Residential (module)

From GridLAB-D Wiki

Simulates single-family homes with various appliances, electronics, and occupants.

Synopsis

```
module residential;
module residential {
  default_outdoor_temperature 74.0 degF;
  default_humidity 75.0 %;
  default_etp_iterations 100;
  implicit_enduses LIGHTS|PLUGS|OCCUPANCY|DISHWASHER|MICROWAVE|FREEZER|REFRIGERATOR|RANGE|EVCHARGER|WATER
  house_low_temperature_warning 55 degF;
  house_high_temperature_warning 95 degF;
  thermostat_control_warning TRUE;
  system_dwell_time 1 s;
  aux_cutin_temperature 10 degF;
}
```

Classes

As of Four Corners (Version 2.2)

- house – Single-family home model.
- residential_enduse – Abstract residential end-use class.
- waterheater – Typical residential water heating appliance.
- ZIPload – Generic constant impedance/current/power end-use load.

As of Hassayampa (Version 3.0)

These may be available in earlier versions but they have not been validated and are not supported.

- lights – Typical residential lights.
- occupantload – Residential occupants (sensible and latent heat).
- plugload – Typical residential plug loads.

Unsupported

These may be available in many versions but they have not been validated and are not supported.

- clotheswasher – Typical residential clothes washing appliance.
- dishwasher – Typical residential dish washing appliance.
- dryer – Typical residential clothes drying appliance.
- evcharger – Standard electric vehicle charger.
- freezer – Typical residential freezing appliance.

- microwave – Typical residential microwave appliance.
- range – Typical residential cooking appliance.
- refrigerator – Typical residential refrigeration appliance.

Variables

- default_line_voltage (complex[3]) Incoming line voltage to use when no power objects are defined (default is 240V+0j,120V+0j,120V+0j).
- default_line_current (complex[3]) Line current across the outside energy meter (default is 0A+0j,0A+0j,0A+0j).
- default_outdoor_temperature (double) Used when no climate/weather data is available (default is 74 degF).
- default_humidity (double) Used when no climate/weather data is available (default is 75%).
- default_solar (double[9]) Used when no climate/weather data is available (default is 0,0,0,0,0,0,0,0,0).
- default_etp_iterations (int64) Limits the number of iterations the ETP solver will perform before stopping (default is 100).

Bugs

Due to parsing limitations on arrays default_line_voltage, default_line_current, and default_solar cannot be set from a GLM file.

See also

- **Residential module**
  - User's Guide
  - Appliances
  - house class – Single-family home model.
  - residential_enduse class – Abstract residential end-use class.
  - occupantload – Residential occupants (sensible and latent heat).
  - ZIPload – Generic constant impedance/current/power end-use load.
- Technical Documents
  - Requirements
  - Specifications
  - Developer notes
  - Technical support document
  - Validation

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