

Italian innovation: island-mode inverters

Specializing in the design and production of electric motors, mechanical gearboxes and inverters, Italian company Motive has recently widened its product range with a solution dedicated to automatic pressure control in hydraulic systems and with an island or hybrid drive for solar pumps and motors.

Motive has evolved its remote-controlled and patented Neo-WiFi, with the Neo-Pump; designed and developed for automatic pressure control and regulation in hydraulic pumping systems.

A minor number of components mean a simpler system, less subjected to anomalies and offering more efficiency, dictated by the fact that the inverter uses a power that is proportional to the demanded water quantity. Thanks to a physical law connected with the fluid motion, the minor is the water used and the exponentially lower are the requested power and energy consumption. In more conventional plants that operate without an inverter, you consume instead the maximum power of all pumps altogether, irrespective of the real water demand.

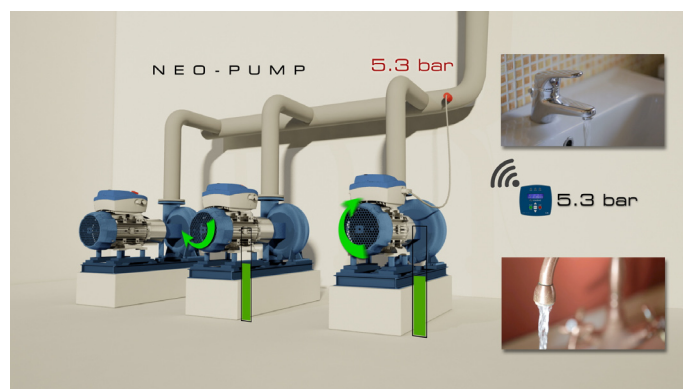
There are two models supplied by the company, one with 3 kW of power and one featuring 11 kW. In master-slave connection, their power multiplies and suits any size of pumping system. In comparison with standard pump inverters that require the input of various data concerning the pump flow rate and head, Neo-Pump carries out an auto-tuning automatically. This allows detecting and registering the characteristic pump curve and adapting its operation to the system, without needing eventual additional calculations and/or inputs.

Moreover, the new inverter grants an alternate operation, optimized and targeted to maximise the service life of each pump. The prearranged internal algorithms can instead detect and eventually adjust the pressure in fully automatic modality, without needing any manual intervention.

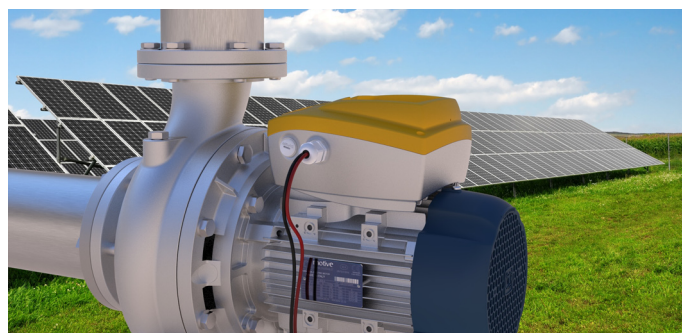
Island system for solar pumps and motors

The Neo-Solar is an island system for solar pumps and motors. It is an inverter for assembly on motor board, directly powered by solar panels and the novelty consists in the fact that, even if it can operate in "island mode" (that is to say without power supply from the net), it needs no voltage stabilizers and batteries between solar panel and inverter. It can be mounted, for instance, on a pump used in places where the electrical power supply is not available, but also simply to have hot water while saving energy.

The most common alternative in the solar pump field is to rely on DC motors. Motive says in comparison, the Neo Solar can operate with a broad array of motors already installed, since these are typically asynchronous AC motors, without calling for their replacement. Easily installed and maintained, it is possible to connect the same system simultaneously with solar panels and/or with electric net and/or generator, to compen-



Neo-Pump, specific inverter for automatic water pumping control.



Neo-Solar, island system for solar pumps and motors.

sate a possible insufficient solar irradiation or at night.

Moreover, the software of Neo-Solar, called MPST (Max Point Speed Tracker) has been further improved in comparison with standard MPPT (Max Point Power Tracker) systems of the other solar pumps, to achieve a bigger water quantity displacement. A standard MPPT system was born for the different target of constantly pursuing a compromise between current and voltage, in order to

store the extracted power.

MPST by Neo-Solar, instead, focuses on the water result and operates so that the pump regulates the speed and optimizes voltage and current values, to attain the operation in a longer time lapse during the day. As with Neo-Pump inverters, two executions are currently available for Neo-Solar, one with 3 kW of power and one for power up to 11 kW. ●

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