



6GF

EN	6GF SERIES	Installation and Operating Instructions

WARNINGS FOR THE SAFETY OF PEOPLE AND PROPERTY

The symbols used in this manual are shown below together with their meanings



DANGER

Failure to observe this warning may cause personal injury and/or damage to property



ELECTRIC SHOCK

Failure to observe this warning may result in electric shock



WARNING

Failure to observe this warning may cause damage to property (pump, system, panel,...) or the environment



Read this manual carefully before proceeding

Information for ...

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- 3. Applications
- 4. Transport and Storage
- 5. Installation
- 6. Start-up
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1. Overview

The contents of this manual refer to the standard product, as presented in the sales documentation. Any special versions will be supplied with supplementary instruction sheets. Please refer to the sales contract for the features of variants and special versions. Always specify the exact type of motor and code when requesting our Sales and Service Department for technical information or spare parts



Read this manual carefully before installing and using the product.



Improper use may cause personal injury and/or damage to property, and invalidate the warranty.

2. Product Description

The 6GF range comprises a number of 6” submersible motors with cased stator and rotor immersed in a bath of demineralised water and anti-freeze lubricating liquid, designed to be coupled to 6” and 8” submersible pumps with NEMA-compliant flange and coupling sizes. They can also be coupled to 10” submersible pumps after checking the dimensions of the flange and of the pump coupling.

All the metal parts in contact with the water are either made from stainless steel or cast iron.

Each motor includes a cable with removable connector and a Kingsbury pivoted-shoe thrust bearing.

3. Applications

All the motors in the 6GF range can be used to drive submersible pumps in the conditions established in EN 60034-1 (IEC 60034-1) and at the supply voltage / frequency specified on the rating plate.

The shaft extension and flange size of these motors comply with NEMA MG1:2006 REv 1-2007..



The power of the pumps coupled to these motors must be less than or equal to that of the motors.

3.1 Working Limits

3.1.1 Liquids in which the motor can operate

This motor can be used in cold water.



Do not use this motor with corrosive or explosive liquids, or particularly dirty or hard water (impurities may deposit on the outer casing).

3.1.2 Water temperature



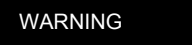
Minimum water temperature is + 0°C.

Maximum water temperature is + 35°C as long as the flowrate of the water around the motor does not fall below 0.3 m/s.

For temperatures above + 35°C, motor output must be reduced to ensure correct cooling.

For further information, please contact our Sales and Service Department.

3.1.3 Cooling the motor



To ensure the motor is correctly cooled, make sure the flowrate of the water around the outer casing is at least 0.3 m/s when positioning the motor in wells or tanks. At water speeds lower than 0.3 m/s, mount a cooling jacket.

For further information, please contact our Sales and Service Department.

3.1.4 Installation Position

All the motors in the range can be installed vertically.

All the motors in the range can be installed horizontally as long as the axial thrust of the pump never falls below 250 N while it is working.

For special requirements, please contact our Sales and Service Department.

3.1.5 Depth of immersion

The maximum depth of immersion for all motors is 300 m.

3.1.6 Power supply requirements



Make sure the supply voltage and frequency match those indicated on the rating plate of the motor.

For further information, please contact our Sales and Service Department.

The motors can generally work at the following supply voltage tolerances:

f Hz	~	UN V ± %	
50	3	400	-10%, +6%
50	3	400/690	-10%, +6%

f Hz	~	UN V ± %	
60	3	380	-10%, +6%
60	3	380/660	-10%, +6%

3.1.7 Number of starts per hour

The maximum number of starts per hour allowed is 20 for direct start with a maximum time of 3 seconds at full starting current.

3.1.8 Compatible pumps



Make sure the motor is compatible with the pump. Incompatible combinations may cause problems.

In particular, before coupling the motor to the pump check that:

- the power of the pump to couple to the motor is less than or equal to that of the motor.
- the supply voltage and frequency match those indicated on the rating plate of the motor
- the motor and pump shafts turn freely

For further information, please contact our Sales and Service Department.

3.1.9 Motor powered by a frequency converter

WARNING

The motors can be powered with a frequency converter (30 Hz – 50/60 Hz).

For further information, please contact our Sales and Service Department.

WARNING

If the motor is combined with a frequency converter, downgrade power by 10% and make sure you never exceed the rated input frequency of the motor.

To ensure the motor is properly cooled, the minimum water flowrate at the minimum frequency of use must equal the minimum flowrate indicated in the previous points.

For further information, please contact our Sales and Service Department.

3.1.10 Motor powered by a generating set

For information, please contact our Sales and Service Department.

3.1.11 Special applications

WARNING

For situations other than those described for the nature of the liquid and/or installation, please contact our Sales and Service Department.

3.1.12 Improper Use



Improper use of the motor may create dangerous conditions and cause personal injury and/or damage to property.

Improper use includes:

- working with liquids other than water
- working at water temperatures higher than 35 °C without downgrading the motor
- working with a cooling water flowrate of less than 0.3 m/s
- exceeding the maximum number of starts per hour

3.2 Technical specifications

For performance data, please refer to the rating plate attached to the motor.

For any requirements, please contact our Sales and Service Department.

3.3 Warranty

Please refer to the sales contract for further information.

4. Transport and storage

The motors are supplied in various shapes and sizes of cardboard boxes.

Store packed products at an ambient temperature ranging from –5° to +40°C.

WARNING

Packed products must be transported, handled and stored horizontally.

Protect products from humidity, heat and physical damage (knocks, falls, ...).

Do not place heavy objects on boxes.



Lift and handle products carefully, using suitable lifting equipment. Observe accident prevention regulations.

Do not lift or carry motors by their power cord.

On receipt of the motor, check the box for signs of damage. If the product is damaged, inform our dealer within 8 days of delivery.

If you cannot reuse the box, dispose of it according to local bylaws governing sorted waste disposal.

Harness the product safely before lifting and handling it.

For further information ⇐ section 3.1.

5. Installation



Before installing the motor, read this instructions manual and the one supplied with the pump or electric pump to which the motor will be coupled. Keep both manuals with care.

If the product shows clear signs of damage, do not proceed with installation, but contact the Technical Service Centre.

This product may only be installed by qualified and experienced personnel.

Use suitable equipment and protective devices. Observe all accident prevention regulations.

Carefully read the working limits specified in section 3.1.

Always refer to current local and/or national regulations, legislation and bylaws governing installation and water and power connections.

5.1 Selecting the electrical panel

Motors must be suitably protected against overloads and short circuits.

The following starting systems can be used: direct, impedance, autotransformer, soft-start.

WARNING

Make sure the panel power ratings match those of the pump. Incompatible combinations may cause faults and fail to fully protect the motor.

Check the working limits specified in section 3.1.



Before installing, carefully read the instructions supplied with the electrical panel.

For further information, please contact our Sales and Service Department.

5.2 Pump connections



Before connecting the motor to the pump, read this instructions manual and the one supplied with the pump or electric pump to which the motor will be coupled. Keep both manuals with care.

For further information, please contact our Sales and Service Department.

5.3 Installing the motor in a well or tank



Follow the instructions in the pump or electric pump manual.

When installing the electric pump vertically, make sure the motor does not rest on the bottom of the well or tank.
When installing the electric pump horizontally, make sure the motor does not rest on the bottom of the tank.
For further information, please contact our Sales and Service Department.

6. Start-up



Follow the instructions in the pump or electric pump manual.

6.1 Electrical connections to the electric pump



WARNING

Electrical connections may only be performed by a qualified installer in compliance with current regulations.

Make sure that the supply voltage and frequency are compatible with the electrical panel. The relative information is shown on the motor rating plate and in the documents supplied with the panel. Provide suitable short circuit protection on the supply line.



Before proceeding, make sure that all the connections (even if they are potential-free) are voltage-free.
Unless otherwise specified in local bylaws, the supply line must be fitted with:

- a short circuit protection device
 - a high sensitivity residual current circuit breaker (30mA) for additional protection from electrocution in case of inefficient grounding.
 - a general switch with a contact aperture of at least 3 millimetres.
- Ground the system in compliance with current regulations.

• Three-phase version

Connect the electric pump to a supply line via a suitable electrical control panel .

WARNING

Install the electrical panel in a sheltered area.

Refer to the documentation supplied with the electrical panel.

For connections to any external control devices (e.g.: pressure switch, float) follow the instructions supplied with these devices.

7. Maintenance, Service, Spare Parts



Before proceeding, always make sure the motor is disconnected from the supply line.



Maintenance operations may only be performed by expert and qualified people. Use suitable equipment and protective devices.
Observe all accident prevention regulations.

Do not attempt to disconnect the connector from the motor head cable.

This may only be done by authorised personnel.

WARNING

Only use original spare parts to replace faulty components.

The motor does not require any scheduled routine maintenance.

Users wishing to prepare a maintenance schedule should bear in mind that maintenance frequencies depend on the conditions of use.

For any requirements, please contact our Sales and Service Department.

7.1 Spare Parts

WARNING

Always specify the exact type of motor and code when requesting our Sales and Assistance Service for technical information or spare parts.



Only use spare parts to replace faulty components. Unsuitable spare parts may cause the product to work incorrectly and cause hazards for people and property.

For further information, please contact our Sales and Service Department.

8. Warranty

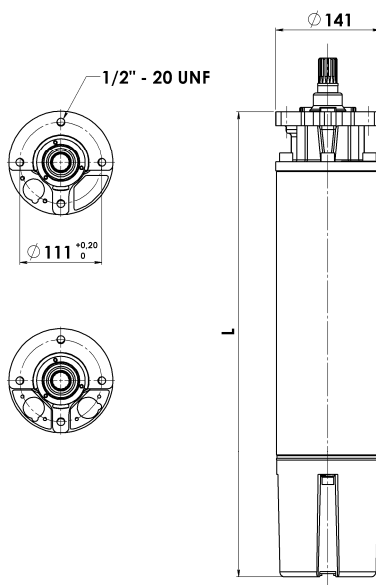
Please refer to the sales contract for further information.

DIMENSIONI E PESI – DIMENSION AND WEIGHT – WYMIARY I WAGI

Rated Hp	Rated KW	Phase	Axial thrust (N)	L (mm)	Weight (Kg)
5,5	4	3	16000	600	39,5
7,5	5,5	3	16000	631	43,2
10	7,5	3	16000	660	45,5
12,5	9,2	3	16000	685	49
15	11	3	16000	730	53
20	15	3	16000	785	59
25	18,5	3	16000	860	66,5
30	22	3	16000	920	72,5
40	30	3	27000	1050	85
50	37	3	27000	1180	98

**DIMENSIONAMENTO CAVI AVVIAMENTO DIRETTO – SECTION CABLE DIRECT START
WYMIAROWANIE KABLI – ROZRUCH BEZPOŚREDNI**

VOLTAGE TENSIONE NOMINALE NAPIĘCIE ZNAMIONOWE V	RATED POWER POTENZA NOMINALE MOC ZNAMIONOWA kW Hp		PHASE ~ 3	VOLTAGE DROP CADUTA DI TENSIONE SPADEK NAPIĘCIA %	Sezione del cavo - Section cable - Sekcja kabla								
	mm ²												
	mm ²	4			6	10	16	25	35	50	70		
380 - 400	4	5,5	3	4	A max	29	36	51	67	89	110	138	172
	5,5	7,5			Lunghezza massima - maximum length Maksymalna długość								
	7,5	10			mt								
	9,3	12,5			230	342							
	11	15			174	259	426						
	15	20			130	194	319						
	18,5	25			104	155	255	402					
	22	30			88	131	215	339					
	30	40			68	102	168	265	403				
	37	50				83	137	215	328	448			
						69	114	180	275	377			
				84	132	202	276	382					
					103	158	217	301	405				



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