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| Model Name: Example Listing | | |
| Name and affiliation of author or POC:  Chris Smith, MIT Lincoln Laboratory | Model Symbol: | Accreditation (TRL?):  SimPowerSystems standard |
| Date of Publication:  7/8/2017 |
| Version Information:  1.0 |
| Model accessibility (open source, license, …):  Open source |
| Model Description and Theory of Operation:  Three single-phase transformers with fixed voltage ratio, impedance, and X/R. There is no saturation modeled.  List of References:   * See SimPowerSystems documentation | | |
| Model Specifications:  The distribution transformer is implemented using three single-phase transformers connected D/Ygrounded with a negative 30 degrees angular displacement, and operated with fixed turn ratios.  The connectivity convention of this block is as follows: ABC indicates the “primary” or high voltage side, and the abc indicates the “secondary” or low voltage side.  Parallel resistances are included to avoid numerical issues. Primary impedance is set to zero.  Assumptions and Limitations   * Nominal frequency is assumed to be 60Hz * 500 PU for magnetization inductance and resistance | | |
| Interfacing Information (platform, input requirements, possible outputs):   1. Inputs: 2. Outputs: 3. Electrical connections:   A, B, C phase connections are the primary.  a, b, c phase connections are the secondary.   1. Parameters:   Rating (kVA)- Nominal operating power  Primary Voltage (VRMSLL)- Voltage on primary side measured line-line in RMS.  Secondary Voltage (VRMSLL)- Voltage on secondary side measured line-line in RMS.  Impedance Z (%)- Leakage impedance modeled on the secondary side.  X/R Ratio- Unitless ratio of inductive to resistive impedance. | | |
| Diagrammatic Representation of Model Internals: | | |
| Model Validation (technique used, evidence):  The model is not validated against actual transformer hardware, but it based on typical values found in literature. | | |
| Simulation Platform, Solvers:  Matlab 2013a with Simscape. A discrete Tustin solver with 100us time step was used. | | |
| Known Issues:  This transformer does not model inrush or saturation. | | |
| Models which use this block:  Basic element for numerous distribution systems. | | |