

# Water under Control



## WatchDog pro for the water industry

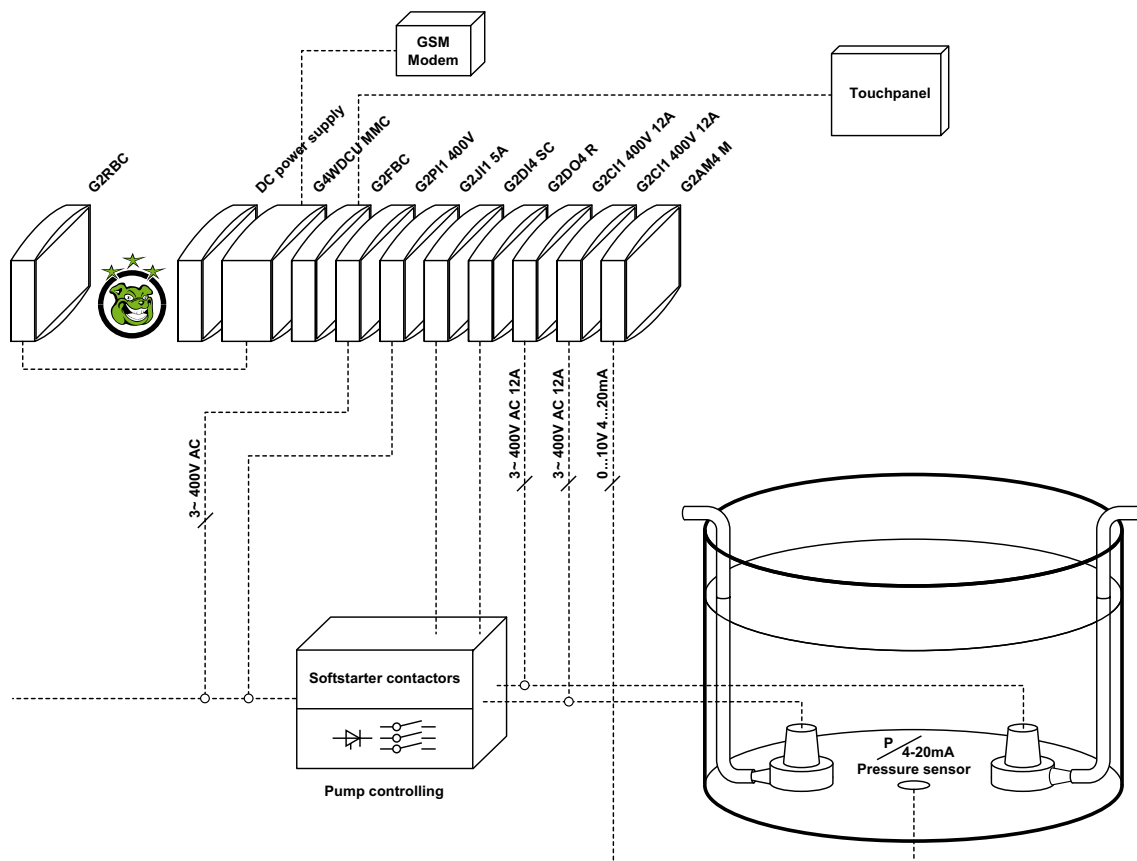
Independent system for controlling and monitoring filling levels and for monitoring pumps in terms of running dry, jamming or complete breakdowns.

### Problem

Wastewater system faults and breakdowns can prove to be critical for an entire region. Since these systems are unmanned and frequently located far from centres, they are difficult to monitor. In order to prevent reservoirs from overflowing, these unmanned systems are level or flow-regulated. The perfect functioning of the system will, however, quickly be at risk if a pump breaks down or a pipe becomes blocked. Breakdowns and damage with far-reaching consequences may result if the control centre is not informed about such problems at an early stage.

### Task

An independent system is installed to control and monitor filling levels and monitor pumps in terms of running dry, jamming or breaking down completely. It must be ensured that if a fault develops, the local pump control system will switch over to a redundant system. The distribution of the operating hours of the double pumps must be consistent in normal operation in order to prevent the spare unit from malfunctioning. Any fault which occurs is to be immediately reported to the control centre by SMS or the Internet. Recording all the operating data serves to be able to trace the entire system operation.



With WatchDog pro, the whole installation to be monitored (supply, pumps, etc.) can be connected direct to the system. Transducers are no longer needed.

Measuring the active input of the individual pumps will enable any potential reservoir overflow to be recognised beforehand and prevented. Even a total loss of power can be reliably reported to the control centre with the help of a small UPS. An optional GSM module and various field busses (Modbus, Profibus, and CANopen) allow for different methods of connection to the central process control equipment. Each operating status can be recorded and clearly traced on a local basis with the help of the integrated memory card. Maintenance cycles no longer need to follow a fixed time schedule. Instead they can be calculated and carried out according to the number of operating hours and load, thus reducing costs for downtime and repairs. The modular concept means that WatchDog pro can be extended as needed at any time, making it a safe investment for the future.

## Solution

## Advantages

- Simple installation through connecting the pump direct without the need for transducers
- Precise monitoring of pump output to protect the pumps from running dry or jamming
- Pump controls to monitor levels (overflow protection)
- Easy, intuitive operation with a touch panel
- Operating data stored in an MMC system
- Communication via SMS, field bus or Internet
- Modular design is a safe investment for the future

## WatchDog pro modules used

### G4WDCU MMC

art.No.: 2500000

#### Central control unit

- 4 digital input ports
- 2 relay outputs
- Optional serial interface (RS 232) for PC and GSM modem
- MMC memory card
- Remote bus connection



### G2PI1 400V

art.No.: 2500350

#### 3-phase power measurement

- Voltage measured in 3-phase networks
- Phase sequence recognition



### G2CI1 400V12A

art.No.: 2500450

#### Input measurement for monitoring overloads

- Measuring the power factor in single and 3-phase networks
- Recognising inductive/capacitive consumers and generators
- Entering other measured quantities (P, S, Q, Urms, Irms)
- 2 measuring ranges: 1.2kW and 4.8kW (12A, 400VAC)
- Suitable for VFI (10-100Hz)



### G2AM4 M

art.No.: 2500600

#### Monitoring analogue standard signals

- 2 configurable voltage input ports (0-10V)
- 2 configurable power input ports (0/4-20mA)
- 1 programmable analog output

