



**OPERATING INSTRUCTIONS
FOR ASYNCHRONOUS THREEPHASE
ELECTRIC MOTORS**

The instructions reported in this document can be integrated with the information in our technical catalogue, which contains all the details related to our production range.
All the people working with the motor must be appropriately trained.

SAFETY WARNINGS



It is forbidden to install the electric motor in area where potentially explosive atmosphere can form (ATEX), or with high burning risk. Do not wash/clean with solvents or water under pressure and do not paint the electric motor. You must choose your electric motor complying to your industrial and /or commercial requirements, in accordance with nameplate data and with the information contained in our technical manual. We recommend you not to disable or tamper with the safety devices. In case of failure or malfunctioning do not use the motor and clearly signalize its "out of service" status. For possible repairs refer to our Technical Assistance.

RESIDUAL RISKS



Parts under voltage



Moving parts



High Temperature

INSTALLATION AND PUTTING INTO SERVICE

Receipt

Check the status of the motor. In case of damage to the product or to the packing, notify your reservations to the forwarder. Check that motor and data of the nameplate comply to what you have ordered.

Handling and storage

Always use suitable lifting devices (belts, hooks) according to the weight of the motors and the current regulations.

Store the motors in tempered, clean and dry place, protected from severe weather and free from impacts and vibrations.

Before installing check the compliance of the insulation resistance.

Mechanical installation

The motors are usually coupled to other mechanical components, it is always important that:

- surfaces must be clean, they must have a suitable thickness, suitable flatness and orthogonality tolerance, and must be free from vibrations;
- the motor must be so positioned that the air vents can freely aspire and discharge the air;
- install pulleys, pinions or other devices with the highest care, so as not to damage bearings or seals;
- the assembly of couplings or pulleys must be perfectly executed. Do not hit the shaft, the coupling or the pulley to facilitate the assembly;
- running conditions (temperature, degree of humidity and so on) have to comply with what specify on the catalogue or in your order;
- loads on the shaft must be compatible with those indicate on the catalogue or on the order;
- the motor has to be assembled and positioned according to what has been specified on the order;
- all the hot components must be protected from possible contacts with persons or other components of the machine.

Electric installation

Check that the voltage of the motor meets to the supply tension and frequency.

Do not connect or switch on the motor without the wiring diagram; do not switch on the motor with free key.



Every electric circuit must be protected against failure or malfunction.

The installation must be performed by trained and competent people: the installer will take care to prepare all the safety devices of the machine according to regulations.

Except when otherwise agreed, the motor is not equipped with any protection.

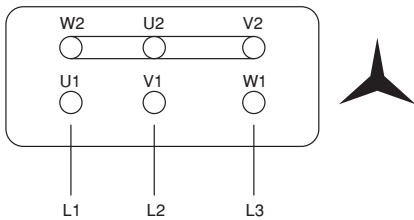
Make electric connections with adequate cable section and isolation, when this is possible keep to CEI EN60204-1; respect the wiring diagram provided by NICOLINI & C. srl.

Check cable have such an adequate length as to be free from mechanical tension and are not pressed against the frame of the machine.

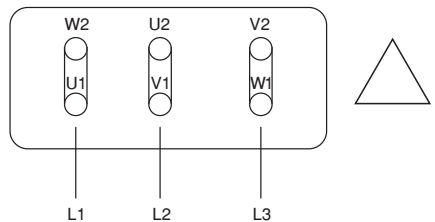
When tightening the cables of the terminal strip, always use a double key.

All unused cables and connections have to be sealed in order to restore the protection degree IP.

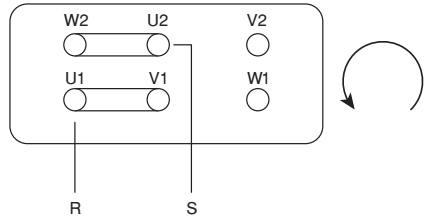
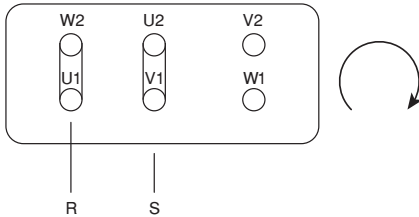
Treephase connection Star connection



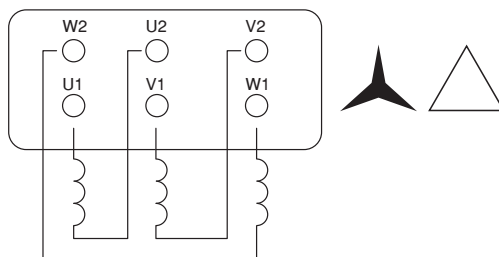
Treephase connection Delta connection



Singlephase connection



Connection internal diagram



The motor usually have six terminals which must be connected according to the a.m. diagram.
Tighten the terminal nuts with a torque adequate to the nuts dimension and to the type of the terminals.
On motors designed for star-triangle start remove the connection points.
Once the connection is completed, close the terminal box taking care to correctly position the seals and to tighten all the screws and the gland as well.

Start controls

After finishing the installation check as follows:

- the supply voltage and the frequency must suit the data in the nameplate;
 - check that the motor is equipped with the safety and protection devices required by regulations;
 - check all screws are correctly tighten;
 - check the isolation resistance to the earth of the motor;
 - supply tension to the motor, check the correct direction of rotation, check no vibrations or noises are produced.
- In case of start/delta connection the starting time with star connection must allow the motor to reach the speed values before moving to the delta connection.

Maintenance/Spare parts

- Periodically clean the fan and its cover in order to prevent over-heating;
- if the motor is equipped with greasers, arrange for regular lubrication: when possible, perform greasing when the motor is running; when, out of safety reasons, this is not possible, repeat the operation after rotating the motor. In our catalogue you can identify greasing time and lubrication type;
- check if noises or extreme vibrations are present;
- check the condition of sealing rings and the tightness of the connections.

The maintenance operations must be performed by qualified or by NICOLINI & C. srl authorized personnel, using only original spare parts. Before operating on the motors, disconnect the power network supply, wait until the moving mass stops and the surface temperature drops below 40 C to avoid risk of burning. At the end of maintenance and inspection service controls are to be performed as indicate under installation phase.

Warranty

NICOLINI & C. srl recognizes the right of warranty only in case of malfunctioning due to production defects. The warranty does not cover the parts subject to wearing due the normal running of the motor.
All the transport costs for returning goods to NICOLINI & C. srl and the subsequent shipment to the customer are excluded from warranty. Warranty is not granted in case of wrong installation, use of not original components, running exceeding the allowed values or in wrong way.

Removal

This equipment may contain hazardous substances. Do not dispose as urban waste, But remove selective, according to the local regulation.



Made in Italy

The products by NICOLINI & C. srl comply with the European applicable directives and regulations.
The electric motors shall not be put into service as long as the final equipment, or the machine in which they will be integrated, is not declared as compliant to the provisions of the applicable directives.
Due to the constant evolution of progress report, NICOLINI & C. srl reserves the possibility to change in every moment the content of this document. The a.m. changes should never be considered as binding.
