



IS : 694



CM/L-7300109204

ORBIT



## SUBMERSIBLE CABLES

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# PRODUCT RANGE

## ■ RESIDENCIAL WIRES



- HEAT RESISTANCE AND FLAME RETARDANT
- FLAME RETARDANT LOW SMOKE
- COMIT CLASS 5
- ORBIT PRIME
- MULTI-CORE FLEXIBLE CABLES

## ■ SERVICE WIRES



- WELDING CABLES
- SOLID STRAND WIRE
- ALUMINIUM VIR WIRE
- ALUMINIUM TWIN CORE
- SOLID SINGLE CORE

## ■ AGRI & SOLAR CABLES



- 3 CORE SUBMERSIBLE CABLES
- 4 CORE SUBMERSIBLE CABLES
- SOLAR CABLES

## ■ COMMUNICATION CABLE



- LAN CABLES
- CCTV CABLES
- TELEPHONE CABLES
- SPEAKER CABLES
- CO-AXIAL CABLES
- FLEXIBLE CORD CABLES

## ■ ARMOURED CABLES



- SHIELDED CABLES
- COPPER ARMoured CONTROL CABLES
- COPPER UNARMoured CONTROL CABLES
- ALUMINIUM ARMoured CABLES
- ALUMINIUM UNARMoured CABLES
- ARMoured CONTROL CABLES
- UNARMoured CONTROL CABLES

# SUBMERSIBLE CABLES



## TABLE FOR SINGLE PHASE MOTOR MAXIMUM LENGTH OF COPPER CABLE

Motor rating			Cable size in square millimeters											
Volts	KM	HP	1.5	2.5	4	6	10	16	25	35	50	70	95	
220-240 VOLT 50Hz	0.37	0.5	120	200	320	480	810	1260	1900	2590	3580	4770	5920	MAXIMUM LENGTH IN MTRS
	0.55	0.75	80	130	250	320	550	850	1290	1760	2430	3230	4000	
	0.75	1	60	100	170	250	430	670	1010	1380	1910	2550	3160	
	1	1.5	40	70	120	180	300	470	710	980	1360	1850	2320	
	1.5	2	30	60	90	130	230	360	550	760	1060	1440	1820	
	2.2	3	-	40	60	100	170	280	600	600	820	1080	1310	

## TABLE FOR SINGLE PHASE MOTOR MAXIMUM LENGTH OF COPPER CABLE

Motor rating			Cable size in square millimeters												
Volts	KM	HP	1.5	2.5	4	6	10	16	25	35	50	70	95	120	
220-240 VOLT 50Hz	0.75	1.00	380	630	1020	1525	2595	4032	6111	8366					MAXIMUM LENGTH IN MTRS
	1.10	1.50	300	500	810	1210	2060	3200	4850	6640	9220				
	1.50	2.00	220	370	590	880	1500	2340	3560	4890	6830	9230			
	2.50	3.00	150	250	400	600	1030	1600	2440	3350	4680	6830	7990		
	3.00	4.00	110	190	310	460	790	1230	1880	2590	3630	4680	6230		
	3.70	5.00	90	150	240	370	630	980	1490	2050	2870	3630	4920		
	4.00	5.50	80	140	230	340	590	920	1390	1910	2670	2870	4520		
	4.50	6.00	70	130	220	320	550	860	1310	1790	2510	3390	4260		
	5.50	7.50	60	110	170	260	440	690	1060	1450	2030	2750	3460		
	7.50	10.00	50	80	130	200	340	530	810	1110	1560	2120	2680		
	9.30	12.50		60	110	160	280	440	670	920	1310	1780	2250		
	11.00	15.00		50	90	130	230	360	550	750	1060	1440	1820		
	13.00	17.50			80	110	200	310	480	650	920	1250	1580		
	15.00	20.00			70	100	170	270	410	570	800	1080	1370		
	18.50	25.00				80	140	210	330	450	630	860	1090		
	22.00	30.00				70	120	180	280	380	540	740	930		
	26.00	35.00					100	150	230	310	440	610	770	870	
	30.00	40.00					90	130	210	280	400	540	680	760	
	37.00	50.00						110	170	230	320	440	550	700	
	45.00	60.00							140	100	260	360	460	500	
	55.00	75.00								160	220	290	380	340	
	75.00	100.00									160	220	260	340	
	93.00	125.00										170	220	260	

These are maximum length of cable in METERS FROM POWER SOURCE TO MOTOR Exceeding these lengths will void guarantee.

# SUBMERSIBLE CABLES



## CABLE SELECTION CHART AT 30° C 415V (WITH DOL STARTER)

H.P.	5	7.5	10	12.5	15	17.5	20	25	30	35
FULL LOAD Current Amps.	7.5	11	15	19	22.5	26	28.4	35.6	42.3	50.4
size of Cable in Sq mm at various lengths (in mts)	10	1.5	1.5	2.5	2.5	4	4	6	10	10
	20	1.5	1.5	2.5	2.5	4	4	6	10	10
	30	1.5	1.5	2.5	2.5	4	4	6	10	10
	40	1.5	1.5	2.5	2.5	4	4	6	10	10
	50	1.5	1.5	2.5	2.5	4	4	6	10	10
	60	1.5	1.5	2.5	2.5	4	4	6	10	10
	70	1.5	1.5	2.5	2.5	4	4	6	10	10
	80	1.5	2.5	2.5	4	4	4	6	10	10
	90	1.5	2.5	2.5	4	4	4	6	10	10
	100	1.5	2.5	4	4	4	6	6	10	10
	110	1.5	2.5	4	4	6	6	6	10	10
	128	2.5	4	4	6	6	10	10	10	10
	140	2.5	4	4	6	6	10	10	10	10
	180	4	4	6	10	10	10	10	16	16
	200	4	6	6	10	10	10	16	16	25

## CABLE SELECTION CHART AT 30° C 415V (WITH STAR DELTA STARTER DOUBLE CABLE)

H.P.	5	7.5	10	12.5	15	17.5	20	25	30	35
FULL LOAD Current Amps.	7.5	11	15	19	22.5	26	28.4	35.6	42.3	50.4
size of Cable in Sq mm at various lengths (in mts)	10	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	20	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	30	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	40	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	50	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	60	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	70	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
	80	1.5	1.5	2.5	2.5	2.5	2.5	4	4	6
	90	1.5	1.5	2.5	2.5	2.5	2.5	4	4	6
	100	1.5	1.5	2.5	2.5	4	4	4	6	6
	110	1.5	1.5	2.5	2.5	4	4	4	6	6
	128	1.5	2.5	4	4	4	4	6	10	10
	140	1.5	2.5	4	4	4	4	10	10	10
	180	1.5	4	4	6	6	10	10	10	10
	200	1.5	4	6	6	6	10	10	10	16

## CABLE SELECTION CHART FOR SINGLE PHASE 3 WIRE (D.O.L.)

Motor Rating	Volts	230 Volts (50 Hz)					
		KW	0.37	0.55	0.75	1.1	1.5
		HP	0.5	0.75	1	1.5	2
LENGTH IN MTS							
size of Cable in Sq mm	1.5	120	80	60	40	30	-
	2.5	200	130	100	70	60	40
	4	320	220	170	120	90	60
	6	480	320	150	180	130	90
	10	810	550	430	300	230	150
	16	1200	850	870	470	360	230
	25	1900	1290	1010	710	550	350
	36	2590	1780	1380	980	760	490
	50	3580	2430	1910	1360	1060	680
	70	4770	3230	2550	1850	1440	920
	95	5920	4000	3480	2320	1820	1190

## DESCRIPTION

ORBIT submersible cables are produced in a well equipped manufacturing plant using high thermal stability, bright electrolytic copper of 99.95% purity with low conductor resistance for high current carrying capacity with superior grade rubber & PVC compounds. Outer sheath is made up of special grade water proof PVC / Rubber compound resistant to moisture, abrasion, grease, oil and other environment effect. ORBIT produces different types of submersible cables in a wide range to meet the different needs of customers across the world. ORBIT supplies cables in both SWG and AWG dimensions. These cables are produced keeping vagaries of field conditions voltage fluctuations into account to ensure reliability, safety, longevity and energy saving.

Orbit was Manufactured from bright-annealed 99.97% pure bare copper conductors these cables have low conductor resistance. The inner cores are insulated with a special grade PVC compound formulated and manufactured in-house. The tough robust outer PVC jacket protects it from the oils, greases, various chemicals and abrasions, thereby giving long life and electrical safety.

## ELECTRICAL CHARACTERISTICS

- 99.95% EC Grade Copper
- High conductivity
- Better Thermal stability
- Abrasion Resistant PVC Compound
- High Ageing Property
- Impervious to water ,oil & Grease

## APPLICATION

The PVC insulated and sheathed 3 core flat cables are used for giving electricals connection to the submersible pump motors. These are manufactured keeping in mind the severe, tough and difficult conditions in which they have to operate. The slot available in the tube well being narrow the shape of the cables has to be suited for such an application. These cables conform to and are marked IS 694:1990 upto 4.00 sq. mm. The sizes above 4.00 sq. mm. cables generally conform to IS 694:1990

## SPECIFICATIONS

<b>Working Voltage</b>	Up to 1100 V.
<b>Available sizes in Sq.mm</b>	1.5,2.5,4,6,10,16,25,35,50,70,95, 120& 150(3coreand4core) - 1100V
<b>Available sizes in AWG</b>	14, 12, 10, 8, 6, 4, 2, 1, 1/0, 2/0, 3/0, 4/0, & 250 MCM (3 core and 4 core) - 600 V
<b>Armoured cables sizes available in Sq.mm</b>	1.5, 2.5, 4, 6, 10, 16, 25 & 35 (3 core and 4 core) 1100 V
<b>Temperature Range</b>	40°C to +90°C
<b>Conductor</b>	High conductivity annealed and bunched copper
<b>Conductor material</b>	Plain / Tinned
<b>Insulation material</b>	Flexible water proof PVC / Rubber
<b>Sheath material</b>	Flexible water proof PVC / Rubber
<b>Sheath colour</b>	Black / Blue / Green
<b>Packing</b>	500/1000 meters on drums.

# SUBMERSIBLE CABLES



## 3 CORE FLAT CABLES FOR SUBMERSIBLE PUMP MOTORS

Orbit Core Flat Cables are produced from best quality electrolytic copper, which is drawn, annealed on-line and bunched on automatic machines to ensure flexibility and uniform resistance. The conductors are insulated with a special grade of PVC on sophisticated co-extrusion lines, outer sheath consists of highly abrasion resistant PVC compound impervious to grease, oil and water etc

Orbit Core Flat Cables are manufactured for critical space requirement, protection against indefinite immersion in water under specified conditions, protection against rain-water and against ingress of small solid foreign bodies.

Conductor		Insulation		Sheath		Conductor Resistance @ 20°C (Max) Ohms/km	Current Carrying Capacity @ 40°C Amps		
Area (Nom.) Sq. mm	No/dia of strands mm	Thickness (Nom.) mm	Overall dimensions						
			Thickness (Nom.) mm	Size (Approx.) (W x T) mm					
1.5	30/0.25	0.8	1.1	11.4 X 5.3	13.3	16			
2.5	50/0.25	0.9	1.2	13.3 X 6.0	7.98	22			
4	56/0.3	1	1.3	16.1 X 7.1	4.95	29			

## ORBIT - 3 CORE FLAT CABLES

Conductor		Insulation		Sheath		Conductor Resistance @ 20°C (Max) Ohms/km	Current Carrying Capacity @ 40°C Amps		
Area (Nom.) Sq. mm	No/dia of strands mm	Thickness (Nom.) mm	Overall dimensions						
			Thickness (Nom.) mm	Size (Approx.) (W x T) mm					
6	84/0.3	1.1	1.4	18.6 X 8.0	3.30	37			
10	80/0.4	1.3	1.6	23.4 X 10.0	1.91	51			
16	126/0.4	1.4	1.8	27.0 X 11.4	1.21	68			
25	196/0.4	2	2.2	35.4 X 15.0	0.78	86			
35	276/0.4	2.1	2.2	39.3 X 16.3	0.554	110			
50	396/0.4	2.2	2.4	45.7 X 18.5	0.386	145			

Conductor		Insulation		Sheath		Conductor Resistance @ 20°C (Max) Ohms/km	Current Carrying Capacity @ 40°C Amps		
Area (Nom.) Sq. mm	No/dia of strands mm	Thickness (Nom.) mm	Core dia. (Nom.) mm	Overall dimensions					
				Thickness (Nom.) mm	Size (Approx.) (W x T) mm				
1.5	30/0.25	0.6	2.7	0.9	9.80 X 4.5	13.3	16		
2.5	50/0.25	0.7	3.2	1.0	11.7 X 5.2	7.98	22		
4	56/0.3	0.8	4.1	1.0	14.3 X 6.1	4.95	29		



Survey No. 2450, Ahmedabad - Mehsana Highway, Near Scoda Tubes Limited,  
Village - Rajpur, Taluka - Kadi, District – Mehsana, Gujarat – 382715.