Block DYNDGL

The DYNDGL calculates the heating consumption of a building via the numerical solved Differential Equation of a resistant-capacity element. Heat flux through basement is solved with a balance methode.



DYNDGL

Name	DYNDGL
Function	bs0018
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Inputs

1 Second of the year [sec]
2 External ambient temperature [°C]
3 Total irradiation on vertical surface north direction [W/m^2]
4 Total irradiation on vertical surface east direction [W/m^2]
5 Total irradiation on vertical surface south direction [W/m^2]
6 Total irradiation on vertical surface west direction [W/m^2]
7 Total irradiation on horizontal surface [W/m^2]
8 Total thermal resistance outside - zone 1 [K/W]
9 Useable heat capacity zone 1 [h]
10 Factor FF*g*A(windows) north zone 1
11 Factor FF*g*A(windows) east zone 1
12 Factor FF*g*A(windows) south zone 1
13 Factor FF*g*A(windows) west zone 1
14 Factor FF*g*A(windows) horizontal zone 1
15 Target temperature zone 1 [°C]
16 Internal gains zone 1 [W]

17	Total thermal resistance outside - zone 2 [K/W]
18	Useable heat capacity zone 2 [h]
19	Factor FF*g*A(windows) north zone 2
20	Factor FF*g*A(windows) east zone 2
21	Factor FF*g*A(windows) south zone 2
22	Factor FF*g*A(windows) west zone 2
23	Factor FF*g*A(windows) horizontal zone 2
24	Target temperature zone 2 [°C]
25	Internal gains zone 2 [W]
26	Total thermal resistance zone 1 - zone 2 [K/W]
27	Dynamic conductance via basement floor [W/K]
28	Dynamic conductance via basement wall [W/K]
29	Static conductance [W/K]
30	Phase shift because of basement [mth.]

Outputs

1	Heating energy demand per timestep zone 1 [kWh]
2	Cooling energy demand per timestep zone 1 [kWh]
3	Temperature in zone 1 [degC]
4	Heating energy demand per timestep zone 2 [kWh]
5	Cooling energy demand per timestep zone 2 [kWh]
6	Temperature in zone 2 [degC]
7	Heating energy demand per timestep cellar [kWh]
8	???

Parameters

1	Floor area [m^2]
2	Total ceiling wall area [m^2]
3	Cellar winter setpoint temperature [°C]
4	Cellar summer setpoint temperature [°C]
5	Annual average temperature [°C]

Strings

None
