FACTORS DETAILS

Factors details form

Descriptions of factors details

⚠️	**All the under factors can have a positive effect on the calculation only if obtained by laboratory test. They should not be used to trim performances of the coils without knowing the possible consequences**

Fin corrugation factor/slope:	this parameter, defined as fin corrugation factor, represents the ratio (with the same air frontal velocity) between the exchange coefficient of a corrugated finned coil, and the corresponding exchange coefficient of a plain fin coil. This value is equal to 1 for plain fin. For further corrugation cases, the factors must be experimentally determined.
Tube side coef. factor/slope:	this parameter, defined as "coefficient factor inside tubes/slope", represents the ratio between the real exchange coefficient of internal tubes and the ideal one. This value is equal to 1 for cylindrical tubes with internal plain surface. For further cases, the factor must be experimentally determined
Correction factor of friction factor/slope:	this parameter, defined as "correction factor of friction factor/slope", represents the ratio between the real tubes internal side friction factor and the ideal one. This value is equal to 1 for cylindrical tubes with internal plain surface. For further cases, the factor must be experimentally determined.
Friction factor air side/slope:	this parameter, defined as "friction factor air side/slope", represents the ratio between the real tubes external side friction factor and the ideal one. This value is equal to 1 for plain fins. For further cases, the factor must be experimentally determined.
"Slope" factors	the coefficient of proportionality in logarithmic coordinates between the item at issue (fin etc…) and the related fluid speed. This parameter enables the user to find the correction factor in function of speed.
Red/Inc Surface factor:	this parameter, defined as the surface reduction/increase factor, is a nondimensional parameter which considers the possible calculation differences of the exchange surface. This factor permits to analyze those cases in which the geometry parameters are not constant, such as differentiated spacing coils (typical for direct expansion coils at very low temperature) or differentiated fin height coils.
Reduction Area Pass. Tube:	this parameter, defined as "tube passage reduction area", permits to consider possible elements which may reduce the fluid passage area. The value goes from 0 to 1.
Latent air friction factor	this factor applies specifically to calculations with dehumidification. In this type of application the fin is covered by water, which makes an increment on the air side pressure drops, calculated by a specific equation. This factor lets you trim the behavior of this equation.
Tube internal surface ratio	this parameter applies to grooved tubes and it lets you specify the ratio of the internal surface calculated like (Internal Grooved Surface / Internal Smooth Surface). This parameter is very important when the controlling resistance is tubes side. For a detailed explanation, please see the FAQ called "Considerations about grooved tubes" at the end of the manual.
Security factor	this parameter affects the entire calculation, and lets you increase or decrease the performance of the coil. It's intended to be a factor to gain some security margin.
Sensible factor	this parameter affects the sensible capacity of the coil. The standard value is 0.6 and it is not proportional.

What happens when the factors details are changed

	Please don't change the slope factors.

Fin corrugation factor
The default value is 1.
If the value increases / decreases, the coefficient of partial exchange air side increases / decreases.

Tube side coef. factor
The default value is 1.
If the value increases / decreases, the coefficient of partial exchange inside the tube increases / decreases.

Correction factor of friction factor
The default value is 1.
If the value increases / decreases, the inner tube side pressure drop increases / decreases.

Friction factor air side
The default value is 1.
If the value increases / decreases, the air side pressure loss increases / decreases.

Red/Inc Surface factor
The default value is 1.
If the value increases / decreases, the heat exchange surface in the calculation increases / decreases and so the power increases / decreases.

Reduction Area Pass. Tube:
The default value is 1.
If the value increases / decreases, the passage area of the pipe decreases / increases.

Latent air friction factor
The default value is 1.
If the value increases / decreases, the load losses relating to condensed increases / decreases (you have to apply only to cooling coils of air)

Tube internal surface ratio
The default value is 1.
If the value increases / decreases, the tube internal exchange surface increases / decreases.

Security factor
The default value is 1.
If the value increases / decreases, the capacity increases / decreases.

Sensible factor
The default value is 0,6.
 If the value increases / decreases, the sensitive capacity decreases / increases (you have to apply only to cooling coils of air).