

**E2000 Miniature Circuit Breakers**

EP60 Series.....7-2  
 EP100 Series.....7-4  
 EP100 ULH Series.....7-6  
 EP100 UC Series (Branch Circuit Protection).....7-8  
 Series CA Auxiliary Switch and Bell Alarm.....7-10  
 Series CB Auxiliary Switch and Bell Alarm.....7-11  
 Shunt Trip and Undervoltage Release .....7-12  
 Technical Data.....7-13



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP60 Series

### Applications

—Industrial

### Performance

Thermal setting I <sub>n</sub> (A)	0.5-63
Rated Vac Un (V)	240/415
Minimum operating voltage U <sub>g</sub> min (V)	12
Tripping characteristics	B-C-D
Selectivity class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable mm <sup>2</sup>	25-35
Poles	1, 2, 3, 4
Weight (g/pole)	120

### Short-circuit Capacity

Per UL 1077 & CSA 22.2 No. 235-1989 (File E151139)

Poles	Max. Voltage Rating		Short Circuit Rating kAIC RMS Symmetrical				kAIC DC	
	AC	DC	120	120/240	277	480V/277	50	110
1	277	50	10	–	6	–	10	–
2	480V/277	110	10	10	6	6	–	10
3, 4	480V/277	110	10	10	6	6	–	–

### AC acc. to IEC 60898

Poles	V	I <sub>cn</sub> /I <sub>cs</sub> (kA)
1-4	230/400	6

### AC acc. to IEC 60947-2

Poles	V	I <sub>cu</sub> (kA) <sup>1</sup>
1	240	10
2,3,4	240	20
2,3,4	415	10

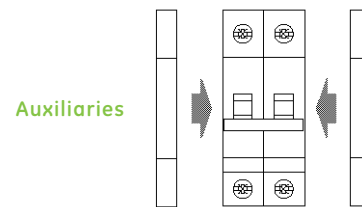
<sup>1</sup>I<sub>cs</sub> = 75% I<sub>cu</sub>

### DC acc. to IEC 60947-2

Poles	V	I <sub>cu</sub> /I <sub>cs</sub> (kA)
1	60	20
2	125	25

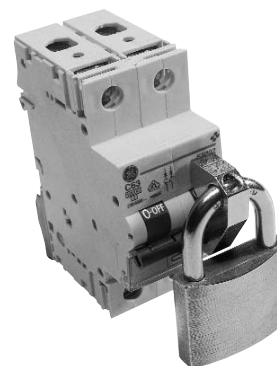
### Approval/Marking

—CE  
—cURus  
—CEBEC  
—KEMA EUR



Auxiliaries

Add-on Devices



KS Padlocking Bracket



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP60 Series

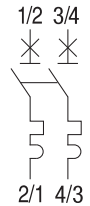
## Section 7

EP60 Series, 6 kAIC @277 or 480Y/277 Vac, Tripping Characteristics B-C-D

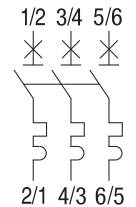
Poles	Std. Pack	6 kAIC In (A)	Tripping Characteristic			List Price G0-135VB		
			B (3-5X) Product No.	C (5-10X) Product No.	D (10-20X) Product No.			
1	12	0.5	-	EP61ULC0.5	EP61ULD0.5	\$78.00		
		1	-	EP61ULC01	EP61ULD01	\$65.00		
		2	-	EP61ULC02	EP61ULD02	\$65.00		
		3	-	EP61ULC03	EP61ULD03	\$65.00		
		4	-	EP61ULC04	EP61ULD04	\$65.00		
		5	EP61ULB05	EP61ULC05	EP61ULD05	\$65.00		
		6	EP61ULB06	EP61ULC06	EP61ULD06	\$65.00		
		10	EP61ULB10	EP61ULC10	EP61ULD10	\$65.00		
		13	EP61ULB13	EP61ULC13	EP61ULD13	\$65.00		
		15	EP61ULB15	EP61ULC15	EP61ULD15	\$65.00		
		16	EP61ULB16	EP61ULC16	EP61ULD16	\$65.00		
		20	EP61ULB20	EP61ULC20	EP61ULD20	\$65.00		
		25	EP61ULB25	EP61ULC25	EP61ULD25	\$65.00		
		30	EP61ULB30	EP61ULC30	EP61ULD30	\$65.00		
		32	EP61ULB32	EP61ULC32	EP61ULD32	\$65.00		
		40	EP61ULB40	EP61ULC40	EP61ULD40	\$72.00		
		50	EP61ULB50	EP61ULC50	EP61ULD50	\$76.00		
		60	EP61ULB60	EP61ULC60	EP61ULD60	\$80.00		
		63	EP61ULB63	EP61ULC63	EP61ULD63	\$80.00		
		2	6	0.5	-	EP62ULC0.5	EP62ULD0.5	\$156.00
				1	-	EP62ULC01	EP62ULD01	\$141.00
				2	-	EP62ULC02	EP62ULD02	\$141.00
				3	-	EP62ULC03	EP62ULD03	\$141.00
				4	-	EP62ULC04	EP62ULD04	\$141.00
5	EP62ULB05			EP62ULC05	EP62ULD05	\$141.00		
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10	EP62ULB10			EP62ULC10	EP62ULD10	\$141.00		
13	EP62ULB13			EP62ULC13	EP62ULD13	\$141.00		
15	EP62ULB15			EP62ULC15	EP62ULD15	\$141.00		
16	EP62ULB16			EP62ULC16	EP62ULD16	\$141.00		
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32	EP62ULB32			EP62ULC32	EP62ULD32	\$141.00		
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50	EP62ULB50			EP62ULC50	EP62ULD50	\$156.00		
60	EP62ULB60			EP62ULC60	EP62ULD60	\$164.00		
63	EP62ULB63			EP62ULC63	EP62ULD63	\$164.00		
3	4			0.5	-	EP63ULC0.5	EP63ULD0.5	\$230.00
				1	-	EP63ULC01	EP63ULD01	\$204.00
				2	-	EP63ULC02	EP63ULD02	\$204.00
				3	-	EP63ULC03	EP63ULD03	\$204.00
				4	-	EP63ULC04	EP63ULD04	\$204.00
		5	EP63ULB05	EP63ULC05	EP63ULD05	\$204.00		
		6	EP63ULB06	EP63ULC06	EP63ULD06	\$204.00		
		10	EP63ULB10	EP63ULC10	EP63ULD10	\$204.00		
		13	EP63ULB13	EP63ULC13	EP63ULD13	\$204.00		
		15	EP63ULB15	EP63ULC15	EP63ULD15	\$204.00		
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		40	EP63ULB40	EP63ULC40	EP63ULD40	\$210.00		
		50	EP63ULB50	EP63ULC50	EP63ULD50	\$219.00		
		60	EP63ULB60	EP63ULC60	EP63ULD60	\$229.00		
		63	EP63ULB63	EP63ULC63	EP63ULD63	\$229.00		
		4	3	0.5	-	EP64ULC0.5	EP64ULD0.5	\$300.00
				1	-	EP64ULC01	EP64ULD01	\$269.00
				2	-	EP64ULC02	EP64ULD02	\$269.00
				3	-	EP64ULC03	EP64ULD03	\$269.00
				4	-	EP64ULC04	EP64ULD04	\$269.00
5	EP64ULB05			EP64ULC05	EP64ULD05	\$269.00		
6	EP64ULB06			EP64ULC06	EP64ULD06	\$269.00		
10	EP64ULB10			EP64ULC10	EP64ULD10	\$269.00		
13	EP64ULB13			EP64ULC13	EP64ULD13	\$269.00		
15	EP64ULB15			EP64ULC15	EP64ULD15	\$269.00		
16	EP64ULB16			EP64ULC16	EP64ULD16	\$269.00		
20	EP64ULB20			EP64ULC20	EP64ULD20	\$269.00		
25	EP64ULB25			EP64ULC25	EP64ULD25	\$269.00		
30	EP64ULB30			EP64ULC30	EP64ULD30	\$269.00		
32	EP64ULB32			EP64ULC32	EP64ULD32	\$269.00		
40	EP64ULB40			EP64ULC40	EP64ULD40	\$272.00		
50	EP64ULB50			EP64ULC50	EP64ULD50	\$285.00		
60	EP64ULB60			EP64ULC60	EP64ULD60	\$293.00		
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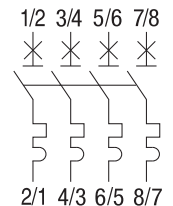
1 Pole



2 Pole



3 Pole



4 Pole



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP100 Series

### Applications

—Industrial

### Performance

Thermal setting In (A)	0.5-63
Rated Vac Un (V)	240/415
Minimum operating voltage U <sub>g</sub> min (V)	12
Tripping characteristics	B-C-D
Selectivity class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable mm <sup>2</sup>	25-35
Poles	1, 2, 3, 4
Weight (g/pole)	120

### Short-circuit Capacity

Per UL 1077 & CSA 22.2 No. 235-1989 (File E151139)

Poles	Max. Voltage Rating		Short Circuit Rating kAIC RMS Symmetrical				kAIC DC	
	AC	DC	120	120/240	277	480V/277	50	110
1	277	50	10	—	10	—	10	—
2	480V/277	110	10	10	10	—	—	10
3, 4	480V/277	110	10	10	10	10	—	—

### AC acc. to IEC 60898

Poles	V	I <sub>cn</sub> (kA) <sup>1</sup>
1-4	230/400	10

<sup>1</sup>I<sub>cs</sub> = 75% I<sub>cu</sub>

### AC acc. to IEC 60947-2

Poles	V	I <sub>cu</sub> (kA) <sup>2</sup>
1	240	15
2,3,4	240	30
2,3,4	415	15

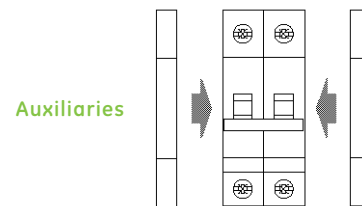
<sup>2</sup>I<sub>cs</sub> = 50% I<sub>cu</sub>

### DC acc. to IEC 60947-2

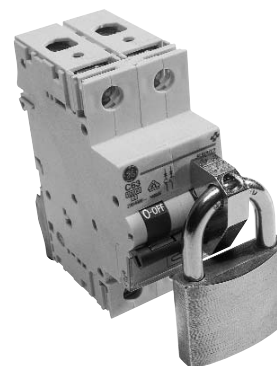
Poles	V	I <sub>cu</sub> /I <sub>cs</sub> (kA)
1	60	25
2	125	30

### Approval/Marking

- CE
- CSA
- cURus
- CEBEC
- KEMA EUR



Add-on Devices



KS Padlocking Bracket



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

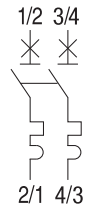
### EP100 Series

#### EP100 Series, 10 kAIC @120 or 120/240 Vac, Tripping Characteristics B-C-D

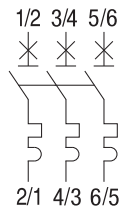
Poles	10 kAIC In (A)	Tripping Characteristic			List Price GO-135VB
		B (3-5X) Product No.	C (5-10X) Product No.	D (10-20X) Product No.	
1	0.5	-	EP101ULC0.5	EP101ULD0.5	\$116.00
	1	-	EP101ULC01	EP101ULD01	\$97.00
	2	-	EP101ULC02	EP101ULD02	\$97.00
	3	-	EP101ULC03	EP101ULD03	\$97.00
	4	-	EP101ULC04	EP101ULD04	\$97.00
	5	EP101ULB05	EP101ULC05	EP101ULD05	\$97.00
	6	EP101ULB06	EP101ULC06	EP101ULD06	\$97.00
	10	EP101ULB10	EP101ULC10	EP101ULD10	\$97.00
	13	EP101ULB13	EP101ULC13	EP101ULD13	\$97.00
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	20	EP101ULB20	EP101ULC20	EP101ULD20	\$97.00
	25	EP101ULB25	EP101ULC25	EP101ULD25	\$97.00
	30	EP101ULB30	EP101ULC30	EP101ULD30	\$97.00
	32	EP101ULB32	EP101ULC32	EP101ULD32	\$97.00
	40	EP101ULB40	EP101ULC40	EP101ULD40	\$107.00
50	EP101ULB50	EP101ULC50	EP101ULD50	\$113.00	
60	EP101ULB60	EP101ULC60	EP101ULD60	\$119.00	
63	EP101ULB63	EP101ULC63	EP101ULD63	\$119.00	
2	0.5	-	EP102ULC0.5	EP102ULD0.5	\$233.00
	1	-	EP102ULC01	EP102ULD01	\$210.00
	2	-	EP102ULC02	EP102ULD02	\$210.00
	3	-	EP102ULC03	EP102ULD03	\$210.00
	4	-	EP102ULC04	EP102ULD04	\$210.00
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	10	EP102ULB10	EP102ULC10	EP102ULD10	\$210.00
	13	EP102ULB13	EP102ULC13	EP102ULD13	\$210.00
	15	EP102ULB15	EP102ULC15	EP102ULD15	\$210.00
	16	EP102ULB16	EP102ULC16	EP102ULD16	\$210.00
	20	EP102ULB20	EP102ULC20	EP102ULD20	\$210.00
	25	EP102ULB25	EP102ULC25	EP102ULD25	\$210.00
	30	EP102ULB30	EP102ULC30	EP102ULD30	\$210.00
	32	EP102ULB32	EP102ULC32	EP102ULD32	\$210.00
	40	EP102ULB40	EP102ULC40	EP102ULD40	\$216.00
50	EP102ULB50	EP102ULC50	EP102ULD50	\$233.00	
60	EP102ULB60	EP102ULC60	EP102ULD60	\$245.00	
63	EP102ULB63	EP102ULC63	EP102ULD63	\$245.00	
3	0.5	-	EP103ULC0.5	EP103ULD0.5	\$343.00
	1	-	EP103ULC01	EP103ULD01	\$304.00
	2	-	EP103ULC02	EP103ULD02	\$304.00
	3	-	EP103ULC03	EP103ULD03	\$304.00
	4	-	EP103ULC04	EP103ULD04	\$304.00
	5	EP103ULB05	EP103ULC05	EP103ULD05	\$304.00
	6	EP103ULB06	EP103ULC06	EP103ULD06	\$304.00
	10	EP103ULB10	EP103ULC10	EP103ULD10	\$304.00
	13	EP103ULB13	EP103ULC13	EP103ULD13	\$304.00
	15	EP103ULB15	EP103ULC15	EP103ULD15	\$304.00
	16	EP103ULB16	EP103ULC16	EP103ULD16	\$304.00
	20	EP103ULB20	EP103ULC20	EP103ULD20	\$304.00
	25	EP103ULB25	EP103ULC25	EP103ULD25	\$304.00
	30	EP103ULB30	EP103ULC30	EP103ULD30	\$304.00
	32	EP103ULB32	EP103ULC32	EP103ULD32	\$304.00
	40	EP103ULB40	EP103ULC40	EP103ULD40	\$314.00
50	EP103ULB50	EP103ULC50	EP103ULD50	\$327.00	
60	EP103ULB60	EP103ULC60	EP103ULD60	\$342.00	
63	EP103ULB63	EP103ULC63	EP103ULD63	\$342.00	
4	0.5	-	EP104ULC0.5	EP104ULD0.5	\$448.00
	1	-	EP104ULC01	EP104ULD01	\$401.00
	2	-	EP104ULC02	EP104ULD02	\$401.00
	3	-	EP104ULC03	EP104ULD03	\$401.00
	4	-	EP104ULC04	EP104ULD04	\$401.00
	5	EP104ULB05	EP104ULC05	EP104ULD05	\$401.00
	6	EP104ULB06	EP104ULC06	EP104ULD06	\$401.00
	10	EP104ULB10	EP104ULC10	EP104ULD10	\$401.00
	13	EP104ULB13	EP104ULC13	EP104ULD13	\$401.00
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	25	EP104ULB25	EP104ULC25	EP104ULD25	\$401.00
	30	EP104ULB30	EP104ULC30	EP104ULD30	\$401.00
	32	EP104ULB32	EP104ULC32	EP104ULD32	\$401.00
	40	EP104ULB40	EP104ULC40	EP104ULD40	\$407.00
50	EP104ULB50	EP104ULC50	EP104ULD50	\$425.00	
60	EP104ULB60	EP104ULC60	EP104ULD60	\$437.00	
63	EP104ULB63	EP104ULC63	EP104ULD63	\$437.00	



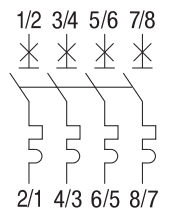
1 Pole



2 Pole



3 Pole



4 Pole



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers with UL 489 Approval

### EP100 ULH Series (Branch Circuit Protection)

#### Applications

- Industrial
- Commercial

#### Performance

Thermal setting In (A)	0.5-32
Rated Vac Un (V)	120/240, 110V
Minimum operating voltage UBmin (V)	12
Tripping characteristics	B-C-D
Selectivity class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2-28/2-30	95%RH at 55°C
Terminal capacity flexible/rigid cable (mm <sup>2</sup> )	25-35
Poles	1, 2, 3
Weight/(g/pole)	130



#### Short-circuit Capacity

##### According to UL 489

Poles	V	Icc (kA)
1	120	10
2, 3	240	10

##### According to IEC 60947-2

Poles	V	Icu (kA) <sup>(1)</sup>
1	127	30
	240	15
	415	4
2	127	40
	240	30
	415	15
2, 3	240	30
	415	15
	440	10

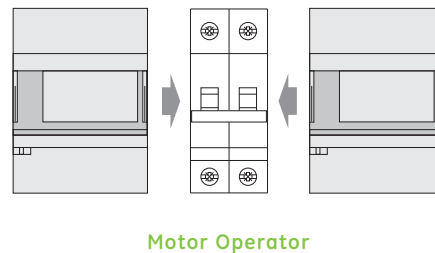
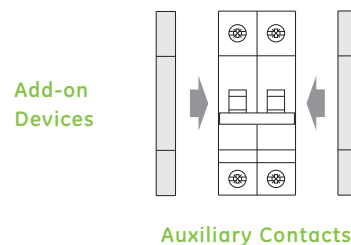
##### DC acc. to IEC 60947-2

Poles	Un (V=)	Icu (kA)/Ics (kA)
1	60	25
2	125	30

<sup>1</sup>Ics = 50% Icu

#### Approval/Marking

- UL
- CE



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers with UL 489 Approval

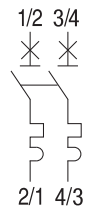
### EP100 ULH Series (Branch Circuit Protection)

#### EP100 ULH Series, 10kA, Tripping Characteristics B-C-D

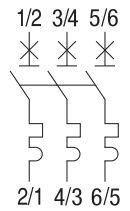
Poles	10 kAIC In (A)	Tripping Characteristic			List Price GO-135VB
		B (3-5X) Product No.	C (5-10X) Product No.	D (10-20X) Product No.	
1	0.5	-	EP101ULHC0.5	EP101ULHD0.5	\$121.80
	1	-	EP101ULHC01	EP101ULHD01	\$101.85
	2	-	EP101ULHC02	EP101ULHD02	\$101.85
	3	-	EP101ULHC03	EP101ULHD03	\$101.85
	4	-	EP101ULHC04	EP101ULHD04	\$101.85
	5	EP101ULHB05	EP101ULHC05	EP101ULHD05	\$101.85
	6	EP101ULHB06	EP101ULHC06	EP101ULHD06	\$101.85
	8	-	EP101ULHC08	EP101ULHD08	\$101.85
	10	EP101ULHB10	EP101ULHC10	EP101ULHD10	\$101.85
	13	EP101ULHB13	EP101ULHC13	EP101ULHD13	\$101.85
	15	EP101ULHB15	EP101ULHC15	EP101ULHD15	\$101.85
	16	EP101ULHB16	EP101ULHC16	EP101ULHD16	\$101.85
	20	EP101ULHB20	EP101ULHC20	EP101ULHD20	\$101.85
	25	EP101ULHB25	EP101ULHC25	EP101ULHD25	\$101.85
	30	EP101ULHB30	EP101ULHC30	EP101ULHD30	\$101.85
	32	EP101ULHB32	EP101ULHC32	EP101ULHD32	\$101.85
2	0.5	-	EP102ULHC0.5	EP102ULHD0.5	\$244.65
	1	-	EP102ULHC01	EP102ULHD01	\$220.50
	2	-	EP102ULHC02	EP102ULHD02	\$220.50
	3	-	EP102ULHC03	EP102ULHD03	\$220.50
	4	-	EP102ULHC04	EP102ULHD04	\$220.50
	5	EP102ULHB05	EP102ULHC05	EP102ULHD05	\$220.50
	6	EP102ULHB06	EP102ULHC06	EP102ULHD06	\$220.50
	8	-	EP102ULHC08	EP102ULHD08	\$220.50
	10	EP102ULHB10	EP102ULHC10	EP102ULHD10	\$220.50
	13	EP102ULHB13	EP102ULHC13	EP102ULHD13	\$220.50
	15	EP102ULHB15	EP102ULHC15	EP102ULHD15	\$220.50
	16	EP102ULHB16	EP102ULHC16	EP102ULHD16	\$220.50
	20	EP102ULHB20	EP102ULHC20	EP102ULHD20	\$220.50
	25	EP102ULHB25	EP102ULHC25	EP102ULHD25	\$220.50
	30	EP102ULHB30	EP102ULHC30	EP102ULHD30	\$220.50
	32	EP102ULHB32	EP102ULHC32	EP102ULHD32	\$220.50
3	0.5	-	EP103ULHC0.5	EP103ULHD0.5	\$360.15
	1	-	EP103ULHC01	EP103ULHD01	\$319.20
	2	-	EP103ULHC02	EP103ULHD02	\$319.20
	3	-	EP103ULHC03	EP103ULHD03	\$319.20
	4	-	EP103ULHC04	EP103ULHD04	\$319.20
	5	EP103ULHB05	EP103ULHC05	EP103ULHD05	\$319.20
	6	EP103ULHB06	EP103ULHC06	EP103ULHD06	\$319.20
	8	-	EP103ULHC08	EP103ULHD08	\$319.20
	10	EP103ULHB10	EP103ULHC10	EP103ULHD10	\$319.20
	13	EP103ULHB13	EP103ULHC13	EP103ULHD13	\$319.20
	15	EP103ULHB15	EP103ULHC15	EP103ULHD15	\$319.20
	16	EP103ULHB16	EP103ULHC16	EP103ULHD16	\$319.20
	20	EP103ULHB20	EP103ULHC20	EP103ULHD20	\$319.20
	25	EP103ULHB25	EP103ULHC25	EP103ULHD25	\$319.20
	30	EP103ULHB30	EP103ULHC30	EP103ULHD30	\$319.20
	32	EP103ULHB32	EP103ULHC32	EP103ULHD32	\$319.20



1 Pole



2 Pole

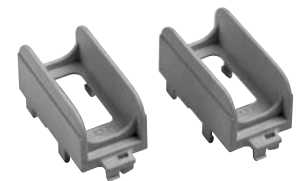


3 Pole

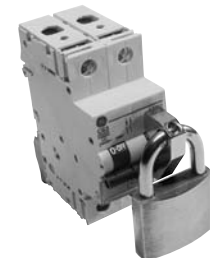
#### Accessories for MCBs

Description	Std. Pack	Product No.	List Price GO-135VB
Walls for terminals IP <sup>1</sup>	10	WUL	\$5.00
Padlocking Bracket - cut off the number of poles needed	25	KS	\$12.00

<sup>1</sup>Single pole MCBs mounted side by side must use walls.



Walls



Padlocking Bracket





# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP100 UC Series<sup>1</sup>

## Section 7

### Applications

—Industrial

### Performance

Thermal setting In (A)	0.5-63
Rated Vac Un (V)	240/400; 230/440
Minimum operating voltage U <sub>B</sub> min (V)	12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable mm <sup>2</sup>	25-35
Poles	1, 2
Weight (g/pole)	120

### Short-circuit Capacity

#### AC acc. to IEC 60898

Poles	V	I <sub>cn</sub> /I <sub>cs</sub> (kA)
1	125 DC	10
	220 DC	6
	230/400 AC	6
2	250 DC	10
	440 DC	6
	400 AC	6

#### AC acc. to IEC 60947-2

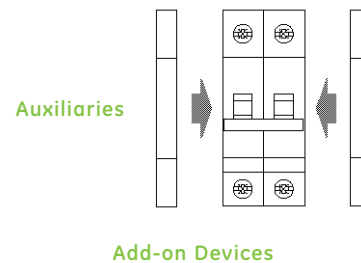
Poles	V	I <sub>cu</sub> /I <sub>cs</sub> (kA)
1, 2	240 AC	10

### Approval/Marking

—IEC 60898-2, DIN VDE 0641

—CE

<sup>1</sup>Not UL approved





# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP100 UC Series<sup>1</sup>

#### EP100 UC Series, 10 kAIC @125 Vdc, Tripping Characteristics B-C

Poles	Std. Pack	Tripping Characteristic			List Price GO-135VB
		6 kAIC In (A)	B (3-5X) Product No.	C (5-10X) Product No.	
1	12	0.5	-	EP101UCC0.5	\$145.00
		1	-	EP101UCC01	\$121.00
		2	-	EP101UCC02	\$121.00
		4	-	EP101UCC04	\$121.00
		6	EP101UCB06	EP101UCC06	\$121.00
		10	EP101UCB10	EP101UCC10	\$121.00
		16	EP101UCB16	EP101UCC16	\$121.00
		20	EP101UCB20	EP101UCC20	\$121.00
		25	EP101UCB25	EP101UCC25	\$121.00
		32	EP101UCB32	EP101UCC32	\$121.00
		40	EP101UCB40	EP101UCC40	\$121.00
		50	EP101UCB50	EP101UCC50	\$145.00
		63	EP101UCB63	EP101UCC63	\$163.00
		2	6	0.5	-
1	-			EP102UCC01	\$267.00
2	-			EP102UCC02	\$267.00
4	-			EP102UCC04	\$267.00
6	EP102UCB06			EP102UCC06	\$267.00
10	EP102UCB10			EP102UCC10	\$267.00
16	EP102UCB16			EP102UCC16	\$267.00
20	EP102UCB20			EP102UCC20	\$267.00
25	EP102UCB25			EP102UCC25	\$267.00
32	EP102UCB32			EP102UCC32	\$267.00
40	EP102UCB40			EP102UCC40	\$267.00
50	EP102UCB50			EP102UCC50	\$319.00
63	EP102UCB63			EP102UCC63	\$360.00

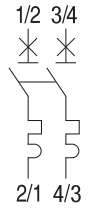
<sup>1</sup>Not UL approved



1 Pole



2 Pole



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Series CA Auxiliary Switch and Bell Alarm

### Applications

- Commercial
- Industrial

### Features

- Common for all MCBs
- Can be coupled on both sides of MCBs
- Gold contact version available for low current and low voltage applications
- Stack up to four CA on left and right sides
- Permits the pass-through of busbars, pin and fork, top and bottom, by changing the position of the base of the auxiliaries

### Performance

Change-over contacts	1 Form C
Rate current In (A)	5
Rated voltage AC Un (V)	240
Electrical endurance	10000
Terminal capacity flexible/rigid cable (mm <sup>2</sup> )	2.5
Weight (g)	70

### Functions

Auxiliary contacts are units to be added on to protection devices. They allow information about the status of the protection device to be monitored from a distance.

Auxiliary contact CA H (function H) reports the OPEN/CLOSED status.

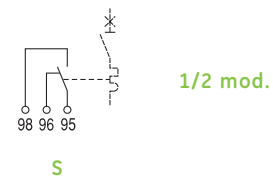
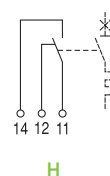
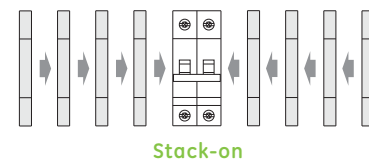
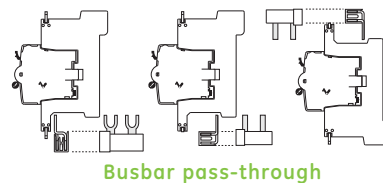
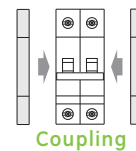
CA S/H or CA S/H G act as either an auxiliary contact (function H) or a signal contact (function S). The user can set the function at the time of installation. When used as a signal contact, it reports information about the automatic tripping of the protection devices. A test button on the front simulates functions H or S. There are also a reset button for the contacts (function S) and a tripping signal (function S).

### Approval/Marking

- CE
- cURus
- CEBEC
- KEMA EUR

### Series CA

Function	Std. Pack	Product No.	List Price GO-135VB
H	1	CA H	\$47.00
S/H	1	CA S/H	\$59.00
S/H (gold contacts)	1	CA S/H G	\$59.00
Padlocking Bracket	25	KS	\$12.00



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Series CB Auxiliary Switch and Bell Alarm

#### Applications

- Commercial
- Industrial

#### Features

- Common for all MCBs
- Can be coupled on both sides of MCBs
- There are two change-over contacts – the upper one features changeable function S/H
- CB SH/HH-R couples to the right side of the protection devices; CB SH/HH-L couple to the left
- No stack-on possibilities (only one auxiliary)
- No busbar pass-through facilities

#### Performance

Change-over contacts	2 Form C
Rate current In (A)	5
Rated voltage AC Un (V)	240
Electrical endurance	10000
Terminal capacity flexible/rigid cable (mm <sup>2</sup> )	2.5
Weight (g)	80

#### Functions

The bottom auxiliary contact (function H) reports the OPEN/ CLOSED status.

The top auxiliary contact can act as either an auxiliary contact (function H) or a signal contact (function S). The user can set the function at the time of installation. When used as a signal contact, it reports information about the automatic tripping of the protection devices.

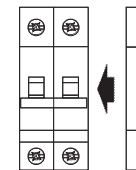
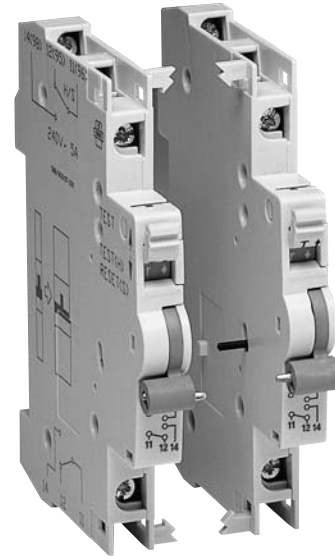
A test button on the front simulates functions H or S. There are also a reset button for the contacts (function S) and a tripping signal (function S).

#### Approval/Marking

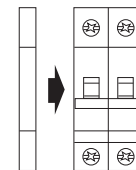
- cURus

#### Series CB

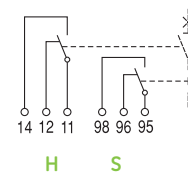
Function	Coupling	Std. Pack	Product No.	List Price
SH/HH	Right	1	CB SH/HH-R	\$87.00
SH/HH	Left	1	CB SH/HH-L	\$87.00



Coupling right



Coupling left



1/2 mod.



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Shunt Trip and Undervoltage Release

#### Applications

- Commercial
- Industrial

#### Features

- Common devices for all miniature circuit breakers
- Can be coupled on both sides of MCBs
- Permits pass-through of busbars, pin and fork, at top or bottom terminals
- Stack up to four modules on left and right sides

#### Approval/Marking

- cURus
- IEC 947-2

#### Shunt Trip Tele L

The Tele L allows remote switching of any miniature circuit breaker by means of push buttons or any other automatic management processor. A built-in contact, in series with the coil, prevents burnout damage if the voltage remains.



#### Shunt Trip Tele L Performance

Rated voltage (V)	110/415, 110/125 DC
(V)	24/60, 24/48 DC
Tripping time (ms)	<10
Electrical endurance	10000
Terminal capacity flexible/rigid cable (mm <sup>2</sup> )	2.5
Weight (g)	125

#### Shunt Trip Tele L

Poles	Std. Pack	Voltage		Product No.	List Price GO-135VB
		AC	DC		
1	1	24-60 V	24-48 V	TELE L-1	\$90.00
		110-415 V	110-125 V	TELE L-2	\$90.00

#### Undervoltage Release Tele U

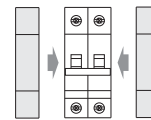
The Tele U releases the main miniature circuit breaker in case the power supply drops below 0.5xUn. Time delay is adjustable up to 300 ms.

#### Undervoltage Release Tele U Performance

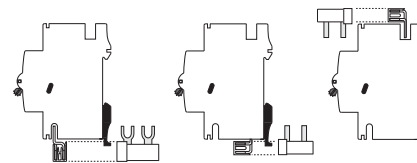
Rated voltage AC UN (V)	240
Rated voltage DC/AC UN (V)	12, 24, 48 DC/AC
Tripping voltage (V)	≤0.5xUN ±10%
Resetting voltage (V)	>0.5xUN ±10%
Tripping time (ms)	Adjustable 1-300
Electrical endurance	2000
Terminal capacity flexible/rigid cable (mm <sup>2</sup> )	2.5
Weight (g)	125

#### Undervoltage Release Tele U

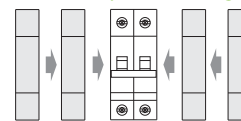
Poles	Std. Pack	Voltage	Product No.	List Price GO-135VB
1	1	AC 230V	TELE U-230	\$128.00
		AC/DC 12V	TELE U-12	\$128.00
		AC/DC 24V	TELE U-24	\$128.00
		AC/DC 48V	TELE U-48	\$128.00



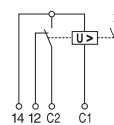
Coupling



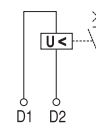
Busbar pass-through



Stack-on



Shunt Trip Tele L



Undervoltage Release Tele L



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Technical Data

#### Technical Data–E2000 Miniature Circuit Breakers

			Series			
			EP60 UL	EP100 UL	EP100 ULH	EP100 UC
Standards			UL1077, EN60947-2	UL1077, EN60947-2	UL1077, EN60947-2	IEC EN70898-2
UL file			E151139	E151139	E256870	-
Nominal voltage acc. UL	1P		277VAC/50VDC	277VAC/50VDC	120VAC/50VDC	
		2P	480VAC/277VDC	480VAC/277VDC	240VAC/110VDC	
		3P	480VAC/277VDC	480VAC/277VDC	240VAC/110VDC	
		4P	480VAC/277VDC	480VAC/277VDC		
Tripping characteristics			B,C,D	B,C,D	B,C,D	B,C
Nominal current			B 6-63, C/D 0.5-63	B 6-63, C/D 0.5-63	B 6-32, C/D 0.5-32	B 6-63, C 0.5-63
Calibration temperature	°C		50	50	50	30
Number of poles	(# mod)		1/2/3/4	1/2/3/4	1/2/3	1/2
Nominal voltage Un						
AC	1P	V	230/400	230/400	230/400	240/415
	2P	V	400	400	400	415
	3P	V	400	400	400	415
	3P+N/4P	V	400	400	400	415
DC	1P	VDC	48	48	48	220
	2P (in series)	VDC	110	110	110	440
Frequency	Hz		50/60	50/60	50/60	50/60
Maximum service voltage U <sub>max</sub> between two wires	V		250/440; 53/120	250/440; 53/120	250/440; 53/120	250/440; 250/440
Minimum service voltage U <sub>min</sub>	V		12 and 12	12 and 12	12 and 12	12 and 12
Selectivity class (IEC 60898)			3	3	3	3
Isolator application	IEC 60947-2		yes	yes	yes	yes
Rated insulation voltage	Pollution degree 2	V	500	500	500	500
	Pollution degree 3	V	440	440	440	440
Impulse withstand test voltage	kV		6	6	6	6
Insulation resistance	MOhm		10000	10000	10000	10000
Dielectric rigidity	kV		2.5	2.5	2.5	2.5
Mounting position			any	any	any	any
Incoming top or bottom			any	any	any	any
Vibrations resistance (in x, y, z direction) (IEC 77/16.3)			3g	3g	3g	3g
Endurance	electrical at Un, In		10000	10000	10000	10000
	mechanical		20000	20000	20000	20000
Utilisation category (IEC 60947-2)			A	A	A	A
Protection distance (IEC 60947-2)	mm		12	12	12	12
Protection degree (outside / inside enclosure with door)			IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
Self-extinguish degree (according to UL94)			V0	V0	V0	V2
Tropicalisation (according to IEC 60068-2 / DIN 40046)	°C/RH		+55°C / 95%RH	+55°C / 95%RH	+55°C / 95%RH	+55°C / 95%RH
Operating temperature	°C		-25/+55	-25/+55	-25/+55	-25/+55
Storage temperature	°C		-55/+55	-55/+55	-55/+55	-55/+55
Terminal capacity	Rigid cable min/max (top)	mm <sup>2</sup>	1/35	1/35	1/35	1/35
	Flexible cable min*/max (top)	mm <sup>2</sup>	0.75/25	0.75/25	0.75/25	0.75/25
	Rigid cable min/max (bottom)	mm <sup>2</sup>	1/35	1/35	1/35	1/35
	Flexible cable min*/max (bottom)	mm <sup>2</sup>	0.75/25	0.75/25	0.75/25	0.75/25
	(* Flexible cable 0.75/1/1.5 mm <sup>2</sup> with cable lug)					
	Torque	Nm		max 4.5	max 4.5	max 4.5
Add-on devices (side add-on)	Auxiliary contacts		yes	yes	yes	yes
	Tele L		yes	yes	yes	yes
	Tele Mp		yes	yes	yes	yes
Dimensions, weights, packaging (HxDxW) 86x68xW <sup>1</sup>	mm/mod.		18	18	18	18
Weight/mod.	g		125	125	130	125
Approvals			UL/CSA/VDE	UL/CSA/VDE	UL	
CE marking			yes	yes	yes	yes

<sup>1</sup>EP100ULH executions 2P and 3P: H = 16 mm



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers with UL 489 Approval

### EP100 ULH Series (Branch Circuit Protection)

## Section 7

### Short Circuit Capacity–E2000 Miniature Circuit Breakers

		Series			
		EP60 UL	EP100 UL	EP100 ULH	EP100 UC
<b>Interrupting capacity acc. to</b>		UL1077	UL1077	UL489	
<b>1P/2P</b>	<b>277VAC</b>	6	10	-	
<b>3P/4P</b>	<b>480VAC</b>	6	10	-	
<b>1P</b>	<b>120VAC</b>	6	10	10	
<b>2P/3P</b>	<b>240VAC</b>	-	-	10	
<b>1P</b>	<b>50VDC</b>	6	10	10	
<b>2P</b>	<b>110VDC</b>	6	10	10	
<b>Short-circuit capacity AC</b>					
<b>Icu (ultimate)</b>					<b>kA</b>
<b>1 P</b>	<b>127 V</b>	20	30	30	
	<b>240 V</b>	10	15	15	
	<b>415 V</b>	3	4	4	
<b>1+N /2P</b>	<b>127 V</b>	30	40	40	
	<b>240 V</b>	20	30	30	
	<b>415 V</b>	10	15	15	
<b>2 P</b>	<b>127 V</b>	10	15	15	
	<b>240 V</b>	20	30	30	
	<b>415 V</b>	10	15	15	
	<b>440 V</b>	6	10	10	
<b>Ics (service)</b>		75% Icu	50% Icu	50% Icu	
<b>Short-circuit capacity DC</b>					
<b>Icu (ultimate)</b>					<b>kA</b>
<b>1 P</b>	<b>≤ 60 V</b>	20	25	25	
	<b>≤ 220 V</b>	-	-	-	
<b>2 P</b>	<b>≤ 125 V</b>	25	30	30	
	<b>≤ 440 V</b>	-	-	-	
<b>Ics (service)</b>		100% Icu	100% Icu	10% Icu	

