
Conext™ Core XC Series, 0G-XC-BB: Grid Settings by Utility Region Application Note

AP-XC-107

Revision A

Overview

This application note lists the default grid settings based on which Utility Region is selected for Conext Core XC Series inverters running version 5.01 or higher firmware. For all other information, refer to the *Conext Core XC Series Inverter, 0G-XC-BB Planning and Installation Manual* (part number: 990-5738) or the *Conext Core XC Series Inverter, 0G-XC-BB Operation Manual* (part number: 990-5737) or the *Grid Support Guide for Conext Core XC Series Inverters* (document number AP-XC-003).

Description

Table 1 and *Table 2* list the default values for all Utility Region grid qualification and options; version 5.01 or higher firmware. Parameters that are read-only are grayed-out in the table. These settings can only be changed by contacting Schneider Electric.

Table 1 and *Table 2* also provide descriptions of all of the grid parameters that are defined by the Utility Region setting. Parameters that are read-only are grayed-out in the table. These settings can only be changed by contacting Schneider Electric.

You can adjust any settings that are not grayed out. Before making any changes to settings, refer to the *Grid Support Guide for Conext Core XC Series Inverters* (document number AP-XC-003) for important information about how to define parameters so that the inverter maintains continuous operation and continuous output current during grid-related events.

Table 1 on page 2 shows the following regions: USA MV-DG, France Arrete 23 avril 2008, IEEE1547 (50 Hz), IEEE1547 (60 Hz), BDEW-MSRL/FGW TR8, IEC61727 (50 Hz), IEC61727 (60 Hz).

Table 2 on page 7 shows the following regions: CHINA MV-DG (G/S), CHINA MV-DG (A/I), P.O.12.3 (Spain), RD661 /RD1663 (Spain), CEI 0-16, ANRE Code (RO).

Grid Settings for USA MV-DG, France Arrete 23 avril 2008, IEEE1547 (50 Hz), IEEE1547 (60 Hz), BDEW-MSRL/FGW TR8, IEC61727 (50 Hz), IEC61727 (60 Hz)

Table 1 Default grid settings for Conext Core XC inverters

Parameter	Password Required?	Utility Region							
		USA MV-DG ¹	France Arrete 23 avril 2008	IEEE1547 (50 Hz)	IEEE1547 (60 Hz)	BDEW-MSRL /FGW TR8	IEC61727 (50 Hz)	IEC61727 (60 Hz)	Firmware Version
System L to L Voltage	Y	Not determined by utility region. Factory defaults are 300 V, 350 V, and 380 V							
Disconn vHV Threshold (%)	Y	140	112	120	120	140	140	140	All
		Level at which disconnection occurs due to AC very high voltage (as a percentage of nominal).							
Disconn vHV Delay (s)	N	3.00	1.00	0.11	0.11	3.00	3.00	3.00	All
		Length of time that the inverter must be at or above "Disconn very HV Threshold" before it disconnects.							
Disconn HV Threshold (%)	Y	120	112	110	110	110	110	110	All
		Level at which disconnection occurs due to AC high voltage (as a percentage of nominal).							
Disconn HV Delay (s)	N	1.0	1.00	0.95	0.95	0.1	1.80	1.80	All
		Length of time that the inverter must be at or above "Disconn HV Threshold" before it disconnects.							
Disconn LV Threshold (%)	Y	80	88	88	88	90	83	83	All
		Level at which disconnection occurs due to AC low voltage (as a percentage of nominal).							
Disconn LV Delay (s)	N	3.50	2.00	1.80	1.80	2.0	1.80	1.80	All
		Length of time that the inverter must be at or below "Disconn LV Threshold" before it disconnects.							
Disconn vLV Threshold (%)	Y	25	20	50	50	25	50	50	All
		Level at which disconnection occurs due to AC very low voltage (as a percentage of nominal).							
Disconn vLV Delay (s)	N	1.00	0.60	0.11	0.11	1.00	0.05	0.05	All
		Length of time that the inverter must be at or below "Disconn vLV Threshold" before it disconnects.							
Disconn vHF Threshold (Hz)	Y	70.0	52.05	65.0	65.0	70.0	70.0	70.0	All
		Value at which disconnection occurs due to AC very high frequency.							
Disconn vHF Delay (s)	N	3.00	0.20	3.00	3.00	3.00	3.00	3.00	All
		Length of time that the inverter must be at or above "Disconn vHF Threshold" before it disconnect.							
Disconn HF Threshold (Hz)	Y	62.2	51.55	50.5	60.5	51.5	51.1	61.1	All
		Value at which disconnection occurs due to AC high frequency.							
Disconn HF Delay (s)	N	0.16	20.00	0.11	0.11	0.10	0.15	0.15	All
		Length of time that the inverter must be at or above "Disconn HF Threshold" before it disconnects.							
Disconn LF Threshold (Hz)	Y	59.0	47.45	49.5	59.5	47.5	48.90	58.90	All
		Value at which disconnection occurs due to AC low frequency.							

Parameter	Password Required?	Utility Region							
		USA MV-DG ¹	France Arrete 23 avril 2008	IEEE1547 (50 Hz)	IEEE1547 (60 Hz)	BDEW- MSRL /FGW TR8	IEC61727 (50 Hz)	IEC61727 (60 Hz)	Firmware Version
Disconn LF Delay (s)	N	300.0	20.00	0.60	0.60	0.10	0.15	0.15	All
		Length of time that the inverter must be at or below "Disconn LF Threshold" before it disconnects.							
Disconn vLF Threshold (Hz)	Y	56.5	46.95	47.0	57.0	40.0	40.0	50.0	All
		Value at which disconnection occurs due to AC very low frequency.							
Disconn vLF Delay (s)	N	0.16	0.20	0.11	0.11	3.00	3.00	3.00	All
		Length of time that the inverter must be at or below "Disconn vLF Threshold" before it disconnects.							
Voltage Envelope Threshold (%)	Y	135	135	135	135	135	135	135	All
		Amount that the instantaneous voltage must exceed the normal peak value of the AC output system voltage before disconnection occurs.							
Voltage Envelope Delay	Y	3 samples							All
		Length of time that the inverter must be at "Voltage Envelope Threshold" before it disconnects.							
Reconn HV Threshold (%)	N	110	110	105	105	110	108	108	All
		Level at which the AC high voltage condition is cleared (as a percentage of nominal) and the reconnection delay begins.							
Reconn LV Threshold (%)	N	90	90	95	95	95	90	90	All
		Level at which the AC low voltage condition is cleared (as a percentage of nominal) and the reconnection delay begins.							
Reconn HF Threshold (Hz)	N	61.5	51.05	50.5	60.5	50.05	50.9	60.9	All
		Value at which the AC high frequency condition is cleared and the reconnection delay begins.							
Reconn LF Threshold (Hz)	N	59.0	47.7	49.8	59.8	47.50	49.1	59.1	All
		Value at which the AC low frequency condition is cleared and the reconnection delay begins.							
Reconnection Delay (s)	N	20.00	20.00	300.00	300.00	20.00	20.00	20.00	All
		Length of time that the inverter must have all grid-related parameters within normal operating conditions before allowing transition to the online state.							
Power Reference Selection	N	Modbus							All
		The type of power reference input: Modbus or analog.							
User Reactive Power Ref.	N	Not determined by utility region. Factory default is 0 kvar.							All
		Max "User Reactive Power Reference" is limited by the value of "Configured Reactive Power Limit" (positive for capacitive reactive power, negative for inductive reactive power).							
User Active Power Limit	N	Not determined by utility region. Factory defaults are 540.0 kW, 630.0 kW, and 680.0 kW.							All
		Max "User Active Power Limit" is limited by the value of "Configured Active Power Limit".							

Parameter	Password Required?	Utility Region							
		USA MV-DG ¹	France Arrete 23 avril 2008	IEEE1547 (50 Hz)	IEEE1547 (60 Hz)	BDEW- MSRL /FGW TR8	IEC61727 (50 Hz)	IEC61727 (60 Hz)	Firmware Version
User Apparent Power Limit	N	Not determined by utility region. Factory defaults are 540.0 kVA, 630.0 kVA, and 680.0 kVA.							All
		Max "User Apparent Power Limit" is limited by the value of "Configured Apparent Power Limit".							
User Phase Angle Ref.	N	Not determined by utility region. Factory default is 0 degrees.							All
		Phase angle for Var Command (positive for capacitive reactive power, negative for inductive reactive power).							
User Phase Current Limit	N	Not determined by utility region. Factory default is 100%.							All
		User phase current limit.							
Voltage Support Function	N	ON							All
		Action to take to support voltage.							
		0 = OFF 1 = ON Provides support by adding capacitive current for low voltage events and inductive current for high voltage event.							
Voltage Support Factor	N	0	0	0	0	2	0	0	All
		VAC support factor.							
V-Support Low Threshold (%)	N	80	90	88	88	90	85	85	All
		VAC support threshold, as a percentage of system line-to-line voltage.							
		When system voltage is greater than "Voltage Support Threshold" + "Voltage Support Deadband", reactive power compensation is inductive. When system voltage is less than "Voltage Support Threshold" - "Voltage Support Deadband", reactive power compensation is capacitive.							
V-Support High Threshold (%)	N	110	110	110	110	110	110	110	All
		The voltage range around nominal in which the system is considered to be in normal operation (voltage support not required).							
Q-Reg Filter Factor	Y	Not determined by utility region. Factory default is 0.010.							
		Low-pass filter factor for reactive power auto-regulation.							
Asymmetry V Factor	Y	2.00	2.00	2.00	2.00	0.70	2.00	2.00	All
		Asymmetry Voltage Factor – percentage of Vn to determine whether asymmetric voltage ride through or not (for extreme cases).							
Asymmetry I Limit Factor	Y	0.40	0.40	0.40	0.40	0.60	0.40	0.40	All
		Asymmetry Current Limit Factor—percentage of In to limit reactive current during asymmetric voltage ride through.							
P(f) Control, Function	N	ON	OFF	OFF	OFF	ON	OFF	OFF	All
		Enables active power control as a function of power frequency (P(f)) control.							

Parameter	Password Required?	Utility Region							
		USA MV-DG ¹	France Arrete 23 avril 2008	IEEE1547 (50 Hz)	IEEE1547 (60 Hz)	BDEW- MSRL /FGW TR8	IEC61727 (50 Hz)	IEC61727 (60 Hz)	Firmware Version
P(f) Control, Reset Time (s)	N	600.00	120.00	120.00	120.00	0	120.00	120.00	5.03 later
		Length of time that the system will take to resume normal power when active power control ends. The actual time may be less than the value set in this parameter because the ramp step assumes that the device starts at 0% power.							
P(f) Control, Corner F High (Hz)	N	60.2	50.2	50.2	60.2	50.2	50.2	60.2	All
		Frequency in Hz, at which active power control starts reducing power.							
P(f) Control, Reset Freq. High (Hz)	N	60.05	50.05	50.05	60.05	50.05	50.05	60.05	All
		Frequency below which active power control can resume normal power.							
P(f) Control, Reset Freq. Low (Hz)	N	60.05	50.05	50.05	60.05	50.05	50.05	60.05	All
		Frequency above which active power control can resume normal power.							
P(f) Control, Reset Delay (s)	N	0	0	0	0	0	0	0	All
		Length of time that the inverter must be at or below "P(f) Control, Reset Freq. High" or at or above "P(f) Control, Reset Freq. Low" before active power control can resume normal power.							
Power Ref. Ramp Time (ms)	N	50	50	50	50	50	50	50	All
		Time it takes to get from the current active power limit to the new active power limit. The actual time may be less than the value set in this parameter because the ramp step assumes that the device starts at 0% power.							
Reconn Power Ramp Time (s)	N	0	0	0	0	0	0	0	All
		Length of time that the active power limit is increased from "Min. Power Limit" to 100% of the active power limit following a grid error event. If you set this parameter to greater than 0 while the system is ramping up, the new value is not applied.							
Min. Power Limit (%)	Y	5	5	10	10	5	10	10	All
		Initial active power limit following a grid error event.							
Anti-Islanding Function	Y	OFF	OFF	ON	ON	OFF	ON	ON	All
		Sets whether or not the active anti-islanding protection is enabled for the inverter.							
Anti-Islanding Type	Y	All Type 0							All
		Anti-Islanding perturb type.							
Anti-Islanding Pert Duration	Y	Not determined by utility region. Factory default is 0.15 s.							All
		Anti-Islanding perturb duration.							
Anti-Islanding Pert Occurrence	Y	Not determined by utility region. Factory default is firmware version dependant. To determine the default value, contact Schneider Electric.							All
		Anti-Islanding perturb occurrence.							
Anti-Islanding Pert Factor	Y	Not determined by utility region. Factory default is 6%.							
		The amplitude of perturb reactive power = (Pout * Anti-Islanding perturb factor).							

Parameter	Password Required?	Utility Region							
		USA MV-DG ¹	France Arrete 23 avril 2008	IEEE1547 (50 Hz)	IEEE1547 (60 Hz)	BDEW- MSRL /FGW TR8	IEC61727 (50 Hz)	IEC61727 (60 Hz)	Firmware Version
Power Ramp Rate (%/min)	N	6000.0							All
		The power ramp rate per minute. This value is used to slew rate positive power output when inverter is online. This power slew rate will be desensitized if the value is maximum, 6000.0.							
Min. Power Ramp Step (kW)	Y	2.0							All
		Minimum power ramp step for power positive slew rate.							
Reconnect Start Delay (s)	N	10	10	10	10	10	10	10	All
		The initial delay for system reconnection.							
Reconnect Power Ramp Type	N	Grid error							All
		Type or flag to indicate how reconnect power ramp behaves. 0 = Grid Error, means ramp will only trigger by grid errors; 1 = Global, means ramp happens all the time when inverter transits from offline to online.							
OVSPD, Voltage Threshold (%)	N	140	140	140	140	140	140	140	All
		Voltage above which ramp down starts.							
OVSPD, Power Limit (%)	N	100	100	100	100	100	100	100	All
		Power limit at which ramp down stops.							
OVSPD, Ramp Down Rate (s)	N	10.0	10.0	10.0	10.0	10.0	10.0	10.0	All
		Ramp down rate for active power.							
OVSPD, Ramp Up Rate (s)	N	10.0	10.0	10.0	10.0	10.0	10.0	10.0	All
		Ramp up rate for Active power.							
GFD Max. Daily Count ²	Y	1	5	1	1	5	5	5	All
		GFD max daily count.							

Grid Settings for CHINA MV-DG (G/S), CHINA MV-DG (A/I), P.O.12.3 (Spain), RD661 /RD1663 (Spain), CEI 0-16, ANRE Code (RO)

Table 2 Default grid settings for Conext Core XC inverters

Parameter	Password Required?	Utility Region						
		CHINA MV-DG (A/I) ³	CHINA MV-DG (G/S) ³	P.O.12.3 (Spain)	RD661 /RD1663 (Spain)	CEI 0-16	ANRE Code (RO)	Firmware Version
System L to L Voltage	Y	Not determined by utility region. Factory defaults are 300 V, 350 V, and 380 V						
Disconn vHV Threshold (%)	Y	120	120	130	130	130	140	All
		Level at which disconnection occurs due to AC very high voltage (as a percentage of nominal).						
Disconn vHV Delay (s)	N	0.60	0.60	0.15	0.15	0.15	3.00	All
		Length of time that the inverter must be at or above "Disconn very HV Threshold" before it disconnects.						
Disconn HV Threshold (%)	Y	110	110	110	110	125	110	All
		Level at which disconnection occurs due to AC high voltage (as a percentage of nominal).						
Disconn HV Delay (s)	N	11.0	11.0	1.50	1.50	0.65	0.10	All
		Length of time that the inverter must be at or above "Disconn HV Threshold" before it disconnects.						
Disconn LV Threshold (%)	Y	90	90	80	85	82	90	All
		Level at which disconnection occurs due to AC low voltage (as a percentage of nominal).						
Disconn LV Delay (s)	N	2.50	2.50	1.50	1.50	1.60	3.00	All
		Length of time that the inverter must be at or below "Disconn LV Threshold" before it disconnects.						
Disconn vLV Threshold (%)	Y	40	40	20	20	20	15	All
		Level at which disconnection occurs due to AC very low voltage (as a percentage of nominal).						
Disconn vLV Delay (s)	N	2.20	2.20	1.00	1.00	0.50	0.625	All
		Length of time that the inverter must be at or below "Disconn vLV Threshold" before it disconnects.						
Disconn vHF Threshold (Hz)	Y	50.51	50.51	70.0	70.0	70.0	70.0	All
		Value at which disconnection occurs due to AC very high frequency.						
Disconn vHF Delay (s)	N	0.10	0.10	3.00	3.00	3.00	3.00	All
		Length of time that the inverter must be at or above "Disconn vHF Threshold" before it disconnect.						
Disconn HF Threshold (Hz)	Y	50.5	50.5	51.0	51.0	51.60	52.05	All
		Value at which disconnection occurs due to AC high frequency.						
Disconn HF Delay (s)	N	0.10	0.10	3.00	3.00	0.15	0.10	All
		Length of time that the inverter must be at or above "Disconn HF Threshold" before it disconnects.						
Disconn LF Threshold (Hz)	Y	49.5	49.5	48.0	48.0	47.50	47.45	All
		Value at which disconnection occurs due to AC low frequency.						
Disconn LF Delay (s)	N	650	650	3.00	3.00	0.10	0.10	All
		Length of time that the inverter must be at or below "Disconn LF Threshold" before it disconnects.						

Parameter	Password Required?	Utility Region						
		CHINA MV-DG (A/I) ³	CHINA MV-DG (G/S) ³	P.O.12.3 (Spain)	RD661 /RD1663 (Spain)	CEI 0-16	ANRE Code (RO)	Firmware Version
Disconn vLF Threshold (Hz)	Y	47.9	47.9	47.0	47.0	40.0	40.0	All
		Value at which disconnection occurs due to AC very low frequency.						
Disconn vLF Delay (s)	N	0.10	0.10	0.20	0.20	4.50	3.00	All
		Length of time that the inverter must be at or below "Disconn vLF Threshold" before it disconnects.						
Voltage Envelope Threshold (%)	Y	135	135	135	135	135	135	All
		Amount that the instantaneous voltage must exceed the normal peak value of the AC output system voltage before disconnection occurs.						
Voltage Envelope Delay	Y	3 samples						All
		Length of time that the inverter must be at "Voltage Envelope Threshold" before it disconnects.						
Reconn HV Threshold (%)	N	110	110	105	105	110	108	All
		Level at which the AC high voltage condition is cleared (as a percentage of nominal) and the reconnection delay begins.						
Reconn LV Threshold (%)	N	90	90	95	95	90	91	All
		Level at which the AC low voltage condition is cleared (as a percentage of nominal) and the reconnection delay begins.						
Reconn HF Threshold (Hz)	N	50.2	50.2	50.7	50.7	50.10	52.00	All
		Value at which the AC high frequency condition is cleared and the reconnection delay begins.						
Reconn LF Threshold (Hz)	N	49.50	49.50	48.5	48.5	49.90	47.50	All
		Value at which the AC low frequency condition is cleared and the reconnection delay begins.						
Reconnection Delay (s)	N	60.00	60.00	180.00	180.00	300.00	30.00	All
		Length of time that the inverter must have all grid-related parameters within normal operating conditions before allowing transition to the online state.						
Power Reference Selection	N	Modbus						All
		The type of power reference input: Modbus or analog.						
User Reactive Power Ref.	N	Not determined by utility region. Factory default is 0 kvar.						All
		Max "User Reactive Power Reference" is limited by the value of "Configured Reactive Power Limit" (positive for capacitive reactive power, negative for inductive reactive power).						
User Active Power Limit	N	Not determined by utility region. Factory defaults are 540.0 kW, 630.0 kW, and 680.0 kW.						All
		Max "User Active Power Limit" is limited by the value of "Configured Active Power Limit".						
User Apparent Power Limit	N	Not determined by utility region. Factory defaults are 540.0 kVA, 630.0 kVA, and 680.0 kVA.						All
		Max "User Apparent Power Limit" is limited by the value of "Configured Apparent Power Limit".						
User Phase Angle Ref.	N	Not determined by utility region. Factory default is 0 degrees.						All
		Phase angle for Var Command (positive for capacitive reactive power, negative for inductive reactive power).						

Parameter	Password Required?	Utility Region						
		CHINA MV-DG (A/I) ³	CHINA MV-DG (G/S) ³	P.O.12.3 (Spain)	RD661 /RD1663 (Spain)	CEI 0-16	ANRE Code (RO)	Firmware Version
User Phase Current Limit	N	Not determined by utility region. Factory default is 100%.						
		User phase current limit.						
Voltage Support Function	N	ON						
		Action to take to support voltage. 0 = OFF 1 = ON Provides support by adding capacitive current for low voltage events and inductive current for high voltage event.						
Voltage Support Factor	N	2.2	2.2	2	2	2	2	All
		VAC support factor.						
V-Support Low Threshold (%)	N	90	90	85	85	85	90	All
		VAC support threshold, as a percentage of system line-to-line voltage. When system voltage is greater than “Voltage Support Threshold” + “Voltage Support Deadband”, reactive power compensation is inductive. When system voltage is less than “Voltage Support Threshold” - “Voltage Support Deadband”, reactive power compensation is capacitive.						
V-Support High Threshold (%)	N	110	110	110	110	115	110	All
		The voltage range around nominal in which the system is considered to be in normal operation (voltage support not required).						
Q-Reg Filter Factor	Y	Not determined by utility region. Factory default is 0.010.						
		Low-pass filter factor for reactive power auto-regulation.						
Asymmetry V Factor	Y	2.00	2.00	2.00	2.00	2.0	0.18	All
		Asymmetry Voltage Factor – percentage of V _n to determine whether asymmetric voltage ride through or not (for extreme cases).						
Asymmetry I Limit Factor	Y	0.40	0.40	0.40	0.40	0.40	0.40	All
		Asymmetry Current Limit Factor—percentage of I _n to limit reactive current during asymmetric voltage ride through.						
P(f) Control, Function	N	OFF	OFF	OFF	OFF	ON	OFF	All
		Enables active power control as a function of power frequency (P(f)) control.						
P(f) Control, Reset Time (s)	N	120.00	120.00	120.00	120.00	300.00	120.00	5.03 later
		Length of time that the system will take to resume normal power when active power control ends. The actual time may be less than the value set in this parameter because the ramp step assumes that the device starts at 0% power.						
P(f) Control, Corner Freq. (Hz)	N	50.2	50.2	50.2	50.2	50.3	50.2	All
		Frequency in Hz, at which active power control starts reducing power.						

Parameter	Password Required?	Utility Region						
		CHINA MV-DG (A/I) ³	CHINA MV-DG (G/S) ³	P.O.12.3 (Spain)	RD661 /RD1663 (Spain)	CEI 0-16	ANRE Code (RO)	Firmware Version
P(f) Control, Reset Freq. High (Hz)	N	50.05	50.05	50.05	50.05	50.09	50.02	All
		Frequency below which active power control can resume normal power.						
P(f) Control, Reset Freq. Low (Hz)	N	50.05	50.05	50.05	50.05	49.91	47.00	All
		Frequency above which active power control can resume normal power.						
P(f) Control, Reset Delay (s)	N	0	0	0	0	300	0	All
		Length of time that the inverter must be at or below “P(f) Control, Reset Freq. High” or at or above “P(f) Control, Reset Freq. Low” before active power control can resume normal power.						
Power Ref. Ramp Time (ms)	N	50	50	50	50	50	50	All
		Time it takes to get from the current active power limit to the new active power limit. The actual time may be less than the value set in this parameter because the ramp step assumes that the device starts at 0% power.						
Reconn Power Ramp Time (s)	N	0	0	0	0	1200	0	All
		Length of time that the active power limit is increased from “Min. Power Limit” to 100% of the active power limit following a grid error event. If you set this parameter to greater than 0 while the system is ramping up, the new value is not applied.						
Min. Power Limit (%)	Y	5	5	5	5	5	5	All
		Initial active power limit following a grid error event.						
Anti-Islanding Function	Y	ON	OFF	OFF	OFF	OFF	OFF	All
		Sets whether or not the active anti-islanding protection is enabled for the inverter.						
Anti-Islanding Type	Y	All Type 0						All
		Anti-Islanding perturb type.						
Anti-Islanding Pert Duration	Y	Not determined by utility region. Factory default is 0.15 s.						All
		Anti-Islanding perturb duration.						
Anti-Islanding Pert Occurrence	Y	Not determined by utility region. Factory default is firmware version dependant. To determine the default value, contact Schneider Electric.						All
		Anti-Islanding perturb occurrence.						
Anti-Islanding Pert Factor	Y	Not determined by utility region. Factory default is 6%.						
		The amplitude of perturb reactive power = (Pout * Anti-Islanding perturb factor).						
Power Ramp Rate (%/min)	N	6000.0						All
		The power ramp rate per minute. This value is used to slew rate positive power output when inverter is online. This power slew rate will be desensitized if the value is maximum, 6000.0.						
Min. Power Ramp Step (kW)	Y	2.0						All
		Minimum power ramp step for power positive slew rate.						
Reconnect Start Delay (s)	N	10	10	10	10	30	10	All
		The initial delay for system reconnection.						

Parameter	Password Required?	Utility Region						
		CHINA MV-DG (A/I) ³	CHINA MV-DG (G/S) ³	P.O.12.3 (Spain)	RD661 /RD1663 (Spain)	CEI 0-16	ANRE Code (RO)	Firmware Version
Reconnect Power Ramp Type	N	Grid error				Global	Grid error	All
		Type or flag to indicate how reconnect power ramp behaves. 0 = Grid Error, means ramp will only trigger by grid errors; 1 = Global, means ramp happens all the time when inverter transits from offline to online.						
OVSPD, Voltage Threshold (%)	N	140	140	140	140	110	140	All
		Voltage above which ramp down starts.						
OVSPD, Power Limit (%)	N	100	100	100	100	20	100	All
		Power limit at which ramp down stops.						
OVSPD, Ramp Down Rate (s)	N	10.0	10.0	10.0	10.0	20.0	10.0	All
		Ramp down rate for active power.						
OVSPD, Ramp Up Rate (s)	N	10.0	10.0	10.0	10.0	20.0	10.0	All
		Ramp up rate for Active power.						
GFD Max. Daily Count ⁴	Y	5	5	5	5	5	5	All
		GFD max daily count.						
AI Disconn LF Threshold	N	49.50	49.50	N/A	N/A	N/A	N/A	5.02 only
		During anti-islanding, value at which disconnection occurs due to AC low frequency.						
AI Disconn LF Delay	N	0.10	0.10	N/A	N/A	N/A	N/A	5.02 only
		During anti-islanding, length of time that the inverter must be at or below "AI Disconn LF Threshold" before it disconnects.						
AI LF Disconn Function	N	ON	ON	N/A	N/A	N/A	N/A	5.02 only
		Sets whether or not the LF disconnection function during anti-islanding is enabled for the inverter.						

¹ The USA MV-DG default setting is compliant with NERC PRC-024-1 Draft 1 A (Feb 17, 2009), WECC Off-Nominal Frequency (April 2005), and FRCC Regional Generator Performance During Frequency and Voltage Excursions (Version 5).

² Only applies to units that have an integrated GFD (ground fault detection) unit.

³ China MV-DG (A/I) and China MV-DG (G/S) regions only use firmware version 5.02.

⁴ Only applies to units that have an integrated GFD (ground fault detection) unit.

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Document Number: AP-XC-107

Revision: Revision A

Date: May 2017

Contact Information

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