Component: Shunt\_device\_Capacitor

**Notes:**

* **The variable names for DiTTo in the first column are exactly copied from DiTTo in order to get the parameters in DiTTo easily.**
* **For ePHASORSIM, the symbols in the third column are put exactly same as the ePHASORSIM user guide and the demo examples.**
* **The DiTTo parameters which match the ePHASORSIM’s parameters are put in the same rows.**
* **If one or more parameters which are available in ePHASORSIM but not in DiTTo, in that case the corresponding columns of the Ditto are left empty or necessary suggestions are provided.**
* **The parameters which are available only in DiTTo but not in ePHASORSIM, in that case the corresponding columns of the ePHASORSIM are left empty.**

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| Ditto | | | ePHASORSIM | | | |  |
| Name of the variable | | Description | | Symbol | Description | Unit | Default value |
| name | | Name of the capacitor object | | name | Shunt device name | Name must be unique |  |
| phases | | This parameter is a list of all the phases at the node. The Phases are Strings of 'A', 'B', 'C', 'N', | | bus\_a | Name of phase A of the connected bus | Name must be unique |  |
| num\_phases | | The number of phases that the capacitor bank is connected | | bus\_b | Name of phase B of the connected bus | Name must be unique |  |
| connecting\_element | | The bus which the capacitor is connected to | | bus\_c | Name of phase C of the connected bus | Name must be unique |  |
| This parameter is unavailable in DiTTo; For completely inductive and capacitive shunt it is always zero (0) | |  | | P\_a (kW) | Active power phase A | Unit: kW | It is usually zero (0) for completely (100%) inductive and capacitive shunt both. |
| var | | The var rating of the capacitor. In DiTTo it is not specified whether it is three-phase or single phase. | | Q\_a (kVAr) | Reactive power phase A | Unit: kVAr | This is negative for capacitor and positive for inductor |
| This parameter is unavailable in DiTTo; For completely inductive and capacitive shunt it is always zero (0) | |  | | P\_b (kW) | Active power phase B | Unit: kW | It is usually zero (0) for completely (100%) inductive and capacitive shunt both. |
| var | | The var rating of the capacitor. In DiTTo it is not specified whether it is three-phase or single phase. | | Q\_b (kVAr) | Reactive power phase B | Unit: kVAr | This is negative for capacitor and positive for inductor |
| This parameter is unavailable in DiTTo; For completely inductive and capacitive shunt it is always zero (0) | |  | | P\_c (kW) | Active power phase C | Unit: kW | It is usually zero (0) for completely (100%) inductive and capacitive shunt both. |
| var | | The var rating of the capacitor, in ditto it is not specified whether it is three-phase or single phase. | | Q\_c (kVAr) | Reactive power phase C | Unit: kVAr | This is negative for capacitor and positive for inductor |
| nominal\_voltage | | The nominal voltage of the capacitor | | kV (ph-gr RMS) | Phase to ground rated voltage | Unit: kV |  |
| This parameter is unavailable in DiTTo; please use  Value = 1 to ensure connected | |  | | Status\_a | Connect/Disconnect status of phase A | 1: Connected  0: Disconnected | 1 |
| This parameter is unavailable in DiTTo; please use  Value = 1 to ensure connected | |  | | Status\_b | Connect/Disconnect status of phase B | 1: Connected  0: Disconnected | 1 |
| This parameter is unavailable in DiTTo; please use  Value = 1 to ensure connected | |  | | Status\_c | Connect/Disconnect status of phase C | 1: Connected  0: Disconnected | 1 |
| delay | The time in seconds that the capacitor need to connect or disconnect by automatic voltage regulation | | |  |  |  |  | |
| mode | The mode that the capacitor is regulating. This is a string from one of the options {voltage, active Power, reactive Power, current Flow, admittance, time Scheduled}. | | |  |  |  |  | |
| grounded | Whether or not the capacitor is grounded. | | |  |  |  |  | |
| low | This is the low range of the value that is being controlled by the control on the capacitor (e.g. reactive power). | | |  |  |  |  | |
| high | This is the high range of the value that is being controlled by the control on the capacitor (e.g. reactive power). | | |  |  |  |  | |
| resistance | total series resistance of the capacitor | | |  |  |  |  | |
| resistance0 | total series zero-sequence resistance of the capacitor''' | | |  |  |  |  | |
| reactance | total series reactance of the capacitor | | |  |  |  |  | |
| reactance0 | total series zero- sequence reactance of the capacitor | | |  |  |  |  | |
| susceptance | positive sequence shunts suscpetance per section. | | |  |  |  |  | |
| susceptance0 | zero sequence shunt susceptance per section | | |  |  |  |  | |
| conductance | This is the shunt conductance of the capacitor per section''' | | |  |  |  |  | |
| conductance0 | This is the zero sequence shunt conductance of the capacitor per section | | |  |  |  |  | |
| sections | The maximum number of sections which can be switched in | | |  |  |  |  | |
| normalsections | The normal number of sections which are switched in''' | | |  |  |  |  | |
| connection\_type | This is the type of connection that the capacitor connects to on the high side. The strings may be one of the following Delta (D), Wye (Y), Zigzap (Z) or autotransformer (A). | | |  |  |  |  | |
| positions | This parameter is a list of positional points describing the capacitor (typically just one). | | |  |  |  |  | |
| pt\_ratio | The voltage (potential) transformer ratio used to step down the voltage for controller | | |  |  |  |  | |
| ct\_ratio | The current transformer ratio used to define the current ratio for a controller | | |  |  |  |  | |

Example: in ePHASORSIM

