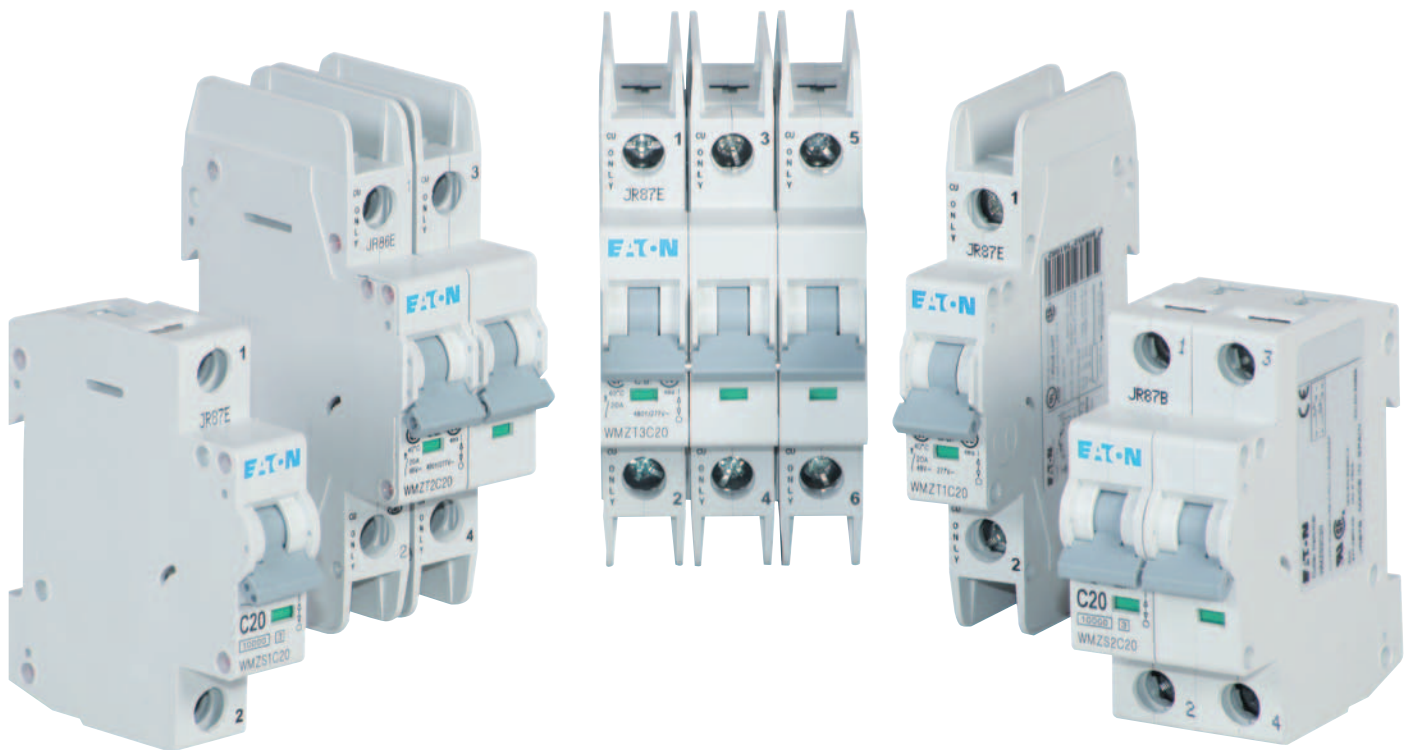


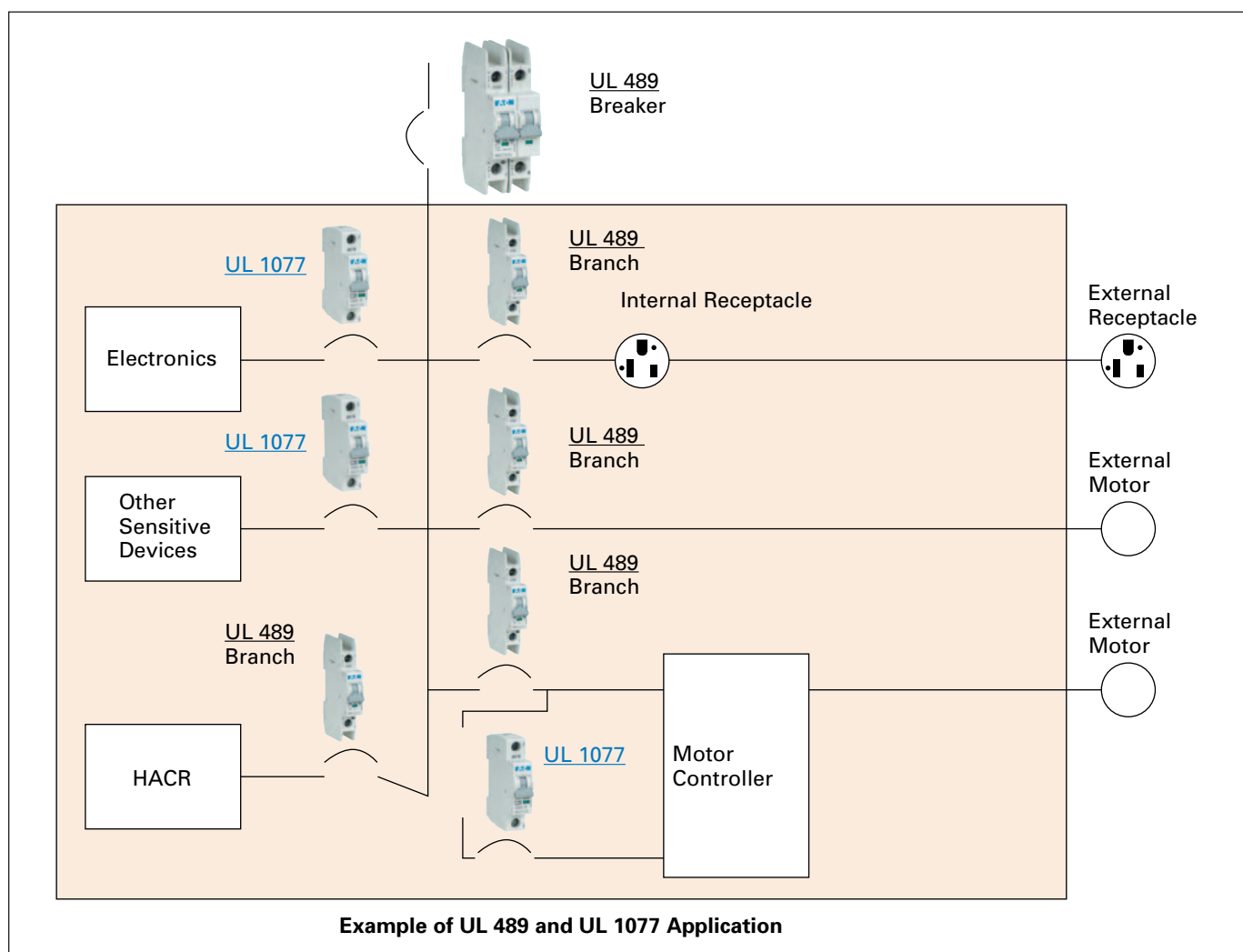
UL 489 and UL 1077 DIN Rail Miniature Circuit Breakers



EAT•N

Powering Business Worldwide

Application Guidelines for UL 489 Circuit Breakers and UL 1077 Supplementary Protectors



UL 489 Circuit Breakers

Used for branch circuit protection, internal/external receptacles, external motors and HACR equipment (heating, air conditioning and refrigeration).

UL 1077 Supplementary Protectors

Used for overcurrent protection within appliances or electrical equipment, where branch circuit protection is already provided or not required.

Note: UL 489 devices can be used in place of UL 1077; UL 1077 devices cannot be used in place of UL 489.

UL 489 and UL 1077 DIN Rail Miniature Circuit Breakers

Eaton offers a complete line of circuit breakers with its WMZT product line engineered for branch circuit protection and its WMZS product line designed for supplementary protection. Optimum product quality, tested reliability and safety stand for the best protection of personnel, installations and plant.

UL 489 DIN Rail Branch Circuit Breakers

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UL 1077 DIN Rail Supplementary Protectors

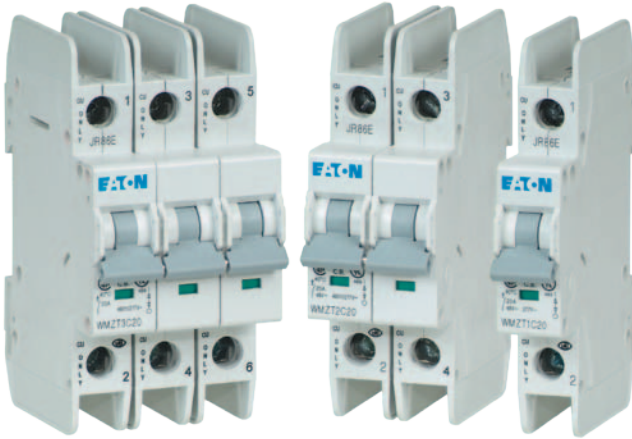
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UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

PRODUCT OVERVIEW

Optimum and Efficient Protection



Optimum product quality, tested reliability and safety stand for best protection of personnel, installations and plant. Eaton's WMZ DIN rail mountable circuit breaker is designed for use in branch service applications.

Powerful Offering for Machine and System Builders

The WMZ is available with C and D characteristics in accordance with UL® 489, CSA® C22.2 No.5; UL 1077, CSA C22.2 No.235 and IEC 60947-2. These devices are CE marked.

Typical Applications

Feeder and 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

Features

- Complete range of UL 489 listed DIN rail mounted miniature circuit breakers up to 40 ampere current rating
- Standard ratings of 10 kAIC at 277 / 480 Vac
- Select amperages available at 14 kAIC at 277 / 480 Vac and 10 kAIC at 125 Vdc
- Current limiting design provides fast short-circuit interruption that reduces the let-through energy, which can damage the circuit
- Suitable for branch circuit device protection
- Thermal-magnetic overcurrent protection
 - Two levels of short-circuit protection, categorized by C and D curves
- Trip-free design — breaker can not be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- SWD (switching duty) — suitable for switching fluorescent lighting loads ($I_n \leq 20A$)
- Fulfill UL 489, CSA C22.2 No.5 and also 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 WMZT....T), terminal screws can be removed (on both sides)
- 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

WMZ Complies with the Latest National and International Standards

Standards — Feeder and Branch Circuit Protection

UL 489

Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection.

Products meet the requirements of the National Electrical Code® (NEC®).



CSA C22.2 No.5

Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection (corresponds closely to UL 489 Standard).

Products meet the requirements of the Canadian Electrical Code (CEC).



RoHS

These devices are RoHS compliant.



UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

PRODUCT OVERVIEW

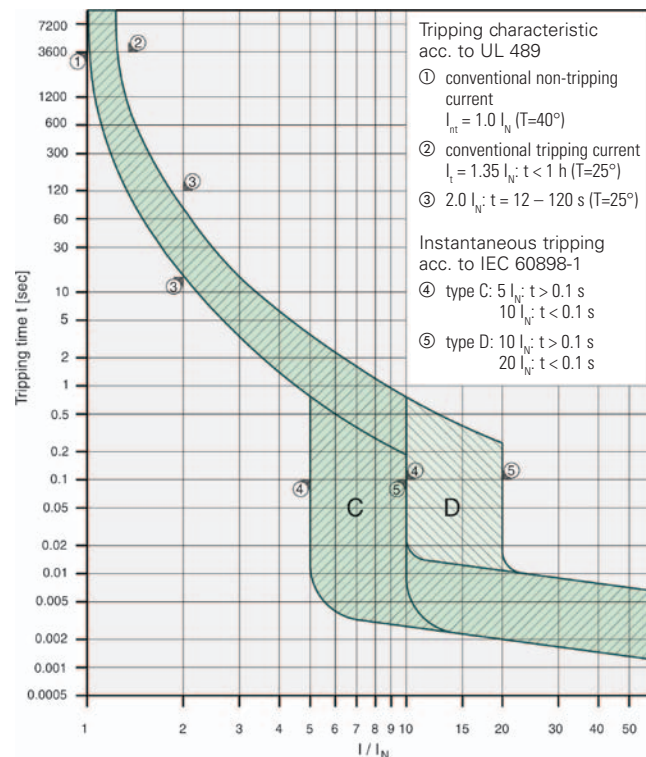
Tripping Curves to Choose From

Eaton WMZ branch circuit breakers are available with “C” and “D” tripping characteristics.

C-curve devices are suitable for applications where medium levels of inrush current are expected. Applications include small transformers, lighting, pilot devices, control circuits and coils. C-curve devices provide a medium magnetic trip point.

D-curve devices are suitable for applications where high levels of inrush current are expected. The high magnetic trip point prevents nuisance tripping in high inductive applications such as motors, transformers and power supplies.

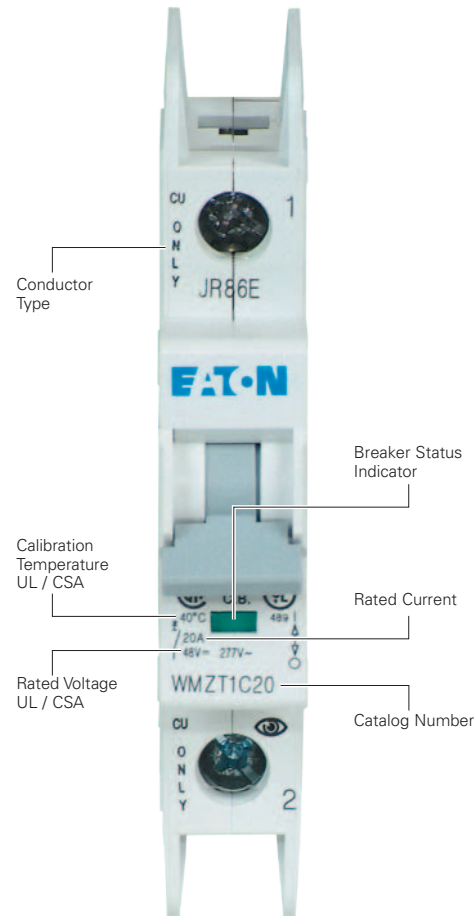
Eaton WMZ devices are current limiting, which means they interrupt fault currents within one half cycle of the fault. Current limiting devices offer superior protection by reducing peak let-through current and energy.



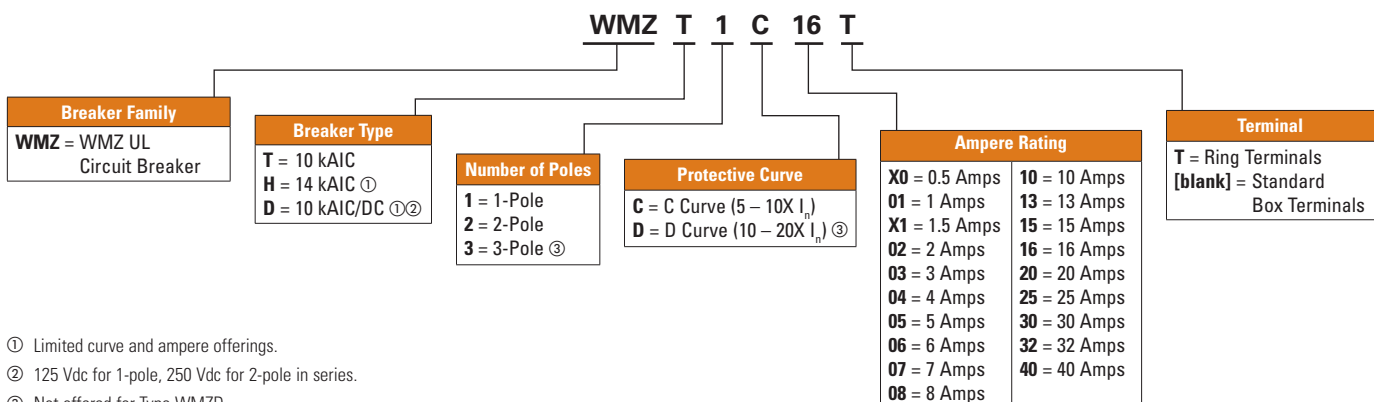
Device Printing on Front and Side

Installation options

These branch circuit breakers are available in two terminal configurations: standard box terminals that accept multiple conductors and ring-tongue terminals, ideally suited to demanding requirements of the semi-conductor industry. 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. These circuit breakers can also be reverse feed.



Catalog Numbering System



① Limited curve and ampere offerings.
② 125 Vdc for 1-pole, 250 Vdc for 2-pole in series.
③ Not offered for Type WMZD.

UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

PRODUCT SELECTION

WMZT Product Selection

- UL approved (UL 489) and CSA Certified (CSA C22.2 No.5-02) as Branch Circuit Breakers
- Interrupting capacity: 10 kA UL / CSA; 15 kA IEC 60947
- Current limiting device
- Optional connections for ring-tongue terminals

WMZT UL 489 Circuit Breakers — 10 kAIC

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number

C Curve (5 – 10X I_n Current Rating)

0.5	WMZT1CX0	WMZT2CX0	WMZT3CX0
1	WMZT1C01	WMZT2C01	WMZT3C01
1.5	WMZT1CX1	WMZT2CX1	WMZT3CX1
2	WMZT1C02	WMZT2C02	WMZT3C02
3	WMZT1C03	WMZT2C03	WMZT3C03
4	WMZT1C04	WMZT2C04	WMZT3C04
5	WMZT1C05	WMZT2C05	WMZT3C05
6	WMZT1C06	WMZT2C06	WMZT3C06
7	WMZT1C07	WMZT2C07	WMZT3C07
8	WMZT1C08	WMZT2C08	WMZT3C08
10	WMZT1C10	WMZT2C10	WMZT3C10
13	WMZT1C13	WMZT2C13	WMZT3C13
15	WMZT1C15	WMZT2C15	WMZT3C15
16	WMZT1C16	WMZT2C16	WMZT3C16
20	WMZT1C20	WMZT2C20	WMZT3C20
25	WMZT1C25	WMZT2C25	WMZT3C25
30	WMZT1C30	WMZT2C30	WMZT3C30
32	WMZT1C32	WMZT2C32	WMZT3C32
40	WMZT1C40	WMZT2C40	WMZT3C40

D Curve (10 – 20X I_n Current Rating)

0.5	WMZT1DX0	WMZT2DX0	WMZT3DX0
1	WMZT1D01	WMZT2D01	WMZT3D01
1.5	WMZT1DX1	WMZT2DX1	WMZT3DX1
2	WMZT1D02	WMZT2D02	WMZT3D02
3	WMZT1D03	WMZT2D03	WMZT3D03
4	WMZT1D04	WMZT2D04	WMZT3D04
5	WMZT1D05	WMZT2D05	WMZT3D05
6	WMZT1D06	WMZT2D06	WMZT3D06
7	WMZT1D07	WMZT2D07	WMZT3D07
8	WMZT1D08	WMZT2D08	WMZT3D08
10	WMZT1D10	WMZT2D10	WMZT3D10
13	WMZT1D13	WMZT2D13	WMZT3D13
15	WMZT1D15	WMZT2D15	WMZT3D15
16	WMZT1D16	WMZT2D16	WMZT3D16
20	WMZT1D20	WMZT2D20	WMZT3D20
25	WMZT1D25	WMZT2D25	WMZT3D25
30	WMZT1D30	WMZT2D30	WMZT3D30
32	WMZT1D32	WMZT2D32	WMZT3D32
40	WMZT1D40	WMZT2D40	WMZT3D40

WMZT UL 489 Circuit Breakers with Ring-Tongue Terminals — 10 kAIC

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number

C Curve with Ring-Tongue Terminals (5 – 10X I_n Current Rating)

0.5	WMZT1CX0T	WMZT2CX0T	WMZT3CX0T
1	WMZT1C01T	WMZT2C01T	WMZT3C01T
1.5	WMZT1CX1T	WMZT2CX1T	WMZT3CX1T
2	WMZT1C02T	WMZT2C02T	WMZT3C02T
3	WMZT1C03T	WMZT2C03T	WMZT3C03T
4	WMZT1C04T	WMZT2C04T	WMZT3C04T
5	WMZT1C05T	WMZT2C05T	WMZT3C05T
6	WMZT1C06T	WMZT2C06T	WMZT3C06T
7	WMZT1C07T	WMZT2C07T	WMZT3C07T
8	WMZT1C08T	WMZT2C08T	WMZT3C08T
10	WMZT1C10T	WMZT2C10T	WMZT3C10T
13	WMZT1C13T	WMZT2C13T	WMZT3C13T
15	WMZT1C15T	WMZT2C15T	WMZT3C15T
16	WMZT1C16T	WMZT2C16T	WMZT3C16T
20	WMZT1C20T	WMZT2C20T	WMZT3C20T
25	WMZT1C25T	WMZT2C25T	WMZT3C25T
30	WMZT1C30T	WMZT2C30T	WMZT3C30T
32	WMZT1C32T	WMZT2C32T	WMZT3C32T
40	WMZT1C40T	WMZT2C40T	WMZT3C40T

D Curve with Ring-Tongue Terminals (10 – 20X I_n Current Rating)

0.5	WMZT1DX0T	WMZT2DX0T	WMZT3DX0T
1	WMZT1D01T	WMZT2D01T	WMZT3D01T
1.5	WMZT1DX1T	WMZT2DX1T	WMZT3DX1T
2	WMZT1D02T	WMZT2D02T	WMZT3D02T
3	WMZT1D03T	WMZT2D03T	WMZT3D03T
4	WMZT1D04T	WMZT2D04T	WMZT3D04T
5	WMZT1D05T	WMZT2D05T	WMZT3D05T
6	WMZT1D06T	WMZT2D06T	WMZT3D06T
7	WMZT1D07T	WMZT2D07T	WMZT3D07T
8	WMZT1D08T	WMZT2D08T	WMZT3D08T
10	WMZT1D10T	WMZT2D10T	WMZT3D10T
13	WMZT1D13T	WMZT2D13T	WMZT3D13T
15	WMZT1D15T	WMZT2D15T	WMZT3D15T
16	WMZT1D16T	WMZT2D16T	WMZT3D16T
20	WMZT1D20T	WMZT2D20T	WMZT3D20T
25	WMZT1D25T	WMZT2D25T	WMZT3D25T
30	WMZT1D30T	WMZT2D30T	WMZT3D30T
32	WMZT1D32T	WMZT2D32T	WMZT3D32T
40	WMZT1D40T	WMZT2D40T	WMZT3D40T

For our complete product offering, see the Distribution Products Catalog (CA08101001E).

UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

PRODUCT SELECTION

WMZH Product Selection

- UL approved (UL 489) and CSA Certified (CSA C22.2 No.5-02) as Branch Circuit Breakers
- Interrupting capacity: 14 kA UL / CSA; 15 kA IEC 60947

- Current limiting device
- Optional connections for ring-tongue terminals

WMZH UL 489 Circuit Breakers — 14 kAIC

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number

C Curve (5 – 10X I_n Current Rating)

15	WMZH1C15	WMZH2C15	WMZH3C15
16	WMZH1C16	WMZH2C16	WMZH3C16
20	WMZH1C20	WMZH2C20	WMZH3C20
25	WMZH1C25	WMZH2C25	WMZH3C25

D Curve (10 – 20X I_n Current Rating)

13	WMZH1D13	WMZH2D13	WMZH3D13
15	WMZH1D15	WMZH2D15	WMZH3D15
16	WMZH1D16	WMZH2D16	WMZH3D16
20	WMZH1D20	WMZH2D20	WMZH3D20

WMZH UL 489 Circuit Breakers with Ring-Tongue Terminals

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number

C Curve (5 – 10X I_n Current Rating)

15	WMZH1C15T	WMZH2C15T	WMZH3C15T
16	WMZH1C16T	WMZH2C16T	WMZH3C16T
20	WMZH1C20T	WMZH2C20T	WMZH3C20T
25	WMZH1C25T	WMZH2C25T	WMZH3C25T

D Curve (10 – 20X I_n Current Rating)

13	WMZH1D13T	WMZH2D13T	WMZH3D13T
15	WMZH1D15T	WMZH2D15T	WMZH3D15T
16	WMZH1D16T	WMZH2D16T	WMZH3D16T
20	WMZH1D20T	WMZH2D20T	WMZH3D20T

WMZD Product Selection

- UL approved (UL 489) and CSA Certified (CSA C22.2 No.5-02) as Branch Circuit Breakers
- Interrupting capacity: 10 kA at 125 Vdc UL / CSA
- 125 Vdc for 1-pole, 250 Vdc for 2-pole in series
- Current limiting device

WMZD UL 489 Circuit Breakers — 10 kAIC at 125 Vdc per pole

		
	1-Pole	2-Pole
Amperes	Catalog Number	Catalog Number

C Curve (5 – 10X I_n Current Rating)

2	WMZD1C02	WMZD2C02
3	WMZD1C03	WMZD2C03
4	WMZD1C04	WMZD2C04
5	WMZD1C05	WMZD2C05
6	WMZD1C06	WMZD2C06
7	WMZD1C07	WMZD2C07
8	WMZD1C08	WMZD2C08
10	WMZD1C10	WMZD2C10
13	WMZD1C13	WMZD2C13
15	WMZD1C15	WMZD2C15
16	WMZD1C16	WMZD2C16
20	WMZD1C20	WMZD2C20
25	WMZD1C25	WMZD2C25
30	WMZD1C30	WMZD2C30
32	WMZD1C32	WMZD2C32
40	WMZD1C40	WMZD2C40

For our complete product offering, see the Distribution Products Catalog (CA08101001E).

UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

ACCESSORIES

WMZ UL 489 Breakers

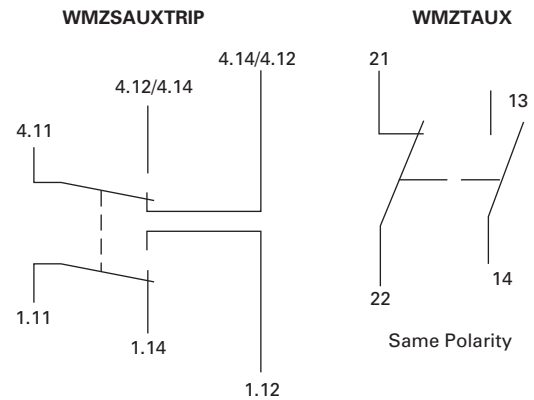
Accessory / Description	Catalog Number
2-Pole Contact or Auxiliary Contact/Trip Indicating Contact	WMZSAUXTRIP
Auxiliary Contact	WMZTAUX
Shunt Trip 110 – 415 Vac Shunt Trip 12 – 110 Vac	WMZTST415 WMZTST110
Padlock Hasp	WMZPLK
Bus Bar — 1-Pole 6 Terminals	WMZT1P6T
Bus Bar — 1-Pole 12 Terminals	WMZT1P12T
Bus Bar — 1-Pole 18 Terminals	WMZT1P18T
Bus Bar — 2-Pole 6 Terminals	WMZT2P6T
Bus Bar — 2-Pole 12 Terminals	WMZT2P12T
Bus Bar — 2-Pole 18 Terminals	WMZT2P18T
Bus Bar — 3-Pole 6 Terminals	WMZT3P6T
Bus Bar — 3-Pole 12 Terminals	WMZT3P12T
Bus Bar — 3-Pole 18 Terminals	WMZT3P18T
3-Pole Bus Bar Shroud	WMZT3PSHROUD
Extension Terminal — 35 mm (2 – 14 AWG)	WMZT35EXT
Bus Connector — Conductors up to 50 mm ² (~1/0 AWG)	WMZTBCON ①

① Contact sales office for availability.

Tripping Signal Switch WMZSAUXTRIP, WMZTAUX

- Design according to IEC / EN 60947-5-1, IEC / EN 62019
- Field installable
- The specified minimum voltages are per contact — take into account particularly in case of series connection
- Self-cleaning contacts
- Contact material and design particularly suitable for extra low voltage
- WMZSAUXTRIP: the function of one of the two change-over contacts can be switched from “auxiliary switch” to “tripping signal switch”
- Tripping signal contact transmits message of electric tripping, not mechanical switch-off
- Test key for contact function “electrical tripping”
- WMZTAUX: will allow for > 480Y / 277 Vac rating

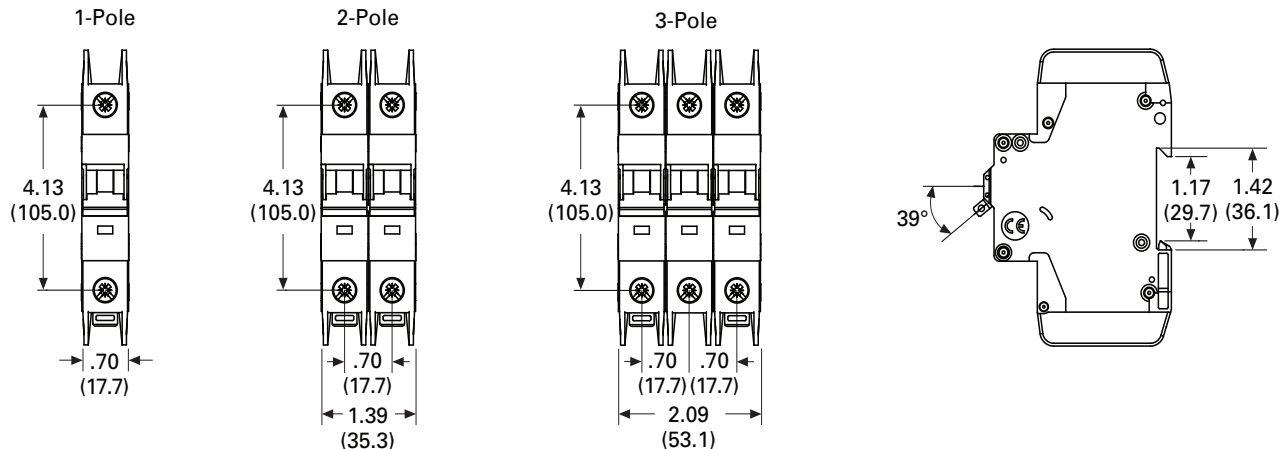
Connection Diagram



Dimensions

Miniature Circuit Breakers

WMZ



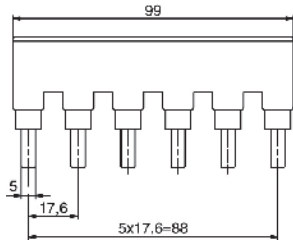
UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

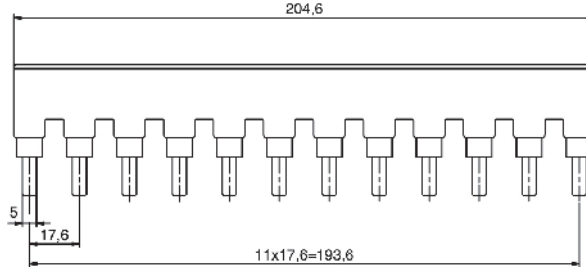
TECHNICAL DATA

Dimensions (mm)

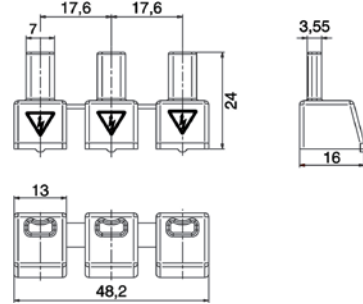
WMZT_ _ 6T



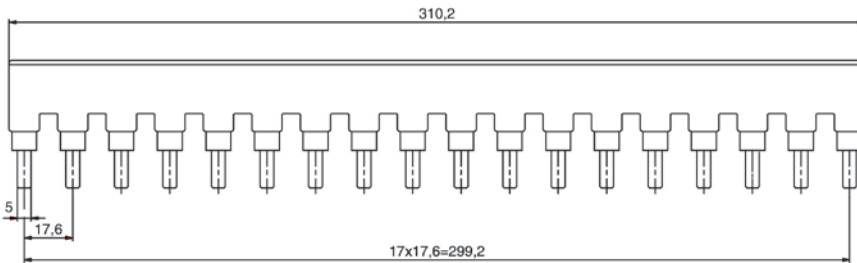
WMZT_ _ 12T



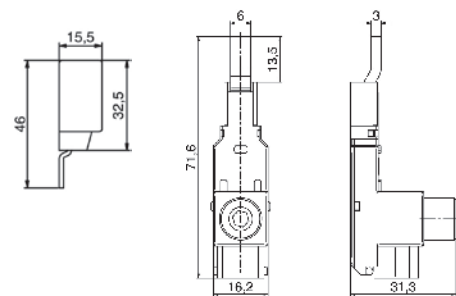
WMZT3PSHROUD



WMZT_ _ 18T



WMZT35EXT

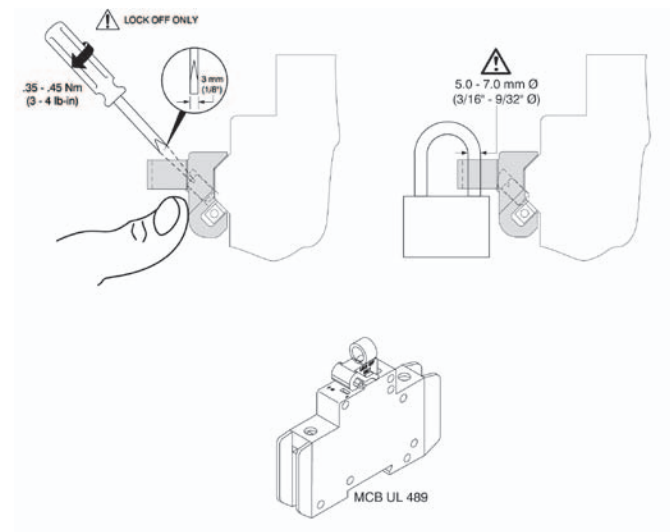


WMZT35EXT

Description	UL 489	IEC / EN 60947-2
	# 2 – 14 AWG 60/75°C Cu	2.5 – 35 mm ² 60/75°C Cu
	0.56 in	14 mm
Tested according to		Tightening Torque of Terminal Screws
UL 486A	# 14 AWG	≥ 2.3 Nm
UL 486B	# 8 – 12 AWG	≥ 2.8 Nm
UL 486E	# 6 – 1 AWG	4 Nm

Lockout Attachment

WMZPLK



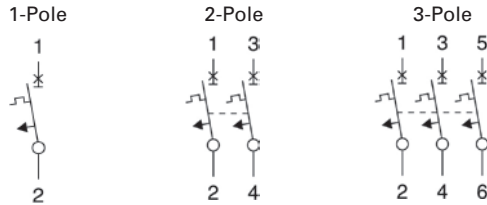
UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

TECHNICAL DATA

Miniature Circuit Breakers WMZ

Connection Diagrams



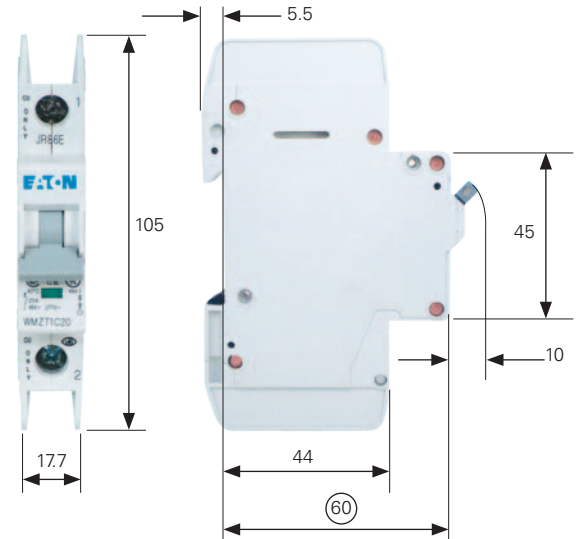
Miniature Circuit Breakers WMZ

Description	
Electrical	
Design According to	UL 489, CSA C22.2 No.5, IEC 60947-2
Rated Voltage WMZT UL / CSA UL / CSA UL / CSA IEC 947-2	10 kAIC at 277 / 480V from 0.5A to 32A 10 kAIC at 240 Vac for 40A 10 kAIC at 48 Vdc per pole 15 kAIC at 240 / 415 Vac
Rated Voltage WMZD UL / CSA	10 kAIC at 125 Vdc per pole (2 poles max) 10 kAIC at 250 Vdc with 2 poles connected in series
Rated Voltage WMZH UL / CSA IEC 947-2	14 kAIC at 277 / 480V at listed amperages 15 kAIC at 240 / 415 Vac
Rated Frequency	50 / 60 Hz
Rated Breaking Capacity WMZT UL / CSA IEC 947-2	10 kA 15 kA
Rated Breaking Capacity WMZH UL / CSA IEC 947-2	14 kA 15 kA
Characteristic	C, D
Endurance	≥ 20,000 Operations
Line Voltage Connection	Suitable for Reverse Feed

Mechanical

Frame Size	45 mm	
Device Height	105 mm	
Device Width	17.7 mm per Pole	
Mounting	Quick Fastening with Two Lock-In Positions on IEC / EN 60715	
Upper and Lower Terminals	Open Mouth / Lift Terminals	
Terminal Capacity	1 Wire 2 Wires	AWG 18 – 6 AWG 18 – 10
Terminal Fastening Torque	AWG 18-21: 21 lb-in AWG 10-8: 25 lb-in AWG 6: 36 lb-in	
Mounting	Independent of Position	
Calibration Temperature UL 489, CSA C22.2 No.5 IEC 60947-2	40°C 30°C	

Dimensions (mm)



Power Loss at I_n

Characteristic C				Characteristic D		
	1-Pole	2-Pole	3-Pole	1-Pole	2-Pole	3-Pole
I_n [A]	P [W]	P [W]	P [W]	P [W]	P [W]	P [W]
0.5	1.6	3.2	4.7	1.6	3.2	4.8
1	1.1	2.2	3.4	0.8	1.5	2.3
1.5	1.3	2.6	3.9	1.0	2.1	3.1
2	1.4	2.8	4.3	1.0	2.1	3.1
3	1.2	2.4	3.6	1.2	2.4	3.6
4	1.4	2.9	4.3	1.4	2.9	4.3
5	1.9	3.7	5.6	1.5	2.9	4.4
6	1.2	2.3	3.5	1.2	2.3	3.5
7	1.4	2.8	4.3	1.4	2.8	4.3
8	1.4	2.8	4.2	1.2	2.4	3.7
10	1.8	3.6	5.3	1.5	3.0	4.5
13	2.4	4.7	7.1	2.0	4.1	6.1
15	1.9	3.8	5.6	1.5	3.1	4.6
16	2.1	4.3	6.4	1.7	3.5	5.2
20	2.9	5.8	8.7	1.8	3.7	5.5
25	3.1	6.2	9.3	2.6	5.1	7.7
30	3.0	6.0	9.0	2.7	5.4	8.1
32	3.4	6.8	10.2	3.1	6.2	9.3
35	3.7	7.4	11.0	3.8	7.6	11.3
40	4.0	8.1	12.1	3.9	7.8	11.6

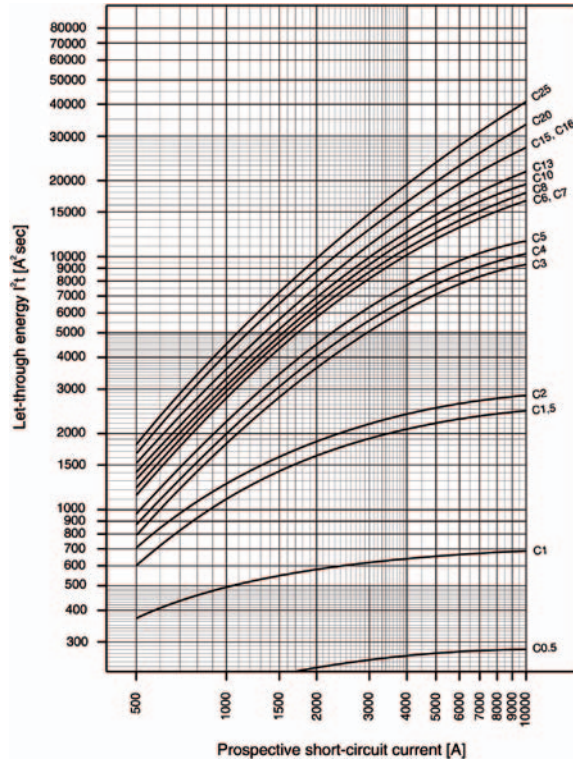
UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

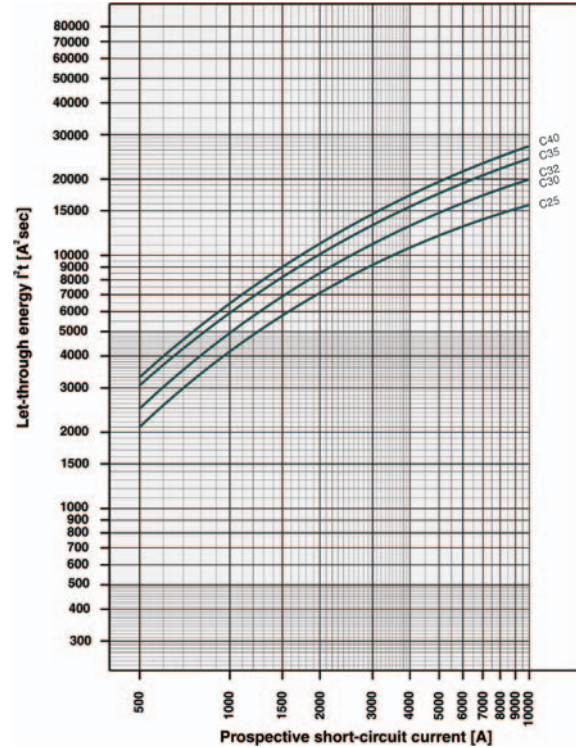
TECHNICAL DATA

Let-Through Energy

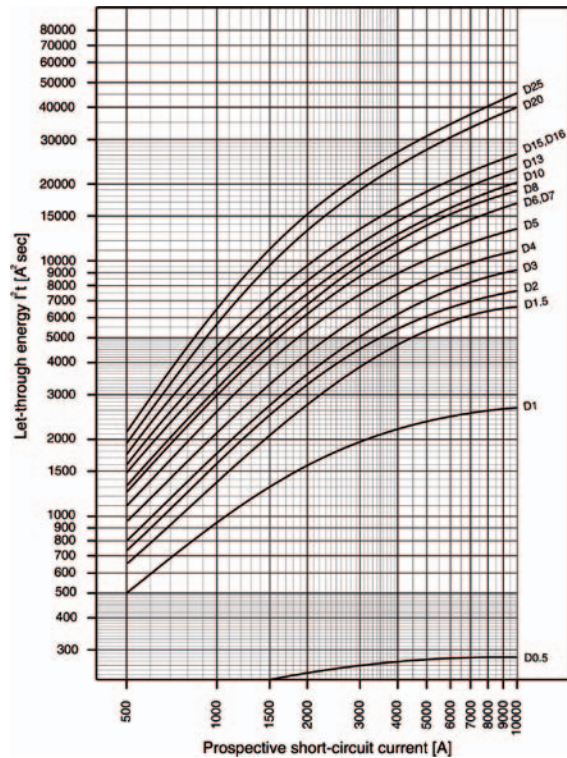
Characteristic C (0.5 – 32A), 277V



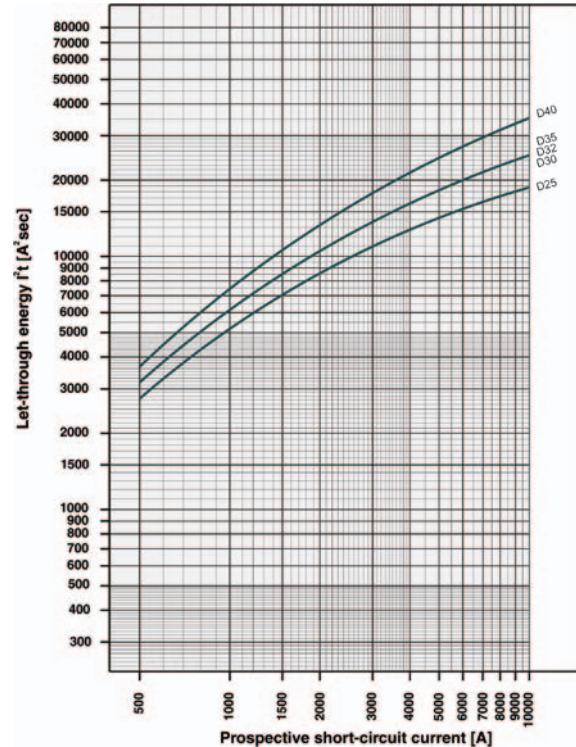
Characteristic C (40A), 240V



Characteristic D (0.5 – 32A), 277V



Characteristic D (40A), 240V



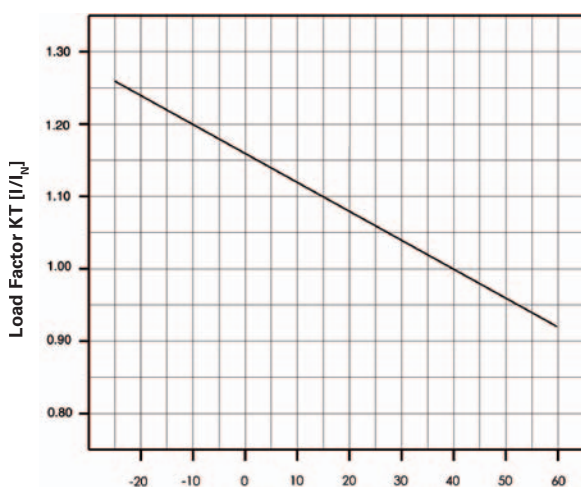
UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

TECHNICAL DATA

Influence of Ambient Temperature T on Load Carrying Capacity

Device Market Current Rating I_n (A) at 40°C	I_n (A) at Higher Ambient Temperature							
	15°C	20°C	25°C	30°C	40°C	50°C	55°C	60°C
0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1.0	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9
1.5	1.7	1.6	1.6	1.6	1.5	1.4	1.4	1.4
2.0	2.2	2.2	2.1	2.1	2.0	1.9	1.9	1.8
3.0	3.3	3.2	3.2	3.1	3.0	2.9	2.9	2.8
4.0	4.4	4.3	4.2	4.2	4.0	3.8	3.8	3.7
5.0	5.5	5.4	5.3	5.2	5.0	4.8	4.7	4.6
6.0	6.6	6.5	6.4	6.2	6.0	5.8	5.6	5.5
7.0	7.7	7.6	7.4	7.3	7.0	6.7	6.6	6.4
8.0	8.8	8.6	8.5	8.3	8.0	7.7	7.5	7.4
10.0	11.0	10.8	10.6	10.4	10.0	9.6	9.4	9.2
13.0	14.3	14.0	13.8	13.5	13.0	12.5	12.5	12.0
15.0	16.5	16.2	15.9	15.6	15.0	14.4	14.1	13.8
16.0	17.6	17.3	17.0	16.6	16.0	15.4	15.0	14.7
20.0	22.0	21.6	21.2	20.8	20.0	19.2	18.8	18.4
25.0	27.5	27.0	26.5	26.0	25.0	24.0	23.3	23.0
30.0	33.0	32.4	31.8	31.2	30.0	28.8	28.2	27.6
32.0	35.2	34.6	33.9	33.3	32.0	30.7	30.1	29.4
40.0	44.0	43.2	42.4	41.6	40.0	38.4	37.6	36.8



Ambient Temperature T [°C]
Maximum Load I_L at ambient temperature T: $I_L(T) = I_n K_T(T)$

UL 489 DIN Rail Branch Circuit Breakers

WMZ Circuit Breakers

TECHNICAL DATA

Accessories

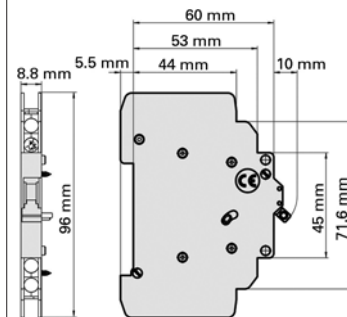
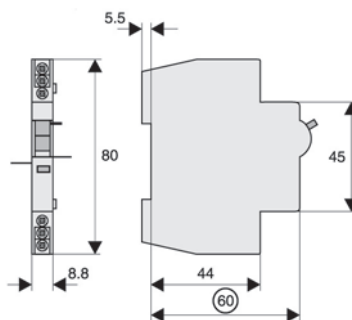
Description	WMZSAUXTRIP	WMZTAUX
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Electrical

Contact Function	2CO	1NO + 1NC
Rated Voltage	230V	250V
Frequency	50 / 60 Hz	50 / 60 Hz
Rated Current	2A	6A
Rated Thermal Current I_{th}	2A	6A
Utilization Category AC13 Rated Operational Current I_o	3A / 250 Vac	3A / 250 Vac
Utilization Category AC15 Rated Operational Current I_o	2A / 250 Vac	2A / 250 Vac
Utilization Category DC12 Rated Operational Current I_o	0.5A / 110 Vdc	0.5A / 110 Vdc 0.25A / 220 Vdc
Rated Insulation Voltage U_i	250 Vac	250 Vac
Minimum Operational Voltage per Contact U_{min}	5 Vdc	5 Vdc
Minimum Operational Current I_{min}	10 mA dc	10 mA ac / dc
Rated Peak Withstand Voltage U_{mp} (1.2 / 50 μ)	2.5 kV	4 kV
Conditional Short Circuit Current I_k with Back-Up Fuse 6A	1 kA	1 kA
Max. Back-Up Fuse, Overload and Short Circuit	6A gL	—

Mechanical

Tripping Indicator "Electrical Tripping"	Blue / White	—
Frame Size	45 mm	45 mm
Device Height	80 mm	80 mm
Device Width	8.8 mm (0.5MU)	8.8 mm (0.5MU)
Mounting	Onto Switching Dev.	—
Degree of Protection, Built-In	IP40	IP40
Terminal Protection	Finger and Hand Touch Safe According to BGV A3, ÖVE-EN 6	Finger and Hand Touch Safe According to BGV A3, ÖVE-EN 6
Terminals	Lift Terminals	Lift Terminals
Terminal Capacity	20 – 14 AWG	0.5 – 2.5 mm ²
Terminal Screws	M3 (Posidrive Z0)	M3 (Posidrive Z0)
Fastening Torque of Terminal Screws	7 lb-in	Max. 1.2 Nm



UL 489 DIN Rail Branch Circuit Breakers

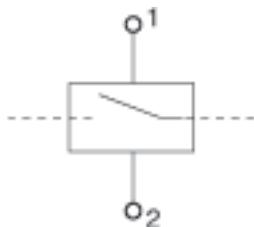
WMZ Circuit Breakers

TECHNICAL DATA

Shunt Trip Release WMZTST

- Remote release for subsequent mounting onto WMZT
- Additional installation of standard auxiliary switch is possible
- Position indicator red – green

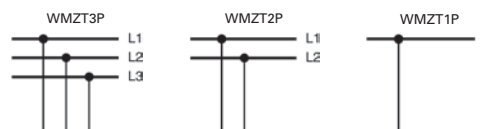
Connection Diagram



Bus Bar Block UL 489 (Pin)

- Tested according to UL 489
- Do not cut
- Extension terminal 35 mm² WMZT35EXT for copper conductors
- For covering of not used pins use bus bar tag shrouds WMZT3PSHROUD

Connection Diagram



Shunt Trip Release WMZTST

Description	WMZTST110	WMZTST415
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Electrical

Can be Mounted Onto	WMZT / WMZH / WMZD	WMZT / WMZH / WMZD
Operational Voltage Range	12 – 110 Vac 12 – 60 Vdc	110 – 415 Vac 110 – 230 Vdc
Frequency	50 / 60 Hz	50 / 60 Hz

Mechanical

Frame Size	45 mm	45 mm
Device Height	105 mm	105 mm
Device Width	17.5 mm	17.5 mm
Mounting	Quick Fastening with 2 Lock-In Positions on EN 50022	
Degree of Protection, Built-In	IP40	IP40
Terminal Protection	Finger and Hand Touch Safe According to BGV A3, ÖVE-EN 6	
Terminals	Open Mouthed / Lift	Open Mouthed / Lift
Terminal Capacity 1 and 2 Wires	18 – 10 AWG	18 – 10 AWG

Bus Bar Block UL 489 (Pin)

Description	UL 489	IEC / EN 60947-2
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Electrical

Rated Operational Voltage	480 / 277 Vac 96 Vdc	—
Rated Frequency	50 / 60 Hz	—
Rated Voltage	—	690 Vac
Overvoltage Category	—	III
Rated Impulse Withstand Voltage U _{imp}	—	9.5 kV
Rated Current	80A	80A
Rated Conditional Short-Circuit Current ac with 350A gG	—	15 kA
Short-Circuit Current	10 kA	—

Mechanical

Bus Bar Cross Section	—	16 mm ² Cu
Flame Class According to UL 94	V0	—
Pollution Degree	—	2
Comparative Tracking Index	—	CTI 600
Minimum Clearance (intern / extern)	—	> 9.5 / 25.4 mm
Minimum Creepage Distance (intern / extern)	—	> 12.7 / 50.8 mm
Resistance to Climatic Conditions	—	According to DIN / EN60068

UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

PRODUCT OVERVIEW

Optimum and Efficient Protection



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

Powerful Offering for Machine and System Builders

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

Typical Applications

Supplementary protection

- Control circuits
- Lighting
- Business equipment
- Appliances

Features

- Complete range of UL 1077 listed DIN rail mounted miniature circuit breakers up to 63 ampere current rating
- Standard ratings of 10 kAIC at 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
 - Three levels of short-circuit protection, categorized by B, C and D 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 17.5 mm (per pole)
- Contact Position Indicator (red / green)
- Easy installation on DIN rail
- Possibility for sealing the toggle in ON or OFF position

WMZS Complies with the Latest National and International Standards

Standards — Supplementary Protection

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

These devices are RoHS compliant.



UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

PRODUCT OVERVIEW

Discover These Advanced Features

Breakers install on standard DIN rail

Available in 1-, 2- and 3-pole models

Color-coded indicator provides breaker status for easy troubleshooting



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

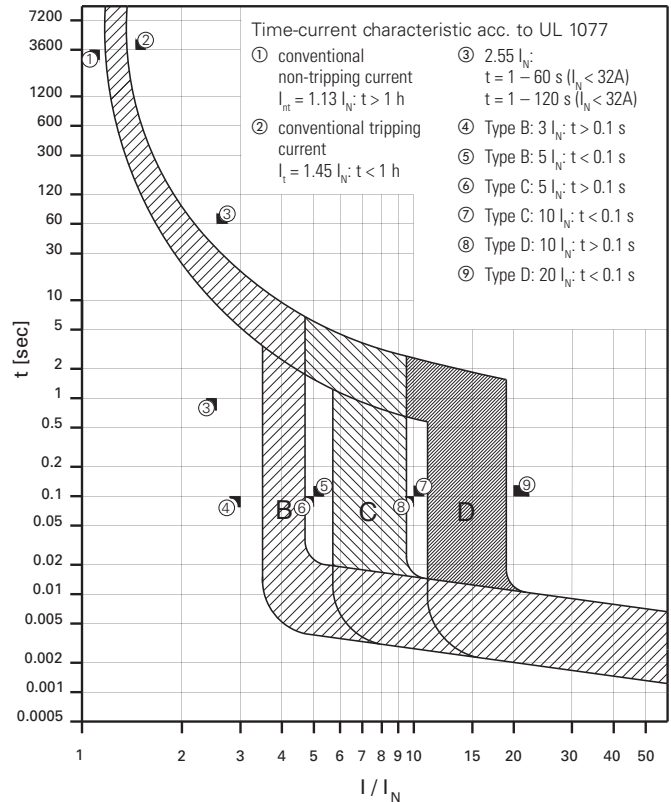
Trip-free design; breaker cannot be defeated by holding the handle in the ON position

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

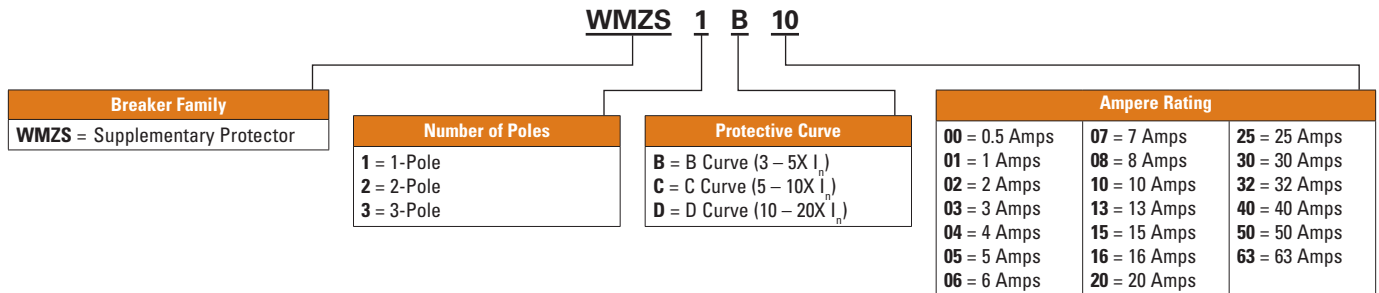
Three Tripping Curves to Choose From

Eaton WMZS Supplementary Protectors are available with three different tripping characteristics, including Type B, C and D. 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 to 5X continuous rating of the device (I_n)).

Even though not required by NEC or CEC for Supplementary Protectors, Eaton's WMZS 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.



Catalog Numbering System



UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

PRODUCT SELECTION

WMZS Product Selection — B Curve (3 – 5X I_n Current Rating)

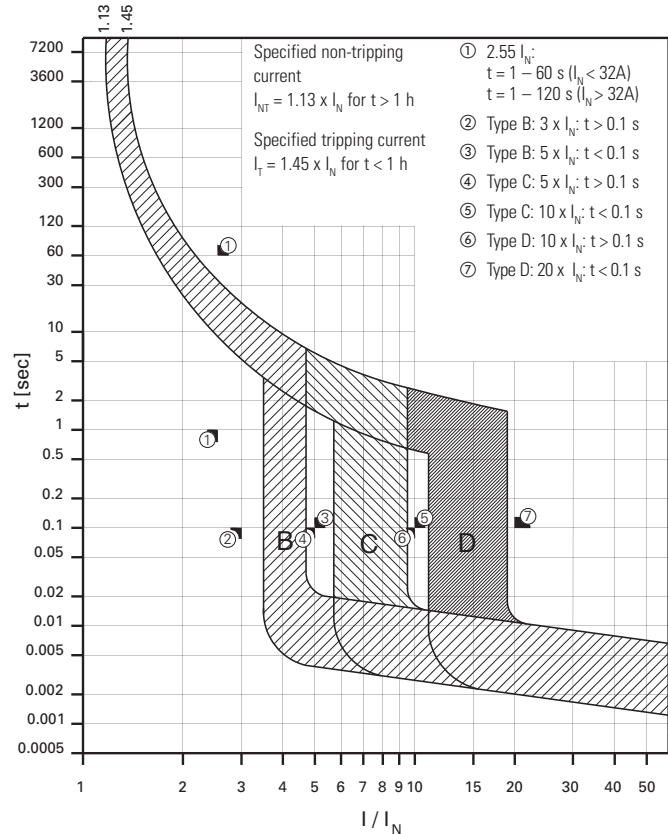
- Designed for resistive or slightly inductive loads
- Response time of instantaneous trip: 3 – 5X I_n current rating
- UL Recognized and CSA Certified as Supplementary Protectors
- For international and domestic use (conform to IEC 60947-2)

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.

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

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number
6	WMZS1B06	WMZS2B06	WMZS3B06
7	WMZS1B07	WMZS2B07	WMZS3B07
8	WMZS1B08	WMZS2B08	WMZS3B08
10	WMZS1B10	WMZS2B10	WMZS3B10
13	WMZS1B13	WMZS2B13	WMZS3B13
15	WMZS1B15	WMZS2B15	WMZS3B15
16	WMZS1B16	WMZS2B16	WMZS3B16
20	WMZS1B20	WMZS2B20	WMZS3B20
25	WMZS1B25	WMZS2B25	WMZS3B25
30	WMZS1B30	WMZS2B30	WMZS3B30
32	WMZS1B32	WMZS2B32	WMZS3B32
40	WMZS1B40	WMZS2B40	WMZS3B40
50	WMZS1B50	WMZS2B50	WMZS3B50
63	WMZS1B63	WMZS2B63	WMZS3B63

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.



UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

PRODUCT SELECTION

WMZS Product Selection — C Curve (5 – 10X I_N Current Rating)

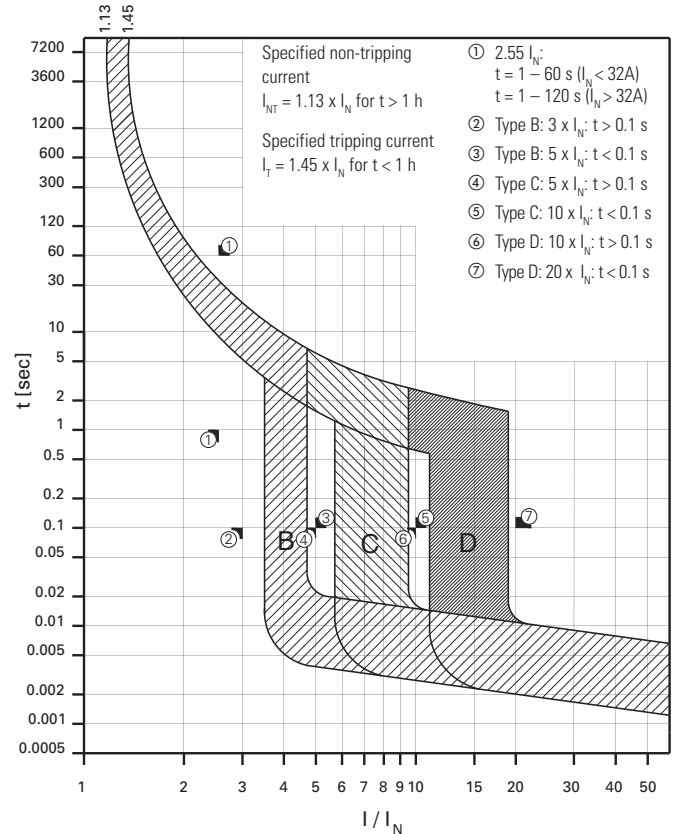
- Designed for inductive loads
- Response time of instantaneous trip: 5 – 10X I_N current rating
- UL Recognized and CSA Certified as Supplementary Protectors
- For international and domestic use (conform to IEC 60947-2)

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.

C Curve (5 – 10X I_N Current Rating) — Designed for Inductive Loads ①

			
Amperes	1-Pole Catalog Number	2-Pole Catalog Number	3-Pole Catalog Number
0.5	WMZS1C00	WMZS2C00	WMZS3C00
1	WMZS1C01	WMZS2C01	WMZS3C01
2	WMZS1C02	WMZS2C02	WMZS3C02
3	WMZS1C03	WMZS2C03	WMZS3C03
4	WMZS1C04	WMZS2C04	WMZS3C04
5	WMZS1C05	WMZS2C05	WMZS3C05
6	WMZS1C06	WMZS2C06	WMZS3C06
7	WMZS1C07	WMZS2C07	WMZS3C07
8	WMZS1C08	WMZS2C08	WMZS3C08
10	WMZS1C10	WMZS2C10	WMZS3C10
13	WMZS1C13	WMZS2C13	WMZS3C13
15	WMZS1C15	WMZS2C15	WMZS3C15
16	WMZS1C16	WMZS2C16	WMZS3C16
20	WMZS1C20	WMZS2C20	WMZS3C20
25	WMZS1C25	WMZS2C25	WMZS3C25
30	WMZS1C30	WMZS2C30	WMZS3C30
32	WMZS1C32	WMZS2C32	WMZS3C32
40	WMZS1C40	WMZS2C40	WMZS3C40
50	WMZS1C50	WMZS2C50	WMZS3C50
63	WMZS1C63	WMZS2C63	WMZS3C63

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.



For our complete product offering, see the Distribution Products Catalog (CA08101001E).

UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

PRODUCT SELECTION

WMZS Product Selection — D Curve (10 – 20X I_n Current Rating)

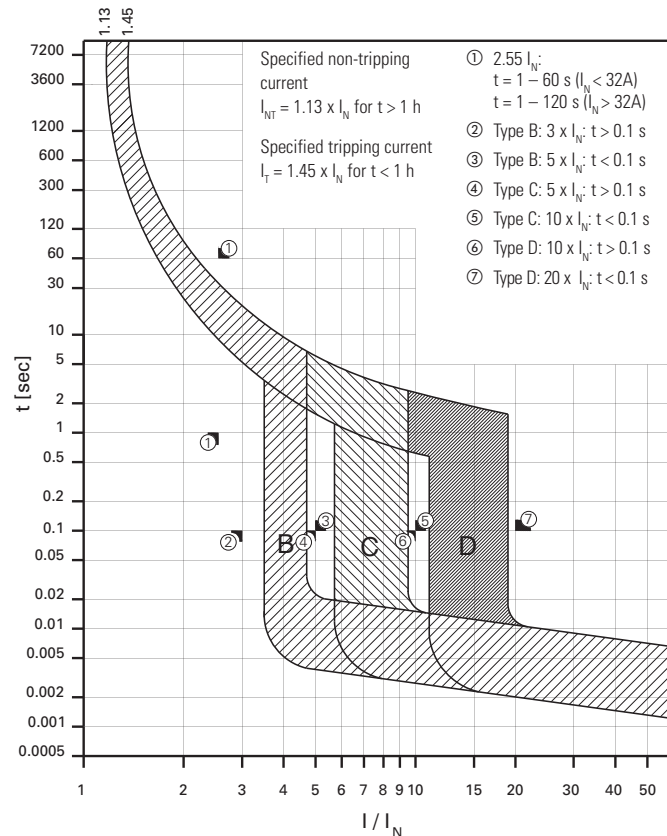
- Designed for highly inductive loads
- Response time of instantaneous trip: 10 – 20X I_n current rating
- UL Recognized and CSA Certified as Supplementary Protectors
- For international and domestic use (conform to IEC 60947-2)

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.

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

			
	1-Pole	2-Pole	3-Pole
Amperes	Catalog Number	Catalog Number	Catalog Number
0.5	WMZS1D00	WMZS2D00	WMZS3D00
1	WMZS1D01	WMZS2D01	WMZS3D01
2	WMZS1D02	WMZS2D02	WMZS3D02
3	WMZS1D03	WMZS2D03	WMZS3D03
4	WMZS1D04	WMZS2D04	WMZS3D04
5	WMZS1D05	WMZS2D05	WMZS3D05
6	WMZS1D06	WMZS2D06	WMZS3D06
7	WMZS1D07	WMZS2D07	WMZS3D07
8	WMZS1D08	WMZS2D08	WMZS3D08
10	WMZS1D10	WMZS2D10	WMZS3D10
13	WMZS1D13	WMZS2D13	WMZS3D13
15	WMZS1D15	WMZS2D15	WMZS3D15
16	WMZS1D16	WMZS2D16	WMZS3D16
20	WMZS1D20	WMZS2D20	WMZS3D20
25	WMZS1D25	WMZS2D25	WMZS3D25
30	WMZS1D30	WMZS2D30	WMZS3D30
32	WMZS1D32	WMZS2D32	WMZS3D32
40	WMZS1D40	WMZS2D40	WMZS3D40

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.

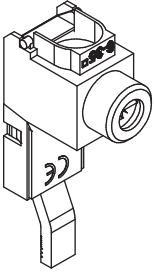


UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

ACCESSORIES

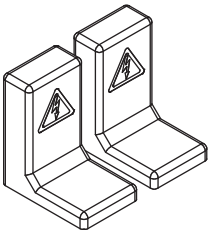
Pin Type Incoming Supply Terminals

Accessories	Description	Installation	Catalog Number
Incoming Terminal			
	- Accommodates Conductors from 6 – 35 mm²/ #10 – 2 AWG 4 – 5.5 Nm/ 35 – 50 lb-in - Finger-Safe Connection		WMZS35EXT

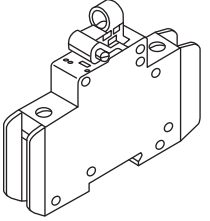
Protective Accessories

Accessories	Description	Catalog Number
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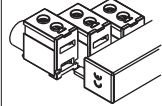
Bus Bar Terminal Cover

	For Covering Unused Terminals	WMZSBBTC
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Padlock Hasp

	- Prevents Reactivation of the Device During Maintenance - Holds One Padlock	WMZPLK
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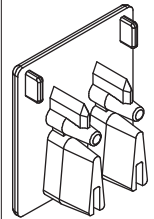
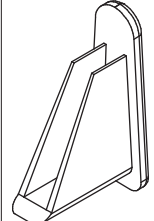
Bus Incoming Supply Terminals

Accessories	Description	Installation	Catalog Number
Incoming Terminal			
	50 mm² #14 – 1 AWG 75 Deg Wire 115 A/Y, 480V UL 160 A/Y 690V IEC		WMZSBCONA

Bus Bar End Cap

Accessories	Description	Poles	Catalog Number
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Fork Connector

	- Install After Cutting Bus Bar - Protects End of Bus Bar	2 & 3	WMZS3CAP
		1	WMZS1CAP

UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

TECHNICAL DATA

Technical Data

Description	B Curve	C Curve	D Curve
Electrical			
Approvals	UR (UL 1077), CSA (CSA 22.2 No. 235), CE		
Standards	IEC / EN 60947-2		
Short-Circuit Trip Response	$3 \times 5 I_n$	$5 \times 10 I_n$	$10 \times 20 I_n$

Supplementary Protectors — UL / CSA

Current Range	6 – 63A	0.5 – 63A	0.5 – 40A
Maximum Voltage Ratings — UL / CSA			
1-Pole	277 Vac 48 Vdc	277 Vac 48 Vdc	277 Vac 48 Vdc
2-, 3-Pole	480Y / 277 Vac	480Y / 277 Vac	480Y / 277 Vac
2 Poles in Series	96 Vdc	96 Vdc	96 Vdc
Thermal Tripping Characteristics			
Single-Pole	$1.35 \times I_n @ 40^\circ\text{C}$	$1.35 \times I_n @ 40^\circ\text{C}$	$1.35 \times I_n @ 40^\circ\text{C}$
Multi-Pole	$1.45 \times I_n @ 40^\circ\text{C}$	$1.45 \times I_n @ 40^\circ\text{C}$	$1.45 \times I_n @ 40^\circ\text{C}$
Short-Circuit Ratings (at Max. Voltage)			
1-Pole	10 kA (5 kA for 40 – 63A Device)	10 kA (5 kA for 40 – 63A Device)	5 kA
2-, 3-Pole	10 kA (5 kA for 40 – 63A Device)	10 kA (5 kA for 40 – 63A Device)	5 kA
1-Pole	10 kA @ 48 Vdc	10 kA @ 48 Vdc	10 kA @ 48 Vdc
2 Poles in Series	10 kA @ 96 Vdc	10 kA @ 96 Vdc	10 kA @ 96 Vdc

Miniature Circuit Breaker — IEC

Current Range	6 – 63A	0.5 – 63A	0.5 – 40A
Maximum Voltage Ratings — IEC 60947-2			
1-Pole	230 Vac 48 Vdc	230 Vac 48 Vdc	230 Vac 48 Vdc
2-, 3-Pole	230/400 Vac	230/400 Vac	230/400 Vac
Maximum Voltage Ratings — IEC 60898			
1-Pole	240 Vac 48 Vdc	240 Vac 48 Vdc	240 Vac 48 Vdc
2-, 3-Pole	240/415 Vac	240/415 Vac	240/415 Vac
Thermal Tripping Characteristics			
Single-Pole	$> 1 \text{ Hour} @ 1.05 \times I_n$	$> 1 \text{ Hour} @ 1.05 \times I_n$	$> 1 \text{ Hour} @ 1.05 \times I_n$
Multi-pole	$< 1 \text{ Hour} @ 1.3 \times I_n$	$< 1 \text{ Hour} @ 1.3 \times I_n$	$< 1 \text{ Hour} @ 1.3 \times I_n$
Interrupt Ratings (at Max. Voltage)			
IEC 60947-2	15 kA	15 kA	15 kA
IEC 60898	10 kA	10 kA	10 kA
Operational Switching Capacity	7.5 kA	7.5 kA	7.5 kA
Max. Back-Up 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

Environmental / General

Selectivity Class	3	3	3
Lifespan (Operations)	> 10000 (1 operation = ON/OFF)	> 10000 (1 operation = ON/OFF)	> 10000 (1 operation = ON/OFF)
Shock (IEC 68-2-22)	10g – 120 ms	10g – 120 ms	10g – 120 ms
Operating Temperature Range	+23 to +104°F (-5 to +40°C)	+23 to +104°F (-5 to +40°C)	+23 to +104°F (-5 to +40°C)
Shipment & 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

Mechanical

Standard Front Dimension	80 mm	80 mm	80 mm
Device Height	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
Terminal Protection	17.5 mm	17.5 mm	17.5 mm
Mounting Width per Pole			
Mounting	IEC / EN 60715 Top-Hat Rail	IEC / EN 60715 Top-Hat Rail	IEC / EN 60715 Top-Hat Rail
Degree of Protection	IP20	IP20	IP20
Terminals Top and Bottom	Twin-Purpose Terminals	Twin-Purpose Terminals	Twin-Purpose Terminals
Supply Connection	Line or Load Side	Line or Load Side	Line or Load Side
Terminal Capacity [mm ²]	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 Bus Bar Material	0.8 – 2 mm	0.8 – 2 mm	0.8 – 2 mm
Mounting Position	As Required	As Required	As Required

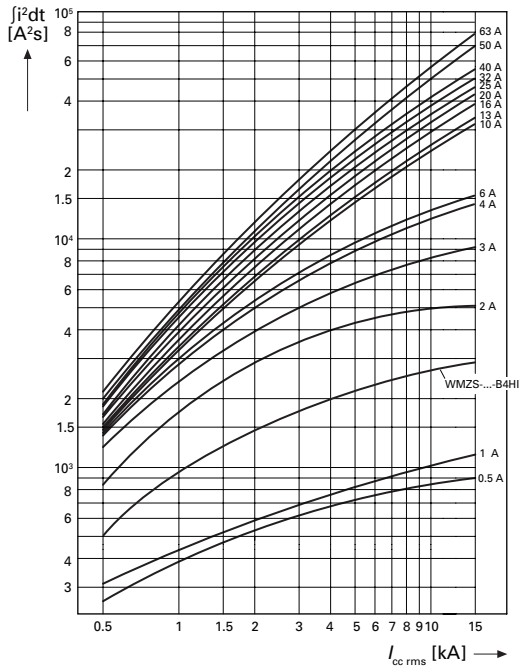
UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

TECHNICAL DATA

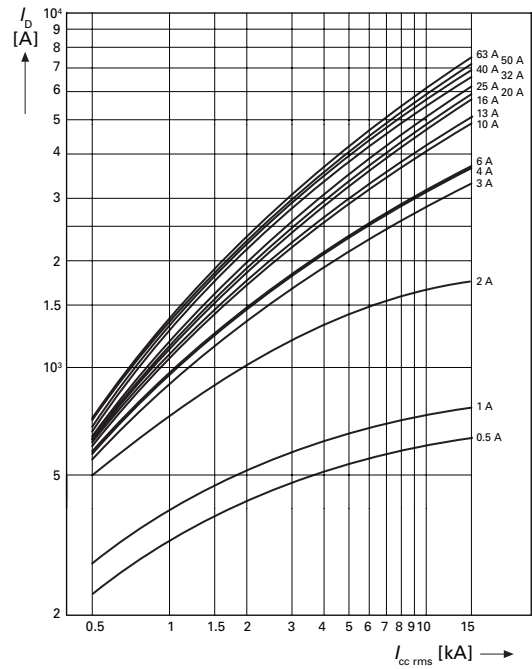
Let-Through Energy I^2t

Characteristic B and C

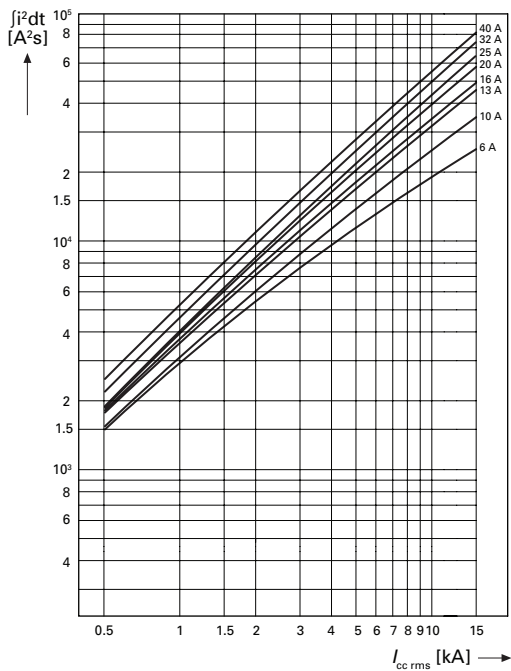


Let-Through Current I_D

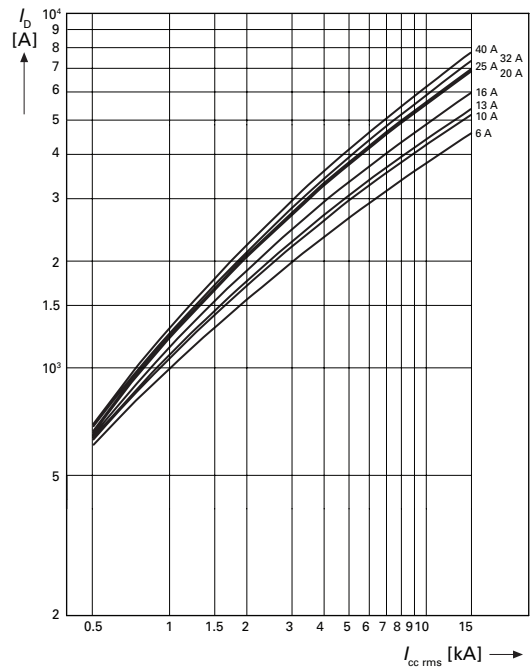
Characteristic B and C



Characteristic D



Characteristic D



UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

TECHNICAL DATA

Influence of the Ambient Temperature on the Thermal Tripping Behavior

Corrected values of the rated current dependent on the ambient temperature

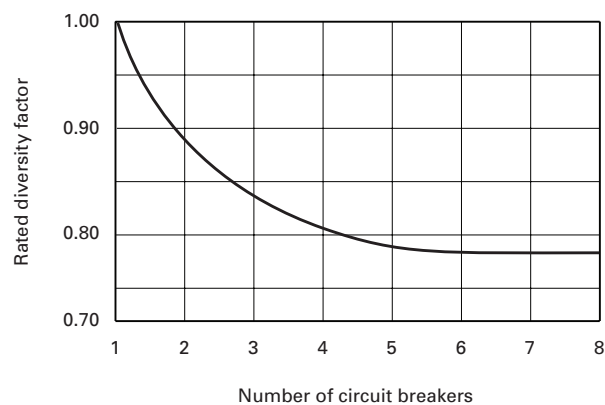
I_n (A)	Ambient Temperature T												
	-25°C	-20°C	-10°C	0°C	10°C	20°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
0.16	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14
0.25	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44
0.75	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3
7	8.6	8.4	8.1	7.9	7.6	7.4	7	6.9	6.8	6.7	6.6	6.4	6.3
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9
12	15	14	14	13	13	13	12	12	12	11	11	11	11
13	16	16	15	15	14	14	13	13	13	12	12	12	12
15	18	18	17	17	16	16	15	15	15	14	14	14	13
16	20	19	19	18	17	17	16	16	15	15	15	14	14
20	24	24	23	22	22	21	20	20	19	19	19	18	18
25	31	30	29	28	27	26	25	25	24	24	23	23	22
32	39	38	37	36	35	33	32	32	31	30	30	29	28
40	49	48	47	45	43	42	40	39	39	38	37	36	35
50	61	60	58	56	54	52	50	49	48	47	46	45	44
63	77	76	73	71	68	66	63	62	61	60	58	57	56

Influence of the Mains Frequency

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

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

Load Carrying Capacity of Adjoining Miniature Circuit Breakers

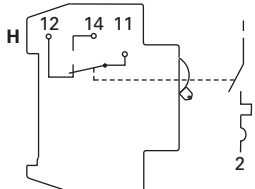
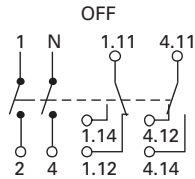


UL 1077 DIN Rail Supplementary Protectors

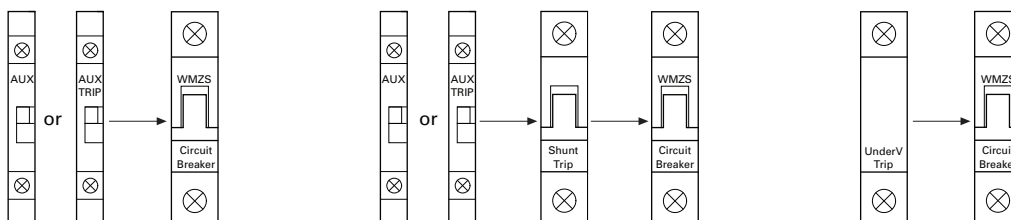
WMZS Circuit Breakers

ACCESSORIES

Auxiliary Contacts and Voltage Trips

Module	Circuit Diagram	Description	Rated Operational Voltage	Catalog Number
Standard Auxiliary Contacts				
		• 1NO / 1NC • Installs on Left Side of WMZS or Shunt Trip • Max. One per WMZS (1077) Device • Switches When WMZS is Tripped Electrically or Manually	230 Vac	WMZSAUX
Auxiliary / Trip Indicating Contact				
		• Small Selector Screw Changes Mode • Two Form C (Changeover) Contacts • Installs on Left Side of WMZS or Shunt Trip • Auxiliary Contacts Switch When WMZS is Tripped Electrically or Manually • Trip Indicating Contact Switches Only When WMZS is Tripped Electrically	230 Vac	WMZSAUXTRIP
Undervoltage Trip				
		• Prevents WMZS from Operating Unless Voltage is Present • Installs on Left Side of WMZS • Includes Test Button	115 Vac	WMZSUVR115
			230 Vac	WMZSUVR230
			400 Vac	WMZSUVR400
Shunt Trip				
		• Allows Remote Trip of WMZS • Installs on Left Side of WMZS	110 – 415 Vac 110 – 230 Vdc	WMZSST415
			12 – 110 Vac 12 – 60 Vdc	WMZSST110

Allowable Combinations of Accessories

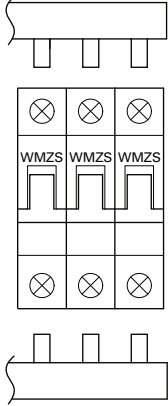


UL 1077 DIN Rail Supplementary Protectors

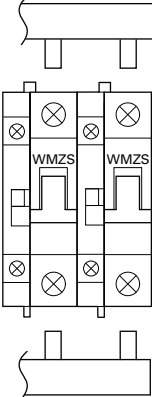
WMZS Circuit Breakers

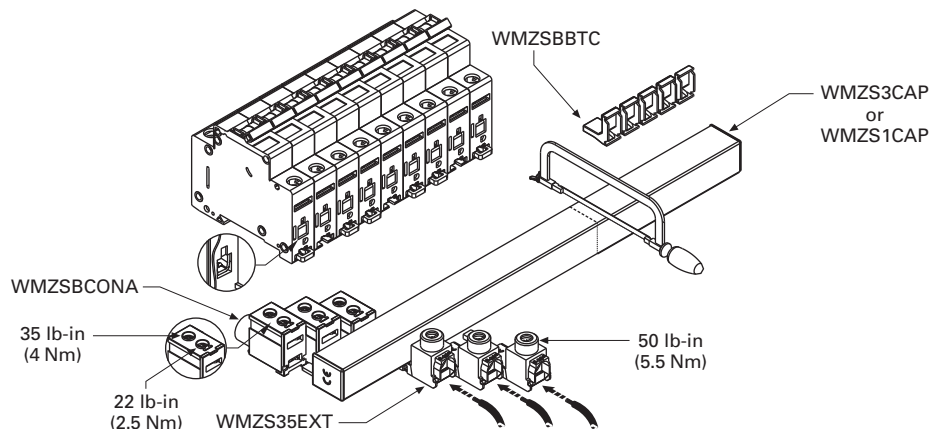
ACCESSORIES

Bus Bar System

Description	Rated Operational Current (A)	Number of Poles per Device	Number of Terminals	Catalog Number
Without Auxiliary Contacts For connecting WMZS Supplementary Protectors without auxiliary contacts. May be fed from line or load side. 	80	1	57	WMZS1P57T
		2	56	WMZS2P56T
		3	57	WMZS3P57T
	100	1	57	WMZS1P57T25
		2	56	WMZS2P56T25
		3	57	WMZS3P57T25

Auxiliary / Trip Indicating Contact

For connecting WMZS Supplementary Protectors with auxiliary contacts. May be fed from line or load side. 	80	1	37	WMZS1P37TAUX
		2	46	WMZS2P46TAUX
		3	48	WMZS3P48TAUX
	100	1	37	WMZS1P37T25AUX
		2	46	WMZS2P46T25AUX
		3	48	WMZS3P48T25AUX



UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

TECHNICAL DATA

Technical Data

Description	WMZSAUX WMZSAUXTRIP	WMZSST	WMZSUVR
Electrical			
Contact Function	1A + 1B 2 C/O	—	—
Rated Operational Voltage U_n	250 Vac	—	115 Vac — WMZSUVR115 230 Vac — WMZSUVR230 400 Vac — WMZSUVR400
Voltage Range WMZSST110	—	12 – 110 Vac 12 – 60 Vdc	—
Voltage Range WMZSST415	—	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_e AC-15 I_n DC-13 I_e	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 μ) U_{imp}	2.5 kV	—	—
Rated Conditional Short-Circuit Current with 6A Back-Up Fuse I_{sc}	1 kA	—	—
Max. Admissible Back-Up Fuse	4A gL	—	—
Mechanical			
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 ² 0.5 – 2.5 mm ²	1 – 2.5 mm ² 1 – 2.5 mm ²	2 x (1 – 2.5) mm ² 2 x (1 – 2.5) mm ²
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)

UL 1077 DIN Rail Supplementary Protectors

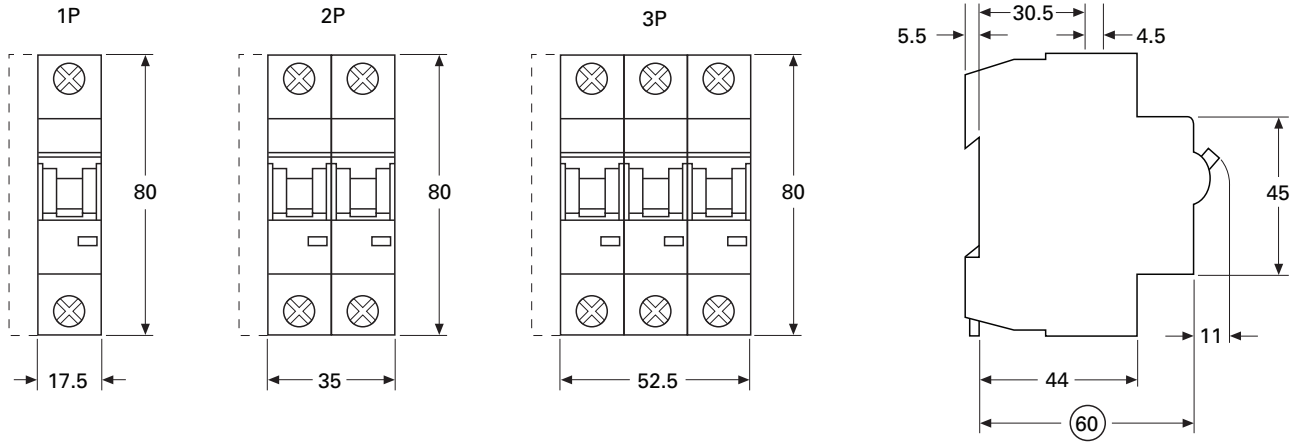
WMZS Circuit Breakers

TECHNICAL DATA

Dimensions

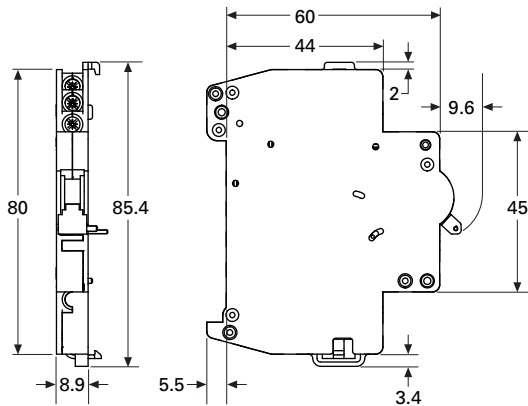
Miniature Circuit Breakers

WMZS



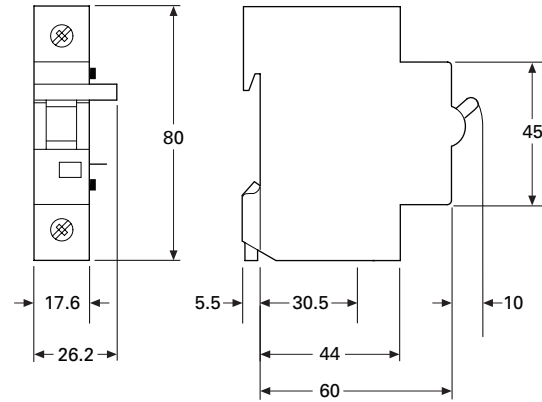
Auxiliary Contacts

WMZSAUX

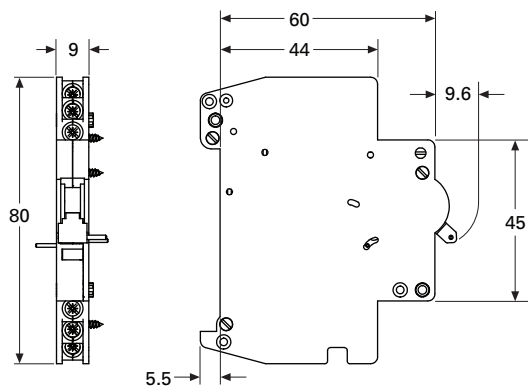


Shunt Releases

WMZSST

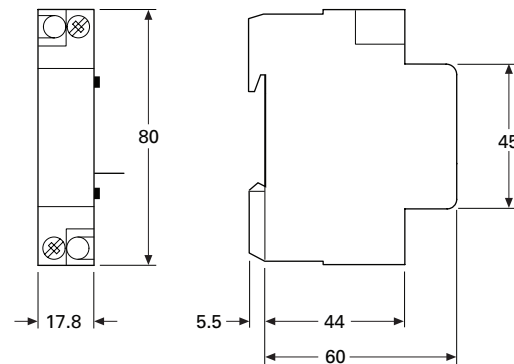


WMZSAUXTRIP



Undervoltage Releases

WMZSUVR



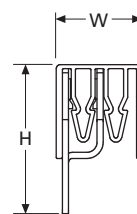
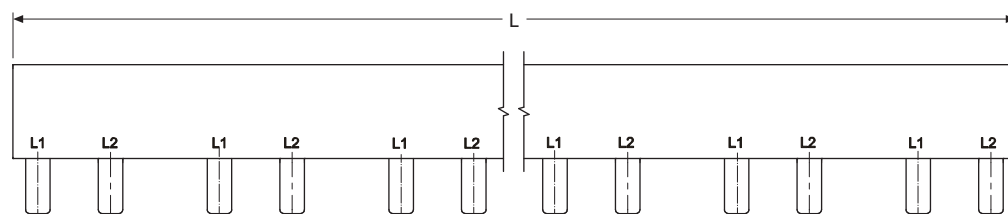
UL 1077 DIN Rail Supplementary Protectors

WMZS Circuit Breakers

TECHNICAL DATA

Bus Bar and Accessory Weights and Dimensions

Catalog Number	Unit Weight (kg)	Length (mm)	Width (mm)	Height (mm)
WMZS1P57T	0.29	1009	15	15
WMZS2P56T	0.64	991	22	37
WMZS3P57T	0.83	1009	22	37
WMZS1P37TAUX	0.26	985	15	15
WMZS2P46TAUX	0.63	1009	22	37
WMZS3P48TAUX	0.79	982	22	37
WMZS1P57T25	0.36	1009	15	15
WMZS2P56T25	0.79	991	22	37
WMZS3P57T25	1.04	1009	22	37
WMZS1P37T25AUX	0.31	985	15	15
WMZS2P46T25AUX	0.73	1009	22	37
WMZS3P48T25AUX	0.97	982	22	37
WMZS35EXT	0.03	60	17	29
WMZSBC0NA	0.03	40	18	30
WMZSBBTC	0.003	85	12	24
WMZS1CAP	0.001	14	5	10
WMZS3CAP	0.001	24	22	10



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