MPID 335 Current definition

Locations Document

11th of June 2025

EirGrid

The Oval, 160 Shelbourne Road, Ballsbridge, Dublin D04 FW28
Telephone: +353 1 677 1700 | www.eirgrid.ie

Feature locations

Location	**Red Line Version Text** ***Deleted text in ~~strike-through red font~~ and new text highlighted in blue font***	**Green Line Version Text**
PC.A3.8	**Grid Connected Transformer** [table] Rated ~~current~~ **Current** of each winding	**Grid Connected Transformer**[table] Rated **Current** of each winding
PC.A4.3	**Generator Operating Characteristics and Registered Data** [table] § Rated Stator ~~current~~ **Current**	**Generator Operating Characteristics and Registered Data** [table] § Rated Stator **Current**
PC.A4.11	**§ Generator Transformer** [table] Rated ~~current~~ **Current** of each winding	**§ Generator Transformer** [table] Rated **Current** of each winding
PC.A5.1	**§ Wind Turbine Generators and Mains Excited Asynchronous Generators** Magnitude of inrush / starting ~~current~~ **Current** Duration of inrush / starting ~~current~~ **Current**	**§ Wind Turbine Generators and Mains Excited Asynchronous Generators** Magnitude of inrush / starting **Current** Duration of inrush / starting **Current**
PC.A5.9	**Internal network of Controllable PPM** [table] Charging ~~current~~ **Current**	**Internal network of Controllable PPM** [table] Charging **Current**
PC.A5.10	**Flicker and harmonics** Provide details of harmonic or flicker contribution from the **Controllable PPM** that may affect the performance of the **Controllable PPM** at the **Connection Point.** This may include harmonic ~~current~~ **Current** injections and phase angles associated with the **Controllable PPM**. Details of any additional AC filter devices shall also be provided by the **Controllable PPM** to the **TSO.**	**Flicker and harmonics** Provide details of harmonic or flicker contribution from the **Controllable PPM** that may affect the performance of the **Controllable PPM** at the **Connection Point.** This may include harmonic **Current** injections and phase angles associated with the **Controllable PPM.** Details of any additional AC filter devices shall also be provided by the **Controllable PPM** to the **TSO.**
PC.A5.11	**Short Circuit Contribution** Provide details of the single-phase to ground, phase-phase and three-phase to ground short circuit contribution from the **Controllable PPM** at the **Connection Point.** The **Controllable PPM** shall provide the **TSO** with the single-phase and three-phase short circuit contribution for rated conditions, i.e. maximum output from the **Controllable PPM** with all **WTGs** and any additional devices in the **Controllable PPM** contributing to the short circuit ~~current~~ **Current**. The **Controllable PPM** shall also provide the single-phase to ground, phase-phase and three-phase to ground	**Short Circuit Contribution** Provide details of the single-phase to ground, phase-phase and three-phase to ground short circuit contribution from the **Controllable PPM** at the **Connection Point.** The **Controllable PPM** shall provide the **TSO** with the single-phase and three-phase short circuit contribution for rated conditions, i.e. maximum output from the **Controllable PPM** with all **WTGs** and any additional devices in the **Controllable PPM** contributing to the short circuit **Current.** The **Controllable PPM** shall also provide the single-phase to ground, phase-phase and three-phase to ground short circuit contribution from an

	short circuit contribution from an individual **WTG.** Signature plots of the short circuit contribution from an individual **WTG** shall also be supplied by the **Controllable PPM.**	individual **WTG.** Signature plots of the short circuit contribution from an individual **WTG** shall also be supplied by the **Controllable PPM.**
PC.A6.1	**Interconnector Operating Characteristics and Registered Data** (iii) Technology details (a) **Interconnector** technology type (i.e. ~~current~~ **Current** or voltage source technology);	**Interconnector Operating Characteristics and Registered Data** (iii) Technology details (a) **Interconnector** technology type (i.e. **Current** or voltage source technology);
PC.A6.1	**Interconnector Operating Characteristics and Registered Data** **(v) Interconnector** power electronic converter and control systems [table] rated ~~current~~ **Current** of each winding	**Interconnector Operating Characteristics and Registered Data** **(v) Interconnector** power electronic converter and control systems [table] rated **Current** of each winding
PC.A8.2	**Model Capabilities** [...] The three-phase electromagnetic transient **Model** shall include all material aspects of the **Plant** that affect the symmetrical and asymmetrical voltage and ~~current~~ **Current** outputs from the **Plant.** [...]	**Model Capabilities** [...] The three-phase electromagnetic transient **Model** shall include all material aspects of the **Plant** that affect the symmetrical and asymmetrical voltage and **Current** outputs from the **Plant.** [...]
CC.7.2.2.2	**User Plant** and **Apparatus** at the **Connection Point** shall be designed taking account of the short circuit ~~current~~ **Current** levels specified in CC.8.6. **User** circuit breakers shall be capable of safely making and interrupting ~~currents~~ **Currents** due to faults, taking account of the ~~current~~ **Current** levels specified in CC.8.6. Circuit breakers with a higher rating than the ~~current~~ **Current** levels specified in CC.8.6 may be necessary for a number of reasons, including, but not limited to the need to provide an adequate safety margin or to cater for a high DC component in the fault ~~current~~ **Current**. It shall be the responsibility of the **User** to determine, what safety margin if any to apply when selecting the **User's Plant** and **Apparatus.**	**User Plant** and **Apparatus** at the **Connection Point** shall be designed taking account of the short circuit **Current** levels specified in CC.8.6. **User** circuit breakers shall be capable of safely making and interrupting **Currents** due to faults, taking account of the **Current** levels specified in CC.8.6. Circuit breakers with a higher rating than the **Current** levels specified in CC.8.6 may be necessary for a number of reasons, including, but not limited to the need to provide an adequate safety margin or to cater for a high DC component in the fault **Current**. It shall be the responsibility of the **User** to determine, what safety margin if any to apply when selecting the **User's Plant** and **Apparatus.**
CC.7.4.2.7	**Short-circuit** **Demand Facilities**, **Closed Distribution Systems** and **Distribution Systems** shall be capable of withstanding maximum short-circuit ~~currents~~ **Currents** as specified in CC.8.6.	**Short-circuit** **Demand Facilities**, **Closed Distribution Systems** and **Distribution Systems** shall be capable of withstanding maximum short-circuit **Currents** as specified in CC.8.6.

CC.7.5.12.4	During **Voltage Dips**, the reactive ~~current~~ **Current** response shall be supplied within the rating of **Interconnector Converter Station**, with a **Rise Time** no greater than 100ms and a **Settling Time** no greater than 300ms.	During **Voltage Dips**, the reactive **Current** response shall be supplied within the rating of **Interconnector Converter Station**, with a **Rise Time** no greater than 100ms and a **Settling Time** no greater than 300ms.
CC.7.5.12.10	– AC **Current** and DC current ;	– AC **Current** and DC current;
CC.12.2	(bb) AC **Current** and DC current measurements;	(bb) AC and DC **Current** measurements;
OC.10.5.7.1	The **TSO** may require a **Generator** with a **Black Start Station** to carry out a test (a "**Black Start Test**") on a **CDGU** in a **Black Start Station** either while the **Black Start Station** remains connected to an external alternating ~~current~~ **Current** electrical supply (a "**Black Start** unit **Test**") or while the **Black Start Station** is disconnected from all external alternating ~~current~~ **Current** electrical supplies (a "**Black Start Station Test**"), in order to demonstrate that a **Black Start Station** has a **Black Start Capability**.	The **TSO** may require a **Generator** with a **Black Start Station** to carry out a test (a "**Black Start Test**") on a **CDGU** in a **Black Start Station** either while the **Black Start Station** remains connected to an external alternating **Current** electrical supply (a "**Black Start** unit **Test**") or while the **Black Start Station** is disconnected from all external alternating **Current** electrical supplies (a "**Black Start Station Test**"), in order to demonstrate that a **Black Start Station** has a **Black Start Capability**.
PPM.1.4.2	(a) During **Transmission System Voltage Dips**, the **Controllable PPM** shall provide **Active Power** in proportion to retained **Voltage** and provide reactive ~~current~~ **Current** to the **Transmission System**, as set out in PPM1.4.2(c).	(a) During **Transmission System Voltage Dips**, the **Controllable PPM** shall provide **Active Power** in proportion to retained **Voltage** and provide reactive **Current** to the **Transmission System**, as set out in PPM1.4.2(c). (b)
PPM.1.4.2	 The provision of reactive ~~current~~ **Current** shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC.8.3.1, or for at least 500 ms, whichever is the sooner.	 The provision of reactive **Current** shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC.8.3.1, or for at least 500 ms, whichever is the sooner.
PPM.1.4.2	 The provision of reactive ~~current~~ **Current** shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC.7.3.1.1 (x), or for at least 500 ms, whichever is the sooner.	 The provision of reactive **Current** shall continue until the **Transmission System Voltage** recovers to within the normal operational range of the **Transmission System** as specified in CC.7.3.1.1 (x), or for at least 500 ms, whichever is the sooner.
PPM.1.4.2	(c) During and after faults, priority shall always be given to the **Active**	(c) During and after faults, priority shall always be given to the **Active Power**

	Power response as defined in PPM1.4.2(a) and PPM1.4.2(b). The reactive ~~current~~ **Current** response of the **Controllable PPM** shall attempt to control the **Voltage** back towards the nominal **Voltage**, and should be at least proportional to the **Voltage Dip**. The reactive ~~current~~ **Current** response shall be supplied within the rating of the **Controllable PPM**, with a **Rise Time** no greater than 100ms and a **Settling Time** no greater than 300ms. [...]	response as defined in PPM1.4.2(a) and PPM1.4.2(b). The reactive **Current** response of the **Controllable PPM** shall attempt to control the **Voltage** back towards the nominal **Voltage**, and should be at least proportional to the **Voltage Dip**. The reactive **Current** response shall be supplied within the rating of the **Controllable PPM**, with a **Rise Time** no greater than 100ms and a **Settling Time** no greater than 300ms. [...]
Acronyms	AC Alternating ~~Current~~ **Current**	AC Alternating **Current**
Definitions	**Active Power** The product of the components of alternating ~~current~~ **Current** and voltage that equate to true power which is measured in units of watts and standard multiples thereof, for example: [...]	**Active Power** The product of the components of alternating **Current** and voltage that equate to true power which is measured in units of watts and standard multiples thereof, for example: [...]
Definitions	**Apparent Power** The product of voltage and of alternating ~~current~~ **Current** measured in units of volt-amperes and standard multiples thereof.	**Apparent Power** The product of voltage and of alternating **Current** measured in units of volt-amperes and standard multiples thereof.
Definitions	**Current Source Technology** ~~Current~~ **Current** source inverters include all static devices generating an AC current from a rectified DC current source. The intermediate DC current is kept constant with a controlled rectifier and high inductance reactors, while the AC output is of variable **Frequency** and **Voltage**.	**Current Source Technology** **Current** source inverters include all static devices generating an AC current from a rectified DC current source. The intermediate DC current is kept constant with a controlled rectifier and high inductance reactors, while the AC output is of variable **Frequency** and **Voltage**.
Definitions	**Frequency** The number of alternating ~~current~~ **Current** cycles per second (expressed in Hertz) at which a **System** is running.	**Frequency** The number of alternating **Current** cycles per second (expressed in Hertz) at which a **System** is running.
Definitions	**Incremental Harmonic Voltage Distortion Level** The incremental change in magnitude of the **Harmonic Voltage Distortion Level** attributed to the **User's** facility as measured at the **Connection Point** which is solely caused by the connection of the **User's** facility. The **Incremental Harmonic Voltage Distortion Level** is a combination of: (a) Distortion caused by harmonic **Voltages** or ~~currents~~ **Currents** generated by the **User's** facility and (b) Amplification of the existing **Harmonic**	**Incremental Harmonic Voltage Distortion Level** The incremental change in magnitude of the **Harmonic Voltage Distortion Level** attributed to the **User's** facility as measured at the **Connection Point** which is solely caused by the connection of the **User's** facility. The **Incremental Harmonic Voltage Distortion Level** is a combination of: (a) Distortion caused by harmonic **Voltages** or **Currents** generated by the **User's** facility and (b) Amplification of the existing **Harmonic Voltage Distortion Level** caused by an

	Voltage Distortion Level caused by an interaction between the **User's** facility and the **Transmission System** harmonic impedance (for example due to resonances).	interaction between the **User's** facility and the **Transmission System** harmonic impedance (for example due to resonances).
Definitions	**Initial Symmetrical Short-Circuit Current** RMS value of the AC symmetrical component of a prospective (available) short-circuit ~~current~~ **Current** applicable at the instant of short circuit if the impedance remains at the zero time value.	**Initial Symmetrical Short-Circuit Current** RMS value of the AC symmetrical component of a prospective (available) short-circuit **Current** applicable at the instant of short circuit if the impedance remains at the zero time value.
Definitions	**Reactive Power** Means the product of voltage and ~~current~~ **Current** and the sine of the phase angle between them measured in units of volt-amperes reactive and standard multiples thereof.	**Reactive Power** Means the product of voltage and **Current** and the sine of the phase angle between them measured in units of volt-amperes reactive and standard multiples thereof.
Definitions	**Rise Time** In relation to reactive ~~current~~ **Current** response from **Controllable PPM**, it is the length of time from **Fault Inception** for reactive ~~current~~ **Current** to reach 90% of its steady-state value.	**Rise Time** In relation to reactive **Current** response from **Controllable PPM**, it is the length of time from **Fault Inception** for reactive **Current** to reach 90% of its steady-state value.
Definitions	**Settling Time** In relation to reactive ~~current~~ **Current** response from **Controllable PPM** and **Interconnector Converter Station**, it is the length of time from **Fault Inception** for reactive ~~current~~ **Current** to settle within +/-10% of its steady-state value.	**Settling Time** In relation to reactive **Current** response from **Controllable PPM** and **Interconnector Converter Station**, it is the length of time from **Fault Inception** for reactive **Current** to settle within +/-10% of its steady-state value.