

**FAZ Circuit Breakers**



*Optimum and Efficient Protection for Every Application*

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**FAZ Circuit Breakers**

**Product Overview**

Optimum product quality, tested reliability and safety stand for best protection of personnel, installations and plant. Eaton’s FAZ DIN rail mountable circuit breaker is designed for use in control panel applications.

**Powerful offering for machine and system builders**

The FAZ is available with B, C, D, K, S, and Z characteristics in accordance with UL 1077, CSA C22.2 No.235 and IEC 60947-2. These devices are CE marked.

**Application Description**

- Supplementary protection
- Control circuits
- Lighting
- Business equipment
- Appliances

**Features**

- Complete range of UL 1077 recognized DIN rail mounted miniature circuit breakers up to 63A current rating
- Standard ratings of 10 kAIC up to 277/480 Vac
- Current limiting design provides fast short-circuit interruption that reduces the let-through energy, which can damage the circuit
- Suitable for supplementary protection
- Thermal-magnetic overcurrent protection
  - Six levels of short-circuit protection, categorized by B, C, D, K, S, and Z curves
- Trip-free design—breaker can not be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- Fulfill UL 1077, CSA C22.2 No.235 and also IEC 60947-2 Standard
- Field-installable shunt trip and auxiliary switch subsequent mounting
- Module width of only 17.7 mm (per pole)
- Contact position indicator (red/green)
- Easy installation on DIN rail
- Possibility for sealing the toggle in ON or OFF position

### Discover These Advanced Features

Breakers install on standard DIN rail

Available in one-, two-, three-, four-pole, 1+N and 3+N models

Color-coded indicator provides breaker status for easy troubleshooting



Captive Posidrive terminal screws with finger and back-of-hand protection (IP20)

Trip-free design; breaker cannot be defeated by holding the handle in the ON position

Breaker information printed on the front of the device for quick identification

### Standards and Certifications

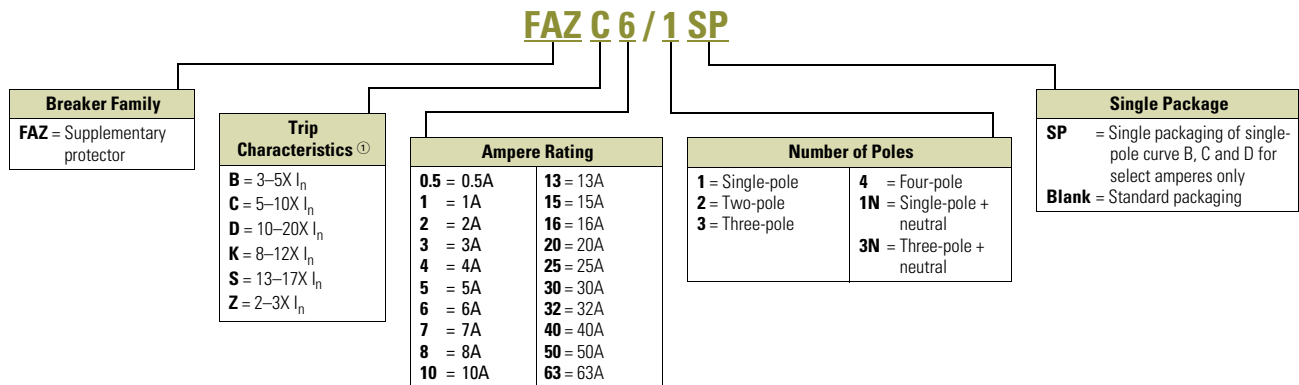
FAZ complies with the latest national and international standards.

- UL 1077, CSA C22.2 No. 235
- Apply to supplementary protectors intended for use as overcurrent, or overvoltage or undervoltage protection within an appliance or other electrical equipment where branch circuit protection is already provided, or is not required

- RoHS compliant
- VDE compliant
  - Devices with B, C, and D curves are VDE compliant
- CCC
  - Devices with B, C, and D curves are CCC compliant
- ABS compliant



### Catalog Number Selection



**Note**

① I<sub>n</sub> = Rated current for instantaneous trip characteristics.

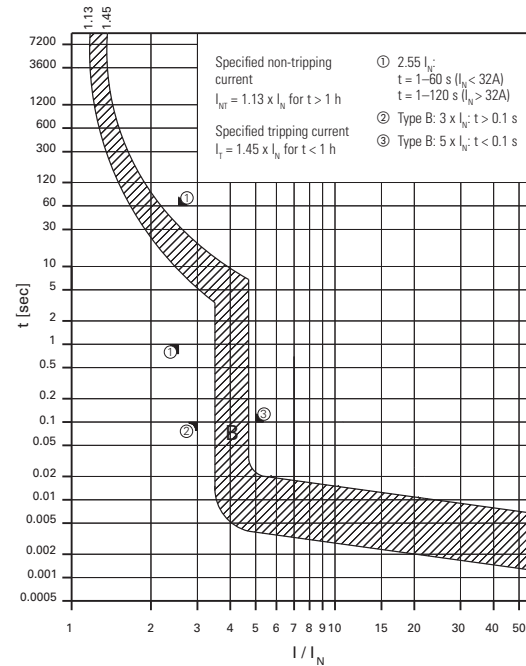
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### Product Selection

#### FAZ B curve (3–5X $I_n$ current rating)

- Designed for resistive or slightly inductive loads
- Response time of instantaneous trip: 3–5X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)
- UL file number 177451

Suitable for applications where protection against low-level short-circuit faults in control wiring is desired. Instantaneous trip is 3–5X continuous rating of device ( $I_n$ ). Applications include PLC wiring, business equipment, lighting, appliances and some motors. Low magnetic trip point.



#### Single-Pole



#### Two-Pole



#### Three-Pole



#### B Curve (3–5X $I_n$ Current Rating)— Designed for Resistive or Slightly Inductive Loads ①

Amperes	Single-Pole ② Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
1	FAZ-B1/1-SP	FAZ-B1/2	FAZ-B1/3
2	FAZ-B2/1-SP	FAZ-B2/2	FAZ-B2/3
3	FAZ-B3/1-SP	FAZ-B3/2	FAZ-B3/3
4	FAZ-B4/1-SP	FAZ-B4/2	FAZ-B4/3
5	FAZ-B5/1-SP	FAZ-B5/2	FAZ-B5/3
6	FAZ-B6/1-SP	FAZ-B6/2	FAZ-B6/3
7	FAZ-B7/1-SP	FAZ-B7/2	FAZ-B7/3
8	FAZ-B8/1-SP	FAZ-B8/2	FAZ-B8/3
10	FAZ-B10/1-SP	FAZ-B10/2	FAZ-B10/3
12	FAZ-B12/1-SP	FAZ-B12/2	FAZ-B12/3
13	FAZ-B13/1-SP	FAZ-B13/2	FAZ-B13/3
15	FAZ-B15/1-SP	FAZ-B15/2	FAZ-B15/3
16	FAZ-B16/1-SP	FAZ-B16/2	FAZ-B16/3
20	FAZ-B20/1-SP	FAZ-B20/2	FAZ-B20/3
25	FAZ-B25/1-SP	FAZ-B25/2	FAZ-B25/3
30	FAZ-B30/1-SP	FAZ-B30/2	FAZ-B30/3
32	FAZ-B32/1-SP	FAZ-B32/2	FAZ-B32/3
40	FAZ-B40/1-SP	FAZ-B40/2	FAZ-B40/3
50	FAZ-B50/1-SP	FAZ-B50/2	FAZ-B50/3
63	FAZ-B63/1-SP	FAZ-B63/2	FAZ-B63/3

#### Four-Pole



#### Single-Pole + Neutral



#### Three-Pole + Neutral



#### B Curve (3–5X $I_n$ Current Rating)— Designed for Resistive or Slightly Inductive Loads, continued ①

Amperes	Four-Pole Catalog Number	Single-Pole + Neutral Catalog Number	Three-Pole + Neutral Catalog Number
1	FAZ-B1/4	FAZ-B1/1N	FAZ-B1/3N
2	FAZ-B2/4	FAZ-B2/1N	FAZ-B2/3N
3	FAZ-B3/4	FAZ-B3/1N	FAZ-B3/3N
4	FAZ-B4/4	FAZ-B4/1N	FAZ-B4/3N
5	FAZ-B5/4	FAZ-B5/1N	FAZ-B5/3N
6	FAZ-B6/4	FAZ-B6/1N	FAZ-B6/3N
7	FAZ-B7/4	FAZ-B7/1N	FAZ-B7/3N
8	FAZ-B8/4	FAZ-B8/1N	FAZ-B8/3N
10	FAZ-B10/4	FAZ-B10/1N	FAZ-B10/3N
12	FAZ-B12/4	FAZ-B12/1N	FAZ-B12/3N
13	FAZ-B13/4	FAZ-B13/1N	FAZ-B13/3N
15	FAZ-B15/4	FAZ-B15/1N	FAZ-B15/3N
16	FAZ-B16/4	FAZ-B16/1N	FAZ-B16/3N
20	FAZ-B20/4	FAZ-B20/1N	FAZ-B20/3N
25	FAZ-B25/4	FAZ-B25/1N	FAZ-B25/3N
30	FAZ-B30/4	FAZ-B30/1N	FAZ-B30/3N
32	FAZ-B32/4	FAZ-B32/1N	FAZ-B32/3N
40	FAZ-B40/4	FAZ-B40/1N	FAZ-B40/3N
50	FAZ-B50/4	FAZ-B50/1N	FAZ-B50/3N
63	FAZ-B63/4	FAZ-B63/1N	FAZ-B63/3N

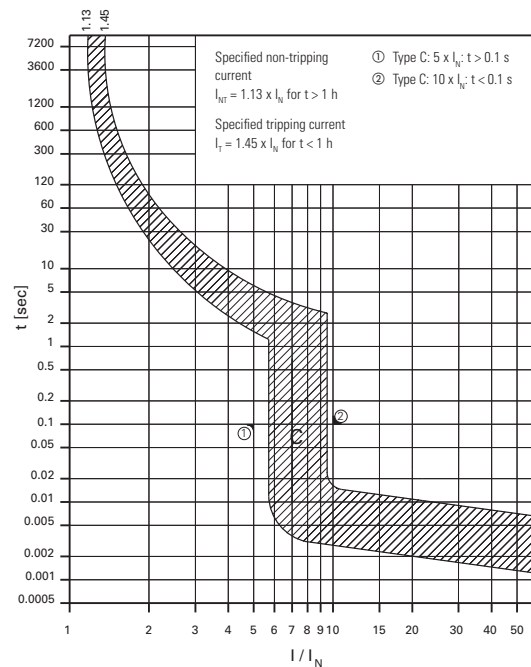
#### Notes

- ① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.
- ② Option for single packaging on single-pole B, C and D curves only; add suffix SP when ordering.

### FAZ C curve (5–10X $I_n$ current rating)

- Designed for inductive loads
- Response time of instantaneous trip: 5–10X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)
- UL file number 177451

Suitable for applications where medium levels of inrush current are expected. Instantaneous trip is 5–10X rating of device ( $I_n$ ). Applications include small transformers, lighting, pilot devices, control circuits and coils. Medium magnetic trip point.



### Single-Pole



### Two-Pole



### Three-Pole



### C Curve (5–10X $I_n$ Current Rating) – Designed Inductive Loads ①

Amperes	Single-Pole ② Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
0.5	FAZ-C0.5/1-SP	FAZ-C0.5/2	FAZ-C0.5/3
1	FAZ-C1/1-SP	FAZ-C1/2	FAZ-C1/3
1.6	FAZ-C1.6/1-SP	FAZ-C1.6/2	FAZ-C1.6/3
2	FAZ-C2/1-SP	FAZ-C2/2	FAZ-C2/3
3	FAZ-C3/1-SP	FAZ-C3/2	FAZ-C3/3
4	FAZ-C4/1-SP	FAZ-C4/2	FAZ-C4/3
5	FAZ-C5/1-SP	FAZ-C5/2	FAZ-C5/3
6	FAZ-C6/1-SP	FAZ-C6/2	FAZ-C6/3
7	FAZ-C7/1-SP	FAZ-C7/2	FAZ-C7/3
8	FAZ-C8/1-SP	FAZ-C8/2	FAZ-C8/3
10	FAZ-C10/1-SP	FAZ-C10/2	FAZ-C10/3
13	FAZ-C13/1-SP	FAZ-C13/2	FAZ-C13/3
15	FAZ-C15/1-SP	FAZ-C15/2	FAZ-C15/3
16	FAZ-C16/1-SP	FAZ-C16/2	FAZ-C16/3
20	FAZ-C20/1-SP	FAZ-C20/2	FAZ-C20/3
25	FAZ-C25/1-SP	FAZ-C25/2	FAZ-C25/3
30	FAZ-C30/1-SP	FAZ-C30/2	FAZ-C30/3
32	FAZ-C32/1-SP	FAZ-C32/2	FAZ-C32/3
40	FAZ-C40/1-SP	FAZ-C40/2	FAZ-C40/3
50	FAZ-C50/1-SP	FAZ-C50/2	FAZ-C50/3
63	FAZ-C63/1-SP	FAZ-C63/2	FAZ-C63/3

### Notes

- ① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.
- ② Option for single packaging on single-pole B, C and D curves only; add suffix SP when ordering.

### Four-Pole



### Single-Pole + Neutral



### Three-Pole + Neutral



### C Curve (5–10X $I_n$ Current Rating) – Designed Inductive Loads, continued ①

Amperes	Four-Pole Catalog Number	Single-Pole + Neutral Catalog Number	Three-Pole + Neutral Catalog Number
0.5	FAZ-C0.5/4	FAZ-C0.5/1N	FAZ-C0.5/3N
1	FAZ-C1/4	FAZ-C1/1N	FAZ-C1/3N
1.6	FAZ-C1.6/4	FAZ-C1.6/1N	FAZ-C1.6/3N
2	FAZ-C2/4	FAZ-C2/1N	FAZ-C2/3N
3	FAZ-C3/4	FAZ-C3/1N	FAZ-C3/3N
4	FAZ-C4/4	FAZ-C4/1N	FAZ-C4/3N
5	FAZ-C5/4	FAZ-C5/1N	FAZ-C5/3N
6	FAZ-C6/4	FAZ-C6/1N	FAZ-C6/3N
7	FAZ-C7/4	FAZ-C7/1N	FAZ-C7/3N
8	FAZ-C8/4	FAZ-C8/1N	FAZ-C8/3N
10	FAZ-C10/4	FAZ-C10/1N	FAZ-C10/3N
13	FAZ-C13/4	FAZ-C13/1N	FAZ-C13/3N
15	FAZ-C15/4	FAZ-C15/1N	FAZ-C15/3N
16	FAZ-C16/4	FAZ-C16/1N	FAZ-C16/3N
20	FAZ-C20/4	FAZ-C20/1N	FAZ-C20/3N
25	FAZ-C25/4	FAZ-C25/1N	FAZ-C25/3N
32	FAZ-C32/4	FAZ-C32/1N	FAZ-C32/3N
40	FAZ-C40/4	FAZ-C40/1N	FAZ-C40/3N
50	FAZ-C50/4	FAZ-C50/1N	FAZ-C50/3N
63	FAZ-C63/4	FAZ-C63/1N	FAZ-C63/3N

# 1.3

## Miniature Circuit Breakers and Supplementary Protectors

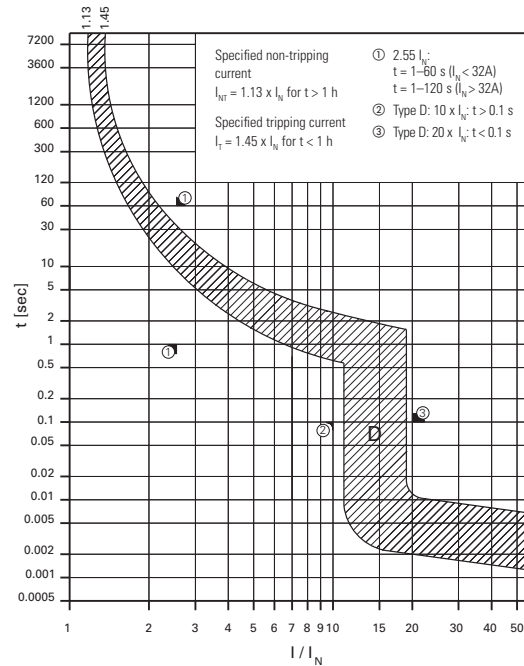
### UL 1077 DIN Rail Supplementary Protectors

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#### FAZ D curve (10–20X $I_n$ current rating)

- Designed for highly inductive loads
- Response time of instantaneous trip: 10–20X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)
- UL file number 177451

Suitable for applications where high levels of inrush current are expected. Instantaneous trip is 10–20X rating of device ( $I_n$ ). The high magnetic trip point prevents nuisance tripping in high inductive applications such as motors, transformers and power supplies.



#### Single-Pole



#### Two-Pole



#### Three-Pole



#### D Curve (10–20X $I_n$ Current Rating)— Designed for Inductive Loads ①

Amperes	Single-Pole ② Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
0.5	FAZ-D0.5/1-SP	FAZ-D0.5/2	FAZ-D0.5/3
1	FAZ-D1/1-SP	FAZ-D1/2	FAZ-D1/3
2	FAZ-D2/1-SP	FAZ-D2/2	FAZ-D2/3
3	FAZ-D3/1-SP	FAZ-D3/2	FAZ-D3/3
4	FAZ-D4/1-SP	FAZ-D4/2	FAZ-D4/3
5	FAZ-D5/1-SP	FAZ-D5/2	FAZ-D5/3
6	FAZ-D6/1-SP	FAZ-D6/2	FAZ-D6/3
7	FAZ-D7/1-SP	FAZ-D7/2	FAZ-D7/3
8	FAZ-D8/1-SP	FAZ-D8/2	FAZ-D8/3
10	FAZ-D10/1-SP	FAZ-D10/2	FAZ-D10/3
13	FAZ-D13/1-SP	FAZ-D13/2	FAZ-D13/3
15	FAZ-D15/1-SP	FAZ-D15/2	FAZ-D15/3
16	FAZ-D16/1-SP	FAZ-D16/2	FAZ-D16/3
20	FAZ-D20/1-SP	FAZ-D20/2	FAZ-D20/3
25	FAZ-D25/1-SP	FAZ-D25/2	FAZ-D25/3
30	FAZ-D30/1-SP	FAZ-D30/2	FAZ-D30/3
32	FAZ-D32/1-SP	FAZ-D32/2	FAZ-D32/3
40	FAZ-D40/1-SP	FAZ-D40/2	FAZ-D40/3
50 ③	FAZ-D50/1-SP	FAZ-D50/2	FAZ-D50/3
63 ③	FAZ-D63/1-SP	FAZ-D63/2	FAZ-D63/3

#### Notes

- ① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.
- ② Option for single packaging on single-pole B, C and D curves only; add suffix SP when ordering.
- ③ IEC 60947-2 only.

#### Four-Pole



#### Single-Pole + Neutral



#### Three-Pole + Neutral



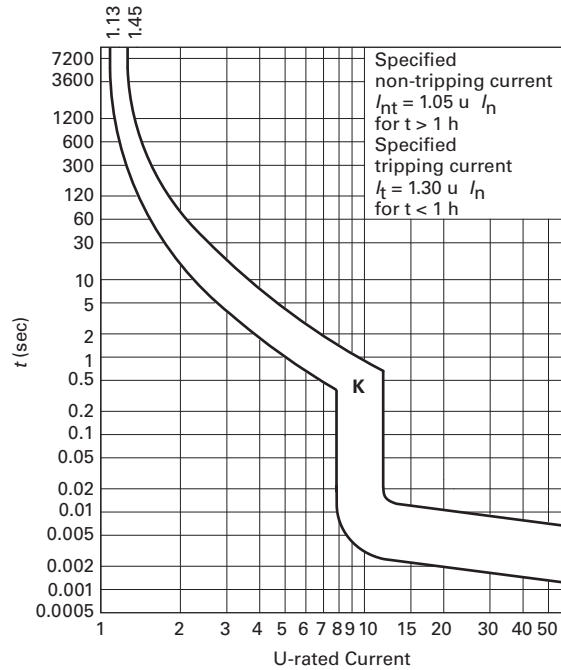
#### D Curve (10–20X $I_n$ Current Rating)— Designed for Inductive Loads, continued ①

Amperes	Four-Pole Catalog Number	Single-Pole + Neutral Catalog Number	Three-Pole + Neutral Catalog Number
0.5	FAZ-D0.5/4	FAZ-D0.5/1N	FAZ-D0.5/3N
1	FAZ-D1/4	FAZ-D1/1N	FAZ-D1/3N
2	FAZ-D2/4	FAZ-D2/1N	FAZ-D2/3N
3	FAZ-D3/4	FAZ-D3/1N	FAZ-D3/3N
4	FAZ-D4/4	FAZ-D4/1N	FAZ-D4/3N
5	FAZ-D5/4	FAZ-D5/1N	FAZ-D5/3N
6	FAZ-D6/4	FAZ-D6/1N	FAZ-D6/3N
7	FAZ-D7/4	FAZ-D7/1N	FAZ-D7/3N
8	FAZ-D8/4	FAZ-D8/1N	FAZ-D8/3N
10	FAZ-D10/4	FAZ-D10/1N	FAZ-D10/3N
13	FAZ-D13/4	FAZ-D13/1N	FAZ-D13/3N
15	FAZ-D15/4	FAZ-D15/1N	FAZ-D15/3N
16	FAZ-D16/4	FAZ-D16/1N	FAZ-D16/3N
20	FAZ-D20/4	FAZ-D20/1N	FAZ-D20/3N
25	FAZ-D25/4	FAZ-D25/1N	FAZ-D25/3N
30	FAZ-D30/4	FAZ-D30/1N	FAZ-D30/3N
32	FAZ-D32/4	FAZ-D32/1N	FAZ-D32/3N
40	FAZ-D40/4	FAZ-D40/1N	FAZ-D40/3N
50 ③	FAZ-D50/4	FAZ-D50/1N	FAZ-D50/3N
63 ③	FAZ-D63/4	FAZ-D63/1N	FAZ-D63/3N

### FAZ K curve (8–12X $I_n$ current rating)

- Designed for motors, transformers and upstream electronics
- Response time of instantaneous trip: 8–12X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)
- UL file number 177451

Suitable for applications where medium levels of inrush current are expected. Instantaneous trip is 8–12X rating of device ( $I_n$ ). Applications include small transformers, lighting, pilot devices, control circuits and coils. Medium magnetic trip point.



#### Single-Pole



#### Two-Pole



#### Three-Pole



### K Curve (8–12X $I_n$ Current Rating) – Designed for Inductive Loads <sup>①②</sup>

Amperes	Single-Pole <sup>③</sup> Catalog Number	Two-Pole Catalog Number	Three-Pole Catalog Number
0.5	FAZ-K0.5/1	FAZ-K0.5/2	FAZ-K0.5/3
1	FAZ-K1/1	FAZ-K1/2	FAZ-K1/3
1.6	FAZ-K1.6/1	FAZ-K1.6/2	FAZ-K1.6/3
2	FAZ-K2/1	FAZ-K2/2	FAZ-K2/3
3	FAZ-K3/1	FAZ-K3/2	FAZ-K3/3
4	FAZ-K4/1	FAZ-K4/2	FAZ-K4/3
6	FAZ-K6/1	FAZ-K6/2	FAZ-K6/3
8	FAZ-K8/1	FAZ-K8/2	FAZ-K8/3
10	FAZ-K10/1	FAZ-K10/2	FAZ-K10/3
13	FAZ-K13/1	FAZ-K13/2	FAZ-K13/3
16	FAZ-K16/1	FAZ-K16/2	FAZ-K16/3
20	FAZ-K20/1	FAZ-K20/2	FAZ-K20/3
25	FAZ-K25/1	FAZ-K25/2	FAZ-K25/3
32	FAZ-K32/1	FAZ-K32/2	FAZ-K32/3
40	FAZ-K40/1	FAZ-K40/2	FAZ-K40/3
50	FAZ-K50/1	FAZ-K50/2	FAZ-K50/3
63	FAZ-K63/1	FAZ-K63/2	FAZ-K63/3

#### Four-Pole



#### Single-Pole + Neutral



#### Three-Pole + Neutral



### K Curve (8–12X $I_n$ Current Rating) – Designed for Inductive Loads, continued <sup>①②</sup>

Amperes	Four-Pole <sup>③</sup> Catalog Number	Single-Pole + Neutral Catalog Number	Three-Pole + Neutral Catalog Number
0.5	FAZ-K0.5/4	FAZ-K0.5/1N	FAZ-K0.5/3N
1	FAZ-K1/4	FAZ-K1/1N	FAZ-K1/3N
1.6	FAZ-K1.6/4	FAZ-K1.6/1N	FAZ-K1.6/3N
2	FAZ-K2/4	FAZ-K2/1N	FAZ-K2/3N
3	FAZ-K3/4	FAZ-K3/1N	FAZ-K3/3N
4	FAZ-K4/4	FAZ-K4/1N	FAZ-K4/3N
6	FAZ-K6/4	FAZ-K6/1N	FAZ-K6/3N
8	FAZ-K8/4	FAZ-K8/1N	FAZ-K8/3N
10	FAZ-K10/4	FAZ-K10/1N	FAZ-K10/3N
13	FAZ-K13/4	FAZ-K13/1N	FAZ-K13/3N
16	FAZ-K16/4	FAZ-K16/1N	FAZ-K16/3N
20	FAZ-K20/4	FAZ-K20/1N	FAZ-K20/3N
25	FAZ-K25/4	FAZ-K25/1N	FAZ-K25/3N
32	FAZ-K32/4	FAZ-K32/1N	FAZ-K32/3N
40	FAZ-K40/4	FAZ-K40/1N	FAZ-K40/3N
50	FAZ-K50/4	FAZ-K50/1N	FAZ-K50/3N
63	FAZ-K63/4	FAZ-K63/1N	FAZ-K63/3N

#### Notes

- ① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.
- ② These breakers are available by special order and may result in additional delivery time.
- ③ Two-piece box order, quantities of 2.



# 1.3

## Miniature Circuit Breakers and Supplementary Protectors

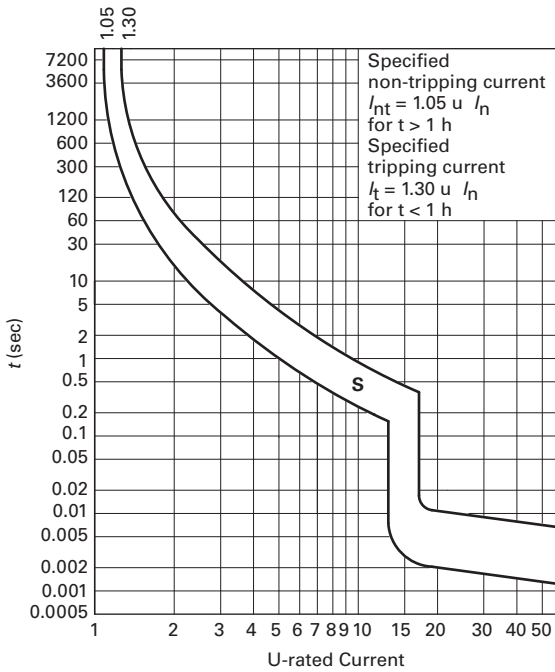
### UL 1077 DIN Rail Supplementary Protectors

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#### FAZ S curve (13–17X $I_n$ current rating)

- Designed for control circuits with high inrush
- Response time of instantaneous trip: 13–17X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)
- UL file number 177451

Suitable for applications where high levels of inrush current are expected. Instantaneous trip is 13–17X rating of device ( $I_n$ ). The high magnetic trip point prevents nuisance tripping in high inductive applications such as motors, transformers and power supplies.



#### Single-Pole



#### Two-Pole



#### S Curve (13–17X $I_n$ Current Rating) — Designed for Inductive Loads ①②

Amperes	Single-Pole ③ Catalog Number	Two-Pole Catalog Number
1	FAZ-S1/1	FAZ-S1/2
2	FAZ-S2/1	FAZ-S2/2
3	FAZ-S3/1	FAZ-S3/2
4	FAZ-S4/1	FAZ-S4/2
6	FAZ-S6/1	FAZ-S6/2
10	FAZ-S10/1	FAZ-S10/2
16	FAZ-S16/1	FAZ-S16/2
20	FAZ-S20/1	FAZ-S20/2
25	FAZ-S25/1	FAZ-S25/2
32	FAZ-S32/1	FAZ-S32/2
40	FAZ-S40/1	FAZ-S40/2

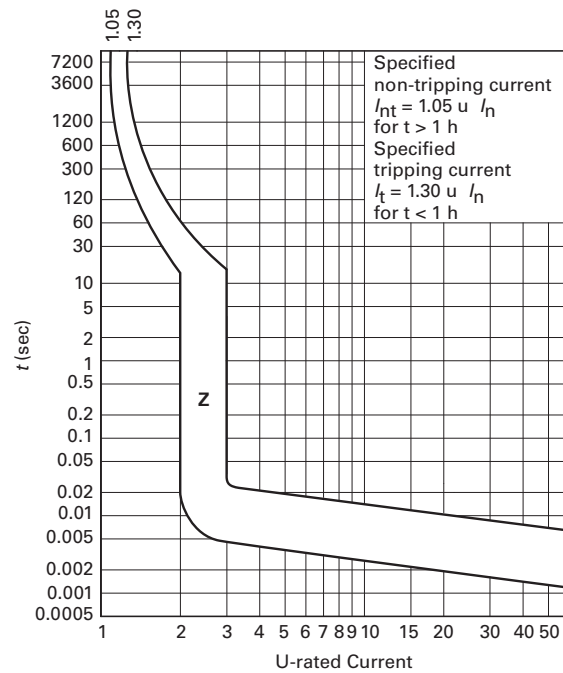
#### Notes

- ① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.
- ② These breakers are available by special order and may result in additional delivery time.
- ③ Two-piece box order, quantities of 2.

### FAZ Z curve (2–3X $I_n$ current rating)

- Designed for protection of electronic devices
- Response time of instantaneous trip: 2–3X  $I_n$  current rating
- UL recognized and CSA Certified as supplementary protectors
- For international and domestic use (conform to IEC 60947-2)

Suitable for applications where low levels of inrush current are expected. Instantaneous trip is 2–3X rating of device ( $I_n$ ). Applications include small transformers, lighting, pilot devices, control circuits and coils. Medium magnetic trip point.



#### Single-Pole



### Z Curve (2–3X $I_n$ Current Rating)— Designed for Inductive Loads ①②

Amperes	Single-Pole ③ Catalog Number	Two-Pole Catalog Number
0.5	FAZ-Z0.5/1	FAZ-Z0.5/2
1	FAZ-Z1/1	FAZ-Z1/2
1.6	FAZ-Z1.6/1	FAZ-Z1.6/2
2	FAZ-Z2/1	FAZ-Z2/2
3	FAZ-Z3/1	FAZ-Z3/2
4	FAZ-Z4/1	FAZ-Z4/2
6	FAZ-Z6/1	FAZ-Z6/2
8	FAZ-Z8/1	FAZ-Z8/2
10	FAZ-Z10/1	FAZ-Z10/2
13	FAZ-Z13/1	FAZ-Z13/2
16	FAZ-Z16/1	FAZ-Z16/2
20	FAZ-Z20/1	FAZ-Z20/2
25	FAZ-Z25/1	FAZ-Z25/2
32	FAZ-Z32/1	FAZ-Z32/2
40	FAZ-Z40/1	FAZ-Z40/2
50	FAZ-Z50/1	FAZ-Z50/2
63	FAZ-Z63/1	FAZ-Z63/2

#### Two-Pole



#### Three-Pole



### Z Curve (2–3X $I_n$ Current Rating)— Designed for Inductive Loads, continued ①②

Amperes	Three-Pole Catalog Number	Four-Pole Catalog Number
0.5	FAZ-Z0.5/3	FAZ-Z0.5/4
1	FAZ-Z1/3	FAZ-Z1/4
1.6	FAZ-Z1.6/3	FAZ-Z1.6/4
2	FAZ-Z2/3	FAZ-Z2/4
3	FAZ-Z3/3	FAZ-Z3/4
4	FAZ-Z4/3	FAZ-Z4/4
6	FAZ-Z6/3	FAZ-Z6/4
8	FAZ-Z8/3	FAZ-Z8/4
10	FAZ-Z10/3	FAZ-Z10/4
13	FAZ-Z13/3	FAZ-Z13/4
16	FAZ-Z16/3	FAZ-Z16/4
20	FAZ-Z20/3	FAZ-Z20/4
25	FAZ-Z25/3	FAZ-Z25/4
32	FAZ-Z32/3	FAZ-Z32/4
40	FAZ-Z40/3	FAZ-Z40/4
50	FAZ-Z50/3	FAZ-Z50/4
63	FAZ-Z63/3	FAZ-Z63/4

#### Four-Pole



#### Notes

① In North America, these switches are UL recognized and CSA Certified as supplementary protection devices. Per the intent of NEC (National Electrical Code), Article 240, and CEC (Canadian Electrical Code), Part 1 C22.1, supplementary breakers cannot be used as a substitute for the branch circuit protective device. They can be used to provide overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided, or is not required.


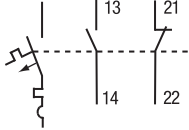


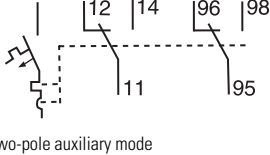
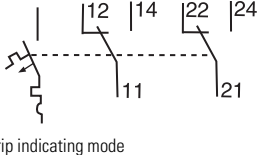




② These breakers are available by special order and may result in additional delivery time.

③ Two-piece box order, quantities of 2.

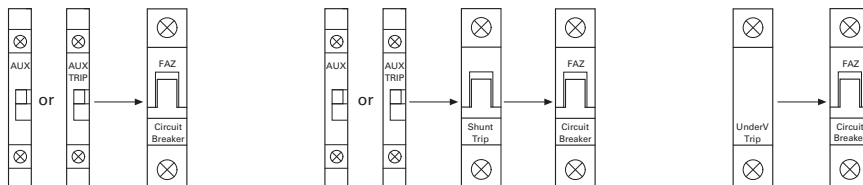


## Accessories

### FAZ Auxiliary Contacts and Voltage Trips

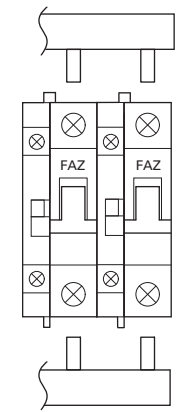
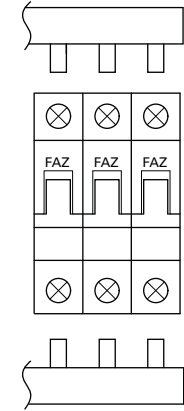
	Circuit Diagram	Description	Rated Operational Voltage	Catalog Number
<b>Standard Auxiliary Contacts</b>				
		<ul style="list-style-type: none"> <li>1NO/1NC</li> <li>Installs on left side of FAZ or shunt trip</li> <li>Max. one per FAZ (1077) device</li> <li>Switches when FAZ is tripped electrically or manually</li> </ul>	230 Vac	<b>FAZ-XHIN11</b>
		<ul style="list-style-type: none"> <li>1 changeover contact</li> <li>Installs on left side of FAZ or shunt trip</li> <li>Max. one per FAZ (1077) device</li> <li>Switches when FAZ is tripped electrically or manually</li> </ul>	230 Vac	<b>FAZ-XHINW1</b>
<b>Auxiliary/Trip Indicating Contact</b>				
	 <p>Two-pole auxiliary mode</p>  <p>Trip indicating mode</p>	<ul style="list-style-type: none"> <li>Small selector screw changes mode</li> <li>Two Form C (changeover) contacts</li> <li>Installs on left side of FAZ or shunt trip</li> <li>Auxiliary contacts switch when FAZ is tripped electrically or manually</li> <li>Trip indicating contact switches only when FAZ is tripped electrically</li> </ul>	230 Vac	<b>FAZ-XAM002</b>
<b>Undervoltage Trip</b>				
		<ul style="list-style-type: none"> <li>Prevents FAZ from operating unless voltage is present</li> <li>Installs on left side of FAZ</li> <li>Includes test button</li> </ul>	115 Vac 230 Vac 400 Vac	<b>FAZ-XUA(115VAC)</b> <b>FAZ-XUA(230VAC)</b> <b>FAZ-XUA(400VAC)</b>
<b>Shunt Trip</b>				
		<ul style="list-style-type: none"> <li>Allows remote trip of FAZ</li> <li>Installs on left side of FAZ</li> </ul>	12–110 Vac 12–60 Vdc 110–415 Vac 110–230 Vdc	<b>FAZ-XAA-C-12-110VAC</b> <b>FAZ-XAA-C-110-415VAC</b>

### Allowable Combinations of Accessories



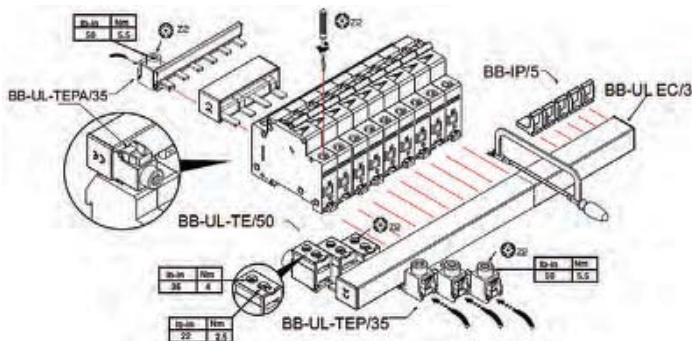
### Busbar System

Description	Rated Operational Current	Number of Poles per Device	Number of Terminals	Catalog Number <sup>①</sup>
<b>Without Auxiliary Contacts</b>				
For connecting FAZ supplementary protectors without auxiliary contacts. May be fed from line or load side.	80A	1	57	<b>BB-UL-18/1P-1M/57</b>
		2	56	<b>BB-UL-18/2P-2M/56</b>
		3	57	<b>BB-UL-18/3P-3M/57</b>
	100A	1	57	<b>BB-UL-25/1P-1M/57</b>
		2	56	<b>BB-UL-25/2P-2M/56</b>
		3	57	<b>BB-UL-25/3P-3M/57</b>
<b>Auxiliary/Trip Indicating Contacts</b>				
For connecting FAZ supplementary protectors with auxiliary contacts. May be fed from line or load side.	80A	1	37	<b>BB-UL-18/1P-1.5M/37</b>
		2	46	<b>BB-UL-18/2P+AS-2.5M/46</b>
		3	48	<b>BB-UL-18/3P+AS-3.5M/48</b>
	100A	1	37	<b>BB-UL-25/1P-1.5M/37</b>
		2	46	<b>BB-UL-25/2P+AS-2.5M/46</b>
		3	48	<b>BB-UL-25/3P+AS-3.5M/48</b>



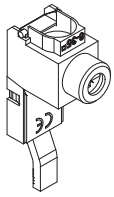
**Note**

① Bus may be center fed for high current capacity.



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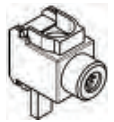
#### Incoming Terminal



#### Pin Type Incoming Supply Terminals

Description	Catalog Number
<ul style="list-style-type: none"> <li>Accommodates conductors from 6–35 mm<sup>2</sup>/#10–2 AWG</li> <li>4–5.5 Nm/35–50 lb-in</li> <li>Two- and three-pole</li> </ul>	<b>BB-UL-TEP/35</b>

#### Incoming Terminal



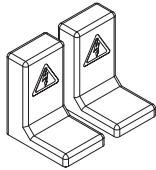
#### Pin Type Incoming Supply Terminals—Single-Phase Only

Description	Catalog Number
<ul style="list-style-type: none"> <li>Accommodates conductors from 6–35 mm<sup>2</sup>/#10–2 AWG</li> <li>4–5.5 Nm/35–50 lb-in</li> </ul>	<b>BB-UL-TEPA/35</b>

#### Protective Accessories

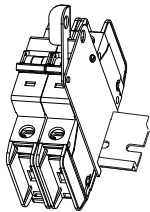
Description	Catalog Number
For covering unused terminals	<b>BB-IP/5</b>

#### Busbar Terminal Cover



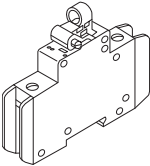
#### Lockoff Device

UL lockoff device	<b>FAZPLOFF</b>
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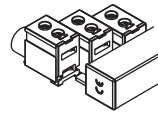


#### Padlock Hasp

<ul style="list-style-type: none"> <li>Prevents reactivation of the device during maintenance</li> <li>Holds one padlock</li> </ul>	<b>Z-IS/SPE-1TE</b>
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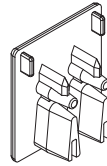
#### Incoming Terminal



#### Bus Incoming Supply Terminals

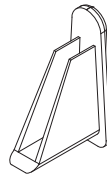
Description	Catalog Number
<ul style="list-style-type: none"> <li>50 mm<sup>2</sup></li> <li>#14–1 AWG</li> <li>75 Deg wire</li> <li>115 A/Y, 480V UL</li> <li>160 A/Y 690V IEC</li> </ul>	<b>BB-UL-TE/50</b>

#### Fork Connector



#### Busbar End Cap

Description	Poles	Catalog Number
Install after cutting busbar	2 and 3	<b>BB-EV-EC/3</b>
Protects end of busbar	1	<b>BB-UL-EC/1</b>



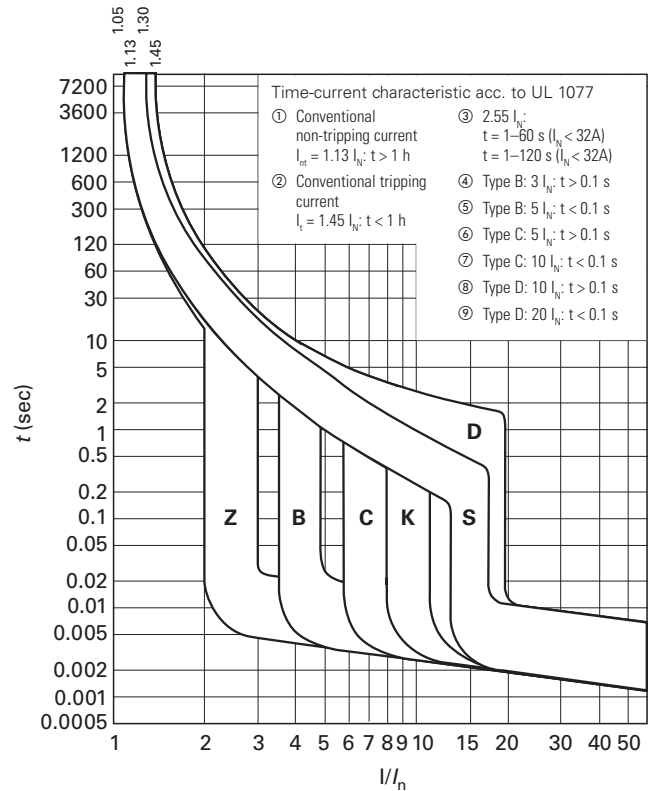
### Technical Data and Specifications

#### Trip Curves Chart

Eaton FAZ supplementary protectors are available with six different tripping characteristics, including Type B, C, D, K, S and Z. Definitions for each trip curve are contained on the ordering pages and can be used to determine the optimal characteristic for your application. For example, low-level short-circuit faults in control wiring, such as PLCs, are best protected by devices with Type B trip characteristics (3–5X continuous rating of the device ( $I_n$ )).

Even though not required by NEC or CEC for supplementary protectors, Eaton’s FAZ devices are current limiting, which means that they interrupt fault currents within one half cycle. Current limiting devices offer superior protection by reducing peak let-through current and energy.

#### Tripping Characteristics



## FAZ Miniature Circuit Breakers Technical Data

Description	B Curve	C Curve	D Curve
<b>Electrical</b>			
Approvals	UR (UL 1077), CSA (CSA 22.2 No. 235), CE		
Standards	IEC/EN 60947-2		
Short-circuit trip response	3–5 $I_n$	5–10 $I_n$	10–20 $I_n$
<b>Supplementary Protectors—UL/CSA</b>			
Current range	1–63A	0.5–63A	0.5–40A
Maximum voltage ratings—UL/CSA			
Single-pole, single-pole + neutral	277 Vac 48 Vdc	277 Vac 48 Vdc	277 Vac 48 Vdc
Two-, three-pole, four-pole and three-pole + neutral	480Y/277 Vac	480Y/277 Vac	480Y/277 Vac
Two poles in series	96 Vdc	96 Vdc	96 Vdc
Thermal tripping characteristics			
Single-pole	1.35 x $I_n$ @ 40°C	1.35 x $I_n$ @ 40°C	1.35 x $I_n$ @ 40°C
Multi-pole	1.45 x $I_n$ @ 40°C	1.45 x $I_n$ @ 40°C	1.45 x $I_n$ @ 40°C
Short-circuit ratings (at max. voltage)			
Single-pole	10 kA (5 kA for 40–63A device)	10 kA (5 kA for 40–63A device)	5 kA
Two-, three-pole	10 kA (5 kA for 40–63A device)	10 kA (5 kA for 40–63A device)	5 kA
Single-pole	10 kA @ 48 Vdc	10 kA @ 48 Vdc	10 kA @ 48 Vdc
Two poles in series	10 kA @ 96 Vdc	10 kA @ 96 Vdc	10 kA @ 96 Vdc
<b>Miniature Circuit Breaker—IEC</b>			
Current range	1–63A	0.5–63A	0.5–63A
Maximum voltage ratings—IEC 68898-1			
Single-pole	230 Vac	230 Vac	230 Vac
Two-, three-pole	230/400 Vac	230/400 Vac	230/400 Vac
Maximum voltage ratings—IEC 60947-2			
Single-pole	240 Vac 48 Vdc	240 Vac 48 Vdc	240 Vac 48 Vdc
Two-, three-pole	240/415 Vac	240/415 Vac	240/415 Vac
Two poles in series	96 Vdc	96 Vdc	96 Vdc
Thermal tripping characteristics			
Single-pole	> 1 hour @ 1.05 x $I_n$	> 1 hour @ 1.05 x $I_n$	> 1 hour @ 1.05 x $I_n$
Multi-pole	< 1 hour @ 1.3 x $I_n$	< 1 hour @ 1.3 x $I_n$	< 1 hour @ 1.3 x $I_n$
Interrupt ratings (at max. voltage)			
IEC 60947-2	15 kA	15 kA	15 kA (10 kA for 50 and 63A)
IEC 60898	10 kA	10 kA	10 kA (50 and 63A not available)
Operational switching capacity	7.5 kA	7.5 kA	7.5 kA
Max. backup fuse [gL/gG]	125A	125A	125A
Rated impulse withstand— $U_{imp}$	4000 Vac	4000 Vac	4000 Vac
Rated insulation voltage— $U_i$	440 Vac	440 Vac	440 Vac
<b>Environmental/General</b>			
Selectivity class	3	3	3
Lifespan (operations)	> 10,000 (1 operation = ON/OFF)	> 10,000 (1 operation = ON/OFF)	> 10,000 (1 operation = ON/OFF)
Shock (IEC 68-2-22)	10g–120 ms	10g–120 ms	10g–120 ms
Operating temperature range	–40 to +167°F (–40 to +75°C)	–40 to +167°F (–40 to +75°C)	–40 to +167°F (–40 to +75°C)
Shipment and short-term storage	–40 to +185°F (–40 to +85°C)	–40 to +185°F (–40 to +85°C)	–40 to +185°F (–40 to +85°C)
Housing material	Nylon	Nylon	Nylon
<b>Mechanical</b>			
Standard front dimension	80 mm		
Device height	80 mm		
Terminal protection	Finger and back-of-hand proof to IEC 536		
Mounting width per pole	17.5 mm		
Mounting	IEC/EN 60715 top-hat rail		
Degree of protection	IP20		
Terminals top and bottom	Twin-purpose terminals		
Supply connection	Line or load side		
Terminal capacity [mm <sup>2</sup> ]	1 x 25 (AWG 4–18)/2 x 10 (AWG 8–18)	1 x 25 (AWG 4–18)/2 x 10 (AWG 8–18)	1 x 25 (AWG 4–18)/2 x 10 (AWG 8–18)
Torque	2.4 Nm	2.4 Nm	2.4 Nm
Imperial torque	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)
Thickness of busbar material	0.8–2 mm		
Mounting position	As required		

### FAZ Miniature Circuit Breakers Technical Data, continued

Description	K Curve	S Curve	Z Curve
<b>Electrical</b>			
Approvals	UR (UL 1077), CSA (CSA 22.2 No. 235), CE		
Standards	IEC/EN 60947-2, E177451, 204453		
Short-circuit trip response	8–12 $I_n$	13–17 $I_n$	2–3 $I_n$
<b>Supplementary Protectors—UL/CSA</b>			
Current range	0.5–63A	0.5–40A	1–63A
Maximum voltage ratings—UL/CSA			
Single-pole, single-pole + neutral	277 Vac 48 Vdc	277 Vac 48 Vdc	277 Vac 48 Vdc
Two-, three-, four-pole and three-pole + neutral	480Y/277 Vac	480Y/277 Vac	480Y/277 Vac
Two poles in series	96 Vdc	96 Vdc	96 Vdc
Thermal tripping characteristics			
Single-pole	1.35 x $I_n$ @ 40°C	1.35 x $I_n$ @ 40°C	1.35 x $I_n$ @ 40°C
Multi-pole	1.45 x $I_n$ @ 40°C	1.45 x $I_n$ @ 40°C	1.45 x $I_n$ @ 40°C
Short-circuit ratings (at max. voltage)			
Single-pole	5 kA @ 277 Vac	5 kA @ 277 Vac	5 kA @ 277 Vac
Single-pole + neutral	5 kA @ 277 Vac	5 kA @ 277 Vac	5 kA @ 277 Vac
Two-, three-, four-pole	5 kA @ 480Y/277 Vac	5 kA @ 480Y/277 Vac	5 kA @ 480Y/277 Vac
Two poles in series	—	—	—
<b>Miniature Circuit Breaker—IEC</b>			
Current range	0.5–63A	0.5–40A	1–63A
Maximum voltage ratings—IEC 60947-2			
Single-pole, single-pole + neutral	240 Vac	240 Vac	240 Vac
Two-, three-, four-pole, three-pole + neutral	240/415 Vac	240/415 Vac	240/415 Vac
Thermal tripping characteristics			
Single-pole	> 1 Hour @ 1.05 x $I_n$	> 1 Hour @ 1.05 x $I_n$	> 1 Hour @ 1.05 x $I_n$
Multi-pole	< 1 Hour @ 1.3 x $I_n$	< 1 Hour @ 1.3 x $I_n$	< 1 Hour @ 1.3 x $I_n$
Interrupt ratings (at max. voltage)			
IEC 60947-2	15 kA	10 kA	10 kA
Operational switching capacity	7.5 kA	7.5 kA	7.5 kA
Max. backup fuse [gL/gG]	125A	125A	125A
Rated impulse withstand— $U_{imp}$	4000 Vac	4000 Vac	4000 Vac
Rated insulation voltage— $U_i$	440 Vac	440 Vac	440 Vac
<b>Environmental/General</b>			
Selectivity class	3	3	3
Lifespan (operations)	> 10,000 (1 operation = ON/OFF)	> 10,000 (1 operation = ON/OFF)	> 10,000 (1 operation = ON/OFF)
Shock (IEC 68-2-22)	10g–120 ms	10g–120 ms	10g–120 ms
Operating temperature range	–40 to +167°F (–40 to +75°C)	–40 to +167°F (–40 to +75°C)	–40 to +167°F (–40 to +75°C)
Shipment and short-term storage	–40 to +185°F (–40 to +85°C)	–40 to +185°F (–40 to +85°C)	–40 to +185°F (–40 to +85°C)
Housing material	Nylon	Nylon	Nylon
<b>Mechanical</b>			
Standard front dimension			
Device height	80 mm	80 mm	80 mm
Terminal protection	Finger and back-of-hand proof to IEC 536	Finger and back-of-hand proof to IEC 536	Finger and back-of-hand proof to IEC 536
Mounting width per pole	17.7 mm	17.7 mm	17.7 mm
Mounting	IEC/EN 60715 top-hat rail		
Degree of protection	IP20		
Terminals top and bottom	Twin-purpose terminals		
Supply connection	Line or load side		
Terminal capacity [mm <sup>2</sup> ]	1 x 25 (AWG 4–18) / 2 x 10 (AWG 8–18)	1 x 25 (AWG 4–18) / 2 x 10 (AWG 8–18)	1 x 25 (AWG 4–18) / 2 x 10 (AWG 8–18)
Torque	2.4 Nm	2.4 Nm	2.4 Nm
Imperial torque	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)	21 lb-in (AWG 18–12), 25 lb-in (AWG 10–8), 36 lb-in (AWG 6–4)
Thickness of busbar material	0.8–2 mm	0.8–2 mm	0.8–2 mm
Mounting position	As required		



# 1.3

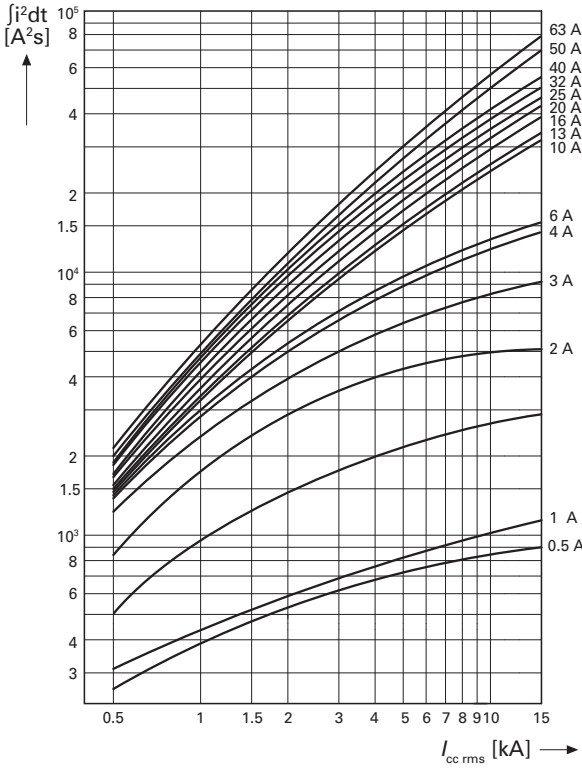
## Miniature Circuit Breakers and Supplementary Protectors

UL 1077 DIN Rail Supplementary Protectors

1

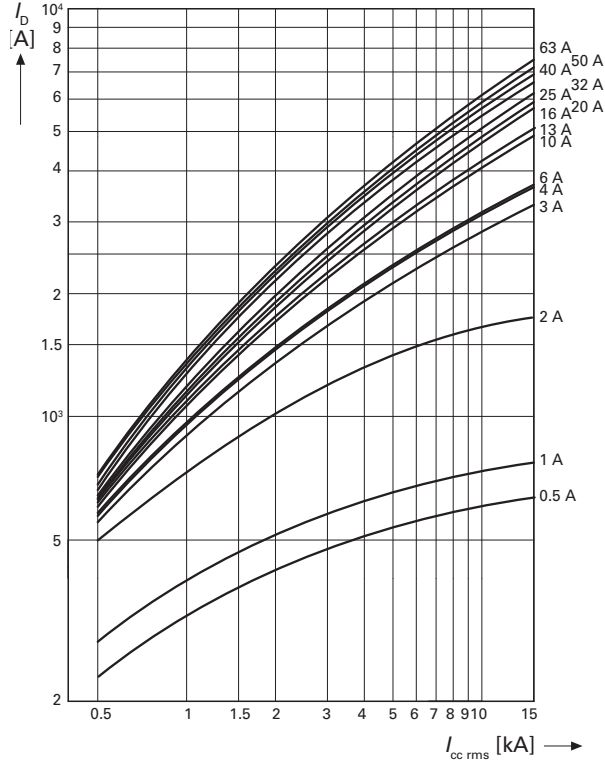
### Let-Through Energy $I^2t$

#### Characteristic B and C

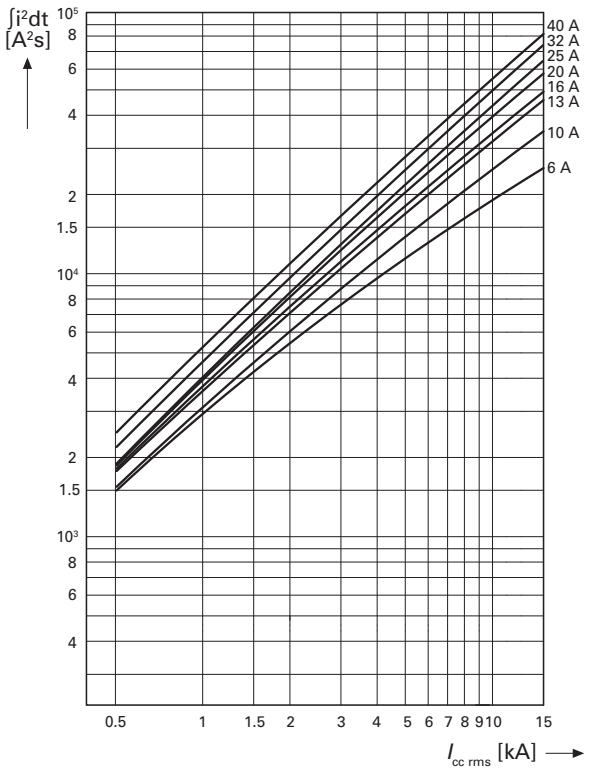


### Let-Through Energy $I_D$

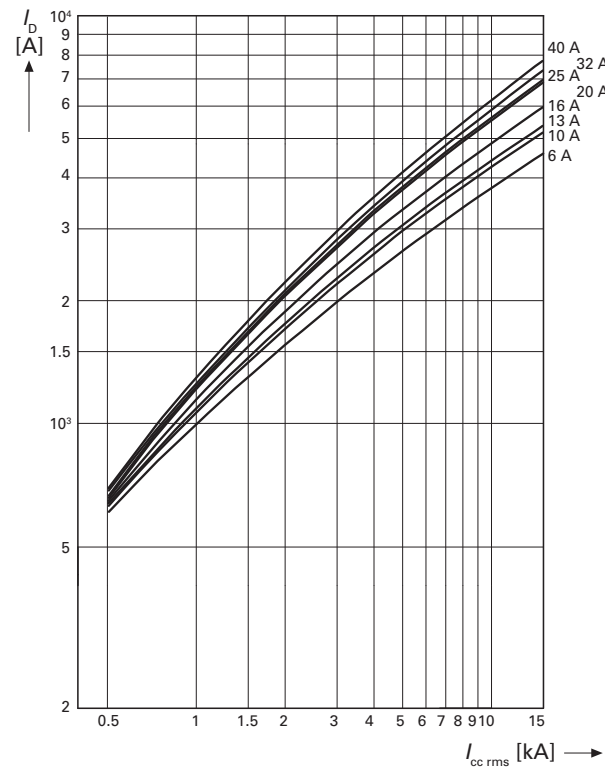
#### Characteristic B and C



#### Characteristic D

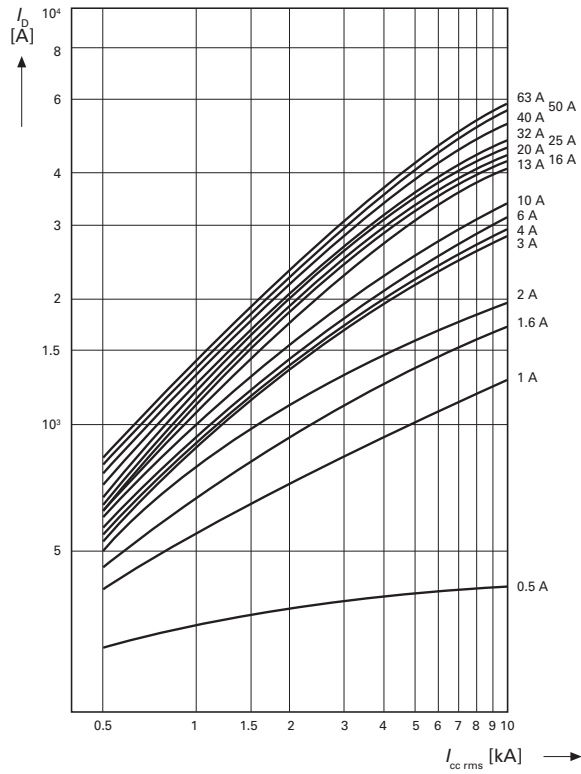


#### Characteristic D

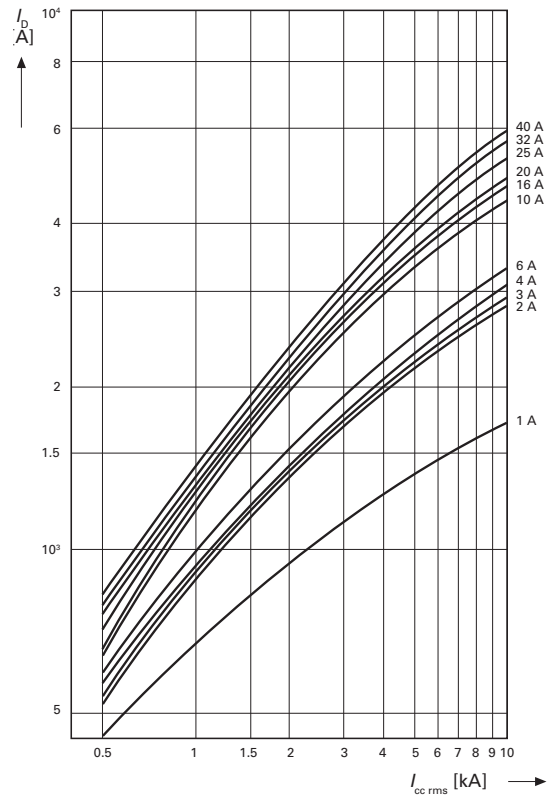


### Let-Through Energy $I^2t$

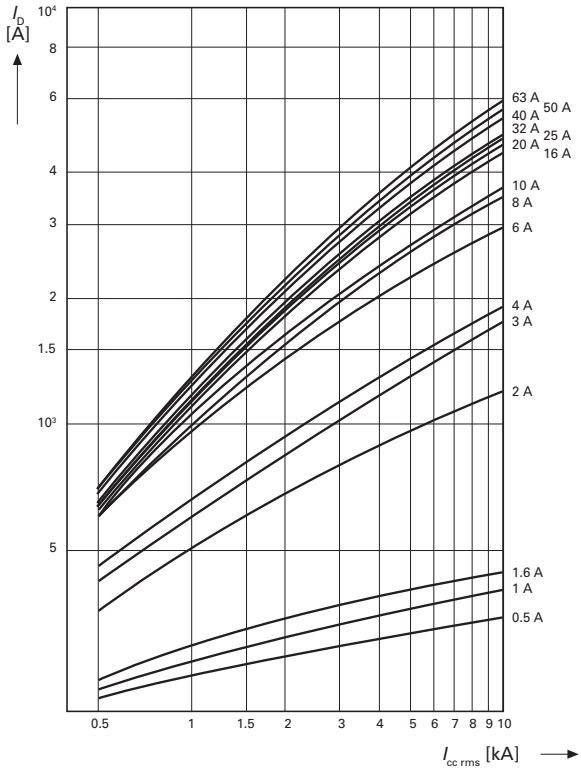
#### Characteristic K



#### Characteristic S



#### Characteristic Z



# 1.3

## Miniature Circuit Breakers and Supplementary Protectors

### UL 1077 DIN Rail Supplementary Protectors

1

#### Influence of the Ambient Temperature on the Thermal Tripping Behavior

Corrected values of the rated current dependent on the ambient temperature

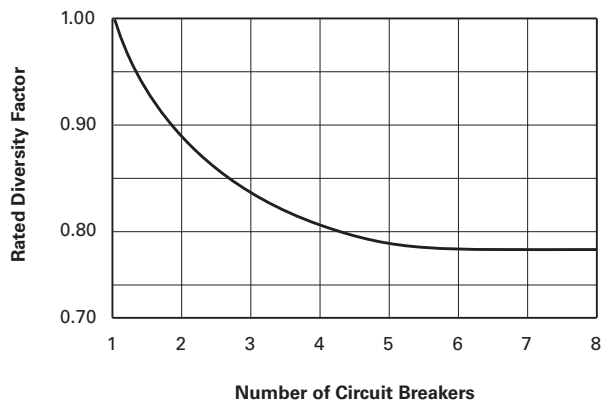
$I_n$ (A)	Ambient Temperature T																
	-40°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C
0.16	0.20	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
0.25	0.32	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
0.50	0.64	0.62	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41
0.75	0.96	0.93	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66	0.65	0.64	0.62
1.00	1.30	1.20	1.20	1.20	1.10	1.10	1.00	1.00	0.99	0.97	0.95	0.93	0.90	0.89	0.87	0.85	0.83
1.50	1.90	1.90	1.80	1.70	1.70	1.60	1.60	1.50	1.50	1.50	1.40	1.40	1.40	1.30	1.30	1.30	1.20
1.60	2.00	2.00	1.90	1.90	1.80	1.70	1.70	1.60	1.60	1.50	1.50	1.50	1.40	1.40	1.40	1.40	1.30
2.00	2.60	2.50	2.40	2.30	2.20	2.20	2.10	2.00	2.00	1.90	1.90	1.90	1.80	1.80	1.70	1.70	1.70
2.50	3.20	3.10	3.00	2.90	2.80	2.70	2.60	2.50	2.50	2.40	2.40	2.30	2.30	2.20	2.20	2.10	2.10
3.00	3.80	3.70	3.60	3.50	3.40	3.30	3.10	3.00	3.00	2.90	2.80	2.80	2.70	2.70	2.60	2.50	2.50
3.50	4.50	4.40	4.20	4.10	3.90	3.80	3.70	3.50	3.40	3.40	3.30	3.20	3.20	3.10	3.00	3.00	2.90
4.00	5.10	5.00	4.80	4.70	4.50	4.30	4.20	4.00	3.90	3.90	3.80	3.70	3.60	3.50	3.50	3.40	3.30
5.00	6.40	6.20	6.00	5.80	5.60	5.40	5.20	5.00	4.90	4.80	4.70	4.60	4.50	4.40	4.30	4.20	4.10
6.00	7.70	7.50	7.20	7.00	6.70	6.50	6.30	6.00	5.90	5.80	5.70	5.60	5.40	5.30	5.20	5.10	5.00
7.00	9.00	8.70	8.40	8.20	7.80	7.60	7.40	7.00	6.90	6.80	6.70	6.50	6.30	6.20	6.10	6.00	5.80
8.00	10.20	9.90	9.60	9.30	9.00	8.70	8.40	8.00	7.90	7.70	7.60	7.40	7.20	7.10	6.90	6.80	6.60
10.00	13.00	12.00	12.00	12.00	11.00	11.00	10.00	10.00	9.90	9.70	9.50	9.30	9.00	8.90	8.70	8.50	8.30
12.00	15.00	15.00	14.00	14.00	13.00	13.00	13.00	12.00	12.00	12.00	11.00	11.00	11.00	11.00	10.00	10.00	10.00
13.00	17.00	16.00	16.00	15.00	15.00	14.00	14.00	13.00	13.00	13.00	12.00	12.00	12.00	12.00	11.00	11.00	11.00
15.00	19.00	19.00	18.00	17.00	17.00	16.00	16.00	15.00	15.00	15.00	14.00	14.00	14.00	13.00	13.00	13.00	12.00
16.00	20.00	20.00	19.00	19.00	18.00	17.00	17.00	16.00	16.00	15.00	15.00	15.00	14.00	14.00	14.00	14.00	13.00
20.00	26.00	25.00	24.00	23.00	22.00	22.00	21.00	20.00	20.00	19.00	19.00	19.00	18.00	18.00	17.00	17.00	17.00
25.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	25.00	24.00	24.00	23.00	23.00	22.00	22.00	21.00	21.00
32.00	41.00	40.00	38.00	37.00	36.00	35.00	33.00	32.00	32.00	31.00	30.00	30.00	29.00	28.00	28.00	27.00	26.00
35.00	45.00	43.00	41.00	41.00	38.00	38.00	36.00	35.00	35.00	34.00	33.00	32.00	32.00	32.00	30.00	29.00	29.00
40.00	51.00	50.00	48.00	47.00	45.00	43.00	42.00	40.00	39.00	39.00	38.00	37.00	36.00	35.00	35.00	34.00	33.00
50.00	64.00	62.00	60.00	58.00	56.00	54.00	52.00	50.00	49.00	48.00	47.00	46.00	45.00	44.00	43.00	42.00	41.00
63.00	81.00	78.00	76.00	73.00	71.00	68.00	66.00	63.00	62.00	61.00	60.00	58.00	57.00	56.00	55.00	53.00	52.00

#### Influence of the Mains Frequency

Influence of the mains frequency on the tripping behavior  $I_{MA}$  of the instantaneous release

$I_{MA}(f)/I_{MA}(50\text{ Hz})$ [%]	Mains Frequency f [Hz]						
	16 2/3	50	60	100	200	300	400
	91	100	101	106	115	134	141

#### Load Carrying Capacity of Adjoining Miniature Circuit Breakers



## Accessories Technical Data

Description	FAZ-XHIN FAZ-XAM002	FAZ-XAA-C	FAZ-XUA
<b>Electrical</b>			
Contact function	1A + 1B 2 C/O	—	—
Rated operational voltage $U_n$	250 Vac	—	115 Vac 230 Vac 400 Vac
Voltage range	—	12–110 Vac 12–60 Vdc	—
Voltage range	—	110–415 Vac 110–230 Vdc	—
Closing threshold [ $\times U_n$ ]	—	—	0.8
Tripping threshold [ $\times U_n$ ]	—	—	0.5
Rated frequency $f$	50/60 Hz	50/60 Hz	50/60 Hz
General use (UL/CSA) AC—230/240 Vac DC—110/120 Vdc	2/2A 0.5/0.5A	— —	— —
Pilot duty	A600/Q600	—	—
Conventional free air thermal current $I_{th}$	4A	—	—
Rated operational current AC-13 $I_g$ AC-15 $I_g$ DC-13 $I_g$	3A (250 Vac) 2A (250 Vac) 0.5A (110 Vdc)	— — —	— — —
Rated insulation voltage $U_i$	250 Vac	—	—
Minimum operating voltage per contract $U_{min}$	5 Vdc	—	—
Rated impulse withstand voltage (1.2/50 $\mu$ ) $U_{imp}$	2.5 kV	—	—
Rated conditional short-circuit current with 6A backup fuse $I_{SC}$	1 kA	—	—
Max. admissible backup fuse	4A gL	—	—
<b>Mechanical</b>			
Standard front dimension	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Mounting width	8.8 mm	17.6 mm	17.8 mm
Mounting	On MCB	IEC/EN 60715 top-hat rail	IEC/EN 60715 top-hat rail
Degree of protection enclosed	IP40	IP40	IP40
Terminal protection	Protection against electric shock to IEC 536	Protection against electric shock to IEC 536	Protection against electric shock to IEC 536
Terminals	Lift terminals	Twin-purpose terminals	Twin-purpose terminals
Terminal capacity Solid Flexible	0.5–2.5 mm <sup>2</sup> 0.5–2.5 mm <sup>2</sup>	1–2.5 mm <sup>2</sup> 1–2.5 mm <sup>2</sup>	2 x (1–2.5) mm <sup>2</sup> 2 x (1–2.5) mm <sup>2</sup>
Tightening torque of terminal screws	0.8–1.0 Nm (7–9 lb-in)	2.4 Nm (21 lb-in)	0.8 Nm (7 lb-in)

# 1.3

## Miniature Circuit Breakers and Supplementary Protectors

### UL 1077 DIN Rail Supplementary Protectors

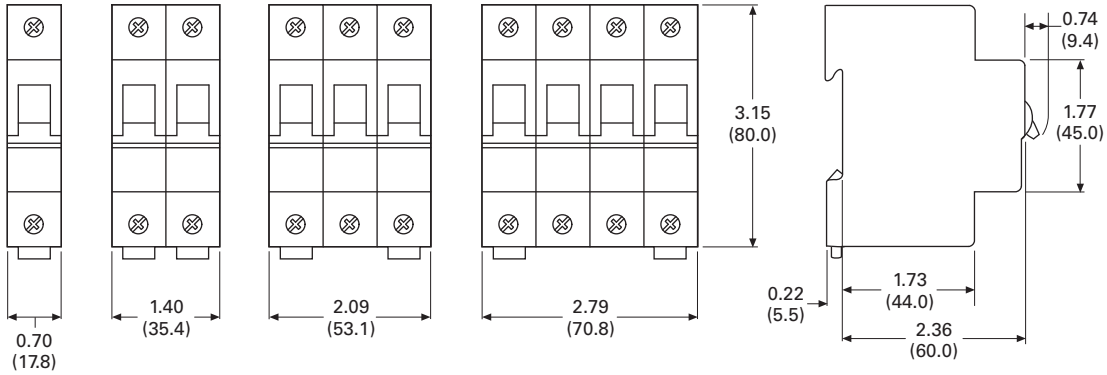
1

#### Dimensions

Approximate Dimensions in Inches (mm)

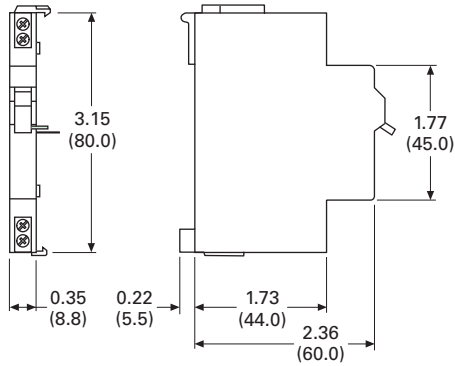
#### Miniature Circuit Breakers

##### FAZ

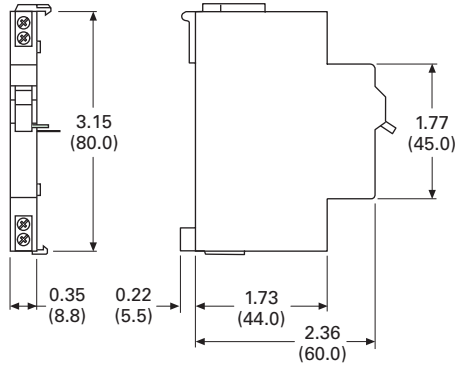


#### Auxiliary Contacts

##### FAZ-XHI11 and FAZ-XH1NW1

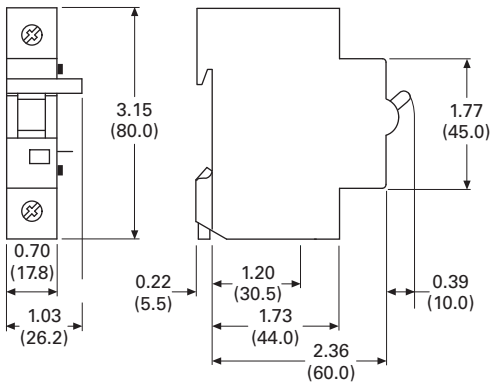


##### FAZ-XAM002



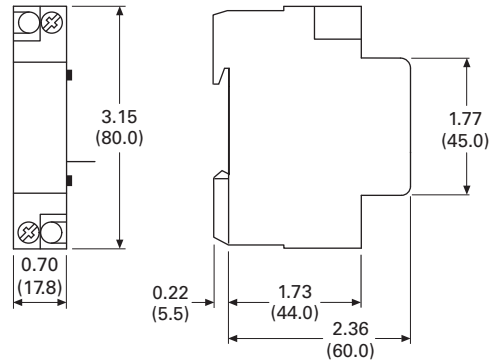
#### Shunt Releases

##### FAZ-XAA



#### Undervoltage Releases

##### FAZ-XUA



Approximate Dimensions in Inches (mm)

### Busbar and Accessory Weights and Dimensions

Unit Weight (kg)	Length	Width	Height	Catalog Number
0.29	39.72 (1009.0)	0.59 (15.0)	0.59 (15.0)	<b>BB-UL-18/1P-1M/57</b>
0.64	39.02 (991.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-18/2P-2M/56</b>
0.83	39.72 (1009.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-18/3P-3M/57</b>
0.26	38.78 (985.0)	0.59 (15.0)	0.59 (15.0)	<b>BB-UL-18/1P-1.5M/37</b>
0.63	39.72 (1009.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-18/2P+AS-2.5M/46</b>
0.79	38.66 (982.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-18/3P+AS-3.5M/48</b>
0.36	39.72 (1009.0)	0.59 (15.0)	0.59 (15.0)	<b>BB-UL-25/1P-1M/57</b>
0.79	39.02 (991.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-25/2P-2M/56</b>
1.04	39.72 (1009.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-25/3P-3M/57</b>
0.31	38.78 (985.0)	0.59 (15.0)	0.59 (15.0)	<b>BB-UL-25/1P-1.5M/37</b>
0.73	39.72 (1009.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-25/2P+AS-2.5M/46</b>
0.97	38.66 (982.0)	0.87 (22.0)	1.46 (37.0)	<b>BB-UL-25/3P+AS-3.5M/48</b>
0.03	2.36 (60.0)	0.67 (17.0)	1.14 (29.0)	<b>BB-UL-TEP/35</b>
0.03	1.42 (36.0)	0.67 (17.0)	1.14 (29.0)	<b>BB-UL-TEPA/35</b>
0.03	1.57 (40.0)	0.71 (18.0)	1.18 (30.0)	<b>BB-UL-TE/50</b>
0.003	3.35 (85.0)	0.47 (12.0)	0.94 (24.0)	<b>BB-IP/5</b>
0.001	0.55 (14.0)	0.20 (5.0)	0.39 (10.0)	<b>BB-EV-EC/3</b>
0.001	0.94 (24.0)	0.87 (22.0)	0.39 (10.0)	<b>BB-UL-EC/1</b>

