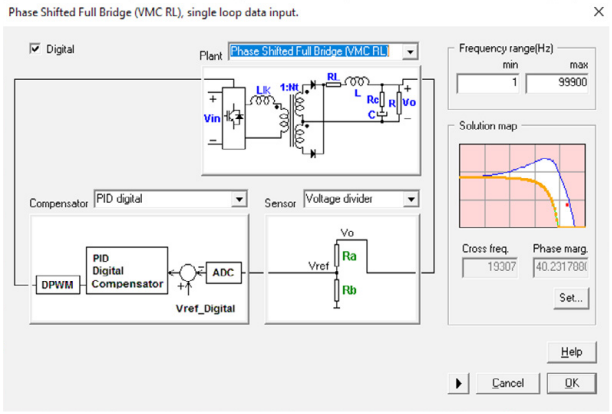
SmartCtrl 4.2

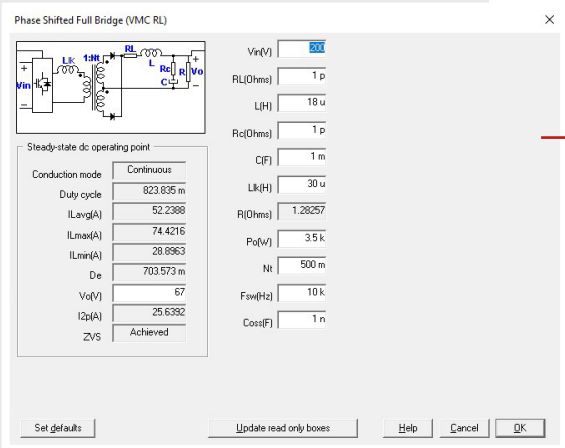
What´s new

New DC-DC converter: Phase shifted full bridge 01

Phase shifted full bridge (PSFB) DC-DC **converters** are used frequently to step down high DC bus voltages and/or provide isolation in medium to high power **applications** like server power supplies, telecom rectifiers, battery charging systems, and renewable energy systems.

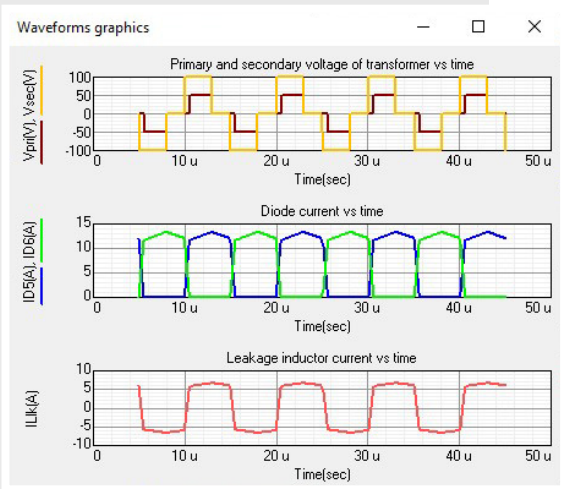
This topology allows all the switching devices to switch with zero voltage switching (ZVS) resulting in lower switching losses and an efficient converter.

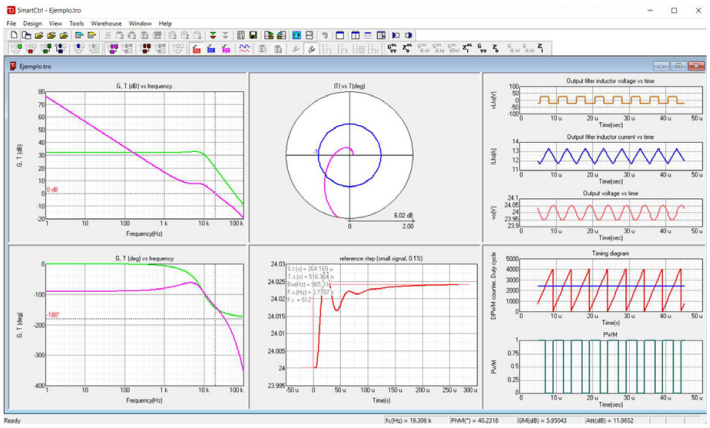




SmartCtrl 4.2 allows the user to define the switches output capacitance (Coss) in order to study the conditions of the zero voltage switching (ZVS).

Optimum control loop due to the high accuracy of the converter model included in SmartCtrl 4.2.





- The converter model considered in SmartCtrl 4.2 includes the effective duty cycle losses due to the transformer inductance leakage. The new steady state waveforms allows the user to review the operating point of the converter.
- Direct converter simulation in **PSIM** seamlessly integrated with SmartCtrl.
- Select with just one click between **digital or analog** control.

smart ctrl
control design for power electronics

What´s new

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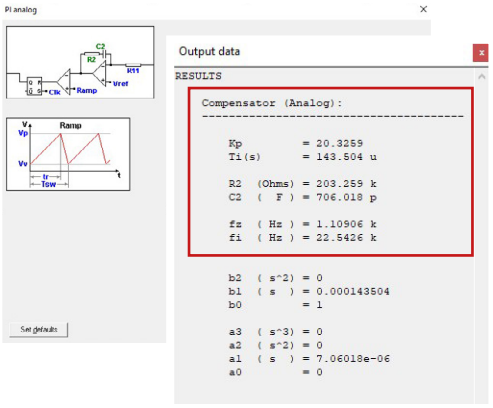
02 New PI compensator

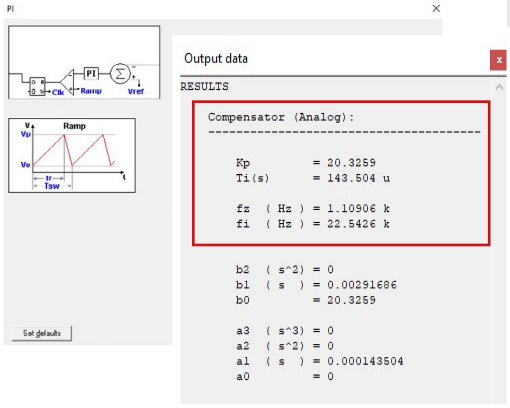
SmartCtrl originally includes a **PI analog** compensator to allow the user to get the values for its physical implementation.

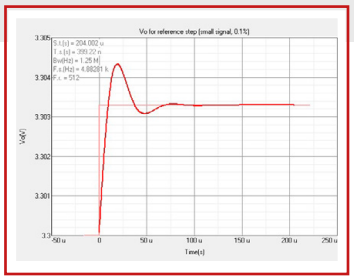
Now we have included the **classical PI** compensator using its transfer function combined with the PWM modulator.

The **transient response plot** functionality has been revised and updated.

$$Kp \frac{(1 + s\,Ti)}{s\,Ti}$$







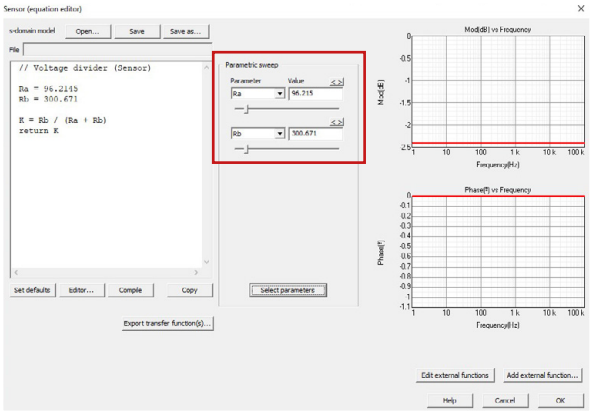
Custom defined sensor for predefined topologies 03

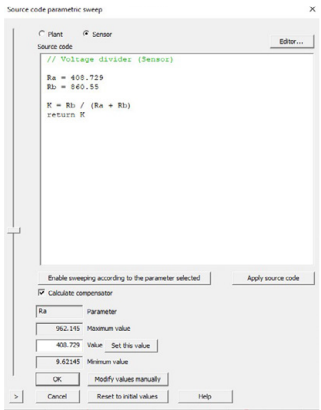
Are you using Matlab or Mathcad? Do you already have the **transfer function of your sensor**? SmartCtrl is the perfect complement, thanks to the new functionality you can combine any of the **predefined topologies** with your own customized sensor.

Buck | **Boost** | **Flyback** | **Forward** | **Full Bridge** | **With a user defined sensor**

Now you can define, e.g., the transfer function of your specific implementation of the typical TL431 driving an optocoupler voltage sensing or any specific Hall sensor.

Using the **Parametric Sweep** select the best control solution just using the sliders to change your sensor parameters.





by PSC Power Smart Control SL