SIEMENS ECHS100 4.17-in Hub in the Breaker Box User Guide

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HS100
E10703

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Arc Fault Circuit Interrupters (AFCI)

Identifying applications:
Used in Siemens and Murray load centers

Definition of product:

Arc fault circuit interrupter (AFCI) uses advanced electronic technology to provide maximum available protection against the effects of arcing faults.

Overview of the product:

- United States Fire Administration (USFA) reported:
  – Annually, an estimated 28,300 residential electrical fires cause 360 deaths, 1,000 injuries, and $995 million in direct loss.
  – 15% of residential electrical fires start in bedrooms.
  – 47% of residential electrical fires are caused by the wiring.
- Combination Type AFCI's are required by the 2005, 2008, 2011, 2014 and 2017 National Electric Code ®

Product rating: UL listed

General features and benefits:

- 1 and 2 pole Combination Type AFCIs
- Exclusive LED trip indicators indicate cause of last trip (ie. Arcing fault or overcurrent condition.)

1-Pole Combination Type AFCI	
LED indicator	**Last known trip condition**
ON	Arc fault
OFF	Overcurrent

2-Pole Combination Type AFCI		
LED indicator		**Last known trip condition**
Yellow 1	**Yellow 2**	
On	OFF	Arc Fault (Leg A)
OFF	ON	Arc Fault (Leg B)
OFF	OFF	Overcurrent

Accessories

- Padlocking device: ECPLD1

Arc Fault Breaker Catalog Numbering System

Q	**1**	**20**	**AFC**	**P**
Brand name	**No. of Poles**	**Amperes**	**Special Applications**	**Packaging**
Q = Siemens MP = Murray	1 = 1 2 = 2	15 = 15A 20 = 20A	(blank) = Standard breaker AFC = Combination Type Arc Fault Circuit Interrupter	(blank) = cardboard packaging P = Clamshell packaging for retail

Ground Fault Circuit Interrupters (GFCI)

Identifying applications:
Used in Siemens and Murray load centers

Definition of product:

Ground fault circuit interrupter (GFCI) is designed to protect against severe electrical shock or electrocution from ground faults. Ground faults occur when the electrical current in an appliance strays outside its normal path, and the human body becomes part of the path through which the electrical current may flow.

Overview of the product:

- GFCIs are installed to protect areas of the home, such as the kitchen, bathroom or laundry, where electrical appliances or products may come into contact with water.
- Current imbalances of 4-6 milliamps or more between load conductors will cause the ground fault sensor to trip the circuit breaker.

Product rating: UL listed, CSA Certified

General features and benefits:

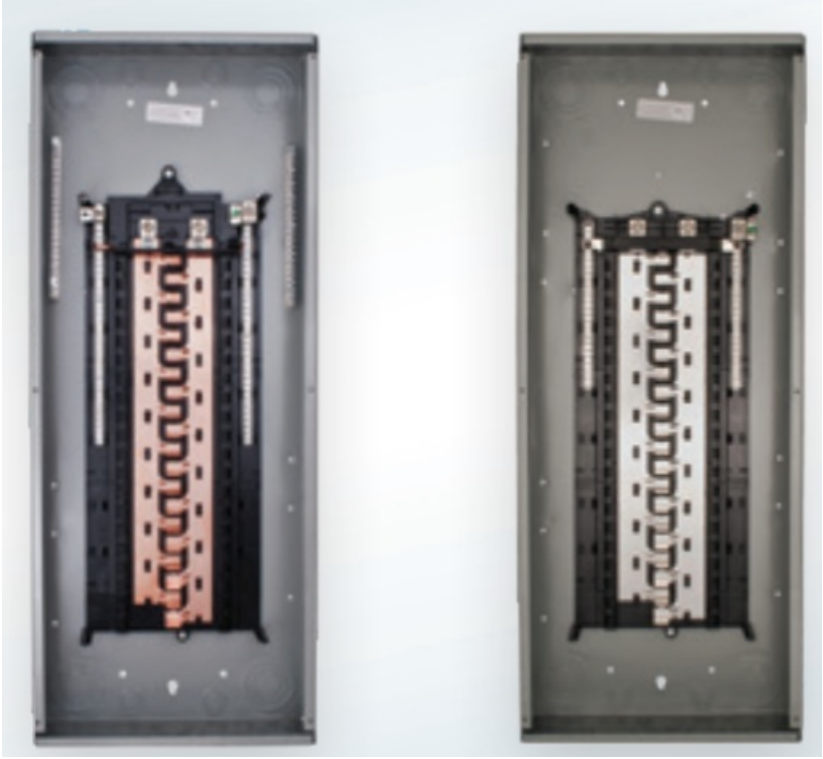
- Available in 1-pole (15-30A) and 2-pole (15-60A)
- Common uses: spas, hot tubs, kitchens, bathrooms, garages, etc.
- Resists false tripping (shielded to prevent RF interference)
- Standard 1 inch per pole format with plug-in design
- Provides Class A GFCI protection

Ground Fault Breaker Catalog Numbering System

Q	F	1	20	P
Brand name	**Ground Fault Indication**	**No. of Poles**	**Amperes**	**Packaging**
Q = Siemens MP = Murray	F = Ground Fault; 5mA personnel protection E = Ground fault; 30mA equipment protection	1 = 1 2 = 2	15 = 15A 20 = 20A 30 = 30A 40 = 40A 50 = 50A 60 = 60A	(blank) = cardboard packaging P = Clamshell packaging for retail

Load centers PL and ES Series

Identifying applications:
Residential and multi-family electrical distribution



Definition of product:

A load center is the point where all of the electricity enters and is distributed throughout the house.

Overview of the product:

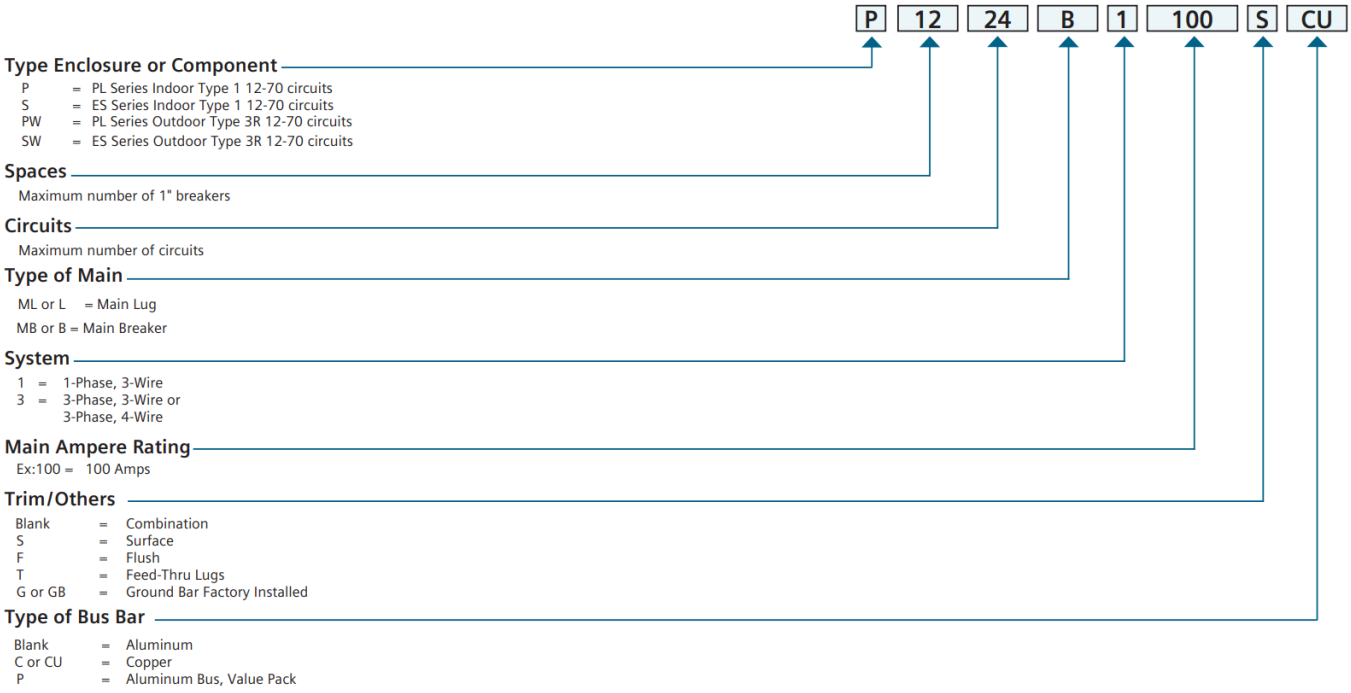
- Copper Bus and Aluminum Bus variations
- 100-225A, 1 and 3-phase, NEMA 1 and 3R
- Main Lug and Main Breaker options

Product rating: UL listed

General features and benefits: PL Series

- Copper Bus
- Convertible from Main Lug to Main Breaker
- 12-70 circuits/spaces
- 2 Ground Bars factory installed
- INSTA-WIRE™ neutrals and grounds

Catalog Numbering System



Siemens load centers meet or exceed the following standards.

- UL50 – Electric Cabinets and Boxes
- UL67 – Electric Panelboards
- UL486 – Wire Connectors
- UL489 – Molded-Case Circuit Breakers
- UL869 – Service Equipment
- UL943– Ground Fault interrupters (Class A – Personnel Protection)
- Federal Specification W-P-115b – Panel Power Distribution
- Federal Specification W-C-375B – Circuit Breakers
- NEC
- NEMA 250

Underwriters' Laboratories, Inc. reference file numbers:

- Series Connected Circuit Breaker Information is recognized by UL under file #E10848(N)
- Load Centers Listed by UL under file #E10703
- Load Centers UL recognized components found under file #E10703, Volume 6 and 7. (Also referenced under the recognized components directory – section QEUY2)
- EQ Circuit Breakers are Listed by UL under file #E82615

Load center Accessories

Ground Bars:
2 included in all PL Series load center. Sold separately for ES Series.
EC2GB15, EC3GB27

Filler Plates:
Covers twist outs from a dead front without a breaker to fill the space.

ECQF3P

Hubs:
For use on outdoor load centers for water tight connection to conduit fittings.
ECHS000, ECHS075,
ECHS100, ECHS125,
ECHS150, ECHS200

QN and MPD

Identifying applications:
Used as a main breaker in small circuit load centers, circuit breaker enclosures, meter mains and meter combos.
Used as a branch breaker to be a main disconnect for main lug only load centers.

Definition of product:

The QN is used as both a branch breaker and a main breaker in applications which require a two pole, 120/240V AC breaker.

Overview of the product:

- 150, 175, and 200 A
- 10k, 22K, 65K AIC

Product rating: UL listed

General features and benefits:

- Available with a reverse handle mechanism

Accessories

- Padlocking device ECQLN3

QN Breaker Catalog Numbering System

	QN	2	150	R	H
Interrupting Rating	**Brand name**	**No. of Poles**	**Amperes**	**Handle operation**	**Interrupting Rating**
(blank) = 10kAIC	QN = Siemens	2 = 2	150 = 150A	(blank) = vertical applications	(blank) = 10kAIC
			175 175A		
			200 = 200A		
H = 65kAIC	MPD = Murray			R = horizontal applications	H = 22kAIC

MBK Breaker

Identifying applications:
Used in Ultimate load centers, 1 phase PL and ES load centers, riser panel load centers, and generator ready load centers

Definition of product:

Main breaker used in various Siemens load centers

Overview of the product:

- 2 Pole
- 100, 125, 150, 200, 225 A
- 22K AIC

Product rating: UL listed

General features and benefits:

- 00 and 125A breakers have a smaller footprint than the 150A+ MBKs so they cannot be installed in 150A+ load centers for increased installation safety

Accessories

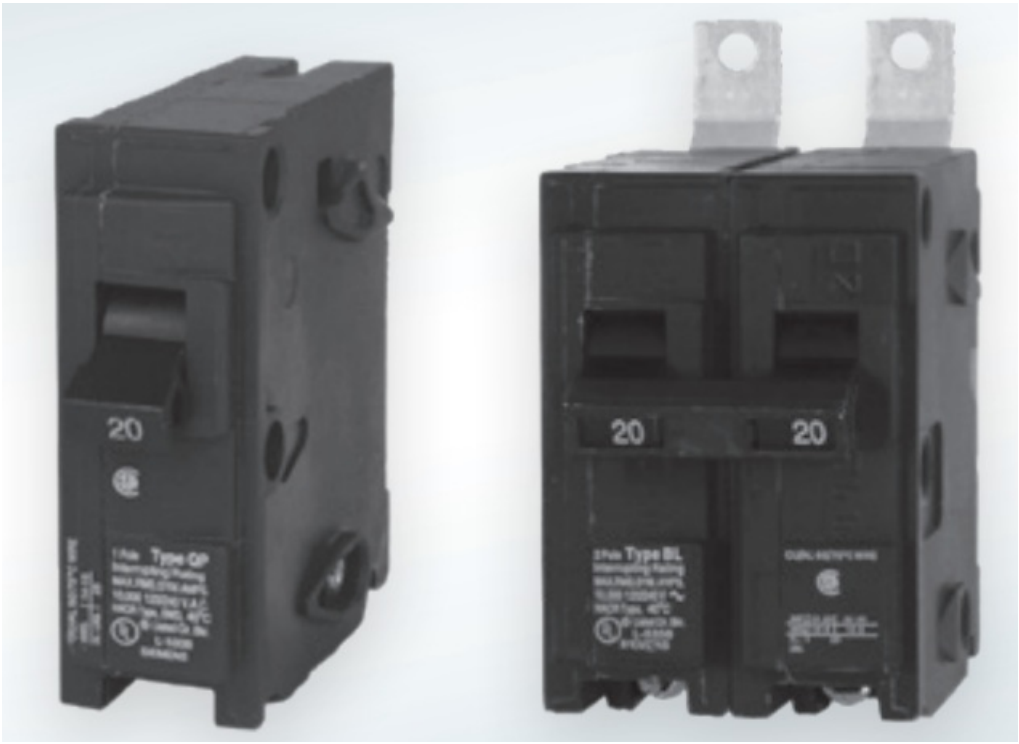
- Padlocking device
  ECQLN3

Catalog numbers

Siemens:
MBK100A, MBK125A, MBK150A, MBK200A, MBK225A
Murray:
MBK100M, MBK125M, MBK150M, MBK200M, MBK225M

QP Breakers

Identifying applications:
Used as a 1” pole center branch breaker for applications that require plug-in (QP) or bolt-on (BL) connections



Definition of product:

1” pole center branch breaker

Overview of the product:

- 1, 2, and 3 Poles (common trip)
- Available as 120V, 120/240V, 240V AC
- 10-125A
- 10K, 22K, 65K AIC

Product rating: UL listed

General features and benefits:

- Time saving INSTA-WIRE™ feature

Accessories

- Padlocking device: ECPLD1, ECPLD2, ECPLD2R, ECPLD3, ECPLD3R, ECQLD3, ECQLD4, ECQTH4
- Handle tie: ECQTH3
- Mechanical interlock: ECQML12
- Handle blocking device: ECQL1

Standard Breaker Catalog Numbering System

Q	**1**	**20**	**H**
Brand name	**No. of Poles**	**Amperes**	**Interrupting Rating**
Q = Siemens plug-in MP = Murray plug-in	1 = 1 2 = 2 3 = 3	10 = 10A 15 = 15A 20 = 20A 25 = 25A 30 = 30A 35 = 35A 40 = 40A 45 = 45A 50 = 50A 60 = 60A 70 = 70A 80 = 80A 90 = 90A 100 = 100A 110 = 110A 125 = 125A	(blank) = 10kAIC H = 22k AIC HH = 65kAIC

QT Breakers

Identifying applications:
Used as branch breakers in Siemens load centers

Definition of product:

1/2” pole centers branch breakers offered as a duplex, triplex, and quadplex.

Overview of the product:

- 120/240V AC
- Available as 120V, 120/240V, 240V AC
- 10K AIC
- 15-50A

Product rating: UL listed

General features and benefits:

- Space saving design allows two poles to fit in a 1” panel space
- Available without a rejection tab so it can be used with an unnotched stab (for panels built before the 1970s)

Accessories

- Padlocking device: ECPLD1, ECPLD2, ECPLD2R, ECQLD4
- Handle tie: ECQTH2
- Handle blocking device: ECBX23IM

QT Breaker Catalog Numbering System

Q		**15**	**15**	**NC**
Brand name	**No. of Poles**	**Amperes**	**Amperes**	**Special Application**
Q = Siemens	(blank) = Duplex	15 = 15A	15 = 15A	(blank) = standard
		20 = 20A	20 = 20A 25 = 25A 30 = 30A 35 = 35A 40 = 40A 45 = 45A 50 = 50A	
MP = Murray	2 = Triplex or Quadplex	30 = 30A		NC = Non CTL for replacement use only in panels manufactured before 1968.
				CT = Triplex CT2 = Quadplex

One Pole Applications

*These are typical installations. Check with local codes, existing wire size installed, and ratings of the appliances before proceeding.

Appliance	**Watts**	**Voltage**	**Amps**	**Breaker**
Dishwasher	1200	120	20	Q120
Lighting Fixture	1200	120	15	Q115
Refrigerator/ Freezer	300/350	120	20	Q120
TV/DVD	300	120	20	Q120
Washing Machine	1200	120	20	Q120
Waste Disposal	300	120	20	Q120

Two Pole Applications

Appliance	Watts	Voltage	Amps	Breaker
Built-in Oven	4500	120/240	30	Q230
Central Air	6000	120/240	50	Q250
Clothes Dryer	5000	120/240	30	Q230
Range	12000	120/240	50	Q250
Range Top	6000 3300	120/240	30 20	Q230 Q220
Water Heater	4000	120/240	30	Q230

Surge Protection Device

Identifying applications:
Provides surge protection for all branch circuits in the load center of the residence at no loss of load center spaces

Definition of product:

2” Wide plug-on containing two one pole circuit breakers and a surge arrester

Overview of the product:

- Utilizes Siemens-built 150V AC, 40mm, metal oxide visitor with maximum impulse rating of 40 kA
- Rated 120/240V AC

Product rating: UL listed

General features and benefits:

- Easy to install and perfect for retrofit
- LEDs provide protection status
- $20,000 warranty for the residential electrical system (Load center, internal wiring, receptacles, dimmers, hard wired appliances)
- Surge protection at no loss of load center spaces

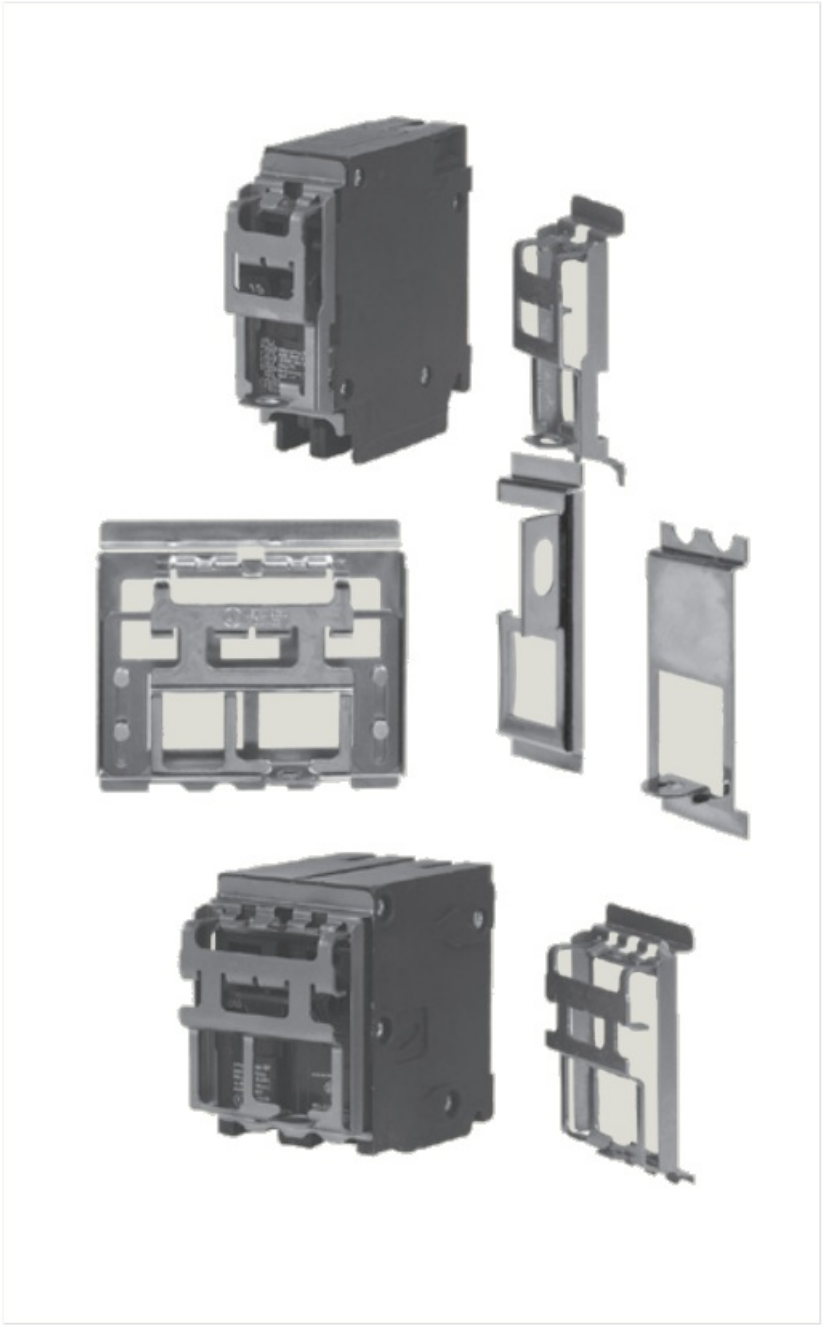
Surge Protection Breaker Catalog Numbering System

QSA	**20**	**20**	**SPD**
Brand name	**Amperes**	**Amperes**	**Special Application**
QSA = Siemens MSA = Murray	15 = 15A 20 = 20A	15 = 15A 20 = 20A	SPD = Surge Protection Device

Breaker Accessories

Padlocking Device:

For locking breaker in “OFF” position. Note “ON” position does not affect breaker functionality.
ECPLD1, ECPLD2,
ECPLD2R, ECPLD3,
ECPLD3R, ECQLD3,
ECQLD4, ECQLN3,
ECQTH4
Available for: QP, BL, QT, QN, QNR, 150A+ MBK



Handle Tie:

Provides simultaneous switching of 2 adjacent handles
ECQTH2, ECQTH3
Available for: 2 Pole QP and QTs

Mechanical Interlock:

Mechanically interlocks two breakers so it is impossible for both to close at the same time ECQML12
Available for: QP and BL

Handle Blocking Device:

For holding device in “ON” and “OFF” position. Not a lockout/tagout device ECQL1, ECBX231M
Available for: QP, BL, QT

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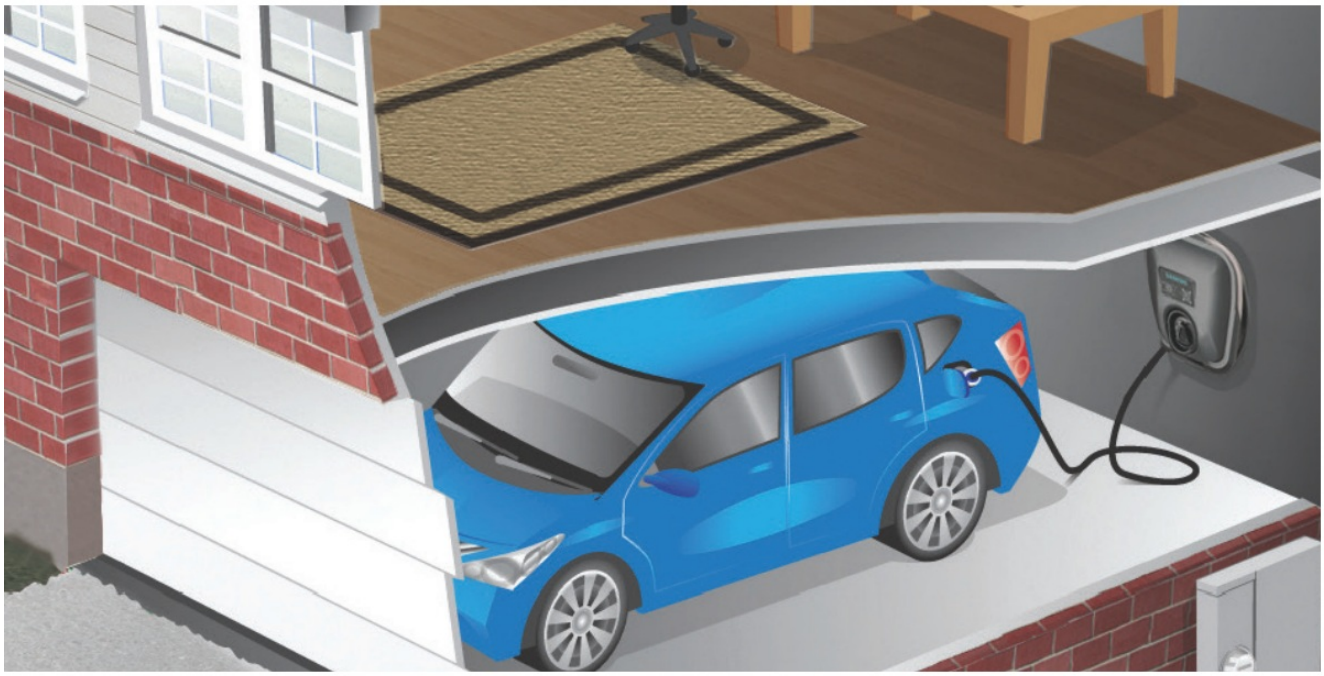

Customer Support

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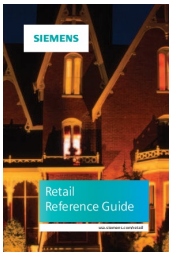
Documents / Resources

	SIEMENS ECHS100 4.17-in Hub in the Breaker Box [pdf] User Guide ECHS100 4.17-in Hub in the Breaker Box, ECHS100, 4.17-in Hub in the Breaker Box, Hub in the Breaker Box, Breaker Box

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- Residential Power Distribution and Circuit Protection | Low-voltage â power distribution | Siemens USA
- Retail Market Key Visual | Market Focus | Siemens USA
- Surge Protection Devices - Commercial and Residential | Low-voltage â power distribution | Siemens USA
- VersiCharge AC Series - Transportation Electrification - USA
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