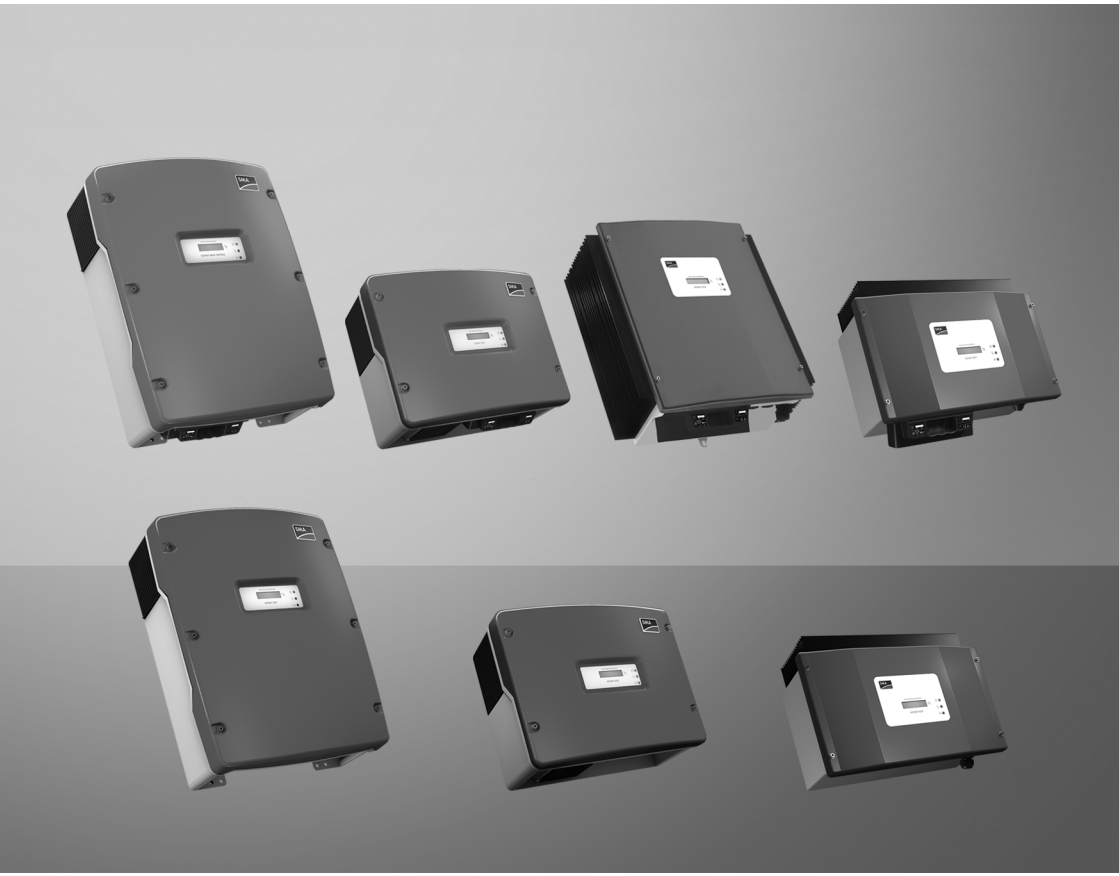
Operating Parameters

SUNNY BOY
SUNNY MINI CENTRAL
WINDY BOY

Technical Description



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1 Information on this Document

1.1 Validity

This document describes the operating parameters including value ranges and factory settings for the following SMA inverters:

Sunny Boy	Windy Boy	Sunny Mini Central
SB 1200	WB 1100LV	SMC 4600A
SB 1300TL-10	WB 1200	SMC 4600A-11
SB 1600TL-10	WB 1700	SMC 5000A
SB 1700	WB 2500	SMC 5000A-11
SB 2100TL	WB 3000	SMC 6000A
SB 2500	WB 3300	SMC 6000A-11
SB 3000	WB 3300-11	SMC 7000HV-11
SB 3300TL HC	WB 3800	SMC 6000TL
SB 3300	WB 3800-11	SMC 7000TL
SB 3300-11	WB 5000A	SMC 8000TL
SB 3800	WB 5000A-11	SMC 9000TL-10
SB 3800-11	WB 6000A	SMC 10000TL-10
	WB 6000A-11	SMC 11000TL-10
		SMC 9000TLRP-10
		SMC 10000TLRP-10
		SMC 11000TLRP-10

1.2 Target Group

This document is intended for installers and operators of the inverter. Some tasks described in this document may only be carried out by electrically qualified persons.

1.3 Additional Information

For information on mounting, installation, commissioning and maintenance of the inverter as well as device-specific technical data, refer to the installation manual of the respective inverter.

You will find information on operating the inverter in the user manual of the respective inverter.

1.4 Symbols Used

The following types of safety precautions and general information appear in this document:

DANGER!

DANGER indicates a safety precaution which, if not observed, will result in death or serious injury.

WARNING!

WARNING indicates a safety precaution which, if not observed, could result in death or serious injury.

CAUTION!

CAUTION indicates a safety precaution which, if not observed, could result in minor or moderate injury.

NOTICE!

NOTICE indicates a safety precaution which, if not observed, could result in property damage.

Information

Information provides tips that are important for the optimum operation of your product.

2 Safety Precautions

The various operating parameters control the functionality of the inverter. They can only be read and modified via a communication product.

Some parameters can only be viewed by an installer (greyed-out parameters). The so-called "installer password" is required for this.

Parameters designated with * are safety-related grid monitoring parameters (SMA Grid Guard). The SMA Grid Guard Code must be entered to change the SMA Grid Guard parameters. The application form is located in the download area at www.SMA.de/en, in the "Certificate" category for each inverter.

WARNING!

Danger to life as a result of changing the inverter's internal safety specifications

Unauthorised changes to the SMA Grid Guard parameters can lead to personal injury and property damage and the operation permission may become void.

- Only change SMA Grid Guard parameters with express permission of the network operator.

Parameter Default Settings

You can see the standard to which the inverter was set upon delivery from the type label and the supplementary sheet with the default settings.

3 Explanation of the Operating Parameters

Name	Description
ACVtgRPro*	Voltage increase protection (only relevant for Germany) In Germany, Sunny Boys and Sunny Mini Centrals can feed into the electricity grid with up to 264.5 V AC. However, the DIN VDE 0126-1-1 standard stipulates that the 10-minute AC voltage average may not exceed 253 V. If the 10-minute average exceeds the limiting value of 253 V, the inverter disconnects from the electricity grid. As soon as the 10-minute average returns to a value of less than 253 V, the inverter will resume feeding power into the grid. If voltage increase protection is not required in the relevant grid area (outside Germany), it can be deactivated by presetting the LdVtgC parameter. In this case, only the quick disconnection will be active, which can be configured through the "Vac-Max" parameter.
AID-Esk-Alpha*	Amplification factor of the escalating anti-island process
AntiIsland-Ampl*	Amplification of the anti-island process (alternative anti-islanding process, which is deactivated for Germany)
AntiIsland-Freq*	Repetition frequency of the anti-island process (alternative anti-islanding process, which is deactivated for Germany)
AntiIsland-Lim*	Maximum frequency that can lie above and below the power frequency of 50 Hz or 60 Hz before the grid monitoring disconnects the inverter from the electricity grid.
Operating mode	Operating mode of the inverter: Mpp-Operation: Maximum Power Point V-Const: Constant voltage mode (the target value is defined in "Vconst-Setpoint") Stop: Disconnection from the electricity grid, no function Turbine: Operating mode for small wind turbine systems (this operating mode may only be set in wind energy inverters. The use of this mode is expressly prohibited for inverters of other energy types, such as Sunny Boys or Sunny Mini Centrals. Otherwise the operation permission and all warranty claims become void.)
Control	Configuration of the current control. If the Control parameter is set to "Auto", the inverter automatically chooses the optimum type of current control. If the Control parameter is set to "Grid", the inverter regulates on the grid side. If set to "Bridge", the inverter regulates on the bridge side. This setting can help in the event of difficult grid conditions. Discuss the alteration of this parameter with the SMA Service Line.
DC-Offset_Max*	Limiting value for the maximum direct current component in the AC current
DGS-PWMVolNom*	Switch-off voltage in percent relative to VRef + VRefOfs. When the AC voltage drops below the set value, the inverter stops feeding.

Name	Description
DGS-HystVolNom*	Hysteresis in percent When the AC voltage exceeds the set value, the inverter starts feeding again.
Default*	Defines the country standard for adjusting country-specific information. You will find the procedure for changing country settings in Section 4 "Setting the Country Standard" (page 17).
dFac-Max*	Maximum change to the power frequency before the grid monitoring disconnects the inverter from the electricity grid.
dV-Mpp Track	Device-internal parameter which is not saved permanently.
dUref-Mpp	Device-internal parameter which is not saved permanently.
dU U-Const	Device-internal parameter which is not saved permanently.
dZac-Max	Maximum change to the grid impedance before the grid monitoring disconnects the inverter from the electricity grid.
E-total	Total energy yield of the inverter Changing this may be necessary if you replace your inverter and want to use data from the old device.
Fac-delta+* Fac-delta+Fast*	Maximum permissible frequency deviation above the power frequency of 50 Hz or 60Hz. At this value the inverter disconnects from the electricity grid (frequency increase protection).
Fac-delta–* Fac-delta–Fast*	Maximum permissible frequency deviation below the power frequency of 50 Hz or 60Hz. At this value the inverter disconnects from the electricity grid (frequency drop protection).
Fac-Limit delta Fac-Start delta	For setting the frequency-dependent output derating in the "OFF Grid" operating mode. More information on this subject can be found in the Sunny Island operating manual.
Fac-Min-Fast-Tm* Fac-Max-Fast-Tm* Fac-Min-Tm* Fac-Max-Tm*	Switch-off time for frequency increase protection (Fac-delta+, Fac-delta+Fast) and frequency drop protection (Fac-delta–, Fac-delta–Fast)
Fac-Pderating	Active power limitation depending on frequency
Fac-Tavg	Averaging time of grid frequency measurement
Fan-Test	By setting the "Fan-Test" parameter to "1", the functionality of the fan can be tested (only for inverters with fan).
FrqCtl.ReconMax*	Maximum frequency for reconnection after a grid disconnection
FrqCtl.ReconMin*	Minimum frequency for reconnection after a grid disconnection.

Name	Description
GndFltRea	Controls the behaviour of the inverter in the event of an earth fault. • GndFltWrn: If there is an earth fault, the inverter continues to feed into the electricity grid. • GndFltDscon: If there is an earth fault, the inverter disconnects from the electricity grid.
GriFltMonTms*	Connection time following a longer system incident.
GriFltReConTms*	Connection time following a brief system incident.
GriFltTms*	Time-based definition of a brief system incident.
GriStrTms*	Connection time following a restart.
h-total	Total operating hours of the inverter. Changing this may be necessary if you replace your inverter and want to use data from the old device.
Hardware-OCS	Hardware version of the operation control unit (OCS)
I-NiTest	Setting for the impulse for impedance monitoring (0 = off) This parameter can only be changed when the inverter is deactivated (disconnected on the AC side), or if it is in "Stop" mode.
Inst.-Code	Parameter for entering the SMA Grid Guard Code SMA Grid Guard parameters can only be changed after the SMA Grid Guard password has been entered.
I SearchNewMPP	Device-internal parameter which is not saved permanently.
KI-Wind-Reg	This value defines the integral factor of the power control. It determines the factor of the time-related response to the control deviation (control deviation = nominal power − actual power). ki * Time integral of control deviation = corrective power value Excessively high values lead to vibrations and instability in the system.
KP-Wind-Reg	This value defines the proportional factor of the power control. It sets the factor of the direct response to the control deviation. kp * Control deviation = corrective power value Excessively high values lead to vibrations and instability in the system.

Name	Description
LdVtgC*	Compensation for the voltage drop in the line This parameter takes into account the voltage drop between the inverter and the grid-connection point. The 10-minute average voltage at the inverter connection must not exceed the sum of ACVtgRPro plus LdVtgC. The LdVtgC parameter is preset to 0 V for Germany. In grid areas where an additional voltage increase protection (see ACVtgRPro parameter) is not required, the LdVtgC parameter is preset to 50 V. The voltage increase protection is therefore deactivated for these grid areas (253 V + 50 V = 303 V) and only the fast disconnection intervenes via the Vac-Max parameter.
Grid connection	With this parameter, it is possible to store information in the inverter regarding which line conductor the inverter is connected to. This means that in the plant overview it is easy to manage which inverter is installed at which line conductor.
NiTest	Activation and deactivation of the islanding detection via impedance monitoring (0 = off / 1 = on). This parameter can only be changed when the inverter is deactivated (disconnected on the AC side), or if it is in "Stop" mode.
P-GriSWOpnZerW	When this parameter is activated ("Yes"), the inverter disconnects from the electricity grid if the Power Reducer Box specifies 0 W or the "P-W" parameter is set to 0 W. When this parameter is deactivated ("No"), the inverter continues to feed in with the minimum power at a power specification of 0 W.
P-HystEna*	Activation of the stay-set indicator function with frequency-dependent active power limitation P(f)
P-HzStop*	Switch-back frequency for full active power
P-HzStr*	Start frequency for active power limitation
P-HzStopWGra*	Speed of the active power increase in percentage of Pmax per minute following a frequency-dependent active power limitation P(f)
P-W*	Maximum active power of the inverter for an active power process with a fixed active power limitation
P-Wind-Mid	Defines the power from which the characteristic curve becomes steeper during turbine operation.
P-WCtlHzMod*	Activation of the characteristic curve for the active power limitation, in relation to the set frequency thresholds P(f)
P-WGra*	Steepness of the frequency-dependent active power limitation (gradient)

Name	Description
P-Wind-Ramp	This parameter lets you configure the controlled startup of the small wind turbine system. Only once the inverter is connected to the electricity grid will the small wind turbine system not be charged rapidly, but rather with a configurable ramp. After the connection process, this parameter will no longer be active.
P-WMod*	Selection of the process for active power limitation
PF-PF*	Setting in the reactive power process, cos φ (fix): specification of a constant displacement power factor, cos φ
PF-PFExt*	Setting in the reactive power process, cos φ (fix): setting for the type of excitation for the displacement power factor, cos φ (underexcited, overexcited)
PF-PFExtStop*	Setting in the reactive power process, cos φ (P): excitation type for the end point
PF-PFExtStr*	Setting in the reactive power process, cos φ (P): excitation type for the starting point
PF-PFStop*	Setting in the reactive power process, cos φ (P): displacement power factor, cos φ, for the end point
PF-PFStr*	Setting in the reactive power process, cos φ (P): displacement power factor, cos φ, for the starting point
PF-WNomStop*	Setting in the reactive power process, cos φ (P): active power of the end point from Pmax
PF-WNomStr*	Setting in the reactive power process, cos φ (P): active power of the starting point from Pmax
PFCnst*	In this operating mode for the reactive power process, a constant displacement power factor, cos φ, is specified.
PFCtlCom*	In this operating mode for the reactive power process, the displacement power factor, cos φ, is specified via the Power Reducer Box.
PFCtlW*	In this operating mode for the reactive power process, the displacement power factor, cos φ, is specified as a function of the current active power.
Phase*	Setting for the line conductor to which the inverter feeds
Plimit	Display of the active power limitation of the inverter
Pmax	Active power limitation of the inverter
PowerBalMax*	Maximum power of the SMA Power Balancer in the "PowerGuard" operating mode If 3 Sunny Mini Centrals are connected together within a three-phase system and 1 inverter drops out, the power of this inverter is limited to the power set here in order to adhere to the unbalanced load limit set by the network operator. Depending on the applicable country standard, the unbalanced load limit lies between 4.6 kVA and 6.0 kVA.

Name	Description
PowerBalancer	Operating mode of the SMA Power Balancer for the prevention of unbalanced loads in three-phase systems with Sunny Mini Central. The SMA Power Balancer has 4 operating modes: Off: the SMA Power Balancer is deactivated. If one of the inverters displays a device fault or a grid voltage disturbance, only the affected inverter disconnects from the electricity grid and the other two inverters continue to feed in at full power. PowerGuard: operating mode in which no distinction is made between a device fault and a grid voltage disturbance. The inverter experiencing a disturbance disconnects from the electricity grid and the other two inverters limit their power in accordance with the applicable country standard to 4.6 kVA - 6 kVA or to the power set under "PowerBalMax". PhaseGuard: operating mode in which a distinction is made between a device fault and a grid voltage disturbance. In the event of a device fault in one inverter, the other two inverters continue to operate at full power. In the event of a grid voltage disturbance, all inverters disconnect from the electricity grid immediately. FaultGuard: operating mode in which a distinction is made between a device fault and a grid voltage disturbance. In the event of a device fault, the error message will be sent to the other two inverters with a time delay of 5 minutes. Once the 5 minutes have elapsed, the other two inverters also disconnect from the electricity grid. In the event of a grid voltage disturbance, all inverters disconnect from the electricity grid immediately.
PTot-Min	DC power required before the inverter begins feeding power into the electricity grid
Q-VArMod*	Selection of the reactive power process/cos φ process
Ripple-Ctl-Frq Ripple-Ctl-Lev Ripple-Ctl-Rcvr	The Ripple-Ctl-Frq, Ripple-Ctl-Lev and Ripple-Ctl-Rcvr parameters are intended for the handling of ripple control signals by the SMA inverters. These parameters are not available for all inverters. These parameters may only be changed after prior consultation with SMA Solar Technology AG.
Riso-Min	This parameter is used to change the limiting value for the insulation monitoring. The parameter cannot be permanently saved.
Slimit	Apparent power limitation of the inverter
SMA-Grid-Guard	SMA Grid Guard version
SMA-SN	Inverter serial number
Smax	Apparent power limitation of the inverter
Software-BFR	Firmware version of the operation control unit (OCU)
Software-SRR	Firmware version of the current control unit (CCU)

Name	Description
Memory function	Default Param.: Resets all country-independent parameters to the default settings. Reset op.data: Resets all operating data. Reset errors: resets a permanent fault.
(Memory)	Permanent: modified parameters are saved in the EEPROM and can be used even when the inverter has been restarted. Volatile: prevents the parameters from being saved in the EEPROM. The parameters are only saved until the next start.
T-Max-Fan T-Max-Fan-In T-Max-Fan-Mod	Temperature for maximum fan rotation speed
T-Start	Grid monitoring time: time during which the inverter monitors the electricity grid before it connects.
T-Start-Fan T-Start-Fan-In T-Start-Fan-Mod	As of this temperature, the fan will start to run at minimum speed.
T-Stop	Time for which the inverter waits before disconnecting from the electricity grid if the direct voltage drops below Vpv-Start.
T-Stop-Fan T-Stop-Fan-In T-Stop-Fan-Mod	If, after a temperature increase, the inverter cools down to below this limiting value, the fan will switch off again.
Vac-Min* Vac-Max* Vac-Min-Fast* Vac-Max-Fast*	Additional monitoring of AC voltage (deactivated for Germany). Lower (Vac-Min) and upper (Vac-Max) limit of the permissible AC voltage before the grid monitoring disconnects the inverter from the electricity grid.
Vac-Min-Tm* Vac-Max-Tm* Vac-Min-Fast-Tm* Vac-Max-Fast-Tm*	Switch-off time for voltage increase protection (Vac-Max-Tm, Vac-Max-Fast-Tm) and voltage decrease protection (Vac-Min-Tm, Vac-Min-Fast-Tm).
Vac-Tavg	Averaging time for measuring grid frequency
VdcWindMid	Defines the voltage from which the characteristic curve becomes steeper during turbine operation.
VdcWindStart	This parameter defines the starting point of the power characteristic curve. When the DC input voltage reaches this value after grid synchronisation, the inverter uses the power characteristic curve to start the load of the small wind turbine system and feeds power into the electricity grid.

Name	Description
VdcWindStop	This parameter is only relevant for the Windy Boy 1100LV. If the value falls below VdcWindStop, the inverter decreases its self-consumption (DC) by deactivating the power semiconductor device.
Vpv-Start	Direct voltage required before the inverter begins feeding power into the electricity grid. This value is above the minimum MPP voltage which is required in order to always guarantee safe connection to the grid and to minimise grid relay wear. If, after a grid disconnection, and in the absence of any further disturbances, the inverter does not automatically reconnect to the electricity grid, this parameter can be decreased in small steps. It should be noted that if the value is set too low, this leads to an increased number of connections to the grid, and thus to increased wear of components.
Vconst-Setpoint	Target PV voltage for constant operating voltage. This parameter is only important when the "Operating Mode" parameter is set to "V-Const".
VolCtl.ReconMax*	Maximum voltage for reconnection after a system incident
VolCtl.ReconMin*	Minimum voltage for reconnection after a system incident
VolCtl.RPro*	Voltage increase protection (only relevant for Germany) In Germany, Sunny Boys and Sunny Mini Centrals can feed into the electricity grid with up to 264.5 V AC. However, the DIN VDE 0126-1-1 standard stipulates that the 10-minute AC voltage average may not exceed 253 V. If the 10-minute average exceeds the limiting value of 253 V, the inverter disconnects from the electricity grid. As soon as the 10-minute average returns to a value of less than 253 V, the inverter will resume feeding power into the grid. If voltage increase protection is not required in the relevant grid area (outside Germany), it can be deactivated by means of an adjustment to the maximum value.
VRef*	Reference voltage for limited dynamic grid support (e.g. on the local grid transformer)
VRefOfs*	Adjustable voltage offset (e.g. through cable losses) for the "VRef" reference voltage in the case of limited dynamic grid support.
WCnst*	The maximum active power is permanently limited.
WCtlCom*	The maximum active power is limited when required by means of communication via the Power Reducer Box.
WCtlHz*	The active power is limited depending on the power frequency in accordance with the characteristic curve (P(f)).
WGra*	Setting for the active power increase per second
WGraRecon*	Setting for the active power increase per minute in the case of a reconnection following a system incident.

Name	Description
WGraReconEna*	Activation of the gradient of the active power limitation in the case of a reconnection following a system incident.
Wind_a0 Wind_a1 Wind_a2 Wind_a3	The following formula gives the factors for the voltage-dependent power calculation: $P(V) = a_0 + a_1 * V + a_2 * V^2 + a_3 * V^3$
Zac-Max	Maximum grid impedance before the grid monitoring disconnects the inverter from the electricity grid.

4 Setting the Country Standard

By means of the "Default" parameter you can set the installation country and/or the grid connection standard valid for your country via a communication product or a PC with the appropriate software. This is necessary if the inverter was originally ordered for another country and was preset accordingly by SMA Solar Technology AG.

If your country or the standard valid in your country is not listed in the following overview, please contact the SMA Service Line.

Parameter	Setting	Description
Default*	VDE-AR-N4105	Country-specific parameter settings for Germany in accordance with VDE-AR-N 4105 for power generation plants ≤ 3.68 kVA
	VDE-AR-N4105-MP	Country-specific parameter settings for Germany in accordance with VDE-AR-N 4105 for power generation plants > 3.68 kVA and ≤ 13.8 kVA
	VDE-AR-N4105-HP	Country-specific parameter settings for Germany in accordance with VDE-AR-N 4105 for power generation plants > 13.8 kVA
	GER/MSD	Country-specific parameter settings for Germany in accordance with DIN VDE 0126 (4.99)
	GER/VDE0126-1-1	Country-specific parameter settings for Germany and France in accordance with DIN VDE 0126-1-1
	VDE0126-1-1/UTE	Country-specific parameter settings for France in accordance with UTE C15-712-1
	SP/RD1663 SP/RD1663-A SP/RD1663/661 SP/RD1663/661-A	Country-specific parameter settings for Spain
	AUS/AS4777	Country-specific parameter settings for Australia
	IT/DK5940 Ed.2	Country-specific parameter settings for Italy
	GB GB/G83 GB/G83/1-1 G59/2	Country-specific parameter settings for Great Britain
	KOR/KEPCO Guide	Country-specific parameter settings for Korea
	EN 50438	Country-specific parameter settings for various European countries
	EN 50438-CZ CZ/PPDS	Country-specific parameter settings for the Czech Republic

Parameter	Setting	Description
Default*	GR/PPC	Country-specific parameter settings for Greece
	TH/PEA TH/MEA TH/IEC61727/PEA TH/IEC61727/MEA	Country-specific parameter settings for Thailand
	BE/C10/11	Country-specific parameter settings for Belgium
	CN/CGC/GF001	Country-specific parameter settings for China
	MVtgDirective	Extension to the disconnection thresholds of the inverter for voltage and frequency to the extreme values (prerequisite: external three-phase decoupling protection)
	Other	Parameter settings for countries for which no pre-defined settings exist can be configured here.
	trimmed	If country-specific parameters have been changed, "trimmed" is shown in the display.
	OFF_Grid	Setting for inverters which are operated in a stand-alone grid. More information can be found in the Sunny Island installation manual.

5 Reactive Power and Grid Management

The grid management functions allow the inverters to take part in grid management. This means that the inverters fulfil the network operator's requirement that power generation plants participate in grid management.

Depending on the device type, the inverters have the following grid management functions:

	SB 1200 **SB 1300TL-10*** **SB 1600TL-10*** **SB 1700*** **SB 2100TL*** **SB 2500*** **SB 3000*** **WB 1200*** **WB 1700*** **WB 2500*** **WB 3000***	**SB 3300-11** **SB 3800-11** **SMC 4600A-11** **SMC 5000A-11** **SMC 6000A-11** **SMC 7000HV-11** **SMC 9000TLRP-10** **SMC 10000RP-10** **SMC 11000TLRP-10** **WB 3300-11** **WB 3800-11** **WB 5000A-11** **WB 6000A-11**	**SMC 4600A** **SMC 5000A** **SMC 6000A** **SMC 6000TL** **SMC 7000TL** **SMC 8000TL** **SMC 9000TL-10** **SMC 10000TL-10** **SMC 11000TL-10** **WB 5000A** **WB 6000A**	**SB 3300** **SB 3800** **WB 3300** **WB 3800**
Specification of the displacement power factor, cos φ	–	x	–	–
Frequency-dependent active power limitation P(f)	x	x	x	–
External active power limitation	x	x	x	x
Soft start	x	x	–	–
Control of the reconnection conditions	x	x**		–
Line conductor assignment	x	x	x	x
Limited dynamic grid support	x***	x	–	–

* From firmware version 4.00.

** SMC 7000HV-11: From firmware version 2.10,
SMC 9000TLRP-10/10000TLRP-10/11000TLRP-10: From firmware version 2.05.

*** Does not apply to SB 1300TL-10/1600TL-10/SB 2100TL.

The following parameters are protected by the SMA Grid Guard Code. To set all parameters you need a personal SMA Grid Guard Code and the installer password. The application form for the SMA Grid Guard Code is located in the download area at www.SMA.de/en, in the "Certificate" category of the respective inverter. Upon request, SMA Service Line will provide you with the installer password. Discuss any changes to these parameters with your network operator beforehand.

With the procedures described below, you can select various settings in which additional configuration parameters can be set.

5.1 Specification of the Displacement Power Factor, cos ϕ

The inverter can provide reactive power by means of the manual or automatic specification of the displacement power factor cos φ. The activation of this procedure influences the active power output (active power is also reduced).

The default setting for the displacement power factor depends on the applicable country data set. You can change the displacement power factor, cos φ, and the type of excitation in accordance with the network operator's specifications via a communication product. 3 operating modes are available for this.

Procedures and Configuration Parameters

Default settings

Default settings are shown in bold in the following table.

Procedure	Setting	Description
Q-VArMod	**PFCnst**	Operating mode 1: Constant displacement power factor cos φ
	PFCtlCom	Operating mode 2: Displacement power factor is specified by communication via the Power Reducer Box. For this you need a Sunny WebBox and a Power Reducer Box. The network operator enters his specifications in the Power Reducer Box and this transfers the specifications to the inverters via the Sunny WebBox.
	PFCtlW*	Operating mode 3: Automatic adjustment to the displacement power factor depending on the current active power.
	Off	The process is deactivated.

* Default value for country data sets in accordance with VDE-AR-N-4105.

Configuration Options for "PFCnst"

Setting	Parameter	Description	Range	Default value
PFCnst	PF-PF	Displacement power factor specification cos φ (operating mode 1)	0.8 ... 1	1*
	PF-PFExt	Type of excitation of the displacement power factor cos φ (operating mode 1)	Underexcited/ UnExt, Overexcited/ OvExt	Underexcited/ UnExt

* With country data set VDE-AR-N4105-HP = 0.9, with country data set VDE-VR-N4105-MP = 0.95

Configuration Options for "PFCtlW"

Setting	Parameter	Description	Range	Default value
PFCtlW	PF-PFExtStr	Excitation type at the starting point	Underexcited/ UnExt, Overexcited/ OvExt	Overexcited/ OvExt
	PF-PFStr	Displacement power factor cos φ of the starting point	0.8 ... 1	1
	PF-WNomStr	Active power of the starting point from Pmax	0% ... 100%	50%
	PF-PFExtStop	Excitation type at the end point	Underexcited/ UnExt, Overexcited/ OvExt	Underexcited/ UnExt
	PF-PFStop	Displacement power factor cos φ of the end point	0.8 ... 1	1*
	PF-WNomStop	Active power of the end point from Pmax	0% ... 100%	100%

* With country data set VDE-AR-N4105-HP = 0.9, with country data set VDE-VR-N4105-MP = 0.95.

5.2 Frequency-dependent Active Power Limitation P(f)

The frequency-dependent active power limitation can be used to limit the power of the inverters in accordance with the power frequency.

When you activate the frequency-dependent active power, you can set the start frequency, the gradient, the stop frequency and the stay-set indicator function for the active power limitation. You can use an additional parameter to set the active power gradient in accordance with a frequency-dependent active power limitation.

Procedures and Configuration Parameters

Default settings

Default settings are shown in bold in the following table.

Procedure	Setting	Description
P-WCtlHzMod	**Off**	The process is deactivated.
	WCtlHz*	The active power is regulated based on the characteristic curve in accordance with the frequency.

* Default value for country data sets in accordance with VDE-AR-N 4105.

Configuration Options for "WCtlHz"

Setting	Parameter	Description	Range	Default value
WCtlHz	P-HzStr	Start frequency (nominal frequency + setting) for active power limitation.	0 Hz ... 5 Hz	0.20 Hz
	P-WGra	Steepness of the active power limitation (gradient)	10%/Hz ... 130%/Hz	40%/Hz
	P-HzStop	Frequency (nominal frequency + setting) for resetting the active power limitation.	0 Hz ... 5 Hz	0.2 Hz*
	P-HystEna	Activation of the stay-set indicator function	On, Off	Off

* 0.05 Hz with country data sets in accordance with the medium-voltage directive (MVtgDirective).

5.3 External Active Power Limitation

The inverter can automatically limit its active power by means of the network operator's specifications (operating mode 1). For this you need a Sunny WebBox and a Power Reducer Box. The network operator enters a target value in the Power Reducer Box and this transfers the specifications to the inverter via the Sunny WebBox. This process is activated for all inverters on delivery.

You can specify that the inverter should limit its active power by means of the manual specification of the target value (operating mode 2). This is necessary if you are operating the inverter without a Sunny WebBox or Power Reducer Box.

Procedures and Configuration Parameters

Default settings

Default settings are shown in bold in the following table.

Procedure	Setting	Description
P-WMod	Off	The process is deactivated.
	WCtlCom	Limitation of the maximum active power when required by means of communication via a Power Reducer Box (operating mode 1).
	WCnst	Permanent limitation of the maximum active power of the inverter (operating mode 2).

Configuration Options for "WCnst"

Setting	Parameter	Description	Range	Default value
WCnst	P-W	Limitation of the maximum active power	0 ... Pmax	Pmax

5.4 Soft Start

Using the soft start function, the inverter can slowly increase its active power output following a reconnection.

"WGra" Parameter

The "WGra" parameter is preset in the factory. After a device or DC-side disturbance, the active power is increased by 20% of the nominal power per second.

Parameter	Description	Range	Default value
WGra	Speed of the active power increase per second as a percentage of Pmax	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s

"WGraReconEna" Parameter

When you activate this function, the inverter runs with 10% of the nominal power per minute following a system incident. As long as this parameter is activated, the "WGra" parameter setting does not apply.

This parameter only exists for SMC 9000TLRP-10/10000TLRP-10/11000TLRP-10 and SMC 7000HV-11, which do not yet have the country data sets in accordance with AR-N4105.

Default settings

Default settings are shown in bold in the following table.

Parameter	Setting	Description
WGraReconEna	**0**	Soft start with 10% Pmax/min is deactivated.
	1*	Soft start with 10% Pmax/min is activated.

* Default value for country data sets in accordance with VDE-AR-N 4105.

"WGraRecon" Parameter

With this parameter you can define the speed of the active power increase per minute following a system incident.

Parameter	Description	Range	Default value
WGraRecon	Speed of the active power increase as a percentage of Pmax per minute	1% Pmax/min ... 10,000% Pmax/min	10,000% Pmax/min*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 10% Pmax/minute.

"P-HzStopWGra" Parameter

With this parameter you can define the speed of the active power increase per minute following a frequency-dependent active power limitation.

Parameter	Description	Range	Default value
P-HzStopWGra	Speed of the active power increase as a percentage of Pmax per minute after P(f)	1% Pmax/min ... 10,000% Pmax/min	10,000% Pmax/min*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 10% Pmax/minute.

5.5 Reconnection Conditions

You can use the parameters described below to define the reconnection times and limits following a system incident.

5.5.1 Reconnection Times

You can use the following parameters to set the inverter connection times following a grid disconnection.

Parameter	Description	Range	Default value
GriFltReConTms	Connection time following a brief system incident	0 s ... 1,600 s	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 5 s.

Parameter	Description	Range	Default value
GriFltMonTms	Connection time following a longer system incident ≥ 3 seconds	0 s ... 1,600 s	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 60 s.

Parameter	Description	Range	Default value
GriStrTms	Connection time following a restart	0 s ... 1,600 s	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 60 s.

5.5.2 Reconnection Limits

You can use the following parameters to set the inverter reconnection limits following a grid disconnection.

Parameter	Description	Range	Default value
VolCtl.ReconMin	Minimum voltage for reconnection	70 V ... 240 V	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 199 V.

Parameter	Description	Range	Default value
VolCtl.ReconMax	Maximum voltage for reconnection	100 V ... 280 V	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 249.5 V.

Parameter	Description	Range	Default value
FrqCtl.ReconMin	Minimum frequency for reconnection	44 Hz ... 60 Hz	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 47.5 Hz.

Parameter	Description	Range	Default value
FrqCtl.ReconMax	Maximum frequency for reconnection	50 Hz ... 65 Hz	Depending on country standard*

* Default value for country data sets in accordance with VDE-AR-N 4105 = 50.05 Hz.

Error Messages Relating to the Power Frequency

As a result of the maximum frequency connection limit of 50.05 Hz stipulated by VDE-AR-N 4105, there may be an increased number of disturbances relating to the power frequency (e.g. Fac-Bfr, Fac-Srr) before the start of feed-in. These disturbances constitute normal grid-related behaviour and are not device faults. However, if yield losses do occur as a result of this parameter setting, please contact your network operator.

5.6 Line Conductor Assignment

You can assign each inverter to a specific line conductor. This allows only the inverter of an individual line conductor to control the network operator's specifications by means of communication with the Power Reducer Box.

The inverter is assigned to line conductor 1 by default.

Default settings

Default settings are shown in bold in the following table.

Parameter	Setting	Description
Line conductor	**- - - - -**	This setting means that no active setting was selected. The inverter reacts as in setting "L1".
	L1	The inverter is assigned to line conductor L1.
	L2	The inverter is assigned to line conductor L2.
	L3	The inverter is assigned to line conductor L3.

5.7 Limited Dynamic Grid Support

Using this function, the inverter can begin feeding in again immediately after the end of a short-term voltage dip. The inverter also disconnects from the electricity grid through the internal decoupling protection with the set country parameters or through the external three-phase decoupling protection.

There are 4 configurable parameters for this function.

Parameter	Description	Range	Default value
DGS-PWMVolNom	Switch-off voltage in percent relative to VRef + VRefOfs. When the AC voltage drops below the value set here, the inverter will stop feeding in.	40% ...100%	70%
DGS-HystVolNom	Hysteresis in percent. When the AC voltage exceeds the set value, the inverter starts feeding in again.	0% ... 60%	5%
VRef	Phase voltage at the output side of the transformer	215 V ... 245 V	230 V
VRefOfs	Adjustable voltage offset (e.g. through cable losses)	− 20 V ... +20 V	0 V

6 Value Ranges and Factory Settings

6.1 Sunny Boy

6.1.1 SB 1200/1700

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	12 deg/%
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
DGS-HystVolNom*	0% ...60%	Depending on country standard
DGS-PWMVolNom*	40% ...100%	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta-*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5 Hz	5 Hz
Fac-delta-Fast*	0 Hz ... 6 Hz	6 Hz
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	10 s
Fac-Max-Tm*	0.04 s ... 90 s	0.14 s
Fac-Min-Fast-Tm*	0.04 s ... 300 s	10 s
Fac-Min-Tm*	0.04 s ... 300 s	0.14 s
Fac-Start delta*	0 Hz ... 5 Hz	1 Hz
FrqClt.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqClt.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea (firmware version 3.06 and higher)	GndFltWrn	Depending on country standard
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
P-GriSwOpnZerW	No	Depending on country standard
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard

Name	Value/Range	Default value
P-HzStopWGra (SB 1200)*	1%/min ... 1,250%/min	Depending on country standard
P-HzStopWGra (SB 1700)*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-W*	0 W ... 1,750 W	Depending on country standard
Pmax (SB 1200)	0 W ... 1,250	1,200 W
Pmax (SB 1700)	0 W ... 1,750	1,700 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Memory function*	No function	No function
	R2	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 280 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max*-Tm	0.04 s ... 60 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard
Vac-Min-Fast*	100 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start (SB 1200)	110 V ... 400 V	120 V
Vpv-Start (SB 1700)	150 V ... 400 V	180 V
Vconst-Setpoint (SB 1200)	110 V ... 400 V	400 V
Vconst-Setpoint (SB 1700)	150 V ... 430 V	400 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard

Name	Value/Range	Default value
VolCtl.RPro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	230 V
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

6.1.2 SB 1300TL-10/1600TL-10/2100TL

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
DC-Offset-Max*	20 mA ... 2,000 mA	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta–*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta–Fast *	0 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	Depending on country standard
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	Depending on country standard
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GriFltMonTms*	0 s ... 1600 s	Depending on country standard
GriStrTms*	0 s ... 1600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
P-GriSWOpnZerW	No	No
	Yes	
P-HystEna*	Off	Off
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1% Pmax/min ... 10,000% Pmax/min	Depending on country standard

Name	Value/Range	Default value
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
Pmax (SB 1300TL-10)	0 W ... 1,350 W	1,300 W
Pmax (SB 1600TL-10)	0 W ... 1,650 W	1,600 W
Pmax (SB 2100TL)	0 W ... 2,200 W	2,150 W
P-W*	0 ... 2,200 W	Pmax
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCtlCom	
	WCnst	
Phase*	-----	-----
	L1	
	L2	
	L3	
Memory function	No function	No function
	R2	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	10 s
T-Stop	1 s ... 3,600 s	10 s
Vac-Max*	100 V ... 280 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	125 V ... 600 V	150 V
Vconst-Setpoint	125 V ... 600 V	600 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro*	100 V ... 280 V	Depending on country standard
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s

Name	Value/Range	Default value
WGraRecon*	1% Pmax/min ... 10,000% Pmax/min	Depending on country standard

6.1.3 SB 2500/3000

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PMWVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta-*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	Depending on country standard
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	Depending on country standard
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
P-GriSwOpnZerW	No	Depending on country standard
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard

Name	Value/Range	Default value
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-W* (SB 2500)	0 W ... 2,550 W	2,500 W
P-W*(SB 3000)	0 W ... 3,050 W	3,000 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SB 2500)	0 W ... 2,550 W	2,500 W
Pmax (SB 3000)	0 W ... 3,050 W	3,000 W
Memory function	No function	No function
	R2	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	120 V ... 280 V	Depending on country standard
Vac-Max-Fast*	120 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	120 V ... 230 V	Depending on country standard
Vac-Min-Fast*	120 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start (SB 2500)	250 V ... 600 V	300 V
Vpv-Start (SB 3000)	290 V ... 600 V	330 V
Vconst-Setpoint	250 V ... 600 V	600 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro*	100 V ... 280 V	Depending on country standard

Name	Value/Range	Default value
VRef*	80 V ... 245 V	230 V
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

6.1.4 SB 3300/3800

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	0 deg
AntiIsland-Freq*	1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Grid	
	Bridge	
dFac-Max*	0.1 Hz/s ... 4.0 Hz/s	4.0 Hz/s
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta–Fast *	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	Depending on country standard
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	Depending on country standard
Fan-Test	0	0
	1	
GndFltRea*	GndFltWrn	GndFltWrn
	GndFltDscon	
h-total	0 h ... 200,000 h	0 h
LDVtgC*	0 V ... 50 V	Depending on country standard

Name	Value/Range	Default value
Grid connection	-----	-----
	L1	
	L2	
	L3	
Pmax (SB 3300)	0 ... 3,600 W	3,600 W
Pmax (SB 3800)	0 ... 3,800 W	3,800 W
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Max-Fan	0°C ... 100°C	90°C
T-Start	5 s ... 1,600 s	Depending on country standard
T-Start-Fan	0°C ... 100°C	60°C
T-Stop	1 s ... 3,600 s	2 s
T-Stop-Fan	0°C ... 100°C	50°C
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	240 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard
Vac-Min-Fast*	100 V ... 220 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	200 V ... 500 V	250 V
Vconst-Setpoint	200 V ... 500 V	500 V

6.1.5 SB 3300-11/3800-11

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Bridge	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea*	GndFltWrn	GndFltWrn
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4,000,000,000	0
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard

Name	Value/Range	Default value
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-GriSwOpnZerW	No	No
	Yes	
P-W* (SB 3300-11)	0 W ... 3,600 W	3,600 W
P-W* (SB 3800-11)	0 W ... 3,800 W	3,800 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
PF-PF*	0.8 ... 1	Depending on country standard
PF-PFExt*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStop*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStr*	UnExt	Depending on country standard
	OvExt	
PF-PFStop*	0.8 ... 1	Depending on country standard
PF-PFStr*	0.8 ... 1	Depending on country standard
PF-WNomStop*	0% ... 100%	Depending on country standard
PF-WNomStr*	0% ... 100%	Depending on country standard
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SB 3300-11)	0 ... 3,600 W	3,600 W
Pmax (SB 3800-11)	0 ... 3,800 W	3,800 W
Q-VArMod*	Off	Depending on country standard
	PFCnst	
	PFCtlCom	
	PFCtlW	
Smax (SB 3300-11)	0 VA ... 3,600 VA	3,600 VA
Smax (SB 3800-11)	0 VA ... 3,800 VA	3,800 VA

Name	Value/Range	Default value
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	10 s
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	200 V ... 500 V	250 V
Vconst-Setpoint	200 V ... 500 V	500 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.Rpro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	Depending on country standard
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

6.1.6 SB 3300TL HC

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AntiIsland-Ampl*	0 deg ... 10 deg	0 deg
AntiIsland-Freq*	0 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
dFac-Max*	0.1 Hz/s ... 4.0 Hz/s	4.0 Hz/s
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 4.5 Hz	2.45 Hz
Fac-delta+*	0.1 Hz ... 4.5 Hz	0.19 Hz
h-total	0 h ... 200,000 h	0 h
NiTest	0	1
	1	
LDVtgC*	0 V ... 50 V	Depending on country standard
Riso-Min	1,500 k Ω ... 30,000 k Ω	1500 k Ω
T-Start	2 s ... 300 s	2 s
Vac-Max*	230 V ... 300 V	260 V
Vac-Min*	160 V ... 300 V	198 V
PTot-Min	0 W ... 500 W	35 W
Vconst-Setpoint DC	0 V ... 750 V	290 V

6.2 Sunny Mini Central

6.2.1 SMC 4600A/5000A/6000A

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	0 deg
AntiIsland-Freq*	1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Grid	
	Bridge	
dFac-Max*	0.1 Hz/s ... 6.0 Hz/s	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
h-total	0 h ... 200,000 h	0 h
LDVtgC*	0 V ... 50 V	Depending on country standard
P-HzStop*	0 Hz ... 5 Hz	0.05 Hz
P-HzStr*	0 Hz ... 5 Hz	0.20 Hz
P-W* (SMC 4600A)	0 W ... 5,000 W	5,000 W
P-W* (SMC 5000A)	0 W ... 5,500 W	5,500 W

Name	Value/Range	Default value
P-W* (SMC 6000A)	0 W ... 6,000 W	6000 W
P-WCtlHzMod*	Off	Off
	On	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SMC 4600A)	0 W ... 5,050 W	5,000 W
Pmax (SMC 5000A)	0 W ... 5,550 W	5,500 W
Pmax (SMC 6000A)	0 W ... 6,050 W	6,000 W
PowerBalancer	Off	Off
	PhaseGuard	
	PowerGuard	
	FaultGuard	
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Max-Fan	0°C ... 100°C	90°C
T-Start	5 s ... 1600 s	Depending on country standard
T-Start-Fan	0°C ... 100°C	70°C
T-Stop	1 s ... 3,600 s	2 s
T-Stop-Fan	0°C ... 100°C	50°C
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	250 V ... 600 V	300 V

Name	Value/Range	Default value
Vconst-Setpoint	250 V ... 600 V	600 V

6.2.2 SMC 4600A-11/5000A-11/6000A-11

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Bridge	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl-ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea*	GndFltWrn	Depending on country standard
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4,000,000,000	0

Name	Value/Range	Default value
P-GriSwOpnZerW	No	No
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
PF-PF*	0.8 ... 1	Depending on country standard
PF-PFExt*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStr*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStop*	UnExt	Depending on country standard
	OvExt	
PF-PFStop*	0.8 ... 1	Depending on country standard
PF-PFStr*	0.8 ... 1	Depending on country standard
PF-WNomStop*	0% ... 100%	Depending on country standard
PF-WNomStr*	0% ... 100%	Depending on country standard
P-W* (SMC 4600A-11)	0 W ... 5,000 W	5,000 W
P-W* (SMC 5000A-11)	0 W ... 5,500 W	5,500 W
P-W* (SMC 6000A-11)	0 W ... 6,000 W	6,000 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SMC 4600A-11)	0 W ... 5,050 W	5,000 W
Pmax (SMC 5000A-11)	0 W ... 5,550 W	5,500 W
Pmax (SMC 6000A-11)	0 W ... 6,050 W	6,000 W
PowerBalMax*	3,500 W ... 7,000 W	Depending on country standard

Name	Value/Range	Default value
PowerBalancer*	Off	Depending on country standard
	PowerGuard	
	PhaseGuard	
	FaultGuard	
Q-VArMod*	Off	Depending on country standard
	PFCnst	
	PFCtlCom	
	PFCtlW	
Smax (SMC 4600A-11)	0 VA ... 5,000 VA	5,000 VA
Smax (SMC 5000A-11)	0 VA ... 5,500 VA	5,500 VA
Smax (SMC 6000A-11)	0 VA ... 6,000 VA	6,000 VA
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	10 s
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	250 V ... 600 V	300 V
Vconst-Setpoint	250 V ... 600 V	600 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.Rpro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	Depending on country standard
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

6.2.3 SMC 7000HV-11 (up to firmware version 2.09)

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AntiIsland-Ampl*	0 deg ... 10 deg	Depending on country standard
AntiIsland-Freq*	0.1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
dFac-Max*	0.1 Hz/s ... 4.0 Hz/s	4.0 Hz/s
DGS-PWMVolNom*	40% ... 100%	70%
DGS-HystVolNom*	0% ... 60%	5%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0 ... 1	0
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
h-total	0 h ... 200,000 h	0 h
LDVtgC*	0 V ... 50 V	0 V
P-HzStop*	0 Hz ... 5 Hz	0.05 Hz
P-HzStr*	0 Hz ... 5 Hz	0.20 Hz
P-W*	0 W ... 7,000 W	7,000 W
P-WCtlHzMod*	Off	Off
	On	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
PF-PFExt*	Overexcited/OvExt	Underexcited/UnExt
	Underexcited/UnExt	
PF-PF*	0.8 ... 1.0	1
Pmax	0 W ... 7,000 W	7,000 W

Name	Value/Range	Default value
PowerBalancer	Off	Off
	PowerGuard	
	PhaseGuard	
	FaultGuard	
Q-VArMod*	Off	PFCnst
	PFCnst	
	PFCtlCom	
Smax	0 VA ... 7,000 VA	7,000 VA
T-Stop-Fan	0°C ... 100°C	50°C
T-Start-Fan	0°C ... 100°C	70°C
T-Max-Fan	0°C ... 100°C	90°C
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vpv-Start	370 V ... 800 V	400 V
Vconst-Setpoint	335 V ... 800 V	800 V
VRef*	215 V ... 245 V	230 V
VRefOfs*	− 20 V ... 20 V	0 V
WGraReconEna*	0 ... 1	0

6.2.4 SMC 7000HV-11 (from firmware version 2.10)

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
	Turbine	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta–Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea*	GndFltWrn	Depending on country standard
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4,000,000,000	0
P-GriSwOpnZerW	No	No
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard

Name	Value/Range	Default value
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-W*	0 W ... 7,000 W	7,000 W
P-WCtlHzMod*	Off	Depending on country standard
	On	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
PF-PF*	0.8 ... 1.0	Depending on country standard
PF-PFExt*	OvExt	Depending on country standard
	UnExt	
PF-PFExtStop*	OvExt	Depending on country standard
	UnExt	
PF-PFExtStr*	OvExt	Depending on country standard
	UnExt	
PF-PFStop*	0.8 ... 1	Depending on country standard
PF-PFStr*	0.8 ... 1	Depending on country standard
PF-WNomStop*	0% ... 100%	Depending on country standard
PF-WNomStr*	0% ... 100%	Depending on country standard
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax	0 W ... 7,000 W	7,000 W
PowerBalMax*	3500 W ... 7,000 W	Depending on country standard
PowerBalancer*	Off	Depending on country standard
	PowerGuard	
	PhaseGuard	
	FaultGuard	
Q-VArMod*	Off	Depending on country standard
	PFCnst	
	PFCtlCom	
	PfCtlW	
Smax	0 VA ... 7,000 VA	7,000 VA

Name	Value/Range	Default value
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Stop	1 s ... 3,600 s	2 s
T-Start	5 s ... 1,600 s	10 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	370 V ... 800 V	400 V
Vconst-Setpoint	335 V ... 800 V	800 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	Depending on country standard
VRefOfs*	− 20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

6.2.5 SMC 6000TL/7000TL/8000TL

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	Depending on country standard
AntiIsland-Freq*	1 mHz ... 2,000 mHz	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
DC-Offset_Max*	100 mA ... 5,000 mA	Depending on country standard
dFac-Max*	0.1 Hz/s ... 6.0 Hz/s	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6.0 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5.0 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5.0 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6.0 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5.0 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Start delta	0 Hz ... 5.0 Hz	1 Hz
Fan-Test	0	0
	1	
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4294899968	0
LDVtgC*	0 V ... 50 V	Depending on country standard
P-HzStop*	0 Hz ... 5.0 Hz	Depending on country standard
P-HzStr*	0 Hz ... 5.0 Hz	Depending on country standard
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SMC 6000TL)	0 W ... 6,060 W	6,000 W

Name	Value/Range	Default value
Pmax (SMC 7000TL)	0 W ... 7,070 W	7,000 W
Pmax (SMC 8000TL)	0 W ... 8,080 W	8,000 W
PowerBalancer	Off	Off
	PowerGuard	
	PhaseGuard	
	FaultGuard	
Riso-Min	1,500 k Ω ... 10,000 k Ω	1,500 k Ω
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Max-Fan	0°C ... 110°C	90°C
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
T-Start-Fan	0°C ... 110°C	70°C
T-Stop-Fan	0°C ... 110°C	50°C
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	220 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard
Vac-Min-Fast*	115 V ... 220 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	335 V ... 700 V	400 V
Vconst-Setpoint	250 V ... 700 V	500 V

6.2.6 SMC 9000TL-10/10000TL-10/11000TL-10 (from firmware version 1.40)

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	Depending on country standard
AntiIsland-Freq*	1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
DC-Offset_Max*	100 mA ... 5,000 mA	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6.0 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5.0 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5.0 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6.0 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
h-total	0 h ... 200,000 h	0 h
LDVtgC*	0 V ... 50 V	Depending on country standard
Phase*	-----	-----
	L1	
	L2	
	L3	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
Pmax (SMC 9000TL-10)	0 W ... 9,090 W	9,000 W
Pmax (SMC 10000TL-10)	0 W ... 10,100 W	10,000 W
Pmax (SMC 11000TL-10)	0 W ... 11,110 W	11,000 W

Name	Value/Range	Default value
PowerBalancer	Off	Off
	PowerGuard	
	PhaseGuard	
	FaultGuard	
P-WCtlHzMod*	Off	Depending on country standard
	On	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
Riso-Min	280 k Ω ... 10,000 k Ω	280 k Ω
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	240 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard
Vac-Min-Fast*	115 V ... 220 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	335 V ... 700 V	400 V
Vconst-Setpoint	250 V ... 700 V	500 V

6.2.7 SMC 9000TLRP-10/10000TLRP-10/11000TLRP-10 (up to firmware version 2.03)

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
DC-Offset-Max*	100 mA ... 5,000 mA	Depending on country standard
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast *	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast *	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0 ... 1	0
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4294899968	0
LDVtgC*	0 V ... 50 V	Depending on country standard
PF-PF*	0.8 ... 1.0	1
PF-PFExt*	Underexcited	Depending on country standard
	Overexcited	
Phase*	-----	-----
	L1	
	L2	
	L3	
P-HzStop*	0 Hz ... 5 Hz	0.05 Hz
P-HzStr*	0 Hz ... 5 Hz	0.20 Hz
Pmax (SMC 9000TLRP-10)	0 W ... 9,090 W	9,000 W
Pmax (SMC 10000TLRP-10)	0 W ... 10,100 W	10,000 W

Name	Value/Range	Default value
Pmax (SMC 11000TLRP-10)	0 W ... 11,110 W	11,000 W
PowerBalancer	Off	Off
	PowerGuard	
	PhaseGuard	
	FaultGuard	
P-W*	0 W ... 11,110 W	11,000 W
P-WCtlHzMod*	Off	Off
	On	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Q-VArMod*	Off	PFCnst
	PFCnst	
	PFCtlCom	
Riso-Min	280 k Ω ... 10,000 k Ω	280 k Ω
Smax (SMC 9000TLRP-10)	0 VA ... 9,090 VA	9,000 VA
Smax (SMC 10000TLRP-10)	0 VA ... 10,000 VA	10,000 VA
Smax (SMC 11000TLRP-10)	0 VA ... 11,110 VA	11,000 VA
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.02 s ... 10 s	10 s
Vac-Max-Tm*	0.04 s ... 60 s	60 s
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 220 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	10 s
Vac-Min-Tm*	0.04 s ... 10 s	10 s
Vpv-Start	335 V ... 700 V	400 V
Vconst-Setpoint	250 V ... 700 V	500 V
VRef*	215 V ... 245 V	230 V

Name	Value/Range	Default value
VRefOfs*	– 20 V ... 20 V	0 V
WGraReconEna*	0 ... 1	0

6.2.8 SMC 9000TLRP-10/10000TLRP-10/11000TLRP-10 (from firmware version 2.07)

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Mpp-Operation
	V-Const	
	Stop	
DC-Offset_Max*	100 mA ... 5,000 mA	Depending on country standard
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5.0 Hz	Depending on country standard
Fac-delta-Fast*	0 Hz ... 6.0 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
P-GriSwOpnZerW	No	No
	Yes	
P-HystEna*	Off	Off
	On	

Name	Value/Range	Default value
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1% Pmax/min ... 10,000% Pmax/min	10,000% Pmax/min
P-HzStr*	0 Hz ... 5 Hz	0.20 Hz
P-W*	0 W ... 11,110 W	11,000 W
P-WCtlHzMod*	Off	Off
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
PF-PF*	0.8 ... 1.0	1
PF-PFExt*	UnExt (underexcited)	UnExt
	OvExt (overexcited)	
PF-PFExtStop*	UnExt (underexcited)	Depending on country standard
	OvExt (overexcited)	
PF-PFExtStr*	UnExt (underexcited)	Depending on country standard
	OvExt (overexcited)	
PF-PFStop*	0.8 ... 1	1
PF-PFStr*	0.8 ... 1	1
PF-WNomStop*	0% ... 100%	100%
PF-WNomStr*	0% ... 100%	50%
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SMC 9000TLRP-10)	0 W ... 9,090 W	9,000 W
Pmax (SMC 10000TLRP-10)	0 W ... 10,100 W	10,000 W
Pmax (SMC 11000TLRP-10)	0 W ... 11,110 W	11,000 W
PowerBalMax*	3,500 V ... 7,000 W	5,000 W
PowerBalancer	Off	Off
	PowerGuard	
	PhaseGuard	
	FaultGuard	

Name	Value/Range	Default value
Q-VArMod*	Off	PFCnst
	PFCnst	
	PFCtlCom	
	PFCtlW	
Riso-Min	280 k Ω ... 10,000 k Ω	280 k Ω
Smax (SMC 9000TLRP-10)	0 VA ... 9,090 VA	9,000 VA
Smax (SMC 10000TLRP-10)	0 VA ... 10,000 VA	10,000 VA
Smax (SMC 11000TLRP-10)	0 VA ... 11,100 VA	11,000 VA
Memory function	No function	No function
	R1	
	Default Param.	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	335 V ... 700 V	400 V
Vconst-Setpoint	250 V ... 700 V	500 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	230 V
VRefOfs*	– 20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1% Pmax/min ... 10,000% Pmax/min	10,000% Pmax/min

6.3 Windy Boy

6.3.1 WB 1100LV

Name	Value/Range	Default value
Operating mode	Mpp-Operation	Turbine
	V-Const	
	Stop	
	Turbine	
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.117
P-Wind-Ramp	10 W/s ... 600 W/s	400 W/s
Pmax	0 W ... 1,150 W	1,100 W
T-Stop	1 s ... 3,600 s	2 s
Vpv-Start	20 V ... 60 V	25 V
VdcWindStart	1 V ... 60 V	25 V
VdcWindStop	1 V ... 60 V	24.9 V
Wind_a0	− 1,000,000,000 ... 1,000,000,000	− 1897.57
Wind_a1	− 1,000,000,000 ... 1,000,000,000	182.87
Wind_a2	− 1,000,000,000 ... 1,000,000,000	− 5933.95
Wind_a3	− 1,000,000,000 ... 1,000,000,000	66,410

6.3.2 WB 1200/1700

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	12 deg/%
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
DGS-HystVolNom*	0% ...60%	Depending on country standard
DGS-PWMVolNom*	40% ...100%	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta-*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5 Hz	5 Hz
Fac-delta-Fast*	0 Hz ... 6 Hz	6 Hz
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	10 s
Fac-Max-Tm*	0.04 s ... 90 s	0.14 s
Fac-Min-Fast-Tm*	0.04 s ... 300 s	10 s
Fac-Min-Tm*	0.04 s ... 300 s	0.14 s
Fac-Start delta*	0 Hz ... 5 Hz	1 Hz
FrqClt.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqClt.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea (firmware version 3.06 and higher)	GndFltWrn	Depending on country standard
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
KI-Wind-Reg	0 V ... 0.25 V	0.005
KP-Wind-Reg	0 V ... 0.25 V	0.117
P-GriSwOpnZerW	No	Depending on country standard
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra (WB 1200)*	1%/min ... 1,250%/min	Depending on country standard

Name	Value/Range	Default value
P-HzStopWGra (WB 1700)*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-W*	0 W ... 1,750 W	Depending on country standard
Pmax (WB 1200)	0 W ... 1,250	1,200 W
Pmax (WB 1700)	0 W ... 1,750	1,700 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Memory function*	No function	No function
	R2	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 280 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max*-Tm	0.04 s ... 60 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard
Vac-Min-Fast*	100 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
VdcWindStart	1 V ... 500 V	150 V
Vpv-Start (WB 1200)	110 V ... 400 V	120 V
Vpv-Start (WB 1700)	150 V ... 400 V	180 V
Vconst-Setpoint (WB 1200)	110 V ... 400 V	400 V

Name	Value/Range	Default value
Vconst-Setpoint (WB 1700)	150 V ... 430 V	400 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	230 V
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard
Wind_a0 (WB 1200)	– 1,000,000,000 ... 1,000,000,000	– 83
Wind_a0 (WB 1700)		– 341
Wind_a1 (WB 1200)		2.92
Wind_a1 (WB 1700)		8.76
Wind_a2 (WB 1200)		– 30.62
Wind_a2 (WB 1700)		– 73
Wind_a3 (WB 1200)		99.22
Wind_a3 (WB 1700)		197.84

6.3.3 WB 2500/3000

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PMWVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta-*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0 Hz ... 6 Hz	Depending on country standard
Fac-delta+Fast*	0 Hz ... 5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	Depending on country standard
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	Depending on country standard
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.02
P-GriSwOpnZerW	No	Depending on country standard
	Yes	
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard

Name	Value/Range	Default value
P-W* (SB 2500)	0 W ... 2,550 W	2,500 W
P-W*(SB 3000)	0 W ... 3,050 W	3,000 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (SB 2500)	0 W ... 2,550 W	2,500 W
Pmax (SB 3000)	0 W ... 3,050 W	3,000 W
Memory function	No function	No function
	R2	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	Depending on country standard
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	120 V ... 280 V	Depending on country standard
Vac-Max-Fast*	120 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	120 V ... 230 V	Depending on country standard
Vac-Min-Fast*	120 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
VdcWindStart (WB 2500)	150 V ... 600 V	250 V
VdcWindStart (WB 3000)	150 V ... 600 V	270 V
Vpv-Start (WB 2500)	250 V ... 600 V	300 V
Vpv-Start (WB 3000)	290 V ... 600 V	330 V

Name	Value/Range	Default value
Vconst-Setpoint	250 V ... 600 V	600 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.RPro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	230 V
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard
Wind_a0 (WB 2500)	– 1,000,000,000 ... 1,000,000,000	– 1538
Wind_a0 (WB 3000)		– 3923
Wind_a1 (WB 2500)		17.07
Wind_a1 (WB 3000)		38.36
Wind_a2 (WB 2500)		– 64.43
Wind_a2 (WB 3000)		– 128
Wind_a3 (WB 2500)		85.06
Wind_a3 (WB 3000)		147.8

6.3.4 WB 3300/3800

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	0 deg
AntiIsland-Freq*	1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Grid	
	Bridge	
dFac-Max*	0.1 Hz/s ... 4.0 Hz/s	4.0 Hz/s
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-delta–Fast *	0.1 Hz ... 4.5 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	Depending on country standard
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	Depending on country standard
Fan-Test	0	0
	1	

Name	Value/Range	Default value
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
h-total	0 h ... 200,000 h	0 h
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.117
LDVtgC*	0 V ... 50 V	Depending on country standard
Grid connection	-----	-----
	L1	
	L2	
	L3	
P-Wind-Ramp (WB 3300)	10 W/s ... 2,000 W/s	600 W/s
P-Wind-Ramp (WB 3800)	10 W/s ... 2,000 W/s	650 W/s
Pmax (WB 3300)	0 W ... 3,600 W	3,600 W
Pmax (WB 3800)	0 W ... 3,800 W	3,800 W
Memory function	No function	No function
	R1	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Max-Fan	0°C ... 100°C	90°C
T-Start	5 s ... 1,600 s	Depending on country standard
T-Start-Fan	0°C ... 100°C	60°C
T-Stop	1 s ... 3,600 s	2 s
T-Stop-Fan	0°C ... 100°C	50°C
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	240 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min*	160 V ... 230 V	Depending on country standard

Name	Value/Range	Default value
Vac-Min-Fast*	100 V ... 220 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
Vpv-Start	200 V ... 500 V	250 V
VdcWindStart (WB 3300)	150 V ... 500 V	200 V
VdcWindStart (WB 3800)	150 V ... 500 V	180 V
Vconst-Setpoint	200 V ... 500 V	500 V
Wind_a0 (WB 3300)	− 1,000,000,000 ... 1,000,000,000	− 290
Wind_a0 (WB 3800)		− 610.56
Wind_a1 (WB 3300)		7.086
Wind_a1 (WB 3800)		0.83
Wind_a2 (WB 3300)		− 52
Wind_a2 (WB 3800)		9.51
Wind_a3 (WB 3300)		120
Wind_a3 (WB 3800)		26.37

6.3.5 WB 3300-11/3800-11

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Bridge	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl.ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea*	GndFltWrn	GndFltWrn
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4,000,000,000	0
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.117
P-HystEna*	Off	Depending on country standard
	On	

Name	Value/Range	Default value
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
P-GriSwOpnZerW	No	No
	Yes	
P-W* (WB 3300-11)	0 W ... 3,600 W	3,600 W
P-W* (WB 3800-11)	0 W ... 3,800 W	3,800 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-Wind-Ramp (WB 3300-11)	10 W/s ... 2,000 W/s	600 W/s
P-Wind-Ramp (WB 3800-11)	10 W/s ... 2,000 W/s	650 W/s
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
PF-PF*	0.8 ... 1	Depending on country standard
PF-PFExt*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStop*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStr*	UnExt	Depending on country standard
	OvExt	
PF-PFStop*	0.8 ... 1	Depending on country standard
PF-PFStr*	0.8 ... 1	Depending on country standard
PF-WNomStop*	0% ... 100%	Depending on country standard
PF-WNomStr*	0% ... 100%	Depending on country standard
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (WB 3300-11)	0 W ... 3,600 W	3,600 W
Pmax (WB 3800-11)	0 W ... 3,800 W	3,800 W
Q-VArMod*	Off	Depending on country standard
	PFCnst	
	PFCtlCom	
	PFCtlW	
Smax (WB 3300-11)	0 W ... 3,600 W	3,600 W

Name	Value/Range	Default value
Smax (WB 3800-11)	0 W ... 3,800 W	3,800 W
Memory function	No function	No function
	R1	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1,600 s	10 s
T-Stop	1 s ... 3,600 s	2 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
VdcWindStart (WB 3300-11)	150 V ... 500 V	200 V
VdcWindStart (WB 3800-11)	150 V ... 500 V	180 V
Vpv-Start	200 V ... 500 V	250 V
Vconst-Setpoint	200 V ... 500 V	500 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.Rpro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	Depending on country standard
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard
Wind_a0 (WB 3300-11)	– 1,000,000,000 ... 1,000,000,000	– 290
Wind_a0 (WB 3800-11)		– 610.6
Wind_a1 (WB 3300-11)		7.086
Wind_a1 (WB 3800-11)		0.83
Wind_a2 (WB 3300-11)		– 52
Wind_a2 (WB 3800-11)		9.51
Wind_a3 (WB 3300-11)		120
Wind_a3 (WB 3800-11)		26.37

6.3.6 WB 5000A/6000A

Name	Value/Range	Default value
ACVtgRPro*	230 V ... 300 V	253 V
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
AntiIsland-Ampl*	0 deg ... 10 deg	0 deg
AntiIsland-Freq*	1 mHz ... 2,000 mHz	500 mHz
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Grid	
	Bridge	
dFac-Max*	0.1 Hz/s ... 6.0 Hz/s	Depending on country standard
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.2
h-total	0 h ... 200,000 h	0 h
LDVtgC*	0 V ... 50 V	Depending on country standard
P-HzStop*	0 Hz ... 5 Hz	0.05 Hz
P-HzStr*	0 Hz ... 5 Hz	0.20 Hz
P-W* (WB 5000A)	0 W ... 5,500 W	5,500 W
P-W* (WB 6000A)	0 W ... 6,000 W	6,000 W

Name	Value/Range	Default value
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-Wind-Ramp (WB 5000A)	10 W/s ... 2,000 W/s	830 W/s
P-Wind-Ramp (WB 6000A)	10 W/s ... 2,000 W/s	1,000 W/s
P-WMod*	Off	WCtlCom
	WCtlCom	
	WCnst	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (WB 5000A)	0 W ... 5,550 W	5,500 W
Pmax (WB 6000A)	0 W ... 6,050 W	6,000 W
PowerBalancer	Off	Off
	PhaseGuard	
	PowerGuard	
	FaultGuard	
Memory function	No function	No function
	R1	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Max-Fan	0°C ... 100°C	90°C
T-Start	5 s ... 1,600 s	Depending on country standard
T-Start-Fan	0°C ... 100°C	70°C
T-Stop	1 s ... 3,600 s	2 s
T-Stop-Fan	0°C ... 100°C	50°C
Vac-Max*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast*	230 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard

Name	Value/Range	Default value
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
VdcWindStart (WB 5000A)	1 V ... 500 V	150 V
VdcWindStart (WB 6000A)	1 V ... 800 V	150 V
Vpv-Start	250 V ... 600 V	300 V
Vconst-Setpoint	250 V ... 600 V	600 V
Wind_a0 (WB 5000A)	– 1,000,000,000 ... 1,000,000,000	– 1993
Wind_a0 (WB 6000A)	– 1,000,000,000 ... 1,000,000,000	– 8197
Wind_a1 (WB 5000A)	– 1,000,000,000 ... 1,000,000,000	22.687
Wind_a1 (WB 6000A)	– 1,000,000,000 ... 1,000,000,000	77.08
Wind_a2 (WB 5000A)	– 1,000,000,000 ... 1,000,000,000	– 92.3
Wind_a2 (WB 6000A)	– 1,000,000,000 ... 1,000,000,000	– 247.8
Wind_a3 (WB 5000A)	– 1,000,000,000 ... 1,000,000,000	135.3
Wind_a3 (WB 6000A)	– 1,000,000,000 ... 1,000,000,000	281.2

6.3.7 WB 5000A-11/6000A-11

Name	Value/Range	Default value
AID-Esk-Alpha*	0 deg/% ... 40 deg/%	Depending on country standard
Operating mode	Mpp-Operation	Turbine (If you select the "Default param." setting under "Memory function", you must then reset the "Operating mode" parameter to "Turbine" manually.)
	V-Const	
	Stop	
	Turbine	
Control	Auto	Auto
	Bridge	
DGS-HystVolNom*	0% ... 60%	5%
DGS-PWMVolNom*	40% ... 100%	70%
E-total	0 kWh ... 200,000 kWh	0 kWh
Fac-delta–*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-delta+*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta+Fast*	0.1 Hz ... 5 Hz	Depending on country standard
Fac-delta-Fast*	0.1 Hz ... 6 Hz	Depending on country standard
Fac-Limit delta	0 Hz ... 5 Hz	2 Hz
Fac-Max-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Fac-Max-Tm*	0.04 s ... 90 s	Depending on country standard
Fac-Min-Fast-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Min-Tm*	0.04 s ... 300 s	Depending on country standard
Fac-Start delta	0 Hz ... 5 Hz	1 Hz
Fan-Test	0	0
	1	
FrqCtl-ReconMax*	50 Hz ... 65 Hz	Depending on country standard
FrqCtl.ReconMin*	44 Hz ... 60 Hz	Depending on country standard
GndFltRea	GndFltWrn	GndFltWrn
	GndFltDscon	
GriFltMonTms*	0 s ... 1,600 s	Depending on country standard
GriFltReConTms*	0 s ... 1,600 s	Depending on country standard
GriStrTms*	0 s ... 1,600 s	Depending on country standard
h-total	0 h ... 200,000 h	0 h
Inst.-Code	0 ... 4,000,000,000	0
KI-Wind-Reg	0 ... 0.25	0.005
KP-Wind-Reg	0 ... 0.25	0.02
P-GriSwOpnZerW	No	No
	Yes	

Name	Value/Range	Default value
P-HystEna*	Off	Depending on country standard
	On	
P-HzStop*	0 Hz ... 5 Hz	Depending on country standard
P-HzStopWGra*	1%/min ... 10,000%/min	Depending on country standard
P-HzStr*	0 Hz ... 5 Hz	Depending on country standard
PF-PF*	0.8 ... 1	Depending on country standard
PF-PFExt*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStr*	UnExt	Depending on country standard
	OvExt	
PF-PFExtStop*	UnExt	Depending on country standard
	OvExt	
PF-PFStop*	0.8 ... 1	Depending on country standard
PF-PFStr*	0.8 ... 1	Depending on country standard
PF-WNomStop*	0% ... 100%	Depending on country standard
PF-WNomStr*	0% ... 100%	Depending on country standard
P-W* (WB 5000A-11)	0 W ... 5,500 W	5,500 W
P-W* (WB 6000A-11)	0 W ... 6,000 W	6,000 W
P-WCtlHzMod*	Off	Depending on country standard
	WCtlHz	
P-WGra*	10%/Hz ... 130%/Hz	Depending on country standard
P-Wind-Ramp (WB 5000A-11)	10 W/s ... 2,000 W/s	830 W/s
P-Wind-Ramp (WB 6000A-11)	10 W/s ... 2,000 W/s	1,000 W/s
P-WMod*	Off	WCtlCom
	WCnst	
	WCtlCom	
Phase*	-----	-----
	L1	
	L2	
	L3	
Pmax (WB 5000A-11)	0 W ... 5,550 W	5,500 W
Pmax (WB 6000A-11)	0 W ... 6,050 W	6,000 W
PowerBalMax*	3,500 W ... 7,000 W	Depending on country standard
PowerBalancer*	Off	Depending on country standard
	PowerGuard	
	PhaseGuard	
	FaultGuard	

Name	Value/Range	Default value
Q-VArMod*	Off	Depending on country standard
	PFCnst	
	PFCtlCom	
	PFCtlW	
Smax (WB 5000A-11)	0 VA ... 5,500 VA	5,500 VA
Smax (WB 6000A-11)	0 VA ... 6,000 VA	6,000 VA
Memory function	No function	No function
	R1	
	Default Param. (If you select this setting, you must then reset the "Operating mode" parameter to "Turbine" manually.)	
	Reset op.data	
	Reset errors	
T-Start	5 s ... 1600 s	10 s
T-Stop	1 s ... 3600 s	2 s
Vac-Max*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast*	100 V ... 300 V	Depending on country standard
Vac-Max-Fast-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Max-Tm*	0.04 s ... 60 s	Depending on country standard
Vac-Min*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast*	70 V ... 230 V	Depending on country standard
Vac-Min-Fast-Tm*	0.04 s ... 10 s	Depending on country standard
Vac-Min-Tm*	0.04 s ... 10 s	Depending on country standard
VdcWindStart (WB 5000A-11)	1 V ... 500 V	150 V
VdcWindStart (WB 6000A-11)	1 V ... 800 V	150 V
Vpv-Start	250 V ... 600 V	300 V
Vconst-Setpoint	250 V ... 600 V	600 V
VolCtl.ReconMax*	100 V ... 280 V	Depending on country standard
VolCtl.ReconMin*	70 V ... 240 V	Depending on country standard
VolCtl.Rpro*	100 V ... 280 V	Depending on country standard
VRef*	80 V ... 245 V	Depending on country standard
VRefOfs*	–20 V ... 20 V	0 V
WGra*	1% Pmax/s ... 1,000% Pmax/s	20% Pmax/s
WGraRecon*	1%/min ... 10,000%/min	Depending on country standard

Name	Value/Range	Default value
Wind_a0 (WB 5000A-11)	– 1,000,000,000 ... 1,000,000,000	– 1993
Wind_a0 (WB 6000A-11)		– 8197
Wind_a1 (WB 5000A-11)		22.687
Wind_a1 (WB 6000A-11)		77.08
Wind_a2 (WB 5000A-11)		– 92.3
Wind_a2 (WB 6000A-11)		– 247.8
Wind_a3 (WB 5000A-11)		135.3
Wind_a3 (WB 6000A-11)		281.2

7 Contact

If you have technical problems concerning our products, please contact our SMA Service Line. We require the following information in order to provide you with the necessary assistance:

- Inverter device type
- Inverter serial number
- Type and number of connected PV modules or small wind turbine systems
- Blink code or display message of the inverter
- Optional equipment, e.g., communication products

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SMA Factory Warranty

The current warranty conditions come enclosed with your device. These are also available online at www.SMA.de and can be downloaded and are available in paper from the usual sales channels if required.

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