

TWO DIFFERENT CABLE SIZES CAN BE USED

The example below is for reference. Depending on the installation, any number of combinations may be used, as long as the total percentage length of the two cables used does not exceed 100%. This is to ensure that adequate voltage will be supplied to the motor.

In a replacement installation, the well already has 210 feet of buried #12 cable between the service entrance and the well head. The question is: What size cable is required in the well with a 1 HP, 230 Volt, 1 PH, 3W motor setting at 310 feet?

1. According to the table, #12 cable is large enough for the 1 HP motor so the percent of the maximum allowable cable used by the 210-foot run is $210 \div 359 = 58.5\%$, since 359 feet is the total allowable.
2. With 58.5% of the total allowable cable already used between the service entrance and the well head, only 41.5% is left for the well. Therefore, the 310 feet needed in the well can only utilize 41.5% of the total feet allowed in the table.
3. From the table, 41.5% of the 573 feet for #10 cable equals only 238 feet, so a larger size is needed. For #8, 41.5% of 908 feet = 377 feet. As a result, #8 can be used for the 310 feet in the well.

* 2 WIRE MOTOR

MOTOR RATING	VOLTS	HP	60C AND 75C INSULATION - AWG COPPER WIRE SIZE												
			14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0
115	1/2		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0
		115	183	293	463	721	1150	1445	1825	2299	2902	3662	4623	5824	
	1/2	466	742	1183	1874	2915	4648	5843	7379	9295	11733				
230	3/4		342	545	869	1376	2141	3413	4291	5419	6826	8617	10871		
		1	241	383	611	968	1506	2400	3018	3811	4801	6060	7646	9652	
	1-1/2	199	317	505	801	1246	1986	2496	3153	3972	5013	6325	7985		

CSIR CONTROL BOXES

60 HZ MOTOR RATING			60C AND 75C INSULATION - AWG COPPER WIRE SIZE												
VOLTS	HP		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0
115	1/2		87	138	221	349	544	867	1090	1376	1734	2188	2761	3485	4391
		1/2	348	553	883	1398	2175	3467	4359	5505	6935	8753			
230	3/4		264	420	670	1061	1651	2632	3309	4178	5264	6644	8383		
		1	226	359	573	908	1413	2252	2831	3575	4504	5685	7173		

CSCR CONTROL BOXES

60 HZ MOTOR RATING			60C AND 75C INSULATION - AWG COPPER WIRE SIZE												
VOLTS	HP		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0
115	1/2		447	711	1135	1797	2796	4458	5604	7078	8916	11254			
		3/4	348	553	883	1398	2175	3467	4359	5505	6935	8753	11044		
	1	304	484	772	1223	1903	3034	3814	4817	6068	7659	9663			
230	1-1/2		197	314	501	793	1234	1968	2474	3124	3936	4968	6268		
		2	180	286	456	722	1123	1790	2251	2843	3581	4520	5703		
	3		133	211	337	534	830	1324	1664	2102	2648	3342	4217	5323	
		5			206	326	507	809	1017	1284	1618	2042	2577	3253	

All lengths in feet.

NOTE: Based on service factor amps, 30C ambient temperature, 2% voltage drop, 25% of total length in conduit, 1.25 multiplier for 100 ft. or more, 1.5 multiplier for 200 ft. or more, 1.75 multiplier for 300 ft. or more, 2.0 multiplier for 400 ft. or more, 2.25 multiplier for 500 ft. or more, 2.5 multiplier for 600 ft. or more, 2.75 multiplier for 700 ft. or more, 3.0 multiplier for 800 ft. or more, 3.25 multiplier for 900 ft. or more, 3.5 multiplier for 1000 ft. or more.

STA-RITE® Cable Selection

Stainless Steel

