

Control unit for Pump Stations with single or duplex pumps, 12A each, 1- or 3-phase

Why use the PumpGuard duo control unit?

- Outstanding price-performance ratio
- Level detection by
 - ⇒ Diver's bell / pressure
 - ⇒ Pressure measurement with air-bubble introduction and blower monitoring
 - ⇒ Float switch
 - ⇒ Level probe / analogue input 4-20mA
- Single and duplex pump version
- Up to 72h mains failure alarm with 4xAA rechargeable battery module and BonFlash alarm lamp.
- Durable LED display for working-life far more than 10 years
- All settings can be done comfortable in the menu
- ATEX mode

- Compact & modular design (battery and input module)
- Digital 3-phase current monitoring
- Thermal protection inputs
- Operating hours counter
- Alarm outputs (pot. free & 230VAC)
- Level measurement inputs compatible with common Zener barriers



PumpGuard

PumpGuard details

The *PumpGuard* is designed as a **compact control unit with the features of a “big” pump controller for the price of a small one**. Therefore, a lot of handy features, that are normally not available at this price range, have been integrated.

Level measurement possibilities

As standard option, level measurement is performed by **diver’s bell / pressure sensing**. This is a very efficient and reliable way to detect the preset switching levels. This measurement can be **combined with one alarm float switch**. A second option is, to use **float switches**. Two float switches for the single-pump operation can be connected in the standard package, a third float switch can be added using the input module. Another possibility is, to use an **analogue pressure probe (4-20mA)**. The probe can be connected to the additional input module.

Pump monitoring options

The pump **current consumption is evaluated digitally on all three phases** according to applicable standards. Moreover, the **reversible temperature sensor and he irreversible temperature sensor** are monitored. As a third security level, the **maximal pump runtime** can be checked.

Special pump behavior settings

To enhance functionality and comfort, the following functions have been added:

- Startup timeout: **Delay after mains recovery**

Technical data

Attribute	Value
Dimensions (l x w x h); weight	210 x 200 x 110mm; solo: 1.5kg, duo: 1.7kg
Ambient temperature and humidity	-20°C to +50°C; 0-90% rel. humidity, not condensing
Protection classification	IP54
Display / LED	LED display, 6-digit / 7 LED
Pressure sensor	0 - 99mbar measurement range, 400mbar max. pressure
Electrical outputs	1-2x contactor relay 1-/3-phase; max. 5kW potential-free changeover alarm contact (max. 250VAC; 3A; required fuse max. 3A) alarm relay output 230VAC (max. 250VAC; 1A) low voltage alarm output (5V / 50mA max.) for <i>BonFlash</i>
Inputs	All inputs suited for Zener barriers with internal resistance of up to 20kΩ 2x digital input 5VDC / 5mA max. On input module: 1x digital input 5VDC / 0.3mA max. 1x analogue input 4 – 20mA (two wire), range: 0-100mbar, resolution 40µA, processed resolution: 1mbar

- Overcurrent retry delay: Time in minutes for a retry of the pump after detecting overcurrent
- Overtravel duration: A time in seconds can be set to run a pump after detecting the Off-level
- Forced pumping: **Each X days the pumps are started for 3s to destroy possible fat crusts**
- Forced operation timeout: **To prevent smelling, pump to Off-level each X hours**
- Single pump operation: Restrict to max. one pump, even at high level

ATEX mode

One way to reach ATEX conformity is, to connect a **mini-blower** to the diver’s bell measurement. The *PumpGuard* is capable of a minimal pressure monitoring to reach the required security level for this **air-bubble introduction** measurement.

The digital inputs for the float switches are compatible with **common Zener barriers**, which limit the max. energy to ensure ATEX compatibility.

Also, the analogue input can be combined with common Zener barriers.

Mains failure signaling

The *PumpGuard* can be equipped with a cost-effective rechargeable battery module containing four AA rechargeable batteries. Together with BONNEL’s low energy LED alarm beacon *BonFlash*, the *PumpGuard* can **signalize mains failures of more than 72h**.