

VOLTAGE DROP CHARTS

VOLTAGE DROP CHART – SINGLE PHASE														
3W – 120V, 208V, 240V, 277V, 347V														
COPPER														
Circuit					Max Distance In Feet									
	CKT SIZE	AMPS	VOLTS	PH	#12	#10	#8	#6	#4	#3	#2	#1		
120V	20	5	120	1	175	275	450	700						
	20	10	120	1	90	140	230	360	580	730				
	20	16	120	1	50	90	140	220	350	450	560			
	30	15	120	1		90	150	240	380	480	600			
	30	24	120	1		60	90	150	240	300	380	480		
208V	20	5	208	1	300	500	790							
	20	10	208	1	150	250	390	630						
	20	16	208	1	90	150	240	390	630					
	30	24	208	1		100	160	260	420	530	660			
	40	32	208	1			120	190	300	390	500	630		
	50	40	208	1			110	150	250	300	400	500		
240V	20	10	240	1	180	280	460	730						
	20	16	240	1	110	180	280	450	720					
	30	15	240	1		190	300	480	770	970				
	30	24	240	1		120	190	300	480	770				
	40	32	240	1			140	220	360	450	560	720		
	50	40	240	1			110	180	290	360	460	580		
	60	48	240	1				150	240	300	380	480		
277V	20	5	277	1	400	650	1000							
	20	10	277	1	200	330	530	840						
	20	16	277	1	130	200	330	520	840					
	25	20	277	1		160	260	420	670	840				
Conduit					EMT	1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1 1/4"	
					RMC	1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1"	1 1/4"
					IMC	1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1"	1 1/4"
					PVC40	1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1"	1 1/4"
					PVC80	1/2"	1/2"	3/4"	3/4"	1"	1"	1"	1"	1 1/4"
Conductors					3	3	3	3	2+6G	2+#6G	2+#8G	2+#4G		

Conduit fill is based on THHN conductors.

NOTES:

- Charts indicate maximum distance for a specific circuit.
- Calculations are based on a 3% voltage drop.
- These charts are solely for estimating purposes only, not for design.
- Amperages are approximate, not exact.
- Conduit fill is according to fill % in the NEC, however sometimes a larger conduit is more practical for wiring pulling purposes depending on length of circuit. Border line fill percentages, the next larger size conduit is indicated.

VOLTAGE DROP CHART – SINGLE PHASE					ALUMINUM							
3W – 120V, 208V, 240V, 277V												
Circuit					Max Distance In Feet							
	CKT SIZE	AMPS	VOLTS	PH	#12	#10	#8	#6	#4	#3	#2	#1
120V	20	5	120	1	100	175	275	425				
	20	10	120	1	55	85	140	220	350	440		
	20	16	120	1		55	85	135	220	275	350	
	30	15	120	1			90	145	235	295	375	
	30	24	120	1			55	90	145	185	230	290
208V	20	5	208	1	190	300	480					
	20	10	208	1	95	150	240	380				
	20	16	208	1	60	90	150	240	380			
	30	24	208	1		60	100	160	250	320	400	
	40	32	208	1			75	120	190	240	300	380
	50	40	208	1			60	95	150	190	240	300
	60	48	208	1			80	125	160	200	250	
240V	20	10	240	1	110	175	280	440				
	20	16	240	1	65	110	175	275	440			
	30	15	240	1		115	180	290	470	590		
	30	24	240	1		45	115	185	290	370		
	40	32	240	1			85	135	220	275	350	440
	50	40	240	1			70	110	175	220	280	350
	60	48	240	1				90	145	185	230	290
277V	20	5	277	1	250	400	640					
	20	10	277	1	125	200	320	500				
	20	16	277	1	75	125	200	320	510			
	25	20	277	1		100	160	250	400	510		
Conduit			EMT		1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1 1/4"
			RMC		1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1 1/4"
			IMC		1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1 1/4"
			PVC40		1/2"	1/2"	1/2"	3/4"	1"	1"	1"	1 1/4"
			PVC80		1/2"	1/2"	3/4"	3/4"	1"	1"	1"	1 1/4"
Conductors					3	3	3	3	2+6G	2+#6G	2+#8G	2+#4G

1. Conduit fill is based on XHHW conductors.