6/23/2017

Voltage Drop Calculation

Customer Information
Reeves, Thomas
1145 Dragston Road, Down Township, NJ 08315.

Conditions

Equipment:	1 – Solar Edge SE10000A-US inverter - 42a maximum continuous output current
Trench Length:	180’
Total one way circuit length:	210’
Selected conductor:	Copper #2 AWG

Calculation
VD = 2 x K x I x D/CM

“VD” = Voltage Drop
“K” = 12.9
“I” = Amperage = 42a
“D” = Distance = 210’
“CM” = Circular-Mils = (2014 NEC Chapter 9, Table 8.) #2 AWG = 66,360

VD = 2 x 12.9 x 42a x 210’/66,360
VD = 3.43v

3.43v / 240 = 0.014
0.014 x 100% = **1.4%**

Result
One conductor per phase utilizing a #2 AWG copper conductor will limit voltage drop to 1.4% or less when supplying 42.0 amps for 210 feet on a 240 volt 1 phase system.

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