

Voltage Drop Calculator

Compressed Air Systems has compiled this chart as a reference. If the voltage drop at your distance from the main panel will drop the voltage supplied below the minimum operating voltage of the compressors system you may need to look into a booster to raise the voltage back up to the operating range of your compressor system.

| Select your ambient temperature (degrees Fahrenheit) | Select your wire size | Max amperage flow | Enter wire length from main panel (in feet) | Approximate voltage drop at maximum amperage |
|--|-----------------------|-------------------|---|--|
| | | | | |

All amperage and voltage drops are based on 2011 NEC, Article 430, Part III, copper wire 75C, Ampacity THW, THHN-THWN, XHHW NEC Table 3101.15

If ambient temperature could exceed 122 degrees Fahrenheit consult factory.

Voltage drops of more than 3% can fall outside the operating parameters of electrically driven equipment.

Motor Amperage Draw

Motor amperage draws are based off and average maximum amperage draw across several different motor manufacturers as of 2018. For duplex compressor systems always double the amperage draw requirements.

| Motor HP | Phase | Max Amperage Draw @ 200V | Max Amperage Draw @ 208 Volt | Max Amperage Draw @ 230V | Max Amperage Draw @ 480V |
|----------|-------|--------------------------|------------------------------|--------------------------|--------------------------|
| 5 | 1 | 31.05 | 26.1 | 23.4 | N/A |
| 5 | 3 | 17.5 | 16.1 | 15.2 | 7.6 |
| 7.5 | 1 | 42 | 38 | 35.7 | N/A |
| 7.5 | 3 | 24.6 | 23 | 21.9 | 10.9 |
| 10 | 1 | N/A | N/A | 45 | N/A |
| 10 | 3 | 32.9 | 29.9 | 28.9 | 14.4 |
| 15 | 3 | 48.3 | 43.7 | 41.6 | 20.8 |
| 20 | 3 | 63.25 | 59.8 | 55.2 | 27.6 |
| 25 | 3 | 82.8 | 73.6 | 71.3 | 35.6 |
| 30 | 3 | 96.6 | 89.7 | 87.4 | 43.7 |
| 40 | 3 | N/A | 117.3 | 110.4 | 55.2 |
| 50 | 3 | N/A | 147.2 | 133.4 | 66.7 |

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