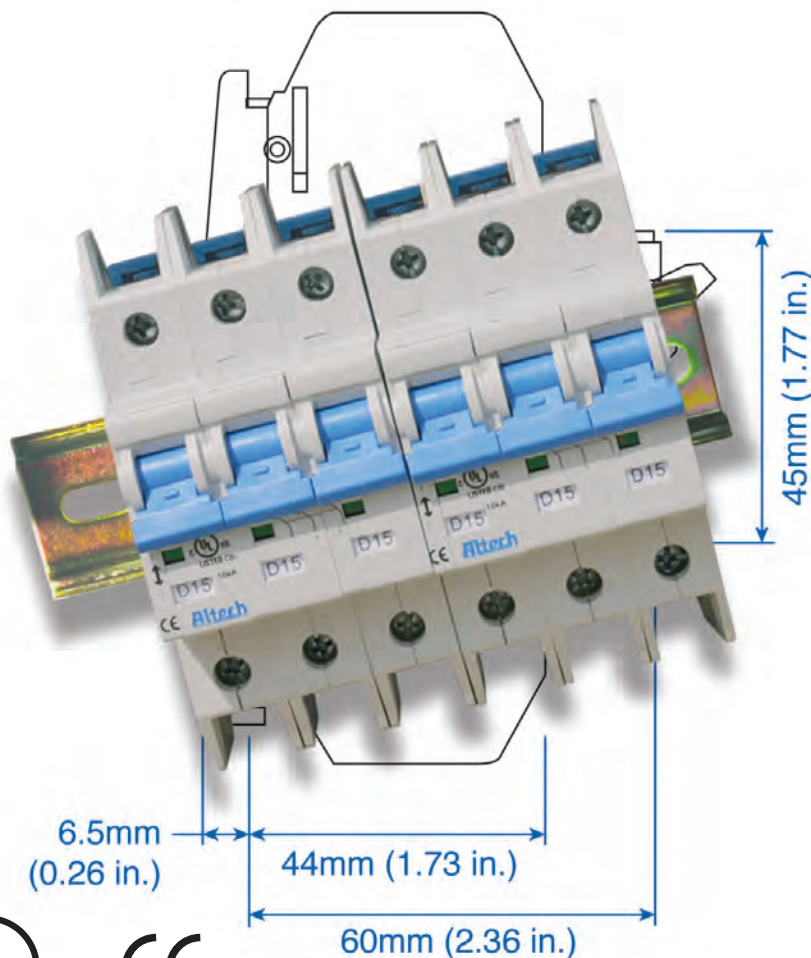


# L-Series AC or DC

## Miniature Molded Case Circuit Breakers

### UL489 Listed Circuit Breakers

- Available in AC and DC models
- DIN Rail Mounted
- 17.5mm width
- Thermal Magnetic
- 240V, 480Y/277V AC, 50/60Hz
- 125VDC (1 pole); 250VDC (2 pole)
- 10kA Short Circuit Interrupting Capacity
- Positive Trip indicator (Green - off/tripped, Red - on)
- HACR Type 40°C
- Line/Load reversible



|                                        |                                                                 |
|----------------------------------------|-----------------------------------------------------------------|
| AC Version Current/ Voltage Rating     | 0.2-63A/240VAC, 0.2-32A/480Y/277VAC*                            |
| DC Version Current/ Voltage Rating     | 0.2-63A/125/250VDC                                              |
| Calibration Temperature                | 40°C (104°F)                                                    |
| Operating Temperature                  | -25° to 60°C (-13° to 140°F)                                    |
| Storage Temperature                    | -25° to 75°C (-13° to 167°F)                                    |
| Terminal Size Acceptability and Torque | 14-3 AWG: 17.5 lb-in. (2.0 Nm)<br>18-16 AWG: 25 lb-in. (2.8 Nm) |
| Terminal Protection Degree             | IP20 at front                                                   |
| Electrical Life                        | 6,000 cycles on/off                                             |
| Mechanical Life                        | 10,000 cycles on/off                                            |
| Wire Connection                        | copper wire only 60/75°C                                        |
| Vibration Resistance                   | 3g (18-50Hz)                                                    |
| Mounting Orientation                   | In any plane                                                    |

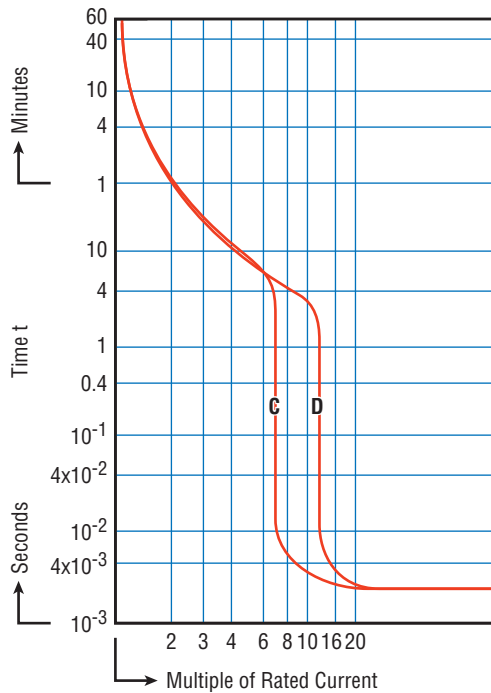
\*One device dual voltage ratings.

### AC - SHORT CIRCUIT INTERRUPTING RATING

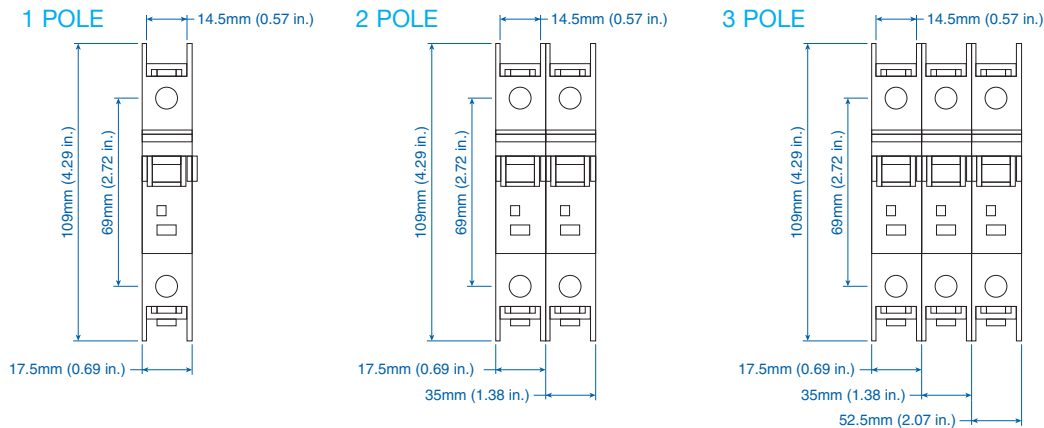
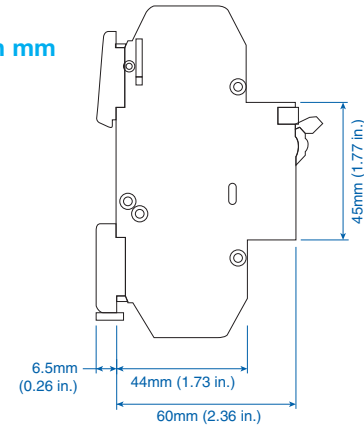
| No. Poles | Type | 0.2-32A                   | 33-63A         |
|-----------|------|---------------------------|----------------|
| 1         | AC   | 10kA@120, 240, 277V       | 10kA@120, 240V |
| 2-4       | AC   | 10kA@120, 240V, 480Y/277V | 10kA@120, 240V |

### DC - SHORT CIRCUIT INTERRUPTING RATING

| No. Poles | Type | 0.2-32A   | 33-63A    |
|-----------|------|-----------|-----------|
| 1         | DC   | 10kA@125V | 10kA@125V |
| 2         | DC   | 10kA@250V | 10kA@250V |



Dimensions in mm  
side view



| Trip-Characteristics*          |                   |                        |                       | Type | Applications                                                                        |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|--------------------------------|-------------------|------------------------|-----------------------|------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Characteristic Trip Boundaries |                   |                        |                       |      | Lighting<br>Wiring<br>Protection<br>Control<br>Circuits                             | Business<br>Equipment<br>Appliances                                                   | Transformers                                                                          | Power<br>Supplies<br>Heaters                                                          | Motors                                                                                |                                                                                       | Reactive<br>Load                                                                      |
| Thermal Trip                   |                   | Magnetic Trip          |                       |      |                                                                                     |                                                                                       |                                                                                       |                                                                                       | Low<br>Inrush                                                                         | High<br>Inrush                                                                        |                                                                                       |
| Must not<br>Trip>100ms         | Must Trip<br><1hr | Must not<br>Trip>100ms | Must Trip<br>at 100ms |      |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| C-Characteristics              |                   |                        |                       |      |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |    |                                                                                       |
| 1.05xRC                        | 1.3xRC            | 5xRC                   | 10xRC                 | AC   |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| 1.05xRC                        | 1.3xRC            | 5xRC                   | 10xRC                 | DC   |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| D-Characteristics              |                   |                        |                       |      |  |  |  |  |  |  |  |
| 1.05xRC                        | 1.3xRC            | 10xRC                  | 16xRC                 | AC   |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| 1.05xRC                        | 1.3xRC            | 10xRC                  | 16xRC                 | DC   |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |

\*The value of each characteristic is shown vertically beneath its corresponding heading.



### Warning!

This information should only be used as a selection guide. The use of a Miniature Circuit Breaker in an application with a certain Trip-Characteristic always requires prototype testing! It is the responsibility of the circuit design engineer to select the appropriate Miniature Circuit Breaker for his specific application.

# AC C-Trip Characteristics



LISTED  
E305318



## Application Examples:

Low inrush motors, resistive loads, wiring protection, receptacles, lighting, and control circuit applications. Relatively short thermal trip delay and medium magnetic trip point.



**One Pole**

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 1CU02L            |
| 0.5A          | 1CU05L            |
| 1.0A          | 1CU1L             |
| 1.6A          | 1CU1.6L           |
| 2.0A          | 1CU2L             |
| 3.0A          | 1CU3L             |
| 4.0A          | 1CU4L             |
| 5.0A          | 1CU5L             |
| 6.0A          | 1CU6L             |
| 8.0A          | 1CU8L             |
| 10A           | 1CU10L            |
| 12A           | 1CU12L            |
| 13A           | 1CU13L            |
| 15A           | 1CU15L            |
| 16A           | 1CU16L            |
| 20A           | 1CU20L            |
| 25A           | 1CU25L            |
| 30A           | 1CU30L            |
| 32A           | 1CU32L            |
| 40A           | 1CU40L            |
| 50A           | 1CU50L            |
| 60A           | 1CU60L            |
| 63A           | 1CU63L            |

Standard Pack: 12

Weight: 1.7kg (3.74 lb.)



**Two Pole**

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 2CU02L            |
| 0.5A          | 2CU05L            |
| 1.0A          | 2CU1L             |
| 1.6A          | 2CU1.6L           |
| 2.0A          | 2CU2L             |
| 3.0A          | 2CU3L             |
| 4.0A          | 2CU4L             |
| 5.0A          | 2CU5L             |
| 6.0A          | 2CU6L             |
| 8.0A          | 2CU8L             |
| 10A           | 2CU10L            |
| 12A           | 2CU12L            |
| 13A           | 2CU13L            |
| 15A           | 2CU15L            |
| 16A           | 2CU16L            |
| 20A           | 2CU20L            |
| 25A           | 2CU25L            |
| 30A           | 2CU30L            |
| 32A           | 2CU32L            |
| 40A           | 2CU40L            |
| 50A           | 2CU50L            |
| 60A           | 2CU60L            |
| 63A           | 2CU63L            |

Standard Pack: 6

Weight: 1.7kg (3.74 lb.)



**Three Pole**

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 3CU02L            |
| 0.5A          | 3CU05L            |
| 1.0A          | 3CU1L             |
| 1.6A          | 3CU1.6L           |
| 2.0A          | 3CU2L             |
| 3.0A          | 3CU3L             |
| 4.0A          | 3CU4L             |
| 5.0A          | 3CU5L             |
| 6.0A          | 3CU6L             |
| 8.0A          | 3CU8L             |
| 10A           | 3CU10L            |
| 12A           | 3CU12L            |
| 13A           | 3CU13L            |
| 15A           | 3CU15L            |
| 16A           | 3CU16L            |
| 20A           | 3CU20L            |
| 25A           | 3CU25L            |
| 30A           | 3CU30L            |
| 32A           | 3CU32L            |
| 40A           | 3CU40L            |
| 50A           | 3CU50L            |
| 60A           | 3CU60L            |
| 63A           | 3CU63L            |

Standard Pack: 4

Weight: 1.7kg (3.74 lb.)



**Four Pole**  
Please contact  
Altech.



For ring tongue terminal version, replace "U" with "R" in part number. For example **1CR20L** instead of **1CU20L**.

## AC D-Trip Characteristics



### Application Examples:

High inrush motors, transformers, power supplies, heaters and reactive loads.  
Relatively long thermal trip delay and very high magnetic trip point.



One Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 1DU02L            |
| 0.5A          | 1DU05L            |
| 1.0A          | 1DU1L             |
| 1.6A          | 1DU1.6L           |
| 2.0A          | 1DU2L             |
| 3.0A          | 1DU3L             |
| 4.0A          | 1DU4L             |
| 5.0A          | 1DU5L             |
| 6.0A          | 1DU6L             |
| 8.0A          | 1DU8L             |
| 10A           | 1DU10L            |
| 12A           | 1DU12L            |
| 13A           | 1DU13L            |
| 15A           | 1DU15L            |
| 16A           | 1DU16L            |
| 20A           | 1DU20L            |
| 25A           | 1DU25L            |
| 30A           | 1DU30L            |
| 32A           | 1DU32L            |
| 40A           | 1DU40L            |
| 50A           | 1DU50L            |
| 60A           | 1DU60L            |
| 63A           | 1DU63L            |

Standard Pack: 12

Weight: 1.7kg (3.74 lb.)



Two Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 2DU02L            |
| 0.5A          | 2DU05L            |
| 1.0A          | 2DU1L             |
| 1.6A          | 2DU1.6L           |
| 2.0A          | 2DU2L             |
| 3.0A          | 2DU3L             |
| 4.0A          | 2DU4L             |
| 5.0A          | 2DU5L             |
| 6.0A          | 2DU6L             |
| 8.0A          | 2DU8L             |
| 10A           | 2DU10L            |
| 12A           | 2DU12L            |
| 13A           | 2DU13L            |
| 15A           | 2DU15L            |
| 16A           | 2DU16L            |
| 20A           | 2DU20L            |
| 25A           | 2DU25L            |
| 30A           | 2DU30L            |
| 32A           | 2DU32L            |
| 40A           | 2DU40L            |
| 50A           | 2DU50L            |
| 60A           | 2DU60L            |
| 63A           | 2DU63L            |

Standard Pack: 6

Weight: 1.7kg (3.74 lb.)



Three Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | 3DU02L            |
| 0.5A          | 3DU05L            |
| 1.0A          | 3DU1L             |
| 1.6A          | 3DU1.6L           |
| 2.0A          | 3DU2L             |
| 3.0A          | 3DU3L             |
| 4.0A          | 3DU4L             |
| 5.0A          | 3DU5L             |
| 6.0A          | 3DU6L             |
| 8.0A          | 3DU8L             |
| 10A           | 3DU10L            |
| 12A           | 3DU12L            |
| 13A           | 3DU13L            |
| 15A           | 3DU15L            |
| 16A           | 3DU16L            |
| 20A           | 3DU20L            |
| 25A           | 3DU25L            |
| 30A           | 3DU30L            |
| 32A           | 3DU32L            |
| 40A           | 3DU40L            |
| 50A           | 3DU50L            |
| 60A           | 3DU60L            |
| 63A           | 3DU63L            |

Standard Pack: 4

Weight: 1.7kg (3.74 lb.)



Four Pole  
Please contact  
Altech.



For ring tongue terminal version, replace "U" with "R" in part number. For example **1CR20L** instead of **1CU20L**.

# DC C- & D-Trip Characteristics

## Application Examples:

Telecommunication equipment,  
computer equipment, uninterruptable  
power supplies.



LISTED  
E305318



### C-Trip



One Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | DC1CU02L          |
| 0.5A          | DC1CU05L          |
| 1.0A          | DC1CU1L           |
| 1.6A          | DC1CU1.6L         |
| 2.0A          | DC1CU2L           |
| 3.0A          | DC1CU3L           |
| 4.0A          | DC1CU4L           |
| 5.0A          | DC1CU5L           |
| 6.0A          | DC1CU6L           |
| 8.0A          | DC1CU8L           |
| 10A           | DC1CU10L          |
| 12A           | DC1CU12L          |
| 13A           | DC1CU13L          |
| 15A           | DC1CU15L          |
| 16A           | DC1CU16L          |
| 20A           | DC1CU20L          |
| 25A           | DC1CU25L          |
| 30A           | DC1CU30L          |
| 32A           | DC1CU32L          |
| 40A           | DC1CU40L          |
| 50A           | DC1CU50L          |
| 60A           | DC1CU60L          |
| 63A           | DC1CU63L          |

Standard Pack: 12

Weight: 1.7kg (3.74 lb.)



Two Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | DC2CU02L          |
| 0.5A          | DC2CU05L          |
| 1.0A          | DC2CU1L           |
| 1.6A          | DC2CU1.6L         |
| 2.0A          | DC2CU2L           |
| 3.0A          | DC2CU3L           |
| 4.0A          | DC2CU4L           |
| 5.0A          | DC2CU5L           |
| 6.0A          | DC2CU6L           |
| 8.0A          | DC2CU8L           |
| 10A           | DC2CU10L          |
| 12A           | DC2CU12L          |
| 13A           | DC2CU13L          |
| 15A           | DC2CU15L          |
| 16A           | DC2CU16L          |
| 20A           | DC2CU20L          |
| 25A           | DC2CU25L          |
| 30A           | DC2CU30L          |
| 32A           | DC2CU32L          |
| 40A           | DC2CU40L          |
| 50A           | DC2CU50L          |
| 60A           | DC2CU60L          |
| 63A           | DC2CU63L          |

Standard Pack: 6

Weight: 1.7kg (3.74 lb.)

### D-Trip



One Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | DC1DU02L          |
| 0.5A          | DC1DU05L          |
| 1.0A          | DC1DU1L           |
| 1.6A          | DC1DU1.6L         |
| 2.0A          | DC1DU2L           |
| 3.0A          | DC1DU3L           |
| 4.0A          | DC1DU4L           |
| 5.0A          | DC1DU5L           |
| 6.0A          | DC1DU6L           |
| 8.0A          | DC1DU8L           |
| 10A           | DC1DU10L          |
| 12A           | DC1DU12L          |
| 13A           | DC1DU13L          |
| 15A           | DC1DU15L          |
| 16A           | DC1DU16L          |
| 20A           | DC1DU20L          |
| 25A           | DC1DU25L          |
| 30A           | DC1DU30L          |
| 32A           | DC1DU32L          |
| 40A           | DC1DU40L          |
| 50A           | DC1DU50L          |
| 60A           | DC1DU60L          |
| 63A           | DC1DU63L          |

Standard Pack: 12

Weight: 1.7kg (3.74 lb.)



Two Pole

| Rated Current | Type/<br>Cat. No. |
|---------------|-------------------|
| 0.2A          | DC2DU02L          |
| 0.5A          | DC2DU05L          |
| 1.0A          | DC2DU1L           |
| 1.6A          | DC2DU1.6L         |
| 2.0A          | DC2DU2L           |
| 3.0A          | DC2DU3L           |
| 4.0A          | DC2DU4L           |
| 5.0A          | DC2DU5L           |
| 6.0A          | DC2DU6L           |
| 8.0A          | DC2DU8L           |
| 10A           | DC2DU10L          |
| 12A           | DC2DU12L          |
| 13A           | DC2DU13L          |
| 15A           | DC2DU15L          |
| 16A           | DC2DU16L          |
| 20A           | DC2DU20L          |
| 25A           | DC2DU25L          |
| 30A           | DC2DU30L          |
| 32A           | DC2DU32L          |
| 40A           | DC2DU40L          |
| 50A           | DC2DU50L          |
| 60A           | DC2DU60L          |
| 63A           | DC2DU63L          |

Standard Pack: 6

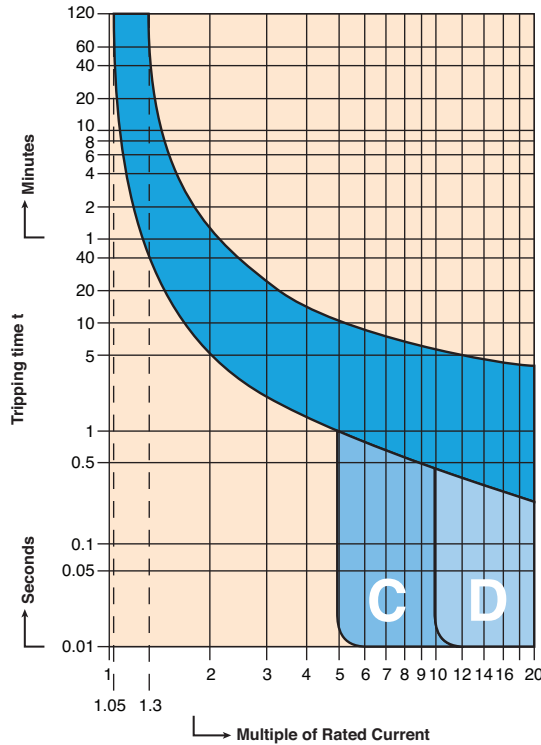
Weight: 1.7kg (3.74 lb.)



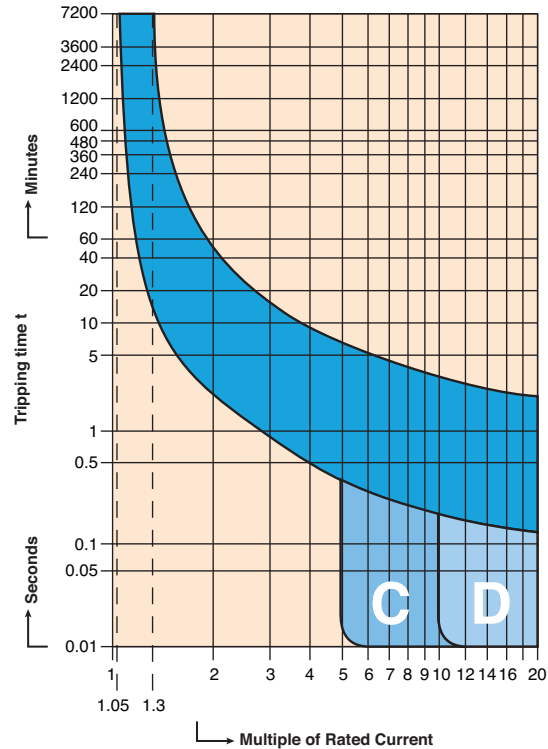
For ring tongue terminal version, replace "U" with "R" in part number. For example **1CR20L** instead of **1CU20L**.

# L-Series Trip Curves

C and D Trip  
Less than 10A



C and D Trip  
10A and higher



## Temperature and Power Loss Specifications

| Rated<br>current<br>I <sub>n</sub> (A) | Effective rated current allowing for ambient temperature<br>I <sub>cor</sub> (A) |      |      |      |      |      |      |      |      | Internal<br>impedance<br>Z (m Ω) | Power Loss<br>B, C, D, K<br>P (W) |
|----------------------------------------|----------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|----------------------------------|-----------------------------------|
|                                        | -20                                                                              | -10  | 0    | 10   | 20   | 30   | 40   | 50   | 60   | char. B, C, D, K                 |                                   |
| 0.2                                    | 0.24                                                                             | 0.24 | 0.23 | 0.22 | 0.21 | 0.2  | 0.19 | 0.18 | 0.17 | 45100.0                          | 1.80                              |
| 0.5                                    | 0.61                                                                             | 0.59 | 0.57 | 0.55 | 0.53 | 0.5  | 0.47 | 0.44 | 0.42 | 8000.0                           | 2.00                              |
| 1                                      | 1.21                                                                             | 1.18 | 1.14 | 1.1  | 1.05 | 1.0  | 0.93 | 0.88 | 0.83 | 2000.0                           | 2.00                              |
| 2                                      | 2.42                                                                             | 2.36 | 2.28 | 2.2  | 2.1  | 2.0  | 1.86 | 1.76 | 1.67 | 490.0                            | 1.96                              |
| 3                                      | 3.63                                                                             | 3.54 | 3.42 | 3.3  | 3.15 | 3.0  | 2.79 | 2.64 | 2.5  | 230.0                            | 2.07                              |
| 4                                      | 4.84                                                                             | 4.72 | 4.56 | 4.4  | 4.2  | 4.0  | 3.72 | 3.52 | 3.33 | 150.0                            | 2.40                              |
| 5                                      | 6.1                                                                              | 5.9  | 5.7  | 5.5  | 5.3  | 5.0  | 4.7  | 4.4  | 4.2  | 95.0                             | 2.38                              |
| 6                                      | 7.3                                                                              | 7.1  | 6.8  | 6.6  | 6.3  | 6.0  | 5.6  | 5.3  | 5.0  | 69.0                             | 2.48                              |
| 7                                      | 8.5                                                                              | 8.2  | 8.0  | 7.7  | 7.4  | 7.0  | 6.5  | 6.2  | 5.8  | 52.0                             | 2.55                              |
| 8                                      | 9.7                                                                              | 9.4  | 9.1  | 8.8  | 8.4  | 8.0  | 7.4  | 7.0  | 6.7  | 35.0                             | 2.24                              |
| 10                                     | 12.1                                                                             | 11.8 | 11.4 | 11.0 | 10.5 | 10.0 | 9.3  | 8.8  | 8.3  | 23.5                             | 2.35                              |
| 12                                     | 14.5                                                                             | 14.2 | 13.7 | 13.2 | 12.6 | 12.0 | 11.2 | 10.6 | 10.0 | 18.7                             | 2.69                              |
| 13                                     | 15.7                                                                             | 15.3 | 14.8 | 14.3 | 13.7 | 13.0 | 12.1 | 11.5 | 10.8 | 14.3                             | 2.42                              |
| 14                                     | 16.9                                                                             | 16.5 | 16.0 | 15.4 | 14.7 | 14.0 | 13.0 | 12.3 | 11.7 | 12.4                             | 2.43                              |
| 15                                     | 18.2                                                                             | 17.7 | 17.1 | 16.5 | 15.8 | 15.0 | 14.0 | 13.2 | 12.5 | 10.1                             | 2.27                              |
| 16                                     | 19.4                                                                             | 18.9 | 18.2 | 17.6 | 16.8 | 16.0 | 14.9 | 14.1 | 13.3 | 7.5                              | 1.92                              |
| 20                                     | 24.2                                                                             | 23.6 | 22.8 | 22.0 | 21.0 | 20.0 | 18.6 | 17.6 | 16.7 | 6.3                              | 2.52                              |
| 25                                     | 30.3                                                                             | 29.5 | 28.5 | 27.5 | 26.3 | 25.0 | 23.3 | 22.0 | 20.8 | 4.6                              | 2.88                              |
| 30                                     | 36.3                                                                             | 35.4 | 34.2 | 33.0 | 31.5 | 30.0 | 27.9 | 26.5 | 25.0 | 3.6                              | 3.24                              |
| 32                                     | 38.7                                                                             | 37.8 | 36.5 | 35.2 | 33.6 | 32.0 | 29.8 | 28.2 | 26.7 | 3.6                              | 3.69                              |
| 35                                     | 42.3                                                                             | 41.3 | 39.9 | 38.5 | 36.8 | 35.0 | 32.6 | 30.8 | 29.2 | 3.6                              | 4.41                              |
| 40                                     | 48.4                                                                             | 47.2 | 45.6 | 44.0 | 42.0 | 40.0 | 37.2 | 35.2 | 33.3 | 3.0                              | 4.80                              |
| 50                                     | 60.5                                                                             | 59.0 | 57.0 | 55.0 | 52.5 | 50.0 | 46.5 | 44.1 | 41.7 | 2.4                              | 6.00                              |
| 60                                     | 72.6                                                                             | 70.9 | 68.4 | 66.0 | 63.0 | 60.0 | 55.9 | 52.9 | 50.1 | 1.8                              | 6.48                              |

UL 489

UL 508

UL 1077

UL 1077  
Equipment Breakers

Earth Leakage  
Circuit Breakers

ANNEX



# Accessories

## L-Series Circuit Breakers



Accessories can be factory or field mounted on L-Series miniature molded case circuit breakers for enhanced control and monitoring capabilities. Field mounting kits include all necessary parts and instructions. Accessories can be gang mounted on a single controller (the Auxiliary Switch in the outside position). The mounting arrangement links the internal latch-pins for the tripping mechanisms, ensuring simultaneous trips. Handles are linked to simplify manual resetting.



### Neutral Pole

(63A/240VAC; 32A/480Y/277VAC)

| Description | Type/<br>Cat. No. | Cable<br>Max               | Cable<br>Min                 | Torque<br>Max     | Torque<br>Min     |
|-------------|-------------------|----------------------------|------------------------------|-------------------|-------------------|
| Neutral     | ALTN2L            | 25mm <sup>2</sup><br>3 AWG | 2.5mm <sup>2</sup><br>12 AWG | 2Nm<br>17.5 lb-in | 1.5Nm<br>12 lb-in |

Standard Pack: 10

Weight: 1.2kg (2.64 lb.)



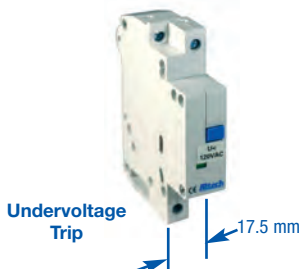
### Shunt Trip and Undervoltage Trip

| Description     | Shunt Trip<br>Type/Cat. No. | Operational<br>Voltage | Rated<br>Coil Current | Undervoltage Trip*<br>Type/Cat. No. |
|-----------------|-----------------------------|------------------------|-----------------------|-------------------------------------|
| <b>AC Coil:</b> |                             |                        |                       |                                     |
| 12V AC          | FA12ACL                     | 8.4 - 13.2V            | 6A                    | UV12ACL                             |
| 24V AC          | FA24ACL                     | 16.8 - 26.4V           | 2.8A                  | UV24ACL                             |
| 48V AC          | FA48ACL                     | 33.6 - 52.8V           | 0.8A                  | UV48ACL                             |
| 60V AC          | FA60ACL                     | 42 - 66V               | ~0.7A                 | UV60ACL                             |
| 110V AC         | FA110ACL                    | 77 - 121V              | 0.5A                  | UV110ACL                            |
| 120V AC         | FA120ACL                    | 84 - 132V              | ~0.5A                 | UV120ACL                            |
| 230V AC         | FA230ACL                    | 161 - 253V             | 0.6A                  | UV230ACL                            |
| 277V AC         | FA277ACL                    | 194 - 305V             | ~0.5A                 | UV277ACL                            |
| 400V AC         | FA400ACL                    | 280 - 440V             | 0.5A                  | UV400ACL                            |
| <b>DC Coil:</b> |                             |                        |                       |                                     |
| 12V DC          | FA12DCL                     | 8.4 - 13.2V            | ~6A                   | UV12DCL                             |
| 24V DC          | FA24DCL                     | 16.8 - 26.4V           | 3A                    | UV24DCL                             |
| 48V DC          | FA48DCL                     | 33.6 - 52.8V           | 2A                    | UV48DCL                             |
| 110V DC         | FA110DCL                    | 77 - 121V              | 0.6A                  | UV110DCL                            |

\* Reset-Hold Voltage =  $0.85 \times V_E$ ; Drop-Out Voltage =  $0.2 \times V_E$

Standard Pack: 10

Weight: 1.1kg (2.43 lb.)



|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| Terminal Size - min/max   | 2.5 mm <sup>2</sup> (12 AWG) / 25mm <sup>2</sup> (3 AWG) |
| Terminal Torque - min/max | 1.5 Nm (12 lb. in.) / 2 Nm (17.5 lb. in.)                |

Accessories

L-Series  
Circuit Breakers



UL 489

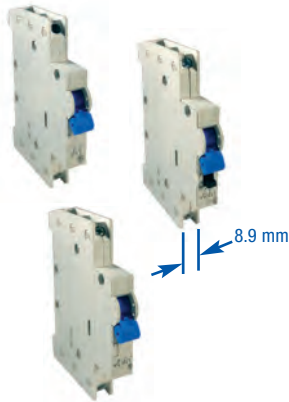
UL 508

UL 1077

UL 1077  
Equipment Breakers

Earth Leakage  
Circuit Breakers

ANNEX



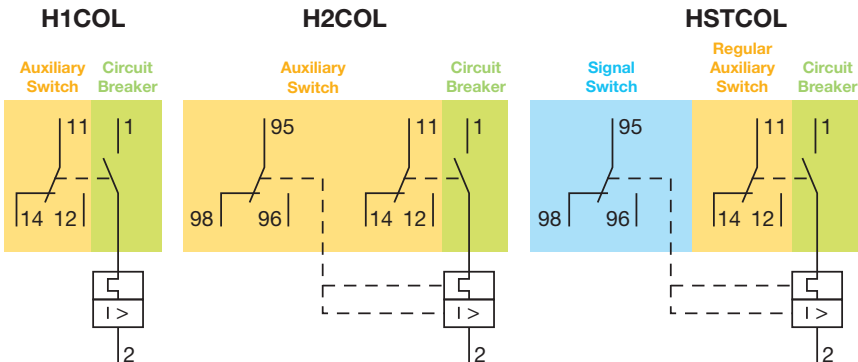
**Auxiliary Contact** (6A/120V AC; 3A/240V AC; 6A/24V DC; 0.5A/125V DC)

| Description                       | Type/<br>Cat. No. | Cable<br>Max                 | Cable<br>Min                 | Torque<br>Max    | Torque<br>Min     |
|-----------------------------------|-------------------|------------------------------|------------------------------|------------------|-------------------|
| 1 x CO                            | H1COL             | 2.5mm <sup>2</sup><br>12 AWG | 0.5mm <sup>2</sup><br>20 AWG | 0.5Nm<br>4 lb-in | 0.33Nm<br>3 lb-in |
| 2 x CO                            | H2COL             |                              |                              |                  |                   |
| 1 x CO, 1 Signal<br>& Test Button | HSTCOL            |                              |                              |                  |                   |

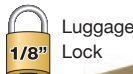
Standard Pack: 15

Weight: 0.5kg (1.32 lb.)

**Wiring  
Diagram**



**Lock-out Adapter**



| Description | Type/<br>Cat. No. |
|-------------|-------------------|
| Yellow      | EASS2L            |

Standard Pack: 10

Weight: 50g (1.76 oz.)



**Front Mounting Kit** with hardware

| Description | Type/<br>Cat. No. | Weight         |
|-------------|-------------------|----------------|
| 1 Pole      | FMA1PL            | 40g (1.41 oz.) |
| 2 Pole      | FMA2PL            | 45g (1.59 oz.) |
| 3 Pole      | FMA3PL            | 50g (1.76 oz.) |

Standard Pack: 1



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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