

**E2000 Miniature Circuit Breakers**

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# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP60 Series

## Section 7

### 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<br>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       | Icn/Ics (kA) |
|-------|---------|--------------|
| 1-4   | 230/400 | 6            |

### AC acc. to IEC 60947-2

| Poles | V   | Icu (kA) <sup>1</sup> |
|-------|-----|-----------------------|
| 1     | 240 | 10                    |
| 2,3,4 | 240 | 20                    |
| 2,3,4 | 415 | 10                    |

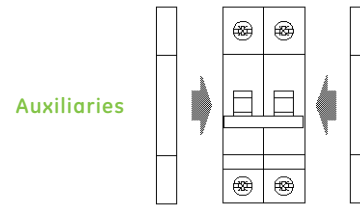
<sup>1</sup>Ics = 75% Icu

### DC acc. to IEC 60947-2

| Poles | V   | Icu/Ics (kA) |
|-------|-----|--------------|
| 1     | 60  | 20           |
| 2     | 125 | 25           |

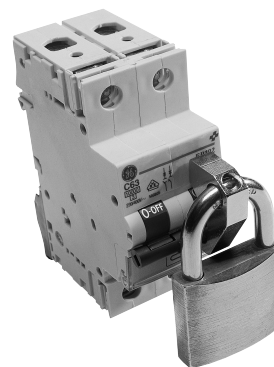
### Approval/Marking

—CE  
—cURus  
—CEBEC  
—KEMA EUR



Auxiliaries

Add-on Devices



KS Padlocking Bracket



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP60 Series

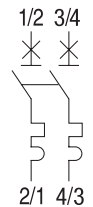
## Section 7

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

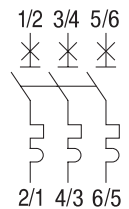
| Poles | Std. Pack | Tripping Characteristic |                         |                          |                           | List Price<br>GO-135VB |            |          |
|-------|-----------|-------------------------|-------------------------|--------------------------|---------------------------|------------------------|------------|----------|
|       |           | 6 kAIC In (A)           | B (3-5X)<br>Product No. | C (5-10X)<br>Product No. | D (10-20X)<br>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               |            |          |
| 6     | EP62ULB06 |                         |                         | EP62ULC06                | EP62ULD06                 | \$141.00               |            |          |
| 10    | EP62ULB10 |                         |                         | EP62ULC10                | EP62ULD10                 | \$141.00               |            |          |
| 13    | EP62ULB13 |                         |                         | EP62ULC13                | EP62ULD13                 | \$141.00               |            |          |
| 15    | EP62ULB15 |                         |                         | EP62ULC15                | EP62ULD15                 | \$141.00               |            |          |
| 16    | EP62ULB16 |                         |                         | EP62ULC16                | EP62ULD16                 | \$141.00               |            |          |
| 20    | EP62ULB20 |                         |                         | EP62ULC20                | EP62ULD20                 | \$141.00               |            |          |
| 25    | EP62ULB25 |                         |                         | EP62ULC25                | EP62ULD25                 | \$141.00               |            |          |
| 30    | EP62ULB30 |                         |                         | EP62ULC30                | EP62ULD30                 | \$141.00               |            |          |
| 32    | EP62ULB32 |                         |                         | EP62ULC32                | EP62ULD32                 | \$141.00               |            |          |
| 40    | EP62ULB40 | EP62ULC40               | EP62ULD40               | \$145.00                 |                           |                        |            |          |
| 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               |            |          |
|       |           | 16                      | EP63ULB16               | EP63ULC16                | EP63ULD16                 | \$204.00               |            |          |
|       |           | 20                      | EP63ULB20               | EP63ULC20                | EP63ULD20                 | \$204.00               |            |          |
|       |           | 25                      | EP63ULB25               | EP63ULC25                | EP63ULD25                 | \$204.00               |            |          |
|       |           | 30                      | EP63ULB30               | EP63ULC30                | EP63ULD30                 | \$204.00               |            |          |
|       |           | 32                      | EP63ULB32               | EP63ULC32                | EP63ULD32                 | \$204.00               |            |          |
| 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                 |                           |                        |            |          |
| 63    | EP64ULB63 | EP64ULC63               | EP64ULD63               | \$293.00                 |                           |                        |            |          |



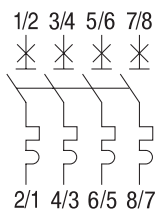
1 Pole



2 Pole



3 Pole



4 Pole



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP100 Series

## Section 7

### Applications

—Industrial

### Performance

|  |                |
|--|----------------|
| Thermal setting In (A)                                 | 0.5-63         |
| Rated Vac Un (V)                                       | 240/415        |
| Minimum operating voltage $U_g$ 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 | 480Y/277 | 50      | 110 |
| 1     | 277                 | 50  | 10  | —       | 10  | —        | 10      | —   |
| 2     | 480Y/277            | 110 | 10  | 10      | 10  | —        | —       | 10  |
| 3, 4  | 480Y/277            | 110 | 10  | 10      | 10  | 10       | —       | —   |

### AC acc. to IEC 60898

| Poles | V       | Icn (kA) <sup>1</sup> |
|-------|---------|-----------------------|
| 1-4   | 230/400 | 10                    |

<sup>1</sup>Ics = 75% Icu

### AC acc. to IEC 60947-2

| Poles | V   | Icu (kA) <sup>2</sup> |
|-------|-----|-----------------------|
| 1     | 240 | 15                    |
| 2,3,4 | 240 | 30                    |
| 2,3,4 | 415 | 15                    |

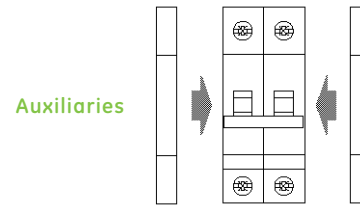
<sup>2</sup>Ics = 50% Icu

### DC acc. to IEC 60947-2

| Poles | V   | Icu/Ics (kA) |
|-------|-----|--------------|
| 1     | 60  | 25           |
| 2     | 125 | 30           |

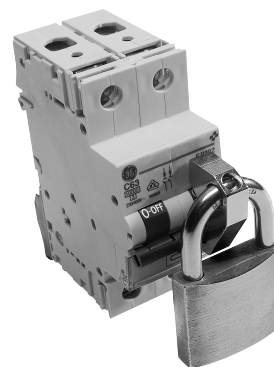
### Approval/Marking

- CE
- CSA
- cURus
- CEBEC
- KEMA EUR



Auxiliaries

Add-on Devices



KS Padlocking Bracket



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### EP100 Series

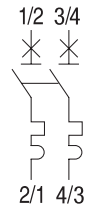
## Section 7

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

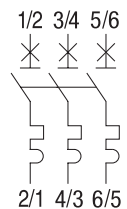
| Poles | 10 kAIC In (A) | Tripping Characteristic |                          |                           | List Price<br>GO-135VB |          |
|-------|----------------|-------------------------|--------------------------|---------------------------|------------------------|----------|
|       |                | B (3-5X)<br>Product No. | C (5-10X)<br>Product No. | D (10-20X)<br>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                |          |
|       | 15             | EP101ULB15              | EP101ULC15               | EP101ULD15                | \$97.00                |          |
|       | 16             | EP101ULB16              | EP101ULC16               | EP101ULD16                | \$97.00                |          |
|       | 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               |          |
| 5     |                | EP102ULB05              | EP102ULC05               | EP102ULD05                | \$210.00               |          |
| 6     |                | EP102ULB06              | EP102ULC06               | EP102ULD06                | \$210.00               |          |
| 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               |          |
| 15    |                | EP104ULB15              | EP104ULC15               | EP104ULD15                | \$401.00               |          |
| 16    |                | EP104ULB16              | EP104ULC16               | EP104ULD16                | \$401.00               |          |
| 20    |                | EP104ULB20              | EP104ULC20               | EP104ULD20                | \$401.00               |          |
| 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               |          |



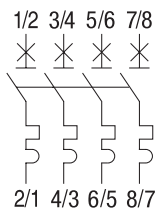
1 Pole



2 Pole



3 Pole



4 Pole



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers with UL 489 Approval

### EP100 ULH34 Series (Branch Circuit Protection)

## Section 7

### Applications

- Industrial
- Commercial

### Performance

|   |               |
|---|---------------|
| Thermal setting In (A)                                    | 0.5-40        |
| Rated Vac Un (V)  | 277/480V      |
| 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     | 277 | 10       |
| 2, 3  | 480 | 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  | 415 | 15                      |
|       | 440 | 10                      |

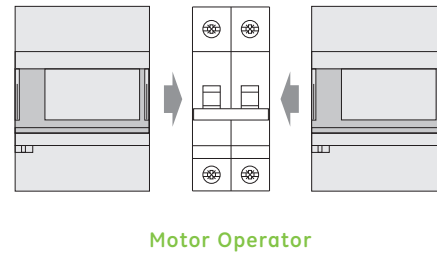
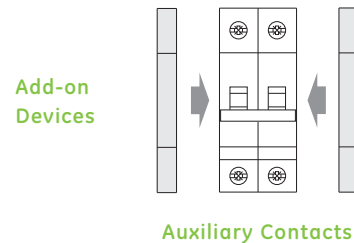
#### DC acc. to IEC 60947-2

| 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 ULH34 Series (Branch Circuit Protection)

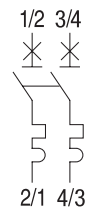
## Section 7

#### UL489 EP100 ULH34 Series, 10kA, Tripping Characteristics B-C-D

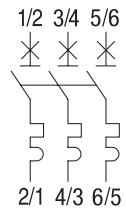
| Poles | 10 kAIC In (A) | Tripping Characteristic |                          |                           | List Price<br>GO-135VB |          |
|-------|----------------|-------------------------|--------------------------|---------------------------|------------------------|----------|
|       |                | B (3-5X)<br>Product No. | C (5-10X)<br>Product No. | D (10-20X)<br>Product No. |                        |          |
| 1P    | 0.5            | -                       | EP101ULH3C0.5            | EP101ULH3D0.5             | \$146.40               |          |
|       | 1              | -                       | EP101ULH3C01             | EP101ULH3D01              | \$122.40               |          |
|       | 2              | -                       | EP101ULH3C02             | EP101ULH3D02              | \$122.40               |          |
|       | 3              | -                       | EP101ULH3C03             | EP101ULH3D03              | \$122.40               |          |
|       | 4              | -                       | EP101ULH3C04             | EP101ULH3D04              | \$122.40               |          |
|       | 5              | EP101ULH3B05            | EP101ULH3C05             | EP101ULH3D05              | \$122.40               |          |
|       | 6              | EP101ULH3B06            | EP101ULH3C06             | EP101ULH3D06              | \$122.40               |          |
|       | 8              | EP101ULH3B08            | EP101ULH3C08             | EP101ULH3D08              | \$122.40               |          |
|       | 10             | EP101ULH3B10            | EP101ULH3C10             | EP101ULH3D10              | \$122.40               |          |
|       | 13             | EP101ULH3B13            | EP101ULH3C13             | EP101ULH3D13              | \$122.40               |          |
|       | 15             | EP101ULH3B15            | EP101ULH3C15             | EP101ULH3D15              | \$122.40               |          |
|       | 16             | EP101ULH3B16            | EP101ULH3C16             | EP101ULH3D16              | \$122.40               |          |
|       | 20             | EP101ULH3B20            | EP101ULH3C20             | EP101ULH3D20              | \$122.40               |          |
|       | 25             | EP101ULH3B25            | EP101ULH3C25             | EP101ULH3D25              | \$122.40               |          |
|       | 30             | EP101ULH3B30            | EP101ULH3C30             | EP101ULH3D30              | \$122.40               |          |
|       | 32             | EP101ULH3B32            | EP101ULH3C32             | EP101ULH3D32              | \$122.40               |          |
|       | 35             | EP101ULH3B35            | EP101ULH3C35             | EP101ULH3D35              | \$122.40               |          |
|       | 40             | EP101ULH3B40            | EP101ULH3C40             | EP101ULH3D40              | \$122.40               |          |
|       | 2P             | 0.5                     | -                        | EP102ULH4C0.5             | EP102ULH4D0.5          | \$294.00 |
|       |                | 1                       | -                        | EP102ULH4C01              | EP102ULH4D01           | \$265.20 |
| 2     |                | -                       | EP102ULH4C02             | EP102ULH4D02              | \$265.20               |          |
| 3     |                | -                       | EP102ULH4C03             | EP102ULH4D03              | \$265.20               |          |
| 4     |                | -                       | EP102ULH4C04             | EP102ULH4D04              | \$265.20               |          |
| 5     |                | EP102ULH4B05            | EP102ULH4C05             | EP102ULH4D05              | \$265.20               |          |
| 6     |                | EP102ULH4B06            | EP102ULH4C06             | EP102ULH4D06              | \$265.20               |          |
| 8     |                | EP102ULH4B08            | EP102ULH4C08             | EP102ULH4D08              | \$265.20               |          |
| 10    |                | EP102ULH4B10            | EP102ULH4C10             | EP102ULH4D10              | \$265.20               |          |
| 13    |                | EP102ULH4B13            | EP102ULH4C13             | EP102ULH4D13              | \$265.20               |          |
| 15    |                | EP102ULH4B15            | EP102ULH4C15             | EP102ULH4D15              | \$265.20               |          |
| 16    |                | EP102ULH4B16            | EP102ULH4C16             | EP102ULH4D16              | \$265.20               |          |
| 20    |                | EP102ULH4B20            | EP102ULH4C20             | EP102ULH4D20              | \$265.20               |          |
| 25    |                | EP102ULH4B25            | EP102ULH4C25             | EP102ULH4D25              | \$265.20               |          |
| 30    |                | EP102ULH4B30            | EP102ULH4C30             | EP102ULH4D30              | \$265.20               |          |
| 32    |                | EP102ULH4B32            | EP102ULH4C32             | EP102ULH4D32              | \$265.20               |          |
| 35    |                | EP102ULH4B35            | EP102ULH4C35             | EP102ULH4D35              | \$265.20               |          |
| 40    |                | EP102ULH4B40            | EP102ULH4C40             | EP102ULH4D40              | \$265.20               |          |
| 3P    |                | 0.5                     | -                        | EP103ULH4C0.5             | EP103ULH4D0.5          | \$433.20 |
|       |                | 1                       | -                        | EP103ULH4C01              | EP103ULH4D01           | \$384.00 |
|       | 2              | -                       | EP103ULH4C02             | EP103ULH4D02              | \$384.00               |          |
|       | 3              | -                       | EP103ULH4C03             | EP103ULH4D03              | \$384.00               |          |
|       | 4              | -                       | EP103ULH4C04             | EP103ULH4D04              | \$384.00               |          |
|       | 5              | EP103ULH4B05            | EP103ULH4C05             | EP103ULH4D05              | \$384.00               |          |
|       | 6              | EP103ULH4B06            | EP103ULH4C06             | EP103ULH4D06              | \$384.00               |          |
|       | 8              | EP103ULH4B08            | EP103ULH4C08             | EP103ULH4D08              | \$384.00               |          |
|       | 10             | EP103ULH4B10            | EP103ULH4C10             | EP103ULH4D10              | \$384.00               |          |
|       | 13             | EP103ULH4B13            | EP103ULH4C13             | EP103ULH4D13              | \$384.00               |          |
|       | 15             | EP103ULH4B15            | EP103ULH4C15             | EP103ULH4D15              | \$384.00               |          |
|       | 16             | EP103ULH4B16            | EP103ULH4C16             | EP103ULH4D16              | \$384.00               |          |
|       | 20             | EP103ULH4B20            | EP103ULH4C20             | EP103ULH4D20              | \$384.00               |          |
|       | 25             | EP103ULH4B25            | EP103ULH4C25             | EP103ULH4D25              | \$384.00               |          |
|       | 30             | EP103ULH4B30            | EP103ULH4C30             | EP103ULH4D30              | \$384.00               |          |
|       | 32             | EP103ULH4B32            | EP103ULH4C32             | EP103ULH4D32              | \$384.00               |          |
|       | 35             | EP103ULH4B35            | EP103ULH4C35             | EP103ULH4D35              | \$384.00               |          |
|       | 40             | EP103ULH4B40            | EP103ULH4C40             | EP103ULH4D40              | \$384.00               |          |



1 Pole



2 Pole



3 Pole

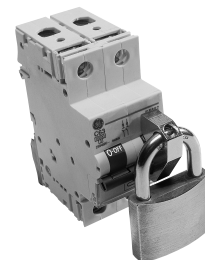
#### Accessories for MCBs

| Description  | Std. Pack | Product No. | List Price<br>GO-135VB |
|--|-----------|-------------|------------------------|
| Walls for terminals IP <sup>1</sup>                        | 10        | WUL         | \$5.00                 |
| Padlocking Bracket -<br>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 with UL 489 Approval

### EP100 ULH12 Series (Branch Circuit Protection)

## Section 7

### Applications

- Industrial
- Commercial

### Performance

|   |               |
|---|---------------|
| Thermal setting In (A)                                    | 0.5-63        |
| 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  | 440 | 10                      |

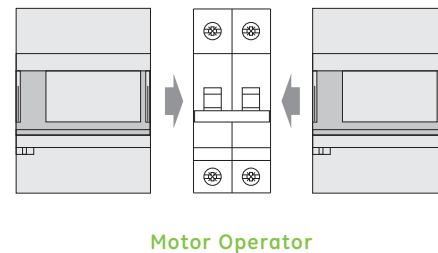
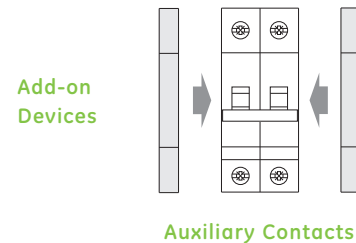
#### DC acc. to IEC 60947-2

| 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 ULH12 Series (Branch Circuit Protection)

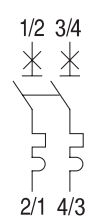
## Section 7

#### UL489 EP100 ULH12 Series, 10kA, Tripping Characteristics B-C-D

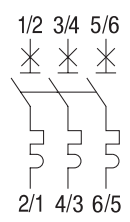
| Poles | 10 kAIC In (A) | Tripping Characteristic |                          |                           | List Price<br>GO-135VB |
|-------|----------------|-------------------------|--------------------------|---------------------------|------------------------|
|       |                | B (3-5X)<br>Product No. | C (5-10X)<br>Product No. | D (10-20X)<br>Product No. |                        |
| 1     | 0.5            | -                       | EP101ULH1C0.5            | EP101ULH1D0.5             | \$121.80               |
|       | 1              | -                       | EP101ULH1C01             | EP101ULH1D01              | \$101.85               |
|       | 2              | -                       | EP101ULH1C02             | EP101ULH1D02              | \$101.85               |
|       | 3              | -                       | EP101ULH1C03             | EP101ULH1D03              | \$101.85               |
|       | 4              | -                       | EP101ULH1C04             | EP101ULH1D04              | \$101.85               |
|       | 5              | EP101ULH1B05            | EP101ULH1C05             | EP101ULH1D05              | \$101.85               |
|       | 6              | EP101ULH1B06            | EP101ULH1C06             | EP101ULH1D06              | \$101.85               |
|       | 8              | EP101ULH1B08            | EP101ULH1C08             | EP101ULH1D08              | \$101.85               |
|       | 10             | EP101ULH1B10            | EP101ULH1C10             | EP101ULH1D10              | \$101.85               |
|       | 13             | EP101ULH1B13            | EP101ULH1C13             | EP101ULH1D13              | \$101.85               |
|       | 15             | EP101ULH1B15            | EP101ULH1C15             | EP101ULH1D15              | \$101.85               |
|       | 16             | EP101ULH1B16            | EP101ULH1C16             | EP101ULH1D16              | \$101.85               |
|       | 20             | EP101ULH1B20            | EP101ULH1C20             | EP101ULH1D20              | \$101.85               |
|       | 25             | EP101ULH1B25            | EP101ULH1C25             | EP101ULH1D25              | \$101.85               |
|       | 30             | EP101ULH1B30            | EP101ULH1C30             | EP101ULH1D30              | \$101.85               |
|       | 32             | EP101ULH1B32            | EP101ULH1C32             | EP101ULH1D32              | \$101.85               |
|       | 35             | EP101ULH1B35            | EP101ULH1C35             | EP101ULH1D35              | \$102.00               |
|       | 40             | EP101ULH1B40            | EP101ULH1C40             | EP101ULH1D40              | \$113.00               |
|       | 50             | EP101ULH1B50            | EP101ULH1C50             | EP101ULH1D50              | \$119.00               |
|       | 60             | EP101ULH1B60            | EP101ULH1C60             | EP101ULH1D60              | \$125.00               |
|       | 63             | EP101ULH1B63            | EP101ULH1C63             | EP101ULH1D63              | \$125.00               |
| 2     | 0.5            | -                       | EP102ULH2C0.5            | EP102ULH2D0.5             | \$244.65               |
|       | 1              | -                       | EP102ULH2C01             | EP102ULH2D01              | \$220.50               |
|       | 2              | -                       | EP102ULH2C02             | EP102ULH2D02              | \$220.50               |
|       | 3              | -                       | EP102ULH2C03             | EP102ULH2D03              | \$220.50               |
|       | 4              | -                       | EP102ULH2C04             | EP102ULH2D04              | \$220.50               |
|       | 5              | EP102ULH2B05            | EP102ULH2C05             | EP102ULH2D05              | \$220.50               |
|       | 6              | EP102ULH2B06            | EP102ULH2C06             | EP102ULH2D06              | \$220.50               |
|       | 8              | EP102ULH2B08            | EP102ULH2C08             | EP102ULH2D08              | \$220.50               |
|       | 10             | EP102ULH2B10            | EP102ULH2C10             | EP102ULH2D10              | \$220.50               |
|       | 13             | EP102ULH2B13            | EP102ULH2C13             | EP102ULH2D13              | \$220.50               |
|       | 15             | EP102ULH2B15            | EP102ULH2C15             | EP102ULH2D15              | \$220.50               |
|       | 16             | EP102ULH2B16            | EP102ULH2C16             | EP102ULH2D16              | \$220.50               |
|       | 20             | EP102ULH2B20            | EP102ULH2C20             | EP102ULH2D20              | \$220.50               |
|       | 25             | EP102ULH2B25            | EP102ULH2C25             | EP102ULH2D25              | \$220.50               |
|       | 30             | EP102ULH2B30            | EP102ULH2C30             | EP102ULH2D30              | \$220.50               |
|       | 32             | EP102ULH2B32            | EP102ULH2C32             | EP102ULH2D32              | \$220.50               |
|       | 35             | EP102ULH2B35            | EP102ULH2C35             | EP102ULH2D35              | \$221.00               |
|       | 40             | EP102ULH2B40            | EP102ULH2C40             | EP102ULH2D40              | \$228.00               |
|       | 50             | EP102ULH2B50            | EP102ULH2C50             | EP102ULH2D50              | \$245.00               |
|       | 60             | EP102ULH2B60            | EP102ULH2C60             | EP102ULH2D60              | \$256.00               |
|       | 63             | EP102ULH2B63            | EP102ULH2C63             | EP102ULH2D63              | \$256.00               |
| 3     | 0.5            | -                       | EP103ULH3C0.5            | EP103ULH3D0.5             | \$360.15               |
|       | 1              | -                       | EP103ULH3C01             | EP103ULH3D01              | \$319.20               |
|       | 2              | -                       | EP103ULH3C02             | EP103ULH3D02              | \$319.20               |
|       | 3              | -                       | EP103ULH3C03             | EP103ULH3D03              | \$319.20               |
|       | 4              | -                       | EP103ULH3C04             | EP103ULH3D04              | \$319.20               |
|       | 5              | EP103ULH3B05            | EP103ULH3C05             | EP103ULH3D05              | \$319.20               |
|       | 6              | EP103ULH3B06            | EP103ULH3C06             | EP103ULH3D06              | \$319.20               |
|       | 8              | EP103ULH3B08            | EP103ULH3C08             | EP103ULH3D08              | \$319.20               |
|       | 10             | EP103ULH3B10            | EP103ULH3C10             | EP103ULH3D10              | \$319.20               |
|       | 13             | EP103ULH3B13            | EP103ULH3C13             | EP103ULH3D13              | \$319.20               |
|       | 15             | EP103ULH3B15            | EP103ULH3C15             | EP103ULH3D15              | \$319.20               |
|       | 16             | EP103ULH3B16            | EP103ULH3C16             | EP103ULH3D16              | \$319.20               |
|       | 20             | EP103ULH3B20            | EP103ULH3C20             | EP103ULH3D20              | \$319.20               |
|       | 25             | EP103ULH3B25            | EP103ULH3C25             | EP103ULH3D25              | \$319.20               |
|       | 30             | EP103ULH3B30            | EP103ULH3C30             | EP103ULH3D30              | \$319.20               |
|       | 32             | EP103ULH3B32            | EP103ULH3C32             | EP103ULH3D32              | \$319.20               |
|       | 35             | EP103ULH3B35            | EP103ULH3C35             | EP103ULH3D35              | \$320.00               |
|       | 40             | EP103ULH3B40            | EP103ULH3C40             | EP103ULH3D40              | \$329.00               |
|       | 50             | EP103ULH3B50            | EP103ULH3C50             | EP103ULH3D50              | \$342.00               |
|       | 60             | EP103ULH3B60            | EP103ULH3C60             | EP103ULH3D60              | \$358.00               |
|       | 63             | EP103ULH3B63            | EP103ULH3C63             | EP103ULH3D63              | \$358.00               |



1 Pole



2 Pole



3 Pole

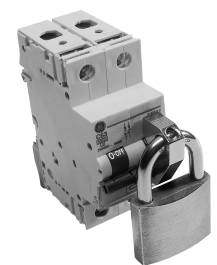


Walls

#### Accessories for MCBs

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

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



Padlocking Bracket



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

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

## Section 7

### Applications

—Industrial

### Performance

|  |                  |
|--|------------------|
| Thermal setting I <sub>n</sub> (A)                     | 0.5-63           |
| Rated Vac U <sub>n</sub> (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>cu</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

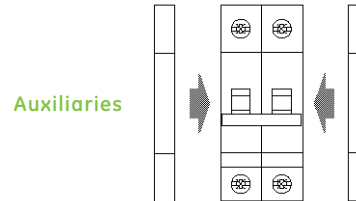
| Poles | V      | I <sub>cu</sub> /I <sub>cs</sub> (kA) |
|-------|--------|---------------------------------------|
| 1, 2  | 240 AC | 10                                    |

### Approval/Marking

—IEC 60898-2, DIN VDE 0641

—CE

<sup>1</sup>Not UL approved



Add-on Devices



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

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

## Section 7

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

| Poles | Std. Pack  | 6 kAIC In (A) | Tripping Characteristic |                          | List Price<br>GO-135VB |
|-------|------------|---------------|-------------------------|--------------------------|------------------------|
|       |            |               | B (3-5X)<br>Product No. | C (5-10X)<br>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               |

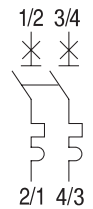
<sup>1</sup>Not UL approved



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.

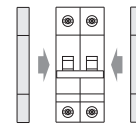
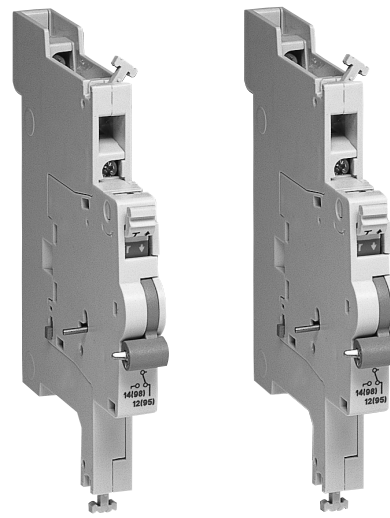
Auxiliary contact CA H (function H) reports the OPEN/CLOSED status. CA S/H or CA S/H G act as either an auxiliary contact (function H) or a signal contact (function S). The user can set the function at the time of installation. When used as a signal contact, it reports information about the automatic 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

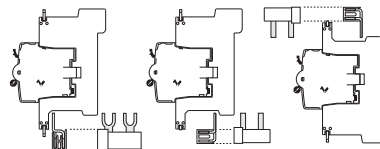
- CE
- cURus
- CEBEC
- KEMA EUR

#### Series CA

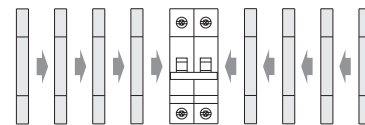
| Function            | Std. Pack | Product No. | List Price<br>GO-135VB |
|---------------------|-----------|-------------|------------------------|
| H                   | 1         | CA H        | \$47.00                |
| S/H                 | 1         | CA S/H      | \$59.00                |
|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



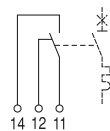
Coupling



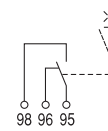
Busbar pass-through



Stack-on



H



S

1/2 mod.



# 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.

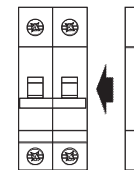
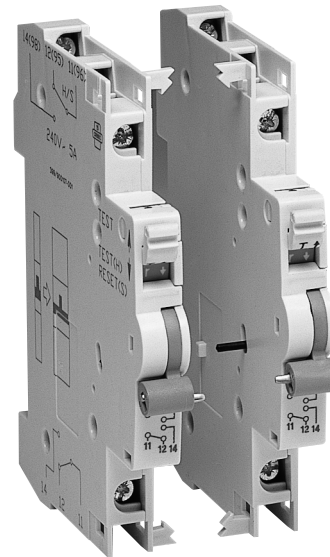
A test button on the front simulates functions H or S. There are also a reset button for the contacts (function S) and a tripping signal (function S).

#### Approval/Marking

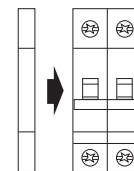
- cURus

#### Series CB

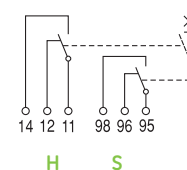
| Function | Coupling | Std. Pack | Product No. | List Price GO-135VB |
|----------|----------|-----------|-------------|---------------------|
| SH/HH    | Right    | 1         | CB SH/HH-R  | \$87.00             |
| SH/HH    | Left     | 1         | CB SH/HH-L  | \$87.00             |



Coupling right



Coupling left



1/2 mod.



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Shunt Trip and Undervoltage Release

#### Applications

- Commercial
- Industrial

#### Features

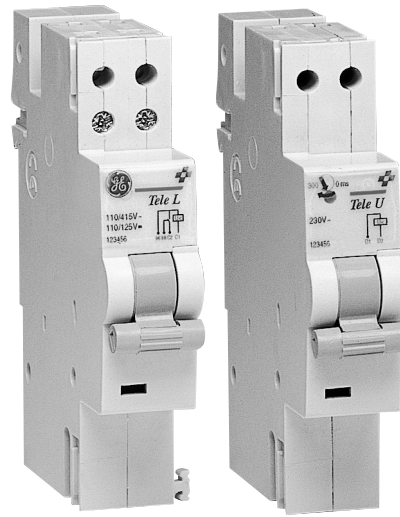
- Common devices for all miniature circuit breakers
- Can be coupled on both sides of MCBs
- Permits pass-through of busbars, pin and fork, at top or bottom terminals
- Stack up to four modules on left and right sides

#### 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 |
|   | 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

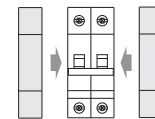
The Tele U releases the main miniature circuit breaker in case the power supply drops below 0.5xUn. Time delay is adjustable up to 300 ms.

#### Undervoltage Release Tele U Performance

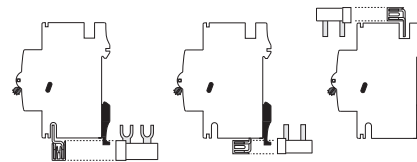
|   |                  |
|---|------------------|
| Rated voltage AC UN (V)                                   | 240              |
| Rated voltage DC/AC UN (V)                                | 12, 24, 48 DC/AC |
| Tripping voltage (V)                                      | ≤0.5xUN ±10%     |
| Resetting 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

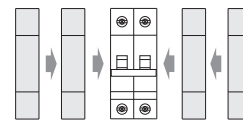
| Poles | Std. Pack | Voltage   | Product No. | List Price GO-135VB |
|-------|-----------|-----------|-------------|---------------------|
|       |           |           |             |                     |
| 1     | 1         | AC 230V   | TELE U-230  | \$128.00            |
|       |           |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



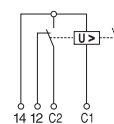
Coupling



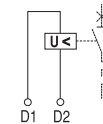
Busbar pass-through



Stack-on



Shunt Trip Tele L



Undervoltage Release Tele U



# Miniature Circuit Breakers

## E2000 Miniature Circuit Breakers

### Technical Data

## Section 7

### Technical Data–E2000 Miniature Circuit Breakers

|   |  |                 | Series             |                    |                    |                      |                  |                  |
|---|--|-----------------|--------------------|--------------------|--------------------|----------------------|------------------|------------------|
|   |  |                 | EP60 UL            | EP100 UL           | EP100 ULH34        | EP100 ULH12          | EP100 UC         |                  |
| <b>Standards</b>  |  |                 | UL1077, EN60947-2  | UL1077, EN60947-2  | UL489, EN60947-2   | UL489, EN60947-2     | IEC EN70898-2    |                  |
| <b>UL file</b>  |  |                 | E151139            | E151139            | E256870            | E256870              | –                |                  |
| <b>Nominal voltage acc. UL</b>                                    | <b>1P</b>  |                 | 277VAC/50VDC       | 277VAC/50VDC       | 277VAC/60VDC       | 120VAC/60VDC         |                  |                  |
|   |  | <b>2P</b>       | 480VAC/110VDC      | 480VAC/110VDC      | 480VAC/120VDC      | 240VAC/120VDC        |                  |                  |
|   |  | <b>3P</b>       | 480VAC/110VDC      | 480VAC/110VDC      | 480VAC/120VDC      | 240VAC/120VDC        |                  |                  |
|   |  | <b>4P</b>       | 480VAC/110VDC      | 480VAC/110VDC      |                    |                      |                  |                  |
| <b>Tripping characteristics</b>                                   |  |                 | B,C,D              | B,C,D              | B,C,D              | B,C,D                | B,C              |                  |
| <b>Nominal current</b>  |  |                 | B 6-63, C/D 0.5-63 | B 6-63, C/D 0.5-63 | B 5-40, C/D 0.5-40 | B 0.5-63, C/D 0.5-63 | B 6-63, C 0.5-63 |                  |
| <b>Calibration temperature</b>                                    |  |                 | °C                 | 50                 | 50                 | 50                   | 30               |                  |
| <b>Number of poles</b>  |  |                 | (# mod)            | 1/2/3/4            | 1/2/3/4            | 1/2/3                | 1/2              |                  |
| <b>Nominal voltage Un</b>   |  |                 |                    |                    |                    |                      |                  |                  |
| AC  | <b>1P</b>  | V               | 230/400            | 230/400            | 230/400            | 230/400              | 240/415          |                  |
|   | <b>2P</b>  | V               | 400                | 400                | 400                | 400                  | 415              |                  |
|   | <b>3P</b>  | V               | 400                | 400                | 400                | 400                  | 415              |                  |
|   | <b>3P+N/4P</b>   | V               | 400                | 400                | 400                | 400                  | 415              |                  |
| DC  | <b>1P</b>  | VDC             | 48                 | 48                 | 48                 | 48                   | 220              |                  |
|   | <b>2P (in series)</b>  | VDC             | 110                | 110                | 110                | 110                  | 440              |                  |
| <b>Frequency</b>  |  |                 | Hz                 | 50/60              | 50/60              | 50/60                | 50/60            |                  |
| <b>Maximum service voltage U<sub>max</sub> between two wires</b>  |  |                 | V                  | 250/440; 53/120    | 250/440; 53/120    | 250/440; 53/120      | 250/440; 53/120  | 250/440; 250/440 |
| <b>Minimum service voltage U<sub>min</sub></b>                    |  |                 | V                  | 12 and 12          | 12 and 12          | 12 and 12            | 12 and 12        |                  |
| <b>Selectivity class (IEC 60898)</b>                              |  |                 |                    | 3                  | 3                  | 3                    | 3                |                  |
| <b>Isolator application</b>                                       |  |                 | IEC 60947-2        | yes                | yes                | yes                  | yes              |                  |
| <b>Rated insulation voltage</b>                                   | <b>Pollution degree 2</b>                                    | V               | 500                | 500                | 500                | 500                  | 500              |                  |
|   | <b>Pollution degree 3</b>                                    | V               | 440                | 440                | 440                | 440                  | 440              |                  |
| <b>Impulse withstand test voltage</b>                             |  |                 | kV                 | 6                  | 6                  | 6                    | 6                |                  |
| <b>Insulation resistance</b>                                      |  |                 | MΩ                 | 10000              | 10000              | 10000                | 10000            |                  |
| <b>Dielectric rigidity</b>  |  |                 | kV                 | 2.5                | 2.5                | 2.5                  | 2.5              |                  |
| <b>Mounting position</b>  |  |                 |                    | any                | any                | any                  | any              |                  |
| <b>Incoming top or bottom</b>                                     |  |                 |                    | any                | any                | any                  | any              |                  |
| <b>Vibrations resistance (in x, y, z direction) (IEC 77/16.3)</b> |  |                 |                    | 3g                 | 3g                 | 3g                   | 3g               |                  |
| <b>Endurance</b>  | <b>electrical at Un, In</b>                                  |                 | 10000              | 10000              | 10000              | 10000                | 10000            |                  |
|   | <b>mechanical</b>  |                 | 20000              | 20000              | 20000              | 20000                | 20000            |                  |
| <b>Utilisation category (IEC 60947-2)</b>                         |  |                 |                    | A                  | A                  | A                    | A                |                  |
| <b>Protection distance (IEC 60947-2)</b>                          |  |                 | mm                 | 12                 | 12                 | 12                   | 12               |                  |
| <b>Protection degree (outside / inside enclosure with door)</b>   |  |                 |                    | IP20/IP40          | IP20/IP40          | IP20/IP40            | IP20/IP40        |                  |
| <b>Self-extinguish degree (according to UL94)</b>                 |  |                 |                    | V0                 | V0                 | V0                   | V2               |                  |
| <b>Tropicalisation (according to IEC 60068-2 / DIN 40046)</b>     |  |                 | °C/RH              | +55°C / 95%RH      | +55°C / 95%RH      | +55°C / 95%RH        | +55°C / 95%RH    |                  |
| <b>Operating temperature</b>                                      |  |                 | °C                 | -25/+55            | -25/+55            | -25/+55              | -25/+55          |                  |
| <b>Storage temperature</b>  |  |                 | °C                 | -55/+55            | -55/+55            | -55/+55              | -55/+55          |                  |
| <b>Terminal capacity</b>  |  |                 |                    |                    |                    |                      |                  |                  |
|   | <b>Rigid cable min/max (top)</b>                             | mm <sup>2</sup> | 1/35               | 1/35               | 1/35               | 1/35                 | 1/35             |                  |
|   | <b>Flexible cable min*/max (top)</b>                         | mm <sup>2</sup> | 0.75/25            | 0.75/25            | 0.75/25            | 0.75/25              | 0.75/25          |                  |
|   | <b>Rigid cable min/max (bottom)</b>                          | mm <sup>2</sup> | 1/35               | 1/35               | 1/35               | 1/35                 | 1/35             |                  |
|   | <b>Flexible cable min*/max (bottom)</b>                      | mm <sup>2</sup> | 0.75/25            | 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) |                 |                    |                    |                    |                      |                  |                  |
|   | <b>Torque</b>  | Nm              | max 4.5            | max 4.5            | max 4.5            | max 4.5              | max 4.5          |                  |
| <b>Add-on devices</b>   |  |                 |                    |                    |                    |                      |                  |                  |
|   | <b>Auxiliary contacts</b>                                    |                 | yes                | yes                | yes                | yes                  | yes              |                  |
| <b>(side add-on)</b>  | <b>Tele L</b>  |                 | yes                | yes                | yes                | yes                  | yes              |                  |
|   | <b>Tele Mp</b>   |                 | yes                | yes                | yes                | yes                  | yes              |                  |
| <b>Dimensions, weights, packaging (HxDxW) 86x68xW<sup>1</sup></b> |  |                 | mm/mod.            | 18                 | 18                 | 18                   | 18               |                  |
| <b>Weight/mod.</b>  |  |                 | g                  | 125                | 125                | 130                  | 125              |                  |
| <b>Approvals</b>  |  |                 |                    | UL/CSA/VDE         | UL/CSA/VDE         | UL                   | UL               |                  |
| <b>CE marking</b>   |  |                 |                    | 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 ULH34 | EP100 ULH12 | EP100 UC |
| <b>Interrupting capacity acc. to</b> |           |          |          |             |             |          |
|                                      | <b>kA</b> | UL1077   | UL1077   | UL489       | UL489       |          |
| 1P/2P                                | 277VAC    | 6        | 10       | 10          | -           |          |
| 3P/4P                                | 480VAC    | 6        | 10       | 10          | -           |          |
| 1P                                   | 120VAC    | 6        | 10       | -           | 10          |          |
| 2P/3P                                | 240VAC    | -        | -        | -           | 10          |          |
| 1P                                   | 50VDC     | 6        | 10       | 10          | 10          |          |
| 2P                                   | 110VDC    | 6        | 10       | 10          | 10          |          |
| <b>Short-circuit capacity AC</b>     |           |          |          |             |             |          |
| <b>Icu (ultimate)</b>                |           |          |          |             |             |          |
| 1 P                                  | 127 V     | 20       | 30       | 30          | 30          |          |
|                                      | 240 V     | 10       | 15       | 15          | 15          |          |
|                                      | 415 V     | 3        | 4        | 4           | 4           |          |
| 1+N /2P                              | 127 V     | 30       | 40       | 40          | 40          |          |
|                                      | 240 V     | 20       | 30       | 30          | 30          |          |
| 2 P                                  | 415 V     | 10       | 15       | 15          | 15          |          |
| 3/3+N/4P                             | 240 V     | 20       | 30       | 30          | 30          |          |
|                                      | 415 V     | 10       | 15       | 15          | 15          |          |
|                                      | 440 V     | 6        | 10       | 10          | 10          |          |
| <b>Ics (service)</b>                 |           | 75% Icu  | 50% Icu  | 50% Icu     | 50% Icu     |          |
| <b>Short-circuit capacity DC</b>     |           |          |          |             |             |          |
| <b>Icu (ultimate)</b>                |           |          |          |             |             |          |
| 1 P                                  | ≤ 60 V    | 20       | 25       | 25          | 25          |          |
|                                      | ≤ 220 V   | -        | -        | -           | -           | 6        |
| 2 P                                  | ≤ 125 V   | 25       | 30       | 30          | 30          |          |
|                                      | ≤ 440 V   | -        | -        | -           | -           | 6        |
| <b>Ics (service)</b>                 |           | 100% Icu | 100% Icu | 10% Icu     | 10% Icu     |          |

