ORBIT®
THE POWER OF PEOPLE

SUBMERSIBLE CABLES

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SUBMERSIBLE CABLES

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 environmental effect. These cables are produced keeping vagaries of field conditions voltage fluctuations into account to ensure reliability, safety, longevity and energy saving. These cables sizes above 4.00 sq.mm cables generally conform to IS 694:1990

FEATURES

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

APPLICATIONS :

Ideal for Irrigation pumps, Drinking water supply pumps, Offshore drilling rings, Firefighting equipment's, Sewage treatment plants, Sea water handling equipment's, etc.

CONDUCTOR:

Thin strands of electrolytic copper having highest purity, least resistance are multi drawn for uniformity in dimension and flexibility.

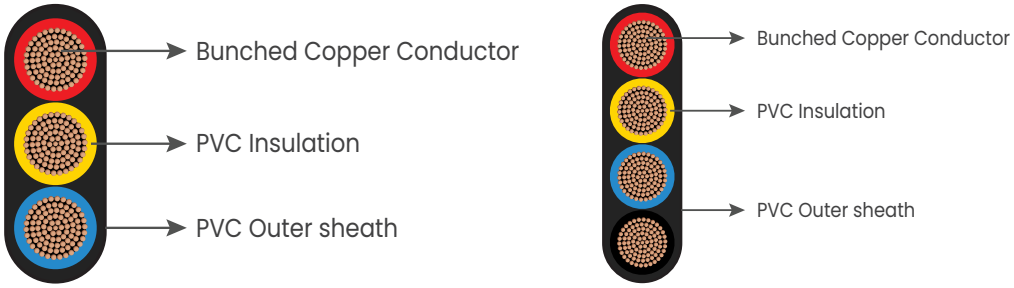
INSULATION:

The conductors are insulated with specially formulated super flexible PVC compound having high water resistance values.

SHEATHING:

3 Core and 4 Core are in parallel position and sheathed with high abrasion resistant PVC compound impervious to grease, oil, water, etc.

SPECIFICATIONS	
Available sizes in Sq.mm..	1.5, 2.5, 4, 6, 10, 16, 25, 35, 50, 70, 95, 120 & 150 (3 core and 4 core) - 1100 V
Armoured cables sizes available in Sq.mm.	1.5, 2.5, 4, 6, 10, 16, 25 & 35 (3 core and 4 core) - 1100 V
Temperature Range	-40°C to + 90°C
Conductor	High conductivity annealed and bunched copper
Conductor Material	Plain / Tinned
Conductor Resistance is as per	PVC / Rubber Std - Class 5 of IEC60228, DIN VDE 0295, IS 8130, BS 6360 Armoured Cable - IS : 1554 (Part 1) 1988
Insulation material	Flexible water proof PVC / Rubber
Sheath material	Flexible water proof PVC / Rubber
Sheath colour	Black / Blue / Green
Standards conforming to	PVC Std - CENELEC HD 21, IEC60227, BS 6500, DIN VDE 0281, IS 694 Rubber Std - CENELEC HD 21, 152, DIN VDE 0282, PART 810, IEC 245, CEI 20-19 & bs 6007, bs 6899. Armoured power cable - IEC 60502 - 1, BS 5467, BS 6724.



PVC 3 CORE FLAT CABLES FOR SUBMERSIBLE PUMPS (1100 VOLTS)

Conductor		PVC Insulation	PVC Sheath			Conductor Resistance @ 20° C (Ohm/Km)	Current Rating @ 40° C (Amps)
Area (sq mm)	No./size of Wire Nominal diameter (mm)	Nominal Thickness (mm)	Nominal Thickness (mm)	Approx Over All Dimension			
				Thickness (T)	Width (W)		
1.5	22/0.30	0.6	1.3	6.0	12.8	12.1	16
2.5	36/0.30	0.7	1.15	6.4	14.6	7.41	22
4	56/0.30	0.8	1.15	7.4	16.8	4.95	29
6	84/0.30	0.8	1.15	7.9	18.7	3.30	37
10	14/0.30	1.0	1.4	9.9	23.7	1.19	51
16	224/0.30	1.0	1.4	11.4	28.0	1.21	68
25	350/0.30	1.2	2.0	14.7	35.5	0.780	86
35	490/0.30	1.2	2.0	16.2	39.5	0.554	110
50	703/0.30	1.4	2.2	18.3	45.5	0.386	125

* Number of wires is approximate and wire diameter is normal; they shall be such as to satisfy the requirements of conductor resistance as per class 5 of IEC 60228 / DIN VDE 0295 / IS 8130 / BS 6360 .

PVC 4 CORE FLAT CABLES FOR SUBMERSIBLE PUMPS (1100 VOLTS)

Conductor		PVC Insulation	PVC Sheath			Conductor Resistance @ 20° C (Ohm/Km)	Current Rating @ 40° C (Amps)
Area (sq mm)	No./size of Wire Nominal diameter (mm)	Nominal Thickness (mm)	Nominal Thickness (mm)	Approx Over All Dimension			
				Thickness (T)	Width (W)		
1.5	22/0.30	0.8	1.30	6.0	15.8	12.1	16
2.5	36/0.30	0.9	1.30	6.4	18.0	7.41	22
4	56/0.30	1.0	1.45	7.4	21.0	4.95	29
6	84/0.30	1.0	1.50	7.9	24.50	3.30	37
10	14/0.30	1.0	1.80	9.9	29.70	1.19	51
16	224/0.30	1.0	1.95	11.4	36	1.21	68
25	350/0.30	1.2	2.0	14.7	45.10	0.780	86
35	490/0.30	1.2	2.0	16.2	50.10	0.554	110
50	703/0.30	1.4	2.2	18.3	58.10	0.386	125

* Number of wires is approximate and wire diameter is normal; they shall be such as to satisfy the requirements of conductor resistance as per class 5 of IEC 60228 / DIN VDE 0295 / IS 8130 / BS 6360 .

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 VOLTS 50HZ	0.37	0.5	120	200	320	480	810	1260	1900	2590	3580	4770	5920	MAXIMUM LENGTH IN METERS
	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 VOLTS 50HZ	0.75	1.00	380	630	1020	1525	2595	4032	6111	8366				
	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

MAXIMUM LENGTH IN METERS

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

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	16
	20	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	30	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	40	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	50	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	60	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	70	1.5	1.5	2.5	2.5	4	4	6	10	10	16
	80	1.5	2.5	2.5	4	4	4	6	10	10	16
	90	1.5	2.5	2.5	4	4	4	6	10	10	16
	100	1.5	2.5	4	4	4	6	6	10	10	16
	110	1.5	2.5	4	4	6	6	6	10	10	16
	128	2.5	4	4	6	6	10	10	10	10	16
	140	2.5	4	4	6	6	10	10	10	16	16
	180	4	4	6	10	10	10	10	16	16	25
	200	4	6	6	10	10	10	16	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	6
	20	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	30	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	40	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	50	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	60	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	70	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	6
	80	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	6
	90	1.5	1.5	2.5	2.5	2.5	2.5	4	4	6	6
	100	1.5	1.5	2.5	2.5	4	4	4	4	6	6
	110	1.5	1.5	2.5	2.5	4	4	4	6	6	6
	128	1.5	2.5	4	4	4	4	4	6	10	10
	140	1.5	2.5	4	4	4	4	4	10	10	10
	180	1.5	4	4	4	6	6	10	10	10	10
	200	1.5	4	6	6	6	6	10	10	10	16

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

	Volts	230 Volts (50 HZ)					
size of Cable in Sq mm	KW	0.37	0.55	0.75	1.1	1.5	2.2
	HP	0.5	0.75	1	1.5	2	3
		LENGTH IN MTS					
	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

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