

Maryland Smart Inverter Settings for Distributed Generators

Minimum Statewide Default Standard (MSDS) – Effective April 1, 2023

Function		IEEE 1547-2018 Performance Category	
Ride-Through		<i>Category II (Ride-Through) - Covers all bulk electric system reliability needs to avoid widespread DG tripping for disturbances for which the bulk system generators are expected to remain connected. Aligns with North American Electric Reliability Corporation (NERC) Standard PRC-024-2 for Generator Frequency and Voltage Protective Relay Settings.</i>	
Voltage Regulation		<i>Category B (Voltage Regulation) - DGs have an extended set of voltage capabilities designed to offset the impacts of high local penetrations of DGs or individual DGs that have outputs that are time-varying.</i>	
Function	Description	Default Activation Status	IEEE 1547-2018 Setting
Anti-Islanding	Refers to the ability to detect loss of utility source and cease to energize	<i>Activated</i>	<i>Trip within 2 seconds of the formation of an unintentional island</i>
Constant Power Factor Mode	Refers to power factor set to a fixed value	<i>Activated</i>	<i>Unity Power Factor</i>
Voltage / Reactive Power Mode (Volt - Var)	Refers to control of reactive power output as a function of voltage	<i>Deactivated</i>	<i>Not applicable to MSDS</i>
Enter Service Criteria	Refers to applicable system voltage, frequency and synchronization parameters when entering service and ramp rate performance during entering service	<i>Activated</i>	<p><i>When entering service, the DG shall not energize the Area EPS until the applicable voltage and system frequency are within the ranges specified in the defaults on Table 4 of IEEE 1547-2018.</i></p> <p><i>The DG ramp rate performance during entering service is specified in Section 4.10.3 of IEEE 1547-2018.</i></p> <p><i>The synchronization parameter limits for synchronous interconnection when entering service are specified in Table 5 of IEEE 1547-2018.</i></p>

Function	Description	Default Activation Status	IEEE 1547-2018 Setting
Voltage Ride Through	Refers to ability of smart inverter to ride through a certain range of voltages before tripping off	<i>Activated</i>	<u>Refer to PJM Guideline for Ride Through Performance of Distribution-Connected Generators (Revision 2, Q4, 2019)</u>
Frequency Ride Through	Refers to ability of smart inverter to ride through a certain range of frequencies before tripping off	<i>Activated</i>	<i>Setting requirements specified for Over-voltage, Under-voltage, Over-frequency and Under-frequency settings</i>
Voltage - Active Power Mode (Volt - Watt)	Refers to control of real power output as a function of voltage	<i>Deactivated</i>	<i>Not applicable to MSDS</i>
Constant Reactive Power Mode	Refers to reactive power set to a fixed value	<i>Deactivated</i>	<i>Not applicable to MSDS</i>
Frequency - Droop (Frequency - Power)	Refers to control of real power as a function of frequency	<i>Activated</i>	<i>Adopt IEEE 1547-2018 default settings In Table 24 This function is mandatory for Category II and Category III Ride-Through Performance in IEEE 1547-2018.</i>
Active Power / Reactive Power Mode (Watt -Var)	Refers to the control of reactive power as a function of real power	<i>Deactivated</i>	<i>Not applicable to MSDS</i>
All Other Smart Inverter Settings	Refers to any other inverter settings/ activation status	<i>As Applicable</i>	<i>All other smart inverter settings use applicable defaults specified in IEEE 1547-2018</i>