



# 4" Oil filled submersible MOTORS 50/60 Hz

Stairs rewindable 4" oil filled submersible motors are designed to operate dependably in 4" and larger boreholes.



STAIRS INDUSTRIAL CO., LTD.


**4" Oil filled**
**Oil filled Motors**

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**General Data**

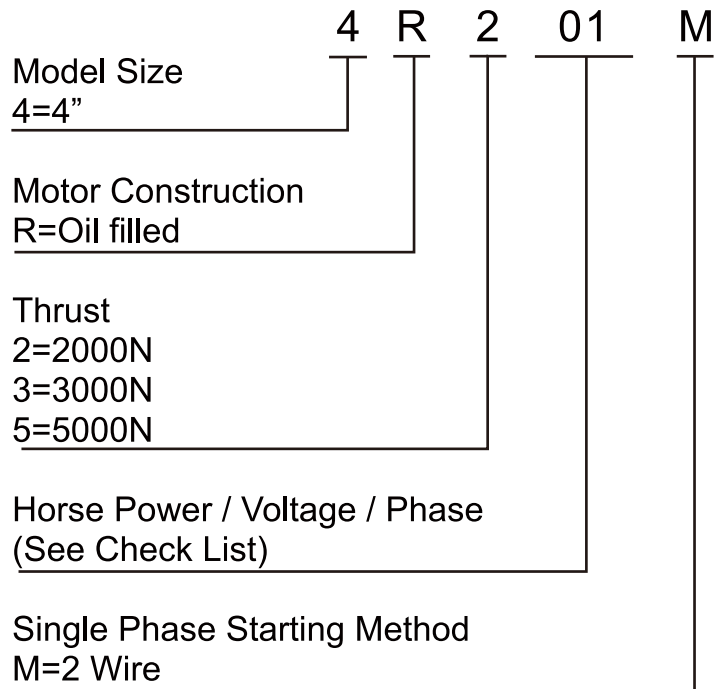
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### Model Code



### Applications

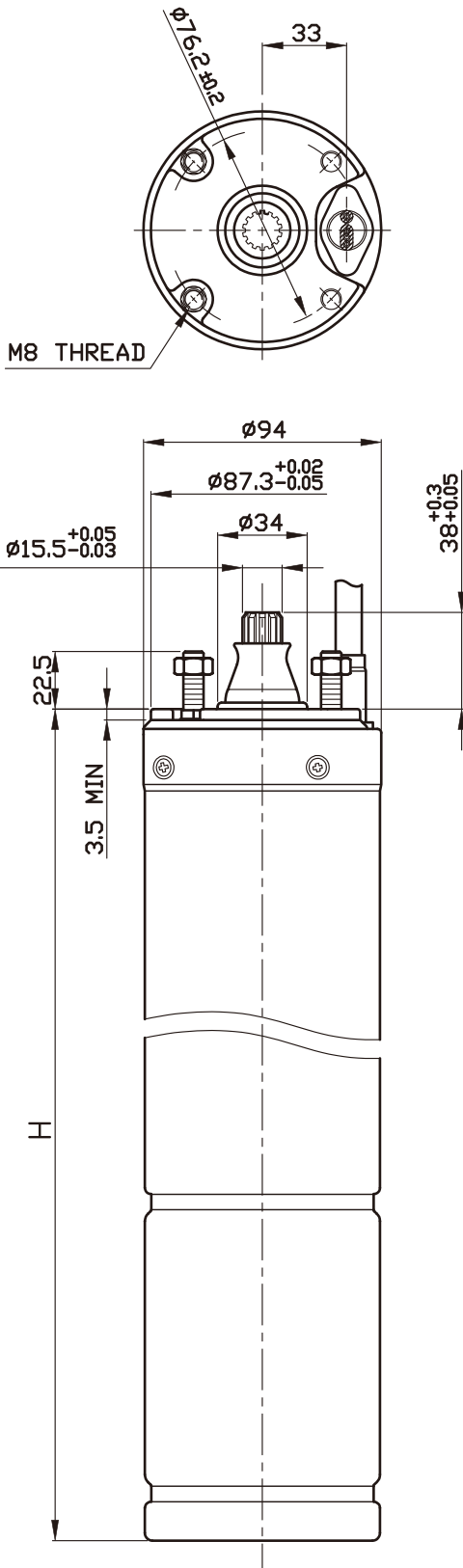
- Removable waterproof cable connector for easy maintenance operations.
- Cable materials are CE approved (for potable water applications)
- Non-toxic oil-premium quality, colorless white oil.
- Special stator design for high starting torque in single-phase models.
- Unique single-phase electrical design for psc starting, and starting capacitor + PSC starting.
- Motor casing, shaft, upper cover and bottom end made of stainless steel.
- Zinc-plated cast iron upper bracket.
- Stators are designed for higher efficiency and the ability to operate within wider voltage fluctuations.
- Use of high quality european made components such as mechanical seal, cable connectors, copper winding wires and insulations
- All motors 100% tested.

### General specifications

Mounting flange	4" NEMA standard	
Degree of protection	IP 68	
Insulation class	F	
Single phase motors	0.37 kW up to 4.0 kW	
Three phase motors	0.37 kW up to 7.5 kW	
Standard voltages	50Hz	60Hz
	1Φ 207 - 244 V	1Φ 100 - 116 V 1Φ 207 - 244 V 1Φ 254 V
	3Φ 207 - 244 V 3Φ 360 - 424 V	3Φ 207 - 244 V 3Φ 360 - 424 V 3Φ 460V
Cable length	1.7 M 0.37 kW up to 1.5 kW 2.5 M 2.2 kW up to 7.5 kW	

### Operating parameters

Max starts / h	40
Max water temperature	35°C
Flow rate	0.2m/sec
Axial thrust	2000N from 0.37 kW up to 1.5 kW 3000N 2.2 kW 5000N from 3 kW up to 7.5 kW
Max immersion depth	200m



### General specifications

#### 2 wire single-phase motors

P <sub>2</sub>		H	Thrust Load
kW	HP	mm	N
0.37	0.5	396	2000
0.55	0.75	416	2000
0.75	1	431	2000
1.1	1.5	456	2000
1.5	2	491	2000

#### 3 wire single-phase motors

P <sub>2</sub>		H	Thrust Load
kW	HP	mm	N
0.37	0.5	346	2000
0.55	0.75	365	2000
0.75	1	380	2000
1.1	1.5	405	2000
1.5	2	440	2000
2.2	3	495	3000
3	4	607	5000
3.7	5	683	5000
4	5.5	683	5000

#### 3 wire three-phase motors

P <sub>2</sub>		H	Thrust Load
kW	HP	mm	N
0.37	0.5	330	2000
0.55	0.75	346	2000
0.75	1	365	2000
1.1	1.5	380	2000
1.5	2	405	2000
2.2	3	440	3000
3	4	516	5000
3.7	5	607	5000
4	5.5	607	5000
5.5	7.5	683	5000
7.5	10	783	5000

### Material specifications

Component	Material
Motor Shell	304 Stainless steel
Sand Guard	NBR
Cable Connector	EPDM
Upper end bracket cover	304 Stainless steel
Upper end bracket	Zinc plated cast iron
Mechanical seal	Ceramic/Carbon
Shaft (0.5 - 10HP)	304 Stainless steel/S45C
Rotor (0.5 - 3 HP)	Aluminum
Rotor (4 - 10HP)	Copper
Connector	PPS
Winding	Copper
Lower end bracket	Aluminum
Lower end bracket cover	304 Stainless steel
Diaphragm	NBR

### Technical Data

#### SINGLE-PHASE MOTORS 50 Hz PSC

Motor Type		P <sub>2</sub>		Voltage	In	Istart	Efficiency	PF	Nn	Thrust Load	Capacitor	Cable		N.W	
3-Wire	2-Wire	kW	HP	V	A	A	%	COSφ	RPM	N	μF	mm2	m	3-Wire	2-Wire
4R201	4R201M	0.37	0.5	207-244	3.7	12	53	0.90	2840	2000	16	1.5	1.7	7.5	7.9
4R202	4R202M	0.55	0.75	207-244	5.0	15	62	0.90	2840	2000	20	1.5	1.7	8.3	8.8
4R203	4R203M	0.75	1	207-244	6.2	20	64	0.90	2840	2000	25	1.5	1.7	9.0	9.5
4R204	4R204M	1.1	1.5	207-244	8.1	32	68	0.90	2840	2000	35	1.5	1.7	10.1	10.6
4R206	4R206M	1.5	2	207-244	10.4	38	73	0.90	2840	2000	40	1.5	1.7	11.8	12.3
4R307	N/A	2.2	3	207-244	15.0	46	72	0.90	2840	3000	55	1.5	2.5	14.4	N/A
4R508	N/A	3	4	207-244	22.7	70.8	67	0.90	2840	5000	70	2	2.5	20.1	N/A
4R509	N/A	4	5.5	207-244	28.1	85	70	0.90	2840	5000	85	2	2.5	23.6	N/A

#### THREE-PHASE MOTORS 50 HZ DOL

Motor Type 3-Wire	P <sub>2</sub>		Voltage	In	Istart	Efficiency	PF	Nn	Thrust Load	Capacitor	Cable		N.W
	kW	HP	V	A	A	%	COSφ	RPM	N	μF	mm2	m	
4R222	0.37	0.5	207-244	2.9	7.8	60	0.80	2870	2000	-	1.5	1.7	6.7
4R210	0.37	0.5	360-424	1.6	4.5	60	0.80	2820	2000	-	1.5	1.7	6.7
4R223	0.55	0.75	207-244	3.4	11.6	64	0.80	2850	2000	-	1.5	1.7	7.4
4R211	0.55	0.75	360-424	1.9	6.7	64	0.80	2840	2000	-	1.5	1.7	7.4
4R224	0.75	1	207-244	4.0	15	66	0.80	2840	2000	-	1.5	1.7	8.3
4R212	0.75	1	360-424	2.3	8.9	66	0.80	2840	2000	-	1.5	1.7	8.3
4R225	1.1	1.5	207-244	5.3	21	70	0.80	2850	2000	-	1.5	1.7	9.0
4R213	1.1	1.5	360-424	3.1	12	70	0.80	2850	2000	-	1.5	1.7	9.1
4R226	1.5	2	207-244	6.9	24	72	0.80	2850	2000	-	1.5	1.7	10.1
4R214	1.5	2	360-424	4.0	14	72	0.80	2850	2000	-	1.5	1.7	10.1
4R328	2.2	3	207-244	9.7	38	71	0.85	2850	3000	-	1.5	2.5	11.9
4R316	2.2	3	360-424	5.6	22	71	0.85	2850	3000	-	1.5	2.5	12.0
4R529	3	4	207-244	12.8	74	73	0.85	2850	5000	-	2.0	2.5	16.0
4R517	3	4	360-424	7.4	43	73	0.85	2840	5000	-	2.0	2.5	16.3
4R530	4	5.5	207-244	17.1	84	75	0.85	2850	5000	-	2.0	2.5	19.9
4R518	4	5.5	360-424	9.8	49	75	0.85	2850	5000	-	2.0	2.5	20.0
4R531	5.5	7.5	207-244	23.8	123	76	0.85	2850	5000	-	2.0	2.5	23.5
4R519	5.5	7.5	360-424	13.7	71	76	0.85	2850	5000	-	2.0	2.5	23.6
4R533	7.5	10	207-244	32.4	166	76	0.85	2850	5000	-	2.0	2.5	28.0
4R521	7.5	10	360-424	18.7	96	76	0.85	2850	5000	-	2.0	2.5	28.1



### Technical Data

#### SINGLE-PHASE MOTORS 60 Hz PSC

Motor Type		P <sub>2</sub>		Voltage	S.F	In	Imax	Istart	Efficiency	PF %		Nn	Thrust Load	Capacitor	Cable		N.W	
3-Wire	2-Wire	kW	HP	V	--	A	A	A	%	allowable load	overload factor	RPM	N	μF	AWG	m	3-Wire	2-Wire
4R261	4R261M	0.37	0.5	100-116	1.6	8.5	9.8	30	64	0.89	0.95	3430	2000	65	14	1.7	7.1	7.9
4R251	4R251M	0.37	0.5	207-244	1.6	4.8	5.2	15	64	0.75	0.87	3430	2000	16	14	1.7	7.5	8.0
4R291	4R291M	0.37	0.5	254	1.6	4.3	4.7	13.8	58	0.75	0.87	3430	2000	12.5	14	1.7	7.5	7.7
4R262	4R262M	0.55	0.75	100-116	1.5	10.9	12.8	38	65	0.59	0.64	3440	2000	80	14	1.7	8.2	8.6
4R252	4R252M	0.55	0.75	207-244	1.5	5.6	6.6	19	65	0.75	0.88	3440	2000	20	14	1.7	8.3	8.9
4R292	4R292M	0.55	0.75	254	1.5	5.3	6	17.1	62	0.79	0.90	3430	2000	16	14	1.7	8.3	8.6
4R263	4R263M	0.75	1	100-116	1.4	11.5	14.5	50	68	0.98	0.99	3440	2000	100	14	1.7	9.0	9.2
4R253	4R253M	0.75	1	207-244	1.4	6.3	7.6	25	68	0.89	0.95	3440	2000	25	14	1.7	9.0	9.6
4R293	4R293M	0.75	1	254	1.4	5.5	6.7	19.3	66	0.88	0.95	3430	2000	20	14	1.7	9.1	9.2
4R254	4R254M	1.1	1.5	207-244	1.3	8.7	10.3	34	69	0.90	0.95	3450	2000	35	14	1.7	10.1	10.6
4R294	4R294M	1.1	1.5	254	1.3	7.9	9.2	25.7	65	0.89	0.95	3450	2000	30	14	1.7	10.1	10.4
4R256	4R256M	1.5	2	207-244	1.25	10.6	12.2	41	72	0.92	0.95	3450	2000	40	14	1.7	11.7	12.3
4R296	4R296M	1.5	2	254	1.25	11	12	38	68	0.84	0.90	3450	2000	35	14	1.7	11.8	11.9
4R357	N/A	2.2	3	207-244	1.15	14.4	16.1	45	70	0.96	0.98	3450	3000	55	14	2.5	14.3	N/A
4R397	N/A	2.2	3	254	1.15	14	15.4	48.9	71	0.93	0.96	3450	3000	45	14	2.5	14.3	N/A
4R558	N/A	3.7	5	207-244	1.15	24.2	27.2	64	71	0.96	0.97	3450	5000	75	14	2.5	23.6	N/A

#### THREE-PHASE MOTORS 60 HZ DOL

Motor type	P <sub>2</sub>		Voltage	S.F	In	Imax	Istart	Efficiency	PF%		Nn	Thrust Load	Cable		N.W
	3-Wire	kW	HP	V	--	A	A	A	%	allowable load	overload factor	RPM	N	AWG	
4R280	0.37	0.5	207-244	1.6	2.8	3.3	10	68	0.55	0.63	3450	2000	14	1.7	6.9
4R270	0.37	0.5	360-424	1.6	1.6	1.9	9	68	0.63	0.77	3450	2000	14	1.7	6.9
4R240	0.37	0.5	460	1.6	1.5	1.7	7	64	0.63	0.76	3450	2000	14	1.7	6.9
4R281	0.55	0.75	207-244	1.5	3.8	4.3	17	69	0.63	0.78	3450	2000	14	1.7	7.5
4R271	0.55	0.75	360-424	1.5	2.2	2.5	11	69	0.65	0.80	3450	2000	14	1.7	7.5
4R241	0.55	0.75	460	1.5	1.7	2.1	8	83	0.72	0.83	3450	2000	14	1.7	7.5
4R282	0.75	1	207-244	1.4	4.5	5.2	24	72	0.65	0.77	3450	2000	14	1.7	8.4
4R272	0.75	1	360-424	1.4	2.6	3.0	14	72	0.58	0.69	3450	2000	14	1.7	8.4
4R242	0.75	1	460	1.4	2.1	2.5	9	84	0.76	0.84	3450	2000	14	1.7	8.3
4R283	1.1	1.5	207-244	1.3	5.7	6.6	33	72	0.73	0.81	3450	2000	14	1.7	9.1
4R273	1.1	1.5	360-424	1.3	3.3	3.8	19	72	0.74	0.82	3450	2000	14	1.7	9.2
4R243	1.1	1.5	460	1.3	2.8	3.3	13	83	0.74	0.83	3440	2000	14	1.7	9.1
4R284	1.5	2	207-244	1.25	7.6	8.5	40	74	0.69	0.77	3450	2000	14	1.7	10.2
4R274	1.5	2	360-424	1.25	4.4	4.9	23	74	0.67	0.75	3450	2000	14	1.7	10.2
4R244	1.5	2	460	1.25	3.8	4.3	17	84	0.77	0.84	3450	2000	14	1.7	10.2
4R386	2.2	3	207-244	1.15	10.3	11.2	48	74	0.76	0.80	3450	3000	14	2.5	11.9
4R376	2.2	3	360-424	1.15	6.0	6.5	28	74	0.74	0.79	3450	3000	14	2.5	11.9
4R345	2.2	3	460	1.15	5.0	5.6	23	83	0.79	0.83	3450	3000	14	2.5	11.6
4R587	3.7	5	207-244	1.15	17.5	18.7	109	75	0.75	0.78	3450	5000	14	2.5	20.0
4R577	3.7	5	360-424	1.15	10.0	11.0	63	75	0.73	0.77	3450	5000	14	2.5	20.1
4R547	3.7	5	460	1.15	8.8	9.8	45	82	0.78	0.81	3450	5000	14	2.5	19.5
4R566	4.0	5.5	207-244	1.15	19.4	21.1	109	75	0.77	0.81	3450	5000	14	2.5	20.0
4R567	4.0	5.5	360-424	1.15	11.2	12.2	63	76	0.75	0.79	3450	5000	14	2.5	20.1
4R548	4.0	5.5	460	1.15	6.4	7.4	30	74	0.80	0.83	3450	5000	14	2.5	20.1
4R588	5.5	7.5	207-244	1.15	25.3	27.6	134	75	0.76	0.80	3450	5000	14	2.5	23.6
4R578	5.5	7.5	360-424	1.15	14.5	15.9	78	75	0.76	0.80	3450	5000	14	2.5	23.7
4R549	5.5	7.5	460	1.15	12.6	13.9	60	80	0.77	0.80	3450	5000	14	2.5	23.1
4R589	7.5	10	207-244	1.15	34.5	37.5	215	76	0.73	0.78	3450	5000	14	2.5	28.1
4R579	7.5	10	360-424	1.15	20.0	21.8	124	76	0.73	0.78	3450	5000	14	2.5	28.2
4R550	7.5	10	460	1.15	17.7	19.4	105	79	0.74	0.79	3450	5000	14	2.5	27.5

### 1PC&2PC series - PSC type(Permanent split capacitor) - EU Standard

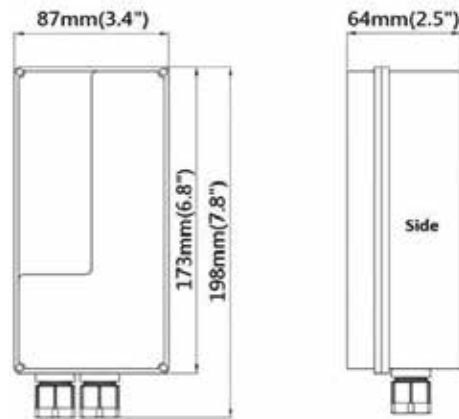
Plastic control box for 4" submersible oil filled motor

### Specifcion

Model	Hz	HP	kW	Voltage	Terminal	Enclosure	Rating
1PC01	50	0.5	0.37	207-244V	5	IP56	Run capacitor 16uF 400V.AC
1PC02	50	0.75	0.55	207-244V	5	IP56	Run capacitor 20uF 400V.AC
1PC03	50	1	0.75	207-244V	5	IP56	Run capacitor 25uF 400V.AC
1PC04	50	1.5	1.1	207-244V	5	IP56	Run capacitor 35uF 400V.AC
1PC06	50	2	1.5	207-244V	5	IP56	Run capacitor 40uF 400V.AC
2PC07	50	3	207-244V	6	IP56	Run capacitor 55uF 400V.AC	

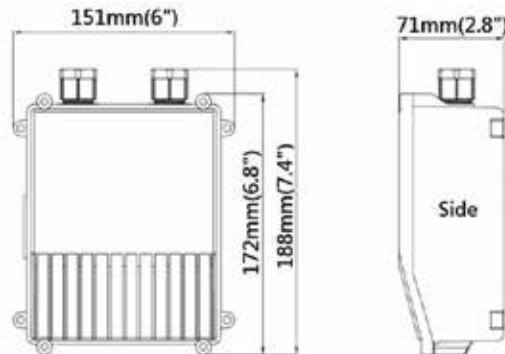
### 1PC series dimension

Carton size			Cable gland	
L	W	H	Quantity	Diameter
21.5cm (8.5")	9.5cm (3.8")	8.5cm (3.4")	2	PG11



### 2PC series dimension

Carton size			Cable gland	
L	W	H	Quantity	Diameter
22cm (8.7")	16.5cm (6.5")	8cm (3.2")	2	∅10mm (∅0.4")



### 1BC series - CSCR type(Capacitor Start/Capacitor Run) - EU Standard

Steel control box for 4" submersible oil filled motor

### Specifiction

Model	Hz	HP	kW	Voltage	Terminal	Enclosure	Rating
1BC04	50	1.5	1.1	207-244V	5	IP23	Start capacitor 125MF 250V.AC Run capacitor 35uF 400V.AC Relay
1BC06	50	2	1.5	207-244V	5	IP23	Start capacitor 200MF 250V.AC Run capacitor 40uF 400V.AC Relay
1BC07	50	3	2.2	207-244V	5	IP23	Start capacitor 300MF 250V.AC Run capacitor 55uF 400V.AC Relay
1BC08	50	4	3	207-244V	5	IP23	Start capacitor 315-400MF 250V.AC Run capacitor 70uF 400V.AC Relay
1BC09	50	5.5	4	207-244V	5	IP23	Start capacitor 315-400MF 250V.AC Run capacitor 85uF 400V.AC Relay

### Dimension

Carton size			Bottom knockouts	
L	W	H	Quantity	Diameter
29cm (11.5")	21.5cm (8.5")	16.5cm (6.5")	2	Ø33mm (Ø1.3")

