PS MP 3 ....:

3" SUBMERSIBLE MOTORS

A new serie of 3" submersible motors, rewindable and oil cooled, the consistent evolution of the previous experiences with 4" and 6" submersible range. Production and quality standards, peculiarity of the "Made in Italy", guarantee the reliability and the efficiency of all manufactured submersible motors. The use of non-toxic materials like the dielectric oil, approved by Farmacopea Italiana and Food and Drug Administration (U.S.A.) And the power-supply cable, unique of its kind, allow the application of these motors in all working conditions and environment.

FEATURES:

• Exterior shell and clamping systems made of AISI 304 stainless steel corrosion-resistant.
• The upper bracket made of pressed brass and the toothed shaft of stainless steel allow a coupling with hydraulic parts following NEMA standard.
• Compensation membrane, power-supply cable, mechanical seals and sand seals have been carefully considered and executed to ensure reliability and safety of its products.

SPECIFICATIONS

Pressed brass coupling flange 3" according to NEMA rules. Outer shell of SS AISI 304 - Stud-bolt, washers and nuts for pump coupling of SS AISI 304 - Shaft extension of AISI 420
Power: single-phase 0,37 kw-1,1kw
three-phase 0,37 kw- 1,1 kw
Voltage: single-phase 230V ± 10% 50 Hz or 60 Hz
three-phase 230V or 400V ± 10% 50 Hz or 60 Hz

Axial load 1500N
Protection IP 68; Insulation class F
Flat cable 4x1,0 m2 dimensions 15,5x5,5mm
Length: 1,4 mt (0,37-0,55kw) 1,8 mt (0,75kw-1,1kw)

LIMITS OF USE

• Max. Starting operations per hour: n.30
• Max. Ambient temperature 35°C , water pH 6,5 -8,0;
• Min cooling speed: 8 cm/sec
• Max depth of immersion: 200 mt
• Vertical or horizontal installation

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MOTORE SOMMERSO 3" bagno d'olio
SUBMERSIBLE MOTOR 3" oil filled
MOTOR SUMERGIBLE 3" baño de aceite
MOTEUR IMMERGÉ 3" bain d'huile

50 Hz

Monofase - Single-phase
Monofásico - Monophasé

Volt 220 - 230 - 240

Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	Condensatore Capacitor Condensador Condensateur	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance	η	Corrente nominale Rated current Corrente nominal Courant nominal	S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V	µF		cos φ	%	A		N	H mm	Kg
PS MP 3 M 050	0.37	0.50	230	16	2800	0.97	52	4.0	1.0		407	7.5
PS MP 3 M 075	0.55	0.75	230	20	2810	0.97	56	5.1	1.0		427	7.7
PS MP 3 M 100	0.75	1.00	230	25	2800	0.98	56	6.2	1.0	1500	447	8.1
PS MP 3 M 150	1.10	1.50	230	35	2810	0.98	58	8.5	1.0		477	8.6

Trifase - Three-phase
Trifásico - Triphasé

Volt 220 - 380 - 400 - 415

Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance	η	Corrente nominale Rated current Corrente nominal Courant nominal	S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V		cos φ	%	A		N	H mm	Kg
PS MP 3 T 050	0.37	0.50	400	2810	0.73	52	2.3	1.0		407	7.5
PS MP 3 T 075	0.55	0.75	400	2800	0.78	58	2.6	1.0		407	7.5
PS MP 3 T 100	0.75	1.00	400	2800	0.79	69	3.1	1.0	1500	427	7.7
PS MP 3 T 150	1.10	1.50	400	2810	0.80	73	3.4	1.0		447	8.1

60 Hz

Monofase - Single-phase
Monofásico - Monophasé

Volt 110 - 230 - 240

Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	Condensatore Capacitor Condensador Condensateur	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance		η	η S.F.	Corrente nominale Rated current Corrente nominal Courant nominal		S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V	µF		cos φ	cos φ	%		A	A S.F.		N	H mm	Kg
PS MP 3M 050 60H	0.37	0.50	230	16	3400	0.96	0.98	53	58	4.2	5.1	1.6		407	7.5
PS MP 3M 075 60H	0.55	0.75	230	20	3410	0.97	0.98	55	59	5.2	6.1	1.5		427	7.7
PS MP 3M 100 60H	0.75	1.00	230	25	3420	0.95	0.97	56	60	6.4	7.3	1.4	1500	447	8.1
PS MP 3M 150 60H	1.10	1.50	230	35	3400	0.96	0.98	59	62	9.7	9.6	1.3		477	8.6

Trifase - Three-phase
Trifásico - Triphasé

Volt 220 - 380 - 400 - 415

Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance		η	η S.F.	Corrente nominale Rated current Corrente nominal Courant nominal		S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V		cos φ	cos φ	%		A	A S.F.		N	H mm	Kg
PS MP 3T 050 60H	0.37	0.50	400	3400	0.71	0.75	52	58	2.5	2.8	1.6		407	7.5
PS MP 3T 075 60H	0.55	0.75	400	3400	0.76	0.79	57	63	2.7	3.1	1.5		407	7.5
PS MP 3T 100 60H	0.75	1.00	400	3400	0.77	0.81	65	72	3.3	3.6	1.4	1500	427	7.7
PS MP 3T 150 60H	1.10	1.50	400	3420	0.78	0.83	71	78	3.6	3.9	1.3		447	8.1

Modifiche tecniche senza obbligo di preavviso - Technical modifications without prior notice - Variaciones tecnicas sin aviso previo - Changements techniques sans préavis

OP3 SERIES
3" OIL FILLED SUBMERSIBLE MOTORS

SMALL SIZE, GREAT QUALITY
Thanks to its range of 3" submersible motors denominated OP3, Sumoto is now able to offer a valid instrument for the solution of problems due to well dimensions.

The OP3-type is the outcome of a consistent design effort arousing from the need to solve all the problems linked to reduced space.
The motor still preserves the splined-shaft coupling system typical of the NEMA regulations.
The electromechanical specifications are undoubtdedly interesting and complying with all application requirements.
Each motor is supplied with a 1.8 mt-long sealed cable directly connected with the winding.

OP3 MOTOR TECHNICAL FEATURES

- Atoxic dielectric liquid cooling
- Axial load to be carried: 1.200 N
- 0,37Kw to 0,75Kw single-phase version
  0,37Kw to 1,1Kw three-phase version
- F-class insulation - IP 58 protection
- Splined shaft extension for easy coupling
- AISI 303 stainless steel end shaft
- Compensation diaphragm and sand-seal suitable dimensions
- Easy to disassemble and to re-wind
- High-resistance nickelled-cast iron brackets
- Maximum voltage fluctuation admissible versus nominal rated voltage: ± 10%

OPERATING DATA — **50 Hz.** — **SINGLE PHASE**

	Type	Thrust Load N	Weight Kg	H mm	kW	Hp	In Amp	Istart Amp	RPM	Cosφ	Ts/Tn	EFF%	μF
220/230V	OPM 050	1200	6	377	0,37	0,5	3,75	8,8	2800	0,96	0,58	51	16
	OPM 075	1200	6,4	397	0,55	0,75	4,50	12,2	2800	0,98	0,54	55	20
	OPM 100	1200	6,8	416	0,75	1	5,85	14,5	2800	0,98	0,55	57	25

THREE PHASE

380/400V	OPT 050	1200	6	377	0,37	0,5	2,00	8,0	2800	0,71	2,1	51	
	OPT 075	1200	6,1	377	0,55	0,75	2,10	9,1	2800	0,75	2	56	
	OPT 100	1200	6,4	397	0,75	1	2,50	11,7	2800	0,75	2	63	
	OPT 150	1200	6,8	416	1,1	1,5	3,20	14,0	2800	0,75	2	63	
220V	OPT 050	1200	6	377	0,37	0,5	3,50	14,0	2800	0,71	2,1	51	
	OPT 075	1200	6,1	377	0,55	0,75	3,70	16,0	2800	0,75	2	56	
	OPT 100	1200	6,4	397	0,75	1	4,40	20,0	2800	0,75	2	63	
	OPT 150	1200	6,8	416	1,1	1,5	5,60	24,0	2800	0,75	2	63	

OPERATING DATA — **60 Hz.** — **SINGLE PHASE**

	Type	Thrust Load N	Weight Kg	H mm	kW	Hp	In Amp	Istart Amp	RPM	Cosφ	Ts/Tn	EFF%	μF	Imax Amp
220/230V	OPM 050	1200	6	377	0,37	0,5	3,80	9	3400	0,96	0,54	51	12,5	4,3
	OPM 075	1200	6,4	397	0,55	0,75	4,60	13	3400	0,98	0,52	55	16	5,1
	OPM 100	1200	6,8	416	0,75	1	5,95	15	3400	0,98	0,52	57	25	6,2

THREE PHASE

380V	OPT 050	1200	6	377	0,37	0,5	2,10	9	3400	0,71	2	51		2,5
	OPT 075	1200	6,1	377	0,55	0,75	2,20	10	3400	0,75	2	56		2,6
	OPT 100	1200	6,4	397	0,75	1	2,60	13	3400	0,75	2	63		3,1
	OPT 150	1200	6,8	416	1,1	1,5	3,40	15	3400	0,75	2	63		3,8

SINCERT

4” REWINDABLE SUBMERSIBLE MOTORS

4” Submersible motors are especially engineered to be jointed to centrifugal multistage pumps for 4” wells or bigger. Electric winding is asynchronous with short-circuited rotor and cooled by dielectric and atoxic oil, according to Farmacopea Italiana rules and approved by Food and Drug Administration (U.S.A.). Simpleness of contruction and technological innovations are the main features of the motors assuring quality, reliability and long life with excellent performances even in extreme conditions of employment.

CONSTRUCTIVE FEATURES:

Exterior shell, motor shaft and blocking systems are made of stainless steel AISI 304, corrosion resistant, while the superior bracket is made of pressed brass. Coupling parts are engineered according to the standard of NEMA rules. Inside, a compensation disphragm properly dimensioned assures the equilibrium of internal/external pressures and the oil volume variation caused by temperature. Clamping system, anti-sand devices and electric cable, atoxic and alimentary type, have been studied and realised particularly for these motors in order to assure their perfect seal and safety.

SPECIFICATIONS

- Pressed brass coupling flange 4” according to NEMA rules
- Outer shell of SS AISI 304
- Stud-bolt, washers and nuts for pump coupling of SS AISI 304
- Shaft extension of SS AISI 420
- Power: single phase 0,37 kw – 2,2 kw
  three-phase 0,37 – 7,5 kw
- Voltage: single-phase 230V ± 10 % 50 Hz or 50 Hz
  three-phase 230V or 400V ± 10% 50 Hz or 60 Hz
- Axial load: 2500N – 4500N
- Protection IP 68, Insulation class F
- Flat cable 4x1,5 mm2 dimensions 15,5 x 5,5 mm
- Length: 1,5 mt (0,37 kw – 1,5 kw) 2,5 mt (2,2 kw – 5,5 kw) 3,0 mt (7,5 kw)

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LIMITS OF USE:
- **Max. starting operations per hour: 30**
- **Max. ambient temperature: 35°C, water pH 6,5-8,0**
- **Min. Cooling speed: 8 cm/sec**
- **Max depth of immersion: 350 mt**
- **Vertical or horizontal installarion**

Monofase - Single-phase
Monofásico - Monophasé

Volt 220 - 230 - 240

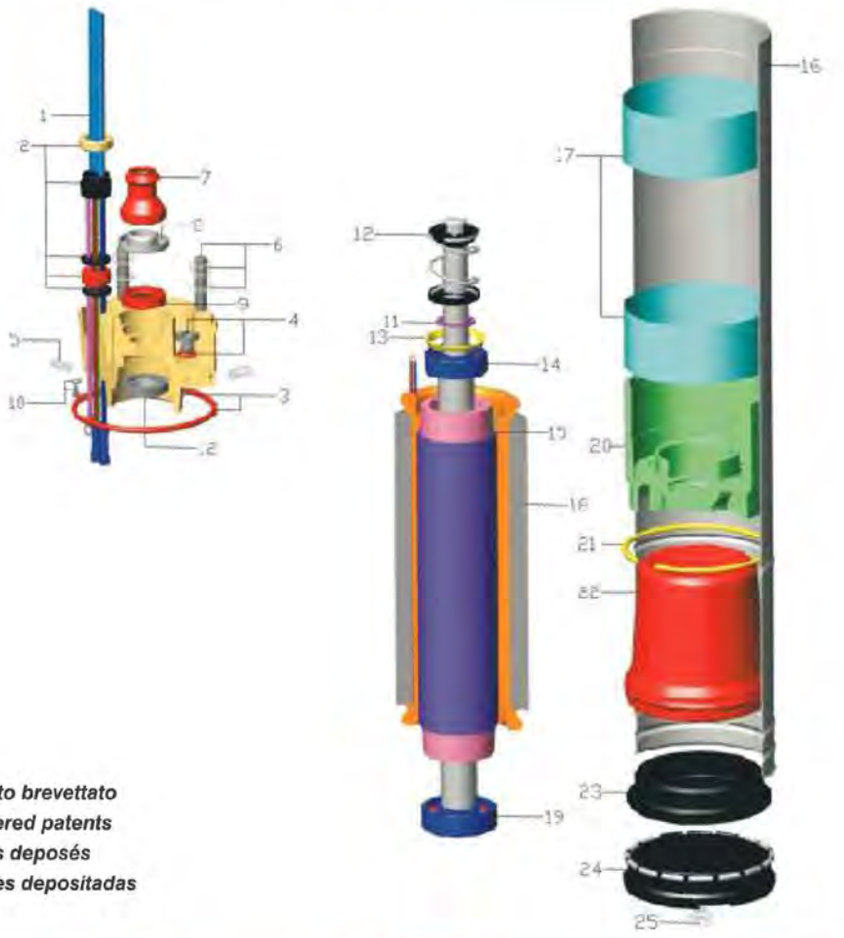
Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	Condensatore Capacitor Condensador Condensateur	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance	η	Corrente nominale Rated current Corriente nominal Courant nominal	S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V	µF		cos φ	%	A		N	H mm	Kg
PS MP 4M 50 ORL	0,37	0,50	230	20	2840	0,93	58	3,1	1,0		373	7,7
PS MP 4M 75 ORL	0,55	0,75	230	25	2820	0,97	64	5,0	1,0		393	8,6
PS MP 4M 100 ORL	0,75	1,00	230	36	2840	0,95	69	6,2	1,0	2500	423	9,9
PS MP 4M 150 ORL	1,10	1,50	230	40	2830	0,94	71	8,5	1,0		453	11,3
PS MP 4M 200 ORL	1,50	2,00	230	50	2840	0,94	73	10,8	1,0		493	13,1
PS MP 4M 300 ORL	2,20	3,00	230	80	2840	0,97	74	15,5	1,0		543	15,4

Trifase - Three-phase
Trifásico - Triphasé

Volt 220 - 380 - 400 - 415

Tipo Type Modelo Modéle	Potenza Power Potencia Puissance		Tensione Voltage Tensions Voltage	RPM	Fattore di potenza Power factor Factor de potencia Facteur de puissance	η	Corrente nominale Rated current Corriente nominal Courant nominal	S.F.	Carico assiale Axial load Carga axial Charge axiale	Dimensioni Dimensions Cotas Dimensions	Peso Weight Peso Poids
	Kw	HP	V		cos φ	%	A		N	H mm	Kg
PS MP 4T 50 ORL	0,37	0,50	400	2810	0,78	64	1,2	1,0		373	7,2
PS MP 4T 75 ORL	0,55	0,75	400	2810	0,78	67	1,6	1,0		373	7,8
PS MP 4T 100 ORL	0,75	1,00	400	2820	0,78	69	2,2	1,0		393	8,8
PS MP 4T 150 ORL	1,10	1,50	400	2820	0,78	74	3,0	1,0		423	10,1
PS MP 4T 200 ORL	1,50	2,00	400	2820	0,76	76	4,2	1,0	2500	453	11,4
PS MP 4T 300 ORL	2,20	3,00	400	2820	0,79	77	6,2	1,0		493	13,2
PS MP 4T 400 ORL	3,00	4,00	400	2840	0,85	79	7,1	1,0		513	14,0
PS MP 4T 550 ORL	4,00	5,50	400	2840	0,84	80	9,4	1,0		543	16,3
PS MP 4T 750 ORL	5,50	7,50	400	2840	0,81	80	13,3	1,0		623	19,6
PS MP 4T 1000 ORL	7,50	10,00	400	2810	0,76	80	18,0	1,0	**4500**	853	28,5

LEGENDA



Prodotto brevettato
Registered patents
Brevets deposés
Patentes depositadas

1	Cavo di alimentazione
2	Gruppo pressacavo antistrappo
3	Supporto superiore in Ottone/Ghisa/AISI 316 completo di O-ring
4	Tappo riempimento olio con O-ring
5	Spine di fissaggio AISI 304/316
6	Gruppo prigioniero, rondella e dado inox per accoppiamento pompa AISI 304/316
7	Labirinto di tenuta
8	Disco porta labirinto
9	Paraolio
10	Vite e rondella di terra
11	Rondella di spallamento
12	Tenuta meccanica carbone ceramica
13	Molla di compensazione
14	Cuscinetto superiore
15	Albero con rotore
16	Cassa inox 4" AISI 304/316
17	Isolante protezione statore
18	Statore avvolto
19	Cuscinetto inferiore idoneo ad assorbire i vari carichi assiali
20	Supporto inferiore in alluminio
21	Anello elastico
22	Diaframma di compensazione
23	Disco di contenimento diaframma
24	Fondello di chiusura
25	Vite di sicurezza

1	Feeding cable
2	Cable fastener
3	Upper bracket with O-ring of Brass/Cast Iron/SS AISI 316
4	Filling plug with O-ring
5	Fastening pins of SS AISI 304/316
6	Stud-bolt, washers and stainless steel nuts for pump coupling of SS AISI 304/316
7	Watertight labyrinth seal
8	Labyrinth holding plate
9	Oil gasket
10	Earth screw with washer
11	Lateral bearing washer
12	Ceramic carbon seal
13	Equalizer spring
14	Upper bearing
15	Shaft and rotor
16	Stainless steel case AISI 304/316
17	Insulating material for stator heads
18	Winded stator
19	Lower ball bearing suitable for resisting to several axial load
20	Aluminium lower bracket
21	Elastic ring
22	Compensation diaphragm
23	Diaphragm holding disc
24	Lower head plate
25	Security screw

1	Cable de alimentación
2	Prensacable
3	Soporte superior en Latón/Fundición/Acero Inoxidable AISI 316 completo de O-ring
4	Tapón de llenado aceite completo de O-ring
5	Tornillos de fijación en acero inoxidable AISI 304/316
6	Perno prisionero, arandelas y tuercas para acoplamiento a bomba en acero inoxidable AISI 304/316
7	Laberinto de estanqueidad
8	Disco portalaberinto
9	Sello de aceite
10	Tornillos y arandela de tierra
11	Arandela de apoyo lateral
12	Sello mecánico cab./cerámico
13	Muelle de equilibrio
14	Cojinete superior
15	Eje con rotor
16	Caja inoxidable AISI 304/316
17	Aislante cabezal estator
18	Estator bobinado
19	Cojinete inferior apto para absorber cargas axiales diferentes
20	Soporte inferior
21	Anillo elastico
22	Membrana de compensación
23	Disco portamembrana
24	Fondo del cierre
25	Tornillo de seguridad

1	Câble électrique
2	Serre-câble
3	Support supérieur en Laiton/Fonte/Acier Inoxydable AISI 316 avec O-ring
4	Bouchon de remplissage avec O-ring
5	Goupilles en acier inoxydable AISI 304/316
6	Boulon prisonnier, rondelles et écrous pour accouplement de la pompe en acier inoxydable AISI 304/316
7	Labyrinthe d'étanchéité
8	Disque porte-labyrinthe
9	Pare-huile
10	Vis et mise à la terre
11	Rondelle d'appui latéral
12	Garniture mécanique en charbon céramique
13	Ressort compensation
14	Palier supérieur
15	Arbre avec rotor
16	Caisse en acier inoxydable AISI 304
17	Isolant du stator
18	Stator bobiné
19	Palier inférieur apte à absorber des charges axiales distinctes
20	Support inférieur
21	Bague élastique
22	Membrane de compensation
23	Disque porte-membrane
24	Fond de fermeture
25	Vis de sécurité

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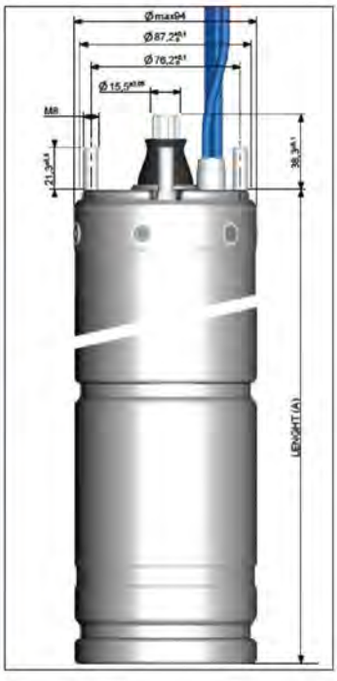
MOTOR/PUMP COUPLING	4"NEMA STANDARD
PROTECTION	IP 68
WINDING INSULATION CLASS	F
FEEDING VOLTAGE TOLERANCE	-10%/+10%
LIQUID ALLOWED TEMPERATURES	0°C - 35°C 32°F - 95°F
LIQUID MINIMUM SPEED	0,1 M/S 0,328 FT/SEC
MAXIMUM STARTS-STOPS / HOUR	30
AXIAL WORKING POSITIONS	VERTICALE E/O ORIZZONTALE VERTICAL AND/OR HORIZONTAL
TRUST LOADS: FROM 0,5 UNTIL 3,0 HP FROM 2,0 UNTIL 4,0 HP FROM 4,0 UNTIL 10,0 HP	 2000N 3000N 5000N



Single-phase version: PSC type (permanent split capacitor)

PS MB 4M...

4" REWINDABLE OIL FILLED MOTORS

Designed for operation in 4" and larger diameter water wells, filled with mineral oil suitable for food use. The high quality of employed materials, the several and rigid tests in designed phase and a know-how strengthened in thirty-year experience in the field assure great mechanical strength and high-performance electrical characteristics. All parts in contact with water are AISI 304 stainless steel made. The removable lead connector assures a perfect hermetic sealing.

PRODUCTS FEATURES

EXTERNAL SLEEVE AND BOTTOM COVER: AISI 304 stainless steel made. In particular, sleeve is made of AISI 304L (Low Carbon) stainless steel, in order to avoid any corrosion on welding zone.
UPPER BRACKET: nickel-plated cast iron made, by a stainless steel top cover protected.
UPPER BRACKET – SLEEVE FIXING: assured by means of 4 inserts in low size motors and 6 inserts in motors greater than 3Hp power, in order to guarantee a perfect alignment and an excellent stiffness in case of assembly with longer pumps.
MECHANICAL SEAL: standard version made of graphite ceramic; SIC version available.
UPPER / LOWER BALL BEARINGS: suitably oversized to assure a long life to motors.
STATOR: 24-slot laminations made, designed to reach the highest electrical efficiency. Hermetically sealed and immersed in a high refined white mineral oil, employed also in pharmaceutical, food and cosmetics applications (FDA approved). Vacuum process filling, in order to assure complete replenishment and perfect electrical insulation.
REMOVABLE CABLE CONNECTOR: it assures perfect sealing even at the most critical working conditions, in addition to make easier all maintenance operations. In particular, this connection avoids oil rising along the cable up to the junction. Cable material according to drinking water regulations (WRAS, ACS, KTW approved).
SHAFT: Carbon-steel alloy in rotor area, in order to improve electrical characteristics. Shaft extension in AISI 304 stainless steel made. A special steel alloy, known as DUPLEX, replaces AISI 304 on motors greater than 3Hp power. This steel combines an excellent corrosion resistance with an extraordinary mechanical strength, which is absolutely necessary with very high starting torque.
100% TESTED: all motors are end-of-line electrically tested and undergo effective pressure seal checks.

Electrical data - 50Hz

Type	P2 (Hp)	P2 (kW)	Voltage (V)	Ph	In (A)	Isw (A)	rpm	cos Φ	η (%)	Capacitor (µF)	Thrust load (N)	Length A (mm)	Weight (kg)	Cable Section (mm²)	Cable Length (m)
PS MB 4M 50	0,5	0,37	230	1	3,6	12	2810	0,87	51	20	2000	311,3	6,45	4 x 1,5	1,7
PS MB 4M 75	0,75	0,55	230	1	4,8	16,5	2820	0,88	56	25	2000	331,3	7,2	4 x 1,5	1,7
PS MB 4M 100	1	0,75	230	1	5,8	18,9	2825	0,9	62	35	2000	356,3	8,45	4 x 1,5	1,7
PS MB 4M 150	1,5	1,1	230	1	8,1	26,2	2845	0,91	65	40	2000	386,3	10,2	4 x 1,5	1,7
PS MB 4M 200	2	1,5	230	1	10,6	35	2825	0,93	66	60	2000	436,3	11,65	4 x 1,5	1,7
PS MB 4M 300	3	2,2	230	1	15,2	47	2815	0,93	67	80	2000 3000	481,3 505	14,9 15,1	4 x 1,5	1,7
PS MB 4M 500	5	3,7	230	1	24,5	95	2845	0,95	69	90	5000	699,5	24,15	4 x 2	2,7
PS MB 4T 50 230	0,5	0,37	230	3	2,2	8,9	2825	0,75	56	-	2000	311,3	6,45	4 x 1,5	1,7
PS MB 4T 50			400		1,8	5,8	2835	0,54	55	-					
PS MB 4T 75 230	0,75	0,55	230	3	3,4	13,5	2830	0,70	58	-	2000	331,3	7,2	4 x 1,5	1,7
PS MB 4T 75			400		2,1	8	2820	0,65	58	-					
PS MB 4T 100 230	1	0,75	230	3	4,1	15,5	2820	0,74	62	-	2000	356,3	8,45	4 x 1,5	1,7
PS MB 4T 100			400		2,3	9,4	2820	0,77	61	-					
PS MB 4T 150 230	1,5	1,1	230	3	5,9	25	2815	0,68	69	-	2000	371,3	9,35	4 x 1,5	1,7
PS MB 4T 150			400		3,4	15,5	2825	0,69	68	-					
PS MB 4T 200 230	2	1,5	230	3	8,2	27,5	2810	0,64	72	-	2000	386,3	10,2	4 x 1,5	1,7
PS MB 4T 200			400		4,8	18	2840	0,63	72	-					
PS MB 4T 300 230	3	2,2	230	3	10,6	39,5	2815	0,70 0,70	74	-	2000 3000	436,3 450	11,65 11,9	4 x 1,5	1,7
PS MB 4T 300	3	2,2	400	3	6,2	39,5	2815	0,69 0,69	74	-	2000 3000	436,3 450	11,65 11,9	4 x 1,5	1,7
PS MB 4T 400 230	4	3	230	3	12,8	39,5	2810	0,81	73	-	3000	505	15	4 x 1,5	1,7
					10,9	34,2	2840	0,90	77		5000	519,5	16,2	4 x 2	2,7
PS MB 4T 400	4	3	400	3	8,6	39,5	2810	0,69	73	-	3000	505	15	4 x 1,5	1,7
					6,7	34,2	2840	0,84	77		5000	519,5	16,2	4 x 2	2,7
PS MB 4T 550 230	5,5	4	230	3	15,6	86	2845	0,83	78	-	5000	609,5	20,05	4 x 2	2,7
PS MB 4T 550			400		8,9	49,5	2850	0,83	78	-					
PS MB 4T 750 230	7,5	5,5	230	3	22,7	109	2825	0,78	78	-	5000	699,5	24,65	4 x 2	2,7
PS MB 4T 750			400		11,7	64	2835	0,86	79	-					
PS MB 4T 1000	10	7,5	400	3	16,4	88	2840	0,81	81	-	5000	799,5	28,95	4 x 2	2,7

Electrical data - 60Hz

Type	P2 (Hp)	P2 (kW)	Voltage (V)	Ph	In (A)	Isw (A)	rpm	cos Φ	η (%)	Capacitor (µF)	S.F.	Thrust load (N)	Length A (mm)	Weight (kg)	Cable Section (mm²)	Cable Length (m)
PS MB 4M 50 23060	0,5	0,37	230	1	2,9	16	3465	0,92	61	20	1,6	2000	331,3	7,2	4 x 1,5	1,7
PS MB 4M 50 11560			115		7,2	29	3455	0,89	62	80						
PS MB 4M 75 23060	0,75	0,55	230	1	4,1	20,2	3475	0,95	63	25	1,5	2000	356,3	8,45	4 x 1,5	1,7
PS MB 4M 75 11560			115		10,2	39	3460	0,84	66	100						
PS MB 4M 100 23060	1	0,75	230	1	4,95	22,6	3455	0,95	68	35	1,4	2000	371,3	10,2	4 x 1,5	1,7
PS MB 4M 100 11560			115		12,1	48	3455	0,89	66	120						
PS MB 4M 150 23060	1,5	1,1	230	1	6,8	32	3450	0,96	72	40	1,3	2000	386,3	11,25	4 x 1,5	1,7
PS MB 4M 150 11560			115		15,1	72	3440	0,91	67	160						
PS MB 4M 200 23060	2	1,5	230	1	9,9	41	3445	0,95	69	60	1,25	2000	436,3	11,65	4 x 1,5	1,7
PS MB 4M 300 23060	3	2,2	230	1	14,9	47	3435	0,96	67	80	1,15	2000 3000	481,3 505	14,9 15,1	4 x 1,5	1,7
PS MB 4M 500 23060	5	3,7	230	1	24,1	92	3460	0,93	72	90	1,15	5000	699,5	24,15	4 x 2	2,7
PS MB 4T 50 23060	0,5	0,37	230	3	2,1	11,5	3480	0,56	79	-	1,6	2000	311,3	6,45	4 x 1,5	1,7
PS MB 4T 50 40060			400		1,3	10,5	3475	0,77	78	-						
PS MB 4T 75 23060	0,75	0,55	230	3	3,11	19	3485	0,55	81	-	1,5	2000	331,3	7,2	4 x 1,5	1,7
PS MB 4T 75 40060			400		1,89	11,5	3480	0,72	77	-						
PS MB 4T 100 23060	1	0,75	230	3	3,95	26,5	3475	0,62	77	-	1,4	2000	356,3	8,45	4 x 1,5	1,7
PS MB 4T 100 40060			400		2,38	16,5	3505	0,72	84	-						
PS MB 4T 150 23060	1,5	1,1	230	3	5,72	35	3465	0,63	76	-	1,3	2000	371,3	9,35	4 x 1,5	1,7
PS MB 4T 150 40060			400		3,43	21,5	3455	0,68	76	-						
PS MB 4T 200 23060	2	1,5	230	3	7,5	43	3450	0,67	75	-	1,25	2000	386,3	10,2	4 x 1,5	1,7
PS MB 4T 200 40060			400		4,5	24,5	3440	0,75	75	-						
PS MB 4T 300 23060	3	2,2	230	3	10,1	51	3445	0,73	75	-	1,15	2000 3000	436,3 450	11,65 11,9	4 x 1,5	1,7
PS MB 4T 300 40060	3	2,2	400	3	5,9	30	3445	0,72	75	-	1,15	2000 3000	436,3 450	11,65 11,9	4 x 1,5	1,7
PS MB 4T 400 23060	4	3	230	3	13,4	73	3465	0,73	77	-	1,15	3000	505	15	4 x 1,5	1,7
												5000	519,5	16,2	4 x 2	2,7
PS MB 4T 400 40060	4	3	400	3	7,8	41	3460	0,73	76	-	1,15	3000	505	15	4 x 1,5	1,7
												5000	519,5	16,2	4 x 2	2,7
PS MB 4T 550 23060	5,5	4	230	3	17,1	118	3480	0,72	82	-	1,15	5000	609,5	20,05	4 x 2	2,7
PS MB 4T 550 40060			400		9,7	67	3480	0,74	81	-						
PS MB 4T 750 23060	7,5	5,5	230	3	25,2	137	3455	0,73	75	-	1,15	5000	699,5	24,65	4 x 2	2,7
PS MB 4T 750 40060			400		14,9	79	3460	0,74	75	-						
PS MB 4T1000 400 60	10	7,5	400	3	20,6	94	3460	0,77	75	-	1,15	5000	799,5	28,95	4 x 2	2,7

PS MF 4M...

4"
Super Stainless
1~ PSC

SUBMERSIBLE MOTORS
Quality in the Well

Franklin Electric 4" encapsulated PSC Motors, manufactured to ISO 9001 standards, for operation with permanent split capacitor and overload. The motor offers you a maintenance free long life operation by good low voltage behaviour and a high starting torque.

Product advantages:

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out
- High efficiency electrical design (low operation cost, cooler winding temperature)
- Removable „Water Bloc" lead connector
- Cable material according to drinking water regulations (KTW approved)
- Water lubricated radial and thrust bearings
- All motors prefilled and 100% tested
- Non contaminating, water-filled design

Technical Specification
Standard Motor:

- 4" NEMA flange
- Rotation: CCW facing shaft end
- Degree of protection: IP68
- Insulation: Cl. B
- Rated Ambient temp.: max. 30°C
- Cooling flow: min. 8 cm/sec
- Starts/h: 20
- Mounting: vertical/horizontal
- Voltage tolerance: +6% / -10% U_N
- Motor protection: Select thermal overloads according to EN 60947-4-1.Trip time <10sec at 5 x I_N

Options

- Motor cable VDE, KTW approved (1,5m; special lengths available)
- Built-in lightning arrestor
- Built-in overload protection (0,25 ... 1,50 kW)

4" PSC Performance Data 50 Hz

220V - 230V version

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T_N [Nm]	T_A [Nm]	Capacitor µF (U_C=450V)
						50	75	100	50	75	100			
0,25	3000	220	2865	2,3	9,0	33	45	51	0,91	0,93	0,96	0,82	0,73	12,5
		230	2875	2,4	9,4	28	42	50	0,80	0,88	0,92	0,83	0,80	
0,37	3000	220	2850	3,2	12,1	36	47	54	0,86	0,92	0,97	1,21	1,07	16
		230	2860	3,3	12,6	35	46	54	0,78	0,85	0,91	1,24	1,17	
0,55	3000	220	2840	4,2	16,9	46	57	63	0,94	0,97	0,98	1,85	1,50	20
		230	2850	4,3	17,7	45	57	63	0,86	0,91	0,94	1,90	1,63	
0,75	3000	220	2825	5,7	21,7	44	54	61	0,97	0,99	0,99	2,5	2,3	35
		230	2845	5,7	22,7	41	52	59	0,92	0,96	0,98	2,5	2,5	
1,1	3000	220	2830	8,1	32,5	47	59	65	0,86	0,94	0,97	3,7	2,9	40
		230	2845	8,4	33,9	43	56	63	0,77	0,86	0,92	3,7	3,1	
1,5	3000	220	2820	10,4	39,9	52	63	68	0,90	0,95	0,98	5,1	3,6	50
		230	2830	10,7	41,7	48	59	66	0,82	0,90	0,95	5,1	3,9	
2,2	4000	220	2825	14,7	59,2	55	65	70	0,93	0,98	0,99	7,4	5,0	70
		230	2840	14,7	61,8	51	62	68	0,86	0,93	0,97	7,4	5,5	

4"
Super Stainless
3 ~

PS MF 4T...

SUBMERSIBLE MOTORS

Quality in the Well

Franklin Electric 4" three phase encapsulated Motors, manufactured to ISO 9001 standards, for three phase power supply. The motor offers you a maintenance free long life submersible pump application

Product advantages:

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out
- High efficiency electrical design (low operation cost, cooler winding temperature)
- Removable „Water Bloc" lead connector
- Cable material according to drinking water regulations (KTW approved)
- Water lubricated radial and thrust bearings
- All motors prefilled and 100% tested
- Non contaminating, water-filled design

Technical Specification

Standard Motor

- 4" NEMA flange
- Rotation: CCW facing shaft end
- Degree of protection: IP68
- Insulation: Cl. B
- Rated Ambient temp.: max. 30°C
- Cooling flow: Motors 2,2 kW and up: min.8cm/sec.
- Starts/h: 20
- Mounting: vertical/horizontal
- Voltage tolerance: 380-415V/50Hz,460V/ 60Hz ; +6% / -10% U_N (Standard: 415 + 6% = 440V, 380 - 10% = 342V)
- Motor protection: Select thermal overloads according to EN 60947-4-1.Trip time <10sec. at 5 x I_N

Options

- Motor cable VDE / KTW approved (1,5m; 2,5m; special lengths available)
- Special voltages on request
- Motor complete in AISI 316SS with SiC seal
- Built-in lightning arrestor

3-Phase Standard Performance Data 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T_N [Nm]	T_A [Nm]
						50	75	100	50	75	100		
0,37	3000	220	2830	1,80	7,95	58	65	67	0,64	0,75	0,82	1,25	2,55
		230	2855	1,78	8,30	56	64	67	0,61	0,72	0,79	1,23	2,80
		380	2850	1,10	5,10	55	63	66	0,60	0,71	0,79	1,23	2,70
		400	2870	1,10	5,41	54	63	66	0,55	0,66	0,74	1,22	3,00
		415	2880	1,14	5,61	53	61	65	0,51	0,62	0,71	1,23	3,20
		500	2830	0,79	3,49	58	65	67	0,64	0,75	0,82	1,25	2,55
0,55	3000	220	2820	2,6	10,9	60	65	66	0,65	0,77	0,84	1,85	3,50
		230	2845	2,6	11,4	58	65	66	0,61	0,73	0,81	1,84	3,85
		380	2855	1,6	7,0	57	64	68	0,60	0,71	0,79	1,84	3,80
		400	2870	1,6	7,4	55	63	68	0,53	0,65	0,74	1,82	4,20
		415	28880	1,7	7,7	50	60	65	0,50	0,61	0,70	1,82	4,60
		500	2820	1,2	4,8	60	65	66	0,65	0,77	0,84	1,85	3,50
0,75	3000	220	2840	3,5	11,6	63	69	70	0,61	0,73	0,81	2,51	6,05
		230	2865	3,5	12,2	61	68	70	0,55	0,68	0,77	2,49	6,70
		380	2840	2,0	6,7	63	69	70	0,61	0,73	0,81	2,51	6,05
		400	2865	2,0	7,0	61	68	70	0,55	0,68	0,77	2,49	6,70
		415	2875	2,1	7,3	58	66	69	0,51	0,63	0,73	2,48	7,20
		500	2840	1,5	5,1	63	69	70	0,61	0,73	0,81	2,51	6,05
1,1	3000	220	2830	4,9	26,4	68	73	74	0,63	0,75	0,82	3,71	10,23
		230	2850	4,9	27,8	66	72	74	0,57	0,69	0,78	3,67	11,33
		380	2830	2,8	15,3	68	73	74	0,63	0,75	0,82	3,71	10,23
		400	2850	2,8	16,0	66	72	74	0,57	0,69	0,78	3,67	11,33
		415	2865	2,9	16,7	64	70	73	0,52	0,65	0,74	3,64	12,20
		500	2830	2,1	11,6	68	73	74	0,63	0,75	0,82	3,71	10,23
1,5	3000	220	2830	6,7	34,0	67	72	73	0,62	0,74	0,83	5,04	12,77
		230	2855	6,7	35,9	65	71	73	0,55	0,68	0,78	5,00	14,10
		380	2830	3,9	19,7	67	72	73	0,62	0,74	0,83	5,04	12,77
		400	2855	3,9	20,7	65	71	73	0,55	0,68	0,78	5,00	14,10
		415	2865	4,0	21,5	62	69	72	0,50	0,63	0,73	5,00	15,20
		500	2830	2,9	14,9	67	72	73	0,62	0,74	0,83	5,04	12,77
2,2	4000	220	2820	9,3	49,0	71	75	75	0,6	0,74	0,82	7,42	19,87
		230	2845	9,5	51,6	69	74	75	0,52	0,66	0,77	7,37	22
		380	2820	5,4	28,3	71	75	75	0,6	0,74	0,82	7,42	19,87
		400	2845	5,5	29,8	69	74	75	0,52	0,66	0,77	7,37	22
		415	2855	5,8	30,9	65	72	74	0,47	0,61	0,72	7,33	23,67
		500	2820	4,1	21,5	71	75	75	0,6	0,74	0,82	7,42	19,87
3	4000	220	2820	12,8	69,1	73	77	77	0,61	0,74	0,82	10,16	28,80
		230	2845	13,0	72,8	70	76	76	0,53	0,67	0,77	10,06	31,93
		380	2820	7,4	39,9	73	77	77	0,61	0,74	0,82	10,16	28,80
		400	2845	7,5	42,0	70	76	76	0,53	0,67	0,77	10,06	31,93
		415	2855	7,9	43,6	67	73	75	0,47	0,61	0,72	10,04	34,33
		500	2820	5,6	30,3	73	77	77	0,61	0,74	0,82	10,16	28,80

ORLANDO srl

4" TESLA WATER FILLED SUBMERSIBLE MOTORS

4" Series high performance water filled submersible motors made of AISI 394 stainless steel (parts in contact with water). Encapsulated stator filled with inert gas avoiding the inflation of the inner casing and damages to the rotor and shaft. Lubrication of the motor and thrust bearing system is guaranteed by a water + glycol mixture. The motors are supported by Kingsbury type thrust bearing pads which ensure high axial thrust; all the motors are provided with a removable cable connector. All motors are available with UL/CSA approva.

CARACTÉRISTIQUES TECHNIQUES - *TECHNICAL SPECIFICATION*

Brides	*Flange*	**4" NEMA**
Classe d'isolement	*Insulation class*	**F**
Indice de protection	*Degree of protection*	**IP68**
Température ambiante	*Rated ambient temp.*	**35°C**
Vitesse de refroidissement	*Cooling flow*	**min. 0.2 m/s**
Tolérance alimentation	*Voltage tolerance*	**+6% / -10%**
Boulons et visserie	*Screws and bolts*	**AISI 304**
Nb max. démarrages	*Max starts*	**20/h**
Profondeur max. de fonctionnement	*Max operating depth*	**300m**
Poussée axiale	*Axial thrust*	
de 0,5 à 1,5 HP	*from 0,5 to 1,5 HP*	**2000 N**
de 2 à 3 HP	*from 2 to 3 HP*	**3000 N**
de 4 à 10 HP	*from 4 to 10 HP*	**6000 N**

Codici: PS MT 4...:

DONNÉES ÉLECTRIQUES - *ELECTRICAL DATA*

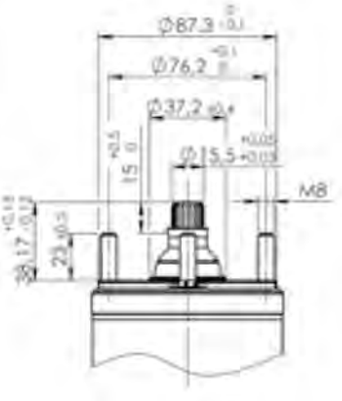
P2		Aliment. *Voltage* 50 Hz	In	Ist	P1 Max	tr/min	Cosφ	Eff.	Condens. *Capacitor*	*Poussée axiale Axial thrust*	Longueur *Length*	Poids *Weight*	Câble / *Cable*	
													Section / Set.	*Longueur/Length*
Hp	**KW**	**V**	**A**	**A**	**W**	**N**	**Nm**	**η**	**μF**	**N**	**mm**	**Kg**	**mm²**	**m**
0,5	0,37	1 ~ 230 V	3,3	9	740	2820	0,97	50	16	2000	236	6,7	4 x 1,5	1,7
0,75	0,55	1 ~ 230 V	4,6	15	1000	2820	0,94	56	20	2000	266	8	4 x 1,5	1,7
1	0,75	1 ~ 230 V	6,2	20	1300	2820	0,92	58	25	2000	286	9	4 x 1,5	1,7
1,5	1,1	1 ~ 230 V	8,6	31	1820	2830	0,92	62	35	2000	331	11	4 x 1,5	1,7
2	1,5	1 ~ 230 V	11	41	2320	2820	0,91	65	40	3000	393	13	4 x 1,5	1,7
3	2,2	1 ~ 230 V	16	50	3460	2820	0,94	65	60	3000	413	13,8	4 x 1,5	1,7
5	3,7	1 ~ 230 V	25	90	5500	2850	0,95	65	90	6000	684	26,5	4 x 2	2,7
0,5	0,37	3 ~ 230 V	2,7	10	710	2820	0,7	53	-	2000	216	6	4 x 1,5	1,7
		3 ~ 400 V	1,6	6										
0,75	0,55	3 ~ 230 V	3,3	14	920	2830	0,71	60	-	2000	236	6,7	4 x 1,5	1,7
		3 ~ 400 V	1,9	8										
1	0,75	3 ~ 230 V	4,1	21	1190	2830	0,73	63	-	2000	266	8	4 x 1,5	1,7
		3 ~ 400 V	2,4	12										
1,5	1,1	3 ~ 230 V	5,7	24	1720	2830	0,76	64	-	2000	286	9	4 x 1,5	1,7
		3 ~ 400 V	3,4	14										
2	1,5	3 ~ 230 V	7,6	33	2200	2830	0,72	68	-	3000	348	11	4 x 1,5	1,7
		3 ~ 400 V	4,4	19										
3	2,2	3 ~ 230 V	10,2	45	3170	2820	0,78	71	-	3000	393	13	4 x 1,5	1,7
		3 ~ 400 V	5,9	26										
4	3	3 ~ 230 V	14,3	66	4050	2840	0,71	74	-	6000	544	19,7	4 x 1,5	2,7
		3 ~ 400 V	8,3	38										
5,5	4	3 ~ 230 V	17,3	97	5340	2850	0,79	75	-	6000	614	23	4 x 2	2,7
		3 ~ 400 V	10	56									4 x 1,5	
7,5	5,5	3 ~ 230 V	24,2	133	7110	2850	0,74	77	-	6000	684	26,6	4 x 2	2,7
		3 ~ 400 V	14	77									4 x 1,5	
10	7,5	3 ~ 400 V	17,4	84	9520	2850	0,79	79	-	6000	764	30,6	4 x 2	3,5

MATÉRIAUX - *MATERIALS*

COMPOSANT	**COMPONENT**	**MATÉRIAU / *MATERIAL***	***TYPE***
Chemise interne et externe	*Int. and external sleeve*	Acier inoxe /*Stainless steel*	AISI 304 L
Extrémité arbre	*Shaft end*	Acier inox /*Stainless steel*	AISI 304 /Duplex
Support supérieur	*Upper bracket*	Fonte téflonisée/ *Teflon plated cast iron*	
Couvercle support	*Bracket cover*	Acier inox /*Stainless steel*	AISI 304
Joint à lèvre	*Lip seal*	Caoutchouc / *Rubber*	NBR
Joints d'étanchéité	*Gasket*	Caoutchouc / *Rubber*	NBR
Couvercle inférieur (jusqu'à 3 HP)	*Lower cover (up to 3 HP)*	Acier inox /*Stainless steel*	AISI 304
Support inférieur	*Lower cover*	Fonte téflonisée/*Teflon plated cast iron*	
Soufflet	*Diaphragm*	Caoutchouc / *Rubber*	EPDM
Paliers de butée	*Thrust bearing*	Acier-Graphite / *Stainless steel-graphite*	
Soupape	*Valve*	*Acier inox /Stainless steel*	AISI 304
Câble	*Cable*	Caoutchouc / Rubber	EPDM
Fiche connecteur	*Connector plug*	*Acier inox /Stainless steel*	AISI 316
Garniture antisable (fixe-mobile)	*Sand guard (fixed-removable)*	Caoutchouc / Rubber	NBR
Visserie	*Bolts & screws*	*Acier inox /Stainless steel*	AISI 304
Liquide réfrigérant	*Cooling liquid*	Antigel+Eau / *Antifreeze+water*	

	Tous les moteurs Tesla sont munis de câble d'alimentation amovible. Cette solution permet un montage/démontage rapide de la partie hydraulique et facilite les interventions de maintenance.	*All Tesla motors are provided with removable cable connector. This solution allows fast assembly/disassembly of the hydraulic part and facilitates maintenance operations.*
	Groupe de butée type Kingsbury composé de patins oscillants en acier inox à très haute résistance usinés par Tesla avec un procédé de rodage sphérique ; cet usinage garantit à ce composant stratégique une haute fiabilité et une résistance élevée à la charge axiale.	*Kingsbury type thrust bearing unit consisting of tilting pads made of highly-resistant stainless steel and machined by Tesla using the spherical lapping process; this machining guarantees to this strategic component high reliability and high resistance to axial load.*
	Arbres en acier AISI 304 avec traitement particulier de durcissement superficiel et de polissage dans la zone de travail des coussinets en bronze ; rotor avec cage en cuivre pour les moteurs d'une puissance supérieure à 4 HP	*Shafts made of AISI 304 with a special process of surface hardening and polishing of the working area of the bushes; rotor with copper cage for motors with power exceeding 4 HP*
	Stator encapsulé avec chemise externe en AISI 304L. Le stator est à 24 rainures pour une plus grande élasticité et régularité de fonctionnement ; conducteurs en cuivre isolé avec double émail en classe H.	*Encapsulated stator with outer casing made of AISI 304L. The stator has 24 slots for better elasticity and regularity of operation; Class H double insulated copper wires.*

Brides NEMA
NEMA FLANGE



ORLANDO srl

4” SUMOTO OIL FILLED SUBMERSIBLE MOTORS

Op4 Series

PS MS 4....:

Introduction

RELIABLE POWER FOR PUMPS

Filled with special food grade lubricant.

The OP4 Series is the evolution of the 4" Submersible Rewindable Motor.
Elevated starting torque, mechanical compactness,reliability,superior perfomance togheter with the mos complete range of products are the principal features making the OP4 Motors.

The special design allow an easy access and replacement of all par subject to the wear marking simply and quick the eventual servicir of the motor.

Technical Features

- Motor casing, shaft and bottom end made in Stainless Steel AISI 304.
- High resistance cast iron nickel plated Upper Bracket.
- Options:
Upper bracket of stamped Brass OT 58
Upper bracket of casting AISI 304
- Axial and radial thrust ball bearing.
- Standard mechanical Seal graphite\ceramic.
- Optionable seal type SIC
- Special Cooling fluid for a better lubricant effect to increase life of moving parts. The liquid with its high thermal capacity gives the motor superior overload capabilities.
- Oversize Compensation diaphragm and sand slinger protection.
- Insulation class F. Protection IP 58.
- Removable cable connector.
- Nema standard coupling dimensions.

OPERATING LIMITS:

- Maximum voltage fluctuaction admissible versus nominal rated voltage: +6% -10%.
- Maximum water temperature:
35°C with at least 0.08 mt/sec of water flow speed
- Maximum motor starting per hour: 30
- Axial thrust:
1500N from 0,37kW up to 2,2kW
2500N from 2,2kW up to 5,5kW
4400N from 2,2kW up to 7,5kW
5000N from 2,2kW up to 5,5kW
- Maximum immersion depth: 150 MT
- Horizontal operating position: admitted up to 2,2kW

VERSION:

Single phase:
from 0,37kW up to 3,7kW 220-230V 50Hz
from 0,37kW up to 3,7kW 240V 50Hz

Three phase:
from 0,37kW up to 7,5kW 220V 50Hz
from 0,37kW up to 7,5kW 380-400V 50Hz
from 0,37kW up to 7,5kW 415V 50Hz

Single Phase:
from 0,37kW up to 1,1kW 115V 60Hz
from 0,37kW up to 3,7kW 220-230V 60Hz

Three phase:
from 0,37kW up to 7,5kW 220V 60Hz
from 0,37kW up to 7,5kW 380V 60Hz
from 0,37kW up to 7,5kW 460V 60Hz

ORLANDO srl

50 Hz.	Type	Thrust Load	Weight	H	kW	Hp	In	Istart	RPM	Cosφ	Ts/Tn	EFF%	μF	Rm	Ra	T_{emp}	Nominal torque
		N	Kg	mm			Amp							[Ω]	[Ω]	°C	[Nm]
		MONOFASE - *SINGLE PHASE*															
Single phase 220/230V 50 Hz	OPM 050	1500	7	325	0,37	0,5	3,4/3,6	10,2	2860	0,94	0,75	53	20	9,2	19,7	20	1,23
	OPM 075		7,6		0,55	0,75	4,2/4,5	13,6	2855	0,94	0,63	61	25	6,3	10,6	20	1,83
	OPM 100		8,7	350	0,75	1	5,8/6,0	18,5	2855	0,96	0,62	63	35	4,6	8,0	20	2,50
	OPM 150		10,3	385	1,1	1,5	8,0/8,2	26	2855	0,97	0,62	67	40	3,2	6,3	20	3,68
	OPM 200		12	420	1,5	2	10,8/11,0	34	2855	0,98	0,62	65	60	2,3	4,3	20	5,01
	OPM 300	1500	14,2	470	2,2	3	14,6/14,8	48	2820	0,96	0,64	68	80	1,8	3,3	20	7,45
		4400	15,5	520													
220/240	OPM500	4400	22	580	3,7	5	24/22	125	2840	0,95	0,5	69	100	1,0	1,5	20	12,44

50 Hz.	Type	Thrust Load	Weight	H	kW	Hp	In	Istart	RPM	Cosφ	Ts/Tn	EFF%	R [Ω]	T_{emp}	Nominal torque
		N	Kg	mm			Amp							°C	[Nm]
		TRIFASE - *THREE PHASE*													
Three Phase 380/400V 50Hz	OPT 050	1500	6,5	325	0,37	0,5	1,4/1,6	5	2840	0,72	2,8	58	35,7	20	1,24
	OPT 075		7		0,55	0,75	1,9/2,0	7	2830	0,75	3,1	62	27,3	20	1,85
	OPT 100		7,6		0,75	1	2,4/2,6	10	2830	0,74	3,3	67	19,7	20	2,53
	OPT 150		8,7	350	1,1	1,5	3,2/3,4	14	2820	0,74	3,2	67	14,1	20	3,72
	OPT 200		10,4	385	1,5	2	4,4/4,6	17	2820	0,72	3,4	68	9,3	20	5,07
	OPT 300	1500	12	420	2,2	3	6,0/6,2	24	2820	0,76	3,1	74	7,5	20	7,45
		2500	11,0	383			5,6/5,8	23	2850	0,82	2,9	78	6,2	20	7,37
		5000	11,2	383			5,6/5,8	23	2850	0,82	2,9	78		20	
		4400	14,2	470			6,0/6,2	24	2820	0,76	3,1	74	7,5	20	7,45
	OPT 400	2500	12,8	418	3	4	7,7/7,8	30	2860	0,80	2,8	78	6,2	20	10,00
		5000	13,1	418			7,7/7,8	30	2860	0,80	2,8	78		20	
		4400	19	550			7,9/8,0	34	2860	0,78	3,5	75	4,6	20	10,00
	OPT 550	2500	15,3	468	4	5,5	9,7/9,8	45	2825	0,82	3,0	78	4,6	20	13,52
		5000	15,6	468			9,7/9,8	45	2825	0,82	3,0	78		20	
		4400	20,5	580			10,0/10,2	47	2840	0,78	3,5	75	3,8	20	13,44
	OPT 750	2500	18,6	538	5,5	7,5	13,5/13,8	55	2820	0,83	3,0	78	3,5	20	18,62
		5000	18,9	538			13,5/,138	55	2820	0,83	3,0	78		20	
		4400	22,4	650			14,0/14,4	58	2830	0,79	3,5	76	2,7	20	18,55
	OPT 1000	4400	27	810	7,5	10	19,0/19,5	72	2820	0,78	3,2	76	1,9	20	25,40
Three Phase 220V 50Hz	OPT 050	1500	6,5	325	0,37	0,5	2,5	8,6	2840	0,72	2,8	58	11,9	20	1,24
	OPT 075		7		0,55	0,75	3,3	12,2	2830	0,75	3,1	62	9,1	20	1,85
	OPT 100		7,6		0,75	1	4,2	17,3	2830	0,74	3,3	67	6,6	20	2,53
	OPT 150		8,7	350	1,1	1,5	5,6	24,3	2820	0,74	3,2	67	4,7	20	3,72
	OPT 200		10,4	385	1,5	2	7,6	29,5	2820	0,72	3,4	68	3,1	20	5,07
	OPT 300	1500	12	420	2,2	3	10,4	41,5	2820	0,76	3,1	74	2,5	20	7,45
		2500	11,0	383			9,7	39,8	2850	0,82	2,9	78	2,1	20	7,37
		5000	11,2	383			9,7	39,8	2850	0,82	2,9	78		20	
		4400	14,2	470			10,4	41,5	2820	0,76	3,1	74	2,5	20	7,45
	OPT 400	2500	12,8	418	3	4	13,3	52	2860	0,80	2,8	78	2,1	20	10,00
		5000	13,1	418			13,3	52	2860	0,80	2,8	78		20	
		4400	19	550			13,7	58	2860	0,78	3,5	75	1,5	20	10,00
	OPT 550	2500	15,3	468	4	5,5	16,8	78	2825	0,82	3,0	78	1,5	20	13,52
		5000	15,6	468			16,8	78	2825	0,82	3,0	78		20	
		4400	20,5	580			17,4	81	2840	0,78	3,5	75	1,3	20	13,44
	OPT 750	2500	18,6	538	5,5	7,5	23,4	95	2820	0,83	3,0	78	1,2	20	18,62
		5000	18,9	538			23,4	95	2820	0,83	3,0	78		20	
		4400	22,4	650			24,4	100	2830	0,79	3,5	76	0,9	20	18,55
	OPT 1000	4400	27	810	7,5	10	33,0	124	2820	0,78	3,2	76	0,6	20	25,40
Three Phase 415V 50Hz	OPT 050	1500	6,5	325	0,37	0,5	1,1	4	2830	0,71	2,7	58	35,7	20	1,25
	OPT 075		7		0,55	0,75	1,6	6	2830	0,72	2,9	62	27,3	20	1,85
	OPT 100		7,6		0,75	1	2,2	9	2830	0,75	3,1	64	19,7	20	2,53
	OPT 150		8,7	350	1,1	1,5	3,3	13	2820	0,74	3,2	65	14,1	20	3,72
	OPT 200		10,4	385	1,5	2	4,2	16	2830	0,74	3,2	65	9,3	20	5,06
	OPT 300	1500	12	420	2,2	3	5,6	24	2820	0,75	3,2	66	7,5	20	7,45
		2500	11,0	383			5,6	23	2850	0,82	2,9	78	6,2	20	7,37
		5000	11,2	383			5,6	23	2850	0,82	2,9	78		20	
		4400	14,2	470			5,6	24	2820	0,78	3,1	72	7,5	20	7,45
	OPT 400	2500	12,8	418	3	4	7,7	30	2860	0,80	2,8	78	6,2	20	10,00
		5000	13,1	418			7,7	30	2860	0,80	2,8	78		20	
		4400	19	550			7,3	33	2840	0,76	3,2	75	4,6	20	10,10
	OPT 550	2500	15,3	468	4	5,5	9,7	45	2825	0,82	3,0	78	4,6	20	13,52
		5000	15,6	468			9,7	45	2825	0,82	3,0	78		20	
		4400	20,5	580			9,5	45	2830	0,79	3,3	76	3,8	20	13,45
	OPT 750	2500	18,6	538	5,5	7,5	13,5	55	2820	0,83	3,0	78	3,5	20	18,62
		5000	18,9	538			13,5	55	2820	0,83	3,0	78		20	
		4400	22,4	650			13,0	56	2830	0,78	3,3	76	2,7	20	18,55
	OPT 1000	4400	27	810	7,5	10	17,0	70	2820	0,83	3,2	77	1,9	20	25,40

CONTROL BOXES FOR 3" AND 4" ELECTRIC MOTORS

ELECTRIC CONTROL BOX WITH CAPACITOR FOR SUBMERSIBLE ELECTRIC PUMPS MONOPHASE 220V FROM 0,5 TO 3 HP:

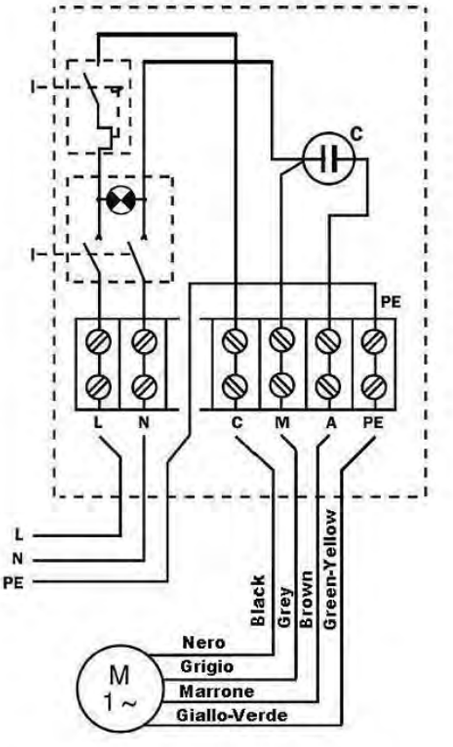
- thermic protection externally restoring;
- Starting capacitor
- bipolar shining switch box activated
- Container in insulating thermoplastic material
- Float switch external commands or pressure switch .

The control boxes are designed and constructed according to the following European Community Directives:

- Low Voltage Directive (LVD) 73/23/CEE
- Electromagnetic Compatibility Directive (EMC) 89/336/CEE
- 93/68/CEE Directive

And meet the following technical standards:

- CEI EN 61058-1 (1992) – CEI EN 61058-1/A1 (1993)
- CEI EN 60934 (2001) – CEI EN 60998-1 (1995)
- CEI EN 60998-2-1 (1993) – CEI EN 60252 (1994)



INSTRUCTION FOR CONNECTION

The electrical connections can be made only by authorized and specialized personnel. The manufacturer declines any responsibility for incorrect installation or connection of the product.

- For connections refer to the above diagram and also to the letters reported on terminal board (LNCMA-symbol of earth).
- Connect the external input (230V 50Hz) to the L-N-PE terminals. The n.4 conductors of the electric motor must be connected in the C-M-A-PE terminals.

Code	HP	KW	Thermal Protection	Capacitor	Motor
Q 16 4	0.5	0.37	4	16 uf	Franklin/Sumoto OP3/TeslaGG
Q 16 6	0.5	0.37	6	16 uf	Orlando 3"
Q 20 4	0.5	0.37	4	20 uf	Sumoto OP4
Q 20 5	0.5	0.37	5	20 uf	Orlando 4" / Submotor
Q 20 6	0.75	0.55	6	20 uf	Orlando 3"/Franklin/Sumoto OP3 e 4WP/ TeslaGG
Q 25 6	0.75	0.55	6	25 uf	Orlando 4"/Sumoto OP4
Q 25 7	0.75	0.55	7	25 uf	Submotor
Q 25 7	1.0	0.75	7	25 uf	Sumoto OP3/ TeslaGG
Q 25 8	1.0	0.75	8	25 uf	Orlando 3"
Q 30 7	1.0	0.75	7	30 uf	Sumoto 4WP
Q 35 7	1.0	0.75	7	35 uf	Franklin/Sumoto OP4
Q 35 8	1.0	0.75	8	35 uf	Orlando 4" / Submotor
Q 35 9	1.5	1.1	9	35 uf	TeslaGG
Q 35 12	1.5	1.1	12	35 uf	Orlando 3"
Q 40 10	1.5	1.1	10	40 uf	Orlando 4"/Franklin
Q 40 11	1.5	1.1	10	40 uf	Submotor
Q 40 12	1.5	1.1	12	40 uf	Sumoto OP4 - 4WP
Q 40 13	2	1.5	13	40 uf	TeslaGG
Q 50 13	2.0	1.5	13	50 uf	Orlando 4"/Franklin
Q 50 15	2.0	1.5	15	50 uf	Sumoto 4WP
Q 60 14	2.0	1.5	14	60 uf	Submotor
Q 60 15	2.0	1.5	15	60 uf	Sumoto OP4
Q 60 16	3.0	2.2	16	60 uf	TeslaGG
Q 70 18	3.0	2.2	18	70 uf	Sumoto 4WP
Q 75 18	3.0	2.2	18	75 uf	Franklin
Q 80 18	3.0	2.2	18	80 uf	Orlando 4"
Q 80 20	3.0	2.2	20	80 uf	Sumoto OP4 / Submotor
Q 90 25	5.0	3.7	25	90 uf	TeslaGG

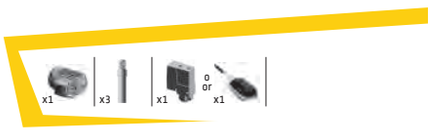
Q SONDA UNI SL 100:
UNI SL 100 unipolar probe, stainless steel electrode,grey body and Cable gland 1 x 1,5 mm2

Q SONDA BLU:
Stainless steel probe, blue color

LEVEL

ITA Avviatori diretti amperometrici 1 motore con controllo di livello

ENG *Amperometric direct starters 1 motor with level control*



CARATTERISTICHE GENERALI

- Sezionatore generale con blocca porta
- Pulsante per il funzionamento automatico -0- manuale
- Trimmer di regolazione sensibilità sonde da 0-100Kohm
- Trimmer di regolazione corrente massima
- Trimmer di regolazione ritardo intervento sonde (0-250min.)
- Ingresso in bassissima tensione per controllo di livello (3 sonde o 2 sonde temporizzate)o interruttore a galleggiante (svuotamento o riempimento)
- Ingresso in bassissima tensione per pressostato o interruttore a galleggiante
- Spia Led "POWER" (presenza rete)
- Spia Led marcia
- Spia Led sovraccarico
- Spia Led stato motore
- Spia Led "EXTERNAL CONTROL" (stato pressostato o interruttore a galleggiante)
- Spia Led "LEVEL" (controllo di livello)
- Fusibile di protezione circuito ausiliario
- Fusibile di protezione motore
- Contattore (SA615.xx)
- Protezione amperometrica
- Switch ON/OFF per protezione minima e massima tensione (ripristino automatico)
- Contenitore esterno in materiale termoplastico
- Pressacavi
- Grado di protezione IP55
- Temperatura d'impiego -5/+40°C

GENERAL CHARACTERISTICS

- *General disconnecting switch with door lock*
- *Button for automatic -0- manual operation*
- *Trimmer to regulate probes sensitivity from 0-100Kohm*
- *Trimmer to regulate maximum current*
- *Trimmer to regulate probes intervention delay (0-250min.)*
- *Very low voltage input for level control (3 probes or 2 timed probes) or float switch (emptying or filling)*
- *Very low voltage input for pressure switch or float switch*
- *"POWER" Led indicator (supply mains)*
- *Running Led indicator*
- *Overload Led indicator*
- *Motor condition Led indicator*
- *"EXTERNAL CONTROL" Led indicator (pressure switch or float switch status)*
- *"LEVEL" Led indicator (level control)*
- *Auxiliary circuit protection fuse*
- *Motor protection fuse*
- *Contactor (SA615.xx)*
- *Amperometric protection*
- *Switch ON/OFF for minimum and maximum voltage protection (automatic reset)*
- *External thermoplastic box*
- *Cable holder*
- *Protection degree IP55*
- *Operating temperature -5/+40°C*

SINGLE-PHASE 230 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA612.00	ADM 0,5/3HP-A-1-CMS-CL-MM-L-SB	0,37/2,2	0,5/3	2-18	345	285	165

THREE-PHASE 400 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA615.00	ADT 0,5/5HP-A-1-CMS-CL-MM-L-SB	0,37/3,7	0,5/5	0,8-9	345	285	165
SA615.01	ADT 0,5/7HP-A-1-CMS-CL-MM-L-SB	0,37/5	0,5/7	0,8-12	345	285	165
SA615.02	ADT 0,5/9HP-A-1-CMS-CL-MM-L-SB	0,37/6,5	0,5/9	0,8-16	345	285	165
SA615.03	ADT 3/12,5HP-A-1-CMS-CL-MM-L-SB	2,2/9,2	3/12,5	4-25	345	285	165
SA615.04	ADT 10/17,5HP-A-1-CMS-CL-MM-L-SB	7,5/13	10/17,5	16-32	345	285	165
SA615.05	ADT 10/22HP-A-1-CMS-CL-MM-L-SB	7,5/16	10/22	16-36	380	300	120
SA615.06	ADT 10/25HP-A-1-CMS-CL-MM-L-SB	7,5/18,5	10/25	16-45	380	300	180
SA615.07	ADT 10/30HP-A-1-CMS-CL-MM-L-SB	7,5/22	10/30	16-52	460	380	180
SA615.08	ADT 10/40HP-A-1-CMS-CL-MM-L-SB	7,5/30	10/40	16-68	460	380	180

OPTIONALS

CODE	TYPE
OP100.05	Scaricatore monofase di tipo 2 per sovratensione / *Single-phase surge arrester type 2*
OP100.05/1	Scaricatore trifase di tipo 2 per sovratensione / *Three-phase surge arrester type 2*
OP100.15/230	Contaore 230Vac 48x48 / *Hour counter 230Vac 48x48*
OP100.15/400	Contaore 400Vac 48x48 / *Hour counter 400Vac 48x48*
OP100.03/20	Condensatore 20µF cablato* / *Wired capacitor 20µF**
OP100.03/30	Condensatore 30µF cablato* / *Wired capacitor 30µF**
OP100.03/40	Condensatore 40µF cablato* / *Wired capacitor 40µF**
OP100.03/50	Condensatore 50µF cablato* / *Wired capacitor 50µF**
OP100.03/70	Condensatore 70µF cablato* / *Wired capacitor 70µF**
OP100.18	Timer ritardo avviamento / *Start delay timer*
OP100.18/1	Timer multifunzione / *Multifunction timer*
OP100.16	Timer analogico giornaliero 72x72 con riserva / *Analog daily timer 72x72 with reserve*
OP100.16/1	Timer analogico giornaliero 72x72 senza riserva / *Analog daily timer 72x72 without reserve*
OP100.16/2	Timer analogico giornaliero DIN con riserva / *Analog daily timer DIN with reserve*
OP100.02	Selettore automatico/manuale / *Automatic/manual selector switch*
OP100.13/1	Pulsante "STOP" sirena / *Siren "STOP" button*
OP100.13/1/230	Sirena cablata 230Vac / *Wired siren 230Vac*
OP100.13/2/230	Lampeggiante cablato 230Vac / *Wired flashing lamp 230Vac*
OP100.14/230	Lampeggiante con sirena remoto 230Vac / *Remote flashing lamp with siren 230Vac*
OP100.13/1/12	Sirena cablata 12Vac/dc / *Wired siren 12Vac/dc*
OP100.13/2/12L	Lampeggiante a Led cablato 12Vac/dc / *Wired flashing Led lamp 12Vac/dc*
OP100.14/12L	Lampeggiante a Led con sirena remoto 12Vac/dc / *Remote flashing Led lamp with siren 12Vac/dc*
OP200.00	Uscita allarme 12Vdc 200mA + contatto puro / *Alarm output 12Vdc 200mA + pure contact*

RICAMBI / SPARE PARTS

CODE	TYPE
AC100.20	Scheda elettronica Led 1 pompa / *Led electronic board 1 pump*
AC100.30/1	Mascherina Level / *Level template*
SD612.20	Scheda elettronica Level monofase amperometrico / *Single-phase amperometric Level electronic board*
SD615.20	Scheda elettronica Level trifase amperometrico 20A / *Three-phase amperometric Level electronic board 20A*
AC110.20	Coppia di T.A. 20A / *T.A. couple 20A*
SD615.30	Scheda elettronica Level trifase amperometrico 30A / *Three-phase amperometric Level electronic board 30A*
AC110.30	Coppia di T.A. 30A / *T.A. couple 30A*
SD615.40	Scheda elettronica Level trifase amperometrico 40A / *Three-phase amperometric Level electronic board 40A*
AC110.40	Coppia di T.A. 40A / *T.A. couple 40A*

MARCIA A SECCO
DRY RUNNING

*Condensatori da 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF e 80µF a richiesta.
L'inserimento di optionals può comportare variazioni alle dimensioni del quadro. Per ulteriori dettagli contattare il n/s ufficio tecnico/commerciale.

**Capacitors from 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF and 80µF on request.*
The addition of some optional can imply changes in the size of the control panel. For further details please contact our technical/commercial department.

DIRECT MOTOR PLUS

ITA Avviatori diretti elettromeccanici 1 motore con amperometro e voltmetro

ENG *Electromechanical direct starters 1 motor with ammeter and voltmeter*

CARATTERISTICHE GENERALI

- Sezionatore generale con blocca porta
- Selettore per il funzionamento automatico -0- manuale (quest'ultimo comando è a ritorno automatico)
- N°2 ingressl in bassissima tensione per pressostati o interruttori a galleggiante (livello minimo/massimo)
- Spia Led marcia
- Spia Led sovraccarico
- Amperometro analogico 72x72
- Voltmetro analogico 72x72
- Fusibile di protezione circuito ausiliario
- Trasformatore per circuito ausiliario uscita 24Vac
- Fusibile di protezione motore
- Contattore
- Relè termico ripristinabile internamente
- Morsettiera per comando ausiliario e potenza
- Contenitore esterno in materiale termoplastico
- Pressacavi
- Grado di protezione IP55
- Temperatura d'impiego -5/+40°C

GENERAL CHARACTERISTICS

- *General disconnecting switch with door lock*
- *Switch for automatic -0- manual operation (the last command has an automatic return)*
- *N°2 very low voltage inputs for pressure switches or float switches (minimum/maximum level)*
- *Running Led indicator*
- *Overload Led indicator*
- *Analog ammeter 72x72*
- *Analog voltmeter 72x72*
- *Auxiliary circuit protection fuse*
- *Transformer for auxiliary circuit output 24Vac*
- *Motor protection fuse*
- *Contactor*
- *Thermal relay (internal reset)*
- *Terminal board for auxiliary control and power*
- *External thermoplastic box*
- *Cable holder*
- *Protection degree IP55*
- *Operating temperature -5/+40°C*

SINGLE-PHASE 230 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA622.00/01	ADEM 0,5/0,75HP-4,5/6,3T-1-P/G-V/A-SB	0,37/0,55	0,5/0,75	4,5-6,3	345	285	165
SA622.02	ADEM 1HP-7/10T-1-P/G-V/A-SB	0,75	1	7-10	345	285	165
SA622.03	ADEM 1,5HP-9/12,5T-1-P/G-V/A-SB	1,1	1,5	9-12,5	345	285	165
SA622.04	ADEM 2HP-11/16T-1-P/G-V/A-SB	1,5	2	11-16	345	285	165
SA622.05	ADEM 3HP-14/20T-1-P/G-V/A-SB	2,2	3	14-20	345	285	165

THREE-PHASE 400 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA632.00	ADET 0,5HP-1,1/1,6T-1-P/G-V/A-SB	0,37	0,5	1,1-1,6	345	285	165
SA632.01	ADET 0,75HP-1,4/2T-1-P/G-V/A-SB	0,55	0,75	1,4-2	345	285	165
SA632.02	ADET 1HP-1,8/2,5T-1-P/G-V/A-SB	0,75	1	1,8-2,5	345	285	165
SA632.03/04	ADET 1,5/2HP-2,8/4T-1-P/G-V/A-SB	1,1/1,5	1,5/2	2,8-4	345	285	165
SA632.05/06	ADET 2,5/3HP-4,5/6,3T-1-P/G-V/A-SB	1,8/2,2	2,5/3	4,5-6,3	345	285	165
SA632.07/08	ADET 4/5HP-7/10T-1-P/G-V/A-SB	3/3,7	4/5	7-10	345	285	165
SA632.09	ADET 5,5HP-9/12,5T-1-P/G-V/A-SB	4	5,5	9-12,5	345	285	165
SA632.10	ADET 7,5HP-11/16T-1-P/G-V/A-SB	5,5	7,5	11-16	345	285	165
SA632.11	ADET 10HP-14/20T-1-P/G-V/A-SB	7,5	10	14-20	345	285	165
SA632.12	ADET 12,5HP-20/25T-1-P/G-V/A-SB	9,2	12,5	20-25	345	285	165
SA632.13	ADET 15HP-23/28T-1-P/G-V/A-SB	11	15	23-28	345	285	165
SA632.14	ADET 17,5HP-27/32T-1-P/G-V/A-SB	13	17,5	27-32	345	285	165
SA632.15	ADET 20HP-34/40T-1-P/G-V/A-SB	15	20	34-40	380	300	120
SA632.16	ADET 25HP-36/45T-1-P/G-V/A-SB	18,5	25	36-45	380	300	180
SA632.17	ADET 30HP-45/63T-1-P/G-V/A-SB	22	30	45-63	460	380	180
SA632.18	ADET 40HP-57/75T-1-P/G-V/A-SB	30	40	57-75	460	380	180
SA632.19	ADET 50HP-70/90T-1-P/G-V/A-SB	37	50	70-90	460	380	180

OPTIONALS

CODE	TYPE
OP100.04	Relè mancanza e sequenza fasi / *Lack and sequence of phases relay*
OP100.04/1	Relè mancanza e sequenza fasi, minima e massima tensione / *Lack and sequence of phases relay, minimum and maximum voltage*
OP100.04/2	Relè mancanza e sequenza fasi, minima e massima tensione e asimmetria / *Lack and sequence of phases relay, minimum and maximum voltage and asymmetry*
OP100.04/3	Relè minima e massima tensione monofase / *Single-phase minimum and maximum voltage relay*
OP100.05	Scaricatore monofase di tipo 2 per sovratensione / *Single-phase surge arrester type 2*
OP100.05/1	Scaricatore trifase di tipo 2 per sovratensione / *Three-phase surge arrester type 2*
OP100.10	Commutatore voltmetrico / *Voltmeter selector switch*
OP100.15/24	Contaore 24Vac 48x48 / *Hour counter 24Vac 48x48*
OP100.03/20	Condensatore 20µF cablato* / *Wired capacitor 20µF**
OP100.03/30	Condensatore 30µF cablato* / *Wired capacitor 30µF**
OP100.03/40	Condensatore 40µF cablato* / *Wired capacitor 40µF**
OP100.03/50	Condensatore 50µF cablato* / *Wired capacitor 50µF**
OP100.03/70	Condensatore 70µF cablato* / *Wired capacitor 70µF**
OP100.19	Modulo GSM / *GSM module*
OP100.18	Timer ritardo avviamento / *Start delay timer*
OP100.18/1	Timer multifunzione / *Multifunction timer*
OP100.16	Timer analogico giornaliero 72x72 con riserva / *Analog daily timer 72x72 with reserve*
OP100.16/1	Timer analogico giornaliero 72x72 senza riserva / *Analog daily timer 72x72 without reserve*
OP100.16/2	Timer analogico giornaliero DIN con riserva / *Analog daily timer DIN with reserve*
OP100.00	Level (controllo di livello) / *Level (level control)*
OP100.01	Sensitive Level (controllo di livello) / *Sensitive Level (level control)*
OP100.02/1	Pulsante start/stop cablato / *Wired start/stop button*
OP100.13	Pulsante "STOP" sirena / *Siren "STOP" button*
OP100.13/1/24	Sirena cablata 24Vac/dc / *Wired siren 24Vac/dc*
OP100.13/2/24	Lampeggiante cablato 24Vac/dc / *Wired flashing lamp 24Vac/dc*
OP100.14/24	Lampeggiante con sirena remoto 24Vac/dc / *Remote flashing lamp with siren 24Vac/dc*
OP200.01	Uscita allarme 24Vac + contatto puro / *Alarm output 24Vac + pure contact*

USO COMUNE
GENERAL USE

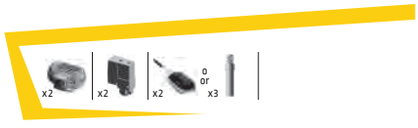
*Condensatori da 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF e 80µF a richiesta.
L'inserimento di optionals può comportare variazioni alle dimensioni del quadro. Per ulteriori dettagli contattare il n/s ufficio tecnico/commerciale.

**Capacitors from 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF and 80µF on request.*
The addition of some optional can imply changes in the size of the control panel. For further details please contact our technical/commercial department.

DUAL MOTOR

ITA Avviatori diretti amperometrici con gestione automatica di 2 motori

ENG *Amperometric direct starters with automatic management of 2 motors*



CARATTERISTICHE GENERALI

- Sezionatore generale con blocca porta
- N° 2 pulsanti per il funzionamento automatico -0- manuale
- Ritardo di 3s tra la partenza dei 2 motori
- Trimmer di regolazione corrente massima per ogni motore
- Ingresso in bassissima tensione per pressostato "START"
- Ingresso in bassissima tensione per pressostato "EMERGENZA"
- N° 2 ingressi in bassissima tensione per interruttori a galleggiante o sonde di livello (livello minimo/massimo)
- Spia Led "POWER" (presenza rete)
- N° 2 spie Led marcia
- N° 2 spie Led sovraccarico
- N° 2 spie Led stato motori
- Spia Led "ALTERNANCE" (stato pressostati)
- Spia Led "LEVEL" (controllo di livello)
- Fusibile di protezione circuito ausiliario
- Fusibile di protezione su ogni motore (SA623.xx)
- Fusibile di protezione motori (SA626.xx)
- N° 2 contattori (SA626.xx)
- Protezione amperometrica su ogni motore
- Switch ON/OFF per protezione minima e massima tensione (ripristino automatico)
- Contenitore esterno in materiale termoplastico
- Pressacavi
- Grado di protezione IP55
- Temperatura d'impiego -5/+40°C

GENERAL CHARACTERISTICS

- *General disconnecting switch with door lock*
- *N° 2 buttons for automatic -0- manual operation*
- *3s delay between the starting of the 2 motors*
- *Trimmer to regulate maximum current for each motor*
- *Very low voltage input for "START" pressure switch*
- *Very low voltage input for "EMERGENCY" pressure switch*
- *N° 2 very low voltage inputs for float switches or level probes (minimum/maximum level)*
- *"POWER" Led indicator (supply mains)*
- *N° 2 running Led indicators*
- *N° 2 overload Led indicators*
- *N° 2 motors' condition Led indicators*
- *"ALTERNANCE" Led indicator (pressure switches status)*
- *"LEVEL" Led indicator (level control)*
- *Auxiliary circuit protection fuse*
- *Protection fuse on each motor (SA623.xx)*
- *Motors' protection fuse (SA626.xx)*
- *N° 2 contactors (SA626.xx)*
- *Amperometric protection on each motor*
- *Switch ON/OFF for minimum and maximum voltage protection (automatic reset)*
- *External thermoplastic box*
- *Cable holder*
- *Protection degree IP55*
- *Operating temperature -5/+40°C*

SINGLE-PHASE 230 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA623.00	ADM 0,5/3HP-A-GA2-PR-P-MM-L-SB	0,37/2,2	0,5/3	2x(2-18)	345	285	165

THREE-PHASE 400 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA626.00	ADT 0,5/5HP-A-GA2-PR-P-MM-L-SB	0,37/3,7	0,5/5	2x(0,8-9)	345	285	165
SA626.01	ADT 0,5/7HP-A-GA2-PR-P-MM-L-SB	0,37/5	0,5/7	2x(0,8-12)	345	285	165
SA626.02	ADT 0,5/9HP-A-GA2-PR-P-MM-L-SB	0,37/6,5	0,5/9	2x(0,8-16)	345	285	165
SA626.03	ADT 3/12,5HP-A-GA2-PR-P-MM-L-SB	2,2/9,2	3/12,5	2x(4-25)	345	285	165

OPTIONALS

CODE	TYPE
OP100.20	Portafusibile su ogni motore / *Fuse holder on each motor*
OP100.05	Scaricatore monofase di tipo 2 per sovratensione / *Single-phase surge arrester type 2*
OP100.05/1	Scaricatore trifase di tipo 2 per sovratensione / *Three-phase surge arrester type 2*
OP100.15/230	Contaore 230Vac 48x48 / *Hour counter 230Vac 48x48*
OP100.15/400	Contaore 400Vac 48x48 / *Hour counter 400Vac 48x48*
OP100.03/20	Condensatore 20µF cablato* / *Wired capacitor 20µF**
OP100.03/30	Condensatore 30µF cablato* / *Wired capacitor 30µF**
OP100.03/40	Condensatore 40µF cablato* / *Wired capacitor 40µF**
OP100.03/50	Condensatore 50µF cablato* / *Wired capacitor 50µF**
OP100.03/70	Condensatore 70µF cablato* / *Wired capacitor 70µF**
OP100.18	Timer ritardo avviamento / *Start delay timer*
OP100.18/1	Timer multifunzione / *Multifunction timer*
OP100.16	Timer analogico giornaliero 72x72 con riserva / *Analog daily timer 72x72 with reserve*
OP100.16/1	Timer analogico giornaliero 72x72 senza riserva / *Analog daily timer 72x72 without reserve*
OP100.16/2	Timer analogico giornaliero DIN con riserva / *Analog daily timer DIN with reserve*
OP100.13/1	Pulsante "STOP" sirena / *Siren "STOP" button*
OP100.13/1/230	Sirena cablata 230Vac / *Wired siren 230Vac*
OP100.13/2/230	Lampeggiante cablato 230Vac / *Wired flashing lamp 230Vac*
OP100.14/230	Lampeggiante con sirena remoto 230Vac / *Remote flashing lamp with siren 230Vac*
OP100.13/1/12	Sirena cablata 12Vac/dc / *Wired siren 12Vac/dc*
OP100.13/2/12L	Lampeggiante a Led cablato 12Vac/dc / *Wired flashing Led lamp 12Vac/dc*
OP100.14/12L	Lampeggiante a Led con sirena remoto 12Vac/dc / *Remote flashing Led lamp with siren 12Vac/dc*
OP200.00	Uscita allarme 12Vdc 200mA + contatto puro / *Alarm output 12Vdc 200mA + pure contact*

RICAMBI / SPARE PARTS

CODE	TYPE
AC100.21	Scheda elettronica Led 2 pompe / *Led electronic board 2 pumps*
AC100.31/1	Mascherina Dual Motor / *Dual Motor template*
SD623.20	Scheda elettronica Dual Motor monofase amperometrico / *Single-phase amperometric Dual Motor electronic board*
SD626.20	Scheda elettronica Dual Motor trifase amperometrico 20A / *Three-phase amperometric Dual Motor electronic board 20A*
AC110.20	Coppia di T.A. 20A / *T.A. couple 20A*
SD626.30	Scheda elettronica Dual Motor trifase amperometrico 30A / *Three-phase amperometric Dual Motor electronic board 30A*
AC110.30	Coppia di T.A. 30A / *T.A. couple 30A*

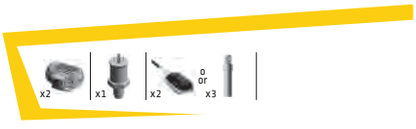
*Condensatori da 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF e 80µF a richiesta.
L'inserimento di optionals può comportare variazioni alle dimensioni del quadro. Per ulteriori dettagli contattare il n/s ufficio tecnico/commerciale.

**Capacitors from 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF and 80µF on request.*
The addition of some optional can imply changes in the size of the control panel. For further details please contact our technical/commercial department.

DUAL MOTOR PLUS 4-20

ITA Avviatori diretti amperometrici con gestione automatica di 2 motori, trasduttore di pressione e display

ENG *Amperometric direct starters with automatic management of 2 motors, pressure transducer and display*



CARATTERISTICHE GENERALI

- Sezionatore generale con blocca porta
- Pulsante per il funzionamento automatico
- Pulsante per il funzionamento manuale
- Ritardo di 3s tra la partenza dei 2 motori
- Timer "ATTESA PRESENZA RETE" regolabile dal SETUP (0-30min.)
- "CORRENTE MASSIMA" su ogni motore regolabile dal SETUP
- Ingresso 4-20mA
- Trasduttore di pressione 0-10bar uscita 4-20mA
- N° 2 ingressi in bassissima tensione per interruttori a galleggiante o sonde di livello (livello minimo/massimo)
- Display a cristalli liquidi per la visualizzazione di:
  -Amperometro su ogni motore
  -Voltmetro
  -Pressione impianto
  -Contaore su ogni motore
  -Tutti i messaggi relativi al funzionamento dei 2 motori
- Multilingua: Italiano, Inglese, Francese e Spagnolo
- "PRESSIONE START" regolabile dal SETUP
- "PRESSIONE EMERGENZA" regolabile dal SETUP
- "PRESSIONE DELTA" regolabile dal SETUP
- "PRESSIONE MINIMA" regolabile dal SETUP
- Fusibile di protezione circuito ausiliario
- Fusibile di protezione su ogni motore (SA643.xx)
- Fusibile di protezione motori (SA646.xx)
- N° 2 contattori (SA646.xx)
- Protezione amperometrica su ogni motore
- Protezione mancanza e sequenza fasi (SA646.xx)
- Protezione "TENSIONE MINIMA" e "TENSIONE MASSIMA" regolabile dal SETUP (ripristino automatico)
- Contenitore esterno in materiale termoplastico
- Pressacavi
- Grado di protezione IP55
- Temperatura d'impiego -5/+40°C

GENERAL CHARACTERISTICS

- *General disconnecting switch with door lock*
- *Button for automatic operation*
- *Button for manual operation*
- *3s delay between the starting of the 2 motors*
- *Adjustable "SUPPLY MAINS WAITING" timer from SETUP (0-30min.)*
- *Adjustable "MAXIMUM CURRENT" on each motor from SETUP*
- *Input 4-20mA*
- *Pressure transducer 0-10bar output 4-20mA*
- *N° 2 very low voltage inputs for float switches or level probes (minimum/maximum level)*
- *LCD to visualize:*
  -Ammeter on each motor
  -Voltmeter
  -Operating pressure
  -Hour counter on each motor
  -All informations concerning the operation of the 2 motors
- *Multilingual: Italian, English, French and Spanish*
- *Adjustable "START PRESSURE" from SETUP*
- *Adjustable "EMERGENCY PRESSURE" from SETUP*
- *Adjustable "DELTA PRESSURE" from SETUP*
- *Adjustable "MINIMUM PRESSURE" from SETUP*
- *Auxiliary circuit protection fuse*
- *Protection fuse on each motor (SA643.xx)*
- *Motors' protection fuse (SA646.xx)*
- *N° 2 contactors (SA646.xx)*
- *Amperometric protection on each motor*
- *Lack and sequence of phases protection (SA646.xx)*
- *Adjustable "MINIMUM VOLTAGE" and "MAXIMUM VOLTAGE" protection from SETUP (automatic reset)*
- *External thermoplastic box*
- *Cable holder*
- *Protection degree IP55*
- *Operating temperature -5/+40°C*

SINGLE-PHASE 230 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA643.00	ADM 0,5/3HP-A-GA2-PR-TP-MM-D-SB	0,37/2,2	0,5/3	2x(2-18)	345	285	165

THREE-PHASE 400 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA646.00	ADT 0,5/5HP-A-GA2-PR-TP-MS/MM-D-SB	0,37/3,7	0,5/5	2x(0,8-9)	345	285	165
SA646.01	ADT 0,5/7HP-A-GA2-PR-TP-MS/MM-D-SB	0,37/5	0,5/7	2x(0,8-12)	345	285	165
SA646.02	ADT 0,5/9HP-A-GA2-PR-TP-MS/MM-D-SB	0,37/6,5	0,5/9	2x(0,8-16)	345	285	165
SA646.03	ADT 3/12,5HP-A-GA2-PR-TP-MS/MM-D-SB	2,2/9,2	3/12,5	2x(4-25)	345	285	165

OPTIONALS

CODE	TYPE
OP100.20	Portafusibile su ogni motore / *Fuse holder on each motor*
OP100.05	Scaricatore monofase di tipo 2 per sovratensione / *Single-phase surge arrester type 2*
OP100.05/1	Scaricatore trifase di tipo 2 per sovratensione / *Three-phase surge arrester type 2*
OP100.03/20	Condensatore 20µF cablato* / *Wired capacitor 20µF**
OP100.03/30	Condensatore 30µF cablato* / *Wired capacitor 30µF**
OP100.03/40	Condensatore 40µF cablato* / *Wired capacitor 40µF**
OP100.03/50	Condensatore 50µF cablato* / *Wired capacitor 50µF**
OP100.03/70	Condensatore 70µF cablato* / *Wired capacitor 70µF**
OP100.19/1	Modulo GSM / *GSM module*
OP100.18/1	Timer multifunzione / *Multifunction timer*
OP100.16	Timer analogico giornaliero 72x72 con riserva / *Analog daily timer 72x72 with reserve*
OP100.16/1	Timer analogico giornaliero 72x72 senza riserva / *Analog daily timer 72x72 without reserve*
OP100.16/2	Timer analogico giornaliero DIN con riserva / *Analog daily timer DIN with reserve*
OP100.13/1	Pulsante "STOP" sirena / *Siren "STOP" button*
OP100.13/1/230	Sirena cablata 230Vac / *Wired siren 230Vac*
OP100.13/2/230	Lampeggiante cablato 230Vac / *Wired flashing lamp 230Vac*
OP100.14/230	Lampeggiante con sirena remoto 230Vac / *Remote flashing lamp with siren 230Vac*
OP100.13/1/12	Sirena cablata 12Vac/dc / *Wired siren 12Vac/dc*
OP100.13/2/12L	Lampeggiante a Led cablato 12Vac/dc / *Wired flashing Led lamp 12Vac/dc*
OP100.14/12L	Lampeggiante a Led con sirena remoto 12Vac/dc / *Remote flashing Led lamp with siren 12Vac/dc*
OP200.00	Uscita allarme 12Vdc 200mA + contatto puro / *Alarm output 12Vdc 200mA + pure contact*

RICAMBI / SPARE PARTS

CODE	TYPE
AC100.22/1	Scheda elettronica display 20 PIN / *Display electronic board 20 PIN*
AC100.35/1	Mascherina Dual Motor Plus 4-20 / *Dual Motor Plus 4-20 template*
AC100.41	Cavetto 20 PIN / *Cable 20 PIN*
SD643.20	Scheda elettronica Dual Motor Plus 4-20 monofase amperometrico / *Single-phase amperometric Dual Motor Plus 4-20 electronic board*
SD646.20	Scheda elettronica Dual Motor Plus 4-20 trifase amperometrico 20A / *Three-phase amperometric Dual Motor Plus 4-20 electronic board 20A*
AC110.20	Coppia di T.A. 20A / *T.A. couple 20A*
SD646.30	Scheda elettronica Dual Motor Plus 4-20 trifase amperometrico 30A / *Three-phase amperometric Dual Motor Plus 4-20 electronic board 30A*
AC110.30	Coppia di T.A. 30A / *T.A. couple 30A*

*Condensatori da 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF e 80µF a richiesta.
L'inserimento di optionals può comportare variazioni alle dimensioni del quadro. Per ulteriori dettagli contattare il n/s ufficio tecnico/commerciale.

**Capacitors from 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF and 80µF on request.*
The addition of some optional can imply changes in the size of the control panel. For further details please contact our technical/commercial department.

DIRECT MOTOR PLUS

ITA

Avviatori diretti elettromeccanici 1 motore con amperometro e voltmetro

ENG

Electromechanical direct starters 1 motor with ammeter and voltmeter

CARATTERISTICHE GENERALI

- Sezionatore generale con blocca porta
- Selettore per il funzionamento automatico -0- manuale (quest'ultimo comando è a ritorno automatico)
- N° 2 ingressi in bassissima tensione per pressostati o interruttori a galleggiante (livello minimo/massimo)
- Spia Led marcia
- Spia Led sovraccarico
- Amperometro analogico 72x72
- Voltmetro analogico 72x72
- Fusibile di protezione circuito ausiliario
- Trasformatore per circuito ausiliario uscita 24Vac
- Fusibile di protezione motore
- Contattore
- Relè termico ripristinabile internamente
- Morsettiera per comando ausiliario e potenza
- Contenitore esterno in metallo
- Grado di protezione IP55
- Temperatura d'impiego -5/+40°C

GENERAL CHARACTERISTICS

- *General disconnecting switch with door lock*
- *Switch for automatic -0- manual operation (the last command has an automatic return)*
- *N° 2 very low voltage inputs for pressure switches or float switches (minimum/maximum level)*
- *Running Led indicator*
- *Overload Led indicator*
- *Analog ammeter 72x72*
- *Analog voltmeter 72x72*
- *Auxiliary circuit protection fuse*
- *Transformer for auxiliary circuit output 24Vac*
- *Motor protection fuse*
- *Contactor*
- *Thermal relay (internal reset)*
- *Terminal board for auxiliary control and power*
- *External metal box*
- *Protection degree IP55*
- *Operating temperature -5/+40°C*

SINGLE-PHASE 230 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA700.00/01	ADEM 0,5/0,75HP-4,5/6,3T-1-P/G-V/A-SB	0,37/0,55	0,5/0,75	4,5-6,3	400	300	150
SA700.02	ADEM 1HP-7/10T-1-P/G-V/A-SB	0,75	1	7-10	400	300	150
SA700.03	ADEM 1,5HP-9/12,5T-1-P/G-V/A-SB	1,1	1,5	9-12,5	400	300	150
SA700.04	ADEM 2HP-11/16T-1-P/G-V/A-SB	1,5	2	11-16	400	300	150
SA700.05	ADEM 3HP-14/20T-1-P/G-V/A-SB	2,2	3	14-20	400	300	150

THREE-PHASE 400 Vac ±10%

CODE	TYPE	APPROX. POWER Kw	Hp	OPERATING CURRENT (A)	DIMENSIONS A-H	L-W	P-D
SA701.00	ADET 0,5HP-1,1/1,6T-1-P/G-V/A-SB	0,37	0,5	1,1-1,6	400	300	150
SA701.01	ADET 0,75HP-1,4/2T-1-P/G-V/A-SB	0,55	0,75	1,4-2	400	300	150
SA701.02	ADET 1HP-1,8/2,5T-1-P/G-V/A-SB	0,75	1	1,8-2,5	400	300	150
SA701.03/04	ADET 1,5/2HP-2,8/4T-1-P/G-V/A-SB	1,1/1,5	1,5/2	2,8-4	400	300	150
SA701.05/06	ADET 2,5/3HP-4,5/6,3T-1-P/G-V/A-SB	1,8/2,2	2,5/3	4,5-6,3	400	300	150
SA701.07/08	ADET 4/5HP-7/10T-1-P/G-V/A-SB	3/3,7	4/5	7-10	400	300	150
SA701.09	ADET 5,5HP-9/12,5T-1-P/G-V/A-SB	4	5,5	9-12,5	400	300	150
SA701.10	ADET 7,5HP-11/16T-1-P/G-V/A-SB	5,5	7,5	11-16	400	300	150
SA701.11	ADET 10HP-14/20T-1-P/G-V/A-SB	7,5	10	14-20	400	300	150
SA701.12	ADET 12,5HP-20/25T-1-P/G-V/A-SB	9,2	12,5	20-25	400	300	150
SA701.13	ADET 15HP-23/28T-1-P/G-V/A-SB	11	15	23-28	400	300	150
SA701.14	ADET 17,5HP-27/32T-1-P/G-V/A-SB	13	17,5	27-32	400	300	150
SA701.15	ADET 20HP-34/40T-1-P/G-V/A-SB	15	20	34-40	400	300	150
SA701.16	ADET 25HP-36/45T-1-P/G-V/A-SB	18,5	25	36-45	400	300	200
SA701.17	ADET 30HP-45/63T-1-P/G-V/A-SB	22	30	45-63	500	400	200
SA701.18	ADET 40HP-57/75T-1-P/G-V/A-SB	30	40	57-75	500	400	200
SA701.19	ADET 50HP-70/90T-1-P/G-V/A-SB	37	50	70-90	500	400	200

OPTIONALS

CODE	TYPE
OP100.04	Relè mancanza e sequenza fasi / *Lack and sequence of phases relay*
OP100.04/1	Relè mancanza e sequenza fasi, minima e massima tensione / *Lack and sequence of phases relay, minimum and maximum voltage*
OP100.04/2	Relè mancanza e sequenza fasi, minima e massima tensione e asimmetria / *Lack and sequence of phases relay, minimum and maximum voltage and asymmetry*
OP100.04/3	Relè minima e massima tensione monofase / *Single-phase minimum and maximum voltage relay*
OP100.05	Scaricatore monofase di tipo 2 per sovratensione / *Single-phase surge arrester type 2*
OP100.05/1	Scaricatore trifase di tipo 2 per sovratensione / *Three-phase surge arrester type 2*
OP100.10	Commutatore voltmetrico / *Voltmeter selector switch*
OP100.15/24	Contaore 24Vac 48x48 / *Hour counter 24Vac 48x48*
OP100.03/20	Condensatore 20µF cablato* / *Wired capacitor 20µF**
OP100.03/30	Condensatore 30µF cablato* / *Wired capacitor 30µF**
OP100.03/40	Condensatore 40µF cablato* / *Wired capacitor 40µF**
OP100.03/50	Condensatore 50µF cablato* / *Wired capacitor 50µF**
OP100.03/70	Condensatore 70µF cablato* / *Wired capacitor 70µF**
OP100.19	Modulo GSM / *GSM module*
OP100.18	Timer ritardo avviamento / *Start delay timer*
OP100.18/1	Timer multifunzione / *Multifunction timer*
OP100.16	Timer analogico giornaliero 72x72 con riserva / *Analog daily timer 72x72 with reserve*
OP100.16/1	Timer analogico giornaliero 72x72 senza riserva / *Analog daily timer 72x72 without reserve*
OP100.16/2	Timer analogico giornaliero DIN con riserva / *Analog daily timer DIN with reserve*
OP100.00	Level (controllo di livello) / *Level (level control)*
OP100.01	Sensitive Level (controllo di livello) / *Sensitive Level (level control)*
OP100.02/1	Pulsante start/stop cablato / *Wired start/stop button*
OP100.13	Pulsante "STOP" sirena / *Siren "STOP" button*
OP100.13/1/24	Sirena cablata 24Vac/dc / *Wired siren 24Vac/dc*
OP100.13/2/24	Lampeggiante cablato 24Vac/dc / *Wired flashing lamp 24Vac/dc*
OP100.14/24	Lampeggiante con sirena remoto 24Vac/dc / *Remote flashing lamp with siren 24Vac/dc*
OP200.01	Uscita allarme 24Vac + contatto puro / *Alarm output 24Vac + pure contact*

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**Capacitors from 10µF, 16µF, 25µF, 35µF, 45µF, 55µF, 60µF, 65µF, 75µF and 80µF on request.*
The addition of some optional can imply changes in the size of the control panel. For further details please contact our technical/commercial department.

6" SUBMERSIBLE MOTOR - OIL COOLED

FEATURES:

- Upper bracket of cast iron and motor shaft of stainless steel according to Nema rules;
- Electric windings and ball bearings properly cooled and lubricated through non-toxic dielectric oil;
- The closing systems, the sand -guards and the non-toxic tear resistant feeding cable are waterproof and fully working reliable;
- The special execution of stainless steel motor case and the technical solutions allow and easy disassembly of rotor-stator in case of rewinding.

TECHNICAL DATA:

- Electric submersible motor cooled through dielectric and non-toxic oil
- Nema coupling flanges 6" cast iron with anti-corrosive treatment
- Outer shell of SS AISI 304
- Stud-bolt, washers and nuts for pump coupling of SS AISI 304
- Shaft extension of SS AISI 304
- Rating: 4kw - 37 kw
- Tension: 230V - 400V - 460V (± 10%)
- Frequency: 50 Hz - 60 Hz
- Axial load: 10000N - 20000N
- Protection: IP 68, insulation Class F
- Cable (flat): 4x4 mm2 L = 3,5 m (4 kw - 22 kw); 4x8 mm2 L= 3,5 m (30kw - 37kw)
- Max starting operations per hour: 20
- Max ambient temperature 30°C, water pH 6,5- 8,0
- Min cooling speed: 0,20 m/s
- Rotation. Clockwise I counter-clockwise
- Max submersible deep: 350 m

TYPE	Power Puissance			Rated current Courant nominal	Axial load Charge axiale
	kw	**HP**	**RPM**	**A**	**N**
PS MP 6T 550 DOL ORL	4	5,5	2810	9,6	10000
PS MP 6T 750 DOL ORL	5,5	7,5	2830	12,8	10000
PS MP 6T1000 DOL ORL	7,5	10	2830	16,9	10000
PS MP 6T1250 DOL ORL	9,2	12,5	2830	21	10000
PS MP 6T1500 DOL ORL	11	15	2830	23,0	10000
PS MP 6T2000 DOL ORL	15	20	2830	32,7	10000
PS MP 6T2500 DOL ORL	18,5	25	2850	38,3	10000

6"
Encapsulated Motors

Standard: SAND FIGHTER

SUBMERSIBLE MOTORS
Quality in the Well

Franklin Electric 6" encapsulated Motors, manufactured to ISO 9001 standards, are the quality drive for your submersible pump. Water lubricated thrust and radial bearings offer you a maintenance free long life submersible motor operation. The Sand Fighter® seal system is the option for sandy applications.

Product advantages:

- Hermetically sealed stator, Anti track, self healing stator resin prevents motor burn out
- Removable "Water Bloc" lead connector
- Cable material according to drinking water regulations (KTW approved)
- Sand slinger and shaft seal for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested. Max. storage temperature -15°C - +60°C
- Non contaminating, water-filled design

PS MF 6T...

Technical Specification
Standard Motor

- 4.....45 kW
- 6" NEMA flange
- Protection: IP 68
- „Sand fighter®" Motor with SiC - Mechanical Seal
- Starts per hour: max. 20
- Installation position: vertical / horizontal
- Standard voltage: 380-415V/50Hz, Voltage tolerance: +6% / -10% (Standard: 415 + 6% = 440V, 380 – 10% = 342V)
- Motor protection: Select thermal overloads according to EN 60947-4-1, trip class 10 or 10A, trip time < 10 s. at 5 x I_N
- Insulation: Class F
- Rated ambient temperature: 4-30kW bis 30°C; 37-45kW bis 50°C
- Cooling flow: min. 16 cm/sec

Optional

- Other voltages
- Motors in complete 316SS
- PT 100 temperature sensor (sold separately)
- Motor lead in 4m lenght (KTW approved) Lead in different lengths up to 50m
- YΔ - start (pos. of cables 90°)
- Provision for filling solution of exchange
- Built-in PTC temperature sensor
- Built-in Subtrol-Heat Sensor

6" Encapsulated Performance Data 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T_N [Nm]	T_A [Nm]
						50	75	100	50	75	100		
4,0	15.500	220	2840	16,4	73	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
		230	2860	16,1	75	74,0	77,5	78,0	0,62	0,74	0,82	12,3	20,2
		380	2840	9,5	42	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
		400	2860	9,3	43	74,0	77,5	78,0	0,62	0,74	0,82	12,3	20,2
		415	2880	9,3	46	74,5	78,0	78,5	0,57	0,70	0,78	12,3	20,8
		500	2840	7,2	32	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
5,5	15.500	220	2850	22,1	104	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
		230	2870	21,7	106	74,0	78,0	79,0	0,63	0,75	0,82	18,6	35,0
		380	2850	12,8	60	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
		400	2870	12,5	64	74,0	78,0	79,0	0,63	0,75	0,82	18,6	35,0
		415	2880	12,8	66	74,0	77,5	78,0	0,58	0,70	0,78	18,6	35,9
		500	2850	9,7	46	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
7,5	15.500	220	2850	28,2	143	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
		230	2860	27,7	144	75,0	78,5	79,0	0,70	0,81	0,86	25,0	47,7
		380	2850	16,3	83	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
		400	2860	16,0	83	75,0	78,5	79,0	0,70	0,81	0,86	25,0	47,7
		415	2880	16,2	91	75,0	78,5	79,0	0,61	0,74	0,81	24,7	51,3
		500	2850	12,4	63	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
9,3	15.500	220	2870	36,4	183	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
		230	2870	36,0	189	78,0	81,0	81,0	0,58	0,72	0,80	31,1	68,6
		380	2870	21,0	106	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
		400	2870	20,7	112	78,0	81,0	81,0	0,58	0,72	0,80	31,1	68,2
		415	2890	21,0	116	74,0	79,0	80,0	0,55	0,70	0,78	30,8	74,1
		500	2870	16,0	80	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
11,0	15.500	220	2860	41,5	218	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
		230	2860	40,4	224	78,5	81,0	81,0	0,68	0,79	0,85	37,3	78,3
		380	2860	24,0	126	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
		400	2860	23,3	129	78,5	81,0	81,0	0,68	0,79	0,85	37,3	78,3
		415	2870	24,1	136	74,5	78,5	79,5	0,61	0,74	0,81	37,2	84,8
		500	2860	18,2	96	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
15,0	15.500	220	2850	55,0	283	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
		230	2860	54,2	289	79,0	81,5	81,0	0,70	0,80	0,85	49,9	107,3
		380	2850	32,0	164	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
		400	2860	31,3	169	79,0	81,5	81,0	0,70	0,80	0,85	49,9	107,3
		415	2870	31,0	179	77,0	81,0	81,0	0,65	0,77	0,83	49,6	116,6
		500	2850	24,3	124	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
18,5	15.500	220	2850	69,2	380	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
		230	2860	66,7	392	80,0	82,5	82,0	0,68	0,79	0,85	62,4	159,6
		380	2850	40,0	220	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
		400	2850	38,5	231	80,0	82,5	82,0	0,68	0,79	0,85	62,4	154,6
		415	2850	38,5	240	78,5	81,5	82,0	0,64	0,76	0,83	62,1	166,8
		500	2850	30,5	168	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
22	15.500	220	2840	81,2	441	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
		230	2860	78,5	455	81,0	83,0	83,0	0,71	0,81	0,86	74,7	177,6
		380	2840	47,0	255	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
		400	2860	45,3	268	81,0	83,0	83,0	0,71	0,81	0,86	74,7	177,6
		415	2870	45,0	278	79,5	82,5	82,5	0,66	0,78	0,84	74,5	189,9
		500	2840	35,8	194	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
30	27.500	220	2860	111	645	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
		230	2860	107	670	80,5	83,0	83,0	0,67	0,79	0,84	99,4	263,1
		380	2860	64,1	373	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
		400	2860	63,5	393	80,5	83,0	83,0	0,67	0,79	0,84	99,4	263,1
		415	2880	64,5	407	79,0	82,0	82,5	0,62	0,74	0,81	99,0	283,5
		500	2860	49,0	283	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
37	27.500	380	2850	80,1	387	77	80,0	81,0	0,75	0,82	0,87		
		400	2870	77,9	411	76	80,0	81,0	0,68	0,78	0,85		
		415	2880	77,9	423	75	79,0	81,0	0,64	0,75	0,82		
45	27.500	380	2850	96,8	480	79	81,0	82,0	0,76	0,83	0,87		
		400	2870	95,2	509	78	80,0	82,0	0,72	0,79	0,84		
		415	2880	94,5	531	77	80,0	82,0	0,68	0,77	0,82		

OY6 SERIES
6" OIL FILLED SUBMERSIBLE MOTORS

Cooled with special food grade lubricant. The new OY6 Series introduces the Plug in Lead Cable for an easier installation of the pump and a more simple service and maintenance of all system. Quality, reliability and great performances together with the simple construction of the product make the OY6 Series a perfect tool for the best operation of all 6" Pumps built according to NEMA Standard.

TECHNICAL FEATURES OF OY6 MOTOR

- Motor casing, shaft and bottom end made in Stainless Steel AISI 304
  Optional: AISI 316
- High resistance cast iron nickel plated upper bracket
  Optional: upper bracket of casting AISI 304 and AISI 316
- Axial and radial thrust ball bearings
- Standard Mechanical Seal: Graphite - Ceramic
  Optional: SIC-SIC or SIC-AL
- FDA approved special cooling fluid
- Oversized compensation diaphragm and sand slinger protection
- Insulation class F Protection IP 58
- Removable cable connector
- NEMA Standard coupling dimensions
- Starting method for motors: D.O.L. and Star Delta
- Standard Flat cable with separate earth: 2,8 m
- Suitable for pumping water at 6,5 - 8 pH range

OPERATING LIMITS

- Maximum voltage fluctuation admissible versus nominal rated voltage: ±10%
- Maximum water temperature: 35°C with at least 0,16 m/sec. of water flow speed
- Maximum motor startings per hours: 30 for D.O.L. type and 15 for Star Delta type
- Maximum immersion depth: 150 m
- Standard mounting position: vertical
  Horizontal operation: admissible up to 15 kW

OPERATING DATA — THREE PHASE

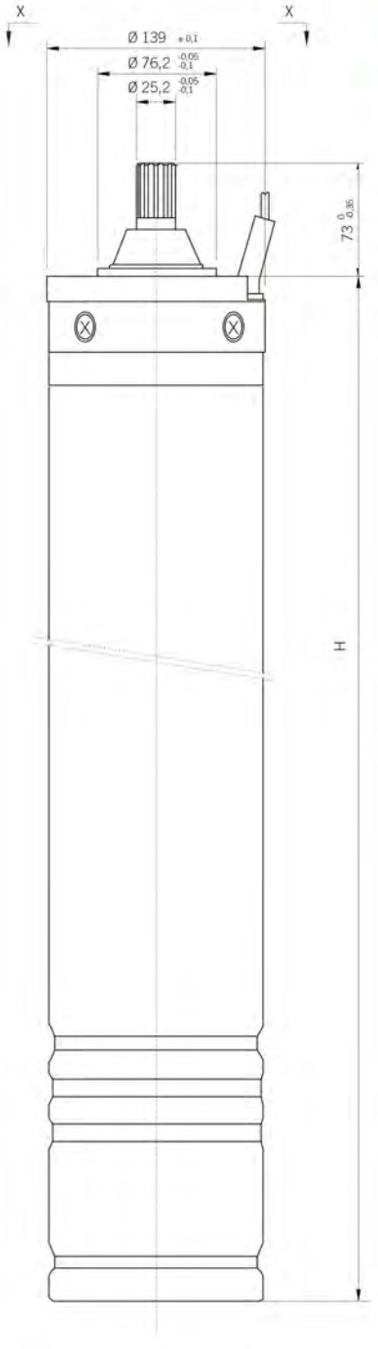
50 Hz.

	Type	Thrust Load N	Weight Kg	H mm	kW	Hp	In Amp	Imax Amp	RPM	Cosφ	EFF%	Ts/Tn	A I start
380/415V	OY6 550 380	5000/10000	32	540	4	5,5	8,7	9,7	2850	0,84	78	2,3	45
	OY6 550 400						8,8	9,8	2860	0,82	76	2,4	
	OY6 550 415						8,9	9,9	2870	0,8	74	2,6	
	OY6 750 380	5000/10000	40	570	5,5	7,5	12,6	14,0	2850	0,84	77	2,8	64
	OY6 750 400						12,5	13,9	2860	0,82	78	3,0	
	OY6 750 415						12,4	13,8	2870	0,80	77	3,0	
	OY6 1000 380	10000	42	600	7,5	10	17,2	19,1	2850	0,85	78	2,4	78
	OY6 1000 400						16,9	18,8	2860	0,82	77	2,5	
	OY6 1000 415						16,5	18,3	2870	0,82	77	2,8	
	OY6 1250 380	10000	45	600	9,2	12,5	22,0	24,4	2850	0,82	79	2,4	95
	OY6 1250 400						21,5	23,9	2860	0,81	80	2,4	
	OY6 1250 415						21,0	23,3	2870	0,79	78	2,6	
	OY6 1500 380	10000	48	700	11	15	24,1	26,8	2850	0,84	84	2,4	121
	OY6 1500 400						23,7	26,3	2860	0,83	83	2,4	
	OY6 1500 415						23,9	25,6	2870	0,80	80	2,4	
	OY6 1750 380	10000	50	700	12,8	17,5	28,0	30,0	2840	0,86	81	2,3	145
	OY6 1750 400						27,8	29,7	2850	0,84	82	2,4	
	OY6 1750 415						27,5	29,4	2860	0,82	81	2,4	
	OY6 2000 380	10000	54	760	15	20	31,4	33,6	2830	0,86	81	2,3	160
	OY6 2000 400						30,4	32,5	2840	0,85	82	2,5	
	OY6 2000 415						29,7	31,8	2860	0,84	81	2,5	
	OY6 2500 380	10000	65	830	18,5	25	41,5	44,4	2830	0,86	80	2,1	225
	OY6 2500 400						38,3	41,0	2850	0,85	82	2,1	
	OY6 2500 415						36,6	39,2	2860	0,82	83	2,2	
	OY6 3000 380	10000	70	890	22	30	46,5	49,8	2830	0,86	83	2,0	250
	OY6 3000 400						44,0	47,1	2850	0,86	83	2,0	
	OY6 3000 415						44,5	47,6	2860	0,84	82	2,1	
	OY6 4000 380	20000	90	1030	30	40	63,0	67,4	2840	0,84	85	2,0	330
	OY6 4000 400						62,0	66,3	2860	0,86	86	2,0	
	OY6 4000 415						58,0	62,1	2850	0,88	86	2,0	
	OY6 5000 380	20000	101	1170	37	50	74,0	79,2	2850	0,88	85	2,0	400
	OY6 5000 400						72,0	77,0	2860	0,87	86	2,0	
	OY6 5000 415						71,0	76,0	2870	0,86	85	2,0	

OPERATING DATA — THREE PHASE

60 Hz.

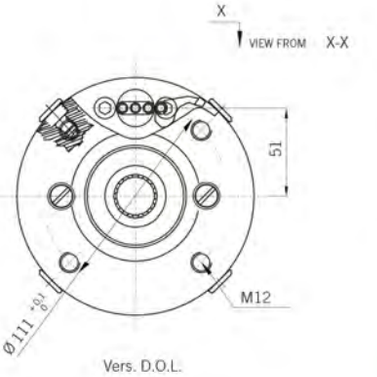
	Type	Thrust Load N	Weight Kg	H mm	kW	Hp	I F.L. Amp	I S.F. load Amp	RPM	Cosφ	EFF%	Ts/Tn	S.F.
380V	OY6 550	5000/10000	32	540	4	5,5	9,6	10,7	3440	0,86	74	2,4	1,15
	OY6 750	5000/10000	40	570	5,5	7,5	13,0	15,1	3450	0,82	79	2,4	1,15
	OY6 1000	10000	42	600	7,5	10	17,4	19,2	3440	0,82	80	2,3	1,15
	OY6 1250	10000	45	600	9,2	12,5	20,2	22,4	3450	0,84	81	2,3	1,15
	OY6 1500	10000	48	700	11	15	25,6	29,4	3460	0,81	82	2,1	1,15
	OY6 1750	10000	50	700	12,8	17,5	27,5	31,1	3450	0,85	82	2,1	1,15
	OY6 2000	10000	54	760	15	20	34,1	38,0	3450	0,81	83	2,1	1,15
	OY6 2500	10000	65	830	18,5	25	39,8	45,6	3460	0,83	84	2,1	1,15
	OY6 3000	10000	70	890	22	30	47,3	54,6	3450	0,83	85	2,1	1,15
	OY6 4000	20000	90	1030	30	40	66,2	75,0	3450	0,81	85	2,0	1,15
	OY6 5000	20000	101	1170	37	50	84,5	96,0	3440	0,82	82	2,0	1,15
220/230V	OY6 550	5000/10000	32	540	4	5,5	15,9	16,8	3440	0,83	74	2,4	1,15
	OY6 750	5000/10000	40	570	5,5	7,5	23,5	26,2	3450	0,82	72	2,4	1,15
	OY6 1000	10000	42	600	7,5	10	29,0	32,8	3440	0,81	80	2,3	1,15
	OY6 1250	10000	45	600	9,2	12,5	35,0	38,8	3450	0,82	80	2,3	1,15
	OY6 1500	10000	48	700	11	15	39,8	47,2	3440	0,85	82	2,1	1,15
	OY6 1750	10000	50	700	12,8	17,5	47,0	53,8	3450	0,83	82	2,1	1,15
	OY6 2000	10000	54	760	15	20	54,5	61,5	3450	0,85	82	2,1	1,15
	OY6 2500	10000	65	830	18,5	25	67,5	76,0	3460	0,82	84	2,1	1,15
	OY6 3000	10000	70	890	22	30	80,2	91,0	3450	0,82	85	2,1	1,15
	OY6 4000	20000	90	1030	30	40							1,15
460V	OY6 550	5000/10000	32	540	4	5,5	7,8	8,9	3440	0,85	76	2,4	1,15
	OY6 750	5000/10000	40	570	5,5	7,5	11,0	12,6	3450	0,82	78	2,4	1,15
	OY6 1000	10000	42	600	7,5	10	14,9	16,8	3440	0,82	77	2,3	1,15
	OY6 1250	10000	45	600	9,2	12,5	19,8	22,4	3440	0,81	78	2,3	1,15
	OY6 1500	10000	48	700	11	15	21,0	24,0	3440	0,81	80	2,1	1,15
	OY6 1750	10000	50	700	12,8	17,5	25,1	28,2	3440	0,86	81	2,1	1,15
	OY6 2000	10000	54	760	15	20	27,2	30,6	3450	0,84	81	2,1	1,15
	OY6 2500	10000	65	830	18,5	25	33,8	38,0	3440	0,84	82	2,1	1,15
	OY6 3000	10000	70	890	22	30	40,2	45,5	3440	0,83	83	2,1	1,15
	OY6 4000	20000	90	1030	30	40	53,0	61,8	3450	0,84	85	2,0	1,15
	OY6 5000	20000	101	1170	37	50	72,0	76,0	3440	0,83	85	2,0	1,15



OY6 SERIES
6" OIL FILLED SUBMERSIBLE MOTORS

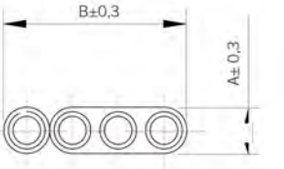
DIMENSIONS AND WEIGHT **50 HZ & 60 HZ**

Type	kW	Hp	Thrust load	H	Cable			Weight
				mm	Sez. mm²	A mm	B mm	Kg
OYT 550	4	5,5	10.000 N	538	4	8	27	32
OYT 750	5,5	7,5	10.000 N	568	4	8	27	34
OYT 1000	7,5	10	10.000 N	598	4	8	27	36
OYT 1250	9,2	112,5	10.000 N	598	4	8	27	39
OYT 1500	11	15	10.000 N	698	4	8	27	42
OYT 1750	12,8	17,5	10.000 N	698	4	8	27	45
OYT 2000	15	20	10.000 N	758	4	8	27	48
OYT 2500	18,5	25	10.000 N	834	8	8	27	65
OYT 3000	22	30	10.000 N	894	8	8	27	70
OYT 4000	29,5	40	20.000 N	1034	8	8	27	90

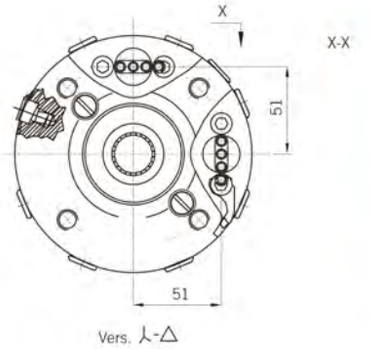


Vers. D.O.L.

Cable dimension



POWER FEEDING CABLE



Vers. 人-△