

SELECTION GUIDE FOR 3 CORE FLAT CABLES
CABLES SELECTION CHART AT 40° C 415 V (WITH DOL STARTER)

Submersible Motors		Size Of Cable in SQ MM. at different Length in Mtrs.											
H.P.	Full Load Current Amps.	30	40	50	60	70	80	90	100	110	130	140	180
5	7.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	4	4
7.5	11	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	6
10	15	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6
12.5	19	2.5	2.5	2.5	2.5	4	4	4	4	6	6	10	10
15	22.5	4	4	4	4	4	4	4	6	6	10	10	10
17.5	26	4	4	4	4	4	6	6	6	10	10	10	10
20	28.4	6	6	6	6	6	6	6	6	10	10	10	16
25	35.6	10	10	10	10	10	10	10	10	10	10	16	16
30	42.3	10	10	10	10	10	10	10	10	10	16	16	16
35	50.4	16	16	16	16	16	16	16	16	16	16	25	25
40	58.1	16	16	16	16	16	16	16	16	16	16	25	25
45	62.1	25	25	25	25	25	25	25	25	25	25	25	25
50	67.5	25	25	25	25	25	25	25	25	25	25	25	35
55	73.8	35	35	35	35	35	35	35	35	35	35	35	35
60	81.0	35	35	35	35	35	35	35	35	35	35	35	35
65	87.3	35	35	35	35	35	35	35	35	35	35	35	35
70	93.6	50	50	50	50	50	50	50	50	50	50	50	50
75	100.8	50	50	50	50	50	50	50	50	50	50	50	50
80	108.0	50	50	50	50	50	50	50	50	50	50	50	50

CABLES SELECTION CHART AT 40° C 415 V (With Star Delta Starter-Double Cable)

Submersible Motors		Size Of Cable in SQ MM. at different Length in Mtrs.											
H.P.	Full Load Current Amps.	30	40	50	60	70	80	90	100	110	130	140	180
5	7.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5
7.5	11	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	4	4	4
10	15	1.5	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	6	6
12.5	19	2.5	2.5	2.5	2.5	2.5	2.5	4	6	6	6	6	6
15	22.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6	10
17.5	26	2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6	10
20	28.4	2.5	2.5	2.5	4	4	4	4	6	6	10	10	10
25	35.6	4	4	4	4	4	4	6	6	10	10	10	16
30	42.3	4	4	4	4	6	6	6	10	10	10	10	16
35	50.4	6	6	6	6	6	6	6	10	10	10	16	16
40	58.1	10	10	10	10	10	10	10	10	10	16	16	16
45	62.1	10	10	10	10	10	10	10	10	10	16	16	16
50	67.5	10	10	10	10	10	10	10	10	10	16	16	25
55	73.8	10	10	10	10	10	10	10	10	16	16	16	25
60	81.0	16	16	16	16	16	16	16	16	16	25	25	25
65	87.3	16	16	16	16	16	16	16	16	16	25	25	25
70	93.6	16	16	16	16	16	16	16	16	16	25	25	35
75	100.8	16	16	16	16	16	16	16	16	16	25	25	35
80	108.0	25	25	25	25	25	25	25	25	25	25	25	35

In view of continuous improvements in our design & process, specifications given herein are subject to change without notice. All information given herein is in good faith. DARSHAN shall not be liable for any damages arising out of incorrect use or interpretation.

Dealers Stamp :

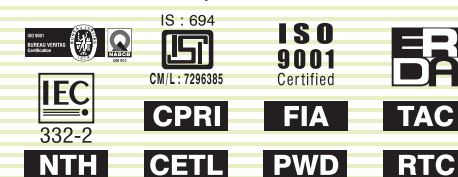
Also Available Housewire (FR) & Flexible Multicore Cable



DARSHAN CABLE INDUSTRIES.

Mfg. of 3 Core Submersible Flat, Flexible Cable & Housewire
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 Works : C/1, 135/A, Phase-1, Vatva, G.I.D.C. Estate, Near Pushpak Estate, Ahmedabad - 382 445. Fax : +91-79-25830347
 E-mail : info@darshancable.com Website : www.darshancable.com

Tested and certified by :



DARSHAN PLUS

Empowering Lives

Quality Performance Value



3 Core Submersible Flat Cable

IS : 694



CM/L: 7296385

ISO 9001

BUREAU VERITAS
 Certification



The Darshan Brand has an illustrious history of performance for the past **25 years**. Thus Darshan brand cable have been bought by happy & satisfied consumer all over the state / country.

Manufactured on state-of-the-art machinery to stringent quality standards, the Darshan name has always inspired great confidence and trust.

In order to continue to offer our consumer full value-for-money, the Darshan brand now offers the ultimate 3 core flat cable – **Darshan Plus**.

DARSHAN PLUS : Darshan plus 3 core cables have been specifically designed for submersible Pump Motors keeping in mind the difficult conditions in which they are required to perform.

ENHANCED CONDUCTION : High purity, bright electrolytic grade, annealed copper are bunched to technical parameters that ensure flexibility and uniform resistance.

SUPERIOR INSULATION : Only flexible grade PVC compound manufactured in house is used. Meticulously checked for high dielectric strength with high insulation resistant, high thermal stability & ageing characteristic & minimal loss of mass.

SHEATH : 3 cores are laid up in flat, parallel position and sheathed with a special grade of abrasion resistance PVC compound which is impervious to water, grease, oil etc.

APPLICATION : Ideal for irrigation pumps, drinking water supply pumps offshore drilling rigs, fire fighting equipment, sewage treatment plants, sea water/river water handling equipment.

MARKING : Non – contact ink – jet printer ensures continuous print with **sequential marking** throughout the cable length, as also the correct and complete length of every coil bought by our customers.

QUALITY APPROVAL & VALUED CUSTOMERS : Kandla port trust, G.W.S.S.B., AMC, PWD, DGS&D, ONGC Ltd., AUDA, IFFCO, & Many other business houses Govt. Agencies & also the Nagar palika's has appraised our product by approval.

The extra technical expertise in the manufacturing process has earned "DARSHAN PLUS" the certification of **ISO:9001, ISI:694, ERDA, RTC CPRI, CEPT, NTH, GWSSB, IEC – 332-2, IEC – 60227-3**, for our product.

Amrut, Varuna, Unnati, PEW, Aroma are few of our valuable customers.

Rating factors for low voltage : Multiply the full load current of submersible motors by factors given below for different supply voltages & select the right cable.

Derating Factors : Multiply the full load current of submersible motors by factors given below for various ambient temperatures.

PVC INSULATED DOUBLE SHEATHED ROUND SUBMERSIBLE CABLES

Conductor		Radial Thickness of insulation Nom. (mm.)	Thickness of Inner Sheath Nom.		Thickness of Outer Sheath Nom.		Overall Diameter Approx.	
Area (sq.mm.)	No. of stands/ Nom dia. (mm.)		3 Core (mm.)	4 Core (mm.)	3 Core (mm.)	4 Core (mm.)	3 Core (mm.)	4 Core (mm.)
1.5	30/0.25	0.6	1.0	1.0	1.2	1.2	10.8	12.0
2.5	50/0.25	0.7	1.0	1.0	1.2	1.2	13.2	13.8
4.0	56/0.30	0.8	1.0	1.0	1.2	1.4	14.2	15.5
6.0	84/0.30	0.8	1.0	1.0	1.4	1.4	16.5	18.5
10.0	140/0.30	1.0	1.0	1.0	1.4	1.4	19.1	22.0
16.0	226/0.30	1.0	1.0	1.0	1.4	1.4	23.5	25.0
25.0	354/0.30	1.2	1.0	1.0	1.6	1.6	28.5	31.0
35.0	495.0.30	1.2	1.0	1.0	2.0	2.0	30.5	32.8

Rating factors for low voltage :

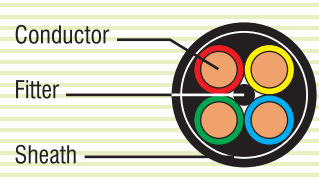
Multiply the full load current of submersible motors by factors given below for different supply voltages & select the right cable.

Voltage	415	400	350	300	275	250
Rating Factor	1.00	1.05	1.15	1.25	1.30	1.35

Derating Factors :

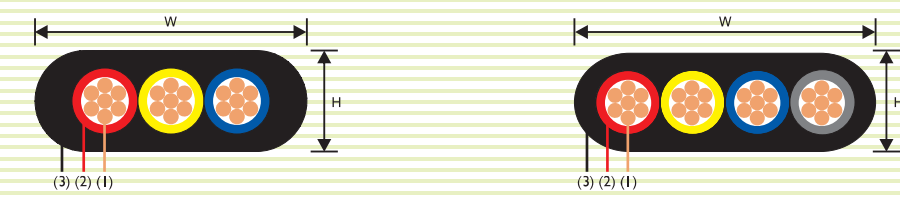
Multiply the full load current of submersible motors by factors given below for various ambient temperatures.

Ambient Temperature C.	30	35	40	45	50
Rating Factor	1.09	1.04	1.00	0.95	0.77



Double sheathed round 3 core and 4 core cables are ideally suited for heavy-duty application like sewage, slurry and dewatering pumps in which the sheathing must be able to withstand abrasion, preventing ingress of water along the interstices of the cable, and be resistant to acidic fluids & reactive base chemicals.

TECHNICAL DATA



(1) Copper Conductor (2) PVC insulation of cores (red, yellow, blue) (3) PVC sheath (black)



3 Core Flat Cables as per IS 694: with ISI mark

Conductor		Insulation Thickness (Nom) mm	Sheath Thickness (Nom) mm	Overall dimensions		Conductor Resistance @20C (max)ohms/km.	Current carrying capacity @40C Amps
Area sq.mm.	No. of strands/ Dia.mm.			Width (Approx) 'W'mm	Height (Approx) 'H'mm		
1.5	22/0.3*	0.6	0.9	12.0	5.6	12.10	14
2.5	36/0.3*	0.7	1.0	14.0	6.4	7.41	18
4.0	56/0.3**	0.8	1.0	16.5	7.4	4.95	26

Note : The strand diameter is nominal. However, construction of conductor is designed to satisfy the requirement of conductor resistance as per IS 8130 : 1984.

* As per Conductor Class 2 of IS 8130 : 1984. ** As per Conductor Class 5 of IS 8130 : 1984.

3 Core Flat Cables generally conforming to IS 694:

Conductor		Insulation Thickness (Nom) mm	Sheath Thickness (Nom) mm	Overall dimensions		Conductor Resistance @20C (max)ohms/km.	Current carrying capacity @40C Amps
Area sq.mm.	No. of strands/ Dia.mm.			Width (Approx) 'W'mm	Height (Approx) 'H'mm		
6.0	84/0.3	1.0	1.15	18.7	7.9	3.30	31
10.0	140/0.3	1.0	1.40	23.7	9.9	1.91	42
16.0	226/0.3	1.0	1.40	28.0	11.4	1.21	57
25.0	354/0.3	1.2	2.00	35.5	14.7	0.780	72
35.0	495/0.3	1.4	2.00	39.5	16.2	0.554	90
50.0	703/0.3	1.4	2.20	45.5	18.3	0.386	115
70.0	360/0.5	1.4	2.20	51.0	20.0	0.272	143
95.0	475/0.5	1.6	2.40	60.0	23.5	0.206	165

Note : The number of wires and strand diameter will be such as to satisfy the requirements of conductor resistance as per IS 8130 : 1984.

4 core & 5 core flat cables are available on request.

