### System Design Data Arrays

The system design data arrays are:

*SysSizInput(i)* stores the input data from the Sizing:System objects.

*SysSizing(i,j)* stores the results of the system design calculations for all systems and all design days. The index i is for air loops, j for design days.

*CalcSysSizing(i*) stores the results of the system design calculations for the peak heating and cooling cases for each air loop.The index i is for the air loops.

*FinalSysSizing(i*) corresponds to *CalcSysSizing* but includes the effect of the user specified sizing factor or user specified system design flow rate.

The data stored in *SysSizing*, *CalcSysSizing* and *FinalSysSizing* includes the following data items.

Table . System Sizing Data

|  |  |
| --- | --- |
| Name | Description |
| All the data from *SysSizInput* |  |
| *CoinCoolMassFlow* | coincident peak cooling mass flow rate [kg/s] |
| *CoinHeatMassFlow* | coincident peak heating mass flow rate [kg/s] |
| *NonCoinCoolMassFlow* | noncoincident peak cooling mass flow rate [kg/s] |
| *NonCoinHeatMassFlow* | noncoincident peak heating mass flow rate [kg/s] |
| *DesMainVolFlow* | design main supply duct volume flow [m3/s] |
| *DesHeatVolFlow* | design heat supply duct volume flow [m3/s] |
| *DesCoolVolFlow* | design cool supply duct volume flow [m3/s] |
| *SensCoolCap* | design sensible cooling capacity [W] |
| *TotCoolCap* | Design total cooling capacity [W] |
| *HeatCap* | design heating capacity [W] |
| *PreheatCap* | design preheat capacity [W] |
| *MixTempAtCoolPeak* | mixed air temperature at the time of the cooling peak [C] |
| *MixHumRatAtCoolPeak* | mixed humidity ratio at the time of the cooling peak [kg water/kg dry air] |
| *RetTempAtCoolPeak* | return air temperature at the time of the cooling peak [C] |
| *RetHumRatAtCoolPeak* | return air humidity ratio at the time of the cooling peak[kg water/kg dry air] |
| *OutTempAtCoolPeak* | outside air temperature at the time of the cooling peak [C] |
| *OutHumRatAtCoolPeak* | outside air humidity ratio at the time of the cooling peak [kg water/kg dry air] |
| *HeatMixTemp* | design mixed air temperature for heating [C] |
| *HeatMixHumRat* | design mixed air humidity ratio for heating [kg water/kg dry air] |
| *HeatRetTemp* | design return air temperature for heating [C] |
| *HeatRetHumRat* | design return air humidity ratio for heating [kg water/kg dry air] |
| *HeatOutTemp* | design outside air temperature for heating [C] |
| *HeatOutHumRat* | design outside air humidity ratio for heating [kg water/kg dry air] |
| *HeatFlowSeq* | daily sequence of system heating air mass flow rate (zone time step) [kg/s] |
| *CoolFlowSeq* | daily sequence of system cooling air mass flow rate (zone time step) [kg/s] |
| *SumZoneCoolLoadSeq* | Daily sequence of zones' summed cooling load (zone time step) [W] |
| *CoolZoneAvgTempSeq* | Daily sequence of zones flow weighted average temperature (zone time step) [C] |
| *SensCoolCapSeq* | daily sequence of system sensible cooling capacity (zone time step) [W] |
| *TotCoolCapSeq* | Daily sequence of system total cooling capacity (zone time step) [W] |
| *HeatCapSeq* | daily sequence of system heating capacity (zone time step) [W] |
| *PreHeatCapSeq* | daily sequence of system preheat capacity (zone time step) [W] |
| *SysCoolRetTempSeq* | daily sequence of system cooling return temperatures (zone time step) [C] |
| *SysCoolRetHumRatSeq* | daily sequence of system cooling return humidity ratios (zone time step) [kg water/kg dry air] |
| *SysHeatRetTempSeq* | daily sequence of system heating return temperatures (zone time step) [C] |
| *SysHeatRetHumRatSeq* | daily sequence of system heating return humidity ratios (zone time step) [kg water/kg dry air] |
| *SysCoolOutTempSeq* | daily sequence of system cooling outside temperatures (zone time step) [C] |
| *SysCoolOutHumRatSeq* | daily sequence of system cooling outside humidity ratios (zone time step) [kg water/kg dry air] |
| *SysHeatOutTempSeq* | daily sequence of system heating outside temperatures (zone time step) [C] |
| *SysHeatOutHumRatSeq* | daily sequence of system heating outside humidity ratios (zone time step) [kg water/kg dry air] |