



# Compatible Inverters for FS2 and FS3 Series Modules

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## Without Galvanic Isolation

This document provides a list of inverters that are compatible and approved for use with the First Solar FS Series 2 and FS Series 3 Modules. This list does not provide performance evaluations or comparisons between inverters and does not recommend a specific inverter manufacturer. Absence from the list does not indicate that there is an incompatibility with an inverter, only that First Solar has not completed the verification of the inverter.

First Solar warrants its FS-Series 2 & 3 modules according to the First Solar Module Warranty Terms & Conditions (PD-5-102, "Module Warranty Terms & Conditions") provided modules are installed, operated and serviced as described in the First Solar User Guide (PD-5-200, "User Guide") and in the System Design and Application document (PD-2-303, "SDA").

First Solar requires all system designs to be submitted for review and approval via the SDA process; therefore, for warranty purposes, every system with First Solar modules must be covered by an SDA. Project Developers and/or Customers should request this document from First Solar and obtain approval prior to equipment procurement and installation.

Approval of the following listed inverters is based upon and in accordance with the inverter datasheet effective at the time of evaluation. Thus, changes in inverter specification after First Solar approval may nullify the confirmation of compatibility. First Solar reserves the right to change the approval requirements for the inverter as well as a possible revocation of the inverter approval list.



## List of Compatible Inverters without Galvanic Isolation<sup>1,2</sup>

Manufacturer	Series	Type	VOC Max	External Remarks English	Series 2	Series 3
ABB	PVS800	57-0630kW-B	1,000	with external transformer	10	15
AEG Power Solutions	Protect PV	.250	1,000		10	15
		.500	1,000		10	15
		10	1,000		10	15
		12,5	1,000		10	15
		15	1,000		10	15
		2000	450		4	6
		2800	500		5	7
		4600	750		7	11
		8	1,000		10	15
Conergy AG	IPG S	3S	940		9	14
		4S	940		9	14
		5S	940		9	14
	IPG T	11 T	1,000		10	15
		15 T	1,000		10	15
		8 T	1,000		10	15
Danfoss Solar Inverters A/S	TripleLynx	10k	1,000		10	15
		12.5k	1,000		10	15
		15K	1,000		10	15
		8k	1,000		10	15
Delta Energy Systems	Solivia	15 TL	1,000		10	15
		20 TL	1,000		10	15

<sup>1</sup> First Solar FS Series 2&3 PV Modules have no exposed conductive surfaces and do not require equipment grounding as long as a clip length of 100mm for a standard 4 clip mounting is not exceeded.

<sup>2</sup> Calculation for maximum number of modules in series is based on -10°C cell temperature and 700W/m<sup>2</sup> irradiation.



<b>Diehl Ako Stiftung &amp; Co. KG</b>	Platinum	11000 TL3	1,000	10	15
		13000 TL	880	8	13
		16000 TL	880	8	13
		19000 TL	880	8	13
		22000 TL	880	8	13
		4300 TL	880	8	13
		4800 TL	880	8	13
		5300 TL	880	8	13
		6300 TL	880	8	13
		7200 TL	880	8	13
<b>Effekta Regeltechnik GmbH</b>	ES	3300	500	5	7
		4200	500	5	7
		5000	500	5	7
<b>Emerson</b>	SPV	1060	1,000	10	15
		1200	1,000	10	15
		1410	1,000	10	15
		145	1,000	10	15
		1500	1,000	10	15
		1590	1,000	10	15
		175	1,000	10	15
		1800	1,000	10	15
		2100	1,000	10	15
		2400	1,000	10	15
		248	1,000	10	15
		2700	1,000	10	15
		300	1,000	10	15
		350	1,000	10	15
		600	1,000	10	15
		700	1,000	10	15
		880	1,000	10	15
		900	1,000	10	15
<b>Fronius International GmbH</b>	IG TL	3.0	850	8	12



		3.6	850	8	12
		4.0	850	8	12
		5.0	850	8	12
<b>Growatt New Energy</b>	Growatt	3600MTL-US	600	6	9
		4200MTL-US	600	6	9
		5000MTL-US	600	6	9
<b>IBC Solar AG</b>	ServeMaster	10000TL	1,000	10	15
		12500TL	1,000	10	15
		15000TL	1,000	10	15
		8000TL	1,000	10	15
<b>Ingeteam GmbH</b>	IngeconSun Lite	2.5 TL	550	5	8
		3 TL	550	5	8
		3.3 TL	550	5	8
		3.68 TL	550	5	8
		3.8 TL	550	5	8
		4.6 TL	550	5	8
		5 TL	550	5	8
		6 TL	550	5	8
	IngeconSun Power Max	100TL	900	9	13
		125TL	900	9	13
		250TL	900	9	13
		315TL	900	9	13
		375TL	900	9	13
		470TL	900	9	13
		500TL	900	9	13
		625TL	900	9	13
		630 HE TL	900	9	13
	IngeconSun Smart	10 TL	550	5	8
		12.5 TL	550	5	8
		15 TL	550	5	8
		18 TL	550	5	8
<b>KACO Gerätetechnik GmbH</b>	Powador	10.0 TL3	1,000	10	15



12.0 TL3	1,000	10	15
14.0 TL3	1,000	10	15
25000xi	800	8	12
25000xi Park	800	8	12
2500xi	800	8	12
30.0 TL3	1,000	10	15
30000xi	800	8	12
30000xi Park	800	8	12
3200	800	8	12
33.0 TL3	1,000	10	15
33000xi	800	8	12
33000xi Park	800	8	12
3500xi	800	8	12
36.0 TL3	1,000	10	15
3600xi	800	8	12
37.5 TL3	1,000	10	15
39.0 TL3	1,000	10	15
4000xi	800	8	12
4400	800	8	12
4500xi	800	8	12
5000xi	800	8	12
5300	800	8	12
5500	800	8	12
6400xi	800	8	12
6600	800	8	12
6650xi	800	8	12
7200xi	800	8	12
7700	800	8	12
7900	800	8	12
8000xi	800	8	12
8000xi Thinfilm HV	800	8	12
8000xi Thinfilm	600	6	9



		LV			
		8600	800	8	12
		9600	800	8	12
<b>Kostal Solar Electric GmbH</b>	Piko	10.1	950	9	14
		3.6	950	9	14
		4.2	950	9	14
		5.5	950	9	14
		8.3	950	9	14
<b>M+W Group GmbH</b>	MW	125	850	8	12
		65	850	8	12
<b>Mastervolt</b>	SunMaster	CS 15 TL	1,000	10	15
		CS 20 TL	1,000	10	15
<b>Oelmaier Technology GmbH</b>	PAC	2	750	7	11
		3	750	7	11
		4	750	7	11
		5	750	7	11
		7	750	7	11
<b>Omron</b>	KP	100L	850	8	12
<b>PAIRAN GmbH</b>	PVI	10000	1,000	10	15
		8000	1,000	10	15
<b>Power One Italy SpA</b>	Aurora Trio	20.0-TL-OUTD	1,000	10	15
		27.6-TL-OUTD	1,000	10	15
		PVI-10.0-OUTD	900	9	13
		PVI-12.5-OUTD	900	9	13
	Aurora Uno	PVI-2000	600	6	9
		PVI-3.0-OUTD	600	6	9
		PVI-3.0-OUTD-S	600	6	9
		PVI-3.0-TL-OUTD	600	6	9
		PVI-3.6-OUTD	600	6	9
		PVI-3.6-OUTD-S	600	6	9
		PVI-3.6-TL-OUTD	600	6	9



		PVI-3600	600	6	9
		PVI-4.2-OUTD	600	6	9
		PVI-4.2-OUTD-S	600	6	9
		PVI-4.2-TL-OUTD	600	6	9
		PVI-5000-OUTD	600	6	9
		PVI-5000-OUTD-S	600	6	9
		PVI-5000-TL-OUTD	600	6	9
		PVI-6000-OUTD	600	6	9
		PVI-6000-OUTD-S	600	6	9
		PVI-6000-TL-OUTD	600	6	9
<b>RefuSol GmbH</b>	Refu Sol	004K	880	8	13
		005K	880	8	13
		006K	880	8	13
		008K	1,000	10	15
		010K	1,000	10	15
		013K	1,000	10	15
		017K	1,000	10	15
		020K	1,000	10	15
		11k	900	9	13
		12k	900	9	13
		15K	900	9	13
		16K	1,000	10	15
<b>Saft Power Systems Iberica, SL</b>	Protect PV	10	800	8	12
<b>Schüco International KG</b>	SGI	30k	800	8	12
		33k	800	8	12
	SGI plus	2000	800	8	12
		2500	800	8	12
		3000	800	8	12
		3500	800	8	12



		4000	800		8	12
		4500	800		8	12
		5500	800		8	12
<b>SIAC</b>	SOLEIL BT	6	600		6	9
	SOLEIL DSP TL	330 TL	930	with external transformer	9	14
<b>Siemens AG</b>	SINVERT PVM	10	1,000		10	15
		13	1,000		10	15
		17	1,000		10	15
		20	1,000		10	15
	Sitop	1500	675		6	10
		2000	675		6	10
		2300	675		6	10
		3000	675		6	10
		4000	675		6	10
		4600	675		6	10
<b>SMA Solar Technology AG</b>	Sunny Boy	2100TL	600		6	9
		3000TL	550		5	8
		3300TL HC	750		7	11
		4000TL	550		5	8
		4200TL HC	750		7	11
		5000TL	550		5	8
		5000TL HC	750		7	11
	Sunny Mini Central	10000TL	700		7	10
		11000TL	700		7	10
		6000TL	700		7	10
		7000TL	700		7	10
		8000TL	700		7	10
		8000TL/V	700		7	10
		9000TL	700		7	10
	Sunny Tripower	10000TL	1,000		10	15
		12000TL	1,000		10	15
		15000TL	1,000		10	15





		17000TL	1,000		10	15
		8000TL	1,000		10	15
		15000TLEE	1,000	Specification say Vmpp Min is 580V but SMA stated that the inverter can track to 570V. SMA has set minimum Riso to 250K	10	15
		20000TLEE	1,000	Specification say Vmpp Min is 580V but SMA stated that the inverter can track to 570V.	10	15
<b>Socomec</b>	SUNSYS pro	SunSys 18K	1,000		10	15
		SunSys 24K	1,000		10	15
<b>SOLUTRONIC GmbH</b>	SOLPLUS	100	850		8	12
		120	850		8	12
		25	850		8	12
		300	850		8	12
		35	850		8	12
		50	850		8	12
		55	850		8	12
<b>Sputnik Engineering GmbH</b>	SolarMax C	2000C	600		6	9
		3000C	600		6	9
		4000C	900		9	13
		4200C	600		6	9
		6000C	600		6	9
	SolarMax MT	10 MT	900		9	13
		13 MT	900		9	13
		15 MT	900		9	13
	SolarMax S	2000S	600		6	9
		20S	900		9	13
		3000S	600		6	9
		35S	900		9	13
		4200S	600		6	9
		6000S	600		6	9
<b>Steca Elektronik GmbH</b>	StecaGrid	10000 3ph	845		8	12



		2000+	450	4	6
		3000	800	8	12
		3600	800	8	12
		8000 3ph	845	8	12
		9000 3ph	830	8	12
<b>Sungrow Power Supply Co., Ltd.</b>	SG	10KTL	1,000	10	15
		12KTL	1,000	10	15
		15KTL	1,000	10	15
		2K5TL-31	500	5	7
		3KTL-31	500	5	7
		4KTL-31	500	10	15
<b>Sunways AG</b>	AT	2700	680	6	10
		3600	680	6	10
		4500	680	6	10
		5000	680	6	10
	NT	10000	900	9	13
		11000	900	9	13
		12000	900	9	13
		2500	900	9	13
		2600	850	8	12
		3700	900	9	13
		4000	850	8	12
		4200	900	9	13
		5000	850	8	12
		6000	850	8	12
		8000	850	8	12
	PT	30k	1,000	10	15
		33k	1,000	10	15
<b>TBEA Xi'an Electric Technology Co., LTD.</b>	GC	500KTL	1000	10	15
		630KTL	1000	-	15
		1000KTL	1000	10	15
<b>Voltwerk electronics GmbH</b>	VS	11	1,000	10	15



		15	1,000		10	15
		3	940		9	14
		4	940		9	14
		5	940		9	14
		8	1,000		10	15
<b>Zigor CORPORACIÓN S.A.</b>	Sunzet	100 TL	800		8	12
		30 TL	800		8	12
		50 TL	800		8	12
<b>SolarEdge</b>	SE	10k	950	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	9	14
		12k	950	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	9	14
		3300	550	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	5	8
		4000	550	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	5	8
		5000	550	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	5	8
		6000	550	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	5	8
		8k	950	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is	9	14



on module level.					
	12,5k	950	The SolarEdge PowerBox PB350-TFI MPP-Tracker is mandatory for the usage of this inverter. The mentioned MPP tracker is on module level.	9	14

