

Voltage Drop Considerations, 240 Vac, M210

The table below provides recommendations for wire size from the junction box at the beginning of the Micro-inverter branch to the main load center based on distance.

External Branch (Home Run) Wiring Maximum Distance in Feet									
Wire	Micro-Inverters per Branch								
	5	6	7	8	9	10	11	12	13
14 AWG	178	142	115	94	77	63	50	39	30
12 AWG	282	225	182	149	122	99	80	62	47
10 AWG	451	359	291	238	195	159	127	100	75
8 AWG	718	572	464	380	311	253	203	159	120
6 AWG	1138	907	736	602	493	401	322	252	189

Circuit Current Calculation

- Maximum Output Power = 210 Watts AC
- $210 \text{ W} \div 240 \text{ V} = .88 \text{ Amps}$
- $.88 \times 13 \text{ inverters} = 11.44 \text{ amps / branch}$

Overcurrent Protection Calculation

- $11.44 \times 1.25 = 14.25 \text{ Amps}$

Conclusions

- Install 1 to 13 Inverters per branch, up to 2730 Watts AC
- 2 Pole 15 Amp circuit breaker maximum, 14 AWG wire size minimum.

Voltage Drop Considerations, 208 Vac, M210

The table below provides recommendations for wire size from the junction box at the beginning of the Micro-inverter branch to the main load center based on distance. The table is in increments of 3 inverters, always round up to the next increment.

External Branch (Home Run) Wiring Maximum Distance in Feet						
Wire	Micro-Inverters per Branch					
	3	6	9	12	15	18
14 AWG	896	438	278	193	137	97
12 AWG	1422	694	441	305	218	154
10 AWG	2270	1108	703	488	348	245
8 AWG	3618	1766	1121	777	554	391
6 AWG	5733	2799	1776	1231	878	619

Circuit Current Calculation

- Maximum Output Power = 210 Watts AC
- $210 \text{ W} \div 208 \text{ V} = 1.00 \text{ Amps}$
- $1.00 \times 6 \text{ inverters per phase} = 6.00 \text{ amps per phase}$
- $6.00 \times 1.73 = 10.38 \text{ amps per leg}$

Overcurrent Protection Calculation

- $10.38 \times 1.25 = 12.98 \text{ Amps}$

Conclusions

- Install 1 to 18 inverters per branch, up to 3780 Watts
- 3 Pole 15 Amp circuit breaker maximum, 14 AWG wire size minimum.