DIN Rail Miniature Circuit Breakers
UL 489, UL 489A and UL 1077

2013 Catalog

Noark

NOARK

Electrical Equipment Supplier for the Smart Grid

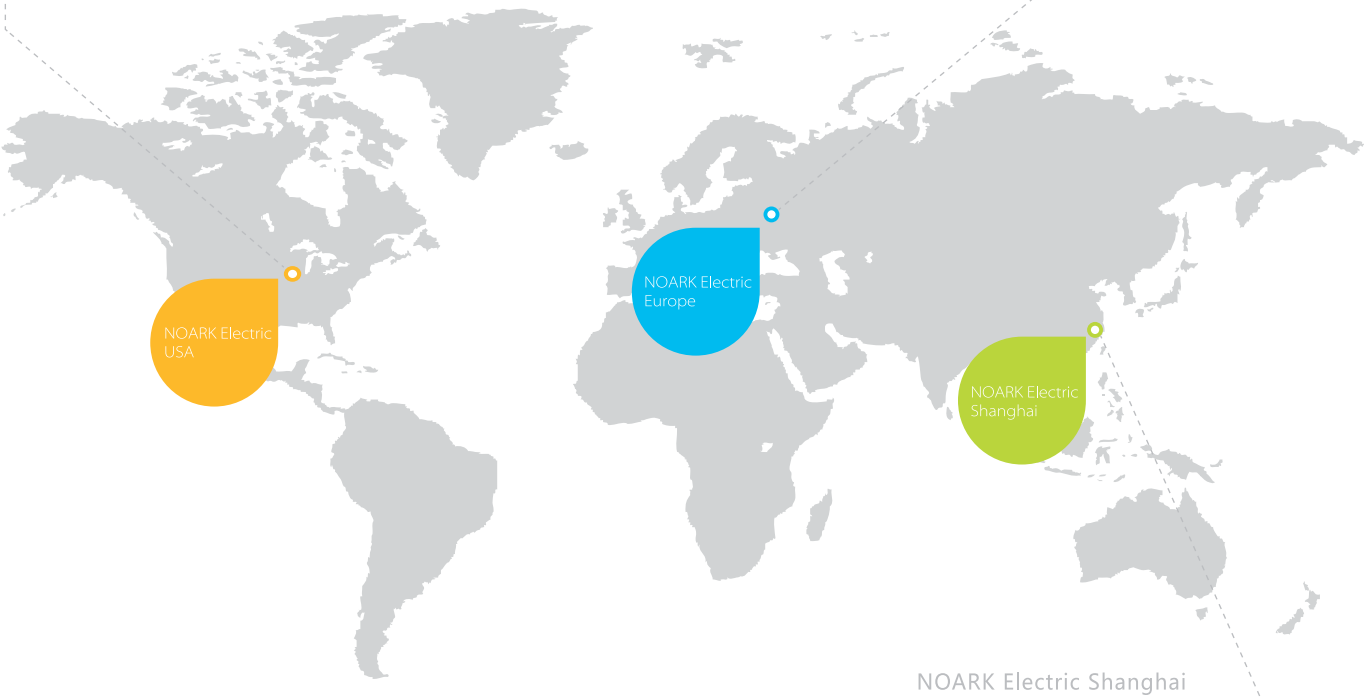
NOARK provides reliable products and efficient solution to intelligent power and energy system. With series of products and solution,Noark is capable of serving traditional industries including utility,iron & steel manufacturing, building, petrochemicals, telecommunications, mechanical and other industries, also has become expert in some cutting-edge fields,such as solar energy,intelligent power distribution, wind energy, electric vehicle and energy storage. The over-expected performance of these products has been identified especially under an extremely harsh environment.

SmartUnit
Is series of intelligent control units embedded in each electrical component, which enable them to communicate with every equipment in smart network. Besides, it has the abilities of self- judgement, storage and prompt react ion to integrate mutually with the entire system. This application can be effectively used in utility, industry, renewable energy and so on.

InPower
(Intelligent power) Distribution System works on two main key components, SmartUnit and InServer(Intelligent Communication Server). The benefit of this integration to user is easy operation and management of power distribution system,through energy monitoring,remote operation,warning alarm,energy analysis,etc.

Solarinel
Is Electrical system solution to photovoltaic system. With a full range of PV products and optimized design of electrical system,it brings high efficiency and performance of the whole solar system. After being applied in over 1GW installation worldwide,Solarinel turns out to be a necessary component and ideal system to several of system application, from residential roof top in hot and humid tropical region to large solar farm in Tibet under extremely harsh environment.

In China, Europe, and the United States, Noark has 4 R&D centers, 3 distribution centers, 15 global sales branches and more than 1,000 employees. We hold the belief that dedicated and professional work manner is the root to bring our customer with complete solution and satisfaction. Noark will continually be committed to reducing cost of operation and maintenance,bringing reliable technology and creating more customer value in long run.



Cutting-edge Technology

Noark Electric invests heavily in R&D. Our Technology Center in Shanghai, China has over 100 professional engineers with expertise in such areas as product design, software development, system design, simulation analysis, reliability, manufacturing and more. NOARK Electric has an extensive portfolio of global patents and certifications that cover products, manufacturing facilities and innovative technologies.

Reliable and Quality Manufacturing

Noark Electric always select qualified suppliers to coorperates with. We are concerned on a large degree about the whole production process, including molding, welding, assembly, quality control, etc, because we share the same value proposition of presenting world class quality to our customers. We hold this philosophy of "Making low voltage electrical products in the way of automobile manufacturing" . Noark Electric obtained ISO9001 quality management system certification from Lloyds Register Quality Assurance and became one of the low-voltage electrical manufacturers being awarded with this certification.

Contents

UL 489 and UL 489A Miniature Circuit Breakers

Product Overview

Features

- Complete range of UL 489 and UL 489A listed miniature circuit breakers up to a 63 ampere current rating
- Breakers mount on standard 35 mm DIN rail
- Standard ratings of 10 kA at 277/480 Vac and 10kA at 125Vdc
- Suitable for branch circuit device protection
- Thermal-magnetic overcurrent protection
  Three levels of short-circuit protection,
  catagorized by B,C and D curves
- Trip-free design — breaker cannot be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- Fulfill UL 489, UL489A and IEC 60947-2 Standard
- For use in applications for which UL 1077 or CSA C22.2 No.235 are also allowed
- Field installable shunt trip and auxiliary switch subsequent mounting
- Separate version for ring-tongue connection (Type B1…R), terminal screws can be removed (on both sides)
- Module width of only 18 mm (per pole)
- Contact Position Indicator (red / green)
- Possibility for locking the toggle in ON or OFF position

Typical Applications

Branch Circuit Protection

- Convenience receptacle circuits (internal / external)
- Motor control circuits
- Load circuits leaving the equipment (external)
- HACR equipment (heating, air conditioning, refrigeration)

(internal / external)

- PLC I/O points
- Computers
- Power supplies
- Control instrumentation
- Relays
- UPS
- Power conditioners

UL 489 and UL 489A Miniature Circuit Breakers

Complies with the Latest National and International Standards

Standards — Feeder and Branch Circuit Protection
UL 489/CSA C22.2 No.5; IEC60947-2

Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection.	
CSA (Canadian Standards Association) C22.2 No. 5-02 standard for branch circuit protection. UL 489A requirements "covering single pole DC circuit breakers intended for use as a branch circuit overcurrent and short circuit protection in communications equipment. UL 486 standard for connection terminals which allows the user to apply field wiring directly to the breaker. IEC 60947-2 standard for industrial applications of circuit protection.	c UL us LISTED CE

RoHS

These devices are RoHS compliant.	RoHS COMPLIANT

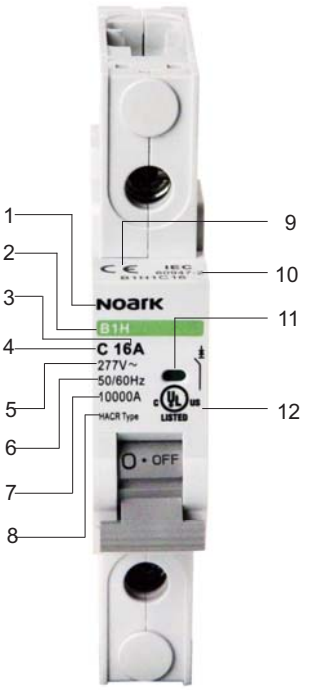
Breakers have UL 486 rated connectors which means the breakers can be wired directly to the load without the need for terminal strips.

UL 489 and UL 489A Miniature Circuit Breakers

Printing

Installation options

These branch circuit breakers are available in two terminal configurations: standard box terminals that accept multiple conductors and ring-tongue terminals. All breakers mount on standard 35 mm DIN rail. Bus connectors and feeder terminal facilitate mounting and wiring of multiple miniature circuit breaker arrays in control panel assemblies. Breakers can also be reverse feed.



1. Brand
2. Product type
3. Rated current
4. Tripping curve
5. Rated voltage
6. Frequency
7. Interrupting rating
8. Utility type
9. Certification mark
10. Standard listing
11. Breaker status indicator
12. UL listed mark

Catalog Number Selection Guide

B1N **1** **C** **63** **R**

Breaker Family

B1N: 240Vac; UL 489 listed
B1H: 480Y/277Vac; UL 489 listed
B1A: 60Vdc; UL489A listed

Number of Poles

1: Single-pole
2: Two-pole
3: Three-pole

Tripping Curve

B: 3-5In
C: 5-10In
D: 10-14In

Terminal code

Blank: Box lugs are standard
R: Ring Tongue Terminal

Rated Current

B1H: 0.5A, 1A, 1.6A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 13A, 15A, 16A, 20A
B1N: 0.5A, 1A, 1.6A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 13A, 15A, 16A, 20A, 25A, 30A, 32A, 35A, 40A, 50A, 60A, 63A
B1A: 0.5A, 1A, 1.6A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 13A, 15A, 16A, 20A, 25A, 30A, 32A, 35A, 40A, 50A, 60A, 63A

UL 489 and UL 489A Miniature Circuit Breakers

Product Selection

B1H UL 489 Circuit Breakers — 480Y/277Vac, 10 kA

B1HR UL 489 Circuit Breakers with Ring Tongue Terminals — 480Y/277Vac, 10 kA

B curve(3-5In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1B0.5	B1H2B0.5	B1H3B0.5
1	B1H1B1	B1H2B1	B1H3B1
1.6	B1H1B1.6	B1H2B1.6	B1H3B1.6
2	B1H1B2	B1H2B2	B1H3B2
3	B1H1B3	B1H2B3	B1H3B3
4	B1H1B4	B1H2B4	B1H3B4
5	B1H1B5	B1H2B5	B1H3B5
6	B1H1B6	B1H2B6	B1H3B6
8	B1H1B8	B1H2B8	B1H3B8
10	B1H1B10	B1H2B10	B1H3B10
13	B1H1B13	B1H2B13	B1H3B13
15	B1H1B15	B1H2B15	B1H3B15
16	B1H1B16	B1H2B16	B1H3B16
20	B1H1B20	B1H2B20	B1H3B20

B curve with Ring Tongue Terminals(3-5In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1B0.5R	B1H2B0.5R	B1H3B0.5R
1	B1H1B1R	B1H2B1R	B1H3B1R
1.6	B1H1B1.6R	B1H2B1.6R	B1H3B1.6R
2	B1H1B2R	B1H2B2R	B1H3B2R
3	B1H1B3R	B1H2B3R	B1H3B3R
4	B1H1B4R	B1H2B4R	B1H3B4R
5	B1H1B5R	B1H2B5R	B1H3B5R
6	B1H1B6R	B1H2B6R	B1H3B6R
8	B1H1B8R	B1H2B8R	B1H3B8R
10	B1H1B10R	B1H2B10R	B1H3B10R
13	B1H1B13R	B1H2B13R	B1H3B13R
15	B1H1B15R	B1H2B15R	B1H3B15R
16	B1H1B16R	B1H2B16R	B1H3B16R
20	B1H1B20R	B1H2B20R	B1H3B20R

C curve(5-10In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1C0.5	B1H2C0.5	B1H3C0.5
1	B1H1C1	B1H2C1	B1H3C1
1.6	B1H1C1.6	B1H2C1.6	B1H3C1.6
2	B1H1C2	B1H2C2	B1H3C2
3	B1H1C3	B1H2C3	B1H3C3
4	B1H1C4	B1H2C4	B1H3C4
5	B1H1C5	B1H2C5	B1H3C5
6	B1H1C6	B1H2C6	B1H3C6
8	B1H1C8	B1H2C8	B1H3C8
10	B1H1C10	B1H2C10	B1H3C10
13	B1H1C13	B1H2C13	B1H3C13
15	B1H1C15	B1H2C15	B1H3C15
16	B1H1C16	B1H2C16	B1H3C16
20	B1H1C20	B1H2C20	B1H3C20

C curve with Ring Tongue Terminals(5-10In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1C0.5R	B1H2C0.5R	B1H3C0.5R
1	B1H1C1R	B1H2C1R	B1H3C1R
1.6	B1H1C1.6R	B1H2C1.6R	B1H3C1.6R
2	B1H1C2R	B1H2C2R	B1H3C2R
3	B1H1C3R	B1H2C3R	B1H3C3R
4	B1H1C4R	B1H2C4R	B1H3C4R
5	B1H1C5R	B1H2C5R	B1H3C5R
6	B1H1C6R	B1H2C6R	B1H3C6R
8	B1H1C8R	B1H2C8R	B1H3C8R
10	B1H1C10R	B1H2C10R	B1H3C10R
13	B1H1C13R	B1H2C13R	B1H3C13R
15	B1H1C15R	B1H2C15R	B1H3C15R
16	B1H1C16R	B1H2C16R	B1H3C16R
20	B1H1C20R	B1H2C20R	B1H3C20R

D curve(10-14In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1D0.5	B1H2D0.5	B1H3D0.5
1	B1H1D1	B1H2D1	B1H3D1
1.6	B1H1D1.6	B1H2D1.6	B1H3D1.6
2	B1H1D2	B1H2D2	B1H3D2
3	B1H1D3	B1H2D3	B1H3D3
4	B1H1D4	B1H2D4	B1H3D4
5	B1H1D5	B1H2D5	B1H3D5
6	B1H1D6	B1H2D6	B1H3D6
8	B1H1D8	B1H2D8	B1H3D8
10	B1H1D10	B1H2D10	B1H3D10
13	B1H1D13	B1H2D13	B1H3D13
15	B1H1D15	B1H2D15	B1H3D15
16	B1H1D16	B1H2D16	B1H3D16
20	B1H1D20	B1H2D20	B1H3D20

D curve with Ring Tongue Terminals(10-14In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1H1D0.5R	B1H2D0.5R	B1H3D0.5R
1	B1H1D1R	B1H2D1R	B1H3D1R
1.6	B1H1D1.6R	B1H2D1.6R	B1H3D1.6R
2	B1H1D2R	B1H2D2R	B1H3D2R
3	B1H1D3R	B1H2D3R	B1H3D3R
4	B1H1D4R	B1H2D4R	B1H3D4R
5	B1H1D5R	B1H2D5R	B1H3D5R
6	B1H1D6R	B1H2D6R	B1H3D6R
8	B1H1D8R	B1H2D8R	B1H3D8R
10	B1H1D10R	B1H2D10R	B1H3D10R
13	B1H1D13R	B1H2D13R	B1H3D13R
15	B1H1D15R	B1H2D15R	B1H3D15R
16	B1H1D16R	B1H2D16R	B1H3D16R
20	B1H1D20R	B1H2D20R	B1H3D20R

UL 489 and UL 489A Miniature Circuit Breakers

B1N UL 489 Circuit Breakers — 240Vac, 10 kA

B curve(3-5In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1B0.5	B1N2B0.5	B1N3B0.5
1	B1N1B1	B1N2B1	B1N3B1
1.6	B1N1B1.6	B1N2B1.6	B1N3B1.6
2	B1N1B2	B1N2B2	B1N3B2
3	B1N1B3	B1N2B3	B1N3B3
4	B1N1B4	B1N2B4	B1N3B4
5	B1N1B5	B1N2B5	B1N3B5
6	B1N1B6	B1N2B6	B1N3B6
8	B1N1B8	B1N2B8	B1N3B8
10	B1N1B10	B1N2B10	B1N3B10
13	B1N1B13	B1N2B13	B1N3B13
15	B1N1B15	B1N2B15	B1N3B15
16	B1N1B16	B1N2B16	B1N3B16
20	B1N1B20	B1N2B20	B1N3B20
25	B1N1B25	B1N2B25	B1N3B25
30	B1N1B30	B1N2B30	B1N3B30
32	B1N1B32	B1N2B32	B1N3B32
35	B1N1B35	B1N2B35	B1N3B35
40	B1N1B40	B1N2B40	B1N3B40
50	B1N1B50	B1N2B50	B1N3B50
60	B1N1B60	B1N2B60	B1N3B60
63	B1N1B63	B1N2B63	B1N3B63

C curve(5-10In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1C0.5	B1N2C0.5	B1N3C0.5
1	B1N1C1	B1N2C1	B1N3C1
1.6	B1N1C1.6	B1N2C1.6	B1N3C1.6
2	B1N1C2	B1N2C2	B1N3C2
3	B1N1C3	B1N2C3	B1N3C3
4	B1N1C4	B1N2C4	B1N3C4
5	B1N1C5	B1N2C5	B1N3C5
6	B1N1C6	B1N2C6	B1N3C6
8	B1N1C8	B1N2C8	B1N3C8
10	B1N1C10	B1N2C10	B1N3C10
13	B1N1C13	B1N2C13	B1N3C13
15	B1N1C15	B1N2C15	B1N3C15
16	B1N1C16	B1N2C16	B1N3C16
20	B1N1C20	B1N2C20	B1N3C20
25	B1N1C25	B1N2C25	B1N3C25
30	B1N1C30	B1N2C30	B1N3C30
32	B1N1C32	B1N2C32	B1N3C32
35	B1N1C35	B1N2C35	B1N3C35
40	B1N1C40	B1N2C40	B1N3C40
50	B1N1C50	B1N2C50	B1N3C50
60	B1N1C60	B1N2C60	B1N3C60
63	B1N1C63	B1N2C63	B1N3C63

B1NR UL 489 Circuit Breakers with Ring Tongue Terminals — 240Vac, 10 kA

B curve with Ring Tongue Terminals(3-5In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1B0.5R	B1N2B0.5R	B1N3B0.5R
1	B1N1B1R	B1N2B1R	B1N3B1R
1.6	B1N1B1.6R	B1N2B1.6R	B1N3B1.6R
2	B1N1B2R	B1N2B2R	B1N3B2R
3	B1N1B3R	B1N2B3R	B1N3B3R
4	B1N1B4R	B1N2B4R	B1N3B4R
5	B1N1B5R	B1N2B5R	B1N3B5R
6	B1N1B6R	B1N2B6R	B1N3B6R
8	B1N1B8R	B1N2B8R	B1N3B8R
10	B1N1B10R	B1N2B10R	B1N3B10R
13	B1N1B13R	B1N2B13R	B1N3B13R
15	B1N1B15R	B1N2B15R	B1N3B15R
16	B1N1B16R	B1N2B16R	B1N3B16R
20	B1N1B20R	B1N2B20R	B1N3B20R
25	B1N1B25R	B1N2B25R	B1N3B25R
30	B1N1B30R	B1N2B30R	B1N3B30R
32	B1N1B32R	B1N2B32R	B1N3B32R
35	B1N1B35R	B1N2B35R	B1N3B35R
40	B1N1B40R	B1N2B40R	B1N3B40R

C curve with Ring Tongue Terminals(5-10In)

Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1C0.5R	B1N2C0.5R	B1N3C0.5R
1	B1N1C1R	B1N2C1R	B1N3C1R
1.6	B1N1C1.6R	B1N2C1.6R	B1N3C1.6R
2	B1N1C2R	B1N2C2R	B1N3C2R
3	B1N1C3R	B1N2C3R	B1N3C3R
4	B1N1C4R	B1N2C4R	B1N3C4R
5	B1N1C5R	B1N2C5R	B1N3C5R
6	B1N1C6R	B1N2C6R	B1N3C6R
8	B1N1C8R	B1N2C8R	B1N3C8R
10	B1N1C10R	B1N2C10R	B1N3C10R
13	B1N1C13R	B1N2C13R	B1N3C13R
15	B1N1C15R	B1N2C15R	B1N3C15R
16	B1N1C16R	B1N2C16R	B1N3C16R
20	B1N1C20R	B1N2C20R	B1N3C20R
25	B1N1C25R	B1N2C25R	B1N3C25R
30	B1N1C30R	B1N2C30R	B1N3C30R
32	B1N1C32R	B1N2C32R	B1N3C32R
35	B1N1C35R	B1N2C35R	B1N3C35R
40	B1N1C40R	B1N2C40R	B1N3C40R

UL 489 and UL 489A Miniature Circuit Breakers

B1N UL 489 Circuit Breakers — 240Vac, 10 kA

D curve(10-14In)			
Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1D0.5	B1N2D0.5	B1N3D0.5
1	B1N1D1	B1N2D1	B1N3D1
1.6	B1N1D1.6	B1N2D1.6	B1N3D1.6
2	B1N1D2	B1N2D2	B1N3D2
3	B1N1D3	B1N2D3	B1N3D3
4	B1N1D4	B1N2D4	B1N3D4
5	B1N1D5	B1N2D5	B1N3D5
6	B1N1D6	B1N2D6	B1N3D6
8	B1N1D8	B1N2D8	B1N3D8
10	B1N1D10	B1N2D10	B1N3D10
13	B1N1D13	B1N2D13	B1N3D13
15	B1N1D15	B1N2D15	B1N3D15
16	B1N1D16	B1N2D16	B1N3D16
20	B1N1D20	B1N2D20	B1N3D20
25	B1N1D25	B1N2D25	B1N3D25
30	B1N1D30	B1N2D30	B1N3D30
32	B1N1D32	B1N2D32	B1N3D32
35	B1N1D35	B1N2D35	B1N3D35
40	B1N1D40	B1N2D40	B1N3D40
50	B1N1D50	B1N2D50	B1N3D50
60	B1N1D60	B1N2D60	B1N3D60
63	B1N1D63	B1N2D63	B1N3D63

B1NR UL 489 Circuit Breakers with Ring Tongue Terminals — 240Vac, 10 kA

D curve with Ring Tongue Terminals(10-14In)			
Amp	Single-pole	Two-pole	Three-pole
0.5	B1N1D0.5R	B1N2D0.5R	B1N3D0.5R
1	B1N1D1R	B1N2D1R	B1N3D1R
1.6	B1N1D1.6R	B1N2D1.6R	B1N3D1.6R
2	B1N1D2R	B1N2D2R	B1N3D2R
3	B1N1D3R	B1N2D3R	B1N3D3R
4	B1N1D4R	B1N2D4R	B1N3D4R
5	B1N1D5R	B1N2D5R	B1N3D5R
6	B1N1D6R	B1N2D6R	B1N3D6R
8	B1N1D8R	B1N2D8R	B1N3D8R
10	B1N1D10R	B1N2D10R	B1N3D10R
13	B1N1D13R	B1N2D13R	B1N3D13R
15	B1N1D15R	B1N2D15R	B1N3D15R
16	B1N1D16R	B1N2D16R	B1N3D16R
20	B1N1D20R	B1N2D20R	B1N3D20R
25	B1N1D25R	B1N2D25R	B1N3D25R
30	B1N1D30R	B1N2D30R	B1N3D30R
32	B1N1D32R	B1N2D32R	B1N3D32R
35	B1N1D35R	B1N2D35R	B1N3D35R
40	B1N1D40R	B1N2D40R	B1N3D40R

B1A UL 489A Circuit Breakers — 60Vdc, 10 kA

B curve (3-5In)	
Amp	Single-pole
0.5	B1A1B0.5
1	B1A1B1
1.6	B1A1B1.6
2	B1A1B2
3	B1A1B3
4	B1A1B4
5	B1A1B5
6	B1A1B6
8	B1A1B8
10	B1A1B10
13	B1A1B13
15	B1A1B15
16	B1A1B16
20	B1A1B20
25	B1A1B25
30	B1A1B30
32	B1A1B32
35	B1A1B35
40	B1A1B40
50	B1A1B50
60	B1A1B60
63	B1A1B63

C curve (5-10In)	
Amp	Single-pole
0.5	B1A1C0.5
1	B1A1C1
1.6	B1A1C1.6
2	B1A1C2
3	B1A1C3
4	B1A1C4
5	B1A1C5
6	B1A1C6
8	B1A1C8
10	B1A1C10
13	B1A1C13
15	B1A1C15
16	B1A1C16
20	B1A1C20
25	B1A1C25
30	B1A1C30
32	B1A1C32
35	B1A1C35
40	B1A1C40
50	B1A1C50
60	B1A1C60
63	B1A1C63

D curve(10-14In)	
Amp	Single-pole
0.5	B1A1D0.5
1	B1A1D1
1.6	B1A1D1.6
2	B1A1D2
3	B1A1D3
4	B1A1D4
5	B1A1D5
6	B1A1D6
8	B1A1D8
10	B1A1D10
13	B1A1D13
15	B1A1D15
16	B1A1D16
20	B1A1D20
25	B1A1D25
30	B1A1D30
32	B1A1D32
35	B1A1D35
40	B1A1D40

B curve with Ring Tongue Terminals (3-5In)	
Amp	Single-pole
0.5	B1A1B0.5R
1	B1A1B1R
1.6	B1A1B1.6R
2	B1A1B2R
3	B1A1B3R
4	B1A1B4R
5	B1A1B5R
6	B1A1B6R
8	B1A1B8R
10	B1A1B10R
13	B1A1B13R
15	B1A1B15R
16	B1A1B16R
20	B1A1B20R
25	B1A1B25R
30	B1A1B30R
32	B1A1B32R
35	B1A1B35R
40	B1A1B40R

C curve with Ring Tongue Terminals (5-10In)	
Amp	Single-pole
0.5	B1A1C0.5R
1	B1A1C1R
1.6	B1A1C1.6R
2	B1A1C2R
3	B1A1C3R
4	B1A1C4R
5	B1A1C5R
6	B1A1C6R
8	B1A1C8R
10	B1A1C10R
13	B1A1C13R
15	B1A1C15R
16	B1A1C16R
20	B1A1C20R
25	B1A1C25R
30	B1A1C30R
32	B1A1C32R
35	B1A1C35R
40	B1A1C40R

D curve with Ring Tongue Terminals (10-14In)	
Amp	Single-pole
0.5	B1A1D0.5R
1	B1A1D1R
1.6	B1A1D1.6R
2	B1A1D2R
3	B1A1D3R
4	B1A1D4R
5	B1A1D5R
6	B1A1D6R
8	B1A1D8R
10	B1A1D10R
13	B1A1D13R
15	B1A1D15R
16	B1A1D16R
20	B1A1D20R
25	B1A1D25R
30	B1A1D30R
32	B1A1D32R
35	B1A1D35R
40	B1A1D40R

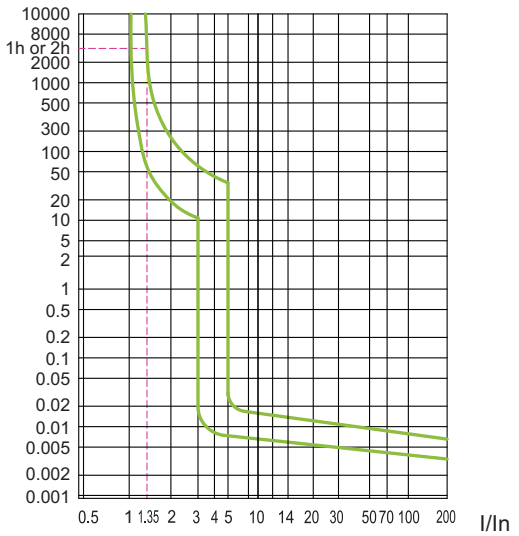
Technical Data

Technical Specification

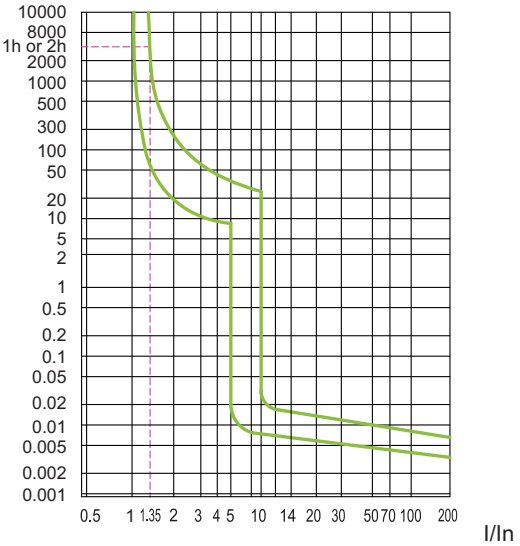
Item \ Model			B1H			B1N			B1A
Conformed standard			UL489						UL489A
Rated operational voltage		V	AC480Y/277			AC240 DC125			DC60
Rated frequency		Hz	50/60						
Rated Current		A	0.5, 1, 1.6, 2, 3, 4, 5, 6, 8, 10, 13, 15, 16, 20			0.5, 1, 1.6, 2, 3, 4, 5, 6, 8, 10, 13, 15, 16, 20, 25, 30, 32, 35, 40, 50, 60, 63			0.5, 1, 1.6, 2, 3, 4, 5, 6, 8, 10, 13, 15, 16, 20, 25, 30, 32, 35, 40, 50, 60, 63
Number of poles			1	2	3	1	2	3	1
Rated insulation voltage		V	500						
Rated impulse withstand voltage		kV	6						
Instantaneous tripping type			B, C, D						
Interrupting	AC120V	kA	10			10			
	AC240		10	10	10	10	10	10	
	AC277		10						
	AC480Y/277			10	10				
	DC48								
	DC60					10	10		10
	DC125						10		
Inverse time-delay over-current release type			Thermal-magnetic						
Service life	Electrical		6000						
	Mechanical		10000						
Protection degree			IP20						
Wire			14~4AWG(Single wire)			14~6AWG/14~10AWG (Two wires)			
Ambient air temperature range			-5℃+40℃						
Pollution degree			Class 3						
Overvoltage category /Mounting			Class III/DIN35 rail						
Altitude			Does not exceed 2000m						
Atmospheric conditions			At +20℃, the relative humidity does not exceed 90%; at +40℃, the relative humidity does not exceed 50%						

UL 489 and UL 489A Miniature Circuit Breakers

Time/ Current Curves



B



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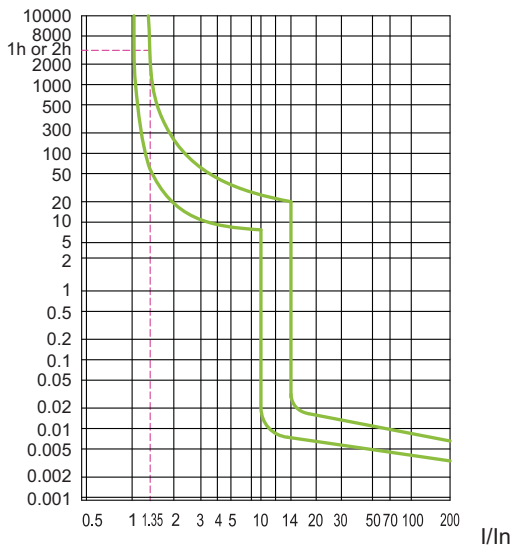
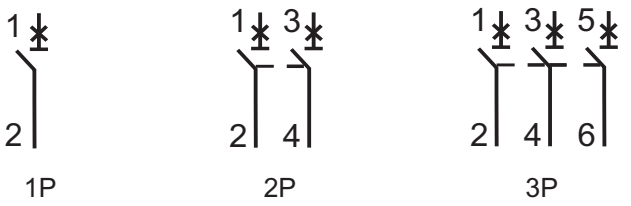


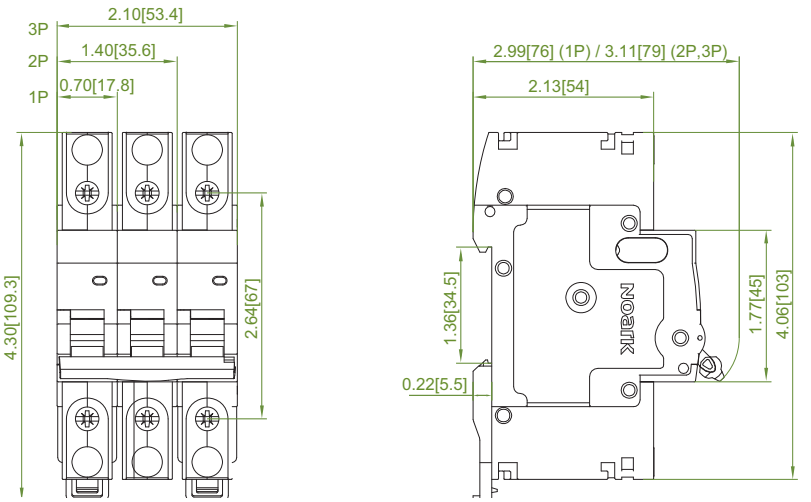
D

Connection Diagram

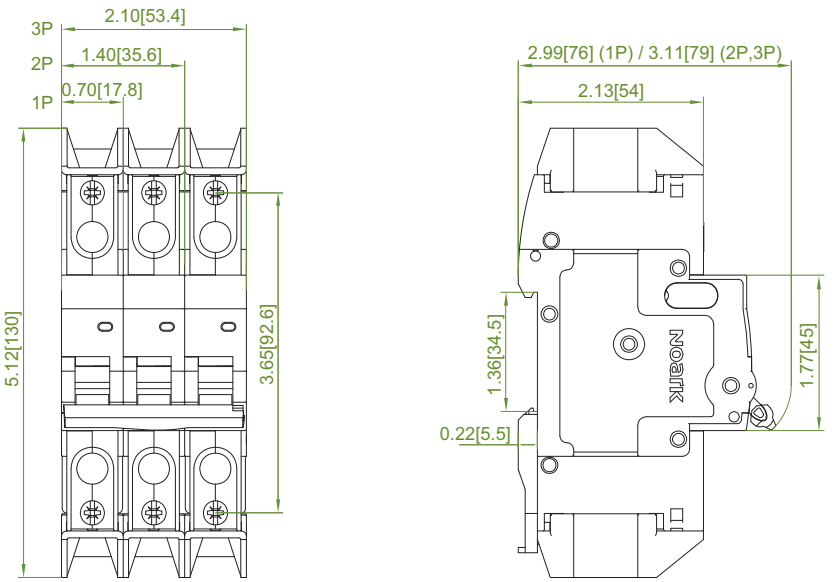


Dimensions

Unit: in. [mm]



B1H/N/A 1P/2P/3P



B1H/N/A with Ring Tongue Terminal 1P/2P/3P

UL 489 and UL 489A Miniature Circuit Breakers Accessories

Catalogue Number Selection Guide

AL31 **11** **N**

Code
Alarm switch for UL 489 and UL489 A breakers

Auxiliary Contact
11: 1NO+1NC

Applicable Device Category
N:UL489/UL489A certified circuit breakers

AX31 **11** **N**

Code
Auxiliary contact for UL 489 and UL489 A breakers

Auxiliary Contact
11: 1NO+1NC

Applicable Device Category
N:UL489/UL489A certified circuit breakers

UVT31 **01** **N** **A**

Code
Undervoltage trip for UL 489 and UL489 A breakers

Auxiliary Contact
01: 1 NC
10: 1 NO
Blank: No auxiliary contact

Applicable Device Category
N:UL489/UL489A certified circuit breakers

Rated Voltage
A: 240Vac
B: 48Vac/dc

SHT31 **11** **N** **A**

Code
Shunt trip for UL 489 and UL489 A breakers

Auxiliary Contact
11: 1 NC + 1 NO
Blank: No auxiliary contact

Applicable Device Category
N:UL489/UL489A certified circuit breakers

Rated Voltage
A: 110-415Vac, 110-130Vdc
B: 48-60Vac/dc
C: 12-24Vac/dc

RTT31 **N**

Code
Ring tongue terminal kit for UL 489 and UL489 A breakers

Applicable Device Category
N: UL489/UL489A certified circuit breakers

UL 489 and UL 489A Miniature Circuit Breakers Accessories

Product Selection

Catlog NO.	Product Description
AL3111N	ALARM SW 1NO+1NC UL 489 and UL 489A

Catlog NO.	Product Description
AX3111N	AUX Contacts 1NO+1NC UL 489 and UL 489A

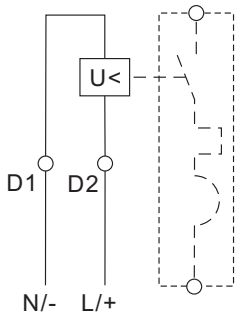
Catlog NO.	Product Description
UVT3101NA	UVT 1NC UL 489 and UL 489A 240Vac
UVT3101NB	UVT 1NC UL 489 and UL 489A 48Vac/dc
UVT3110NA	UVT 1NO UL 489 and UL 489A 240Vac
UVT3110NB	UVT 1N0 UL 489 and UL 489A 48Vac/dc
UVT31NA	UVT UL 489 and UL 489A 240Vac
UVT31NB	UVT UL 489 and UL 489A 48Vac/dc

Catlog NO.	Product Description
SHT3111NA	ST 1NO+1NC UL 489 and UL 489A 110-415Vac/110-130Vdc
SHT3111NB	ST 1NO+1NC UL 489 and UL 489A 48-60Vac/dc
SHT3111NC	ST 1NO+1NC UL 489 and UL 489A 12-24Vac/dc
SHT31NA	ST UL 489 and UL 489A 110-415Vac/110-130Vdc
SHT31NB	ST UL 489 and UL 489A 48-60Vac/dc
SHT31NC	ST UL 489 and UL 489A 12-24Vac/dc

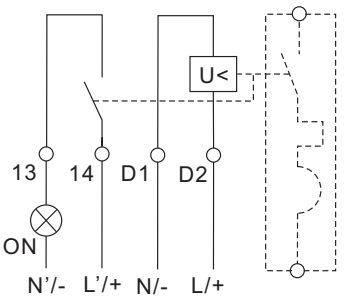
Catlog NO.	Product Description
RTT31N	RTT KIT

UL 489 and UL 489A Miniature Circuit Breakers Accessories

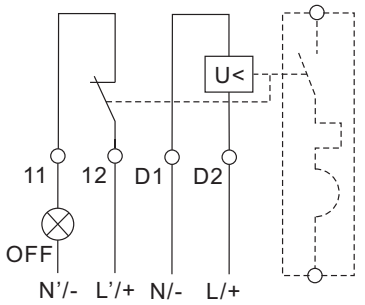
Connection Diagrams



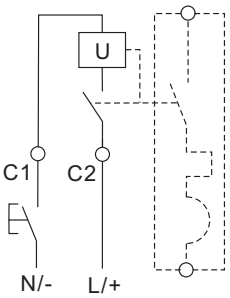
UVT31



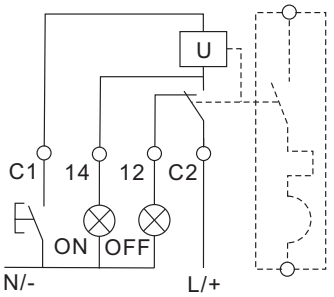
UVT3110



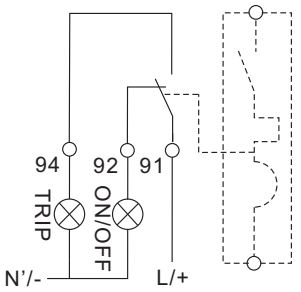
UVT3101



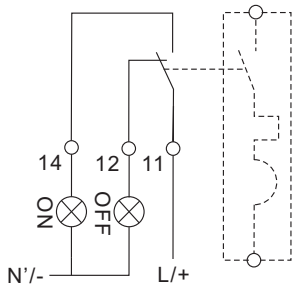
SHT31



SHT3111



AL3111

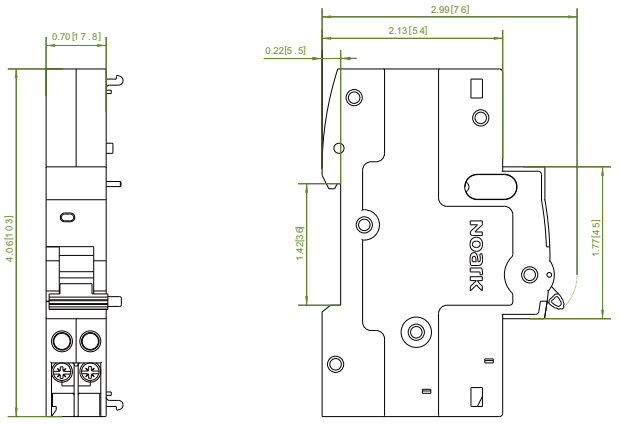


AX3111

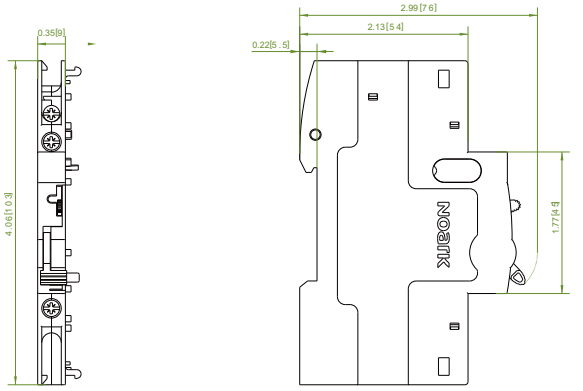
UL 489 and UL 489A Miniature Circuit Breakers Accessories

Dimensions

Unit: in. [mm]



UVT31V, UVT3101N, UVT3110N
SHT31N, SHT3111N



AX3111N, AL3111N

UL1077 Supplementary Protectors

Product Overview

Features

- Complete range of UL1077 listed miniature circuit breakers up to a 63 ampere current rating
- Breakers mount on standard 35 mm DIN rail
- Standard ratings of 5 kA at 480Y/277Vac
- Suitable for supplementary protection
- Thermal-magnetic overcurrent protection
  ——Three levels of short-circuit protection, categorized by B, C and D curves
- Trip-free design — breaker cannot be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- Fulfill UL 1077, IEC 60947-2 Standard
- Field-installable shunt trip and auxiliary switch subsequent mounting
- Module width of only 18 mm (per pole)
- Contact Position Indicator (red / green)
- Possibility for locking the toggle in ON or OFF position

Typical Applications

Supplementary protection

- Control circuits
- Lighting
- Business equipment
- Appliances

UL1077 Supplementary Protectors

Complies with the Latest National and International Standards

Standards — Supplementary Protection
UL 1077/CSA C22.2 No.235; IEC60947-2

Supplementary Protectors are UL Recognized for use in the United States in accordance with NFPA® 70 (NEC). The devices comply with UL 1077 and CSA 22.2 No. 235, meeting the requirements for supplementary protectors. These devices are for international and domestic use, and also comply with IEC 60947-2 and are CE marked.	

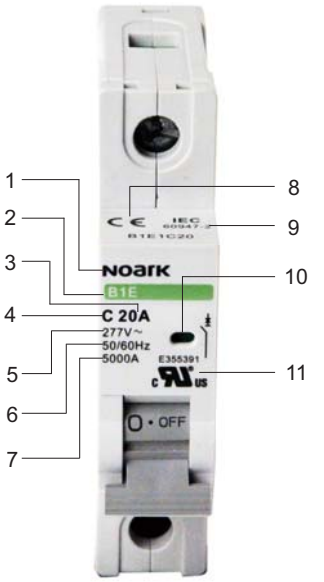
RoHS

These devices are RoHS compliant.	

Printing

Installation options

These branch circuit breakers are available in two terminal configurations: standard box terminals that accept multiple conductors and ring-tongue terminals. All breakers mount on standard 35 mm DIN rail. Bus connectors and feeder terminal facilitate mounting and wiring of multiple miniature circuit breaker arrays in control panel assemblies. Breakers can also be reverse feed.



1. Brand
2. Product type
3. Rated current
4. Tripping curve
5. Rated voltage
6. Frequency
7. Interrupting rating
8. Certification mark
9. Conformed standard
10. Breaker status indicator
11. UL registerred mark

B

Catalogue Numbering System

B1E	1	C	63
Breaker Family	Number of Poles	Tripping Curve	Rated Current
Supplementary protector B1E series	**1:** Single-pole **2:** Two-pole **3:** Three-pole **4:** Four-pole	**B:** 3-5In **C:** 5-10In **D:** 10-14In	**Current rating:** 1A, 1.6A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 13A, 15A, 16A, 20A, 25A, 30A, 32A, 35A, 40A, 50A, 60A, 63A

NOARK

UL1077 Supplementary Protectors

Product Selection

B1E UL 1077 Supplementary Protectors — 480Y/277Vac, 125Vdc; 5 kA

B curve (3-5In)				
Amp	Single-pole	Two-pole	Three-pole	Four-pole
1	B1E1B1	B1E2B1	B1E3B1	B1E4B1
1.6	B1E1B1.6	B1E2B1.6	B1E3B1.6	B1E4B1.6
2	B1E1B2	B1E2B2	B1E3B2	B1E4B2
3	B1E1B3	B1E2B3	B1E3B3	B1E4B3
4	B1E1B4	B1E2B4	B1E3B4	B1E4B4
5	B1E1B5	B1E2B5	B1E3B5	B1E4B5
6	B1E1B6	B1E2B6	B1E3B6	B1E4B6
8	B1E1B8	B1E2B8	B1E3B8	B1E4B8
10	B1E1B10	B1E2B10	B1E3B10	B1E4B10
13	B1E1B13	B1E2B13	B1E3B13	B1E4B13
15	B1E1B15	B1E2B15	B1E3B15	B1E4B15
16	B1E1B16	B1E2B16	B1E3B16	B1E4B16
20	B1E1B20	B1E2B20	B1E3B20	B1E4B20
25	B1E1B25	B1E2B25	B1E3B25	B1E4B25
30	B1E1B30	B1E2B30	B1E3B30	B1E4B30
32	B1E1B32	B1E2B32	B1E3B32	B1E4B32
35	B1E1B35	B1E2B35	B1E3B35	B1E4B35
40	B1E1B40	B1E2B40	B1E3B40	B1E4B40
50	B1E1B50	B1E2B50	B1E3B50	B1E4B50
60	B1E1B60	B1E2B60	B1E3B60	B1E4B60
63	B1E1B63	B1E2B63	B1E3B63	B1E4B63

C curve (5-10In)				
Amp	Single-pole	Two-pole	Three-pole	Four-pole
1	B1E1C1	B1E2C1	B1E3C1	B1E4C1
1.6	B1E1C1.6	B1E2C1.6	B1E3C1.6	B1E4C1.6
2	B1E1C2	B1E2C2	B1E3C2	B1E4C2
3	B1E1C3	B1E2C3	B1E3C3	B1E4C3
4	B1E1C4	B1E2C4	B1E3C4	B1E4C4
5	B1E1C5	B1E2C5	B1E3C5	B1E4C5
6	B1E1C6	B1E2C6	B1E3C6	B1E4C6
8	B1E1C8	B1E2C8	B1E3C8	B1E4C8
10	B1E1C10	B1E2C10	B1E3C10	B1E4C10
13	B1E1C13	B1E2C13	B1E3C13	B1E4C13
15	B1E1C15	B1E2C15	B1E3C15	B1E4C15
16	B1E1C16	B1E2C16	B1E3C16	B1E4C16
20	B1E1C20	B1E2C20	B1E3C20	B1E4C20
25	B1E1C25	B1E2C25	B1E3C25	B1E4C25
30	B1E1C30	B1E2C30	B1E3C30	B1E4C30
32	B1E1C32	B1E2C32	B1E3C32	B1E4C32
35	B1E1C35	B1E2C35	B1E3C35	B1E4C35
40	B1E1C40	B1E2C40	B1E3C40	B1E4C40
50	B1E1C50	B1E2C50	B1E3C50	B1E4C50
60	B1E1C60	B1E2C60	B1E3C60	B1E4C60
63	B1E1C63	B1E2C63	B1E3C63	B1E4C63

D curve (10-14In)				
Amp	Single-pole	Two-pole	Three-pole	Four-pole
1	B1E1D1	B1E2D1	B1E3D1	B1E4D1
1.6	B1E1D1.6	B1E2D1.6	B1E3D1.6	B1E4D1.6
2	B1E1D2	B1E2D2	B1E3D2	B1E4D2
3	B1E1D3	B1E2D3	B1E3D3	B1E4D3
4	B1E1D4	B1E2D4	B1E3D4	B1E4D4
5	B1E1D5	B1E2D5	B1E3D5	B1E4D5
6	B1E1D6	B1E2D6	B1E3D6	B1E4D6
8	B1E1D8	B1E2D8	B1E3D8	B1E4D8
10	B1E1D10	B1E2D10	B1E3D10	B1E4D10
13	B1E1D13	B1E2D13	B1E3D13	B1E4D13
15	B1E1D15	B1E2D15	B1E3D15	B1E4D15
16	B1E1D16	B1E2D16	B1E3D16	B1E4D16
20	B1E1D20	B1E2D20	B1E3D20	B1E4D20
25	B1E1D25	B1E2D25	B1E3D25	B1E4D25
30	B1E1D30	B1E2D30	B1E3D30	B1E4D30
32	B1E1D32	B1E2D32	B1E3D32	B1E4D32
35	B1E1D35	B1E2D35	B1E3D35	B1E4D35
40	B1E1D40	B1E2D40	B1E3D40	B1E4D40
50	B1E1D50	B1E2D50	B1E3D50	B1E4D50
60	B1E1D60	B1E2D60	B1E3D60	B1E4D60
63	B1E1D63	B1E2D63	B1E3D63	B1E4D63

Technical Data

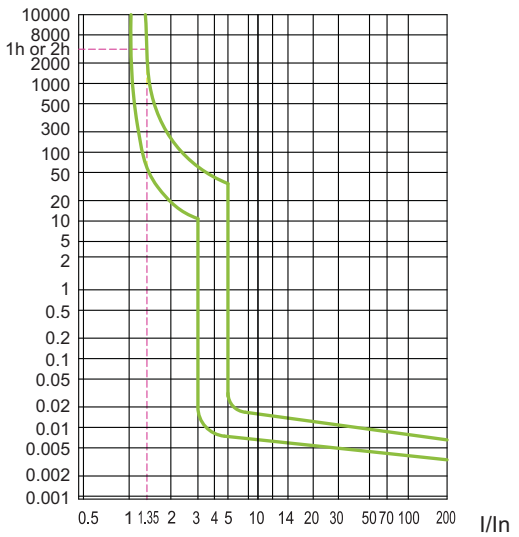
Technical Specification

Item \ Model			B1E			
Conformed standard			UL1077			
Rated operational voltage		V	AC480Y/277 DC125			
Rated frequency		Hz	50/60			
Rated Current		A	1, 1.6, 2, 3, 4, 5, 6, 8, 10, 13, 15, 16, 20, 25, 30, 32, 35, 40, 50, 60, 63			
Number of poles			1	2	3	4
Rated insulation voltage		V	500			
Rated impulse withstand voltage		kV	6			
Instantaneous tripping type			B, C, D			
Interrupting	AC120V	kA	10			
	AC240		10	10	10	10
	AC277		5			
	AC480Y/277			5	5	5
	DC48					
	DC60		10	10		
	DC125			10		
Inverse time-delay over-current release type			Thermal-magnetic			
Service life	Electrical		6000			
	Mechanical		10000			
Protection degree			IP20			
Wire			14~4AWG			
Ambient air temperature range			-5℃+40℃			
Pollution degree			Class 3			
Overvoltage category /Mounting			Class III/DIN35 rail			
Altitude			Does not exceed 2000m			
Atmospheric conditions			At +20℃, the relative humidity does not exceed 90%;at +40℃, the relative humidity does not exceed 50%			

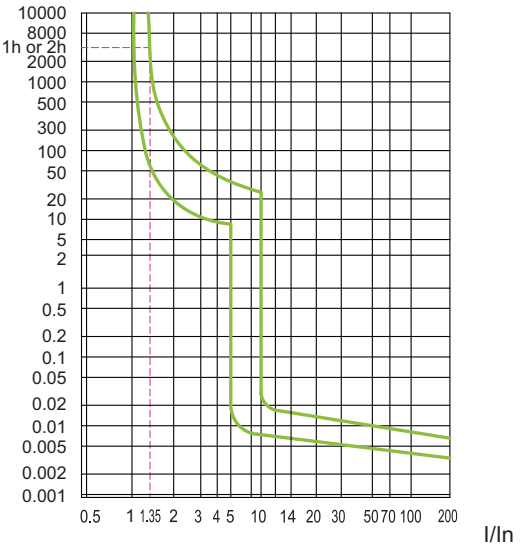
B

UL1077 Supplementary Protectors

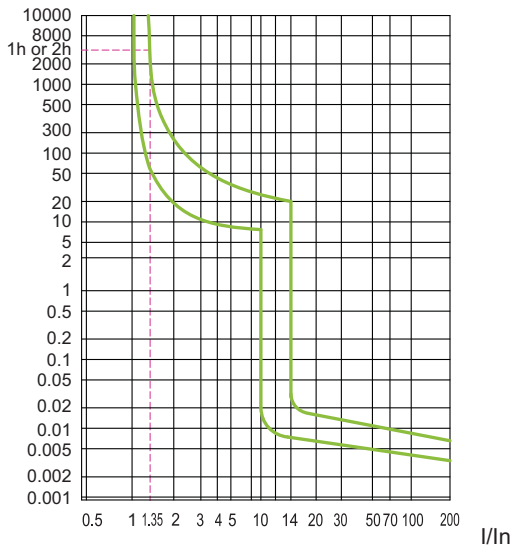
Time/ Current Curves



B

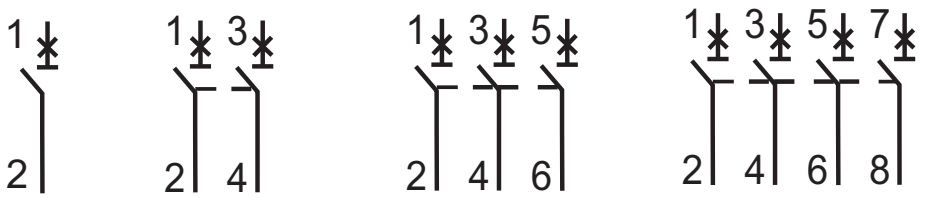


C



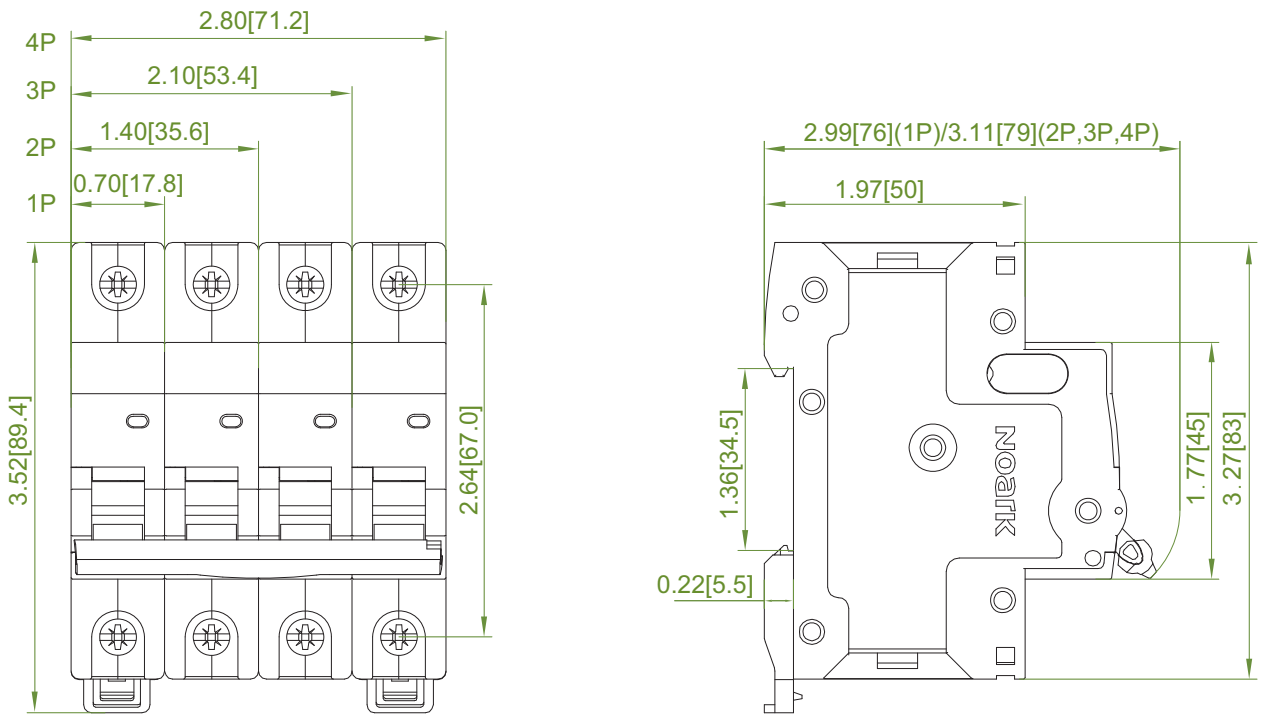
D

Connection Diagrams



Dimensions

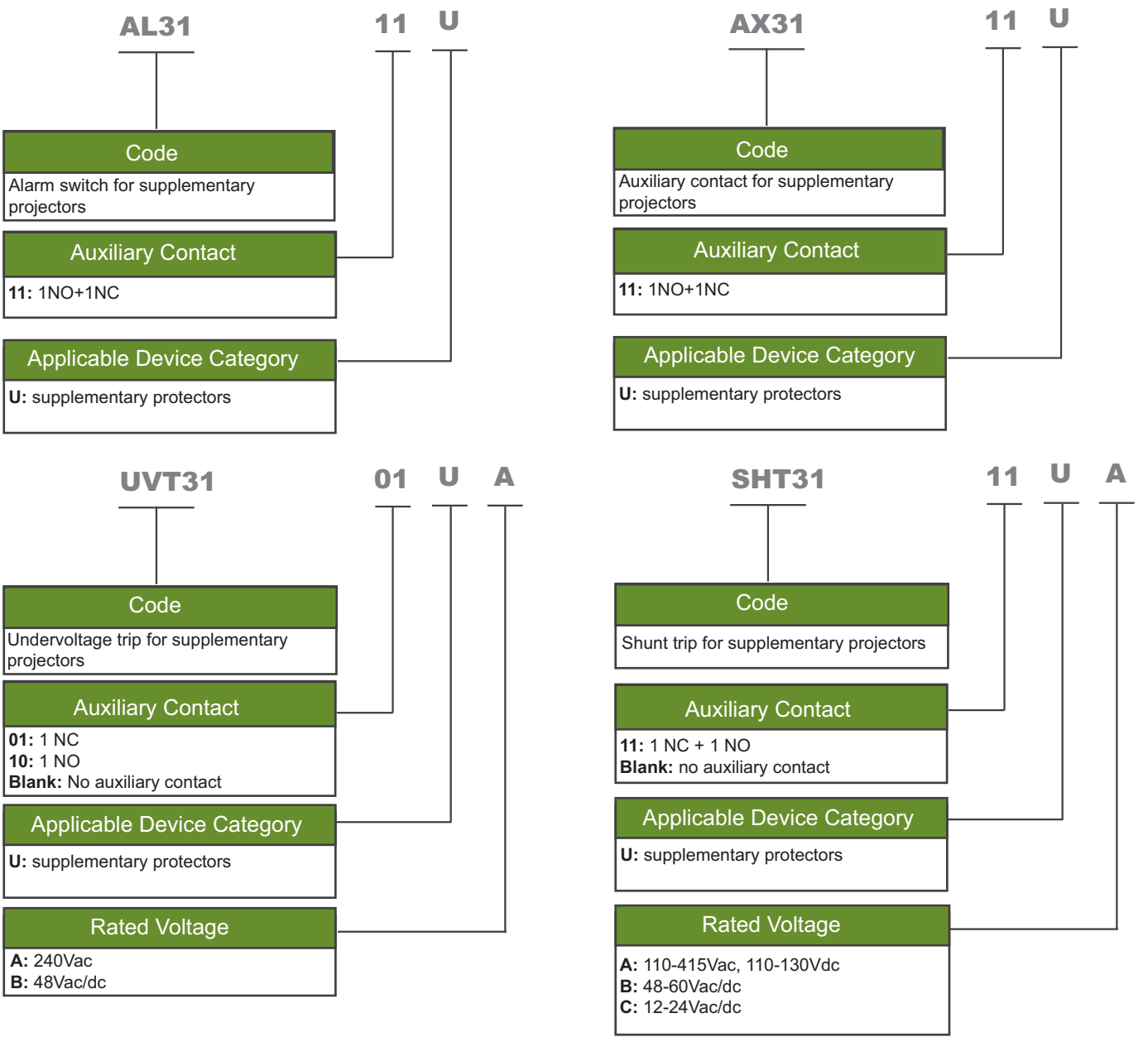
Unit: in. [mm]



B1E 1P/2P/3P/4P

UL1077 Supplementary Protectors Accessories

Catalogue Number Selection Guide



UL1077 Supplementary Protectors Accessories

Product Selection

Catlog NO.	Product Description
AL3111U	ALARM SW 1NO+1NC UL1077

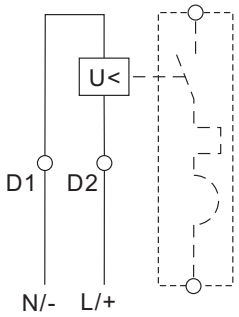
Catlog NO.	Product Description
AX3111U	AUXILIARY SW 1NO+1NC UL1077

Catlog NO.	Product Description
UVT3101UA	UVT 1NC UL 1077 240V
UVT3101UB	UVT 1NC UL 1077 48V
UVT3110UA	UVT 1NO UL 1077 240V
UVT3110UB	UVT 1N0 UL 1077 48V
UVT31UA	UVT UL 1077 240V
UVT31UB	UVT UL 1077 48V

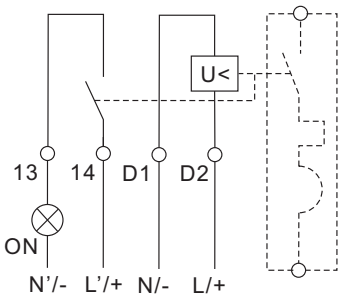
Catlog NO.	Product Description
SHT3111UA	ST 1NO+1NC UL 1077
SHT3111UB	ST 1NO+1NC UL 1077
SHT3111UC	ST 1NO+1NC UL 1077
SHT31UA	ST UL 1077
SHT31UB	ST UL 1077
SHT31UC	ST UL 1077

UL1077 Supplementary Protectors Accessories

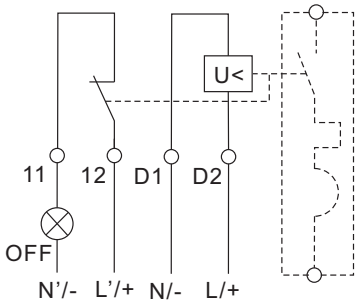
Connection Diagrams



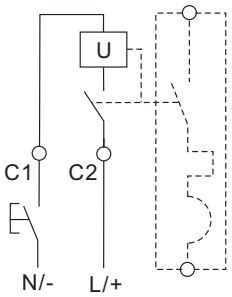
UVT31



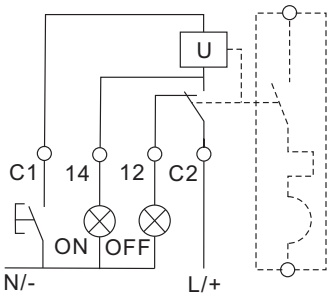
UVT3110



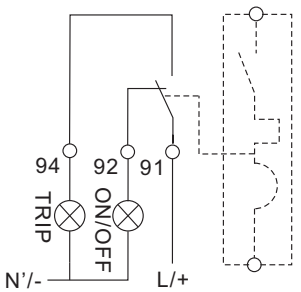
UVT3101



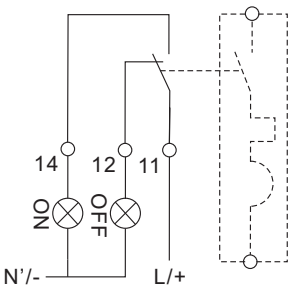
SHT31



SHT3111



AL3111

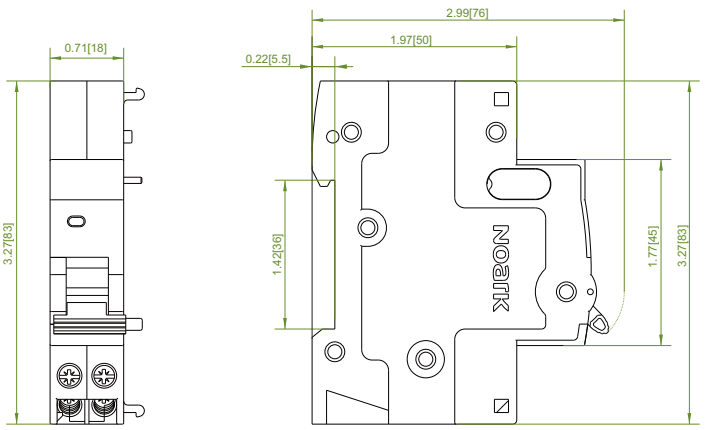


AX3111

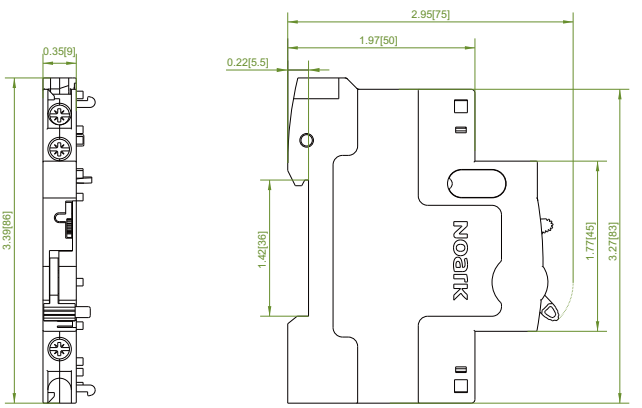
UL1077 Supplementary Protectors Accessories

Dimensions

Unit: in.[mm]



UVT31U, UVT3101U, UVT3110U
SHT31U, SHT3111U



AX3111U, AL3111U

B

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