

PVMate 2900U / 3840U / 4900U / 5300U Grid-Tied PV Inverters with Transformers

MOTECH

YOUR BEST PARTNER FOR PV INVERTERS

More Energy	Motech inverters have the highest CEC efficiency in its class, 96.0%. Maximum efficiency is 96.7%.
	Wide PV input MPPT tracking voltage range enables flexibility in module selection and sizing of PV system
Ease of Installation & Lower Cost	Integrated DC/AC disconnect switch that eliminates the need for external DC/AC disconnects.
	At 50 lbs, Motech inverters are the lightest grid-connected inverters that have 96% CEC efficiency.
	NEMA 3R enclosure makes this product suitable for residential or light commercial applications.
Ease of Serviceability	In the highly unlikely event that the inverter needs to be serviced, the independently sealed inverter enclosure can easily be detached from the DC/AC wiring box, and the wiring box can remain intact on the wall.
	Important system performance parameters are shown on a User-friendly LCD display.
Built-in Communication	Built-in RS232 and RS485. No added-on card is required.
Reliable and Dependable	Motech has been in business for over 29 years, and it is one of leading solar cells manufacturers in the world.
Certified	Certified for the new UL 1741/IEEE 1547
Warranty	10 years standard warranty
Free Software	Free PC software for system troubleshooting and remote monitoring.

Most efficient inverter on CEC list
At 96% CEC efficiency, Motech PVMate 2900U ~ 5300U grid-tied transformer photovoltaic inverters have the highest CEC efficiency in its class.

Greater Flexibility
The MPP tracking voltage for Motech inverters is from 200 V to 550 V, and the range is 350 V. Compared to the 200 ~ 300 V which are commonly seen from the competition, Motech PVMate inverters enable flexibility in module selection and sizing of PV system.

Reliable and Dependable
Established in 1981, Motech Industries Inc. is one of leading solar cells manufacturers in the world. With more than 29 years of experience, Motech is a business that you can trust and rely on.

Standard 10-year Warranty
At Motech, we have been designing and manufacturing high quality power electronics equipment for over 28 years. The production facilities are ISO 9001 and ISO14001 certified.

Light Weight
At 50 lbs, Motech PVMate inverter is the lightest grid-connected inverter with 96% CEC efficiency. The product from the competition weights over 80 lbs, which is 60% heavier than Motech inverter.



Easy System Monitoring
Every inverter from Motech comes standard with 16x2 LCD display and a monitoring software.

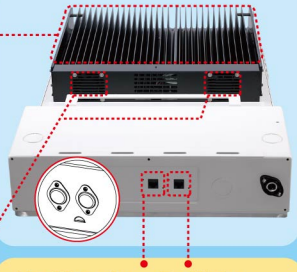
Support Positive Ground and Negative Ground Modules
PVMate 2900U ~ 5300U support negative ground modules. PVMate 2900U-PG ~ 5300U-PG support positive ground modules.

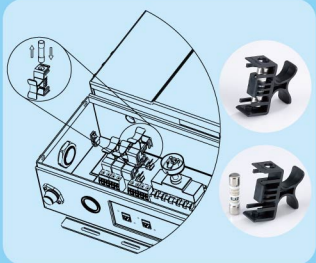
Ease of Installation & Lower Cost
Integrated DC/AC disconnect switch that eliminates the need for external DC/AC disconnects. The built-in DC/AC disconnect lower the total cost of PV system.



Externally Accessible GFDI Fuse
Ground Fault Detection and Interruption (GFDI) fuse could be replaced easily without open the cover of the inverter case. Simply open the cap and replace the fuse with a new one.

User Friendly Placement of Heat Sink
The heat sink could get hot when operate at full rated power. Hence, the heat sink is located on the back of the inverter in order to prevent accidental injuries of skin such as burns and cuts from the contact with the heat sink.





Easily Replaceable PV String Fuses
Each Motech PVMate inverter has four fused string inputs. Simply open the wiring box and replace the fuses as shown on the diagram on the left.

Trouble Free Replacement of Cooling Fans
The built-in cooling fans are designed so that they could be easily replaced.

No Hassle – Built-in Communication
PVMate inverter comes with RS232 and RS485 communication ports. One port for the PC connection, and one port for parallel connection to another PVMate inverter.

Better performance at high temperature
Motech 5.3 kW inverter could operate without derating at full rated power until 53ºC.

UL Certified
Motech PVMate 2900U ~ 5300U are certified for the new UL 1741/IEEE 1547.

◎ Specifications are subject to change without notice.

The contents technically correct at time of going to print. Motech reserves the right to make modifications. (2011/10)

Flexible installation options

Installer can choose to connect PV arrays to PVMate inverter through the built-in internal DC fuses, if no external DC fuses existed (Figure 1). If external combiner box with DC fuses existed, then installers can bypass the built-in internal DC fuses, and the installer is required to rewire only one single wire (Figure 2).

Figure 1. DC cable connection in Negative Ground with internal fuses.

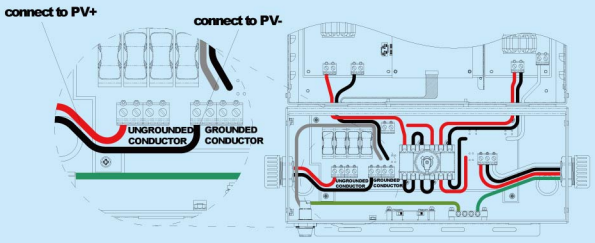
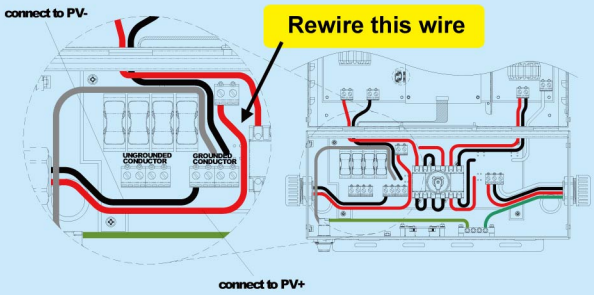
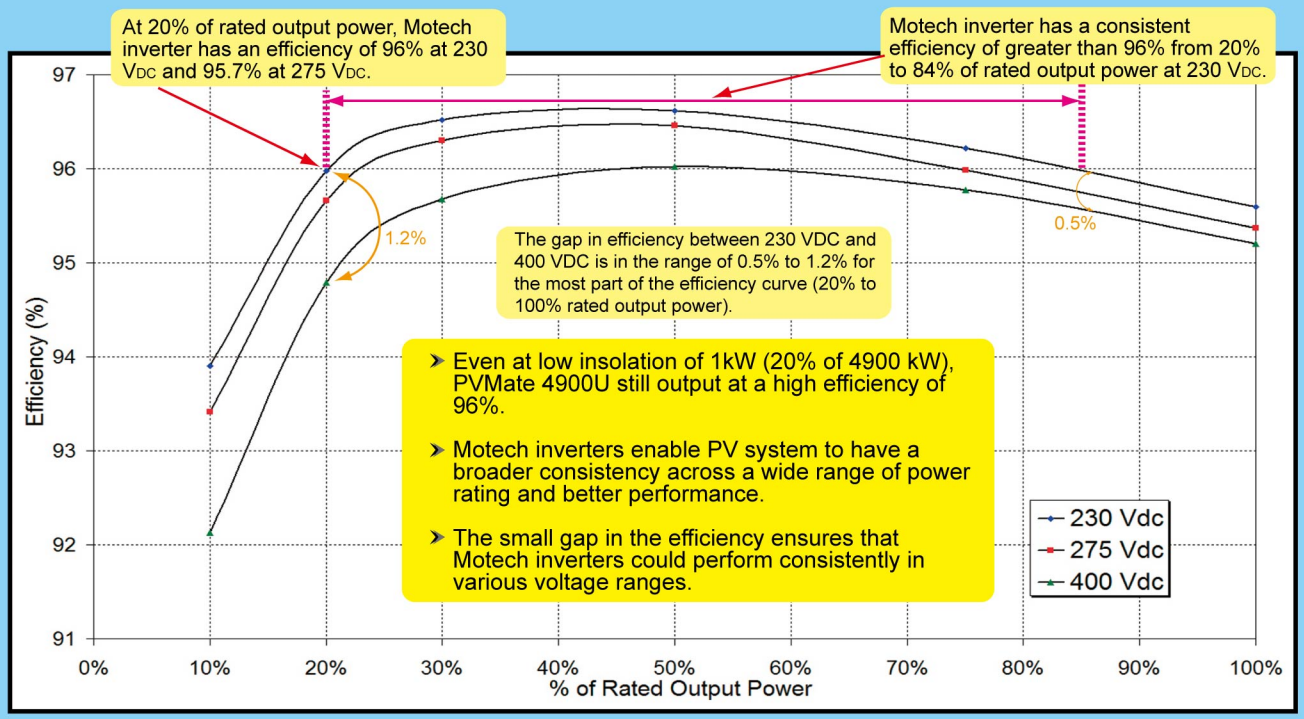


Figure 2. DC cable connection in Negative Ground array without internal DC Fuses.



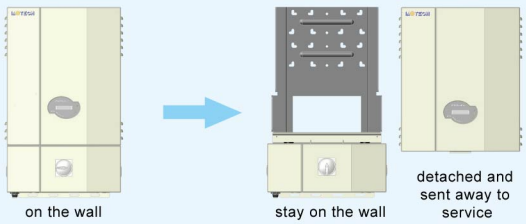
96% CEC efficiency, the highest on CEC inverter list*



* Motech PVMate 2900U ~ 5300U have 96% CEC efficiency, and they ranked Number One as the most efficient PV inverters with transformers according to CEC inverter list. http://gosolarcalifornia.org/equipment/inverter.php

Ease of serviceability

In the highly unlikely event that the inverter needs to be serviced, the independently sealed inverter enclosure can easily be detached from the DC/AC wiring box. The mounting bracket and the wiring box can remain intact on the wall.



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Models								
Negative ground inverters	**PVMate 2900U**		**PVMate3840U**		**PVMate 4900U**		**PVMate 5300U**	
Positive ground inverters	**PVMate 2900U-PG**		**PVMate 3840U-PG**		**PVMate 4900U-PG**		**PVMate 5300U-PG**	
Output Data (AC)								
Output	240 V	208 V	240 V	208 V	240 V	208 V	240 V	208 V
Grid voltage, operating range*	211 ~ 264 V_{AC}	183 ~ 228 V_{AC}	211 ~ 264 V_{AC}	183 ~ 228 V_{AC}	211 ~ 264 V_{AC}	183 ~ 228 V_{AC}	211 ~ 264 V_{AC}	183 ~ 228 V_{AC}
Grid frequency, nominal	60 Hz							
Grid frequency, operating range*	59.3 ~ 60.5 Hz							
Maximum output power	2900 W	2700 W	3840 W	3330 W	4900 W	4300 W	5300 W	4600 W
Maximum output current	13 A		16.A		20.7 A		22.1 A	
Output over current protection	20 A		20 A		30 A		30 A	
Maximum output fault current	15 A		20 A		25 A		25 A	
Startup current	< 2 A							
Maximum grid backfeed current	0 A							
Waveform	True sine							
Power factor	> 0.99							
Total harmonic distortion	< 3%							
DC component	< 0.5%							
Phase	Split Phase or Single phase 240							
Input Data (DC)								
Input voltage range	200 ~ 550 V_{DC}							
Maximum input voltage	600 V_{DC}							
PV start voltage*	235 V_{DC}							
Maximum input current	16 A		20 A		25 A		25 A	
Maximum input short circuit current	24 A		24 A		30 A		30 A	
Number of fused string inputs	3		4					
Efficiency								
Maximum efficiency	96.7%	96.4%	96.7%	96.5%	96.6%	96.4%	96.4%	96.2%
CEC efficiency	96.0%	95.5%	96.0%	95.5%	96.0%	96.0%	96.0%	95.5%
Night-time tare loss	0.5W							
Environment								
Operating temperature range	-25 ~ +55°C (-13°F ~ +131°F)							
Storage temperature range	-25 ~ +55°C (-13°F ~ +131°F)							
Maximum full power operating temperature without derating	55°C (131°F)		55°C (131°F)		55°C (131°F)		53°C (127.4°F)	
Relative humidity	Maximum 95%							
Mechanical								
Outdoor enclosure	NEMA 3R, Rainproof							
Cooling	Convection cooled		Controlled forced ventilation		Controlled forced ventilation		Controlled forced ventilation	
Input and output terminals	Accept wire size of 4 to 16 mm^2 (#10 to #6 AWG)							
Inverter weight	23 kg (50.7 lb)		23 kg (50.7 lb)		28 kg (61.7 lb)		28 kg (61.7 lb)	
Shipping weight	27 kg (59.5 lb)		27 kg (59.5 lb)		32 kg (70.5 lb)		32 kg (70.5 lb)	
Dimensions(HxWxD)	732 x 454 x 175 mm (28.8 x 17.9 x 6.9")				732 x 454 x 210 mm (28.8 x 17.9 x 8.3")			
Shipping dimensions(HxWxD)	840 x 540 x 275 mm (33.1 x 21.3 x 10.8")				840 x 548 x 305 mm (33.1 x 21.6 x 12")			
Features								
Communications	RS232 and RS485							
Display	LED / LCD							
Certifications	UL1741, FCC part 15B, IEEE 1547, IEEE C62.41.2, IEEE C37.90.1							
Warranty	10 years							
* Factory settings can be adjusted with the approval of the utility. This unit is provided with adjustable trip limits and may be aggregated above 30kW on a single Point of Common Coupling.								

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