

- Date:** September 30, 2000
- Product Affected:** All Quarter-brick dc/dc converters (PQ48xxxQNAxxxxS and PQ24xxxQNAxxxxS)
- Change Notice:** ECN # 00-0286
- Change Description:** In order to provide customers with maximum flexibility, SynQor is scaling its trim equations on all quarter-brick products to be aligned with generally accepted industry standard formulas. This change will not affect any other performance characteristics of the converter.
- Cut in Date:** January 2001
- Revision Change:** Product Revision level will change from Revision D to Revision E for the 48Vin family. There is no revision change for the 24Vin family, which will use the new trim equations from the time of their initial introduction. Please contact SynQor if additional information is required.
- Application Notes:** Customers who do not use the trim pin will not be affected by this change. Customers who use the trim pin, will need to scale (increase) their trim values for the new equations by a factor of 5.11.

<p>Original Trim Down Equation</p> $R_{\text{trim-down}} = \left(\frac{100\%}{\Delta} \right) - 2 \text{ (k}\Omega\text{)}$ <p>where $\Delta = \left(\frac{V_{\text{NOM}} - V_{\text{DES}}}{V_{\text{NOM}}} \right) \times 100\%$</p> <p>and V_{NOM} = Nominal Voltage V_{DES} = Desired Voltage</p>	<p>Original Trim Up Equation</p> $R_{\text{trim-up}} = \frac{\left(\frac{V_{\text{NOM}}}{V_{\text{REF}}} - 2 \right) \cdot V_{\text{DES}} + V_{\text{NOM}}}{V_{\text{DES}} - V_{\text{NOM}}} \text{ (k}\Omega\text{)}$ <p>where V_{NOM} = Nominal Voltage V_{DES} = Desired Voltage V_{REF} = 1.225 Volts</p>
<p>New Trim Down Equation</p> $R_{\text{trim-down}} = \left(\frac{511}{\Delta\%} \right) - 10.22 \text{ (k}\Omega\text{)}$ <p>where $\Delta = \left(\frac{V_{\text{NOM}} - V_{\text{DES}}}{V_{\text{NOM}}} \right) \times 100\%$</p> <p>$R_{\text{new}} = R_{\text{old}} \times 5.11$</p>	<p>New Trim Up Equation</p> $R_{\text{trim-up}} = \left(\frac{5.11V_{\text{OUT}}(100+\Delta\%)}{1.225 \Delta\%} - \frac{511}{\Delta\%} - 10.22 \right) \text{ (k}\Omega\text{)}$ <p>where V_{OUT} = Nominal Output Voltage</p> <p>$R_{\text{new}} = R_{\text{old}} \times 5.11$</p>

As an example, to trim a 3.3V_{out} converter down 10% with SynQor's original equations, you would connect an 7.96K resistor between Sense(-) and the trim pin. With the new equations, the new resistor value is 40.7K, or 5.11 times the original value.

To trim a 3.3V_{out} converter up by 10% the original equations required a 17.6K resistor between the Sense(+) and trim pins. The new resistor value is 89.8K, or 5.11 times the original value.

Contact: If any additional information is required, please contact your local SynQor representative. Email can be sent to support@synqor.com for technical inquiries, or sales@synqor.com for commercial issues.