Hunt Electric Supply Company

Number of Conductors in an Electrical Box

Box Dimensions (inches) Trade Size or Type	Min. Cu. In. Capacity	Maximum Number of Conductors			
		14 AWG	12 AWG	10 AWG	8 AWG
4 x 1 1/4" Round or Octagon	12.5	6	5	5	4
4 x 1 1/2" Round or Octagon	15.5	7	6	6	5
4 x 2 1/8" Round or Octagon	21.5	10	9	8	7
4 x 1 1/4" Square	18.0	9	8	7	6
4 x 1 1/2" Square	21.0	10	9	8	7
4 x 2 1/8" Square	30.3	15	13	12	10
4 11/16" x 1 1/4" Square	25.5	12	11	10	8
4 11/16" x 1 1/2" Square	29.5	14	13	11	9
4 11/16" x 2 1/8" Square	42.0	21	18	16	14
3" x 2" x 1 1/2" Device	7.5	3	3	3	2
3" x 2" x 2" Device	10.0	5	4	4	3
3" x 2" x 2 1/4" Device	10.5	5	4	4	3
3" x 2 x 2 1/2" Device	12.5	6	5	5	4
3" x 2" x 2 3/4" Device	14.0	7	6	5	4
3" x 2" x 3 1/2" Device	18.0	9	8	7	6
4" x 2 1/8" x 1 1/2" Device	10.3	5	4	4	3
4" x 2 1/8" x 1 7/8" Device	13.0	6	5	5	4
4" x 2 1/8" x 2 1/8" Device	14.5	7	6	5	4
3 3/4" x 2" x 2 1/2" Masonry	14.0	7	6	5	4
3 3/4" x 2" x 3 1/2" Masonry	21.0	10	9	8	7

Formulas for Determining Amps, HP, KW, & KVA

To Find	Direct Current	Alternating Current		
		Single Phase	2 Phase - 4 Wire	Three Phase
Amperes when horsepower is known	$\frac{\text{Hp x 746}}{\text{E x \% eff}}$	$\frac{\text{Hp x 746}}{\text{E x \% eff x p-f}}$	$\frac{\text{Hp x 746}}{\text{2 x E x \% eff x p-f}}$	$\frac{\text{Hp x 746}}{\text{1.73 x E x \% eff x p-f}}$
Amperes when kilowatts is known	$\frac{\text{Kw x 1000}}{\text{E}}$	$\frac{\text{Kw x 1000}}{\text{E x p-f}}$	$\frac{\text{Kw x 1000}}{\text{2 x E x p-f}}$	$\frac{\text{Kw x 1000}}{\text{1.73 x E x p-f}}$
Amperes when Kva is known		$\frac{\text{Kva x 1000}}{\text{E}}$	$\frac{\text{Kva x 1000}}{\text{2 x E}}$	$\frac{\text{Kva x 1000}}{\text{1.73 x E}}$
Kilowatts	$\frac{\text{I x E}}{\text{1000}}$	$\frac{\text{I x E x p-f}}{\text{1000}}$	$\frac{\text{I x E x 2 x p-f}}{\text{1000}}$	$\frac{\text{I x E x 1.73 x p-f}}{\text{1000}}$
Kva		$\frac{\text{I x E}}{\text{1000}}$	$\frac{\text{I x E x 2}}{\text{1000}}$	$\frac{\text{I x E x 1.73}}{\text{1000}}$
Horesepower (output)	$\frac{\text{I x E \% eff}}{\text{746}}$	$\frac{\text{I x E x \% eff x p-f}}{\text{746}}$	$\frac{\text{I x E x 2 x \% eff x p-f}}{\text{746}}$	$\frac{\text{I x E x 1.73 x \% eff x p-f}}{\text{1000}}$

For 2-phase, 3-wire circuits the current in the common conductor is 1.41 times that in either of the two other conductors.