

SOLAR INVERTERS

ABB central inverters

PVI-134.0/200.0/267.0/334.0/400.0-TL

134 to 400 kW



This new inverter system is based on extractable 67 kW modules of power which reduces the inverter downtime and lowers service costs.

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PVI-400.0-TL

The new extractable module configuration increases power by 67 kW.

The inverter systems are pre-configured and pretested before delivery which significantly reduces on-site wiring and testing operations.

Limited losses thanks to the output voltage increased to 380 V

Each inverter can be configured in “multi-master” for up to 6 independent MPPT connections if mismatching reduction is needed, or in “master slave” mode with a single MPPT to improve the harvest of the energy in case of single failure.

The inverter, without transformer, reaches 98% of peak efficiency.

Highlights

- Increased output voltage to 380 V for limited losses
- Maximum input voltage up to 1000 V, reduced DC distribution losses for large scale PV plants
- Reverse polarity protection for each module
- Front extractable DC/AC converters enable easy installation and maintenance procedure with front accessibility to all critical parts AC and DC side integrated protection (fuses and OVR) easily replaceable
- High efficiency for increased harvest energy
- Two independent RS-485 communication interfaces for inverter and intelligent string combiner monitoring
- Designed for the direct connection to the MV transformer
- Reduced acoustic noise due to high switching frequency

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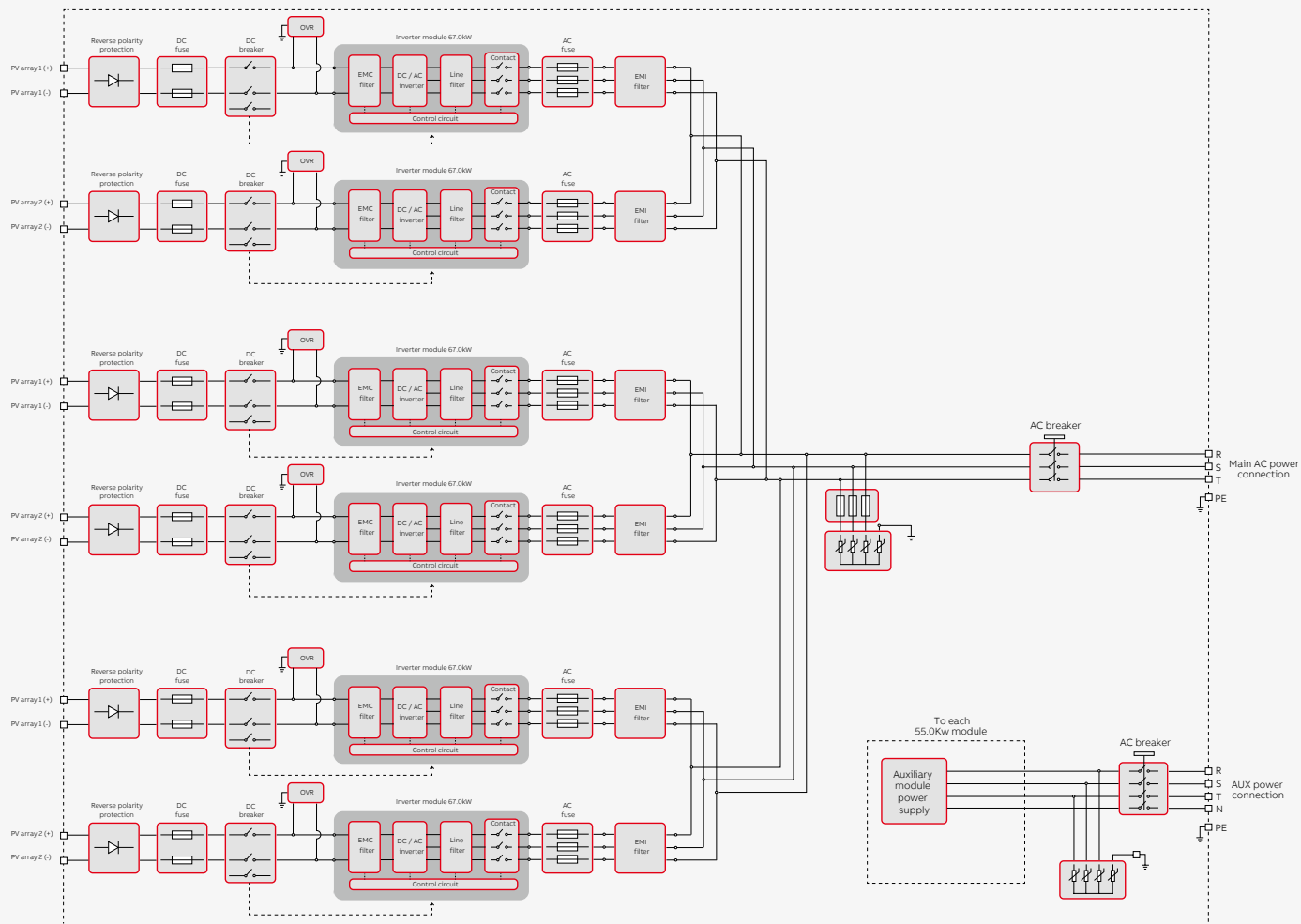
PVI-134.0/200.0/267.0/334.0/400.0-TL
134 to 400 kW



Technical data and types

Type code	PVI-134.0-TL	PVI-200.0-TL	PVI-267.0-TL	PVI-334.0-TL	PVI-400.0-TL
Input side					
Absolute maximum DC input voltage ($V_{max,abs}$)	1000 V				
MPPT input DC voltage range ($V_{MPPTmin} \dots V_{MPPTmax}$) at V_{acr}	570...950 V				
MPPT input DC range ($V_{MPPTmin} \dots V_{MPPTmax}$) at P_{acr} and V_{acr}	Linear derating from max to 30,6% [800< V_{MPPT} <950V]				
MPPT input DC range ($V_{MPPTmin} \dots V_{MPPTmax}$) at P_{acr} and V_{acr}	570...800 V				
Number of independent MPPT multi-master	2	3	4	5	6
Number of independent MPPT multi-master/slave	1	2	2	3	3
Number of independent MPPT master/slave	1				
Maximum combined DC input current ($I_{dcmax,c}$)	246 A	369 A	492 A	615 A	738 A
Maximum DC input current for each module ($I_{dcmax,m}$)	123 A				
Number of DC inputs pairs	2	3	4	5	6
DC connection type	2x185mm ² (M10) +2x300mm ² (M10)	4x185mm ² (M10) +2x300mm ² (M10)	4x185mm ² (M10) +4x300mm ² (M10)	6x185mm ² (M10) +4x300mm ² (M10)	6x185mm ² (M10) +6x300mm ² (M10)
Input protection					
Reverse polarity protection	Yes, with series diode				
Input overvoltage protection - varistor	1 for each input pair, Class II				
Photovoltaic array leakage control, floating neutral, floating panels	No; Proprietary control available ³⁾				
Residual current protection, grounded neutral, floating panels	Not included; dimension output ground fault device with $\Delta I=400mA/module$				
Fuse size for each input pair	125 A / 1000 V				
Output side					
AC grid connection type	Three phases 3W+PE				
Rated AC power ($P_{acr} @\cos\phi=1$)	134 kW	200 kW	267 kW	334 kW	400 kW
Maximum AC output power ($P_{acmax} @\cos\phi=1$)	134 kW	200 kW	267 kW	334 kW	400 kW
Maximum apparent power (S_{max})	148 kVA	222 kVA	296 kVA	371 kVA	440 kVA
Rated grid voltage (V_{acr})	380 V				
AC voltage range ($V_{acmin} \dots V_{acmax}$)	323...437 V ¹⁾				
Maximum output current (I_{acmax})	203 A	304 A	405 A	507 A	608 A
Contributory fault current	225 A	337,5 A	450 A	562,5 A	675 A
Rated frequency (f_r)	50/60 Hz				
Frequency range ($f_{min} \dots f_{max}$)	47...53 / 57...63 Hz ²⁾				
Nominal power factor and adjustable range	> 0.995 (adj. \pm 0.90)				
Total harmonic distortion	< 3% (@ P_{acr})				
AC connection type (for each phase)	2 x 300 mm ² (M12)				
Output protection					
Anti-islanding protection	Yes (IEEE 1547)				
Output overvoltage protection (varistor)	Yes, Class II				
Night time disconnect	No				
AC circuit breaker	50 kA				
Operating performance					
Maximum efficiency (η_{max})	98.0% ⁴⁾				
Weighted efficiency (η_{EURO} / η_{CEC})	97.7% / 97.5% ⁴⁾				
Stand-by consumption/night-time power loss	< 19 W	< 26 W	< 33 W	< 40 W	< 47 W
AC auxiliary supply	3 x 400 Vac +N, 50/60 Hz				
Auxiliary supply consumption	< 0.19% of P_{acr}				
Auxiliary supply consumption without cooling	< 0.18% of P_{acr}				
Inverter switching frequency	18 kHz				
Communication					
Wired local monitoring	PVI-USB-RS232_485 (opt.)				
Remote monitoring	PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)				
String Combiner	PVI-STRINGCOMB (opt.)				
User interface	16 characters x 2 line LCD display for each module				

ABB Block diagram of PVI-400.0 (multi master)



Technical data and types

Type code	PVI-134.0-TL	PVI-200.0-TL	PVI-267.0-TL	PVI-334.0-TL	PVI-400.0-TL
Environmental					
Ambient temperature range	-10...+ 60°C/+14...140°F with derating above 50°C/122°F				
Relative humidity	0...95% non condensing				
Noise emission	< 60 db (A) @ 1 m	< 66 db (A) @ 1 m	< 69 db (A) @ 1 m	< 72 db (A) @ 1 m	< 75 db (A) @ 1 m
Maximum operating altitude without derating	1000 m / 3280 ft				
Physical					
Environmental protection rating	IP 20				
Cooling	Air forced				
Required air cooling flow	2400 m ³ /h - 1416 CFM	3200 m ³ /h - 1888 CFM	4000 m ³ /h - 2360 CFM	4800 m ³ /h - 2832 CFM	5600 m ³ /h - 3304 CFM
Dimension (H x W x D)	1077mm x 1250mm x 850mm / 42,4" x 49,2" x 33,5"	1675mm x 1250mm x 850mm / 65,9" x 49,2" x 33,5"	1675mm x 1250mm x 850mm / 65,9" x 42,9" x 33,5"	2184mm x 1250mm x 850mm / 86,0" x 49,2" x 33,5"	2184mm x 1250mm x 850mm / 86,0" x 49,2" x 33,5"
Weight	< 480 kg / 1058 lb	< 680 kg / 1500 lb	< 780 kg / 1720 lb	< 1000 kg / 2205 lb	< 1150 kg / 2535 lb
Weight of the module	< 60 kg / 132 lb				
Safety					
Transformer	No				
Marking	CE (50 Hz only)				
Safety and EMC standard	EN 50178, EN62109-1, EN62109-2, EN61000-6-2, EN61000-6-4, EN61000-3-12				
Grid standard (check your sales channel for availability)	CEI-0-16, BDEW, RD 661/2007, IEEE 1547-2003 P.O.12.3				

¹⁾ The AC voltage range may vary depending on specific country grid standard

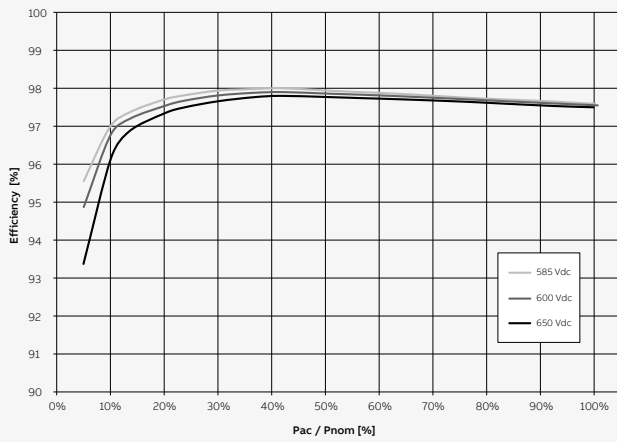
²⁾ The Frequency range may vary depending on specific country grid standard

³⁾ Missing symmetry with respect to ground results in AC disconnection (disabled function by default)

⁴⁾ Power consumption of the auxiliary services not included

Remark. Features not specifically listed in the present data sheet are not included in the product

Efficiency curves of PVI-400.0-TL



For more information please contact your local ABB representative or visit:

www.abb.com/solarinverters
www.abb.com

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