

1.1

Loadcenters and Circuit Breakers

Type CH Loadcenters and Circuit Breakers

1

Spa Panels



Contents

<i>Description</i>	<i>Page</i>
Overview	V1-T1-2
CH Specialty Products	
Spa Panels	
Surge Panel	V1-T1-15
Type CH Retrofit Interior Kits	V1-T1-17
CH Loadcenter Options and Accessories	V1-T1-20
CH Circuit Breakers	V1-T1-35

CH Specialty Products

Spa Panels

Product Description

Eaton’s CH Spa Panels are premium factory-assembled “combination” units that provide ground fault protection, as well as a convenient way to turn spa pumps on and off. The NEC requires that all pool and spa pumps be protected by a ground fault interrupter and a disconnect switch mounted within 10 feet of the tub or the spa.

Features

- Two extra circuits for additional loads
- Limited lifetime warranty
- UL Listed
- Tough powder-coated galvanized steel enclosure
- Factory-installed two-pole ground fault circuit interrupter (GFCI)

Product Selection

CH Spa Panel



Single-Phase Three-Wire— 120/240 Vac Insulated/Bondable Neutral— Factory-Installed Ground Bar

Main Ampere Rating	Circuit Breaker Included	Enclosure Type	Type of Trim Included	Box Size	Wire Size Range Cu/Al 60 °C or 75 °C for Main Lugs	Catalog Number
30	CHN230GF	Outdoor	—	5R	#14–1/0	CHSPA30 ^①
40	CHN240GF	Outdoor	—	5R	#14–1/0	CHSPA40 ^②
50	CHN250GF	Outdoor	—	5R	#14–1/0	CHSPA50 ^③
60	CHN260GF	Outdoor	—	5R	#14–1/0	CHSPA60 ^④

Notes

- ① Includes a CHN230GF breaker, factory installed, and two extra circuits for convenience.
- ② Includes a CHN240GF breaker, factory installed, and two extra circuits for convenience.
- ③ Includes a CHN250GF breaker, factory installed, and two extra circuits for convenience.
- ④ Includes a CHN260GF breaker, factory installed, and two extra circuits for convenience.

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 CHGFI are designed for use in two-wire, 120 Vac circuits. The diagram on Page V1-T1-43 shows a typical wiring configuration.

Contents

Description

	<i>Page</i>
Overview	V1-T1-2
CH Specialty Products	V1-T1-14
CH Loadcenter Options and Accessories	V1-T1-20
CH Circuit Breakers	
Product Selection	V1-T1-36
Options and Accessories	V1-T1-42
Technical Data and Specifications	V1-T1-43
Wiring Diagrams	V1-T1-43

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.

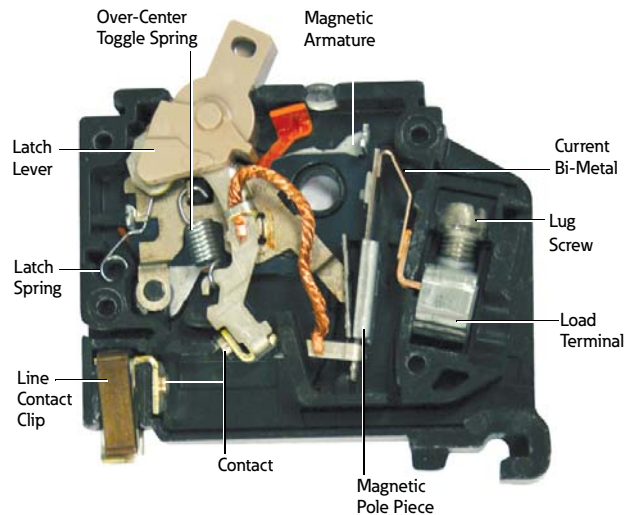
Diagrams on Page V1-T1-43 illustrate typical wiring configurations for 120/240 Vac multiwire circuits.

The diagram on Page V1-T1-43 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



1.1

Loadcenters and Circuit Breakers

Type CH Loadcenters and Circuit Breakers

1

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, Pigtail Neutral Requires One 3/4-Inch (19.1 mm) Space	Single-Pole 120 Vac, Plug-On Neutral 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	CHFN115GF	CHFP115GF	CHN215GF ②
20	#14–6	CHFN120GF	CHFP120GF	CHN220GF ②
25	#14–6	CHFN125GF	—	CHN225GF ②
30	#14–6	CHFN130GF	—	CHN230GF ②
35	#14–6	—	—	CHN235GF ②
40	#14–6	—	—	CHN240GF ②
45	#14–6	—	—	CHN245GF ②
50	#14–6	—	—	CHN250GF ②
60	#14–6 ①	—	—	CHN260GF ②

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	CH225EPD
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	(Hot leg) Neutral Out Neutral In	Phase Phase Neutral Out Neutral In
20	#14–8	CH215SW ③	CH315SW ④
20	#14–8	CH220SW ③	CH320SW ④
30	#14–8	CH230SW ③	CH330SW ④
40	#14–8	CH240SW ③	CH340SW ④
50	#14–8	CH250SW ③	CH350SW ④

Notes

- ① 60 A breaker listed for 75 °C Cu wire only.
- ② "CHN" two-pole breakers are redesigned to fit into the plug-on neutral loadcenter without interfering with the neutral bar.
- ③ For circuit breakers with shunt trip, add ST suffix. Shunt trip requires one additional pole space.
- ④ Switching duty rated.