

PC 200-C – clean water pump controller

1. General

PC 200-C is a microprocessor based pump controller. The equipment is made for managing clean water pumping stations and fire fighting pumping stations being able to control up to 3 pump groups. The pumps may be of the same or of different capacities (i.e. full and half) and the fire fighting pumping stations can include a motor pump too.

PC 200-C can acquire, process and display a lot of signals from different sensors and transducers (temperature, moisture, voltages, currents, pressure, level, flow, power) fitting the demands for a large number of applications. It is easy to use and configure, assuring a very good operating safety for the pumping systems.

In order to allow data monitoring and setting, **PC 200-C** has a 2 x 16 characters liquid crystal display with backlight and 4 multifunctional keys.

PC 200-C also has 4 bicolor LEDs, the first 3 to indicate each pump's status (on, off, failed) and the last one to indicate that there is at least one active or unacknowledged alarm.



2. Multiple daily Set-Points

PC 200-C will maintain the outlet pressure around a set-point, within a set lower and upper limits, by switching on and off the pumps.

PC 200-C can operate up to 6 independent set points per day.

3. Water supply system

The pumping stations controlled by **PC 200-C** can be supplied directly from the public water distribution network or from a buffer tank.

For the pumping stations that are supplied from the water distribution network, a pressure sensor is used to measure the suction pipe pressure.

For the pumping stations that are supplied from a buffer tank the pumping system can also be used for fire fighting. In this case a level sensor measures the water height.

PC 200-C may also be used in the applications of pumping from a tank (emptying) to another tank (filling).

4. Extra Safety

PC 200-C can work with sensors and switches as well. To increase the system safety, pressure and level sensors can be used in conjunction with pressure-switches and float-switches.

To prevent overpressure when the pressure sensor on the discharge pipe is broken, an extra pressure switch can be used.

To prevent dry running when the pressure sensor on the suction pipe or the level sensor in the tank is damaged, an extra pressure switch or low level float switch can be used as an extra safety device.

5. Electrical measured data

PC 200-C is able to measure the main phase voltages and currents of the switchboard (or a phase current for each motor).

At the detection of an improper power supply (incorrect phase sequence, phase loss, over voltage, under voltage, unbalance between phase voltages), **PC 200-C** generates a warning and, optionally, shutdown the pump group.

If **PC 200-C** is measuring a phase current for each motor, it can indicate the inadequate running conditions, like the missing of running confirmation, an undercurrent or an over current. In this case too, **PC 200-C** generates a warning

and, optionally, switches off the respective pump unit.

6. Pump internal sensors

PC 200-C can directly process the signals from temperature sensors (PTC, thermal contact, PT100) or miscellaneous (vibrations, bearing temperature) included in the pump unit and, depending on the measured values and the threshold limits, it can warn the operator and stop the corresponding motor pump.

7. Alarms

PC 200-C can store up to 50 alarm types, each of them with the date and the time when the alarm occurred, when it disappeared and when the operator acknowledged it. The number of occurrences for any alarm type is also displayed. The active alarms are presented in a separate table.

8. Accumulated values

PC 200-C is able to acquire impulses or analog signals from flow meters and energy meters installed in the pumping station and it computes the corresponding accumulated values: pumped volume, energy consumption and system efficiency (kW per pumped cubic meter).

PC 200-C is also computing and displaying the total pump running hours for each pump unit.

9. Manual operation mode through the automatic unit

If the electrical switchboard's installing conditions are very severe and do not allow the use of lamps or buttons, the pumps can be switched on and off by the operator, in manual operation mode via the automatic unit, from the equipment's keyboard. In this operating mode the switching on and off by force is made under the running safety requirements (the max running pumps' number, the time delays between two consecutive stops or starts etc.).

10. Functions

PC 200-C includes a large set of functions (daily set-points depending on the pumping capacity, "first in - first out" pumps alternation or depending

on the running hours, the time delays between two consecutive starts and stops, the maximum continuous running time, the minimum brake time, the starting contribution etc.) that can be selected by the operator in order to improve the pumping system's operating mode.

11. Access levels

To avoid unauthorized access, **PC 200-C** uses four password types: an operator access code (which allows operator to adjust only some values), a system access code (that gives a full access to the set parameters), a commissioning and a firmware password.

12. Communication

In order to be included into a monitoring system, **PC 200-C** may optionally have a serial communication interface RS 232 C, allowing connection either to a Notebook PC, to a telephone modem, to a GSM modem or to a radio modem or a RS 485 serial communication interface allowing the connection to an automation network or to another equipment located at a long distance.

