

Plug-on Circuit Breakers



CH Circuit Breakers

Product Description

Quick-make, quick-break switch mechanism combined with inverse time element tripping operation and trip-free handle design. Type CH circuit breakers trip to the OFF position, eliminating nuisance callbacks. The CHF family also includes a trip flag to differentiate between a trip and the breaker being turned off. The thermal-magnetic trip curve avoids nuisance tripping on mild overloads while reacting almost instantaneously to severe short-circuit conditions. Multipole breakers have internal common trip connection to operate all poles simultaneously. Handles are marked with ON-OFF indication and ampere rating of the breaker.

Special Application Plug-on Circuit Breakers—Type CH 10 kAIC 120 Vac and 120/240 Vac
Branch Feeder Type Arc Fault Circuit Breakers

A branch feeder type arc fault circuit interrupter is a device intended to mitigate high current arcing faults in the complete circuit, including connected cords. High current arcing faults can occur from line to neutral or line to ground. These arcing faults are in parallel with the load and produce the most energy of all arcing faults.

The branch feeder type AFCI is required in the 1999 and 2002 National Electrical Code.

The Combination Type AFCI is required in all subsequent editions of the National Electrical Code.

Combination Type Arc Fault Circuit Breakers

A combination type arc fault circuit interrupter is a device that offers mitigation of high current arcing faults in the complete circuit, including connected cords. In addition it provides direct detection of persistent low current arcing faults down to 5 amps with associated mitigation of fire hazards in the cords connected to the outlets. High current arcing faults can occur from line to neutral or line to ground. These arcing faults are in parallel with the load and produce the most energy of all arcing faults. The current level of low current arcing faults is limited by the load.

Ground Fault Circuit Breakers—Ground Fault Application Notes

Single-pole Type CHGFIs are designed for use in two-wire, 120 Vac circuits. The diagram on **Page V1-T1-44** shows a typical wiring configuration.

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Two-pole Type CHGFIs are designed for use in three-wire, 120/240 Vac circuits, 120 Vac multiwire circuits employing common, neutral and two-wire, 240 Vac circuits obtained from a 120/240 Vac source.

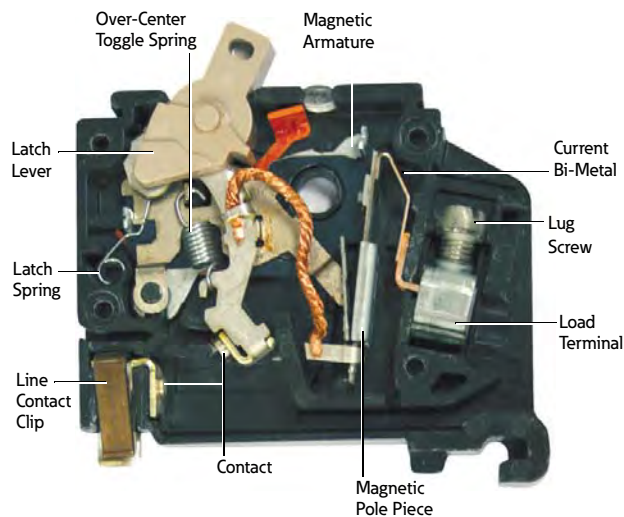
Diagrams on **Page V1-T1-44** illustrate typical wiring configurations for 120/240 Vac multiwire circuits.

The diagram on **Page V1-T1-44** depicts a 240 Vac, two-wire circuit. Note the “panel neutral” conductor connects to the neutral bar,

even though the neutral is not included in the load circuit. This connection is necessary to supply a 120 Vac power source to the ground fault sensing circuit.

The figures are shown with a 120/240 Vac, single-phase, three-wire power source, but are also applicable to a 120/208 Vac, three-phase, four-wire power supply. For all figures, the electrical operation of the Type CHGFI is not affected by the equipment ground.

Features



Product Selection

10 kAIC, 120 Vac, 120/240 Vac and 240 Vac

Type CH Plug-on
Circuit Breakers

Type CH Breakers, 3/4-Inch (19.1 mm) per Pole 120, 120/240 or 240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Catalog Number		
		Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton	Three-Pole 240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton
10	(1) #14–8 ①	CH110	CH210	CH310
15	(2) #14–10 ①② (1) #14–6 ③	CH115 ⑤⑥	CH215 ⑥	CH315 ⑥
20		CH120 ⑤⑥	CH220 ⑥	CH320 ⑥
25		CH125 ⑥	CH225 ⑥	CH325 ⑥
30		CH130 ⑥	CH230 ⑥	CH330 ⑥
35	#14–2 ① #14–6 ③	CH135 ⑥	CH235 ⑥	CH335 ⑥
40	#10–1/0 ④	CH140 ⑥	CH240 ⑥	CH340 ⑥
45	#14–2 #3/0	CH145 ⑥	CH245 ⑥	CH345 ⑥
50		CH150 ⑥	CH250 ⑥	CH350 ⑥
60		CH160	CH260	CH360
70		CH170	CH270	CH370
80		—	CH280	CH3080
90		—	CH290	CH3090
100		—	CH2100	CH3100
110		—	CH2110	—
125		—	CH2125	—

Type CH Plug-on
Circuit Breakers

CHF Breakers with Mechanical Trip Flag

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Catalog Number	
		Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton
10	(1) #14–8 ①	CHF110	CHF210
15	(2) #14–10 ①②	CHF115 ⑤⑥	CHF215 ⑥
20		CHF120 ⑤⑥	CHF220 ⑥
25		CHF125 ⑥	CHF225 ⑥
30		CHF130 ⑥	CHF230 ⑥
35	#14–2 ①	CHF135 ⑥	CHF235 ⑥
40	#14–4 ④	CHF140 ⑥	CHF240 ⑥
45		CHF145 ⑥	CHF245 ⑥
50		CHF150 ⑥	CHF250 ⑥

Notes

- ① For single- and two-pole breakers.
- ② Solid and stranded wire can be used together.
- ③ For three-pole breakers.
- ④ Single-pole and two-pole 40–50 A.
- ⑤ Switching duty rated.
- ⑥ HACR rated.

For factory-installed options, refer to **Page V1-T1-43**.

Type CH AF/GF Single-Pole Circuit Breaker**Type CH AFCI Single-Pole Circuit Breaker****Dual Function Arc Fault/Ground Fault 3/4-Inch (19.1 mm) Wide Circuit Breakers, Type CH, 120 Vac—10 kAIC ^{①②}**

Poles	Ampere Rating	Configuration	Catalog Number
Single-pole 10 kAIC	15	Combination AFCI GFCI	CHFAFGF115 ^③
	20	Combination AFCI GFCI	CHFAFGF120 ^③
Single-pole, plug-on neutral 10 kAIC	15	Combination AFCI GFCI	CHFAFGF115PN
	20	Combination AFCI GFCI	CHFAFGF120PN

Plug-on Branch Feeder Type Arc Fault Circuit Breakers, Type CH 10 kAIC, 120 Vac and 120/240 Vac**Type CH AFCI Single-Pole Circuit Breaker****Combination Type CH AFCI 3/4-Inch (19.1 mm) Wide Circuit Breakers**

Poles	Ampere Rating	Catalog Number
Standard Pigtail		
Single-pole 10 kAIC	15	CHFCAF115
	20	CHFCAF120
Two-pole 10 kAIC	15	CH215CAF
	20	CH220CAF

Plug-on Neutral Combination Type Arc Fault Circuit Breakers and Ground Fault, Type CH 10 kAIC, 120 Vac and 120/240 Vac ^④**Type CH AFCI Single-Pole PON Combo Circuit Breaker****Combination Type CH AFCI 3/4-Inch (19.1 mm) and CHGFCI Circuit Breakers**

Poles	Ampere Rating	Configuration	Catalog Number
Single-pole 10 kAIC	15	AFCI plug-on neutral	CHFCAF115PN
	20	AFCI plug-on neutral	CHFCAF120PN
	15	GFCI plug-on neutral	CHFGFT115PN
	20	GFCI plug-on neutral	CHFGFT120PN
	25		CHFGFT125PN
	30		CHFGFT130PN

Notes

- ① Breaker qualifies as combination arc fault, per UL 1699.
- ② Breaker qualifies as personnel protection ground fault, (5 mA) per UL 943.
- ③ Clamshell packaging available with CS modification code on the end of catalog number.
- ④ Requires plug-on neutral loadcenter.

Common trip refers to two-pole 240 V load application sourced by 120/240 Vac (see diagram on **Page V1-T1-44**).
Independent trip refers to two-pole multi-wire, home run or shared neutral circuits (see diagrams on **Page V1-T1-44**).

Plug-on Ground Fault Circuit Breakers, Type CH 10 kAIC, 120 Vac and 120/240 Vac**Type CH Single-Pole****Type CH Ground Fault Circuit Breakers (5 Milliampere) 3/4-Inch (19.1 mm) per Pole 120 Vac or 120/240 Vac, 10 kAIC**

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C ^①	Catalog Number—1 per Shelf Carton	
		Single-Pole 120 Vac Requires One 3/4-Inch (19.1 mm) Space	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces
15	#14–6	CHFGFT115	CH215GFT
20	#14–6	CHFGFT120	CH220GFT
25	#14–6	CHFGFT125	CH225GFT
30	#14–6	CHFGFT130	CH230GFT
35	#14–6	—	CH235GFT
40	#14–6	—	CH240GFT
45	#14–6	—	CH245GFT
50	#14–6	—	CH250GFT
60	#14–6 ^①	—	CH260GFT

Type CH Two-Pole**Type CH Ground Fault Equipment Protectors (30 Milliampere) 3/4-Inch (19.1 mm) per Pole 120 Vac or 120/240 Vac, 10 kAIC**

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C ^①	Catalog Number—1 per Shelf Carton	
		Single-Pole 120 Vac Requires One 3/4-Inch (19.1 mm) Space	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces
15	#14–6	CHFEP115	CH215EPD
20	#14–6	CHFEP120	CH220EPD
25	#14–6	CHFEP125	—
30	#14–6	CHFEP130	CH230EPD
40	#14–6	—	CH240EPD
50	#14–6	—	CH250EPD
60	#14–6 ^①	—	CH260EPD

Type CH Switching Neutral Breakers—10 kAIC, 120 Vac and 120/240 Vac

Used to open the neutral along power line(s) for applications of gas pumps.

CH220SW**3/4-Inch (19.1 mm) per Pole 120/240 or 240 Vac, 10 kAIC**

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Catalog Number—1 per Shelf Carton	
		Two-Pole 120 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces	Three-Pole 120/240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces
15	#14–8	CH215SW ^②	CH315SW ^③
20	#14–8	CH220SW ^②	CH320SW ^③
30	#14–8	CH230SW ^②	CH330SW ^③
40	#14–8	CH240SW ^②	CH340SW ^③
50	#14–8	CH250SW ^②	CH350SW ^③

Notes

- ① 60 A breaker listed for 75 °C Cu wire only.
 ② For circuit breakers with shunt trip, add ST suffix. Shunt trip requires one additional pole space.
 ③ Switching duty rated.

1.1




Loadcenters and Circuit Breakers

Type CH Loadcenters and Circuit Breakers

1 Type CH-HID Circuit Breakers—10 kAIC, 120 Vac, 120/240 and 240 Vac

Suitable for use in circuits for fluorescent and high intensity discharge lighting. Also suitable for HACR applications.

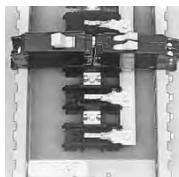
3/4-Inch (19.1 mm) per Pole 120 Vac, 120/240 and 240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton Catalog Number	Two-Pole 240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number	Three-Pole 240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number
				
15	#14–8	CH115HID	CH215HID ①	CH315HID
20	#14–8	CH120HID	CH220HID	CH320HID
30	#14–8	CH130HID	CH230HID	CH330HID


Type CHT Twin 10 kAIC, 120/240 Vac, Universal CTL and Non-CTL Plug-on Circuit Breakers

Suitable for CTL and Non-CTL CH loadcenters.

Type CH and CHT
Circuit Breakers
Mounted in Twin
Breaker Panel






Twin (CTL) 3/4-Inch (19.1 mm) per Pole 120 Vac Class CTL 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Single-Pole Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton Catalog Number
		 120/240 Vac 120/240 Vac
15–15	#14–8	CHT1515 ②③
15–20	#14–8	CHT1520 ②③
20–20	#14–8	CHT2020 ②③

Notes

- ① CH215HID is rated for 120/240 V.
- ② Switching duty rated.
- ③ HACR rated.

Type CHP Commercial Breakers—10 kAIC, 120 Vac, 120/240 Vac and 240 Vac**Note:** CHP breakers feature on-off and trip positions for commercial applications.**3/4-Inch (19.1 mm) per Pole 120, 120/240 or 240 Vac, 10 kAIC**

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton Catalog Number	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number	Three-Pole 240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number
				
10	(1) #14–8 ①	CHP110	CHP210	CHP310
15	(2) #14–10 ①② (1) #14–6 ③	CHP115 ⑥⑦	CHP215 ⑦	CHP315 ⑦
20		CHP120 ⑥⑦	CHP220 ⑦	CHP320 ⑦
25		CHP125 ⑦	CHP225 ⑦	CHP325 ⑦
30		CHP130 ⑦	CHP230 ⑦	CHP330 ⑦
35	#14–2 ① #14–6 ③	CHP135 ⑦	CHP235 ⑦	CHP335 ⑦
40	#10–1/0 ④	CHP140 ⑦	CHP240 ⑦	CHP340 ⑦
45	#14–2 ⑤	CHP145 ⑦	CHP245 ⑦	CHP345 ⑦
50		CHP150 ⑦	CHP250 ⑦	CHP350 ⑦
60		CHP160 ⑦	CHP260 ⑦	CHP360 ⑦
70		CHP170	CHP270	CHP370
80		—	CHP280	—
90		—	CHP290	—
100		—	CHP2100	CHP3100
110		—	CHP2110	—
125		—	CHP2125	—

Notes

- ① For single- and two-pole breakers.
 ② Solid and stranded wire can be used together.
 ③ For three-pole breakers.
 ④ Single-pole 60–70 A, two-pole 80–125 A, three-pole 40–100 A.
 ⑤ Single-pole 40–50 A, two-pole 40–70 A.
 ⑥ Switching duty rated.
 ⑦ HACR rated.

CHP breakers offer on-off and trip positions for commercial applications.

1.1

Loadcenters and Circuit Breakers

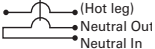
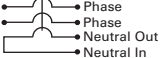
Type CH Loadcenters and Circuit Breakers

1

Type CHP Neutral Switching Breakers—10 kAIC, 120 Vac and 120/240 Vac



Used to open the neutral along power line(s) for applications of gas pumps.

3/4-Inch (19.1 mm) per Pole 120 or 120/240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Two-Pole 120 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 1 per Shelf Carton Catalog Number	Three-Pole 120/240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces 1 per Shelf Carton Catalog Number
			
15	#14–8	CHP215SW ①	CHP315SW ①
20	#14–8	CHP220SW ①	CHP320SW ①



Type CH-M50 High Ambient Breaker

3/4-Inch (19.1 mm) per Pole 120 or 120/240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton Catalog Number	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number
			
15	(1) #14–8	CH115M50	CH215M50
20	(2) #14–10	CH120M50	CH220M50
25		CH125M50	CH225M50
30		CH130M50	CH230M50
35		CH135M50	CH235M50
40		CH140M50	CH240M50
45		CH145M50	CH245M50
50		CH150M50	CH250M50
60		—	CH260M50
70		—	CH270M50

Type CH-HM and CHP-HM High Magnetic Breakers

3/4-Inch (19.1 mm) per Pole 120 or 120/240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton Catalog Number	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton Catalog Number
			
15	(1) #14–8	CH115HM	CH215HM
20	(2) #14–10	CH120HM	CH220HM
15	(1) #14–8	CHP115HM	CHP215HM
20	(2) #14–10	CHP120HM	CHP220HM

Note

① For circuit breakers with shunt trip, add ST suffix. Shunt trip requires one additional pole space, obtain pricing from **Page V1-T1-43**.

Options and Accessories

Field Installation Kits and Parts

CHHT



CHPL



CHPLGF



MCBPL



CHLO



CH125RB



CH9MB270



CHML



Description

Ordering
Quantity ^①Catalog
NumberHandle Ties ^②

Handle tie bar for physically joining the handles of two adjacent single-pole Type CH circuit breakers (molded plastic handle cover)

25

CHHT

Padlockable device for locking the handle of CH AFGF, CAF and GFT breakers into the ON or OFF position.

CHFAFGFLOFF

Handle Lockoffs ^{③④}Padlockable device for locking the handle of single-, two- or three-pole Type CH circuit breakers (escutcheon mounted) ^⑤

1

CHPL

Padlockable device for locking the handle of a single-pole Type CHGI circuit breaker (escutcheon mounted) ^⑤

1

CHPLGF

Padlockable bracket for locking the handle of two-, three- and four-pole Type CH circuit breakers

10

CHPLOFF

Padlockable device for locking the handle of main circuit breaker Types CC and CCH into the ON or OFF position (screw mounted) ^⑥

1

CCPL

Padlockable device for locking the handle of main breaker Types BW and CSR into the ON or OFF position (escutcheon mounted) ^⑤

1

MCBPL

Handle Lockdogs ^{④⑦}Device used to secure handle in ON or OFF position for single-pole Type CH circuit breakers (handle mounted) ^⑧

10

CHLO

Hold-Down Kits ^⑨

Hold-down retainer kit for single-, two-, three-pole Type CH circuit breakers. For 6–24 circuit 125 A single- and three-phase, 12–42 circuit single-phase 225 A and 24–42 circuit three-phase 225 A MLO Type CH loadcenters

1

CH125RB

Hold-down retainer kit for single-, two-, three-pole Type CH circuit breakers for 2–4 circuit MLO CH loadcenters.

1

CH125RB24

Mounting Bases

Mounting base for two-pole Type CH circuit breaker—70 A maximum

1

CH9MB270

Main Breaker Lug Kits

Types CC and CCH main breaker lug kit (2) 300 kcmil

1

CCL300

Type CSR main breaker lug kit (2) 300 kcmil

1

MCBL300

Mechanical Interlock

Type CH for two-, three- and four-pole breakers

10

CHML ^⑩

Shunt Trip Options

Description Type	Volts	Catalog Number Suffix Adder ^⑪
CSR	12 DC	SR12
CSR	24 DC	SR24
CSR	120 AC	SR01
CH	120 AC	ST ^④
CC	12 DC	SR12
CC	24 DC	SR24
CC	120 AC	SR01
CC	208 AC	SR08
CC	240 AC	SR02

Notes

- ^① Must be purchased in multiples of ordering quantities indicated.
- ^② Handle ties: typically used to join two similar independent single-pole breakers to form a two-pole noncommon trip breaker.
- ^③ Handle lockoffs: devices that use a padlock to lock the circuit breaker's handle in the ON or OFF position.
- ^④ Requires one additional pole space.
- ^⑤ Escutcheon mounted: device mounted semipermanently to the face of the circuit breaker and secured by the loadcenter deadfront.
- ^⑥ Screw mounted: device permanently mounted to the face of the circuit breaker by the use of a non-removable screw.
- ^⑦ Handle lockdogs: devices that are used to secure a circuit breaker's handle in the ON or OFF position. Handle lockdogs are not padlockable devices.
- ^⑧ Handle mounted: device mounted above or below handle using spring pressure.
- ^⑨ Hold-down kits: devices used to secure the circuit breaker to the loadcenter for back-feed main application. See NEC Article 408.36(D).
- ^⑩ CHML not suitable to transfer emergency power.
- ^⑪ Add suffix indicated to end of breaker catalog number.

Handle Position Changeability Chart

Handle Lockoff and Lockdog Types	To Change Handle Position from ON to OFF or OFF to ON You Must...		
	Remove Padlock	Remove Device	Remove Loadcenter Deadfront
Lockoff escutcheon mounted	Remove	—	—
Lockoff screw mounted	Remove	—	—
Lockdog handle mounted	N/A	Remove	—

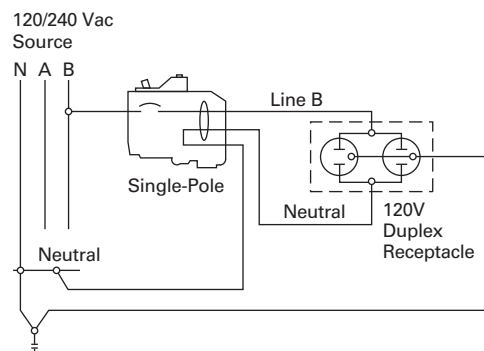
Technical Data and Specifications

Ratings

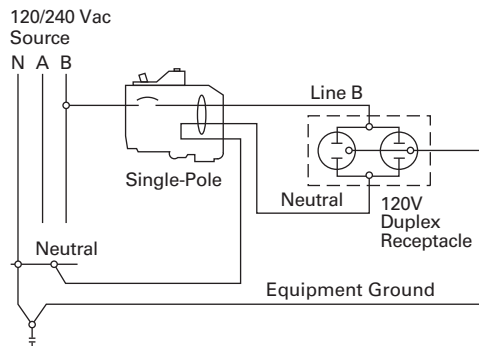
Single- and two-pole CH breakers rated 15 and 20 A have low instantaneous magnetic trip levels. The 15 and 20 A breakers with “HM” suffix have high magnetic trip settings recommended for circuits with inherently high inrush currents. All Type CH breakers are marked for heating, air conditioning and refrigeration (HACR) equipment application. Single-pole 15–20 A breakers are also suitable for switching duty (SWD). Shunt trip coils operate on 120 Vac and require one additional pole space per breaker.

Wiring Diagrams

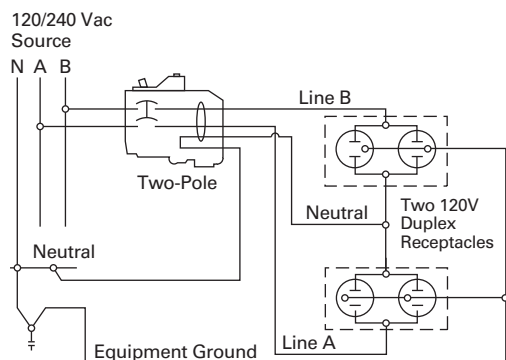
Typical Single-Pole



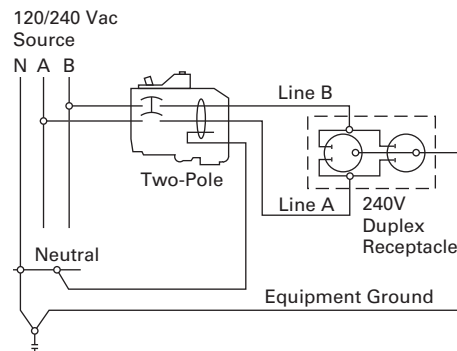
Single-Pole 120 V Load Application Sourced by 120/240 Vac



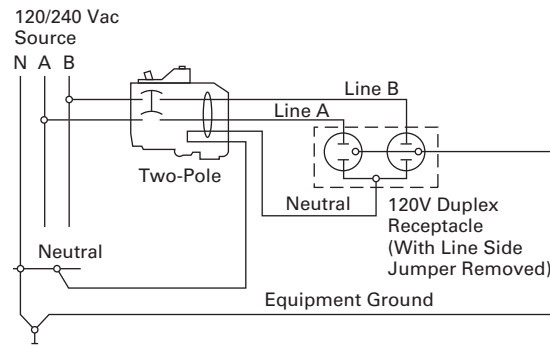
Two-Pole Shared Neutral with Multi-Duplex Receptacle Application



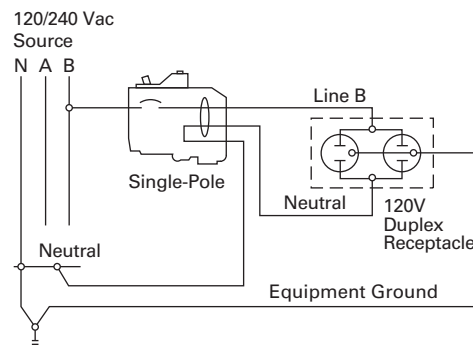
Two-Pole 240 V Load Application Sourced by 120/240 Vac



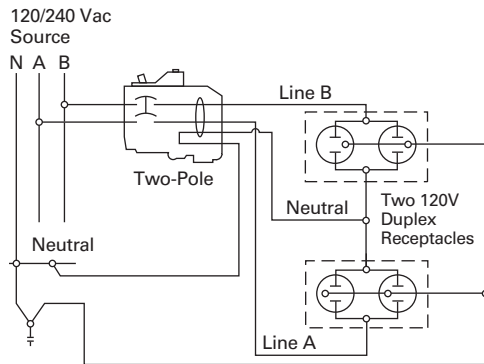
Two-Pole Shared Neutral with Duplex Receptacle Application



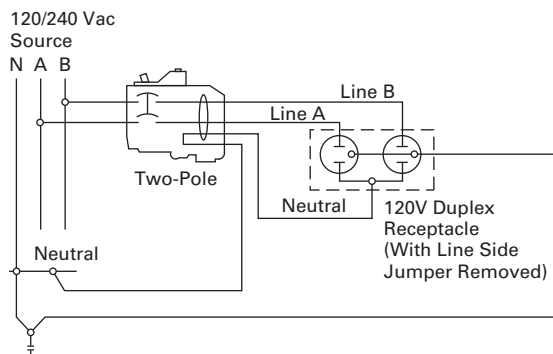
Single-Pole 120 V Duplex Receptacle Application



Two-Pole 120 V Multi-Duplex Receptacle Application



Two-Pole 120 V Duplex Receptacle Application



Two-Pole 240 V Duplex Receptacle Application

