SUBMERSIBLE MOTORS

MODEL IDENTIFICATION CODE

DEEPWELL SUBMERSIBLE MOTOR

X X X S - XXXX XX X N M (H)(P)

DEEPWELL SUBMERSIBLE MOTOR
W = Water Filled
R = Resin Filled Encapsulated
L = Non-Toxic Fluid Filled

NOMINAL MOTOR DIAMETER
4 = 4", 6 = 6", 8 = 8", 10=10", 12 = 12"

Type of Materials of Construction
Type = A/B/N/S/T/O

This digit is only applicable for 1-Phase "R" Series motors with Lightning Arrestor

MOTOR POWER (kW)
03 = 0.37, **05** = 0.55, **11** = 1.1, **75** = 7.5, **110** = 11, **185** = 18.5, **A10** = 110, **A85** = 185

(Applicable for Special Models)
P - Motor with PT Sensor
H - High Temperature Motor with XLPE / PA Winding

This Digit will be applicable only when the Motor is supplied with Mechanical Seal

(Applicable only for 525V motors)

R = Reduced diameter motor with EPDM cable

PHASE / CONNECTION / CONTROL BOX / FREQUENCY
N = 1 Ph / PSC / 3 Wire / 50Hz
M = 1 Ph / PSC / 2 Wire / 50Hz
T = 3 Ph / DOL / 50Hz
D = 3 Ph / S.D. / 50Hz
S = 1Ph / CSCR Type with Control Box & without Meter / 50 Hz
R = 1Ph / CSCR Type with Control Box & Meter / 50 Hz

DEEPWELL SUBMERSIBLE PUMP SET (Pump + Motor)

PUMP MODEL	+	MOTOR MODEL
S X X - XXX / XX	+	X X X - XXX X

DEEPWELL SUBMERSIBLE PUMP SET (Pump + Motor)

PUMP MODEL	+	MOTOR MODEL
S6S - 18 / 03	+	W6A - 22 T

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Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

OIL FILLED SUBMERSIBLE MOTORS

'L' Series Motors

These oil filled motors are one among the proven & successful products from the house of C.R.I. These motors are developed with due diligence complying with all safety standards and giving importance to the customers' need. All the components that are in contact with water are made of AISI 304 stainless steel and the motor is pre-filled with edible grade oil, which acts as coolant media as well as lubricant. The freezing point of the oil used is -10°C.

Ball and angular contact bearings are used to withstand radial & axial thrust loads.

High quality carbon ceramic mechanical seal and lip seal made of Nitrile rubber are used to ensure better sealing system. Pressure equalizing rubber diaphragm is provided to balance the pressure and volume variations due to thermal expansion of the oil inside the motor. Motor sealings are made by means of 'O' rings & mechanical seal. Shaft seals and sand guard prevents ingress of well water, sand and fiber particles into the motor. Care should be taken to ensure that the motor does not run when it is not submerged in the water. To prevent the motor from dry running, install dry run preventer. The motor needs a constant flow of water passed over it's body to keep it at correct operating temperature. Ideally the motors should be set just above the final yield point of bore well and when the level is not ascertained, fit a "flow inducer pipe" over the pumpset to ensure adequate cooling. It is mandatory to use C.R.I. Control boxes for all motors with adequate protection & control systems. Mounting dimensions of these motors are in accordance with NEMA standard. Cooling sleeve is mandatory if borewell size is beyond motor size.

Features

- High operating efficiency and lesser power consumption
- Extremely hardwearing ball & angular contact bearings
- Corrosive resistance stainless steel body
- Filled with non-toxic food grade oil
- Can be easily dismantled and repaired

Applications

These submersible motors are suitable to couple with deepwell submersible pump ends used for

- Residential
- Irrigation
- Fountains
- Gardens
- Industrial water supply
- Sprinkler systems
- Pressure boosting units
- Ponds
- Mining
- CBM (coal bed methane)

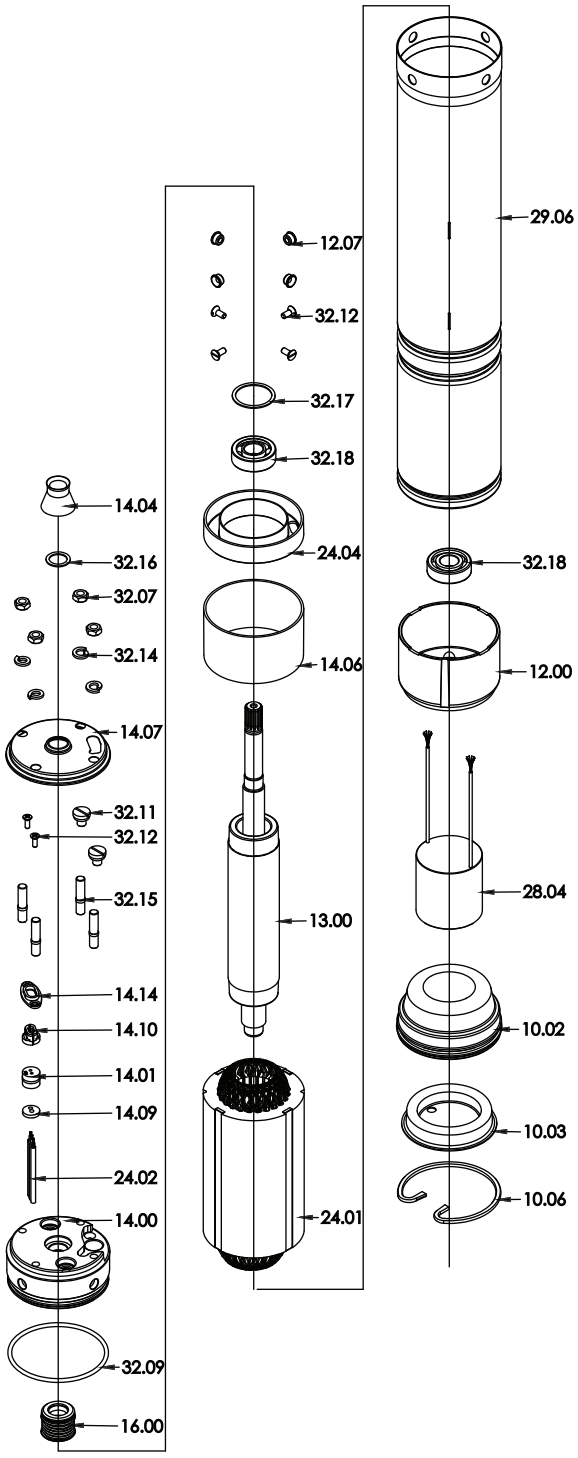
OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"L" Series

2 - Wire
(0.37 kW to 1.5 kW)

Exploded View



Part No.	Part Name
10.02	Diaphragm
10.03	Diaphragm Bottom Plate
10.06	Snap ring
12.00	Lower housing
12.07	Guide bush
13.00	Rotor
14.00	Upper Housing
14.01	Cable Grommet
14.04	Sand Guard - Rubber
14.06	Upper housing Pipe
14.07	Upper housing shell
14.09	Grommet washer
14.10	Cable Guide Plug
14.14	Cable Clamp
16.00	Mechanical seal
24.01	Wound stator
24.02	Cable
24.04	Winding guard
29.06	Outer shell
32.07	Nut
32.09	O-Ring
32.11	Plug
32.12	Screw
32.14	Spring Washer
32.15	Stud
32.16	Washer
32.17	Wave washer
32.18	Bearing
28.04	In-built capacitor

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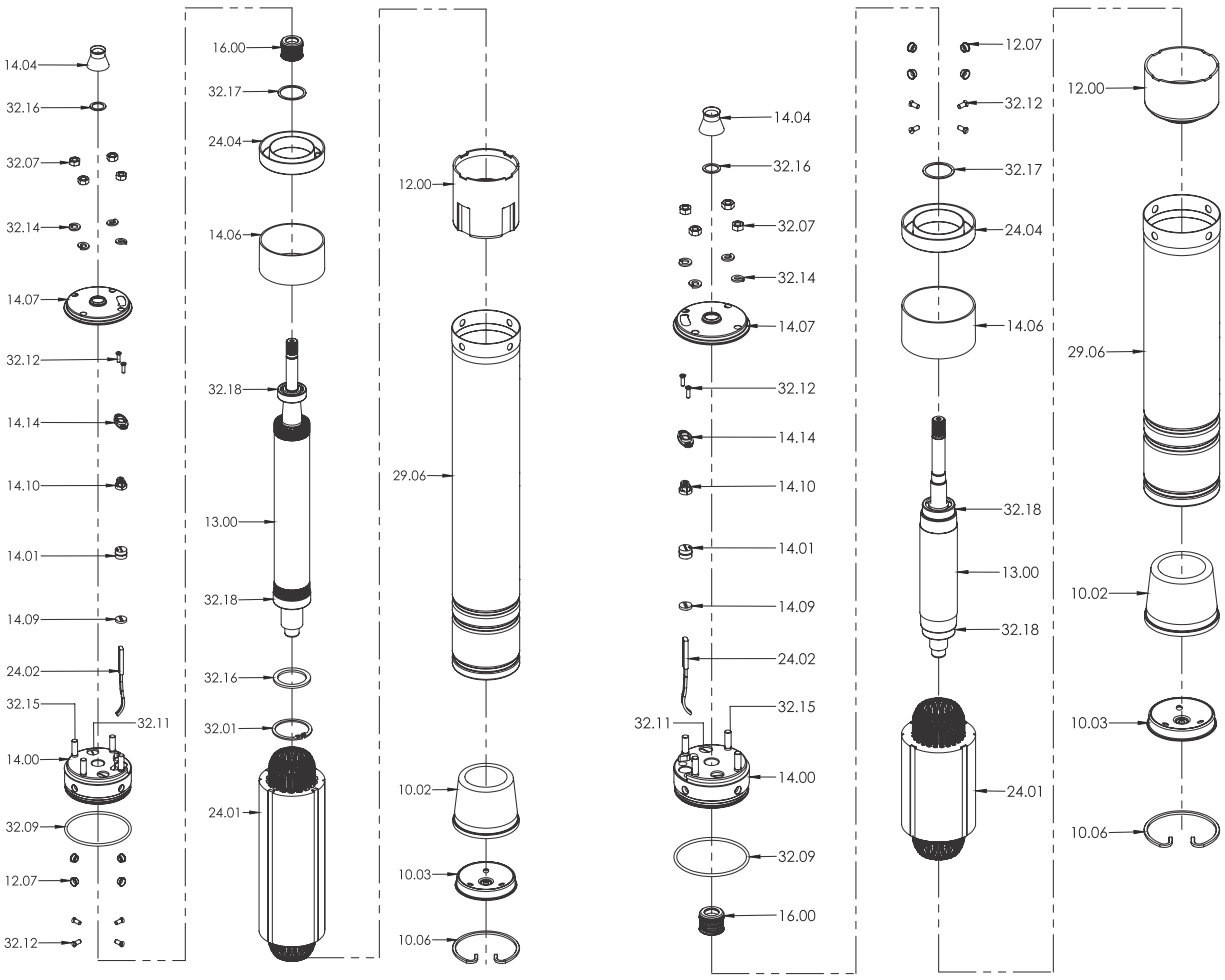
OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"L" Series

3 - Wire
(0.37 kW to 7.5 kW)

Exploded View



Part No.	Part Name
10.02	Diaphragm
10.03	Diaphragm Bottom Plate
10.06	Snap ring
12.00	Lower housing
12.07	Guide bush
13.00	Rotor
14.00	Upper Housing
14.01	Cable Grommet
14.04	Sand Guard - Rubber

Part No.	Part Name
14.06	Upper housing Pipe
14.07	Upper housing shell
14.09	Grommet washer
14.10	Cable Guide Plug
14.14	Cable Clamp
16.00	Mechanical seal
24.01	Wound stator
24.02	Cable
24.04	Winding guard

Part No.	Part Name
29.06	Outer shell
32.07	Nut
32.09	O-Ring
32.11	Plug
32.12	Screw
32.14	Spring Washer
32.15	Stud
32.16	Washer
32.17	Wave washer
32.18	Bearing

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OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"L" Series

Technical Specifications

Nominal Dia	**4" (100mm)**
Maximum Outer Diameter	98 mm
Power Range	0.37 kW to 1.5 kW - Single Phase - 2 Wire
	0.37 kW to 2.2 kW - Single Phase - 3 Wire
	0.37 kW to 7.5 kW - Three Phase
Speed	2900 rpm
Version	Single Phase - 230 V, 50 Hz, A.C Supply
	Three Phase - 380 - 415 V, 50 Hz, A.C Supply
Class of Insulation	F
Degree of Protection	IP 68
Direction of Rotation	CCW - When viewed from driving end - Single Phase
	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	0.37 kW to 0.75 kW - 1500 N
	1.1 kW to 4.0 kW - 2500 N
	5.5 kW to 7.5 kW - 4500 N
Minimum Cooling Flow Along the Motor	0.15 m/sec
Maximum Liquid Temperature	33°C
Maximum Immersion Depth	150 m
Max. Starts per Hour	Single phase - 4 Times
	Three phase - 12 Times
Shaft End	Splines
Mounting Standard	NEMA
Method of Starting	Single Phase - Permanent Split Capacitor (PSC)
	Three Phase - Direct On Line (DOL)
Cable Lead out	3/4 Wire Permanent Type TPE Rubber Flat Cable

Materials of Construction

Part Name	Type - A
Outer Shell	SS - 304
'O' Ring	High Nitrile Rubber
Mechanical Seal	Carbon / Ceramic
Diaphragm	High Nitrile Rubber
Cable	TPE / EPDM
Shaft	SS 420 (0.37 kW to 1.5 kW)
	EN8 (2.2 kW to 7.5 kW)
Shaft Extension	17-4 PH (2.2 kW to 7.5 kW)

OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : **4"** **"L"** Series

Technical Data

SINGLE PHASE, 230V

Model	kW	HP	F.L. Current (A)	Starting Current (A)	Full load		Capacitor (MFD)	Thrust Load (N)
					Efficiency (%)	Power Factor		
L4A-03N	0.37	0.5	3.6	10.4	53	0.92	15	1500
L4A-05N	0.55	0.75	4.8	13.6	58	0.92	20	1500
L4A-07N	0.75	1	6.3	17.6	60	0.96	30	1500
L4A-11N	1.1	1.5	8.6	21.1	64	0.98	40	2500
L4A-15N	1.5	2	11.5	35	72	0.98	50	2500
L4A-22N	2.2	3	15	52	70	0.95	60	2500

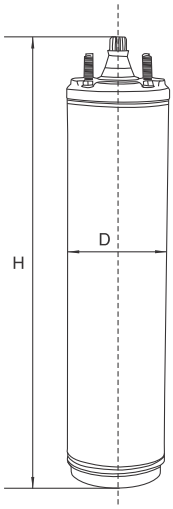
THREE PHASE, 380V

Model	kW	HP	F.L. Current (A)	Starting Current (A)	Full load		Thrust Load (N)
					Efficiency (%)	Power Factor	
L4A-03T	0.37	0.5	1.1	5.2	63	0.80	1500
L4A-05T	0.5	0.75	1.9	9.3	63	0.80	1500
L4A-07T	0.75	1	2.4	11.1	64	0.81	1500
L4A-11T	1.1	1.5	3.15	13	68	0.82	2500
L4A-15T	1.5	2	4.2	19.5	72	0.82	2500
L4A-22T	2.2	3	6	28	72	0.83	2500
L4A-30T	3	4	7.8	40.2	75	0.83	2500
L4A-37T	3.7	5	9.6	48	75	0.83	2500
L4A-40T	4	5.5	10	51	77	0.83	2500
L4A-55T	5.5	7.5	13.6	71.1	78	0.85	4500
L4A-75T	7.5	10	17.6	87.8	79	0.85	4500

THREE PHASE, 415V

Model	kW	HP	F.L. Current (A)	Starting Current (A)	Full load		Thrust Load (N)
					Efficiency (%)	Power Factor	
L4A-03T	0.37	0.5	1.3	7	63	0.74	1500
L4A-05T	0.55	0.75	2.1	11.2	66	0.73	1500
L4A-07T	0.75	1	2.7	13.8	71	0.75	1500
L4A-11T	1.1	1.5	3.7	19	72	0.72	2500
L4A-15T	1.5	2	4.9	25	73	0.72	2500
L4A-22T	2.2	3	6.1	30	73	0.73	2500
L4A-30T	3	4	8	41	73	0.73	2500
L4A-37T	3.7	5	9.9	49	74	0.72	4500
L4A-40T	4	5.5	10.5	56	75	0.73	4500
L4A-55T	5.5	7.5	14.5	73	75	0.72	4500
L4A-75T	7.5	10	19	82	78	0.78	4500

DIMENSIONS AND WEIGHT



Model	kW	HP	Phase	Dia (mm) D	Height (mm) H		Weight (kg)	Cable Leadouts			
								Cable Size (Sq mm)		Cable Length (m)	
					3 wire	2 wire		3 wire	2 wire	3 wire	2 wire
L4A-03N	0.37	0.5	Single	97.5	375	437	7.6	1.5	1.5	1.5	1.75
L4A-05N	0.55	0.75	Single	97.5	390	452	8.3	1.5	1.5	1.5	1.75
L4A-07N	0.75	1	Single	97.5	425	487	9.8	1.5	1.5	1.5	1.75
L4A-11N	1.1	1.5	Single	97.5	440	502	10.7	1.5	1.5	1.5	1.75
L4A-15N	1.5	2	Single	97.5	465	527	11.8	2	1.5	1.5	1.75
L4N-22N	2.2	3	Single	97.5	515	-	13.3	2.3	-	2	-
L4A-03T	0.37	0.5	Three	97.5	375	-	7.6	1.5	-	1.5	-
L4A-05T	0.55	0.75	Three	97.5	390	-	8.3	1.5	-	1.5	-
L4A-07T	0.75	1	Three	97.5	425	-	9.8	1.5	-	1.5	-
L4A-11T	1.1	1.5	Three	97.5	440	-	10.7	1.5	-	1.5	-
L4A-15T	1.5	2	Three	97.5	465	-	11.8	1.5	-	1.5	-
L4A-22T	2.2	3	Three	97.5	495	-	13.3	1.5	-	2	-
L4A-30T	3	4	Three	97.5	590	-	17.7	2	-	2	-
L4A-37T	3.7	5	Three	97.5	640	-	20.35	2	-	2	-
L4A-40T	4	5.5	Three	97.5	640	-	20.35	2	-	2	-
L4A-55T	5.5	7.5	Three	97.5	740	-	23.7	2.3	-	3	-
L4A-75T	7.5	10	Three	97.5	830	-	29.4	2.3	-	3	-

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