

# ИЗ.DRP

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# H3.DRP

## 4" SINGLE-PHASE ENCAPSULATED SUBMERSIBLE MOTOR (1X220-230V / 50 HZ)

Electric motors from series H3 are 2 pole asynchronous single-phase submersible motors designed to operate coupled to hydraulic parts with 4" Nema standard. They are made of materials suitable for contact with water, and cooling and lubrication of the thrust block and bushes are guaranteed by a mixture of water and glycol. H3 motors require a start and run control box, which includes capacitor and manual reset amperometric protection.

The supply cable connector, removable for quick and easy maintenance is equipped with the DRP protection device. The DRP is an electronic device, integrated into the connection cable that guarantees optimal protection of the submersible pump against dry running and other possible installation faults or operation failures. In case of water shortage, the DRP stops the pump when the water is below its sensor. The DRP (observing a programmed time) restarts the motor when the water rises above its sensor.

### APPLICATIONS

H3 encapsulated water-cooled motors ensure reliable working in 4" or larger diameter wells and are designed to be used for lifting, distribution, and pressurisation of water in water systems.

### CHARACTERISTICS OF CONSTRUCTION

- 2 pole asynchronous single-phase encapsulated water-cooled motor.
- Axial and radial water-lubricated bearings allow for maintenance-free operation.
- Hermetically sealed stator by 304L stainless steel flanges, internal and external casings, filled by resin to guarantee optimal cooling capacity of temperature during operation.
- Rotor set on Kingsbury thrust block equipped with carbon clearance ring and oscillating pads in high-strength stainless steel to sustain high axial loads.
- Pre-filled with non-contaminating antifreeze lubricant liquid.
- Sand protection to guarantee optimal operation even with sand in the borehole.
- Removable lead connector to make installation and maintenance easier.
- Supply cable according to drinking water regulations (ACS), available in different lengths.
- DRP protection device integrated into the connection cable available for all powers.

**kW:** 0,37 - 2,2

**Voltage range:** 1x220-230V / 50Hz

**Flange:** 4" NEMA standard dimensions

**Voltage tolerance 50Hz from nominal:** +6% / -10%  $U_n$

**Rotation:** CCW facing shaft end

**Degree of protection:** IP 68

**Insulation:** F

**Rated ambient temperature:** max. 35° C

**Cooling flow:** min 8 cm/sec

**Maximum starts/h:** 150, equally distributed

**Mounting:** vertical/horizontal

**Maximum immersion depth:** 300 m

**Allowed range of water pH:** 6,4 - 8,0

**Thrust:** 1.500 N, 3.000 N (according to ranges)

**Protection requirements:** For H3 motors without the control box CBH an overload protection and a control unit for motor start and run must be installed according to EN 60947-4-1 trip time < 10 sec. at  $5 \times I_N$ .

## **AUTOMATIC PROTECTIONS**

### **DRY-RUNNING PROTECTION**

The DRP completely protects the H3.DRP motor against lack of water in the well, without the aid of other equipment (probes, cables, sensors, control panels etc.). In case of dry running, the DRP automatically stops the pump. When the water level is restored in the well, the DRP restarts the motor after a programmed cycle time.

### **PROTECTION AGAINST TOO FREQUENT START&STOPS**

The DRP protects the H3.DRP motor against leaks in the piping system (also when the pressure tank is exhausted or its membrane is defective, or when there is a defective pressure switch) and too frequent starts and stops (for example if the tank is too small for the system). In such cases, to avoid potential damages, the DRP makes the pump enter the stand-by mode.

### **LOW VOLTAGE PROTECTION**

The DRP protects the H3.DRP motor against low voltage. Low voltage can occur, for example, if the section of the power cable is not adequate considering the motor power and the distance between the plug and the pump itself; or if a generator is faulty or undersized for the pump.

## **INFORMATION ON A PROPER INSTALLATION**

- Before installation, it is necessary to verify technical requirements of the given hydraulic part (thrust, power) to select the correct motor.
- If you are using a generator with an internal combustion engine, it is necessary that the generator's power measured in kW (in continuous delivery) is three times the rated power in kW of the submersible pump.
- We recommend to install a proper cooling jacket in installations bigger than 10 cm, to guarantee the correct motor cooling flow.
- The DRP must NOT be used with a frequency inverter.
- DRP doesn't work with demineralized water (such as rain water).
- DRP must not be used as a float.
- The DRP must be immersed in the same water as the pump in order to ensure continuity between the DRP and the pump casing.
- In order to reset the electronic protection, disconnect the pump power, wait 10 seconds, then plug it in again.
- Maximum quantity of suspended sand: 150 g/m<sup>3</sup>.

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