WatchDog pro for water technology

Water under control

Level control of an automatic sewerage station and monitoring of the complete installation, especially protection of pumps against running dry.

Problem

Sewerage stations are often critical applications for a certain region and a drop out has to be prevented before any problem arises. Therefore a comprehensive and reliable monitoring system is mandatory. The perfect job for WatchDog pro! These sewerage stations are frequently unmanned, therefore the monitoring system needs to have remote communication options. Any failure, (including mains failure) needs to be monitored and alarmed via SMS or internet to the right people. A graphical visualization and intuitive control of the application is often requested. Since pumps are often installed in a large area, a distributed monitoring system is necessary. Remote control from further control panels is an upgradeable option at any time if necessary.

Task

The monitoring of… power supply (mains), flow level in the receiving tank (the level is displayed and pump thresholds can be changed via a touchpanel). Pressure and temperature, protection against dry running of the pump by monitoring the active power drain

Schematic diagram: Monitoring of a automatic sewage station with WatchDog pro

Solution
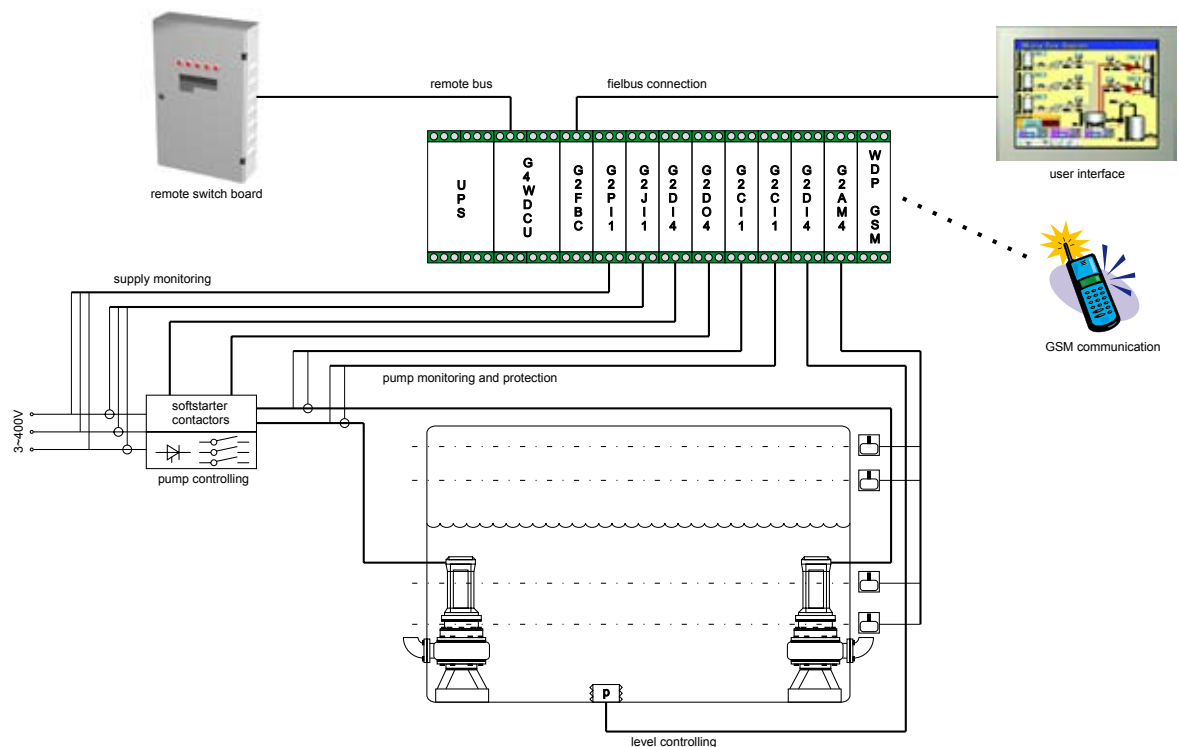
WatchDog pro is able to connect directly to the application (mains, pumps) leaving conventional connection methods (4..20mA transducers and transformers) redundant, saving material cost.

A mains failure notification can be communicated back as Watchdog pro operates using a small UPS.

Maintenance schedules need no longer be fixed as **WatchDog pro** can calculate when it is necessary to maintain a specific pump. This is calculated using its operating hours and pumping performance (load) therefore saving operating costs. Remote control from a second control panel, connected via a simple shielded two wire cable up to 1 km away, can be installed if required at a later date.

This shows how future proof the system actually is, since it can be expanded upon later and with ease through its modularity. Example: A connection via Internet to a SCADA system would also be possible by installing a TCP module.

Advantages

• **simple installation with direct connections to pump motors (no transducers).**
• **dry running or blockage protection by precise active power monitoring.**
• **easy and intuitive management via touch panels is possible and includes many communication • • • • options: SMS, internet, field bus, Data logging.**
• **future proof through its modularity à start small, think big**

Used WatchDog pro modules

G4WDCU MMC
art.no.: 2500000

CPU (central control unit)
• 4 digital inputs
• 2 programmable relay outputs
• optional serial interface connection
• MMC memory card
• remote bus connection

G2PI1 400V
art.no.: **2500350**

3-phase voltage monitoring of mains
• voltage measurement 1 3-phase mains
• sequence detection

G2CI1 400V12A
art.no.: 2500450

Monitoring of the true power for overload protection
• Power factor measurement (PF) in 1 or 3-phase mains
• Recognition of inductive / capacitive consumers and generators
• Detection of additional measurement parameters
(P, S, Q, Ueff, Ieff)
• 2 measuring ranges 1.2kW and 4.8kW (12A, 400VAC)
• Suitable for VFI (10-100Hz)

G2AM4 M
art.no.: **2500600**

Monitoring of the liequied level by standard signals
• 2 configurable voltage inputs
• 2 configurable current inputs
• 1 programmable output