Application Note

Voltage Drop Considerations, 240 Vac

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									
	Micro-Inverters per Branch								
Wire	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
14 AWG	122	101	83	68	55	43	32	22	13
12 AWG	193	160	132	108	87	68	51	35	21
10 AWG	308	255	210	172	138	108	81	56	33
8 AWG	491	406	335	274	220	172	129	90	53
6 AWG	778	644	531	434	349	273	205	142	84

Circuit Current Calculation

- Maximum Output Power = 175 Watts AC
- 175 W ÷ 240 V = .73 Amps
- 73 x 16 inverters = 11.68 amps / branch

Overcurrent Protection Calculation

- 11.68 x 1.25 = 14.6 Amps

Conclusions

- Install 1 to 16 Inverters per branch, up to 2800 Watts
- Minimum 2 Pole 15 Amp circuit breaker, 14 AWG wire size.

Application Note

Voltage Drop Considerations, 208 Vac

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						
	Micro-Inverters per Branch					
Wire	**9**	**12**	**15**	**18**	**21**	**24**
14 AWG	331	231	165	118	81	50
12 AWG	525	366	262	187	128	79
10 AWG	839	584	419	298	204	126
8 AWG	1337	930	667	476	325	200
6 AWG	2118	1474	1057	754	515	317

Circuit Current Calculation

- Maximum Output Power = 175 Watts AC
- 175 W ÷ 208 V = .84 Amps
- .84 x 8 inverters per phase = 6.73 amps per phase
- 6.73 x 1.73 = 11.64 amps per leg

Overcurrent Protection Calculation

- 11.65 x 1.25 = 14.55 Amps

Conclusions

- Install 1 to 24 inverters per branch, up to 4200 Watts
- Minimum 3 Pole 15 Amp circuit breaker, 14 AWG wire size.