

TECHNICAL BULLETIN

Branch Circuit Sizing

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Be advised that the Chilicon Power trunk cable is manufactured using #10 AWG stranded copper wire. NEC code specifies that the maximum allowable breaker size allowable on this type of wire is 30A. Scaling this by the 80% required safety factor results in a maximum allowable current of 24A per branch circuit.

This wire itself has a maximum current carrying capacity of 40A at 30°C. Depending on the conditions, we recommend a derate factor of either .65 or .6 for roof top deployment. This will yield an operational current of at least 24A through our trunk cable.

When calculating the maximum number of permissible microinverters on a branch circuit, NEC code section 690.8A(3) applies:

Inverter Output Circuit Current - the maximum current shall be the inverter continuous output current rating.

Therefore, the maximum number of inverters per branch circuit is $24A / \text{maximum inverter output current}$. For our CP-720 this value is either 3A at full power, or 2.4A for the power limited version. This results in permissible branch sizes of either 8 or 10 microinverters (for the power limited version).

Chilicon Power has tested our trunk cable and approves its use per these guidelines in worst case environments.

While the graphical representation of energy output (as observed via the monitoring software) will show momentary dips, these are short lived and do not actually result in an appreciable decrease in overall system production.

Certain utilities and geographic areas seem more prone to these issues and for those cases this safety feature offers an extra level of system protection.