

# IDROSOLAR



## INTRODUCTION

The solar stations IDROSOLAR allow pumping water from a well with complete autonomy and can be easily installed anywhere there is a good solar radiation. Using the sunlight, they can produce the energy required to run the electric pump.

The number of revolutions of the pump is continuously adapted to available radiation, thus maximizing the flow of the water pumped. (MPPT function: Maximum Power Point Tracking).

When radiation levels increase so do the revolutions of the pump and, consequently, the flow rises.

When the radiation decreases, (clouds passing by or different times of the day) the revolutions of the pump get lower and thus its flow. However, the system continues to supply water until the radiation falls below the minimum necessary operation point.

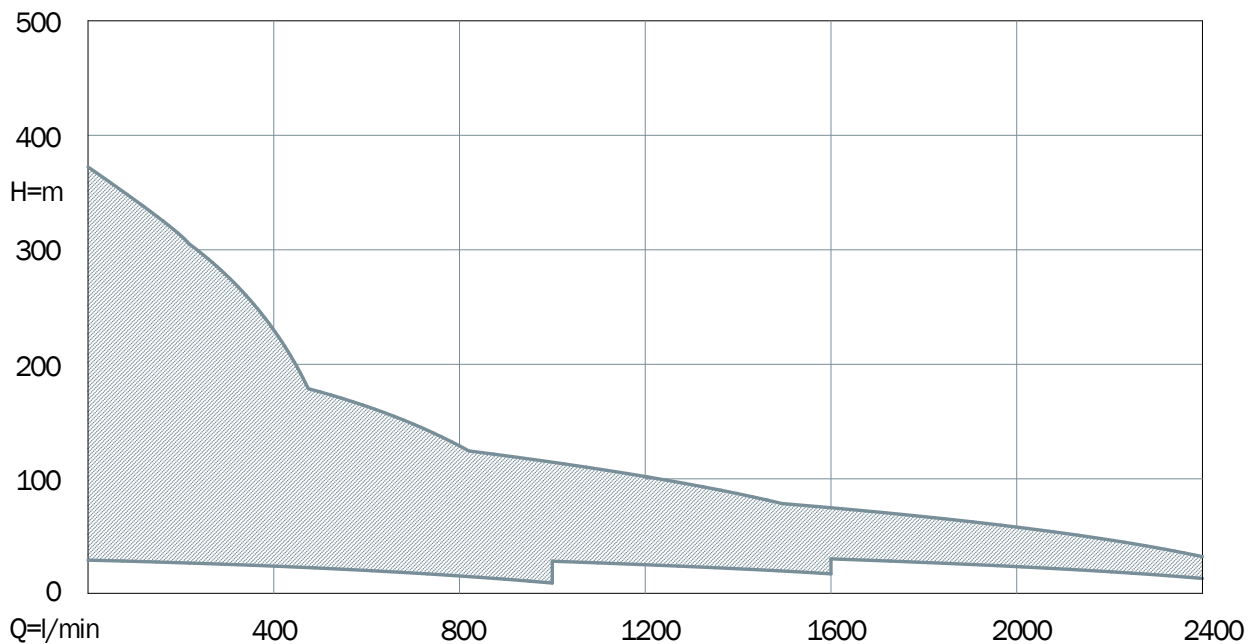
In addition, the system is completely protected against overvoltage, over current and lack of water.

## APPLICATION

To pump water from boreholes

Irrigation

## APPLICATION RANGE



# Photovoltaic pumping stations IDROSOLAR

## PERFORMANCE CHARACTERISTICS

|                 | Motor |      | Pump end |     |       |      | Suggested solar modules* |                     |                         |
|-----------------|-------|------|----------|-----|-------|------|--------------------------|---------------------|-------------------------|
|                 | P2    |      | H        |     | Q     |      | Number of strings        | Modules each string | Total number of modules |
|                 | hp    | kW   | from     | to  | from  | to   |                          |                     |                         |
|                 |       |      | m        |     | l/min |      |                          |                     |                         |
| IDROSOLAR 800   | 0,75  | 0,55 | 14       | 74  | 10    | 100  | 1                        | 3                   | 3                       |
| IDROSOLAR 1200  | 1     | 0,75 | 12       | 92  | 10    | 180  | 1                        | 4                   | 4                       |
| IDROSOLAR 1500  | 1,5   | 1,1  | 7        | 140 | 10    | 250  | 1                        | 6                   | 6                       |
| IDROSOLAR 2000  | 2     | 1,5  | 9        | 184 | 10    | 250  | 1                        | 8                   | 8                       |
| IDROSOLAR 3000  | 3     | 2,2  | 14       | 263 | 10    | 330  | 1                        | 10                  | 10                      |
| IDROSOLAR 3600  | 3,6   | 2,7  | 12       | 245 | 10    | 350  | 1                        | 13                  | 13                      |
| IDROSOLAR 5500  | 5,5   | 4    | 9        | 295 | 20    | 1000 | 1                        | 18                  | 18                      |
| IDROSOLAR 7500  | 7,5   | 5,5  | 13       | 223 | 75    | 1000 | 2                        | 13                  | 26                      |
| IDROSOLAR 10000 | 10    | 7,5  | 17       | 250 | 75    | 1600 | 2                        | 18                  | 36                      |
| IDROSOLAR 12500 | 12,5  | 9,2  | 23       | 307 | 90    | 1000 | 3                        | 18                  | 54                      |
| IDROSOLAR 15000 | 15    | 11   | 13       | 361 | 90    | 2400 | 3                        | 19                  | 57                      |
| IDROSOLAR 20000 | 20    | 15   | 34       | 323 | 150   | 1600 | 4                        | 18                  | 72                      |
| IDROSOLAR 25000 | 25    | 18,5 | 19       | 383 | 150   | 2400 | 4                        | 19                  | 76                      |
| IDROSOLAR 30000 | 30    | 22   | 26       | 290 | 200   | 2400 | 5                        | 18                  | 90                      |
| IDROSOLAR 40000 | 40    | 30   | 32       | 190 | 400   | 2400 | 7                        | 18                  | 126                     |

\* The above calculations have been made considering solar panels with the following specifications

- Open circuit voltage (Voc) < 44 V
- Maximum power voltage (Vmp) > 32 V
- Maximum power current (Imp) < 10 A
- Maximum power rating (Pmax) ≥ 300 Wp

## PUMP TYPE COMBINATIONS

|  | Construction | Application/materials |
|--|--------------|-----------------------|
| Electric submersible pumps IDROSOM for 4" boreholes  | see page 35  | see page 36 - 37      |
| Electric submersible pumps IDROSAND for 6" boreholes | see page 49  | see page 50 - 51      |
| Electric submersible pumps for 8" boreholes          | see page 67  | see page 68 - 69      |

## AVAILABLE VERSIONS

|  | IDROSOLAR   | IDROSOLAR L  | IDROSOLAR C   |
|--|---|--|---|
|  |  |  |  |

### CHARACTERISTICS

|  |   |                  |                   |
|--|---|------------------|-------------------|
| Motors power                               | from 0,75 to 40 hp                          | from 3 to 3,6 hp | from 0,75 to 2 hp |
| IP rating                                  | IP54  | IP65             | IP65              |
| Ambient temperature                        | -5/+40 °C                                   | -5/+60 °C        | -10/+50 °C        |
| N° facilities for wiring a pump controller | 1   | 1                | 1                 |
| Dimensions (mm)                            | from 500 x 430 x 210<br>to 1060 x 810 x 355 | 300 x 400 x 190  | 350 x 440 x 100   |

### MAIN COMPONENTS

|   |                                   |                                   |                                   |
|---|-----------------------------------|-----------------------------------|-----------------------------------|
| Connection box  | Fibreglass                        | Plastic                           | Plastic                           |
| Inverter case   | Powder coated, die-cast aluminium | Powder coated, die-cast aluminium | Powder coated, die-cast aluminium |
| Fixing system   | Steel-sheet fixing bars           | Steel-sheet fixing plate          | Steel-sheet fixing plate          |
| Hand - off - auto selector switch                                   | YES                               | NO                                | NO                                |
| Buttons to start and stop the electric pump                         | YES                               | YES                               | YES                               |
| Display to set and check the electric pump                          | YES                               | YES                               | NO                                |
| Bluetooth communication   | YES                               | YES                               | YES                               |
| General disconnector for the connection of the photovoltaic modules | YES (opening interlocked)         | YES                               | YES                               |
| Surge protector for photovoltaic systems                            | YES                               | NO                                | NO                                |
| Protective fuses  | YES                               | YES                               | YES                               |
| Led indicator lamps for run and alarm                               | YES                               | NO                                | NO                                |

### OPTIONS

|                            |     |    |    |
|----------------------------|-----|----|----|
| Version with dU/dt filters | YES | NO | NO |
|----------------------------|-----|----|----|