WE-FLEX
Flexible Transformer

FLEX-Transformer applications

The inductance when inductors are connected in series or parallel is calculated similar to the resistance of resistors by addition or reciprocals addition.

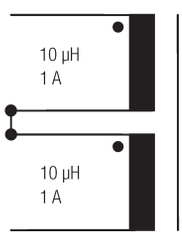
$$L_{Series} = L_1 + L_2 + L_3 + \ldots + L_n = \sum_{i=1}^{n} L_i$$

$$L_{Parallel} = 1/(1/L_1 + 1/L_2 + 1/L_3 + \ldots + 1/L_n) = 1/\sum_{i=1}^{n} (1/L_i)$$

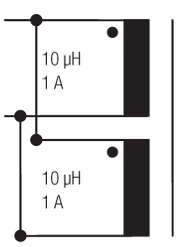
There is another outcome if the inductors are on a single core, as in the case of the FLEX-Transformer. The series connection of two windings doubles the number of turns. This has a square effect on the inductance. The inductance is therefore quadrupled.

In case of parallel connection of two windings, the inductance does not change. The result is that twice the current can be carried.

A general calculation rule is now given, based on the series and parallel connection of two windings:



Series connection of two windings



Parallel connection of two windings

$L_{total} = L_{base} \cdot S^2$	$I_{max} = I_{base} \cdot P$	$L_{total} = L_{base} \cdot S^2$	$I_{max} = I_{base} \cdot P$
$L_{total} = 10\ \mu H \cdot 2^2$	$I_{max} = 1\ A \cdot 1$	$L_{total} = 10\ \mu H \cdot 1^2$	$I_{max} = 1\ A \cdot 2$
$L_{total} = 40\ \mu H$	$I_{max} = 1\ A$	$L_{total} = 10\ \mu H$	$I_{max} = 2\ A$

L_{base} = inductance of one winding
P = number of windings connected in parallel
S = number of windings connected in series
I_{base} = maximum current rating of one winding