



PVMate 3300MS / 3800MS / 4600MS Transformerless Grid-Tied PV Inverters

MOTEC

YOUR BEST PARTNER FOR PV INVERTERS

More Energy	Motech FLEX-MPPT PV inverter has three independent power point trackers (MPPT). This feature increases flexibility in system design as well as the energy yield through the reduction of mismatching and partial shading losses.
	Wide PV input MPPT tracking voltage range enables flexibility in module selection and sizing of PV system
Ease of Installation & Lower Cost	At 23 kg, Motech inverters are among the lightest grid-connected transformerless inverters on the market.
High non-derating temperature	Motech inverters do not experience any derating at temperature up to 55°C.
Versatility	Suitable for residential and light commercial applications. Work with thin-film modules.
Durable	IP65 enclosure allows this inverter to be installed outdoor as well as indoor.
Ease of Serviceability	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 VDE0126-1-1 / VDE-AR-N 4105, RD 1663, RD661, DK5940, and AS 4777.
Warranty	5 years standard warranty
Free Software	Free PC software for system troubleshooting and remote monitoring.

More Choices & Options

Three independent MPP trackers allow strings of PV modules with different operating characteristics to be used together in the same system without losses in power production.

Greater Flexibility

The MPP tracking voltage for Motech inverters is from 100 V to 450 V, and the range is 350 V. Wider voltage range enable more flexibility in module selection and sizing of PV system.

Reliable and Dependable

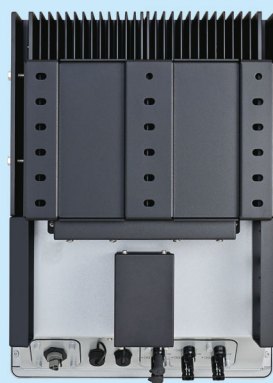
Established in 1981, Motech Industries Inc. is one of leading solar cells manufacturers in the world. With more than 29 years of experience, Motech is a business that you can trust and rely on.

Standard 5-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 ISO 14001 certified.

Light Weight

At 23 kg, Motech inverters are among the lightest grid-connected transformerless inverters on the market.



Certified for various European regulations

Motech PVMate 3300MS ~ 4600MS are certified for the VDE0126-1-1, VDE-AR-N 4105, RD1663, DK 5940, and AS 4777.

High Non-Derating Temperature

Motech inverters do not experience any derating at temperature up to 55°C.

Easy System Monitoring

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

User Friendly Placement of Heat Sink

The heat sink could get hot when operated 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.



Durable

IP65 enclosure allows this inverter to be installed outdoor as well as indoor.

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 two RJ45 communication ports. One port for the PC connection, and one port for parallel connection to another PVMate inverter.

Weather resistance

Water proof plugs for cable connection.

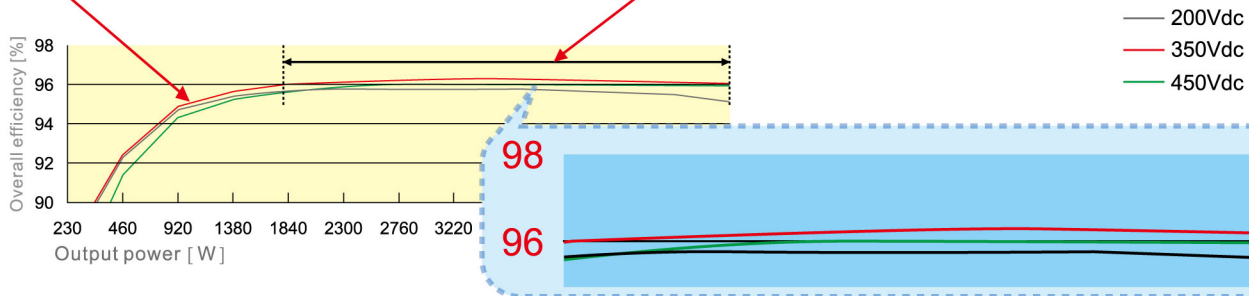
Safe

Active anti-islanding protection and ground fault current protection.

Consistent performance across different input voltage and insolation

At 1KW output power, Motech inverter has an efficiency of 95% at 200 V_{DC} and 350 V_{DC}.

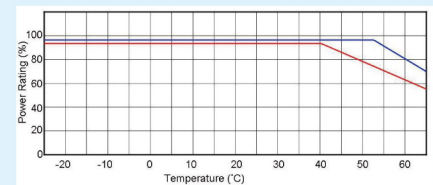
Motech PVMate 4600MS inverter has a consistent efficiency of greater than 96% from 1.7KW to 5.1KW (350V_{DC}).



The gap in efficiency between 200 V_{DC} and 450 V_{DC} is in the range of 0.4% to 0.6% for the most part of the efficiency curve (20% to 80% rated output power).

Better performance at high temperature

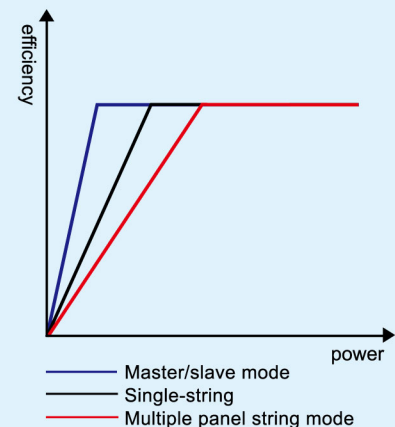
With 55°C of maximum full power operating temperature without derating, Motech inverters operate at full rated power in hot climate such as that of southern Europe. The majority of PV inverters from leading brands start to derate at temperature over 40°C. Due to their superior designs, Motech inverters could maintain safe internal component temperatures and operate at full rated power without derating in extremely hot climates.



— Motech PVMate 3300MS ~ 4600MS
— Other brands of inverters

Master/slave mode

Master/slave mode is a proprietary Motech technology that allows PVMate inverters to operate at a higher efficiency when the insolation is low. For PVMate 4600MS, a total of three strings are supported. Two or three strings could be connected in parallel by altering the jumper setting. Not all the strings attached to the inverter have the same intensity during day time. When that situation occurs, PVMate would compensate and distribute the current across the strings that are connected in parallel, in order to achieve the best efficiency for these strings.





Models			
	PVMate 3300MS	PVMate 3800MS	PVMate 4600MS
Output Data (AC)			
Grid voltage, nominal	230 V _{AC}		
Grid frequency, nominal	50 Hz		
Nominal output power	3300 W	3800 W	4600 W
Maximum Output Power (S _{Emax}) if PF Controlled	3300 VA	3800 VA	4600 VA
Maximum Output Power (P _{Emax}) if PF > 0.99	3800 W	4400 W	5100 W*
Nominal output current	14.34 A	16.52 A	20.0 A
Maximum Output Current if PF Controlled	14.35 A	16.52 A	20.0 A
Maximum Output Current if PF > 0.99	16.52 A	19.13 A	22.0 A*
Maximum grid backfeed current	0 A		
Waveform	True sine		
Power factor	> 0.99 at 20% load Controllable 0.8 inductive to 0.8 capacitive		
Total harmonic distortion	< 3%		
DC component	< 0.5%		
Phase	Single phase		
Input Data (DC)			
Maximum input power	4500 W per input port		
MPP voltage range	100 V _{DC} ~ 450 V _{DC}		
Maximum input voltage	500 V _{DC}		
PV start voltage (adjustable)	130 V _{DC}		
Maximum input current	10 A per input port		
Number of input	2	2	3
Number of MPPT	1 ~ 2	1 ~ 2	1 ~ 3
Efficiency			
Maximum efficiency	96.3 % @ 350 V _{DC}	96.3 % @ 350 V _{DC}	96.2 % @ 350 V _{DC}
European efficiency	95.1 % @ 350 V _{DC}	95.1 % @ 350 V _{DC}	95.4 % @ 350 V _{DC}
Night consumption	< 0.5 W		
Environment			
Operating temperature range	-20 ~ 55°C		
Maximum full power operating temperature without derating	55°C		
Relative humidity	Maximum 95 %		
Mechanical			
Outdoor enclosure	IP65 (ref. IEC 60529)		
Cooling	Controlled forced ventilation		
DC connect	MC4		
Inverter weight	22.5 kg (49.6 lb)	22.5 kg (49.6 lb)	24.5kg (55.5lb)
Shipping weight	26.0 kg (57.3 lb)	26.0 kg (57.3 lb)	28 kg (61.7lb)
Dimensions (HxWxD)	580 x 422 x 182 mm		
Shipping dimensions (HxWxD)	670 x 510 x 310 mm		
Features			
Communications	RS232 and RS485		
Display	LED / LCD		
Warranty	5 years (10 years optional)		
Certifications			
EMC (2004/108/EC)	EN 55022 (Class B) & C-Tick, EN 61000-6-2, EN 61000-6-3		
	EN 61000-3-2, EN 61000-3-3, AS/NZS 61000.3.3	EN 61000-3-11, EN 61000-3-12, AS/NZS 61000.3.5	
Low Voltage Regulation (2006/95/EC)	EN 50178 (covered by IEC 62103), AS/NZS 3100 +A1		
Certifications	VDE 0126-1-1+A1 / VDE-AR-N 4105, PV 501, DK 5940 / Enel Connections Guide (Section F), PPC, RD 1663 / RD 661, AS 4777.2 / AS 4777.3		
RoHS	2002/95/EC		

* According to the valid VDE application rule VDE-AR-N 4105, a maximum apparent connection power shall not exceed 4600 VA per line conductor. Moreover, the 10% overload capacity is not allowed so the output power will be certainly limited to 4600 VA in lieu of 5100 VA as the default setting used for Germany market. Note: 4600 VA \approx 4600 W if PF > 0.99.

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