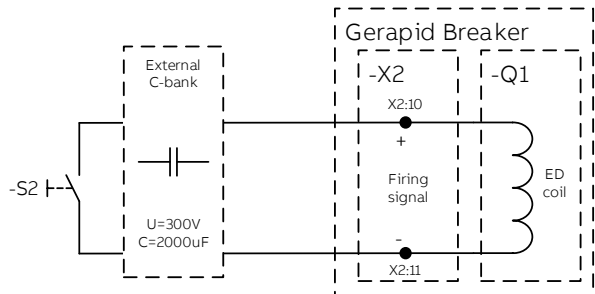


* Connected only for breakers with SU control board.

36/ X _ _ _ _ _ 09
→ Key no. 2 - Voltage converter external 24V DC +/-5%

ED coil with external capacity bank

In this option ED coil, is tripped by means of external capacitor trip device. The NEKO control unit is not furnished, and coil is connected directly to front panel of control box (-X2 :10/:11).



36/ _ X _ _ _ _ _ 09
→ Key no. 0 - Without ED impulse release
Key no. 1 - With ED impulse coil

All requirements listed in following table must be considered during designing of control system for ED Impulse Coil:

Rating	Unit	Value	Limits
Resistance of the coil	mΩ	185	-5%...+5%
Required capacity bank	μF	2000-4000	min – max.
Charging voltage	V	300-350	min – max.
Let thru current during discharging	A	500 – 700	min – max.
Discharging command duration	ms	10	max.
Opening time	ms	3.0	max.
Number of operations with 2 seconds intervals	ops	10	max.
Number of operations with 10 seconds intervals	ops	50	max.
Number of operations with 30 seconds intervals	ops	1.000	max.
Resistance of wire connection	mΩ	150	max

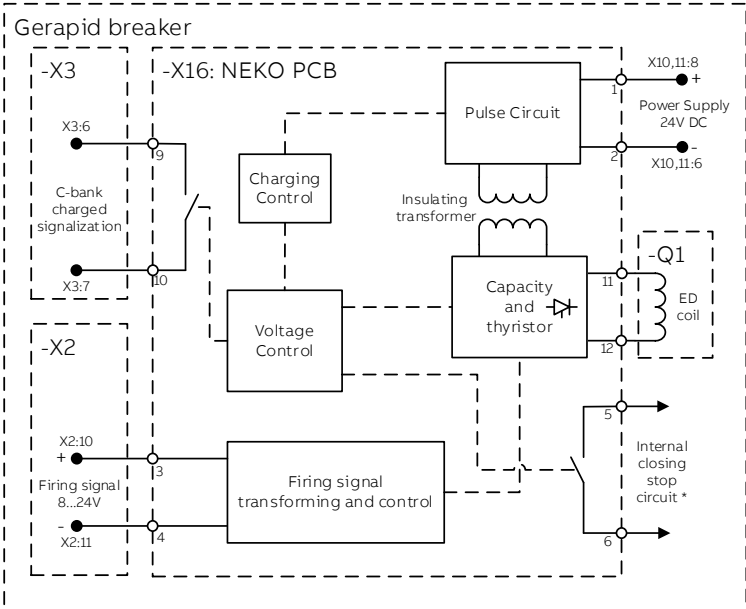
Requirements for ED Impulse Coil

Wires Cross Section	Unit	Value	Limits
AWG 13 or 2.5 mm²	m / ft	11 / 36	max.
AWG 14	m / ft	8 / 26	max.
AWG 15 or 1.5 mm²	m / ft	6 / 20	max.
AWG 16	m / ft	5 / 16	max.

Allowed length of cooper wire connection*.
* - length of a single cooper wire from source capacity bank to the breaker terminal

NEKO C-bank control unit

Tripping signal at (-X2 :10/:11) is processed by opto-coupler, the signal voltage shall be between 8 V DC up to 24 V DC without spikes (<3 ms). Maximum duration of the tripping command must not exceed 1 sec. Longer signals might cause NEKO failure! It is recommended to use one of HS auxiliary contacts connected in series with tripping circuit (-X2 :10) in order to automatically cut off the tripping circuit after breaker opening.

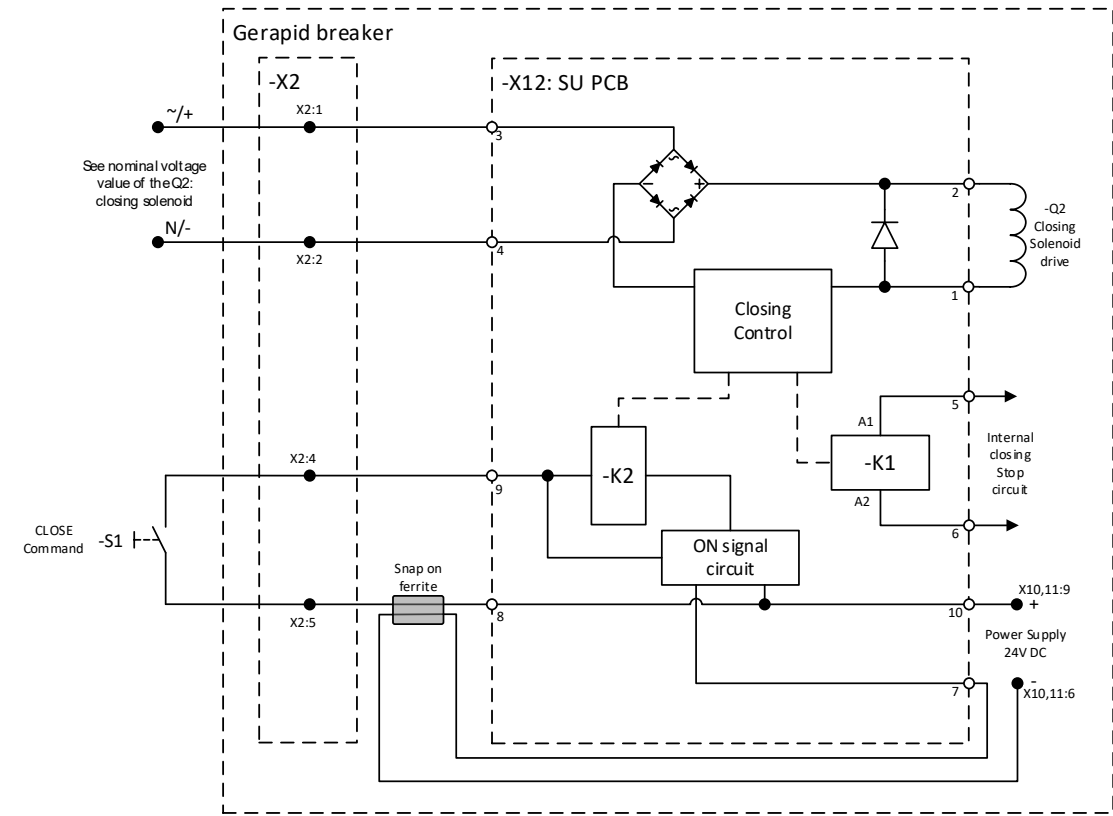


* Connected only for breakers with SU control board.

36/ _ X _ _ _ _ 09
→ Key no. 2 – With ED impulse coil and internal C-bank (NEKO)

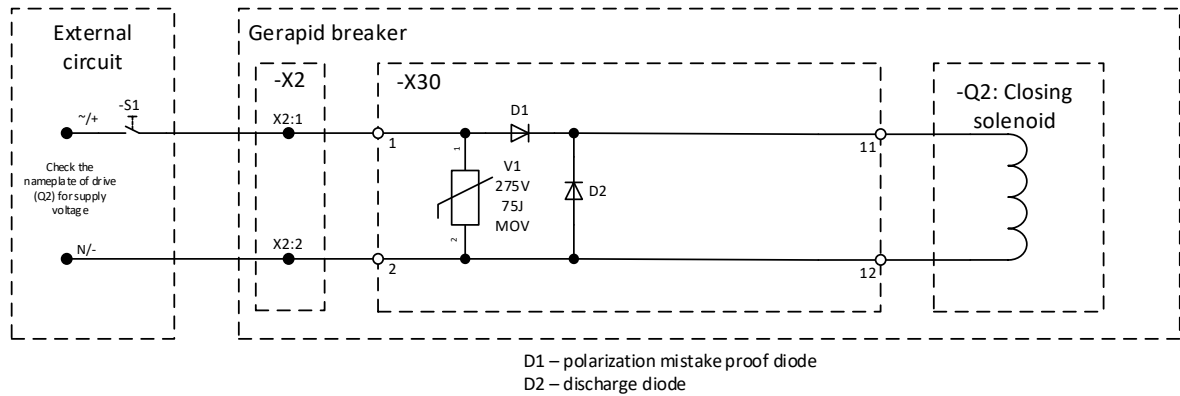
Electrical Diagrams

SU control board circuit



36/ __ 20 __ _09
→ Breaker with SU PCB

Closing circuit without SU control board

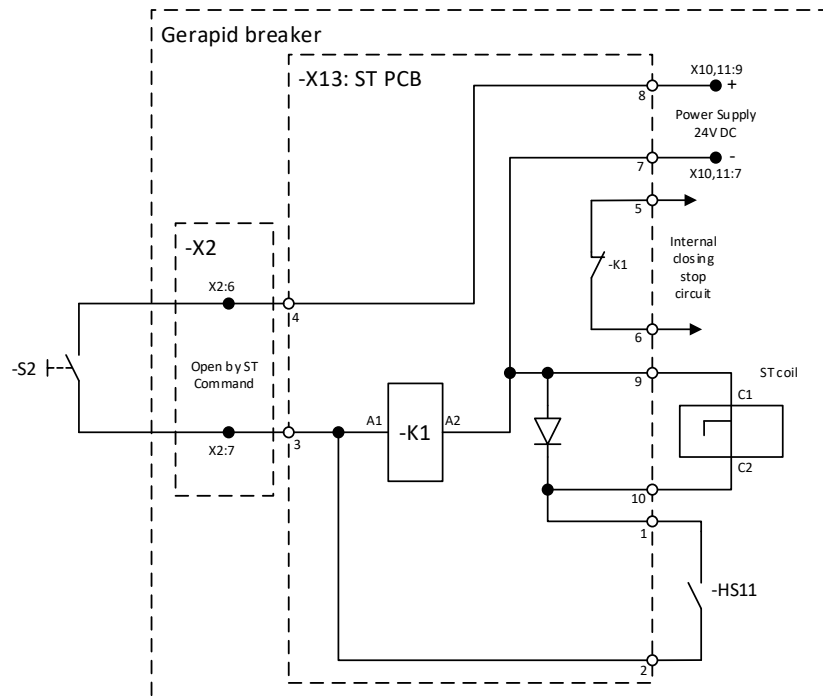


D1 – polarization mistake proof diode
D2 – discharge diode

36/ __ 00 __ _09
→ Breaker without SU PCB

Standard DC 24 V shunt trip with SU control board

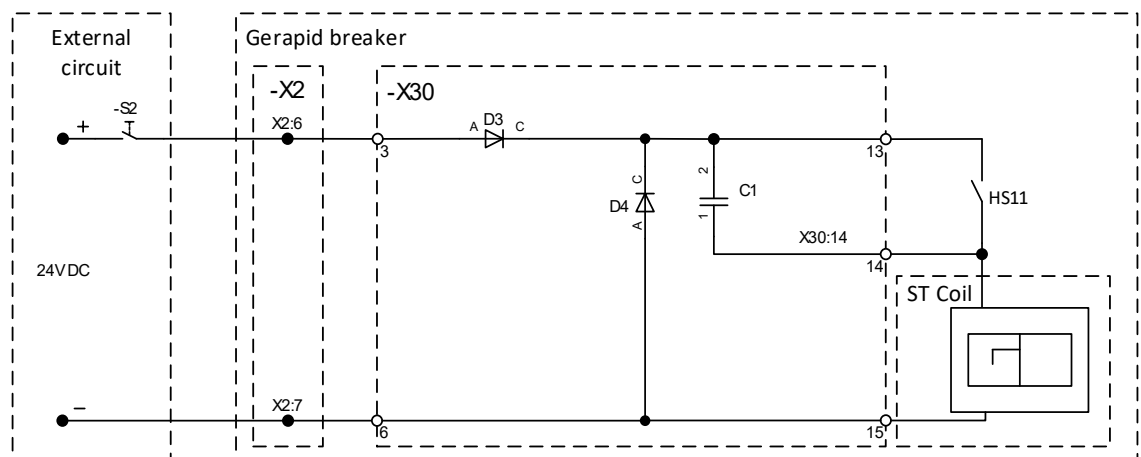
The closing STOP signal is provided for resetting K2 on the SU-control circuit. It effects with priority in switching OFF (by ST or ZVR) before switching ON. Once switching ON and OFF signals are simultaneous, switching OFF command will stay longer than switching ON. It means, that OFF command is master command. The shunt trip operates for short time period only. After main contacts open, switch HS 11 cuts off shunt trip coil. Manual closing of the breaker, while –S2 contact is closed, leads to overheating of ST coil and will damage coil.



36/ __ 20 XX __ __ 09

Key no. 10 – With shunt trip 24V DC

Standard DC 24 V shunt trip without SU control board



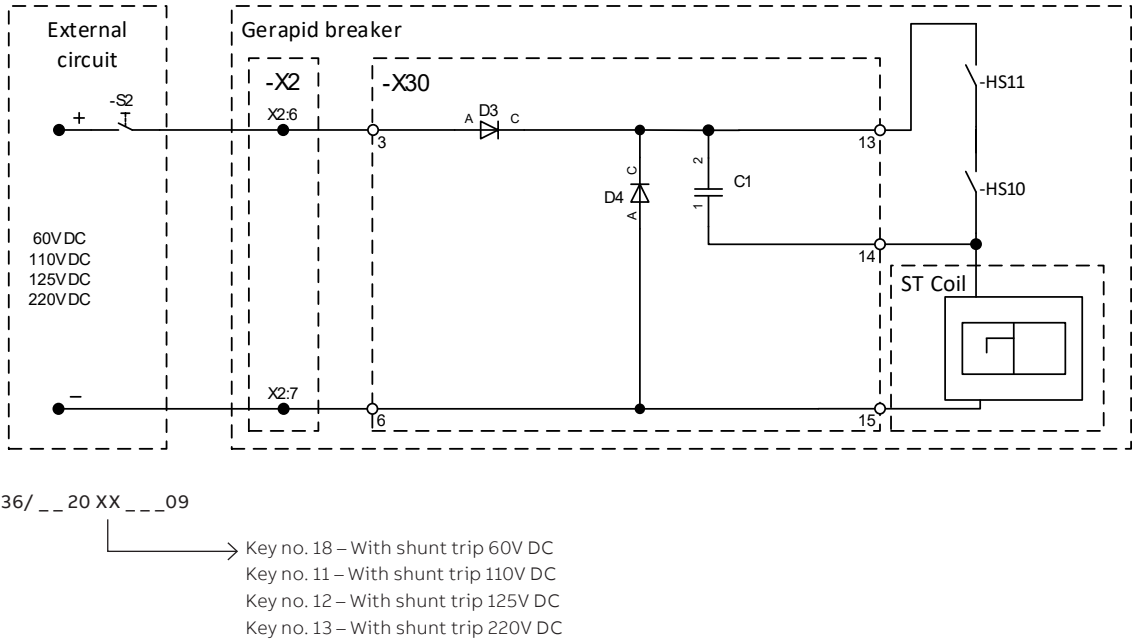
36/ __ 00 XX __ __ 09

Key no. 10 – With shunt trip 24 DC

Electrical Diagrams

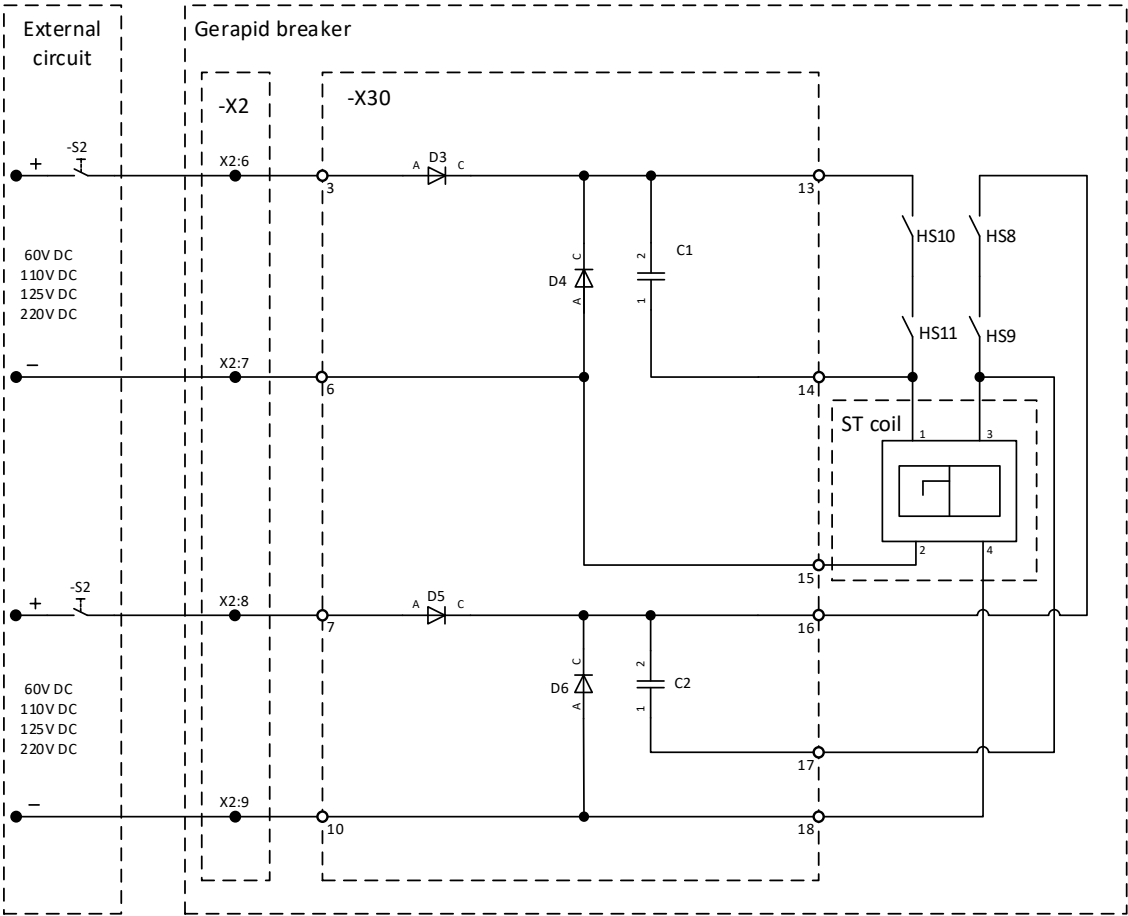
Breakers with single winding Shunt Trip with or without SU control board

Single winding shunt trip coil is available for external DC 60 V, DC 110 V, DC 125 V and DC 220/250 V. User shall provide fused means for safe switching the voltage to the coil. See Table in Annex A1 for coil parameters. Auxiliary contacts used for cutting off shunt trip coils are internal breaker's components.



Breaker with double winding Shunt Trip with or without SU control board

Double winding shunt trip coil is available for external DC 60V, DC 110 V, DC 125 V and DC 220/250 V. User shall provide fused means for safe switching the voltage to the coil. See Table Annex A1 for coil parameters. Auxiliary contacts used for cutting off shunt trip coils are internal breaker’s components.



36/ __ 20 XX __ _09

- Key no. 17 – With double winding shunt trip 60V DC
- Key no. 14 – With double winding shunt trip 110V DC
- Key no. 15 – With double winding shunt trip 125V DC
- Key no. 16 – With double winding shunt trip 220V DC

All requirements listed in following must be considered during designing of control system for Shunt Trip release

Rating	Unit	Value	Limits
Rated voltage	V d.c.	24/60/110/125/220	-15%...+5%
Rated power of 24 V d.c. coil	W	100	-5%...+5%
Rated power of 60/110/125/220 V d.c. coil	W	230	-5%...+5%
Opening time	ms	30 - 50	min - max
24 V d.c. coil duty cycle at Ta=40 °C	%	9	max
60/110/125/220 V d.c. coil duty cycle at Ta=40 °C	%	3	max
Allowable energizing time for tripping	ms	100	max.
Number of operations with 2 seconds intervals	ops	10	max.
Number of operations with 10 seconds intervals	ops	50	max.

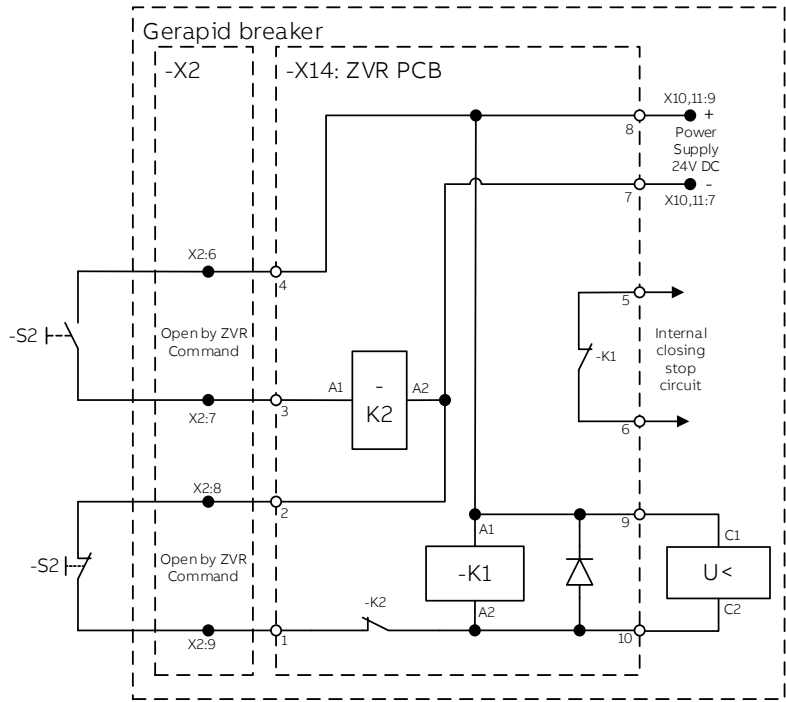
Electrical Diagrams

24V dc Zero Voltage Release for breakers with SU control board

The closing STOP signal is provided for resetting K2 on the SU-control circuit. It effects with priority in switching OFF (by ST or ZVR) before switching ON. Once switching ON and OFF signals are simultaneous, switching OFF command will stay longer than switching ON. It means, that OFF command is master command.

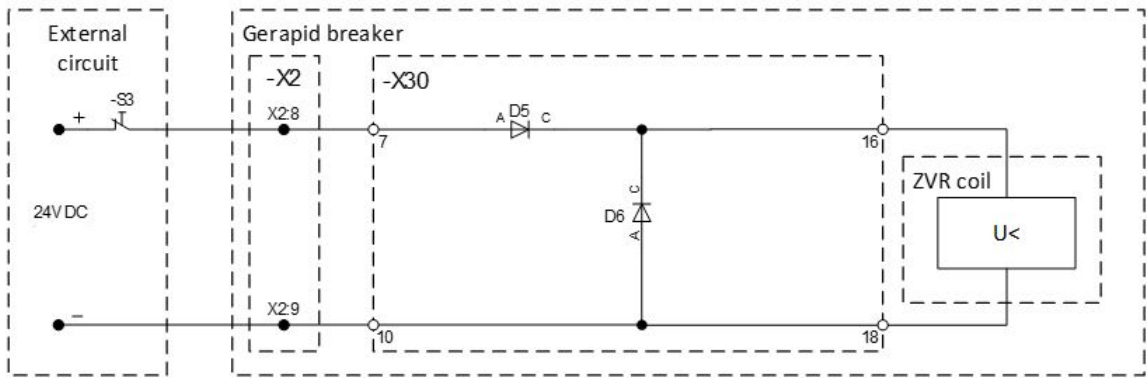
-S2 (-X2 :6/:7) is N.O. contact, utilized for indirect releasing of the ZVR by relay -K2

-S3 (-X2 :8/:9) is N.C. contact utilized for direct releasing of the ZVR. If it's not used, please short this connection permanently



36/ __ 20 XX __ 09
→ Key no. 20 – With 24Vdc zero voltage release

Zero Voltage Release for all other voltages and for breakers without SU control board



36/ __ 00 XX __ 09
→ Key no. 20 – With 24Vdc zero voltage release

Indicators OCT Release Indicator N.O.

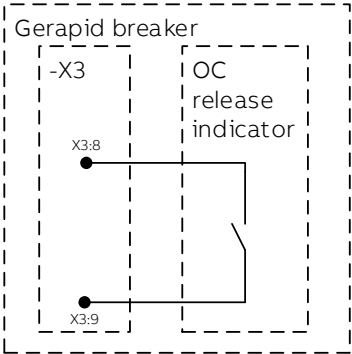


Fig. 29 OTT trip target with N.O. contacts

OCT Release Indicator N.C.

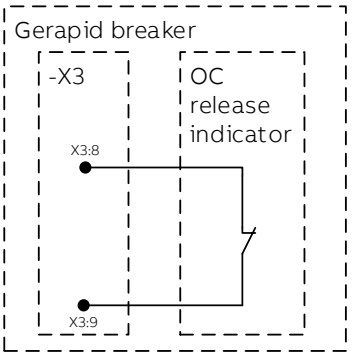
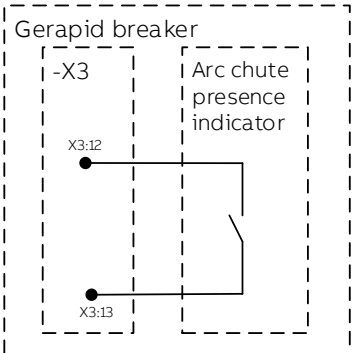


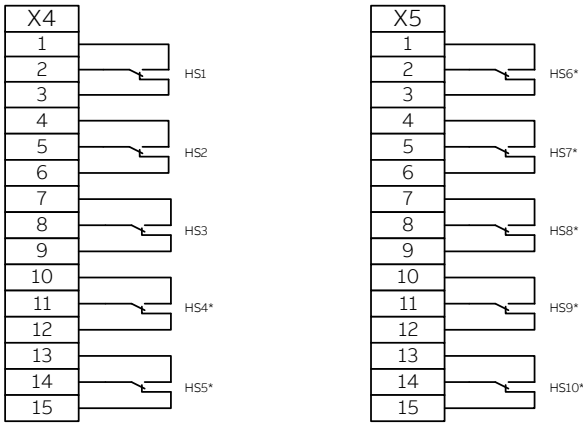
Fig. 29a OTT trip target with N.C. contacts

Arc Chute Presence Indicator N.C.



- 36/ _ _ _ _ XX _ _ 09
- Key no. 00 – Without signal
 - Key no. 2x – With N.O. OC release indicator (OC trip target)
 - Key no. x2 – With arc chute presence indicator
 - Key no. 4x – With N.C. OC release indicator (OC trip target)

Auxiliary switches

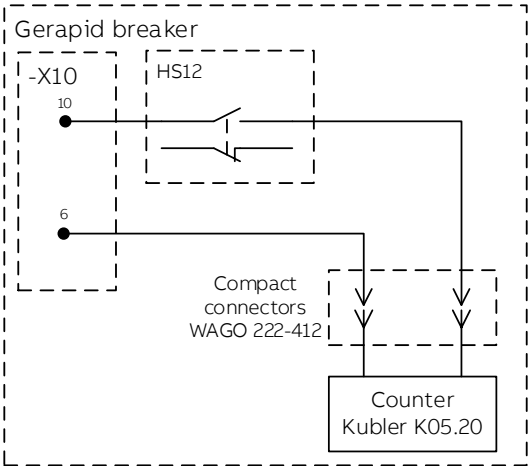


Auxiliary switches are shown in "OFF" position of the main contacts !
*) Optional, exist only if ordered

- 36/ _ _ _ _ X _ 09
- Key no. 3 – for 3 auxiliary switches
 - Key no. 5 – for 5 auxiliary switches
 - Key no. 6 – for 6 auxiliary switches
 - Key no. 7 – for 7 auxiliary switches
 - Key no. 8 – for 8 auxiliary switches
 - Key no. 9 – for 9 auxiliary switches
 - Key no. A – for 10 auxiliary switches

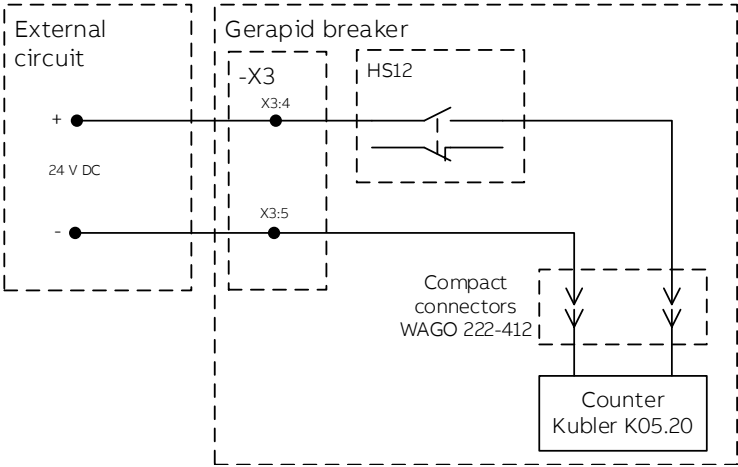
Electrical Diagrams

Accessories Electromechanical operation counter for breakers with Voltage Converter



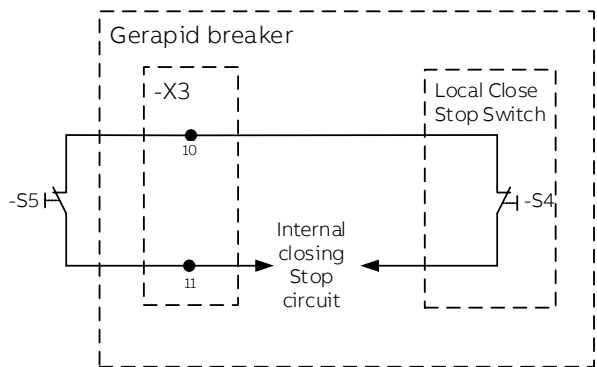
36/ 1 _ _ _ 1xx _ _ 09
→ Key number – 1xx: With Operation counter

Electromechanical operation counter for breakers without Voltage Converter



36/ 2 _ _ _ 1xx _ _ 09
→ Key number – 1xx: With Operation counter

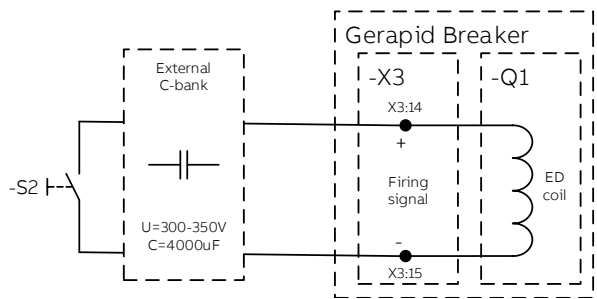
Remote Close-STOP interlock



36/ __ 20 _ x1x __ 09

→ Key number - x1x: With Close-Stop interlock
Available only for breakers with SU board.

Trip-Free Linkage (TL) interlock



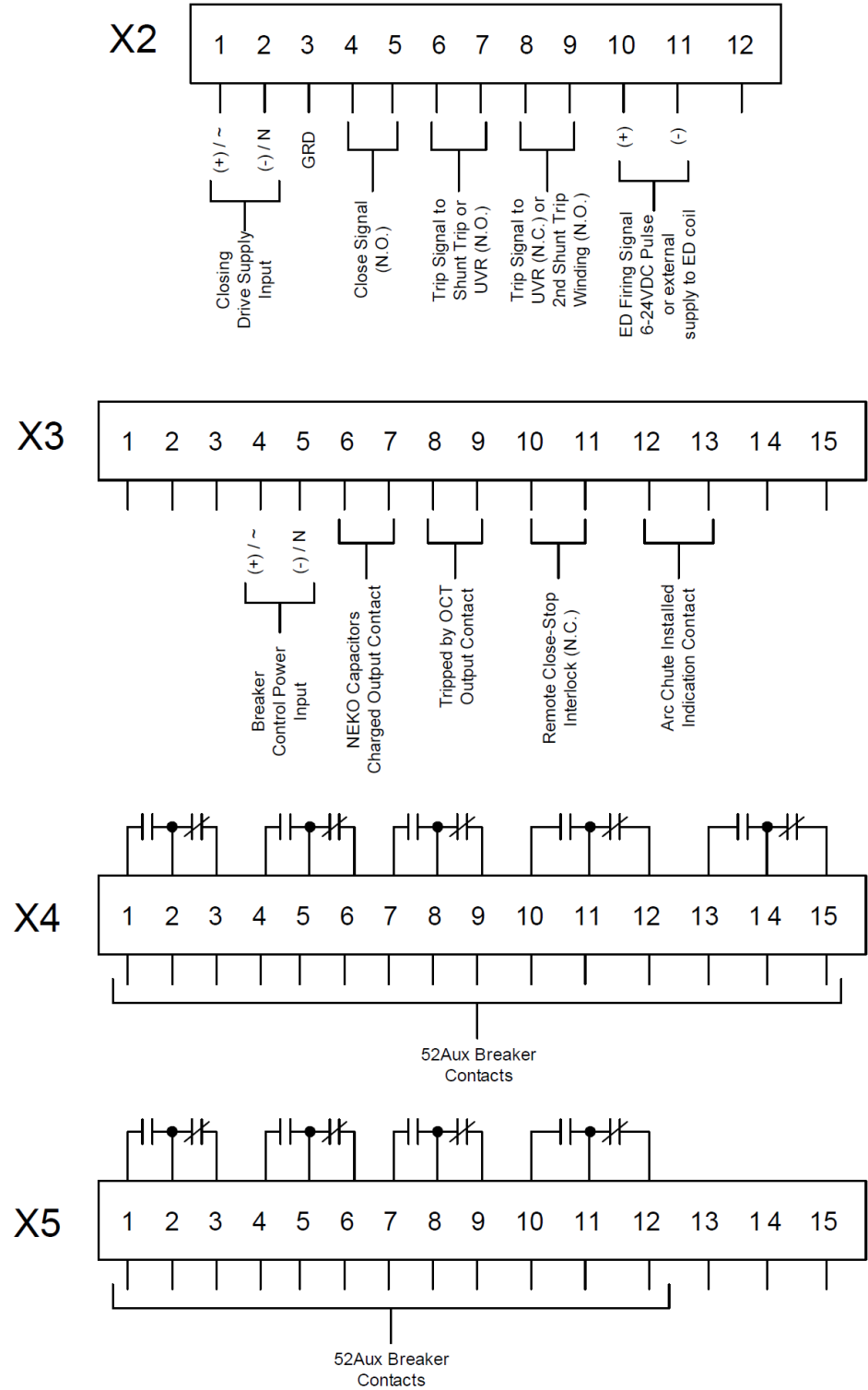
36/ _ _ _ _ x1x _ 09

→ Key number - xx1: With Trip Free Linkage

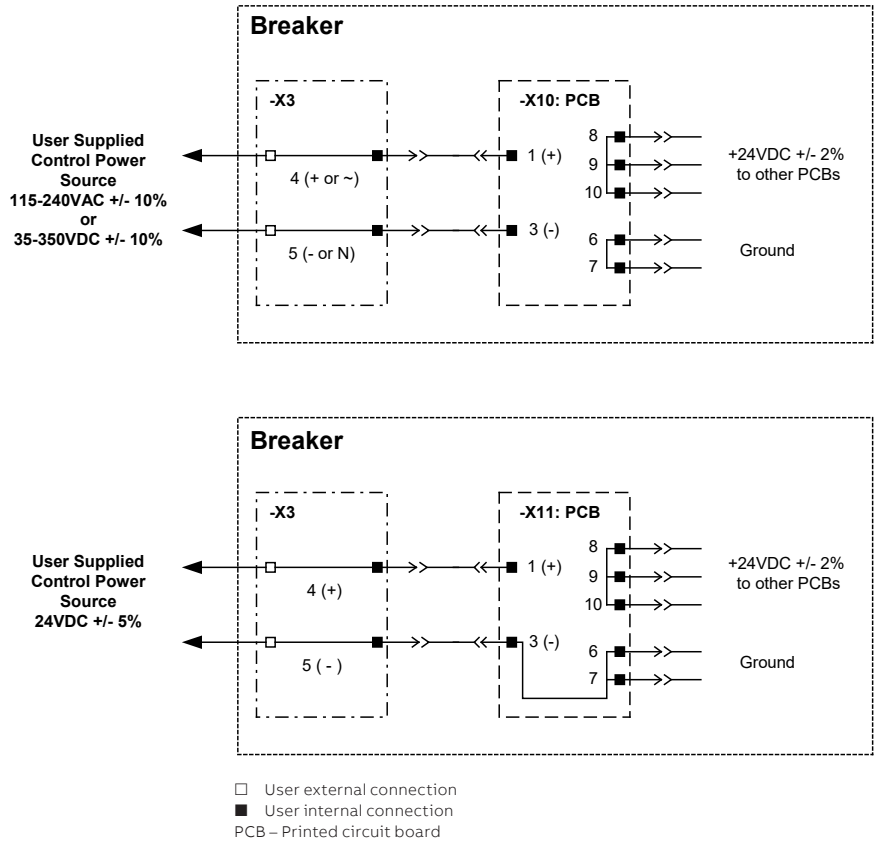
Electrical Diagrams

ANSI drawings

External connections to the breaker



Breaker Internal Control Power Supply Internal Control Power Supply



36/ X_____

→ Key position – 2

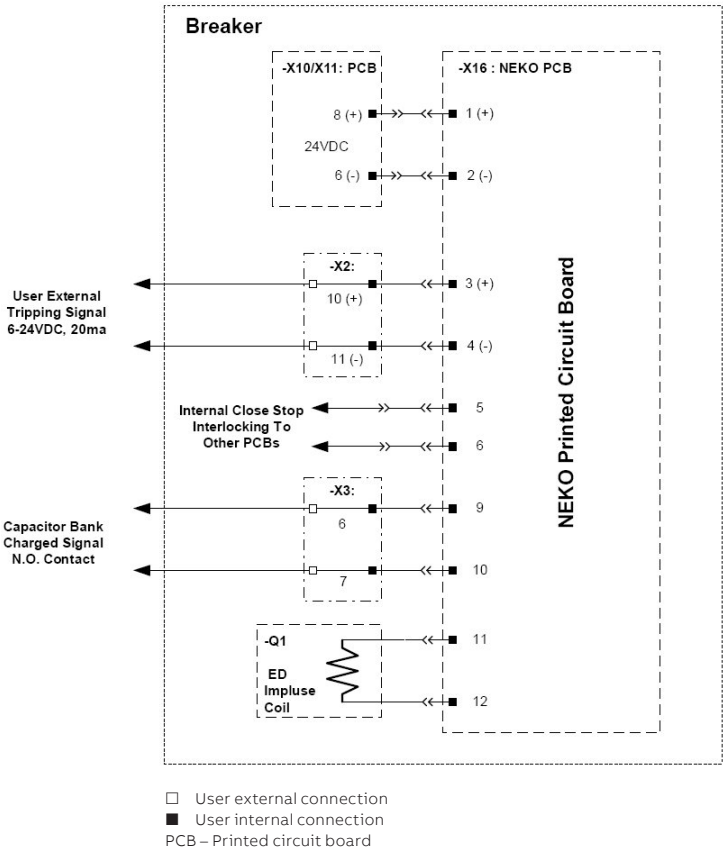
Key number – 1: With internal voltage converter

Key number – 2: Directly supplied from external 24VDC power source

Electrical Diagrams

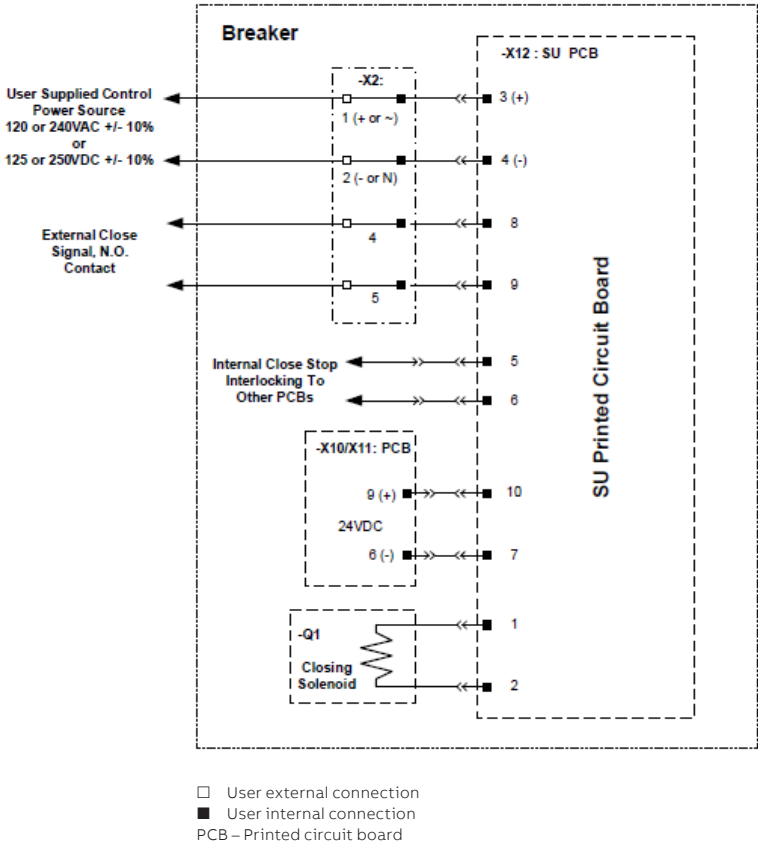
ED Coil With Internal NEKO Control Circuit

Tripping signal at (-X2 :10/:11) is processed by opto-coupler, the signal voltage shall be between 8 V DC up to 24 V DC without spikes (<3 ms). Maximum duration of the tripping command must not exceed 1 sec. Longer signals might cause NEKO failure! It is recommended to use one of HS auxiliary contacts connected in series with tripping circuit (-X2 :10) in order to automatically cut off the tripping circuit after breaker opening.



36/_X_-----> Key position – 3
Key number – 0: Without ED impulse coil
Key number – 1: With ED impulse coil only
Key number – 2: With ED impulse coil and internal NEKO control unit

SU Control Circuit for Closing Solenoid

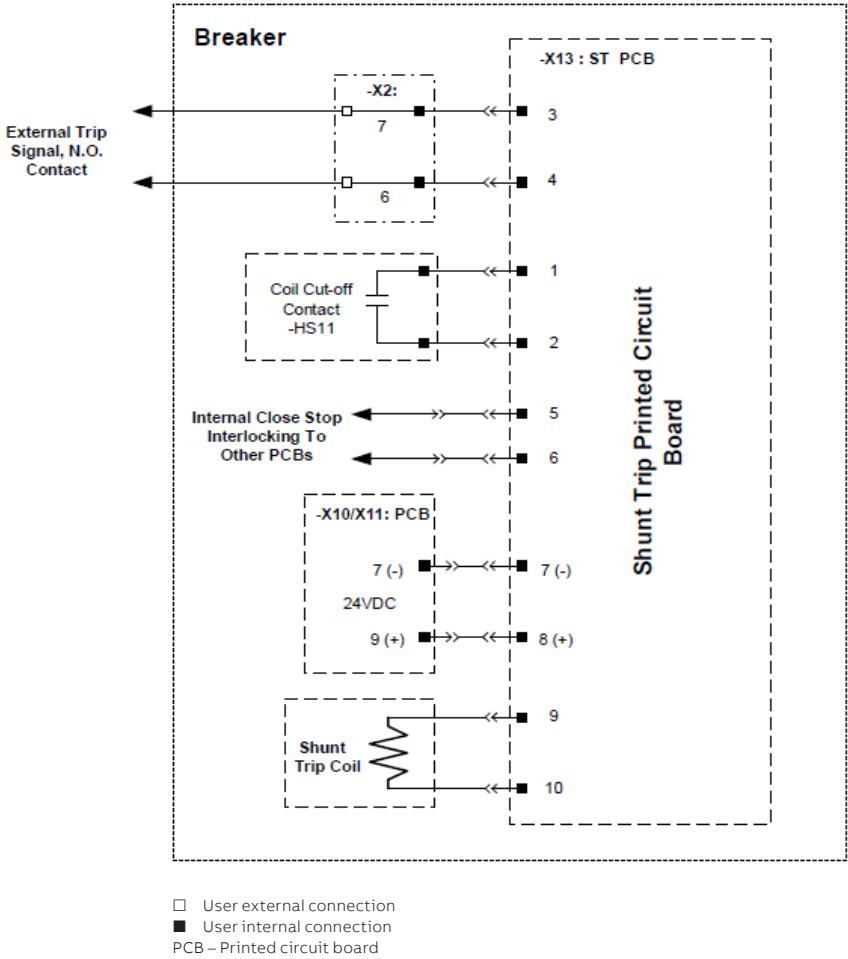


36/_X_---
→ Key position – 4
Key number – 20: Closing solenoid drive with SU control unit

Electrical Diagrams

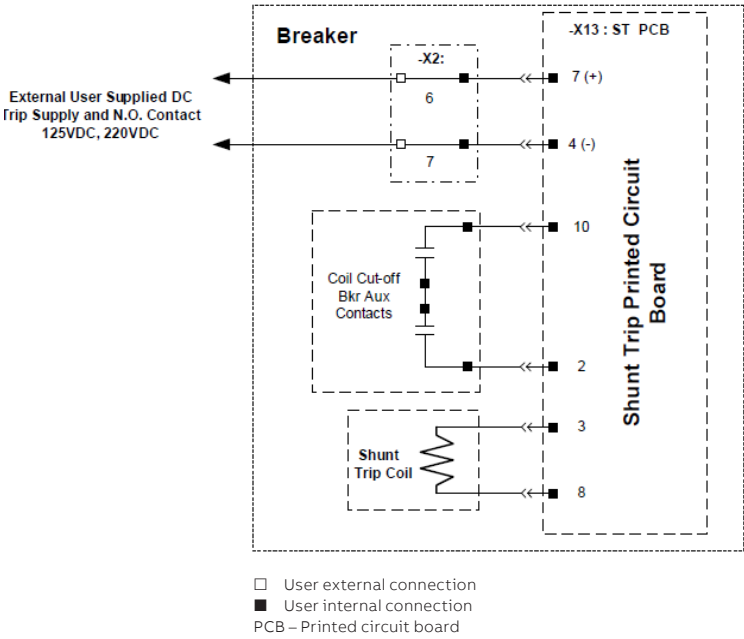
Standard 24VDC Shunt Trip Circuit

The closing STOP signal is provided for resetting K2 on the SU-control circuit. It effects with priority in switching OFF (by ST or ZVR) before switching ON. Once switching ON and OFF signals are simultaneous, switching OFF command will stay longer than switching ON. It means, that OFF command is master command. The shunt trip operates for short time period only. After main contacts open, switch HS 11 cuts off shunt trip coil. Manual closing of the breaker, while –S2 contact is closed, leads to overheating of ST coil and will damage coil.



36/___X___
→ Key position – 5
Key number – 00: Without shunt trip or zero voltage release
Key number – 10: With shunt trip

Standard 24VDC Shunt Trip Circuit

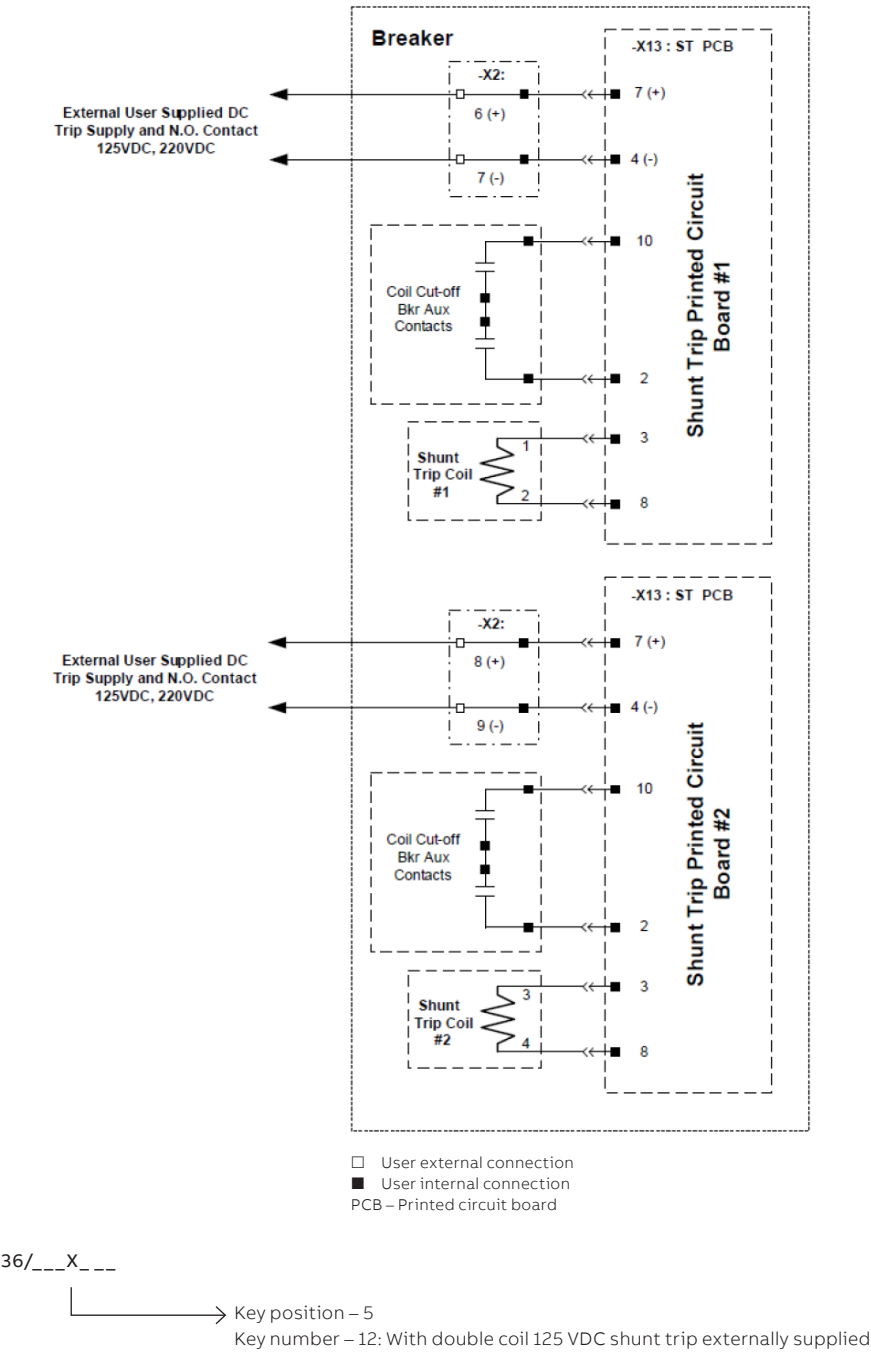


36/___X___

→ Key position – 5
Key number – 12: With 125 VDC shunt trip externally supplied

Electrical Diagrams

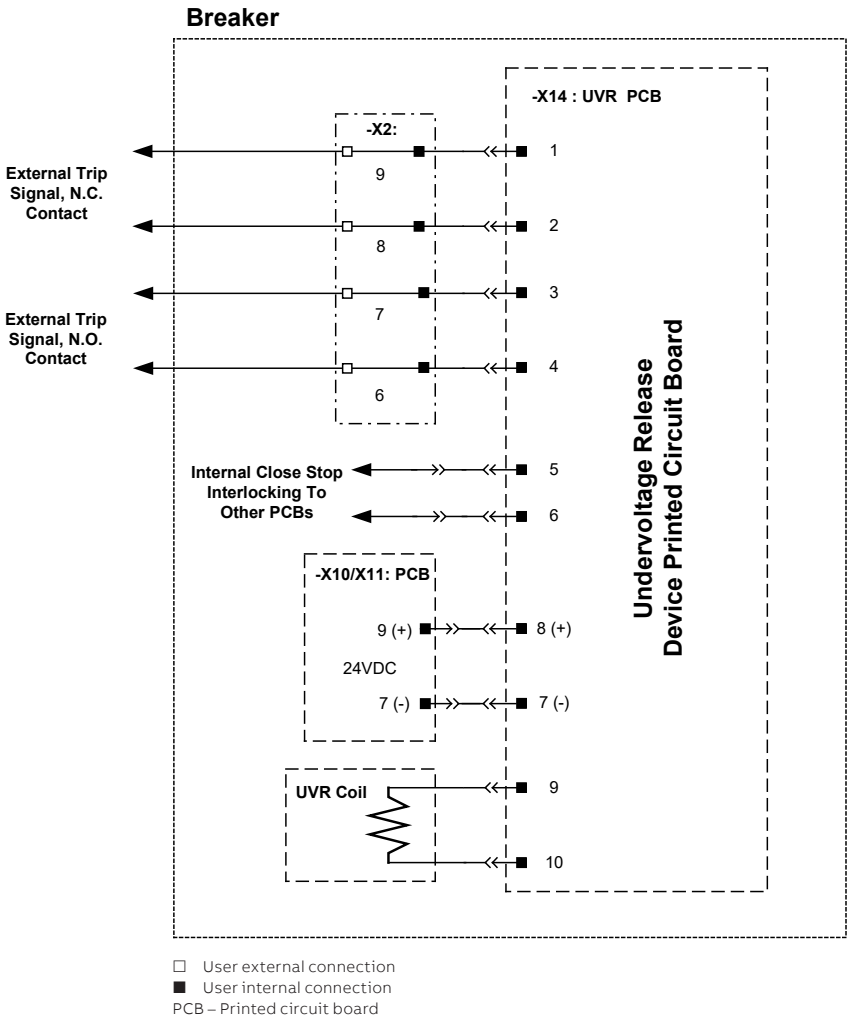
Optional Shunt Trip Circuit - External DC, Dual Winding Coil



Zero voltage release control circuit

The closing STOP signal is provided for resetting K2 on the SU-control circuit. It effects with priority in switching OFF (by ST or ZVR) before switching ON. Once switching ON and OFF signals are simultaneous, switching OFF command will stay longer than switching ON. It means, that OFF command is master command.

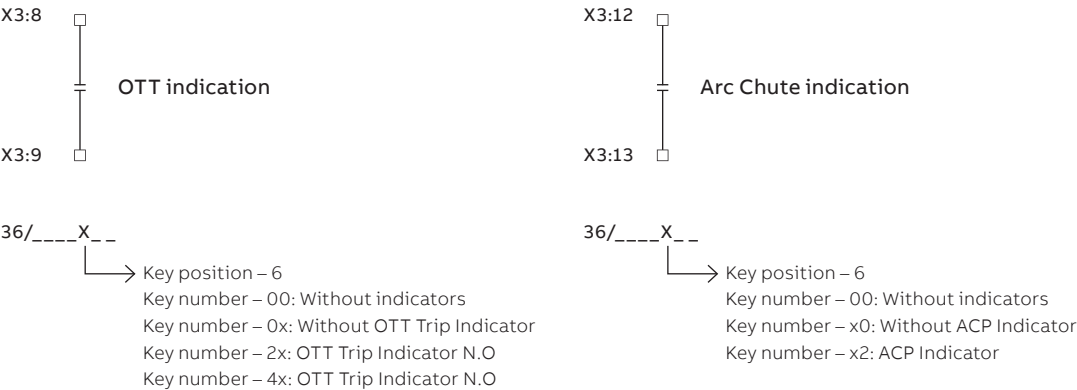
- S2 (-X2 :6/:7) is N.O. contact, utilized for indirect releasing of the ZVR by relay -K2
- S3 (-X2 :8/:9) is N.C. contact utilized for direct releasing of the ZVR. If it's not used, please short this connection permanently.



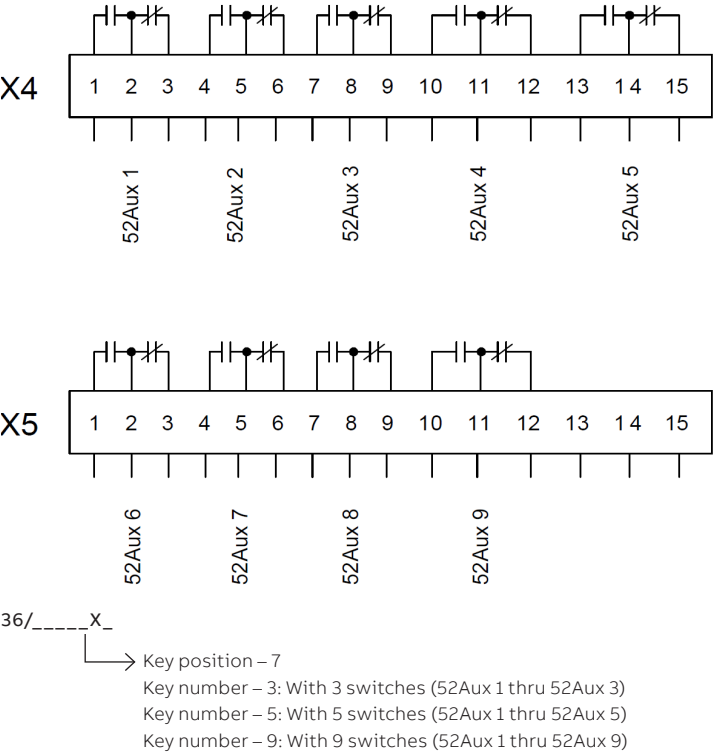
36/___X___
→ Key position – 5
Key number – 20: With zero voltage release

Electrical Diagrams

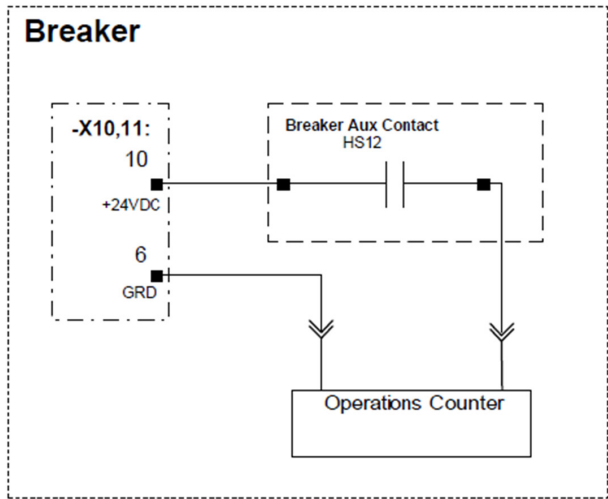
Indicators



Auxiliary switches

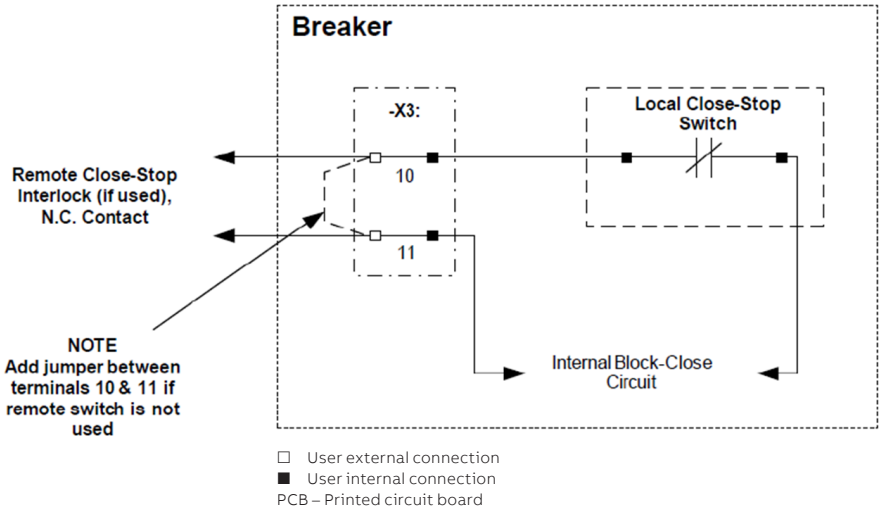


Operations Counter



36/_____X
 └─> Key position – 8
 Key number – 000: Without accessories
 Key number – 0xx: Without operations counter
 Key number – 1xx: With operations counter

Remote/Local Close-Stop interlock



36/_____X
 └─> Key position – 8
 Key number – 000: Without accessories
 Key number – x0x: Without remote closing interlock
 Key number – x1x: With remote closing interlock

Spare parts

Commercial code	GE Legacy number	Description	Qty per Breaker
SERVICE TOOLS			
1VCF449399R0001	764371	Hand lever (for maintenance only)	1
2200080891A	764372	Locking set for main mechanism spring	1
2200020580A	764373	Safety locking device for closing drive	1
SERVICE KITS			
1VCF449399R0002	764358	Arcing parts /2607-6007; 2508-4008/ 1X	1
1VCF449399R0003	764359	Arcing parts /2607-6007; 2508-4008/ 2X	1
TBD	764360	Arcing parts /8007 5008-6008; 1X /	1
1VCF449399R0004	764361	Arcing parts /8007 5008-6008; 2X /	1
TBD	764362	Arcing parts /8007 2607-4207; EF4-12 /	1
1VCF449399R0005	764363	Arcing parts /2607-6007/ 1X2H	1
2200093603A	764369	Sidewall screw kit /2607-60072508-4008/	2
2200096845A	764370	Sidewall screws kit /8007 5008-6008/	2
CONTROL CIRCUITS			
1VCF449399R0008	764374	Voltage stabilizer/filter DC input 24 V	1
1VCF449399R0009	764375	Voltage converter DC input 48 60 V	1
1VCF449399R0010	764376	Voltage converter DC input 110 125 V	1
1VCF449399R0011	764377	Voltage converter AC 110-240V DC 220/250V	1
1VCF449399R0012	764378	SU Control PCB for closing solenoid	1
1VCF449399R0013	764379	ST Control PCB for ST coil DC 24 V	1
1VCF449399R0014	764380	ZVR Control PCB for ZVR coils DC	1
1VCF449399R0015	764381	ST Control PCB for ST coils DC 60-250 V	1
1VCF449399R0016	764382	NEKO Control PCB for ED impulse coil	1
1VCF449399R0018	764465	Auxiliary switch HS	1
1VCF449399R0019	764466	Phoenix Plug (X2)	1
1VCF449399R0020	764467	Phoenix Plug (X3 - X5)	1
TBD	764468	Distribution plug for external DC 24 V	1
AUXILIARY RELEASES			
1VCF449399R0021	764384	Shunt trip coil DC 24 V	1
1VCF449399R0022	764385	Shunt trip coil DC 60 V	1
1VCF449399R0023	764386	Shunt trip coil DC 110 V	1
1VCF449399R0024	764387	Shunt trip coil DC 125 V	1
1VCF449399R0025	764388	Shunt trip coil DC 220 V	1
1VCF449399R0026	764389	Zero voltage release DC 24 V	1
TBD	764390	Zero voltage release DC 60 V	1
1VCF449399R0027	764391	Zero voltage release DC 110 V	1
TBD	764392	Zero voltage release DC 220 V	1
1VCF449399R0030	764457	Forced tripping release (FT)	1
MAIN CIRCUIT			
1VCF449399R0038	764418	Protection cover for movable contact	1
1VCF449399R0039	764419	Protection sheet LEFT, 1X	1
1VCF449399R0040	764420	Protection sheet RIGHT, 1X	1
TBD	764421	Protection sheets SET, 1X	1
1VCF449399R0041	764422	Protect. sheet LEFT, 2X & EF4-12	1

Please, get in contact with your local ABB Service Team for materials not listed below

Commercial code	GE Legacy number	Description	Qty per Breaker
1VCF449399R0042	764423	Protect. sheet RIGHT, 2X & EF4-13	1
TBD	764424	Protect. sheet SET, 2X & EF4-14	1
1VCF449399R0043	764416	Front protection /2607-6007 2508-4008/	1
1VCF449399R0044	764417	Front protection /8007 5008-6008/	1
ARC GUIDE SYSTEM			
TBD	764402	Pre-arcing contact /all/	1
1VCF449399R0045	764404	Pre-arcing contact, set /all/	1
1VCF449399R0047	764406	Arc runner back. Arc chute 1X	1
TBD	764407	Arc runner back. Arc chute 2X	1
128521R03	764408	Arc runner back. Arc chute 1X2H	1
1VCF449399R0048	764410	Arc runner front 1X /2607-6007 2508-4008	1
TBD	764411	Arc runner front 1X /8007 5008 6008/	1
1VCF449399R0049	764412	Arc runner front 2X /2607-6007 2508-4008	1
TBD	764413	Arc runner front 2X /8007/	1
128525R05	764414	Arc runner front 1x2H /2607-6007/	1
ARC CHUTES & ADAPTORS			
1VCF449399R0050	764433	Arc chute type 1X2	1
1VCF449399R0051	764434	Arc chute type 1X4	1
1VCF449399R0052	764435	Arc chute type 2X2	1
1VCF449399R0053	764436	Arc chute type 2X3	1
1VCF449399R0054	764437	Arc chute type 2X4	1
1VCF449399R0056	764439	Gas diverter for arc chutes 2X, single	2
TBD	764441	Adapter carrier 1X2 & 1x4, single	2
TBD	764442	Adapter carrier 1x2H, single	2
TBD	764442	Adapter carrier 2X, single	2
TBD	764443	Probe protection cap, single	2
40177960	764445	Single handle for all arc chutes	2
1VCF449399R0057	764446	Adapter carriers 1X2 & 1X4, set	1
128577R01	764449	Arc chute deflector bow 10 mm, single	1
128576R01	764450	Arc chute deflector bow 80 mm, single	3-5
128576R02	764451	Arc chute deflector bow 150 mm, single	3-7
124916R01	764452	Sealing rope of an arc chute	1-7
INSULATION COMPONENTS			
1VCF449399R0059	764429	IP3X side covers /2607-4207 2508-4008/	1
1VCF449399R0060	764430	IP3X side covers /6007/	1
1VCF449399R0061	764425	Bottom insulation /2607-6007 2508-4008/	1
1VCF449399R0062	764426	Bottom insulation /8007 5008-6008/	1
1VCF449399R0063	764427	Add. base insu. 2X /2607-6007/	1
1VCF449399R0064	764428	Add. base insu. 2X /8007/	1
MECHANISM PARTS			
1VCF449399R0073	764461	Spring bar cap	1
OTHER PARTS			
1VCF449399R0074	764469	Position Indicator IEC BLACK/WHITE	1
1VCF449399R0075	764470	Position Indicator ANSI RED/GREEN	1

Please, get in contact with your local ABB Service Team for materials not listed below

Annex A1 - Technical data of auxiliary circuits

Control box terminals	1x12-pole 4x15-pole		AC 400 V, 20 A AC 250 V, 8 A
Closing solenoid drive ¹⁾	Rated voltage		AC 48 V - 230 V and DC 125 V - 250 V
	Operating range		80% - 115% of rated voltage
	Power consumption	Gerapid 2508 / 4008	1750 W / 2000 W
	Power consumption	Gerapid 5008 / 6008	2600 W / 2600 W
	Minimal CLOSING command duration		100 ms
	mi. interval between two "CLOSE" operations		8 s w/o NEKO installed; 14 s with NEKO
Internal voltage converter ¹⁾ for Gerapid 2508, 4800, 6008, 8008	Input:	Voltage range	DC 88 - 145 V
	Output:	Voltage range	DC 24 V (±5%)
		Current	6 A permanent
	Model description		PCMD 150 48 S24W-GE
	Input:	Voltage range	DC 88 - 145 V
	Output:	Voltage range	DC 24 V (±5%)
		Current	6 A permanent
	Model description		PCMD 150 110 S24W-GE
	Input:	Voltage range	AC 100 - 240 V, DC 100 - 353 V
	Output:	Voltage range	DC 24 V (±5%)
		Current	3 A permanent, 5 A/100 ms
	Model description		PCMAS 75 S24W-CK06
Aux. contact HS 1...HS 9, OC trip target	Rated operational voltage	Ue/AC	230 V
	Rated operational current	Ie/AC-15	1 A
Arc chutes indicator	Conventional thermal current	Ie/AC-12 (Ith)	10 A
	Rated operational voltage	Ue/DC	110 V / 220 V
	Rated operational current	Ie/DC-13	0.5 A / 0.3 A
	Minimum current/voltage ratings		0.1 mA / 6 V DC
	Contact duty (min. value)		DC 10 V / 2 mA
Shunt trip standard	Rated voltage/power	Uc/Pc	24 V / 100 W
	Operating range: OFF		21.6 V - 26.4 V
Shunt trip double wounded	Rated voltage/power	Uc	DC 125 V/ DC 220 V
	Rated power for a single winding	Pc	230 W
ZVR (Zero voltage release)	Rated voltage	Uc	24 V
	Operating range: OFF		< 4 V
	Operating range: ON		24 V (±10%)
	Power consumption		10 W
ED impulse release	Energy source: Capacity		2000 µF
	Charging voltage		300 V
	Switching interval		max. 2/min with 10 consecutive operations
	Endurance		1 000 operations with 1 operation per 180 s
	Firing signal	level / duration	6 - 24 V / 100 - 1000 ms
	Charging signalization relay	AC duty :	AC 250 V/ 0.5 A - AC 120 V /1 A
		DC duty :	DC 220V/0.1A - DC 125V/0.3A - DC 10V/3A

¹⁾ Standard ambient conditions acc. to EN 50123-1 Attachment B. For meeting outside of this standard range, please call back.





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