1.2 Solar-Ready Loadcenters and Meter Breakers

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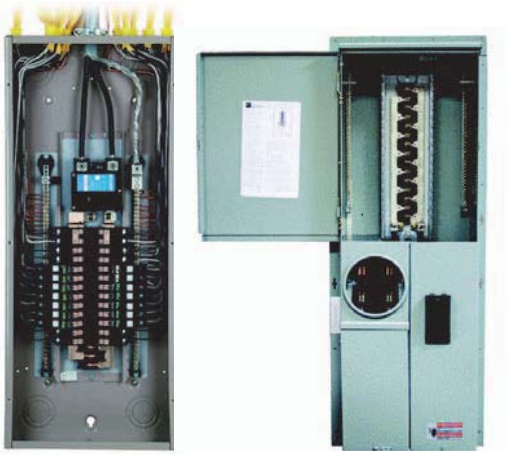
Solar-Ready Loadcenter and Meter Breaker



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Solar-Ready Loadcenters and Meter Breakers

Product Description

Loadcenters are enclosures specifically designed to house the branch circuit breakers and wiring required to distribute power to individual circuits. They contain either a main breaker when used at the service entrance point or a main lug when used as a sub-panel to add circuits to existing service. The main breaker protects the entire panel and can be used as a service disconnect. The branch breakers protect the wires leading to individual electrical loads such as fixtures and outlets.

Meter breakers are service entrance equipment that consist of a single meter socket and loadcenter (circuit breaker distribution section) or meter socket and main breaker combined in one enclosure. Sometimes called Combos, All-in-Ones, Meter Centers or Meter Mains, these units are increasing in popularity as the socket and loadcenter or main breaker are located in one location, thus providing the contractor with a labor and material savings when installing.

Eaton's solar-ready loadcenters and meter breakers can be applied as a system component of a complete photovoltaic electrical system. This solution complies with National Electrical Code® (2008) Section 690.64(B)/ (2011) Section 705.12(D), which identifies the acceptable methods for Solar Photovoltaic (PV) systems.

Application Description

In addition to residential installations, meter breakers are equally applicable for rural service entrance, mobile homes and construction site temporary power. Meter breakers are most often sold in the western, southwestern and southeastern United States. The popularity of meter breakers is continuing to increase as more utilities deregulate and pass the responsibility of supplying watthour meter sockets on to the electrical contractor.

Application Considerations

Eaton offers products for multiple applications:

- Non-EUSERC
- EUSERC/West Coast

How to Size a Solar-Ready Loadcenter or Meter Breaker for your Solar Application

The National Electrical Code (2008) Section 690.64(B)(2)/ (2011) Section 705.12(D)(2) states: "The sum of the ampere ratings of overcurrent devices in circuits supplying power to a busbar or conductor shall not exceed 120 percent of the rating of the busbar or conductor."

Note: Check with local utility for exact requirements.

Example: A 200A main breaker loadcenter + a backfed 40A PV breaker = 240A = 120% of the 200A busbar rating.

Panel Main Breaker Ampere Rating	Standard Bus Ampere Rating	Maximum Total Ampere Rating ALL PV Backfed Mains	Maximum Ampere Rating of Panel Mains + PV Mains
200	200	40	240
200	225	70	270
400	400	80	480

Features

Loadcenters and Meter Breakers

- Up to 225A rated copper or aluminum bussing maximizes solar source up to 70A
- Up to 225A factory installed main available, which provides additional flexibility in service sizing
- Commercial grade rated main breaker ensures many years of safe and dependable service
- All metal backpan provides positive, reliable breaker mounting on a stable one-piece design
- Optional installed surge protective device to protect sensitive connected loads, such as central air/furnace, range tops, televisions, computers and other critical devices

Loadcenters

- Extra 1.5-inch (38.1 mm) knockout for bundling enables easier installation
- Commercial grade 35kAIC series rated main breaker, the highest in the industry
- Drywall marking on enclosure indicates proper mounting depth for flush applications
- Unique sandalwood finish is esthetically appealing with scratch-resistant powder coating
- Silver flash plated copper bus provides superior conductivity
- Patented stab design provides a tight connection to the bus
- Top or bottom feed
  - Straight-in wiring saves labor and material
  - Only one panel for either application—no modifications necessary
- Inboard neutral
  - Provides direct neutral connection for breaker
  - Ample additional 2/0 lugs provided—no kits necessary
- Limited Lifetime Warranty for Type CH

Meter Breakers

- Meter socket and loadcenter are located in one enclosure, which provides labor and material savings
- Commercial grade 22 kAIC or 35 kAIC series rated main breaker
- 7-inch design—ideal for stucco homes
- Endwall knockouts are easily accessible for future wiring without damaging stucco
- Provision for plug-in hybrid electrical vehicle receptacle, which is an energy savings provision that allows for current/ future vehicle charging station
- Optional GFCI integral receptacle kits will constantly monitor electricity flowing in a circuit, to sense any loss of current. If the current flowing through the circuit differs by a small amount from that returning, the GFCI quickly switches off power to that circuit
- Limited Lifetime Warranty for Type CH, 10-year Warranty for Type BR

Standards and Certifications

- National Electrical Code (2008) (2008) Section 690.64(B)/ (2011) Section 705.12(D)

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Product Selection

Solar-Ready Loadcenters

Main Breaker Ampere Rating ①	Wire Size Range	Bus Rating	Maximum Number of Spaces	Maximum Number of Circuits	Enclosure Type	Box Size	Catalog Number ②
200	#2–300 kcmil	225A	32	32	Indoor	J	**CH32BPN200JPV**
200	#2–300 kcmil	225A	42	42	Indoor	K	**CH42BPN200KPV**
200	#2–300 kcmil	225A	60	120	Indoor	N	**CH60BPN200NPV**

Type CH Solar-Ready Meter Breakers ①③

Main Breaker Ampere Rating	Bussing Ampere Rating	Mounting	Service Design	Circuits	Catalog Number
175	225	Surface	UG	42	**CMBE4242B200BS7**
200	225	Surface	OH	24	**CMBE24B200TSR**
200	225	Semi-flush	OH	24	**CMBE24B200TFR**
200	225	Semi-flush	UG	32/42	**CMBE3242B200BF**
200	225	Surface	UG	32/42	**CMBE3242B200BS**
200	225	Flush	OH	24	**CMBE24B200TFR**
200	225	Surface	OH	24	**CMBE24B200TSR**
200	225	Surface	UG	32	**CMBE3242B225BS2**
200	225	Flush	UG	32	**CMBE3242B225BF2**
200	225	Surface	UG	42	**CMBE4242B200BS2**
200	225	Surface	UG	42/42	**CMBE4242B225BS2**
320/400	PV input rated up to 20A via secondary main	Surface	UG	32/42	**CG403242SH**

Type BR Solar-Ready Meter Breakers ①③

Main Breaker Ampere Rating	Bussing Ampere Rating	Mounting	Service Design	Circuits	Catalog Number
125	225	Flush	UG/OH	20/40	**MBE2040B225BTF1**
125	225	Surface	UG/OH	20/40	**MBE2040B225BTS1**
150	225	Flush	UG/OH	20/40	**MBE2040B225BTF5**
150	225	Surface	UG/OH	20/40	**MBE2040B225BTS5**
150	225	Semi-flush	UG	30/42	**MBE3042B225BF5**
150	225	Surface	UG	30/42	**MBE3042B225BS5**
150	225	Flush	UG/OH	40	**MBE4040B200BTF5**
150	225	Surface	UG/OH	40	**MBE4040B200BTS5**
175	225	Flush	UG/OH	20/40	**MBE2040B225BTF7**
175	225	Surface	UG/OH	20/40	**MBE2040B225BTS7**
200	225	Flush	UG/OH	20/40	**MBE2040B225BTF2**
200	225	Surface	UG/OH	20/40	**MBE2040B225BTS2**
200	225	Semi-flush	UG	30	**MBED3042B200PV**
200	225	Semi-flush	UG	30/42	**MBE3042B225BF2**
200	225	Surface	UG	30/42	**MBE3042B225BS2**
200	225	Surface	UG/OH	40	**MBE4040B200BTS2**
200	225	Flush	UG/OH	40	**MBE4040B200BTF2**
225	225	Semi-flush	UG	30	**MBED3042B225PV**

Notes

① 35 kAIC main breaker Type CSH.
② Loadcenter cover is included.
③ 22 kAIC main breaker Type BWH or Type CSR.