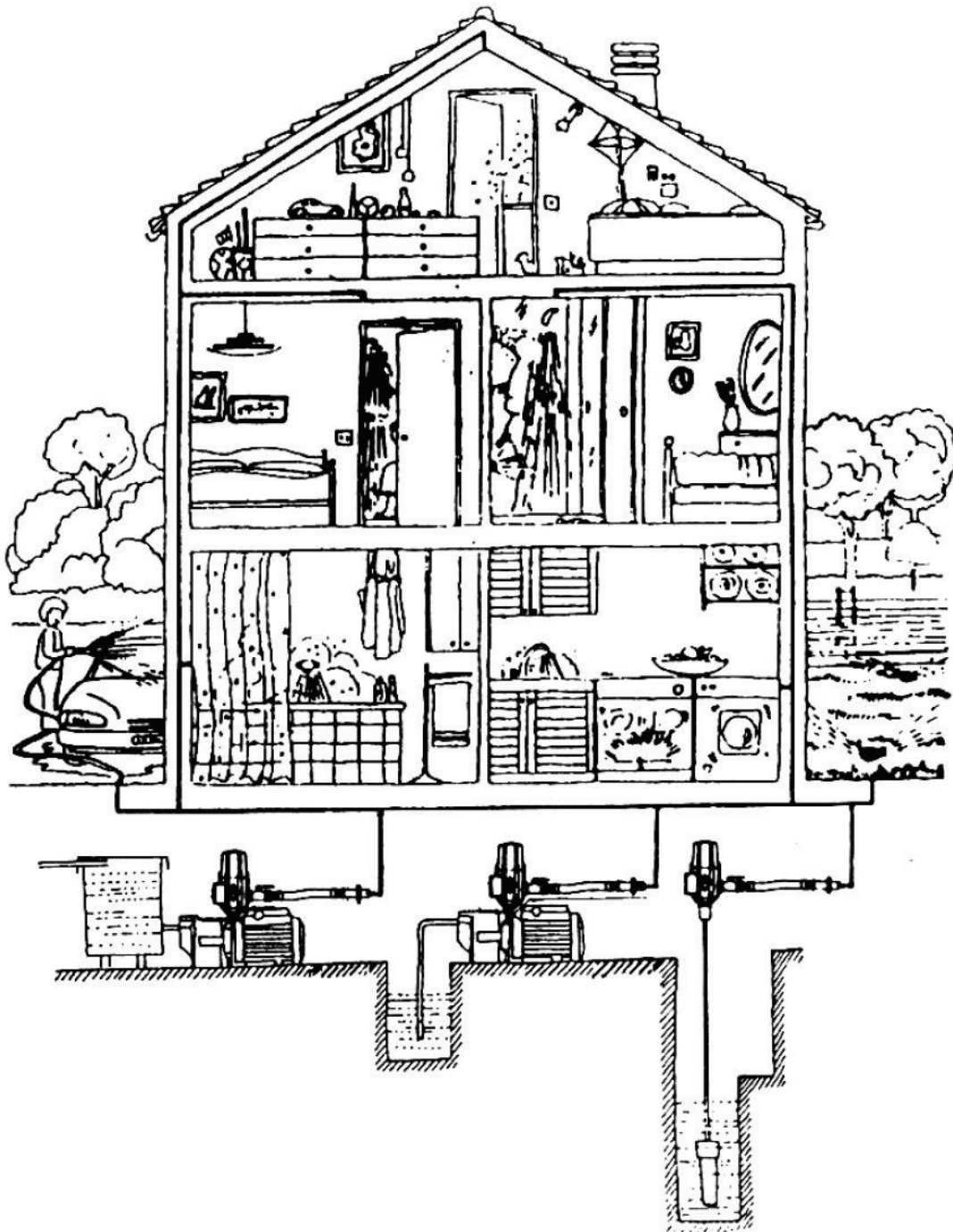# INSTALLATION & INSTRUCTION MANUAL FOR AUTOMATIC CONTROLLER OF WATER PUMP

Ⓟ

OPERATION

The electronic controller orders the automatic start and stop of the water pump when opening or closing any tap or valve of the system. The controller can keep a constant pressure and water flow in the system as long as any tap in the system is open during the pump's operation.

CAUTION!

The electonic controller can be used either for drinking water or non-drinking water system. In installtions where both types of water are present, make sure that drinking water is not mixed with non-drinking one.

CONSTRUCTION CHARACTERISTICS

- Inlet: male 1"
- Outlet: male 1"
- Special non return valve to avoid surges
- Security system avoiding the possibility for the machine to work without water
- Pressure gauge
- Manual start switch (RESET)   - Pump-working LED (ON)
- Tension LED (POWER)   - Security system LED (FAILURE)

TECHNICAL CHARACTERISTICS

Voltage: ~220-240V   Max Current: 10(6) A   Frequency: 50/60Hz   Protection Grade: IP65
Max water temperature: 60ºC   Starting pressure: 1.5-3bar   Max pressure for use: 10bar

! INSTALLATION OF THE PRESSURE GAUGE (Fig. 1)

The pressure gauge is provided with an O-ring, two fixing screws and a screw cap.
The pressure gauge can be mounted on any side of the controller by introducing the cylindrical connector with the O-ring into the hole in the body of the device and fixing it by means of the two supplied screws. The screw-tap is to be located on the opposite side's pressure gauge vent (without O-ring or teflon).

! HYDRAULIC CONNECTION (Fig. 2)

Before proceeding with hydraulic connection, it is essential to prime the pump correctly. The controller should be installed always in a vertical position, thus connecting the inlet opening (male 1") directly to the pump outlet and the lateral outlet (male 1") to the network. Avoid outlet non-return valves.
The folliong accessories are recommended:
Flecible with a disassembling link for network connection, protecting the set from possible flexion charges and vibrations.
Ball valve which permits the isolation of the pump from installation.

ATTENTION:

The water column between the pump and the highest point of use shall not exceed 15m for model DSK-2 and the pumps should supply a minimum pressure of 2.5 bar. If case of using the control in points between 15 and 30m heigh you are suggested to use model DSK-2.1. The adjustment of the starting presssure is made by the screw placed in the top of the control (Fig. 5)
Read the indicated pressure showed in the pressure gauge when the pump starts and perform on the screw according to the wished side (Pressure adjusting must be performed by professional). As per standards the starting pressure should be 0.2 bar higher than the monometric one, and the pump will have to give at least a pressure 0.8 bar higher than the adjusted one.

Example:

USING HEIGHT	OPERATING PRESSURE ADJUSTMENT	MINIMUM PUMP PRESSURE
20m	2.2 bar	3 bar
25m	2.7 bar	3.5 bar

This operation only adjiusts the starting pressure, not the working pressure which only depends on the pump feature. It will be easier to proceed with the adjustment if a tap of the installation is opened, that will reduce the internal pressure of the control.

⚡ ELECTRIC CONNECTION (FIG. 3)

Check the power supply to be ~220-240V. First disconnect the power supply, then dismount the cover (1) of the electronic circuit and make the connections as per diagram on plate (2). The controller can be also used for three-phase or single-phase pumps with intensities higher than 10A by means of an auxiliary contact. In this case, the connections will have to be made according the scheme in Fig. (4).

WARNING

Bad connections may spoil the electronic circuit.

⚠ STARTING

1. Be sure that the pump is correctly primed, and then gently open the tap.
2. Connect the controller to the electric supply. The tension LED will light (POWER)
3. The pump starts working automatically and within a period of 20-25 seconds the pressure gauge will reach approximately the maximum pressure provided by the pump. During its working the corresponding LED (ON) will be on.
4. Close the tap indicated on point 1. After 7-9 seconds the pump will stop. The tension LED (POWER) will be the only one to remain on.

Any problem after this procedure will be due to defective pump priming.

AUTO-RESTART AND DRY-RUNNING PROTECTION

If no water is supplied to the system, ie. no water in tank or closed supply/suction pipe, the system will run the following sequence: Switch off after 20 seconds if no water is detected, stop for 10 seconds, run for 40 seconds stop for 10 seconds, run for 40 seconds stop for 10 seconds. The controller at this point will go into run dry protection. The Green Power light will no longer be illuminated and the Red Failure light will flash. When the failure light is flashing, it means the pump will restart after 24 hours in the sequence mentioned above. The system will repeat this every 24 hours until water is detected.

The pump can be restarted at any time by pressing the reset button.

POSSIBLE PROBLEMS

1. Pump doesn't stop:
    a). Water leakage higher than 1.21/min at some point --- check the system, the tap etc.
    b). Manual start switch (RESET) is blocked --- press it for several times. Consult your dealer if the problem persists.
    c). Breakdown on the electronic board --- proceed to its substitution.
    d). No electrical supply --- check the proper electric feeding. The tension LED (POWER) should be on.
    e). Not enough pump pressure --- the security system has been activated and the corresponding LED (FAILURE) is on.
       Check that the pump pressure is 0.8 bar higher than the starting pressure of the controller.
    f). Air in the pump aspiration --- the pressure gauge will indicate a pressure lower than the nominal or constant oscillations. The security system will act by stopping the pump and the LED (FAILURE) will be on.
       Check the sealing of the connections and O-ring of the aspiration conduct.

3. The pump starts and stops repeatedly:
    a). Small leakage in some point of the installation --- verify possibly tap of tank leakages and repair them.

Fig.1

Fig.2

① ②

Fig.3

3-380/400V~
50/60Hz

L1 L2 L3 N ⏚

220-240V~
50/60Hz

L1

N

U-V: 220-240V~
50/60Hz

10A MAX

U

V

Contactor

M

Fig.4

MOD DSK-2.1

− +

Fig.5