----------INSTRUCTION MANUAL----------

ESPA

O6I

O4I



ESPA 2025, S.L.
Ctra de Mieres, s/n – 17820
BANYOLES
SPAIN
www.espa.com

----------ENGLISH----------

SAFETY WARNINGS
The following table shows the description of symbols used in this manual, which you should pay attention to, for a safe use of the product.

⚠ DANGER: Failure to comply with safety warnings may cause people and pets injury and property damage

⚠ ELECTRIC SHOCK: ailure to comply with safety warnings may cause risk of electric shocks

WARNING Failure to comply with safety warnings may cause environment or property damage (pump, system, panel,..)

Please read carefully this manual before proceeding

OVERVIEW
The following manual contains instructions for installation and use of standard product. Any special versions may be accompanied by additional documentation.
For more information contact sales/service department, taking care to specify the exact motor code sited on its label.

Read this manual carefully before installing and using the product.

PRODUCT DESCRIPTION
O4I and O6I series includes 4'' and 6'' submersible motors, with oil cooled stator and rotor (white mineral oil approved by F.D.A.)
All motors are combinable to 4'' and 6'' submersible pumps, with flange and coupling sizes complying to NEMA Standards.

APPLICATIONS
O4I and O6I series motors are suitable to drive submersible pumps, according with EN 60034-1(IEC 60034-1) requirements and with supply voltage / frequency specified on the rating plate.
WARNING Pump power coupled to the motor must be less than or equal to motor power.

OPERATING LIMITS ⚠
- Maximum immersion depth of motor: 200m
- Maximum tolerated stop-start: 30 starts per hour equally distributed
- Maximum voltage variation of power supply line: ± 10% of nominal value (PICTURE 1)
- Maximum temperature in well: 35°C
- Motors are designed to be used in cold water and they should never be used in presence of corrosive liquids, explosives, very dirty or hard water, in order to prevent deposits on motor external sleeve.
- Minimum water flow speed generated by the pump on motor sides: NEVER less than 0.1 m / s

Formula for determining the speed of water $v = 21{,}22 \times \frac{Q}{(D^2 - 0{,}4^2)}$

where:
s = water speed [m/s]
D_p = well internal diameter [mm]
Q= pump flow [l/min]

INSTALLATION POSITION
All motors can be vertically or horizontally installed, as shown in the figure below. (PICTURE 2)

LAYING IN WELL OR TANK
If the pump has been installed in vertical position, ensure that the motor does not lay on bottom well or tank and so make sure that the motor is raised. If the pump has been in tank installed, put it entirely inside a tube which ensures the correct cooling water flow to the motor (minimum 0.2 m / s).

COUPLING WITH PUMP
WARNING Ensure a correct connection between motor and pump. Improper combinations can cause problems. Particularly, before coupling with pump, check that:
- voltage and frequency of power supply line correspond to motor nominal ones;
- motor and pump shafts run without impediments.

MOTOR POWERED BY FREQUENCY CONVERTER
All motors can be powered by a frequency converter (30 Hz - 50/60 Hz).
WARNING All motors can be powered by a frequency converter (30 Hz - 50/60 Hz).
If the motor is coupled with a frequency converter, make sure you never exceed nominal powered motor frequency.
At minimum frequency of use, ensure such a flow of water to have the minimum speed specified in section 3.1, in order to guarantee a correct motor cooling.

INSTALLATION
Keep the manuals carefully.
Installation procedure must be carried out only by skilled and experienced staff, using suitable equipment and protections, according with safety standard.
Always refer to rules, laws, local and/or national regulations concerning installation, water and power connections.
WARNING Verify the correct pairing of electrical data between panel and pump. Improper combinations can cause problems and fail to protect electric motor.

POWER SUPPLY CABLES
Power cable must be suitable for submersible motors using. The following table shows drop cables sections and lengths.
They are valid at 30°C room temperature. (PICTURE 3).

TTRANSPORT AND STORAGE
WARNING Motors are delivered in cardboard packaging.
Packaged product has to be stored at a temperature between -10 ° and +40° C.
Transport, handling and storage of packaging have to be done in horizontal position.
Products must be protected from moisture, heat and mechanical damage (shocks, falls, ...).
Don't put weights on cardboard packages.

⚠ Raise and handle product with care using appropriate lifting equipment, according with safety standard.
Harness product securely before lifting and handling.
NEVER use cable to lift and carry the engine.

At motor receipt, take care to note that the packaging does not present externally visible damage, and in case of damaged product inform our sales department within 5 days from delivery.

MAINTENANCE, SERVICE, SPARE PARTS
⚠ Check that there is no voltage to the motor before any maintenance.
Maintenance must be carried out by qualified and experienced staff.
Use appropriate equipment and protective devices. Comply with safety standard.
WARNING Use only original parts to replace any eventual failed components. Refer to product code for spare parts.
Motor requires no routine maintenance schedule.
user wishes to draw up a maintenance schedule, note that the deadlines depend on use conditions .

SINGLE-PHASE WIRING DIAGRAM (PICTURE4)

WARRANTY
Two years after the date printed on motor label

DECLARATION OF CONFORMITY UKCA
ESPA 2025 S.L., with headquarters in Ctra. de Mieres, s/n, 17820 Banyoles, Spain, declares that the motors of the series O4I/O6I comply with the provisions of the following European Directives and with the Harmonized standards:
- Directive EMC 2014/30/EU (Electromagnetic compatibility)
- Directive 2014/35/EU (Low voltage)
- Directive 2011/65/UE (Restriction of hazardous sustances)

and with the following technical standards:
- EN 60034-1
- EN 60204-1

Regarding the UKCA mark, according the Directive 2014/30/EU, it is limited to the direct use of the motor. If this one is installed in a system or plant, the installer must verify the conformity of the system in its entirely.

Banyoles, 10/03/2022
Pere Giribets (Director)

Disposal: the product must be disposed of as WEEE (Waste Electrical and Electronic Equipment) in accordance with current regulations; more information is available on the website.

ESPA

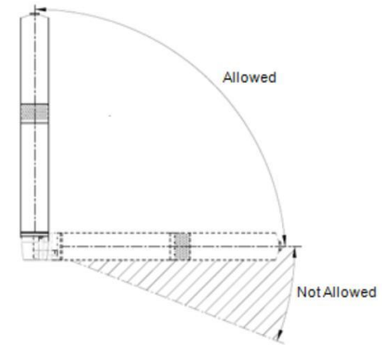


1) O4I MOTORS

f [Hz]	~	UN	
		V	%
50	1	230	±10
50	3	230	±10
50	3	400	±10

f [Hz]	~	UN	
		V	%
60	1	220/110	±10
60	3	220	±10
60	3	380	±10

2) O4I MOTORS

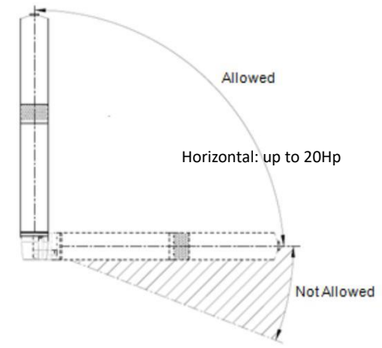


1) O6I MOTORS

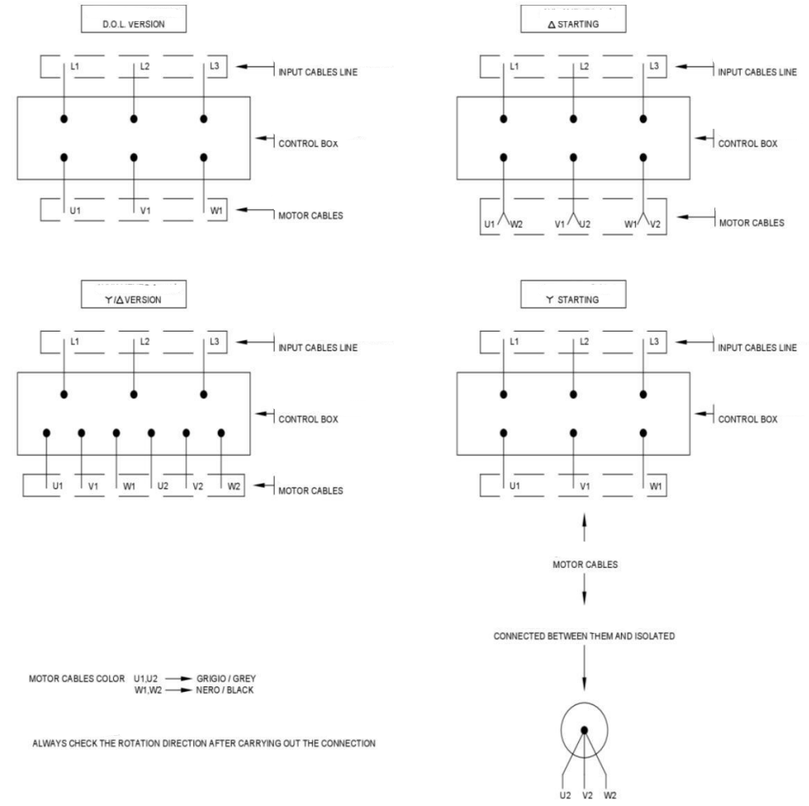
f [Hz]	~	UN	
		V	%
50	3	230	±10
50	3	400	±10
50	3	230/400	±10
50	3	400/690	±10

f [Hz]	~	UN	
		V	%
60	3	220	±10
60	3	380	±10
60	3	220/380	±10
60	3	380/660	±10

2) O6I MOTORS



O6I CONNECTION SCHEME



3) O4I MOTORS

Rated power		Rated Voltage	Cable section mm²							
			1	1,5	2,5	4	6	10	16	25
kW	Hp	V	Maximum Length [m]							
0,37	0,5	Single phase 230V 50Hz 220V 60Hz 110V 60Hz	63	94	156	250	-	-	-	-
0,55	0,75		45	67	112	179	267	-	-	-
0,75	1		39	59	98	156	233	-	-	-
1,1	1,5		28	42	69	110	165	273	-	-
1,5	2		22	32	54	86	128	213	337	-
2,2	3		-	24	41	65	97	161	256	-
3,7	5		-	-	26	42	63	104	166	256
0,37	0,5	Three phase 230V 50Hz 220V 60Hz	94	140	233	-	-	-	-	-
0,55	0,75		67	100	167	266	-	-	-	-
0,75	1		53	80	134	215	-	-	-	-
1,1	1,5		42	63	104	166	247	-	-	-
1,5	2		38	57	98	151	225	-	-	-
2,2	3		30	45	75	119	177	292	-	-
3	4		23	34	56	90	134	220	347	-
4	5,5		-	25	41	66	98	162	256	-
5,5	7,5		-	-	31	49	73	120	189	290
0,37	0,5	Three phase 400V 50Hz 380V 60Hz	270	405	-	-	-	-	-	-
0,55	0,75		192	288	-	-	-	-	-	-
0,75	1		155	234	-	-	-	-	-	-
1,1	1,5		120	180	298	-	-	-	-	-
1,5	2		109	163	271	-	-	-	-	-
2,2	3		86	129	214	341	-	-	-	-
3	4		47	96	160	255	381	-	-	-
4	5,5		35	71	118	188	280	463	-	-
5,5	7,5		-	52	87	139	207	342	-	-
7,5	10		-	40	66	105	157	260	411	-

3) O6I MOTORS

Rated power		Rated Voltage	Cable section mm²								
			4x2,5	4x4	4x6	4x8	4x10	4x16	4x25	4x35	4x50	4x70
kW	Hp	V	Maximum Length [m]									
4.0	5.5	Three phase 400V 50Hz 380V 60Hz Direct DOL	180	290	430	570	710	-	-	-	-	-
5.5	7.5		130	210	320	425	530	830	-	-	-	-
7.5	10.0		90	150	230	310	390	610	940	-	-	-
9.2	12.5		80	130	190	255	320	510	770	-	-	-
11.0	15.0		60	100	160	215	270	430	650	890	-	-
13.0	17.5		40	90	140	185	230	370	530	780	-	-
15.0	20.0		-	80	120	160	200	320	490	680	920	-
18.5	25.0		-	-	100	130	160	260	400	540	740	980
22.0	30.0		-	-	-	100	140	220	340	470	630	840
26.0	35.0		-	-	-	-	80	190	310	420	540	730
30.0	40.0		-	-	-	-	-	160	250	340	470	620
37.0	50.0		-	-	-	-	-	100	160	210	310	400
4.0	5.5	Three phase 400V 50Hz 380V 60Hz Star/Delta	270	430	640	845	-	-	-	-	-	-
5.5	7.5		190	310	480	635	790	-	-	-	-	-
7.5	10.0		130	220	340	460	580	910	-	-	-	-
9.2	12.5		120	190	280	380	480	760	-	-	-	-
11.0	15.0		90	150	240	320	400	640	970	-	-	-
13.0	17.5		80	140	210	280	350	540	850	-	-	-
15.0	20.0		70	120	180	240	300	480	730	1020	-	-
18.5	25.0		60	90	150	195	240	390	600	810	-	-
22.0	30.0		-	70	120	165	210	330	510	700	940	-
26.0	35.0		-	50	100	140	180	290	430	610	800	-
30.0	40.0		-	-	90	120	150	240	370	510	700	930
37.0	50.0		-	-	60	75	90	150	230	320	460	720
4.0	5.5	Three phase 230V 50Hz 220V 60Hz Direct DOL	31	59	95	134	172	276	427	-	-	-
5.5	7.5		20	41	69	99	128	207	322	448	-	-
7.5	10.0		-	27	47	70	92	151	236	331	477	-
9.2	12.5		-	10	37	55	73	122	193	270	391	-
11.0	15.0		-	-	28	44	59	100	160	225	326	450
13.0	17.5		-	-	12	30	48	83	134	190	277	383
15.0	20.0		-	-	8	25	41	72	117	168	245	341
18.5	25.0		-	-	-	-	22	58	95	136	200	277
22.0	30.0		-	-	-	-	14	46	78	113	167	234
26.0	35.0		-	-	-	-	-	26	62	91	136	191
30.0	40.0		-	-	-	-	-	-	52	78	117	165
37.0	50.0		-	-	-	-	-	-	30	60	92	132

4) SINGLE PHASE MOTORS

