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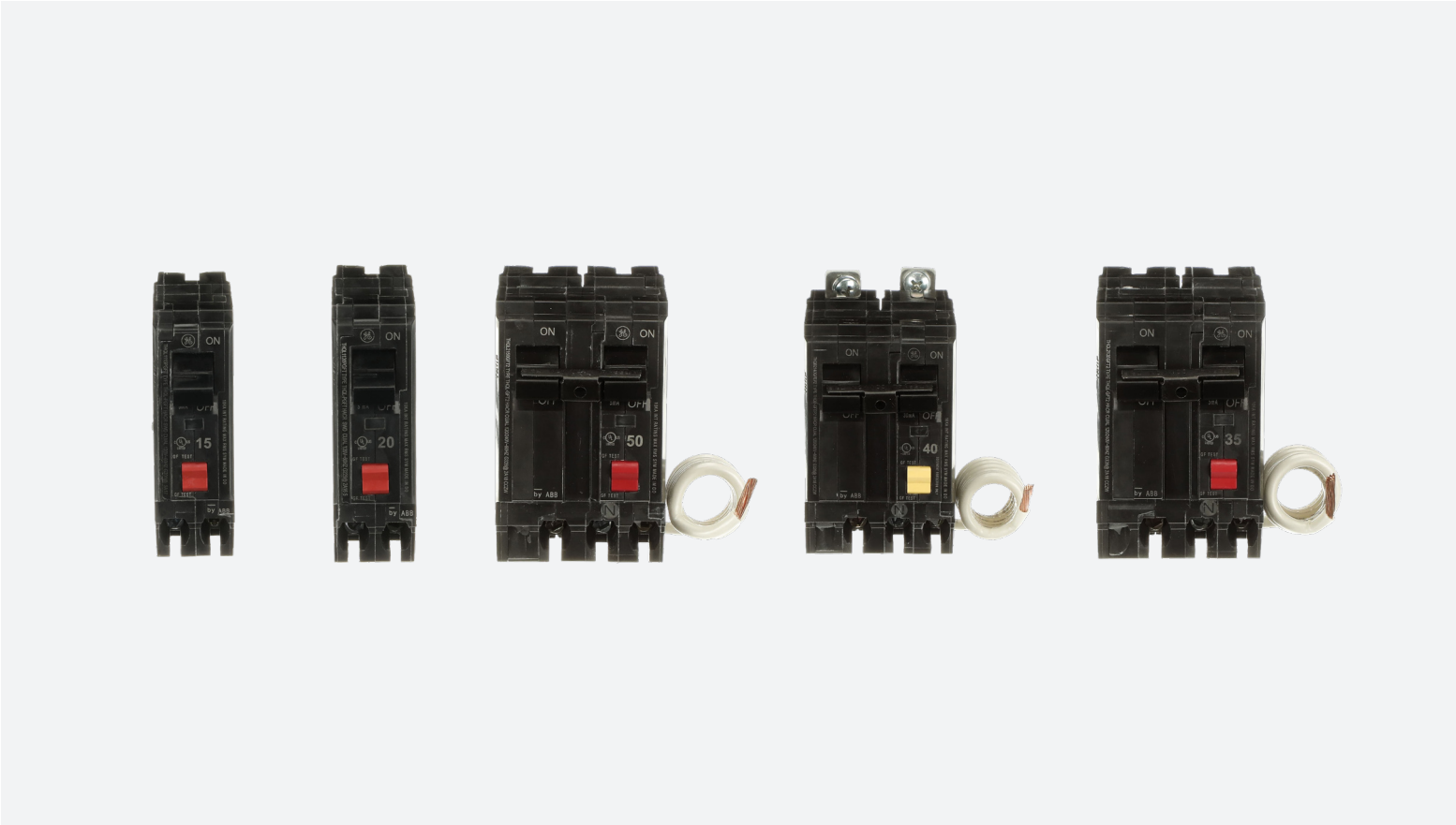
Ground Fault Circuit Interrupter (GFCI)

Provides ground fault protection



The Ground Fault Circuit Interrupter (GFCI) provides protections against overloads, short circuits, and ground faults. The GFCI breakers detect low levels of electrical current leakage (ground faults), and acts quickly to shut off power with a purpose of preventing serious shock

Ground Fault Circuit Interrupters – Personnel Protection

What is a ground fault?
Typically electrical current traveling to an electrical appliance is equal to the current traveling from that appliance. An imbalance in that flow indicates a current leak – also referred to as a ground fault, because the leaking current is flowing to ground.

If the leaking current travels through a person, they will be severely shocked or electrocuted. For example, if a hair dryer is dropped in a tub full of water, some of the electrical current leaks out of the appliance and into the water. This current leakage could be enough to kill someone who comes in contact with the water, but not large enough to trip a nonground fault circuit interrupter. Thermal magnetic circuit breakers only guard against overloads and short circuits. They are not designed to protect people from electrical shocks.

Why ground fault circuit interrupters with self-test?
Self-test functionality is a UL requirement on all GFCI devices that began in 2015. This variant of the GFCI ensures the ground fault circuitry is functioning properly by automatically running diagnostic testing on a periodic basis. Should a problem be detected, the circuit breaker will trip and will need to be replaced.

When installed in a home's load center, the GFCI helps protect people against dangerous electrical shock caused by ground faults. The breaker monitors the current going to and returning from the equipment along the circuit. If a ground fault is detected, the breaker shuts off power to the circuit.

ON/OFF

Trip and LED indicators

Push button test validates the ground fault detection capability of the breaker

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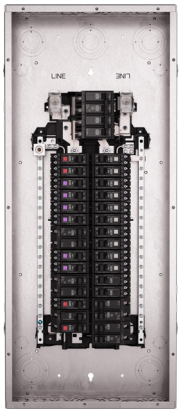

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02 ABB's THQL ground fault circuit interrupters can be installed in the PowerMark™ Pro and PowerMark Gold Load Centers

Protecting up to 5mA for personnel protection
The 2023 National Electrical Code (NEC) requires GFCI protection in dwelling units for 125 volt to 250 volt receptacles located throughout the home. GFCI with personnel protection is required throughout the home. This applies to new construction and existing homes installations, where equipment is updated or replaced.

Specifications
- Class A 5mA ground fault circuit interrupter
- 1 or 2 pole
- 15A, 20A, 25A, 30A, 35A, 40A, 45A, 50A, or 60A
- 10kAIC or 22kAIC
- 120 Vac or 120/240 Vac
- Certified by UL/UL Solutions
- UL489 – molded case circuit breakers
- UL943 – ground fault circuit interrupters 5mA
- UL1053 – ground fault circuit interrupters 30mA

Plug-on-Neutral Circuit Breakers
- Faster field installs
- Secure neutral connections
- Eliminates need for a pigtail
- Maximizes gutter space

Scan QR code to see how it works

Short Pigtail Circuit Breakers
- Cleaner finished look
- Uncluttered wire gutters
- Use in load centers 16 circuits or greater

Scan QR code to see how it works

Technical data						
	1 pole 120 volts ac				2 pole 120/240 volts ac	
	Ampere Rating	**Long pigtail**	**Short pigtail**	**Plug-on neutral**	**Long pigtail**	**Plug-on neutral**
10,000 AIC						
	15	THQL1115GFT	THQL1115GFTS	THQL1115PGFT	THQL2115GFT	THQL2115PGFT
	20	THQL1120GFT	THQL1120GFTS	THQL1120PGFT	THQL2120GFT	THQL2120PGFT
	25	THQL1125GFT		THQL1125PGFT	THQL2125GFT	THQL2125PGFT
	30	THQL1130GFT		THQL1130PGFT	THn L2130GFT	THQL2130PGFT
	35				THQL2135GFT2	
	40				THQL2140GFT2	
	45				THQL2145GFT2	
	50				THQL2150GFT2	
	60				THQL2160GFT2	
22,000 AIC						
	15	THHQL1115GFT		THHQL1115PGFT	THHQL2115GFT	THHQL2115PGFT
	20	THHQL1120GFT		THHQL1120PGFT	THHQL2120GFT	THHQL2120PGFT
	25	THHQL1125GFT		THHQL1125PGFT	THHQL2125GFT	THHQL2125PGFT
	30	THHQL1130GFT		THHQL1130PGFT	THHQL2130GFT	THHQL2130PGFT

	1 pole 120 volts ac			2 pole 120/240 volts ac	
	Ampere Rating	**QB Bolt-on**	**QC Lug-lug**	**QB Bolt-on**	**QC lug-lug**
10,000 AIC					
	15	THQB1115GFT	THQC1115GFT	THQB2115GFT	THQC2115GFT
	20	THQB1120GFT	THQC1120GFT	THQB1120GFT	THQC2120GFT
	25	THQB1125GFT	THQC1125GFT	THQB2125GFT	THQC2125GFT
	30	THQB1130GFT	THQC1130GFT	THQB2130GFT	THQC2130GFT
	35	THQB2135GFT2		THQB2135GFT2	THQC2135GFT2
	40			THQB2140GFT2	THQC2140GFT2
	45			THQB2145GFT2	
	50			THQB2150GFT2	
	60			THQB2160GFT2	
22,000 AIC					
	15	THHQB1115GFT		THHQB2115GFT	THHQC2115GFT
	20	THHQB1120GFT		THHQB2120GFT	THHQC2120GFT
	25	THHQB1125GFT		THHQB2125GFT	THHQC2125GFT
	30	THHQB1130GFT		THHQB2130GFT	THHQC2130GFT

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03 Ground Fault Circuit Interrupters – Equipment Protection

Protecting up to 30mA for equipment protection
A ground fault in a piece of electrical equipment is caused by loss of insulation between a live conductor and an exposed conductive part, causing a flow of current to the ground. Ground faults can result from deterioration, mechanical damage, and harsh environments.

Specifications:
- 1 or 2 pole
- 15A, 20A, 30A, 35A, 40A, 45A, 50A, or 60A
- 10kAIC or 22kAIC
- 120 Vac or 120/240 Vac
- Certified by UL/UL Solutions
- UL489 – molded case circuit breakers
- UL1053 – ground fault circuit interrupters = 30mA

ON/OFF

Trip and LED indicators

Push button test validates the ground fault detection capability of the breaker

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Ground Fault Equipment Protection Applications
Ground fault equipment protection is utilized in many different situations including heat trace systems, data centers, deicing systems, and more.
The National Electric Code (NEC) requires the use of these devices for the protection of the equipment. Below are some examples where ground fault equipment protection is required by the NEC:
Article 426.28: Ground-fault protection for equipment shall be provided for fixed outdoor deicing and snowmelting equipment.
Article 427.22: Ground-fault protection for equipment shall be provided for heat tracing and heating panels for pipelines and vessels.
Article 517.17: In health care facilities, an addi tional level of ground fault protection of equipment (with selectivity) is required downstream.
Article 553.4: The main overcurrent protective device for a floating building/structure shall have ground fault protection not exceeding 100 mA.
Articles 690.5 and 690.35 describe ground-fault protection for equipment in solar installations (PV arrays).

For exceptions, please check the NEC and your local jurisdiction.

Technical data

		1-pole, 120 volts ac			2-pole, 120/240 volts ac		
	Ampere Rating	QL Plug-on	QB Bolt-on	QC Lug-lug	QL Plug-on	QB Bolt-on	QC Lug-lug
10,000 AIC							
	15	THQL1115GFEP	THQB115GFEP	THQC1115GFEP	THQL2115GFEP	THQB2115GFEP	THQC2115GFEP
	20	THQL1120GFEP	THQB1120GFEP	THQC1120GFEP	THQL2120GFEP	THQB2120GFEP	THQC2120GFEP
	30	THQL1130GFEP	THQB1130GFEP	THQC1130GFEP	THQL2130GFEP	THQB2130GFEP	THQC2130GFEP
	35					THQB2135GFEP2	
	40					THQB2140GFEP2	
	45					THQB2145GFEP2	
	50					THQB2150GFEP2	
	60					THQB2160GFEP2	
22,000 AIC							
	15		THHQB1115GFEP	THHQC1115GFEP	THHQL2115GFEP	THHQB2115GFEP	THHQC2115GFEP
	20		THHQB1120GFEP	THHQC1120GFEP	THHQL2120GFEP	THHQB2120GFEP	THHQC2120GFEP
	30		THHQB1130GFEP	THHQC1130GFEP		THHQB2130GFEP	THHQC2130GFEP

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ABB Inc.
305 Gregson Drive
Cary, NC 27511

electrification.us.abb.com/
residential-circuit-breakers

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