SIEMENS
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Siemens Solar Solutions

usa.siemens.com/residential

Emergence of Solar

Solar power over the past decade has had tremendous growth and shown an immense amount of promise as a viable source for electrical power in the energy grid, especially in residential applications. All across the board, the prices of solar power have been dramatically reducing. In fact, a study by the U.S. Department of Energy states that from 2010 to 2017, the cost of residential photovoltaic (PV) power per watt has decreased by over 60%, and is expected to continue going down. This has led to a vast increase in the amount of solar being deployed.

The Problem

As more and more solar has come into the market, companies focusing on the integrating energy infrastructure in the residential space have struggled with how to handle the new solar technology.

A few solutions have been implemented, but Siemens wants to show you how it is possible to use our products to effectively and efficiently integrate solar into your household. We'll break it down into two main categories:

1 Common solar platforms in the industry

2 Siemens improvement on that platform

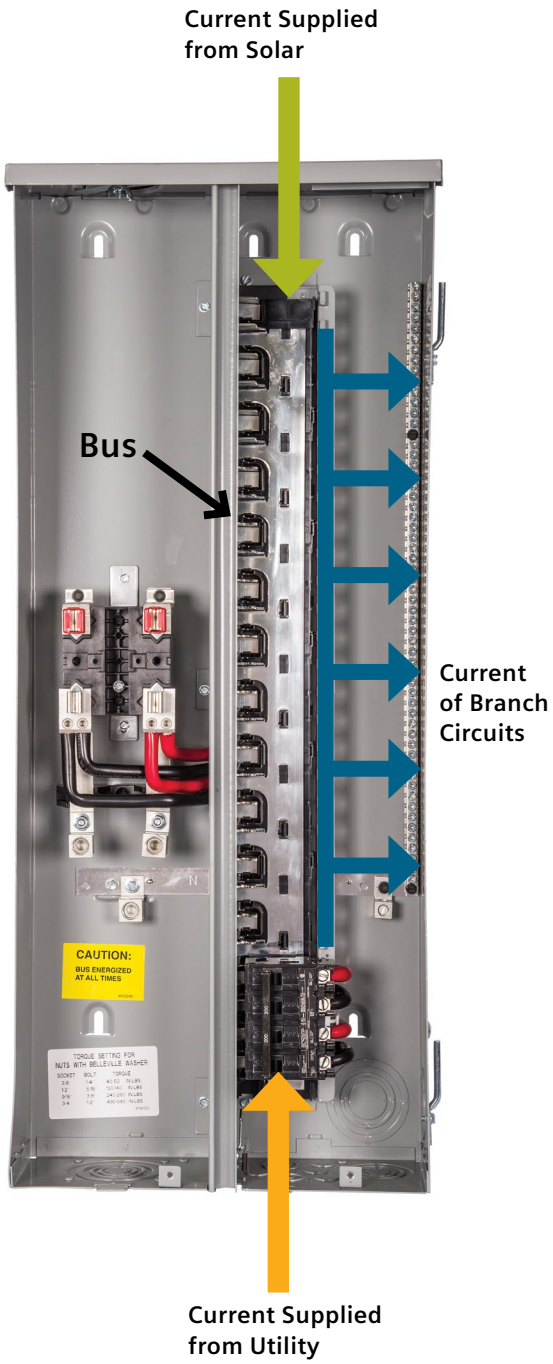
1. Common Solar Platforms

Restrictions to Meet for Solar – NEC 705.12

The National Electric Code provides specific requirements to ensure that solar power is safe to use. In order to remain safe, the 2017 NEC states:

"A connection at either end, but not both ends, of a center-fed panelboard in dwellings shall be permitted where the sum of 125 percent of the power source(s) output-circuit current and the rating of the overcurrent device protecting the busbar does not exceed 120 percent of the current rating of the busbar."

– 2017 NEC 705.12(B)(2)(3)(d)



* Utility current enters the bus via the main breaker
* Solar current enters the bus via a field installed breaker → We use 125% of current because breakers are rated at 80% current
* **BOTH** breakers are protecting a **COMMON BUS**, so to make sure the bus does exceed the allowable current, the 120% rule must be taken into account:

(125%)* Current from Solar + Utility Main Breaker Rating ≤ (120%)* Bus Rating

120% Rule = Protecting The Common BUS

Features of Siemens Solutions in Common Platform

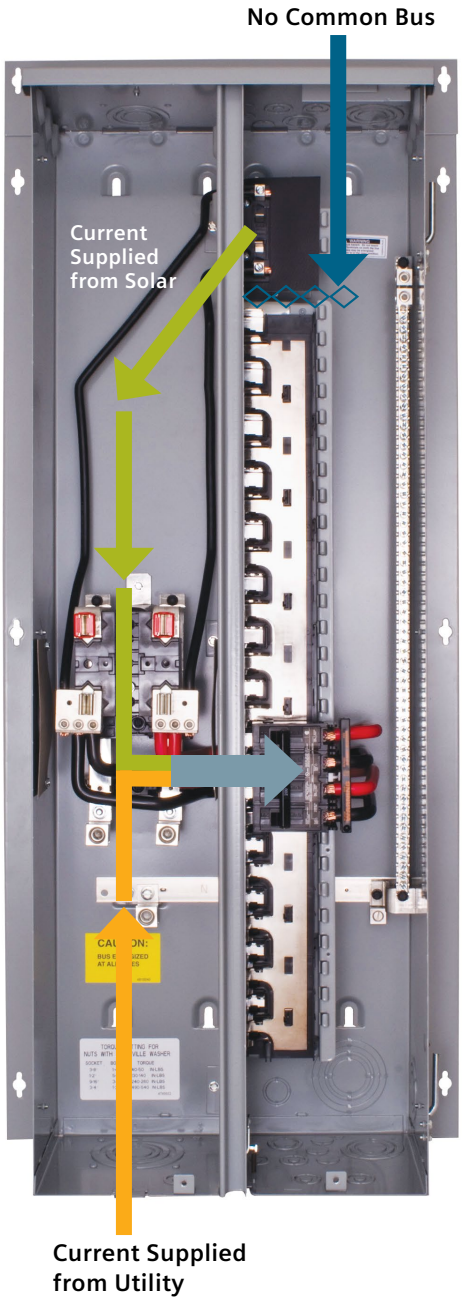
- Options **up to 70A** of alternate energy input
- Main breaker located at opposite end of bus from reserved solar input spaces

** Siemens products that meet this solution can be found on page 4 of this brochure*

2. Siemens Improvement

Reaching your System's Full Potential

Siemens has created an innovative solution to meet the needs of this growing market. These "Solar Ready" devices route the alternate power to the supply side of the service disconnecting means and provide terminations to the load side of the meter socket. This eliminates having a common bus and therefore the need to de-rate the main breaker.



While the previously mentioned common solar platforms do meet standards, they have their limitations. For example, installers may be limited with adding as much solar power as their customers would prefer. Many times, the main breaker is required to be de-rated in order to maximize solar power. This consumes valuable branch breaker space since backfeeding the alternate energy breaker onto the bussing is necessary.

Others provide options to connect solar ahead of the service disconnect, but the Siemens solution is factory installed and takes wire bending space into consideration. This simplifies the install process and allows large alternate energy inputs.

Problems with Common Platforms

- Having to **de-rate main** device in order to safely incorporate solar
- **Lose valuable load space** from solar breaker
- Solar current limited to 120% rule

Features of Siemens Solution

- **Up to 200A** of alternate energy input
- Solar power source is **separate** from busbar and supplied ahead of the service disconnect (**do not** need to worry about 120% rule anymore)
- Do not need to de-rate main breaker
- Does not take up valuable breaker space on the busbar

** Siemens products that meet this solution can be found on pages 5 and 6 of this brochure*

Product Offerings

1 Common Solar Platforms – Siemens Products

40A Max Solar Input Meter-Load Center Combinations

EUSERC and CA Title 24 Compliant, 1-Phase, 3-Wire, 120/240V AC

MC2040B1200FED

Catalog No.	No. of Spaces	No. of Circuits	Dimensions			Mounting	Feed	Main Breaker Amps	Busbar Rating	Max. PV Input Amps
			H	W	D					
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200A with Alternate Energy Input & Between Studs Width (Side-by-Side Construction)										
MC2040B1200EFC	20	40	32.56	17.3	7.1	Flush	OH/UG	200A	200A	40A
MC2040B1200ESC	20	40	31.06	14.5	5.1	Surface	OH/UG	200A	200A	40A
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200A with Alternate Energy Input & Full Load Center Width (Side-by-Side Construction)										
MC3040B1200SECW	30	40	32.34	21.3	5.1	Surface	OH/UG	200A	200A	40A
MC4040B1200SECW	40	40	32.34	21.3	5.1	Surface	OH/UG	200A	200A	40A
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200 Amp with Alternate Energy Input (Over/Under Construction)										
MC1212L1200FED	12	12	39.81	17.3	7.0	Flush	UG	200A	200A	40A
MC1212L1200SED	12	12	38.31	14.6	7.0	Surface	UG	200A	200A	40A
MC2040B1200FED	20	40	43.31	17.3	7.0	Flush	UG	200A	200A	40A
MC2040B1200SED	20	40	41.81	14.6	7.0	Surface	UG	200A	200A	40A
MC3042B1200FED	30	42	51.31	17.3	7.0	Flush	UG	200A	200A	40A
MC3042B1200SED	30	42	49.81	14.6	7.0	Surface	UG	200A	200A	40A
MC3042B1225FED	30	42	51.31	17.3	7.0	Flush	UG	225A	225A	40A
MC3042B1225SED	30	42	49.81	14.6	7.0	Surface	UG	225A	225A	40A

70A Max Solar Input Meter-Load Center Combinations

EUSERC and CA Title 24 Compliant, 1-Phase, 3-Wire, 120/240V AC

MC2442B1200ESV

Catalog No.	No. of Spaces	No. of Circuits	Dimensions			Mounting	Feed	Main Breaker Amps	Busbar Rating	Max. PV Input Amps
			H	W	D					
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200A with Alternate Energy Input & Between Studs Width (Side-by-Side Construction)										
MC2442B1200EFV	24	42	39.81	17.3	7	Flush	OH/UG	200A	225A	70A
MC2442B1200ESV	24	42	35.06	14.5	5.1	Surface	OH/UG	200A	225A	70A

Product Offerings (continued)

2 Siemens Improvement – Solar Ready Products

60A Max Solar Input Meter Mains

1-Phase, 3-Wire, 120/240V AC

MM0202S1200H

Catalog No.	No. of Spaces	No. of Circuits	Dimensions			Feed	Bypass Type	Mounting	5th Jaw	Max. PV Input Amps
			H	W	D					
Meter Mains – Non-EUSERC, 200 Amp with Alternate Energy Input (60A max) and Ring Type Cover (Side-by-Side Construction)										
MM0202S1200H	2	2	19.7	21.3	5.2	OH/UG	None	---	EMC5J	60A
Meter Mains – Non-EUSERC, 200 Amp with Alternate Energy Input (60A max) and Ringless Type Cover (Side-by-Side Construction)										
MM0202S1200RHJ	2	2	19.7	21.3	5.2	OH/UG	None	---	EMC5J	60A
MM0202S1200RJB							Horn	---		

60 - 100A Max Solar Input Meter-Load Center Combinations

1-Phase, 3-Wire, 120/240V AC

MC2442S1200FC

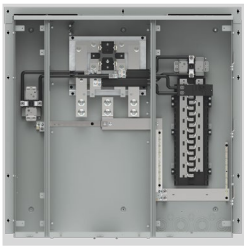
Catalog No.	No. of Spaces	No. of Circuits	Dimensions			Feed	Bypass Type	Mounting	5th Jaw	Max. PV Input Amps
			H	W	D					
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200 Amp with 60 Amp Alternate Energy Input & Between Studs Width (Side-by-Side Construction)										
MC0816S1200SCT	8	16	40.66	14.5	7	OH/UG	None	Surface	EMC5J	60A
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200 Amp with 100 Amp Alternate Energy Input & Between Studs Width (Side-by-Side Construction)										
MC3040S1200SC	30	40	35.68	21.2	5.1	OH/UG	None	Surface	EMC5J	100A
MC4040S1200SC	40	40								
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 200 Amp with Amp Alternate Energy Input & Between Studs Width (Side-by-Side Construction)										
MC2442S1200SC	24	42	40.66	14.5	7	OH/UG	None	Surface	EMC5J	100A
MC2442S1200FC			42.16	17.3	7			Flush		
Meter-Load Center Combination – Non-EUSERC, 200 Amp with Alternate Energy Input Overhead Feed Only										
MC2040S1200SZ	20	40	32.67	14.3	4.3	OH	None	Surface	EC659-0121	60A
Meter-Load Center Combination – Non-EUSERC, 200 Amp, Lever Bypass with Alternate Energy Input (Over/Under Construction)										
MC2040S1200JLC	20	40	40.1	14.4	5.2	OH/UG	HQ Lever Bypass	Surface	Installed	60A

Product Offerings (continued)

2 Siemens Improvement – Solar Ready Products (continued)

200A Max Solar Input Meter-Load Center Combinations

1-Phase, 3-Wire, 120/240V AC



MC3042S1400FCS

Catalog No.	No. of Spaces	No. of Circuits	Dimensions			Feed	Bypass Type	Mounting	5th Jaw	Max. PV Input Amps
			H	W	D					
Meter-Load Center Combination, 400 Amp, Up to 200 Amp Alternate Energy Input, Lever Bypass										
MC3042S1400SCL	30	42	39.6	39.3	7.5	OH/UG	Lever	Surface	---	200A
MC3042S1400FCL			41.1	42.3	8.5			Flush		
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 400 Amp, Up to 200 Amp Alternate Energy Input, Manual Bypass										
MC3042S1400SCS	30	42	39.6	39.3	7.5	OH/UG	Manual	Surface	---	200A
MC3042S1400FCS			41.1	42.3	8.5			Flush		
MC3042S1400SDS	30	42	39.6	39.3	7.5	UG	Manual	Surface	---	200A
MC3042S1400FDS			41.1	42.3	8.5			Flush		
EUSERC and CA Title 24 Compliant Meter-Load Center Combination, 400 Amp, Up to 200 Amp Alternate Energy Input										
MC3042S1400SC	30	42	39.6	39.3	7.5	OH/UG	None	Surface	---	200A
MC3042S1400FC			41.1	42.3	8.5			Flush		
MC3042S1400SD	30	42	39.6	39.3	7.5	UG	None	Surface	---	200A
MC3042S1400FD			41.1	42.3	8.5			Flush		

Notes

Siemens Industry, Inc.
5400 Triangle Parkway
Norcross, GA 30092

1-800-241-4453
info.us@siemens.com

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