

Figure 6-5

Temperature Limitations of Electrical Connections

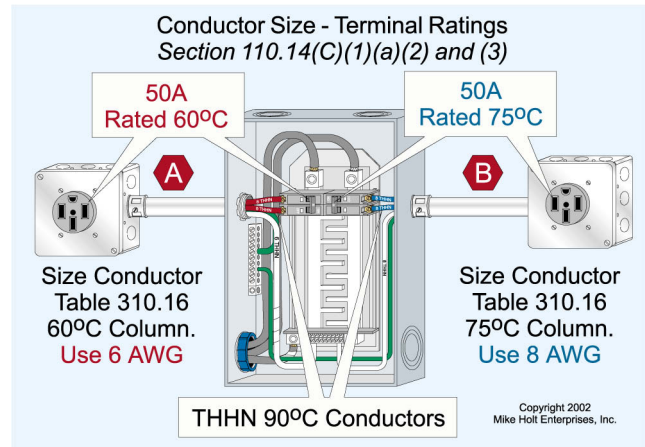


Figure 6-6

Conductor Insulation &amp; Ampacity – Terminal Ratings

#### 6-4 TERMINAL RATINGS [110.14(C)]

Conductors are to be sized in accordance with the lowest temperature rating of any terminal, device or conductor of the circuit.

##### Circuits Rated 100A and Less [110.14(C)(1)(a)]

Equipment terminals rated 100A or less (and pressure connector terminals for 14 AWG through 1 AWG conductors), shall have the conductor sized no smaller than the 60°C temperature rating listed in Table 310.16, unless the terminals are marked otherwise. Figure 6-5.

##### □ Terminal Rated 60°C [110.14(C)(1)(a)(1)]

What size THHN conductor is required for a 50A circuit listed for use at 60°C? Figure 6-6 Part A.

- (a) 10 AWG                      (b) 8 AWG                      (c) 6 AWG                      (d) any of these

• Answer: (c) 6 AWG

Conductors must be sized to the lowest temperature rating of either the equipment or the conductor. THHN insulation can be used, but the conductor size must be selected based on the 60°C terminal rating of the equipment, not the 90°C rating of the insulation. Using the 60°C column of Table 310.16, this 50A circuit requires a 6 AWG THHN conductor (rated 55A at 60°C).

##### □ Terminal Rated 75°C [110.14(C)(1)(a)(2)]

What size THHN conductor is required for a 50A circuit listed for use at 75°C? Figure 6-6 Part B.

- (a) 10 AWG                      (b) 8 AWG                      (c) 6 AWG                      (d) any of these

• Answer: (b) 8 AWG

Conductors must be sized according to the lowest temperature rating of either the equipment or the conductor. THHN conductors can be used, but the conductor size must be selected according to the 75°C terminal rating of the equipment, not the 90°C rating of the insulation. Using the 75°C column of Table 310.16, this installation would permit 8 AWG THHN (rated 50A at 75°C) to supply the 50A load.

##### Circuits Over 100A [110.14(C)(1)(b)]

Terminals for equipment rated over 100A and pressure connector terminals for conductors larger than 1 AWG shall have the conductor sized according to the 75°C temperature rating listed in Table 310.16. Figure 6-7.

##### □ Over 100A [110.14(C)(1)(b)]

What size THHN conductor is required to supply a 225A feeder?

- (a) 1/0 AWG                      (b) 2/0 AWG                      (c) 3/0 AWG                      (d) 4/0 AWG

• Answer: (d) 4/0 AWG