

Emax Power breakers



Emax power breakers



ABB's Emax series of low voltage power circuit breakers embodies over half a century's experience and technological development in power circuit breakers. The Emax offers a series of breakers that is totally innovative in its technological design, ease of installation and use, making it the ideal solution for the growing requirements of designers, switchboard and switchgear manufacturers, installers, OEMs and users.

The Emax power circuit breakers are UL Listed and meet the ANSI Standard for low voltage power circuit breakers.

ABB Emax power circuit breakers are available in five different models (four sizes) with rated continuous current from 800A to 5000A and rated short-circuit current range from 42kA to 125kA (480V).

Technical catalog 1SDC200003 D0201 is available upon request.

General information

UL general ratings and specifications



E1



E2



E3

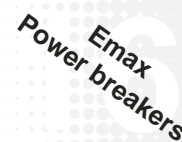
Circuit breaker type			E1		E2		E3		
			B-A	B-A	N-A	N-A	S-A	H-A	V-A
Performance level									
Rated continuous current, UL1066 File # E194191	A		800	1600	1200	2000	1200	1200	1200
	A		1200	—	1600	2500	1600	1600	1600
	A		—	—	—	—	2000	2000	2000
	A		—	—	—	—	2500	2500	2500
Rated short circuit current	240VAC	kA	42	42	65	65	85	85	100
	480VAC	kA	42	42	50	50	65	85	100
	600VAC	kA	35	42	50	50	65	65	85
Rated short time current		kA	35	42	50	50	65	65	65
Trip units									
PR111/P-A			•	•	•	•	•	•	•
PR112/P-A			•	•	•	•	•	•	•
Operation times									
Make time (max)		ms	80	80	80	80	80	80	80
Break time (I<ST current)(max)		ms	70	70	70	70	70	70	70
Break time (I>ST current)(max)		ms	30	30	30	30	30	30	30
Overall dimensions, 3 pole									
Fixed:	H=418mm / 16.46in D=302mm / 11.89in W (3 poles)	mm/in	296/11.65	296/11.65			404/15.91		
Drawout:	H=461mm / 18.15in D=396.5mm / 15.61in W (3 poles)	mm/in	324/12.76	324/12.76			432/17.01		
Weights (CB with releases, RH terminals and CTs, accessories excluded)									
Fixed 3 pole		Kg/lbs	42/93	46/101			68/150		
Drawout 3 pole		Kg/lbs	65/143	72/159			100/220		
Overall dimensions, 4 pole									
Fixed:	H=418mm / 16.46in D=302mm / 11.89in W (4 poles)	mm/in	386/15.20	386/15.20			530/20.87		
Drawout:	H=461mm / 18.15in D=396.5mm / 15.61in W (4 poles)	mm/in	414/16.30	414/16.30			558/21.97		
Weights (CB with releases, RH terminals and CTs, accessories excluded)									
Fixed 4 pole		Kg/lbs	50/110	55/121			80/176		
Drawout 4 pole		Kg/lbs	80/176	89/196			125/275		

Specifications common to the entire range

Rated max voltage	635VAC
Rated voltage	600VAC
Test voltage (1min 50/60Hz)	2.2kV
Frequency	50-60Hz
Service temperature	-5... +70°C
Storage temperature	-40... +70°C
Number of poles	3/4
Versions	Fixed/Drawout

General information

UL general ratings and specifications



E4

E6

Circuit breaker type			E4			E6	
			S-A	H-A	V-A	H-A	V-A
Performance level							
Rated continuous current, UL 1066 File # E194191	A		3200	3200	3200	4000	4000
	A		3600	3600	3600	5000	5000
	A		—	—	—	—	—
	A		—	—	—	—	—
Rated short circuit current	240VAC	kA	85	100	100	125	125
	480VAC	kA	65	85	100	85	125
	600VAC	kA	65	85	85	85	85
Rated short time current		kA	65	85	85	100	100
Trip units							
PR111/P-A			.	.	.	.	.
PR112/P-A			.	.	.	.	.
Operation times							
Make time (max)		ms	80	80	80	80	80
Break time (<ST current)(max)		ms	70	70	70	70	70
Break time (>ST current)(max)		ms	30	30	30	30	30
Overall dimensions, 3 pole							
Fixed:	H=418mm / 16.46in	mm/in	566/22.28			782/30.79	
	D=302mm / 11.89in						
	W (3 poles)						
Drawout:	H=461mm / 18.15in	mm/in	594/23.39			810/31.89	
	D=396.5 / 15.61in						
	W (3 poles)						
Weights (CB with releases, RH terminals and CTs, accessories excluded)							
Fixed 3 poles		Kg/lbs	95/209			140/309	
Drawout 3 poles		Kg/lbs	147/324			210/463	
Overall dimensions, 4 pole							
Fixed:	H=418mm / 16.46in	mm/in	656/25.83			908/35.75	
	D=302mm / 11.89in						
	W (4 poles)						
Drawout:	H=461mm / 18.15in	mm/in	684/26.93			936/36.85	
	D=396.5 / 15.61in						
	W (4 poles)						
Weights (CB with releases, RH terminals and CTs, accessories excluded)							
Fixed 4 pole		Kg/lbs	115/253			170/374	
Drawout 4 pole		Kg/lbs	190/418			260/573	

Specifications common to the entire range

Rated max voltage	635VAC
Rated voltage	600VAC
Test voltage (1min 50/60Hz)	2.2kV
Frequency	50-60Hz
Number of poles	3/4
Versions	Fixed/Drawout

General information

Catalog number information

Emax breaker, UL

E 1 S 16 X X X X X X X X X X

Accessories: X = none
A = mechanical counter
B = button guard
F = A & B

Accessories: X = none
A = mechanical trip indicator
B = mechanical trip indicator & bell alarm
C = padlock provision (open)
D = keylock (open)
E = position lock
F = access pos. lock
G = A & C
H = A & D
J = A & E
K = A & F
L = A, C & E
M = A, C & F
N = B & C
P = B & D
Q = B & E
R = B & F
S = B, C & E
T = B, C & F
U = C & E
V = C & F
W = D & E
Y = D & F

Undervoltage trip: 0 = none
50/60Hz & VDC: A = 24VDC, B = 30V, C = 48V, D = 60V, E = 110 – 120V, F = 125 – 127V, G = 220 – 240V, H = 250V, J = 380 – 400VAC, K = 440 – 480VAC
Second shunt trip: L = 24VDC, M = 30V, N = 48V, P = 60V, Q = 110 – 120V, R = 125 – 127V, S = 220 – 240V, T = 250V, U = 380 – 400VAC, V = 440 – 480VAC

Shunt trip: 0 = none
50/60Hz & VDC: A = 24VDC, B = 30V, C = 48V, D = 60V, E = 110 – 120V, F = 125 – 127V, G = 220 – 240V, H = 250V, J = 380 – 400VAC, K = 440 – 480VAC

Spring charging motor: (includes spring charged signal, P/N does not show)
0 = none, A = 24 – 30VAC/VDC, B = 48 – 60VAC/VDC, C = 110-130VAC/VDC, D = 220 – 250VAC/VDC, E = spring charged signal only

Contacts:
A = 4 aux
E = UV energ. NC
J = B & E
B = 10 aux
F = A & D
K = C & D
C = 15 aux
G = A & E
L = C & E
D = UV energ. N.O.
H = B & D

Closing coil: 0 = none
50/60Hz & VDC: A = 24VDC, B = 30, C = 48, D = 60, E = 110 – 120, F = 125 – 127, G = 220 – 240, H = 250, J = 380 – 400VAC, K = 440 – 480VAC

Terminal types: (1st letter is upper terminal, 2nd letter is lower terminal)
H = rear horz ②, V = rear vert. ①
H = HH, V = VV
A = HV, B = VH

Trip unit: A = PR111/P, LI
D = non-automatic
G = PR112/PD, LSI
P = PR113/PD
B = PR111/P, LSI
E = PR112/P, LSI
H = PR112/PD, LSI
C = PR111/P, LSI
F = PR112/P, LSI
N = PR113/P

Version: B = fixed breaker, UL; D = withdrawable breaker, UL, less cradle

Max. ampere rating: 02 = 250, 04 = 400, 08 = 800, 10 = 1000, 12 = 1200, 16 = 1600, 20 = 2000, 25 = 2500, 32 = 3200, 36 = 3600, 40 = 4000, 50 = 5000

Breaking capacity: B = basic, N = normal, S = standard, H = high, V = very high

Frame size: 1 = 1, 3P; 2 = 2, 3P; 3 = 3, 3P; 4 = 4, 3P; 6 = 6, 3P; A = 1, 4P; B = 2, 4P; C = 3, 4P; D = 4, 4P; F = 6, 4P

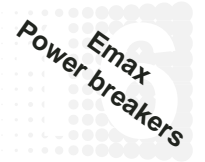
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① Will be shipped separately.
② For withdrawable breakers, use "H".
③ Not available with PR112 trip units. External 15A auxiliary kit can be used.

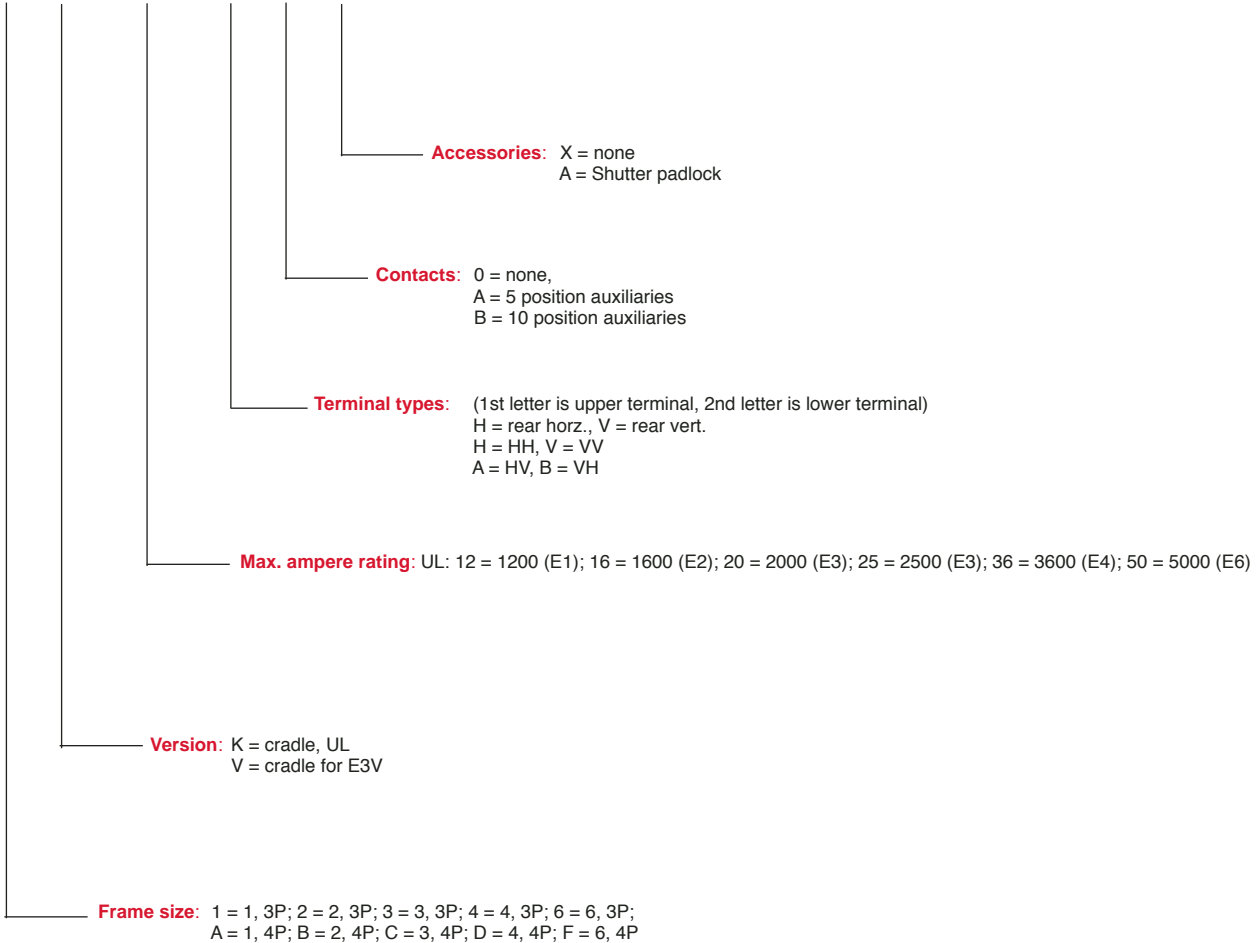
General information

Catalog number information

Emax, cradle (fixed part) UL



E 1 X 12 X X X



General information

Standard features

Fixed breaker		Drawout breaker	
Manual operated	Electrically operated	Manual operated	Electrically operated
T.U. — PR111/P, LI Aux. SW., 4 Spring charged indicator Flange Accessory support Terminal block Lifting plate	T.U. — PR111/P, LI Motor operator Closing coil Shunt trip Aux. SW., 4 Spring charged indicator Flange Accessory support Terminal block Lifting plate	T.U. — PR111/P, LI Aux. SW., 4 Spring charged indicator Flange Crank Accessory support Sliding contacts Anti-insertion lock Lifting plate	T.U. — PR111/P, LI Motor operator Closing coil Shunt trip Aux. SW., 4 Spring charged indicator Flange Crank Accessory support Sliding contacts Anti-insertion lock Lifting plate

NOTE: Switches provided standard without 4 auxiliary contacts.

Fixed breakers, 3 pole UL

Fixed breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Manually operated	Electrically operated	Set of three vertical terminals
E1B-A08	800	42	\$ 6815	\$ 9176	\$ 644
E1B-A12	1200	42	7321	9682	644
E2N-A12	1200	50	7819	10,180	690
E3S-A12	1200	65	8780	11,141	790
E3H-A12	1200	85	9048	11,409	790
E3V-A12	1200	100	9953	12,314	790
E2B-A16	1600	42	7871	10,232	690
E2N-A16	1600	50	9082	11,443	690
E3S-A16	1600	65	9797	12,158	790
E3H-A16	1600	85	10,352	12,713	790
E3V-A16	1600	100	11,387	13,748	790
E3N-A20	2000	50	10,032	12,393	790
E3S-A20	2000	65	11,053	13,414	790
E3H-A20	2000	85	13,602	15,963	790
E3V-A20	2000	100	14,962	17,323	790
E3N-A25	2500	50	14,778	17,139	790
E3S-A25	2500	65	16,451	18,812	790
E3H-A25	2500	85	17,708	20,069	790
E3V-A25	2500	100	19,479	21,840	790
E4S-A32	3200	65	21,102	23,463	1664
E4H-A32	3200	85	21,566	23,927	1664
E4V-A32	3200	100	24,047	26,408	1664
E4S-A36	3600	65	23,939	26,300	1664
E4H-A36	3600	85	27,302	29,663	1664
E4V-A36	3600	100	28,666	31,027	1664
E6H-A40	4000	85	31,528	33,889	2783
E6V-A40	4000	125	43,932	46,293	2783
E6H-A50	5000	85	43,221	45,582	2783
E6V-A50	5000	125	51,684	54,045	2783

Standard features – manually operated UL breaker

- Rear horizontal terminals
- PR111 trip unit with LI protection functions
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open/closed position indication
- Lifting plates
- Current transformers
- Terminal box

Fixed breakers, 4 pole UL



Fixed breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Manually operated	Electrically operated	Set of four vertical terminals
E1B-A08	800	42	\$ 9200	\$ 11,561	\$ 837
E1B-A12	1200	42	9883	12,244	837
E2N-A12	1200	50	10,556	12,917	897
E3S-A12	1200	65	11,853	14,214	1027
E3H-A12	1200	85	12,215	14,576	1027
E3V-A12	1200	100	13,436	15,797	1027
E2B-A16	1600	42	10,626	12,987	897
E2N-A16	1600	50	12,261	14,622	897
E3S-A16	1600	65	13,226	15,587	1027
E3H-A16	1600	85	13,975	16,336	1027
E3V-A16	1600	100	15,373	17,734	1027
E3N-A20	2000	50	13,543	15,904	1027
E3S-A20	2000	65	14,922	17,283	1027
E3H-A20	2000	85	18,363	20,724	1027
E3V-A20	2000	100	20,199	22,560	1027
E3N-A25	2500	50	19,950	22,311	1027
E3S-A25	2500	65	22,209	24,570	1027
E3H-A25	2500	85	23,906	26,267	1027
E3V-A25	2500	100	26,296	28,657	1027
E4S-A32	3200	65	28,488	30,849	2163
E4H-A32	3200	85	29,114	31,475	2163
E4V-A32	3200	100	32,463	34,824	2163
E4S-A36	3600	65	32,318	34,679	2163
E4H-A36	3600	85	36,858	39,219	2163
E4V-A36	3600	100	38,699	41,060	2163
E6H-A40	4000	85	42,563	44,924	3618
E6V-A40	4000	125	59,308	61,669	3618
E6H-A50	5000	85	58,348	60,709	3618
E6V-A50	5000	125	69,773	72,134	3618

Standard features – manually operated UL breaker

- Rear horizontal terminals
- PR111 trip unit with LI protection functions
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open/closed position indication
- Lifting plates
- Current transformers
- Terminal box

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating

Withdrawable breakers, 3 pole UL

Withdrawable breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Moving part only		Fixed part only	
			Manually operated	Electrically operated	RH terminals	Set of three vertical terminals
E1B-A08	800	42	\$ 7383	\$ 9744	\$ 2281	\$ 644
E1B-A12	1200	42	8375	10,736	2281	644
E2N-A12	1200	50	8814	11,175	2400	690
E3S-A12	1200	65	9220	11,581	2925	790
E3H-A12	1200	85	9633	11,994	2925	790
E3V-A12	1200	100	10,596	12,957	2925	790
E2B-A16	1600	42	9320	11,681	2400	690
E2N-A16	1600	50	10,483	12,844	2400	690
E3S-A16	1600	65	10,931	13,292	2925	790
E3H-A16	1600	85	11,445	13,806	2925	790
E3V-A16	1600	100	12,590	14,951	2925	790
E3N-A20	2000	50	11,386	13,747	2925	790
E3S-A20	2000	65	12,700	15,061	2925	790
E3H-A20	2000	85	14,262	16,623	2925	790
E3V-A20	2000	100	15,688	18,049	2925	790
E3N-A25	2500	50	17,767	20,128	2925	790
E3S-A25	2500	65	20,315	22,676	2925	790
E3H-A25	2500	85	22,622	24,983	2925	790
E3V-A25	2500	100	24,884	27,245	2925	790
E4S-A32	3200	65	23,800	26,161	6259	1664
E4H-A32	3200	85	24,447	26,808	6259	1664
E4V-A32	3200	100	25,863	28,224	6259	1664
E4S-A36	3600	65	26,863	29,224	6259	1664
E4H-A36	3600	85	30,865	33,226	6259	1664
E4V-A36	3600	100	31,948	34,309	6259	1664
E6H-A40	4000	85	34,676	37,037	7398	2783
E6V-A40	4000	125	46,570	48,931	7398	2783
E6H-A50	5000	85	46,402	48,763	7398	2783
E6V-A50	5000	125	57,078	59,439	7398	2783

Standard features – electrically operated breaker

Moving part

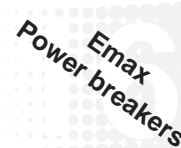
- PR111 trip unit with LI protection feature
- Spring charging motor
- Shunt trip
- Closing coil
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts
- Fail safe device (not available with YU)

Standard features – electrically operated breaker

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Withdrawable breakers, 4 pole UL



Withdrawable breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Moving part only		Fixed part only	
			Manually operated	Electrically operated	RH terminals	Set of four vertical terminals
E1B-A08	800	42	\$ 9967	\$ 12,328	\$ 3079	\$ 837
E1B-A12	1200	42	11,306	13,667	3079	837
E2N-A12	1200	50	11,899	14,260	3240	897
E3S-A12	1200	65	12,447	14,808	3949	1027
E3H-A12	1200	85	13,005	15,366	3949	1027
E3V-A12	1200	100	14,305	16,666	3949	1027
E2B-A16	1600	42	12,582	14,943	3240	897
E2N-A16	1600	50	14,152	16,513	3240	897
E3S-A16	1600	65	14,757	17,118	3949	1027
E3H-A16	1600	85	15,451	17,812	3949	1027
E3V-A16	1600	100	16,996	19,357	3949	1027
E3N-A20	2000	50	15,371	17,732	3949	1027
E3S-A20	2000	65	17,145	19,506	3949	1027
E3H-A20	2000	85	19,254	21,615	3949	1027
E3V-A20	2000	100	21,179	23,540	3949	1027
E3N-A25	2500	50	23,985	26,346	3949	1027
E3S-A25	2500	65	27,425	29,786	3949	1027
E3H-A25	2500	85	30,540	32,901	3949	1027
E3V-A25	2500	100	33,594	35,955	3949	1027
E4S-A32	3200	65	32,130	34,491	8450	2163
E4H-A32	3200	85	33,003	35,364	8450	2163
E4V-A32	3200	100	34,915	37,276	8450	2163
E4S-A36	3600	65	36,265	38,626	8450	2163
E4H-A36	3600	85	41,668	44,029	8450	2163
E4V-A36	3600	100	43,130	45,491	8450	2163
E6H-A40	4000	85	46,813	49,174	9987	3618
E6V-A40	4000	125	62,870	65,231	9987	3618
E6H-A50	5000	85	62,643	65,004	9987	3618
E6V-A50	5000	125	77,055	79,416	9987	3618

Standard features – electrically operated breaker Moving part

- PR111 trip unit with LI protection feature
- Spring charging motor
- Shunt trip
- Closing coil
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts
- Fail safe device (not available with YU)

Standard features – electrically operated breaker Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating

Non-automatic air circuit breakers

Fixed switches (without trip unit & c.t.s.), 3 pole UL

Fixed switches

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Manually operated	Electrically operated	Set of three vertical terminals
E1B-A/MS08	800	42	\$ 5086	\$ 7447	\$ 644
E1B-A/MS12	1200	42	5592	7953	644
E2N-A/MS12	1200	50	6090	8451	690
E3S-A/MS12	1200	65	6944	9305	790
E2B-A/MS16	1600	42	6142	8503	690
E2N-A/MS16	1600	50	7353	9714	690
E3S-A/MS16	1600	65	7961	10,322	790
E3N-A/MS20	2000	50	8196	10,557	790
E3S-A/MS20	2000	65	9217	11,578	790
E3N-A/MS25	2500	50	12,942	15,303	790
E3S-A/MS25	2500	65	14,615	16,976	790
E4S-A/MS32	3200	65	18,733	21,094	1664
E4H-A/MS32	3200	85	19,197	21,558	1664
E4S-A/MS36	3600	65	21,570	23,931	1664
E4H-A/MS36	3600	85	24,933	27,294	1664
E6H-A/MS40	4000	85	28,946	31,307	2783
E6H-A/MS50	5000	85	40,639	43,000	2783

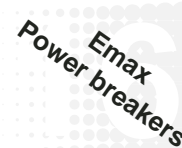
Standard features – manually operated UL switch

- Rear horizontal terminals
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Terminal box

Non-automatic air circuit breakers

Fixed switches (without trip unit & c.t.s.), 4 pole

UL



Fixed switches

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Manually operated	Electrically operated	Set of four vertical terminals
E1B-A/MS08	800	42	\$ 6866	\$ 9227	\$ 644
E1B-A/MS12	1200	42	7549	9910	644
E2N-A/MS12	1200	50	8222	10,583	690
E3S-A/MS12	1200	65	9374	11,735	790
E2B-A/MS16	1600	42	8292	10,653	690
E2N-A/MS16	1600	50	9927	12,288	690
E3S-A/MS16	1600	65	10,747	13,108	790
E3N-A/MS20	2000	50	11,065	13,426	790
E3S-A/MS20	2000	65	12,443	14,804	790
E3N-A/MS25	2500	50	17,472	19,833	790
E3S-A/MS25	2500	65	19,730	22,091	790
E4S-A/MS32	3200	65	25,290	27,651	1664
E4H-A/MS32	3200	85	25,916	28,277	1664
E4S-A/MS36	3600	65	29,120	31,481	1664
E4H-A/MS36	3600	85	33,660	36,021	1664
E6H-A/MS40	4000	85	39,077	41,438	2783
E6H-A/MS50	5000	85	54,863	57,224	2783

Standard features – manually operated UL switch

- Rear horizontal terminals
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Terminal box

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating

Non-automatic air circuit breakers

Withdrawable switches (without trip unit & c.t.s.), 3 pole UL

Withdrawable switches

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Moving part only		Fixed part only	
			Manually operated	Electrically operated	RH terminals	Set of three vertical terminals
E1B-A/MS08	800	42	\$ 5654	\$ 8015	\$ 2281	\$ 644
E1B-A/MS12	1200	42	6646	9007	2281	644
E2N-A/MS12	1200	50	7085	9446	2400	690
E3S-A/MS12	1200	65	7384	9745	2925	790
E2B-A/MS16	1600	42	7591	9952	2400	690
E2N-A/MS16	1600	50	8754	11,115	2400	690
E3S-A/MS16	1600	65	9095	11,456	2925	790
E3N-A/MS20	2000	50	9550	11,911	2925	790
E3S-A/MS20	2000	65	10,864	13,225	2925	790
E3N-A/MS25	2500	50	15,931	18,292	2925	790
E3S-A/MS25	2500	65	18,479	20,840	2925	790
E4S-A/MS32	3200	65	21,431	23,792	6259	1664
E4H-A/MS32	3200	85	22,078	24,439	6259	1664
E4S-A/MS36	3600	65	24,494	26,855	6259	1664
E4H-A/MS36	3600	85	28,496	30,857	6259	1664
E6H-A/MS40	4000	85	32,094	34,455	7398	2783
E6H-A/MS50	5000	85	43,820	46,181	7398	2783

Standard features – manually operated switch

Moving part

- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts
- Fail-safe device (not available with YU)

Standard features – manually operated switch

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Non-automatic air circuit breakers

Withdrawable switches (without trip unit & c.t.s.), 4 pole UL



Withdrawable switches

Circuit breaker type	Frame amps	Interrupting ratings kA, 480V	Moving part only		Fixed part only	
			Manually operated	Electrically operated	RH terminals	Set of four vertical terminals
E1B-A/MS08	800	42	\$ 7633	\$ 9994	\$ 3079	\$ 837
E1B-A/MS12	1200	42	8972	11,333	3079	837
E2N-A/MS12	1200	50	9565	11,926	3240	897
E3S-A/MS12	1200	65	9968	12,329	3949	1027
E2B-A/MS16	1600	42	10,248	12,609	3240	897
E2N-A/MS16	1600	50	11,818	14,179	3240	897
E3S-A/MS16	1600	65	12,278	14,639	3949	1027
E3N-A/MS20	2000	50	12,893	15,254	3949	1027
E3S-A/MS20	2000	65	14,666	17,027	3949	1027
E3N-A/MS25	2500	50	21,507	23,868	3949	1027
E3S-A/MS25	2500	65	24,947	27,308	3949	1027
E4S-A/MS32	3200	65	28,932	31,293	8450	2163
E4H-A/MS32	3200	85	29,805	32,166	8450	2163
E4S-A/MS36	3600	65	33,067	35,428	8450	2163
E4H-A/MS36	3600	85	38,470	40,831	8450	2163
E6H-A/MS40	4000	85	43,327	45,688	9987	3618
E6H-A/MS50	5000	85	59,157	61,518	9987	3618

Standard features – manually operated switch

Moving part

- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts
- Fail-safe device (not available with YU)

Standard features – manually operated switches

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating

General information

IEC general ratings and specifications ②



E1



E2



E3



E4

Circuit breaker type			E1		E2			E3				
Performance level			B		B	N	L	N	S	H	L	
Rated uninterrupted current (at 40°C) I_u breaking capacity	A		800		1600	1250	1250	2500	1250	1250	2000	
	A		1250		2000	1600	1600	3200	1600	1600	2500	
	A		—		—	2000	—	—	2000	2000	—	
	A		—		—	—	—	—	2500	2500	—	
	A		—		—	—	—	—	3200	3200	—	
Capacity of neutral pole on four-pole circuit breakers	% I_u		100		100	100	100	100	100	100	100	
Rated ultimate short-circuit breaking capacity	I_{cu}	220/230/380/400/415V~	kA	40	40	65	130	65	75	100	130	
		440V~	kA	40	40	65	110	65	75	100	110	
		500/660/690V~	kA	36	40	55	85	65	75	85	85	
		600V~	kA	—	—	—	—	—	—	100	—	
		250V— (switches)	kA	36	40	55	—	65	75	75	—	
Rated duty short-circuit breaking capacity	I_{cs}	220/230/380/400/415V~	kA	40	40	65	130	65	75	85	130	
		440V~	kA	40	40	65	110	65	75	85	110	
		500/660/690V~	kA	36	40	55	65	65	75	85	65	
		600V~	kA	—	—	—	—	—	—	100	—	
		250V— (switches)	kA	36	40	55	—	65	75	75	—	
Rated short-time withstand current	I_{cw}	(1S)	kA	36	40	55	10	65	75	75	15	
Rated short-circuit making capacity (peak value)	I_{cm}	220/230/380/400/415V~	kA	84	84	143	286	143	165	220	286	
		440V~	kA	84	84	143	242	143	165	220	242	
		500/660/690V~	kA	75.6	84	121	187	143	165	187	187	
Utilization category (in accordance with CEI EN 60947-2)			B		B	B	A	B	B	B	A	
Isolation behavior (in accordance with CEI EN 60947-2)			•		•	•	•	•	•	•	•	
Overcurrent protection			•		•	•	•	•	•	•	•	
Microprocessor-based releases for a.c. applications			•		•	•	•	•	•	•	•	
Operating time												
Closing time (max)	ms		80		80	80	80	80	80	80	80	
	ms	Break time for $I < I_{cw}$ (max) ①	70		70	70	70	70	70	70	70	
	ms	Break time for $I > I_{cw}$ (max)	30		30	30	12	30	30	30	12	
Dimensions												
Fixed:	H=418mm	D=302mm	L(3/4 poli)=	mm	296/386	296/386			404/530			
Withdrawable:	H=461mm	D=396.5mm	L(3/4 poli)=	mm	324/414	324/414			432/558			
Weights												
(circuit-breaker complete with releases and CT, excluding accessories)												
Fixed 3/4 pole			kg	42/50	46/55	46/55	45/53	68/80	68/80	68/80	67/79	
Withdrawable 3/4 pole (including fixed part)			kg	65/80	72/89	72/89	70/87	100/125	100/125	100/125	100/120	

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Circuit-breaker type			E1B		E2 B-N			E2L		E3 N-S-H				
Rated uninterrupted current (at 40°C)	I_u	A	800	1250	1250	1600	2000	1250	1600	1250	1600	2000	2500	3200
Mechanical life with regular routine maintenance	No. operations x 1000		25	25	25	25	25	20	20	20	20	20	20	20
	Frequency	f	60	60	60	60	60	60	60	60	60	60	60	60
Electrical life (440V~)	No. operations x 1000		10	10	15	12	10	4	3	12	10	9	8	6
	Frequency	f	30	30	30	30	30	20	20	20	20	20	20	20

① Without intentional delays.
② Consult factory for drawings.

General information

IEC general ratings and specifications



Specifications common to the entire range

Voltages			
Rated service voltage	Ue	690~ / 250- V	
Rated insulation voltage	Ui	1000 V	
Rated impulse withstand voltage	Uimp	12 kV	
Service temperature		-5 ...+70 °C	
Storage temperature		-40 ...+70 °C	
Frequency	f	50-60 Hz	
Number of poles		3-4	
Versions		Fixed / Withdrawable	

Circuit breaker type			E4		E6	
Performance level			S	H	H	V
Rated uninterrupted current (at 40°C) I _u	A		4000	3200	5000	3200
	A		—	4000	6300	4000
	A		—	—	—	5000
	A		—	—	—	6300
	A		—	—	—	—
Capacity of neutral poles on four-pole circuit breakers	%I _u		50	50	50	50
Rated ultimate short-circuit breaking capacity	I _{cu} 220/230/380/400/415V~	kA	75	100	100	150
	440V~	kA	75	100	100	150
	500/660/690V~	kA	75	85	75	85
	600V~	kA	—	100	—	—
	250V— (switches)	kA	75	100	100	100
Rated duty short-circuit breaking capacity	I _{cs} 220/230/380/400/415V~	kA	75	100	100	125
	440V~	kA	75	100	100	125
	500/660/690V~	kA	75	85	100	100
	250V— (switches)	kA	75	100	100	100
	I _{cs} 220/230/380/400/415V~	(1S)kA	75	100	100	100
Rated short-time withstand current	I _{cw}		75	100	100	100
Rated short-circuit making capacity (peak value)	I _{cm} 220/230/380/400/415V~	kA	165	220	220	330
	440V~	kA	165	220	220	330
	500/660/690V~	kA	165	187	165	187
Utilization category (in accordance with CEI EN 60947-2)			B	B	B	B
Isolation behavior (in accordance with CEI EN 60947-2)			•	•	•	•
Overcurrent protection						
Microprocessor-based releases for a.c. applications			•	•	•	•
Operating time						
Closing time (max)	ms		80	80	80	80
Break time for I < I _{cw} (max) ^①	ms		70	70	70	70
Break time for I > I _{cw} (max)	ms		30	30	30	30
Dimensions						
Fixed:	H=418mm D=302mm L(3/4 poli)=	mm	566/656		782/908	
Withdrawable:	H=461mm D=396.5mm L(3/4 poli)=	mm	594/684		810/936	
Weights						
(circuit-breaker complete with releases and CT, excluding accessories)						
Fixed 3/4 pole	kg		95/115	95/115	140/170	140/170
Withdrawable 3/4 pole (including fixed part)	kg		147/190	147/190	210/260	210/260

Circuit-breaker type			E3L		E4 S-H		E6 H-V			
Rated uninterrupted current (at 40°C)	I _u	(A)	2000	2500	3200	4000	3200	4000	5000	6300
Mechanical life with regular routine maintenance	(No. operations x 1000)		15	15	15	15	12	12	12	12
Frequency	f	(Operations per hour)	60	60	60	60	60	60	60	60
Electrical life (440V~)	(Operations x 1000)		2	1.8	7	5	5	4	3	2
Frequency	f	(Operations per hour)	20	20	10	10	10	10	10	10

① Without intentional delays.
② Consult factory for drawings.

General information

Catalog number information

IEC

E 1 S 16 X X X X X X X X X X

Accessories: X = none
A = mechanical counter
B = button guard
F = A & B

Accessories: X = none
A = mechanical trip indicator
B = mechanical trip indicator & bell alarm
C = padlock provision (open)
D = keylock (open)
E = position lock
F = access pos. lock
G = A & C
H = A & D
J = A & E
K = A & F
L = A, C & E
M = A, C & F
N = B & C
P = B & D
Q = B & E
R = B & F
S = B, C & E
T = B, C & F
U = C & E
V = C & F
W = D & E
Y = D & F

Undervoltage trip: 0 = none
50/60Hz & VDC: A = 24VDC, C = 48V, E = 110 – 120V, G = 220 – 240V, J = 380 – 400VAC
Second shunt trip: L = 24VDC, N = 48V, Q = 110 – 120V, S = 220 – 240V, U = 380 – 400VAC
B = 30V, D = 60V, F = 125 – 127V, H = 250V, K = 440 – 480VAC, M = 30V, P = 60V, R = 125 – 127V, T = 250V, V = 440 – 480VAC

Shunt trip: 0 = none
50/60Hz & VDC: A = 24VDC, B = 30, C = 48, D = 60, E = 110 – 120, F = 120 – 127, G = 220 – 240, H = 240 - 250, J = 380 – 400VAC, K = 440 – 480VAC

Spring charging motor: (includes spring charged signal, P/N does not show)
0 = none, A = 24 – 30VAC/VDC, B = 48 – 60VAC/VDC, C = 110-130VAC/VDC, D = 220 – 250VAC/VDC, E = spring charged signal only

Contacts:
A = 4 aux, E = UV energ.NC, J = B & E
B = 10 aux, F = A & D, K = C & D
C = 15 aux, G = A & E, L = C & E
D = UV energ. N.O., H = B & D

Closing coil: 0 = none
50/60Hz & VDC: A = 24VDC, B = 30, C = 48, D = 60, E = 110 – 120, F = 120 – 127, G = 220 – 240, H = 240 - 250, J = 380 – 400VAC, K = 440 – 480VAC

Terminal types: (1st letter is upper terminal, 2nd letter is lower terminal) ①
H = rear horz., V = rear vert., F = front, L = rear flat
H = HH, V = VV, F = FF, L = LL,
A = HV, B = VH, C = HF, D = FH, E = HL, G = LH, J = VF, K = FV, M = VL, N = LV, P = FL, Q = LF

Trip unit: A = PR111/P, LI, D = non-automatic, G = PR112/PD, LSI, P = PR113/PD
B = PR111/P, LSI, E = PR112/P, LSI, H = PR112/PD, LSI
C = PR111/P, LSI, F = PR112/P, LSI, N = PR113/P

Version: F = fixed breaker, IEC; W = withdrawable breaker, IEC, less cradle

Max. ampere rating: 02 = 250, 04 = 400, 08 = 800, 10 = 1000, 12 = 1250, 16 = 1600, 20 = 2000, 25 = 2500, 32 = 3200, 40 = 4000, 50 = 5000, 63 = 6300

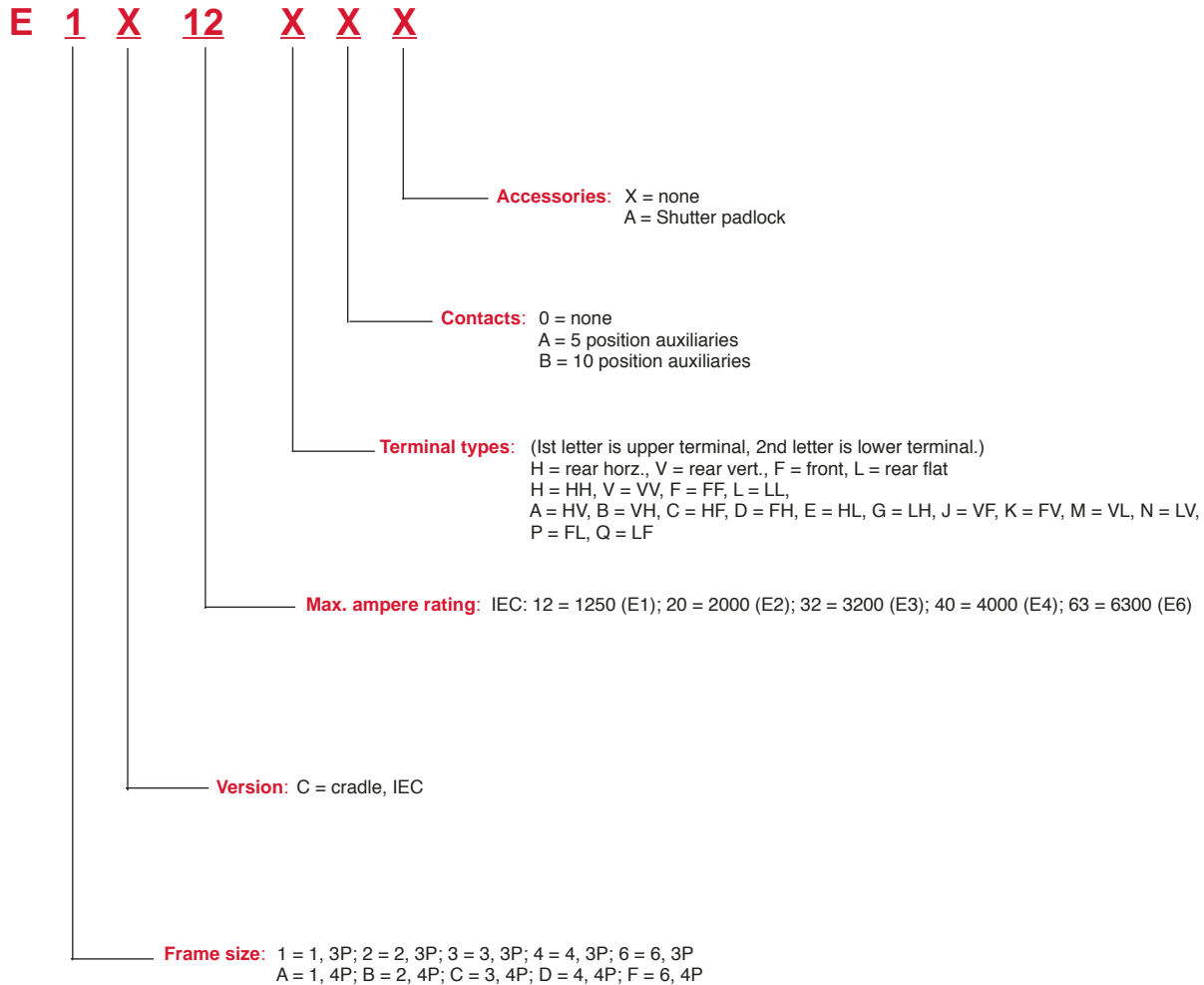
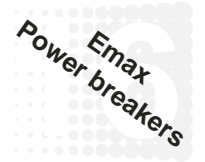
Breaking capacity: B = basic, N = normal, S = standard, H = high, V = very high, L = limiting

Frame size: 1 = 1, 3P; 2 = 2, 3P; 3 = 3, 3P; 4 = 4, 3P; 6 = 6, 3P; A = 1, 4P; B = 2, 4P; C = 3, 4P; D = 4, 4P; F = 6, 4P

① For withdrawable breakers, use "H".

② Not available with PR112 trip units; use external 15 auxiliary kit.

General information
Catalog number information
Cradle (fixed part), IEC



General information
Standard features

Fixed breaker		Drawout breaker	
Manual operated	Electrically operated	Manual operated	Electrically operated
T.U. — PR111/P, LI Aux. SW., 4 Spring charged indicator Flange Accessory support Terminal block Lifting plate	T.U. — PR111/P, LI Motor operator Closing coil Shunt trip Aux. SW., 4 Spring charged indicator Flange Accessory support Terminal block Lifting plate	T.U. — PR111/P, LI Aux. SW., 4 Spring charged indicator Flange Crank Accessory support Sliding contacts Anti-insertion lock Lifting plate	T.U. — PR111/P, LI Motor operator Closing coil Shunt trip Aux. SW., 4 Spring charged indicator Flange Crank Accessory support Sliding contacts Anti-insertion lock Lifting plate

NOTE: Switches provided standard without 4 auxiliary contacts.

Fixed breakers, 3 poles IEC

Fixed breakers

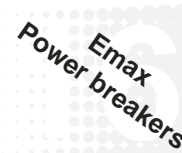
Circuit breaker type	Frame amps	Interrupting ratings kA, 415V	Manually operated	Electrically operated	Set of three vertical terminals	Set of three front terminals
E1B08	800	40	\$ 6027	\$ 8388	\$ 644	\$ 367
E1B12	1250	40	6656	9017	644	367
E2N12	1250	65	7314	9675	690	888
E3S12	1250	75	7808	10,169	790	1232
E3H12	1250	100	8036	10,397	790	1232
E2L12	1250	130	10,066	12,427	690	888
E2B16	1600	40	7293	9654	690	888
E2N16	1600	65	8014	10,375	690	888
E3S16	1600	75	8700	11,061	790	1232
E3H16	1600	100	9232	11,593	790	1232
E2L16	1600	130	11,422	13,783	690	888
E2B20	2000	40	8509	10,870	690	888
E2N20	2000	65	9024	11,385	690	888
E3S20	2000	75	9817	12,178	790	1232
E3H20	2000	100	11,762	14,123	790	1232
E3L20	2000	130	13,425	15,786	790	1232
E3N25	2500	65	13,870	16,231	790	1232
E3S25	2500	75	15,242	17,603	790	1232
E3H25	2500	100	16,948	19,309	790	1232
E3L25	2500	130	19,454	21,815	790	1232
E3N32	3200	65	17,963	20,324	790	1232
E3S32	3200	75	18,662	21,023	790	1232
E3H32	3200	100	20,217	22,578	790	1232
E4H32	3200	100	22,085	24,446	1664	1696
E6V32	3200	150	36,328	38,689	2783	2464
E4S40	4000	75	26,873	29,234	1664	1696
E4H40	4000	100	30,645	33,006	1664	1696
E6V40	4000	150	42,739	45,100	2783	2464
E6H50	5000	100	42,047	44,408	2783	2464
E6V50	5000	150	50,281	52,642	2783	2464
E6H63	6300	100	50,456	52,817	2783	2464
E6V63	6300	150	60,337	62,698	2783	2464

Standard features – manually operated breaker

Fixed breaker

- Rear horizontal terminals
- PR111 trip unit with LI protection functions
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Terminal box

Fixed breakers, 4 poles IEC



Fixed breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 415V	Manually operated	Electrically operated	Set of four vertical terminals	Set of four front terminals
E1B08	800	40	\$ 7475	\$ 9836	\$ 837	\$ 489
E1B12	1250	40	8293	10,654	837	489
E2N12	1250	65	9148	11,509	897	1183
E3S12	1250	75	9306	11,667	1027	1643
E3H12	1250	100	9591	11,952	1027	1643
E2L12	1250	130	12,725	15,086	897	1183
E2B16	1600	40	9121	11,482	897	1183
E2N16	1600	65	10,059	12,420	897	1183
E3S16	1600	75	10,413	12,774	1027	1643
E3H16	1600	100	10,550	12,911	1027	1643
E2L16	1600	130	14,488	16,849	897	1183
E2B20	2000	40	10,701	13,062	897	1183
E2N20	2000	65	11,371	13,732	897	1183
E3S20	2000	75	11,795	14,156	1027	1643
E3H20	2000	100	13,621	15,982	1027	1643
E3L20	2000	130	17,093	19,454	1027	1643
E3N25	2500	65	17,671	20,032	1027	1643
E3S25	2500	75	19,454	21,815	1027	1643
E3H25	2500	100	21,672	24,033	1027	1643
E3L25	2500	130	24,930	27,291	1027	1643
E3N32	3200	65	22,992	25,353	1027	1643
E3S32	3200	75	23,900	26,261	1027	1643
E3H32	3200	100	27,307	29,668	1027	1643
E4H32	3200	100	28,351	30,712	2163	2260
E6V32	3200	150	45,410	47,771	3618	3286
E4S40	4000	75	34,610	36,971	2163	2260
E4H40	4000	100	39,516	41,877	2163	2260
E6V40	4000	150	53,424	55,785	3618	3286
E6H50	5000	100	52,558	54,919	3618	3286
E6V50	5000	150	62,852	65,213	3618	3286
E6H63	6300	100	63,070	65,431	3618	3286
E6V63	6300	150	75,422	77,783	3618	3286

Standard features – manually operated breaker

Fixed breaker

- Rear horizontal terminals
- PR111 trip unit with LI protection functions
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Terminal box

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating ①

① Consult factory for special 100% neutral pole rating.

Withdrawable breakers, 3 poles IEC

Withdrawable breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 415V	Moving part only		Fixed part		
			Manually operated	Electrically operated	RH terminals	Set of three vertical terminals	Set of three front terminals
E1B08	800	40	\$ 6501	\$ 8862	\$ 2281	\$ 644	\$ 367
E1B12	1250	40	7757	10,118	2281	644	367
E2N12	1250	65	8626	10,987	2400	690	888
E3S12	1250	75	8760	11,121	2925	790	1232
E3H12	1250	100	8897	11,258	2925	790	1232
E2L12	1250	130	12,180	14,541	2400	690	888
E2B16	1600	40	9097	11,458	2400	690	888
E2N16	1600	65	10,234	12,595	2400	690	888
E3S16	1600	75	10,674	13,035	2925	790	1232
E3H16	1600	100	11,100	13,461	2925	790	1232
E2L16	1600	130	15,920	18,281	2400	690	888
E2B20	2000	40	10,987	13,348	2400	690	888
E2N20	2000	65	11,182	13,543	2400	690	888
E3S20	2000	75	11,361	13,722	2925	790	1232
E3H20	2000	100	13,256	15,617	2925	790	1232
E3L20	2000	130	17,817	20,178	2925	790	888
E3N25	2500	65	15,220	17,581	2925	790	1232
E3S25	2500	75	17,896	20,257	2925	790	1232
E3H25	2500	100	19,528	21,889	2925	790	1232
E3L25	2500	130	22,892	25,253	2925	790	1232
E3N32	3200	65	22,337	24,698	2925	790	1232
E3S32	3200	75	23,340	25,701	2925	790	1232
E3H32	3200	100	23,724	26,085	2925	790	1232
E4H32	3200	100	23,842	26,203	6259	1664	1696
E6V32	3200	150	38,539	40,900	7398	2783	2464
E4S40	4000	75	30,399	32,760	6259	1664	1696
E4H40	4000	100	34,540	36,901	6259	1664	1696
E6V40	4000	150	45,340	47,701	7398	2783	2464
E6H50	5000	100	45,541	47,902	7398	2783	2464
E6V50	5000	150	53,341	55,702	7398	2783	2464
E6H63	6300	100	64,163	66,524	7398	2783	2464
E6V63	6300	150	78,427	80,788	7398	2783	2464

Standard features – electrically operated breaker

Moving part

- PR111 trip unit with LI protection functions
- Spring charging motor
- Shunt trip
- Closing coil
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts

Standard features – electrically operated breaker

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Withdrawable breakers, 4 poles IEC



Withdrawable breakers

Circuit breaker type	Frame amps	Interrupting ratings kA, 415V	Moving part only		Fixed part		
			Manually operated	Electrically operated	RH terminals	Set of four vertical terminals	Set of four front terminals
E1B08	800	40	\$ 7717	\$ 10,078	\$ 2572	\$ 837	\$ 489
E1B12	1250	40	10,649	13,010	2572	837	489
E2N12	1250	65	11,372	13,733	3192	897	1183
E3S12	1250	75	11,906	14,267	3890	1027	1643
E3H12	1250	100	12,229	14,590	3890	1027	1643
E2L12	1250	130	15,402	17,763	3192	897	1183
E2B16	1600	40	11,395	13,756	3192	897	1183
E2N16	1600	65	12,873	15,234	3192	897	1183
E3S16	1600	75	12,472	14,833	3890	1027	1643
E3H16	1600	100	13,304	15,665	3890	1027	1643
E2L16	1600	130	20,264	22,625	3192	897	1183
E2B20	2000	40	13,851	16,212	3192	897	1183
E2N20	2000	65	15,661	18,022	3192	897	1183
E3S20	2000	75	14,873	17,234	3890	1027	1643
E3H20	2000	100	16,784	19,145	3890	1027	1643
E3L20	2000	130	22,714	25,075	3890	1027	1643
E3N25	2500	65	20,380	22,741	3890	1027	1643
E3S25	2500	75	22,816	25,177	3890	1027	1643
E3H25	2500	100	24,938	27,299	3890	1027	1643
E3L25	2500	130	29,312	31,673	3890	1027	1643
E3N32	3200	65	29,555	31,916	3890	1027	1643
E3S32	3200	75	29,893	32,254	3890	1027	1643
E3H32	3200	100	32,017	34,378	3890	1027	1643
E4H32	3200	100	32,589	34,950	8324	2163	2260
E6V32	3200	150	49,722	52,083	9839	3618	3286
E4S40	4000	75	41,350	43,711	8324	2163	2260
E4H40	4000	100	44,409	46,770	8324	2163	2260
E6V40	4000	150	58,496	60,857	9839	3618	3286
E6H50	5000	100	58,680	61,041	9839	3618	3286
E6V50	5000	150	68,820	71,181	9839	3618	3286
E6H63	6300	100	82,888	85,249	9839	3618	3286
E6V63	6300	150	101,432	103,793	9839	3618	3286

Standard features – electrically operated breaker

Moving part

- PR111 trip unit with LI protection functions
- Spring charging motor
- Shunt trip
- Closing coil
- Manual mechanical close and open pushbuttons
- CB open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- 2NO & 2NC auxiliary contacts for open-closed position indication
- Lifting plates
- Current transformers
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts

Standard features – electrically operated breaker

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating ^①

^① Consult factory for special 100% neutral pole rating.

Non-automatic air circuit breaker

Fixed switches (Without trip unit & c.t.s.), 3 pole IEC

Fixed switches, 3 pole

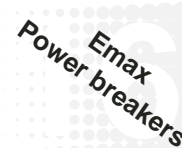
Circuit breaker type	Frame amps	Manually operated	Electrically operated	Set of three vertical terminals	Set of three front terminals
E1B/MS08	800	\$ 4298	\$ 6659	\$ 644	\$ 367
E1B/MS12	1250	4927	7288	644	367
E2N/MS12	1250	5585	7946	690	888
E3S/MS12	1250	5972	8333	790	1232
E2B/MS16	1600	5564	7925	690	888
E2N/MS16	1600	6285	8646	690	888
E3S/MS16	1600	6864	9225	790	1232
E2B/MS20	2000	6780	9141	690	888
E2N/MS20	2000	7295	9656	690	888
E3S/MS20	2000	7981	10,342	790	1232
E3N/MS25	2500	12,034	14,395	790	1232
E3S/MS25	2500	13,406	15,767	790	1232
E3N/MS32	3200	16,127	18,488	790	1232
E3S/MS32	3200	16,826	19,187	790	1232
E4S/MS40	4000	24,504	26,865	1664	1696
E4H/MS40	4000	28,276	30,637	1664	1696
E6H/MS50	5000	39,465	41,826	2783	2464
E6H/MS63	6300	47,874	50,235	2783	2464

Standard features – manually operated switch

- Rear horizontal terminals
- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Terminal box

Non-automatic air circuit breaker

Fixed switches (Without trip unit & c.t.s.), 4 pole IEC



Fixed switches, 4 pole

Circuit breaker type	Frame amps	Manually operated	Electrically operated	Set of four vertical terminals	Set of four front terminals
E1B/MS08	800	\$ 5533	\$ 7894	\$ 837	\$ 489
E1B/MS12	1250	6351	8712	837	489
E2N/MS12	1250	7206	9567	897	1183
E3S/MS12	1250	7221	9582	1027	1643
E2B/MS16	1600	7179	9540	897	1183
E2N/MS16	1600	8117	10,478	897	1183
E3S/MS16	1600	8328	10,689	1027	1643
E2B/MS20	2000	8759	11,120	897	1183
E2N/MS20	2000	9429	11,790	897	1183
E3S/MS20	2000	9710	12,071	1027	1643
E3N/MS25	2500	15,586	17,947	1027	1643
E3S/MS25	2500	17,369	19,730	1027	1643
E3N/MS32	3200	20,907	23,268	1027	1643
E3S/MS32	3200	21,815	24,176	1027	1643
E4S/MS40	4000	31,815	34,176	2163	2260
E4H/MS40	4000	36,721	39,082	2163	2260
E6H/MS50	5000	49,479	51,480	3618	3286
E6H/MS63	6300	59,991	62,352	3618	3286

Standard features – manually operated switch

- Rear horizontal terminals
- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Terminal box

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating ^①

^① Consult factory for special 100% neutral pole rating.

Non-automatic air circuit breaker

Withdrawable switches (Without trip unit & c.t.s.), 3 pole IEC

Withdrawable switches, 3 pole

Circuit breaker type	Ampere frame amps	Moving part only		Fixed part RH terminals	Set of 3 vertical terminals	Set of 3 front terminals
		Manually operated	Electrically operated			
E1B/MS08	800	\$ 4772	\$ 7133	\$ 2281	\$ 644	\$ 367
E1B/MS12	1250	6028	8389	2281	644	367
E2N/MS12	1250	6897	9258	2400	690	888
E3S/MS12	1250	6924	9285	2925	790	1232
E2B/MS16	1600	7368	9729	2400	690	888
E2N/MS16	1600	8505	10,866	2400	690	888
E3S/MS16	1600	8838	11,199	2925	790	1232
E2B/MS20	2000	9258	11,619	2400	690	888
E2N/MS20	2000	9453	11,814	2400	690	888
E3S/MS20	2000	9525	11,886	2925	790	1232
E3N/MS25	2500	13,384	15,745	2925	790	1232
E3S/MS25	2500	16,060	18,421	2925	790	1232
E3N/MS32	3200	20,501	22,862	2925	790	1232
E3S/MS32	3200	21,540	23,865	2925	790	1232
E4S/MS40	4000	28,030	30,391	6259	1664	1696
E4H/MS40	4000	32,171	34,532	6259	1664	1696
E6H/MS50	5000	42,959	45,320	7398	2783	2464
E6H/MS63	6300	61,581	63,942	7398	2783	2464

Standard features – manually operated switch

Moving part

- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts

Standard features – manually operated switch

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Non-automatic air circuit breaker

Withdrawable switches (Without trip unit & c.t.s.), 4 pole IEC



Withdrawable switches, 4 pole

Circuit breaker type	Ampere frame amps	Moving part only		Fixed part RH terminals	Set of 4 vertical terminals	Set of 4 front terminals
		Manually operated	Electrically operated			
E1B/MS08	800	\$ 5775	\$ 8136	\$ 2572	\$ 837	\$ 489
E1B/MS12	1250	8707	11,068	2572	837	489
E2N/MS12	1250	9430	11,791	3192	897	1183
E3S/MS12	1250	9821	12,182	3890	1027	1643
E2B/MS16	1600	9453	11,814	3192	837	1183
E2N/MS16	1600	10,931	13,292	3192	897	1183
E3S/MS16	1600	10,387	12,748	3890	1027	1643
E2B/MS20	2000	11,909	14,270	3192	837	1183
E2N/MS20	2000	13,719	16,080	3192	897	1183
E3S/MS20	2000	12,788	15,149	3890	1027	1643
E3N/MS25	2500	18,295	20,656	3890	1027	1643
E3S/MS25	2500	20,731	23,092	3890	1027	1643
E3N/MS32	3200	27,470	29,831	3890	1027	1643
E3S/MS32	3200	27,808	30,169	3890	1027	1643
E4S/MS40	4000	38,555	40,916	8324	2163	2260
E4H/MS40	4000	41,614	43,975	8324	2163	2260
E6H/MS50	5000	55,601	57,962	9839	3618	3286
E6H/MS63	6300	79,809	82,170	9839	3618	3286

Standard features – manually operated switch

Moving part

- Manual mechanical close and open pushbuttons
- Circuit breaker open/closed mechanical indicator
- Spring charged/discharged mechanical indicator
- Lifting plates
- Racking device with closed door
- Circuit breaker racking position indicator
- Sliding contacts

Standard features – manually operated switch

Fixed part

- Safety shutters
- Rear horizontal terminals
- Sliding contacts
- Anti-insertion lock
- Ground connection

Neutral pole rating

- E1 – E3 = 100% rating
- E4 – E6 = 50% rating ^①

^① Consult factory for special 100% neutral pole rating.

Air circuit breakers

Installed optional features UL & IEC

1. – 20. Options for trip units

Item	Factory installation list price adder	Field installation catalog number	Field install. list price
1. Trip unit PR111/P-A LI (UL version)	—	PR111/P-A-LI	\$ 1089
2. Trip unit PR111/P-A LSI (UL version)	\$ 515	PR111/P-A-LSI	1604
3. Trip unit PR111/P-A LSIG (UL version)	1208	PR111/P-A-LSIG	2297
4. Trip unit PR112/P-A LSI (UL version)	2210	PR112/P-A-LSI	3299
5. Trip unit PR112/P-A LSIG (UL version)	2904	PR112/P-A-LSIG	3993
6. Trip unit PR112/PD-A LSI (UL version)	6890	PR112/PD-A-LSI	7979
7. Trip unit PR112/PD-A LSIG (UL version)	7583	PR112/PD-A-LSIG	8672
8. Trip unit PR113/P-A-LSIG (UL version)	7323	PR113/P-A-LSIG	8412
9. Trip unit PR113/PD-A-LSIG (UL version)	12,002	PR113/PD-A-LSIG	13,091
10. Trip unit PR111/P LI (IEC version)	—	PR111/P-LI	1089
11. Trip unit PR111/P LSI (IEC version)	515	PR111/P-LSI	1604
12. Trip unit PR111/P LSIG (IEC version)	1208	PR111/P-LSIG	2297
13. Trip unit PR112/P LSI (IEC version)	2210	PR112/P-LSI	3299
14. Trip unit PR112/P LSIG (IEC version)	2904	PR112/P-LSIG	3993
15. Trip unit PR112/PD LSI (IEC version)	6890	PR112/PD-LSI	7979
16. Trip unit PR112/PD LSIG (IEC version)	7583	PR112/PD-LSIG	8672
17. Trip unit PR113/PLSIG (IEC version)	7323	PR113/P-LSIG	8412
18. Trip unit PR113/PDLSIG (IEC version)	12,002	PR113/PD-LSIG	13,091
19. Mechanical trip indication (manual reset)	188	KE6TSM	188
20. Mechanical trip indication and bell alarm	348	KE6TBA	348

21. – 27. Electrical and mechanical accessories

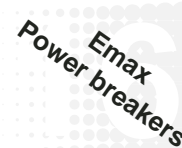
Item	Factory installation list price adder	Field installation catalog number	Field installation list price
21a. Shunt trip coil (included in the electrically operated breaker) Rated voltage 24V 30V 48V 60V 110/120V 125/127V 220/240V 250V 380/400V 440/480V	\$ 374	KE6S0 KE6S9 KE6S8 KE6S7 KE6S6 KE6S5 KE6S4 KE6S3 KE6S2 KE6S1	\$ 374
21b. Second shunt trip coil (includes accessory support) ① 24V 30V 48V 60V 110/120V 125/127V 220/240V 250V 380/400V 440/480V	456	KE6S0-2 KE6S9-2 KE6S8-2 KE6S7-2 KE6S6-2 KE6S5-2 KE6S4-2 KE6S3-2 KE6S2-2 KE6S1-2	456
22. Closing coil (included in the electrically operated breaker) Rated voltage 24V 30V 48V 60V 110/120V 125/127V 220/240V 250V 380/400V 440/480V	374	KE6C0 KE6C9 KE6C8 KE6C7 KE6C6 KE6C5 KE6C4 KE6C3 KE6C2 KE6C1	374
23. Spring charging motor with limit switch and electrical indication charged spring (included in the electrically operated breaker) Rated voltage 24/30V 48/60V 100/130V 220/250V Spring charged signal only	1613 73	KE6M9 KE6M7 KE6M5 KE6M3 KE6SC	1613 73

① Order as alternative to UV trip.

Air circuit breakers

Installed optional features

UL & IEC



Item	Factory installation list price adder	Field installation catalog number	Field installation list price
24. Instantaneous under voltage trip release Rated voltage 24V 30V 48V 60V 110/120V 125/127V 220/240V 250V 380/400V 440/480V	\$ 456	KE6U0 KE6U9 KE6U8 KE6U7 KE6U6 KE6U5 KE6U4 KE6U3 KE6U2 KE6U1	\$ 456
25. Energized undervoltage release signalling contact Auxiliary contact normally open Auxiliary contact normally closed	82	KE6UE10 KE6UE01	82
26. Auxiliary contacts for breakers Rated 5A-250VAC / 0.3A -125VDC 26a. 2NO +2NC 26b. 5NO + 5NC (not available with PR112) 26c. 15 additional auxiliary contacts for field installation on fixed breakers (connected to breaker with flexible cable) ① 26d. 15 additional auxiliary contacts for field installation on withdrawable breakers (connected to breaker with flexible cable) ①	– 753 1507 1507	KE6A4 KE6A10 KE6A15 KE6A15-W	297 1050 1507 1507
27. Auxiliary contacts for switches 27a. 2NO + 2NC 27b. 5NO + 5NC	297 1050	KE6A4 KE6A10	297 1050

28. – 29. Electrical and mechanical accessories

Item	Factory installation list price adder	Field installation catalog number	Field installation list price
28. Auxiliary contacts for service/test/disconnected position indication Cradle mounted 28a. 5 auxiliary contacts 28b. 10 auxiliary contacts for E1/2 3 pole 28c. 10 auxiliary contacts for E1/2 4 pole 28d. 10 auxiliary contacts for E3 3 pole 28e. 10 auxiliary contacts for E3 4 pole 28f. 10 auxiliary contacts for E4/6 3/4 pole	377 753 753 753 753 753	KE6PS1 KE2PS3 KE2PS4 KE3PS3 KE3PS4 KE6PS2	377 753 753 753 753 753
29. Mechanical operation counter	418	KE6MC	418

① Order as alternative to various types of interlock and kirk key lock. For mounting on fixed breaker, also requires accessory 32 (KE6MLP).

Air circuit breakers

Installed optional features

UL & IEC

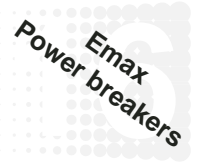
30. – 35. Locks and interlocks

Item	Factory installation list price adder	Field installation catalog number	Field installation list price
30. Button guard	\$ 48	KE6PG	\$ 48
31. Key lock in open position			
31a. Key lock N. 3004222 ①		KE6KL2	
31b. Key lock N. 0025431		KE6KL3	
31c. Key lock N. 0233424	202	KE6KL4	202
31d. Key lock N. 0335452		KE6KL5	
31e. Key lock different keys		KE6KL1	
32. Padlocking button cover (padlocks not supplied)	162	KE6PD1	162
33. Key and padlocking device to lock the breaker in disconnected, test or connected position (position lock)			
33a. Key + padlocking N3004222 ①		KE6PL2	
33b. Key + padlocking N0025451		KE6PL3	
33c. Key + padlocking N0233424	202	KE6PL4	202
33d. Key + padlocking N0335452		KE6PL5	
33e. Key + padlocking different keys		KE6PL1	
34. Accessory to lock the breaker in test or disconnected position only ②			
Position lock	212	KE6PLA	212
35. Padlocking device for the safety shutters on the cradle			
Cradle padlock	43	KE6SP	43

① Keylock number when factory installed is N3004222.
 ② Also requires position lock (accessory 29).

External accessories

Current transformers, UL & IEC



36a. Neutral current transformer (required for 4 wire ground fault systems)

For breaker	Amps	Catalog number	List price
E1 – E2	250A	KE2NCT-250	\$ 406
	400A	KE2NCT-400	
	800A	KE2NCT-800	
	1000A	KE2NCT-1000	
	1200A	KE2NCT-1200	
	1250A	KE2NCT-1250 ①	
	1600A	KE2NCT-1600	
E3	250A	KE3NCT-250	414
	400A	KE3NCT-400	
	800A	KE3NCT-800	
	1000A	KE3NCT-1000	
	1200A	KE3NCT-1200	
	1250A	KE3NCT-1250 ①	
	1600A	KE3NCT-1600	
	2000A	KE3NCT-2000	
	2500A	KE3NCT-2500	
	E4	1600A		KE4NCT-1600	414
2000A		KE4NCT-2000	
2500A		KE4NCT-2500	
3200A		KE4NCT-3200	
4000A		KE4NCT-4000 ①	
E6	3200A	KE6NCT-3200 ①	414
	4000A	KE6NCT-4000	
	5000A	KE6NCT-5000	
	6300A	KE6NCT-6300 ①	

36b. Current transformer sets (sets of three)

For breaker	Amps	Catalog number	List price
E1 – E2	250A	KE2CT250	\$ 840
	400A	KE2CT400	
	800A	KE2CT800	
	1000A	KE2CT1000	
	1200A	KE2CT1200	
	1250A	KE2CT1250 ①	
	1600A	KE2CT1600	
E3	250A	KE3CT250	1090
	400A	KE3CT400	
	800A	KE3CT800	
	1000A	KE3CT1000	
	1200A	KE3CT1200	
	1250A	KE3CT1250 ①	
	1600A	KE3CT1600	
	2000A	KE3CT2000	
	2500A	KE3CT2500	
E4	1600A	KE4CT1600	1640
	2000A	KE4CT2000	
	2500A	KE4CT2500	
	3200A	KE4CT3200	
	4000A	KE4CT4000 ①	
E6	3200A	KE6CT3200	2188
	4000A	KE6CT4000	
	5000A	KE6CT5000	
	6300A	KE6CT6300 ①	

① IEC only.

External accessories

Mechanical interlocks^①

37. Mechanical interlocks (base plate for fixed circuit breaker)

For breaker	Interlock type	Catalog number	List price
E1 – E6	All	KE6MLP	\$ 241

NOTE: order for fixed circuit breaker only; order one accessory for each fixed breaker.

38. Interlock for fixed circuit breaker/fixed part of withdrawable circuit breaker (cable attachment plate)

For breaker	Interlock type	Catalog number	List price
E1 – E6	A, B, D C	KE6MLA KE6MLC	\$ 628

NOTE: order one accessory for each fixed circuit breaker/fixed part of withdrawable circuit breaker

39. Interlock for fixed circuit breaker/moving part of withdrawable circuit breaker (internal interlocking shaft)

For breaker	Interlock type	Catalog number	List price
E1 – E2 E3 E4, 3 pole E4, 4 pole/ E6, 3 pole E6, 4 pole	All	KE2ML KE3ML KE4ML-3 KE6ML-3 KE6ML-4	\$ 145

NOTE: order one accessory for each fixed circuit breaker/mobile part of withdrawable circuit breaker

40. Interlock cables

For breaker	Interlock type	Horizontal Catalog number	Vertical Catalog number	List price
E1 – E6	A	KE6MLC-HA	KE6MLC-VA	\$ 97
	B	KE6MLC-HB	KE6MLC-VB	193
	C	KE6MLC-HC	KE6MLC-VC	193
	D	KE6MLC-HD	KE6MLC-VD	193

NOTE: order one type of cable for each interlock

^① Order as an alternative to the Accessory number 15 auxiliary contact (see page 16.27) and kirk key lock.

External accessories Other items



41. Electronic time delay for undervoltage release ①

Item	Delay	Field installation catalog number	List price
41. Time delay Voltage 24/30V 48V 60V 110/125V 220/250V	0.5-1-1.5-2-3.5 s	KE6TL9 KE6TL8 KE6TL7 KE6TL5 KE6TL3	\$ 428

42. Transparent front cover (IP54)

For breaker	Catalog number	List price
42. Cover E1 – E6	KE6DC	\$ 557

43. Kirk key lock adaptor plate (in open position) ②

For breaker	Catalog number	List price
43. Kirk key lock adaptor plate 43a. E1 – E2 fixed breaker, 3-4 pole 43b. E1 – E2 withdrawable breaker, 3-4 pole 43c. E3 fixed breaker, 3-4 pole 43d. E3 withdrawable breaker, 3-4 pole 43e. E4 fixed breaker, 3 pole 43f. E4 withdrawable breaker, 3 pole 43g. E6 fixed breaker, 3 pole 43h. E6 withdrawable breaker, 3 pole 43i. E4 fixed breaker, 4 pole 43j. E4 withdrawable breaker, 4 pole 43k. E6 fixed breaker, 4 pole 43l. E6 withdrawable breaker, 4 pole	KE6KKB-E2F KE6KKB-E2W KE6KKB-E3F KE6KKB-E3W KE6KKB-E4F KE6KKB-E4W KE6KKB-E6F KE6KKB-E6W KE6KKB-E4F-F KE6KKB-E4W-4 KE6KKB-E6F-4 KE6KKB-E6W-4	\$ 1436 1195 1436 1195 1436 1195 1436 1195 1436 1195 1436 1195 1436 1195

NOTE: Provision for kirk lock (kirk key lock not included; use lock Type F – 1 inch bolt projection in withdrawn position).

44. Kit for converting fixed breaker with rear horizontal terminals to rear vertical (set of three terminals)

Item	Catalog number	List price
44. Conversion kit 44a. 1/2 3p F HR > F VR E1-A 44b. 1/2 3p F HR > F VR E2-A 44c. 1/2 3p F HR > F VR E3-A (12, 16, 20) 44d. 1/2 3p F HR > F VR E3-A (25) 44e. 1/2 3p F HR > F VR E4-A 44f. 1/2 3p F HR > F VR E6-A	KE1FHRVR KE2FHRVR KE3FHRVR KE3F25HRVR KE4FHRVR KE6FHRVR	\$ 644 690 790 790 1664 2783

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45. – 47. Test kits

Item	Catalog number	List price
45. Hand-held test kit (for PR111 only)	K7TUT	\$ 210
46. Hand-held battery unit for PR112	PR120/B	275
47. Test and configuration unit SACE PR010/T	PR010/T	12,500

48. – 55. Spare parts

Item	Catalog number	List price
48. Racking crank	1SDA038092R1	\$ 122
49. Door escutcheon	1SDA038096R1	153
50. Terminal board for fixed circuit breaker	1SDA038342R1	722
51. Support plate for auxiliary releases	1SDA038339R1	244
52. Sliding contacts for the moving part	1SDA038328R1	946
53. Sliding contacts for the fixed part	1SDA038362R1	793
54. Lifting plates	1SDA038093R1	224
55. Transparent cover for the trip unit	1SDA045724R1	61

① IEC only.

② Kirk key not provided. Order as an alternative to the various types of interlocks and auxiliary contacts (see Accessory 26c and 26d on page 16.27).