
PowerSimulator Basecase Formats

Table of Contents

| | |
|--------------------------|----|
| Overview | 2 |
| Case Parameter | 4 |
| ControlArea | 5 |
| GeneratingUnit | 6 |
| LoadAreaCurve | 7 |
| Load | 8 |
| Line | 9 |
| RatioTapChanger | 10 |
| PhaseTapChanger | 11 |
| SeriesCapacitor | 12 |
| SeriesReactor | 13 |
| ShuntCapacitor | 14 |
| ShuntReactor | 15 |
| SVC | 16 |
| Switch | 17 |
| SynchronousMachine | 18 |
| TransformerWinding | 19 |

Name

PsmCaseOverview — PowerSimulator Basecase Formats

PowerSimulator Basecase Formats Overview

PowerSimulator Basecase Formats describe a set of comma-separated-value (CSV) files used to transfer the state of an electrical model previously described with PowerSimulator Model Formats.

A separate CSV file is used for each of the object types below. If no objects exist for a given type, that CSV file can be omitted. The first line of each CSV file is a header containing the attribute names for that object as described in this documentation, and each object of that type is written to the file in the subsequent lines.

Usage Guidelines

- Only include information that is actually available from the source data. Any unused attributes can be left blank. If no object in a CSV file uses an attribute, that entire column can be omitted.
- Avoid invented data.
- There can be one file per object type, and the filenames must be exactly as documented.
- Object ID strings must be those previously described in a model transfer using the PowerSimulator Model Formats.
- The import mechanism relies on the name, not the order of the columns.
- Attributes within each file must be spelled exactly as documented.
- Attributes within each file can appear in any order.

Revision History

Revision 1.10 June 23, 2015

Add Min and Max operating MW to generator case.

Revision 1.9 September 29, 2014

Add MW and MVar flows to branches

Revision 1.8 August 28, 2014

Remove device characteristics from case for SVC (slope, var limits)

Remove device characteristics from case for PhaseTapChanger (var limits), and add optional continuous shift value

Remove device characteristics from case for RatioTapChanger (var limits), and add optional continuous ratio

Revision 1.7 June 4, 2013

rename AreaLoadCurve to LoadAreaCurve to support new LoadArea records

Revision 1.6 May 28, 2013

Add area load curve

Revision 1.5 Apr 25, 2013

Add case MVar to synchronous machine

Revision 1.4 Apr 18, 2013

Remove RegulatingKV since it is a duplicate of AVRMode for synchronous machine .

Revision 1.3 Apr 17, 2013

Correct synchronous machine operating mode description.

Revision 1.2 Nov 19, 2012

Add ACE control mode to Control Area record. Add PsmCaseParameter.csv to allow transfer of case metadata such as name, description, and timestamp

Revision 1.1 May 4, 2012

Add kv setpoint to synchronous machine, add shunt capacitor and shunt reactor

Revision 1.0 April 25, 2012

Initial Revision

Name

PsmCaseParameter.csv — File definition for PsmCaseParameter.csv

Description

This file allows for general parameter / value pairs. The file should have two columns described in the "Attributes" section below. Recognized parameters are described in the second section

Attributes

ParameterName Parameter Name

ParameterValue Parameter Value

Allowed Parameters

CaseFormatVersion Version of PowerSimulatorCaseFormat used.

CaseName Name of case

CaseDescription Case description

CaseTimestamp Timestamp of case used. Format is YYYY-MM-DD HH:MM:SS Z

YYYY Year

MM Month

DD Day

HH Hour

MM Minutes

SS Seconds

Z timezone name, abbreviation or offset from UTC

Name

PsmCaseControlArea.csv — File definition for PsmCaseControlArea.csv

Description

Base case information for Control Area measurements

Attributes

| | |
|----------------|---|
| ID | Control Area ID |
| NetInterchange | Area net interchange (MW) |
| ACEControlMode | ACE Control Mode <ul style="list-style-type: none">• TieLineBias• ConstantNetInterchange• ConstantFrequency |

Name

PsmCaseGeneratingUnit.csv — File definition for PsmCaseGeneratingUnit.csv

Description

Base case information for Generating Unit measurements

Attributes

| | |
|------------------------|--|
| ID | Generating Unit ID |
| MW | Generator Output MW |
| GeneratorOperatingMode | Generator Operating Mode <ul style="list-style-type: none">• OFF• MAN• AGC• EDC• LFC |
| MinOperatingMW | Generator Minimum Operating MW |
| MaxOperatingMW | Generator Maximum Operating MW |

Name

PsmCaseLoadAreaCurve.csv — File definition for PsmCaseLoadAreaCurve.csv

Description

Base case information for Load Area Curves. A curve requires the Load Area MW to be defined at each 5-minute interval for a 24-hour period, or 288 intervals unless the LoadArea has been defined as nonconformin.

Nonconforming LoadAreas can provide a single entry to define the total load.

Attributes

| | |
|----------|-------------------------|
| LoadArea | ID of load area |
| Interval | Interval number (1-288) |
| AreaLoad | MW for interval |

Name

PsmCaseLoad.csv — File definition for PsmCaseLoad.csv

Description

Base case information for Load Devices

Attributes

| | |
|------|-----------|
| ID | Load ID |
| MW | Load MW |
| MVAr | Load MVAr |

Name

PsmCaseLine.csv — File definition for PsmCaseLine.csv

Description

Base case information for Line Devices

Attributes

| | |
|----------|------------------------|
| ID | Line ID |
| FromMW | Case MW Flow on Node 1 |
| FromMVar | Case MVar Flow Node 1 |
| ToMW | Case MW Flow on Node 2 |
| ToMVar | Case MVar Flow Node 2 |

Name

PsmCaseRatioTapChanger.csv — File definition for PsmCaseRatioTapChanger.csv

Description

Base case information for Ratio TapChanger Devices

Attributes

| | |
|-------------|---|
| ID | Tap Changer ID |
| TapPosition | Tap position. |
| LTCEnable | Has LTC Enabled (true / false) |
| Ratio | tap ratio at the given position in per-unit on bus base KV (optional) |

Name

PsmCasePhaseTapChanger.csv — File definition for PsmCasePhaseTapChanger.csv

Description

Base case information for Phase TapChanger Devices

Attributes

| | |
|---------------|---|
| ID | Phase Tap Changer ID |
| TapPosition | Tap position. |
| ControlStatus | Control enabled? (true / false) |
| PhaseShift | Phase shift at the given tap position in degrees (optional) |

Name

PsmCaseSeriesCapacitor.csv — File definition for PsmCaseSeriesCapacitor.csv

Description

Base case information for SeriesCapacitor Devices

Attributes

| | |
|----------|------------------------|
| ID | SeriesCapacitor ID |
| FromMW | Case MW Flow on Node 1 |
| FromMVar | Case MVar Flow Node 1 |
| ToMW | Case MW Flow on Node 2 |
| ToMVar | Case MVar Flow Node 2 |

Name

PsmCaseSeriesReactor.csv — File definition for PsmCaseSeriesReactor.csv

Description

Base case information for SeriesReactor Devices

Attributes

| | |
|----------|------------------------|
| ID | SeriesReactor ID |
| FromMW | Case MW Flow on Node 1 |
| FromMVar | Case MVar Flow Node 1 |
| ToMW | Case MW Flow on Node 2 |
| ToMVar | Case MVar Flow Node 2 |

Name

PsmCaseShuntCapacitor.csv — File definition for PsmCaseShuntCapacitor.csv

Description

Base case information for Shunt Capacitor

Attributes

| | |
|---------|--------------------------------------|
| ID | Shunt Capacitor ID |
| Enabled | KV regulation enabled? true or false |

Name

PsmCaseShuntReactor.csv — File definition for PsmCaseShuntReactor.csv

Description

Base case information for Shunt Reactor measurements

Attributes

| | |
|---------|--------------------------------------|
| ID | Shunt Reactor ID |
| Enabled | KV regulation enabled? true or false |

Name

PsmCaseSVC.csv — File definition for PsmCaseSVC.csv

Description

Base case information for SVC measurements

Attributes

| | |
|-----------------|---|
| ID | SVC ID |
| Mode | <ul style="list-style-type: none">• Volt• MVar |
| MVarSetpoint | SVC MVar Setpoint. |
| VoltageSetpoint | SVC Voltage Setpoint. |

Name

PsmCaseSwitch.csv — File definition for PsmCaseSwitch.csv

Description

Base case information for Switch Devices

Attributes

| | |
|----------------|--|
| ID | Switch ID |
| SwitchPosition | Switch Position. <ul style="list-style-type: none">• Open• Closed |

Name

PsmCaseSynchronousMachine.csv — File definition for PsmCaseSynchronousMachine.csv

Description

Base case information for Synchronous Machine

Attributes

| | |
|---------------------------------|---|
| ID | Synchronous Machine ID |
| SynchronousMachineOperatingMode | SynchronousMachine Operating Mode <ul style="list-style-type: none">• GEN• CON• PMP |
| AVRMode | Automatic Voltage Regulation mode <ul style="list-style-type: none">• ON• OFF |
| KVSetPoint | KV Setpoint if regulating KV is enabled (AVR Mode = ON) |
| MVArSetpoint | MVAr setpoint used if regulating MVAr (AVR Mode = OFF) |
| MVAr | case MVAr |

Name

PsmCaseTransformerWinding.csv — File definition for PsmCaseTransformerWinding.csv

Description

Base case information for TransformerWinding Devices

Attributes

| | |
|----------|------------------------|
| ID | TransformerWinding ID |
| FromMW | Case MW Flow on Node 1 |
| FromMVar | Case MVar Flow Node 1 |
| ToMW | Case MW Flow on Node 2 |
| ToMVar | Case MVar Flow Node 2 |