



FUEL STORAGE MAINTENANCE AND COMPLIANCE

BundGuard® 6

BundGuard® 6 brings the latest functionality and communications technology to Andel's market-leading bund alarm and dewatering system.



BundGuard® 6 protects your site 24 hours a day, 7 days a week, 365 days a year.

The BundGuard® bund dewatering system was first developed by Andel in 1992 for the UK electricity industry and its growing need for an effective dewatering solution at substation sites.

Today, over fifty thousand BundGuard® units are installed in over 25 countries around the world, protecting site operators, preventing hydrocarbons from escaping and contaminating the environment.

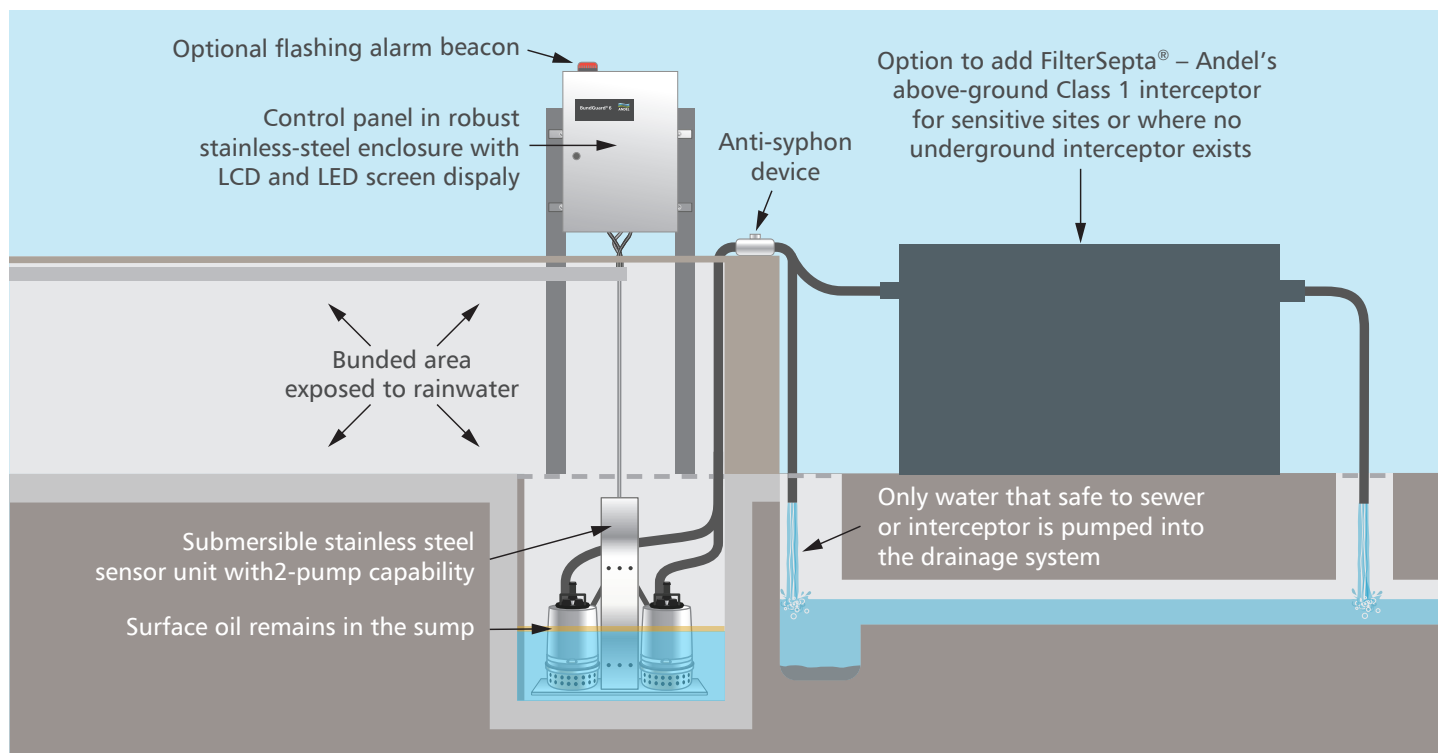
BundGuard® is a sustainable, cost-effective and easy-to-fit dewatering and high-oil alarm system, comprising robust UV-resistant control panel, submersible sensor/pump assembly and mounting system.

BundGuard® 6 expels rainwater and keeps any oil contained within the sump

BundGuard® 6 discriminates between oil and water, keeping oil contained within the sump and expelling water from the contained or banded area.

The robust submersible sensor unit monitors the different liquid levels in the sump via a series of conductive probes that can be configured as required. The control panel activates the pump to remove only water that is safe to sewer or interceptor.

Failsafe systems and relay alarm outputs ensure complete safety and allow onward communication to BMS and other remote monitoring systems.



Authorised Distributor in Singapore

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Making water sustainable for
a cleaner and safer environment.

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BundGuard® 6 is robust, reliable and can be adapted to suit a variety of site conditions

BundGuard® 6 ensures compliance with regulations, avoids pollution incidents and removes the need for regular bund emptying by waste contractors, reducing costs, carbon footprint and environmental impact.

BundGuard® 6 is available in a number of specifications to suit site conditions and customer requirements.

BundGuard® 6 can be relied upon to consistently give accurate readings, avoiding some of the problems associated with other systems such as false readings and repeatedly activating on and off and the risk of pump damage and burning out components.

BundGuard® 6 control panel and submersible sensor unit are built to last and are supplied in robust, stainless-steel enclosures.

With regular maintenance, BundGuard® units have proven to perform for upwards of 15 years in all weather conditions



BundGuard® 6 offers a number of features that provide enhanced control with advanced communications and functionality:

- 2-pump integrated stainless-steel submersible sensor unit
- Option for larger pumps if required
- LCD and LED screen menu display
- High oil alarm
- High oil alarm delay (0-60 minutes)
- High water alarm
- Low water alarm
- Low oil alarm – oil in dry bund alarm
- Pump current monitoring and maintenance alarm
- Mains failure alarm
- System fault alarm
- Pump disable alarm
- Connector disconnection alarm
- Textual alarms
- Historical data storage
- Pump delay customisation
- Outlet water meter support
- Auto changeover
- Over-current disable
- Probe conductivity sensitivity configuration
- FilterSepta® integration
- Oil recovery system option via ORS version
- Multi-language support: Polish, French, Italian, Dutch and English
- Battery backup for communications



- Modbus RTU interface
- Configurable parity on Modbus via menu
- Range of volt-free contacts for onward communications to BMS
- 4G GSM modem
- Multiple forwarding numbers for GSM – maximum 5

Optional xenon amber flashing alarm beacon

Compact, vandal-proof with light diffuser for improved visibility.

Weatherproof to IP67.

Choice of installation locations.



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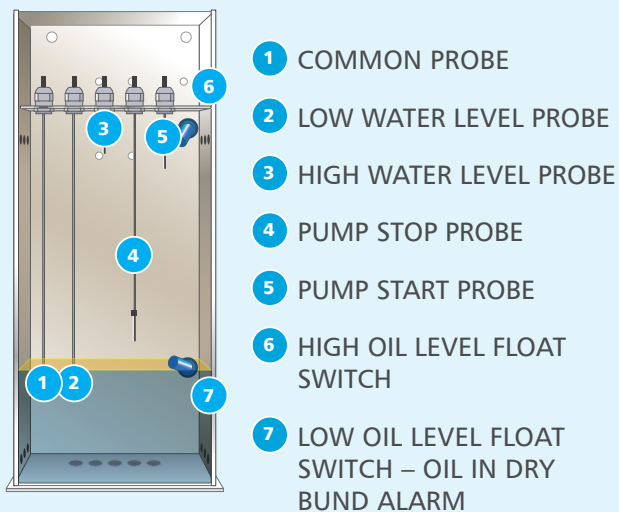
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Benefits at a glance:

- 10-year control panel warranty
- Low maintenance
- Early warning alarm for abnormal oil level – allowing for timely action to prevent damage to the environment
- Fully automatic water pumping
- Dry sump alarm
- Oil in dry sump alarm
- Array of onward communications – VFC (volt-free contact), Modbus and SMS
- Pump current monitoring and maintenance alarm – extends the life of your pumps

The submersible sensor unit is equipped with conductive probes and oil float switches that can be configured to suit each individual installation



The pump inlets are located at the base of the sensor unit, the functionality of the system ensures that oil present in the sump always remains a safe distance from the inlets ensuring it remains within the bund.

The Common Probe ① is a reference probe for the measurement of conductivity between the other conductive probes within the sensor unit.

The sensitivity of the probes can be configured to suit any site conditions, ensuring BundGuard® always delivers optimum performance, even in bund water that has developed low conductivity.

The control panel recognises conductivity between probes and activates the pump when the water level reaches the Pump Start Probe ⑤ and deactivates it when the level drops below the Pump Stop Probe ④.

If the water rises and reaches the High Water Alarm

Probe ③, the system goes into alarm and the second pump is activated. When water in the sump drops below the Low Water Level Probe ②, the system will go into alarm, stopping the pump. There is an option for relays to operate a valve or pump to top up the sump from an IBC.

The High Oil Float Switch ⑥ puts the control panel into High Oil Alarm. As the oil level drops below the float switch, the alarm is deactivated. If the water level is above the Pump Start Probe, the pump will continue to pump only water until the water level drops below the Pump Stop Probe ④.

The Low Oil Float Switch ⑦ puts the control panel into Low Oil Alarm if no water is detected between the Common Probe ① and the Low Water Level Probe ②.

All alarms initiate onward communication to BMS and other monitoring systems via Modbus, email and SMS. BundGuard® 6 has been developed to deal with a range of site conditions and climates.

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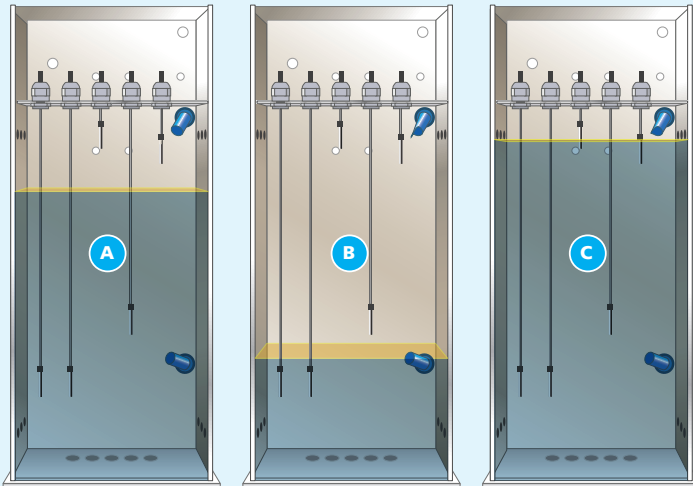
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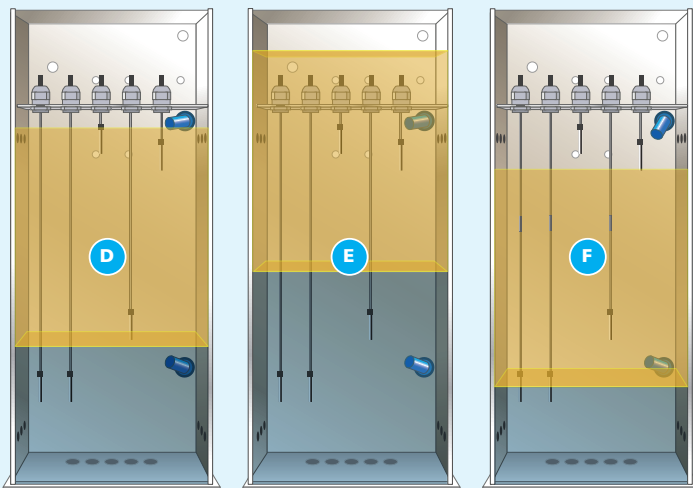
The BundGuard® 6 control panel, by recognising conductivity from the probes in the sensor unit, provides a failsafe, dewatering and high oil alarm system ensuring complete safety with onward communication to BMS and other remote monitoring systems.

Sensor unit cycle with varying water levels and a thin film of oil:



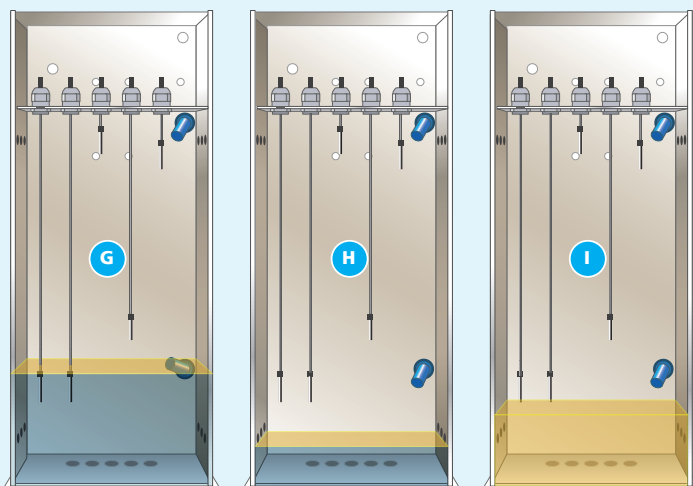
- A** If water entering the sump reaches the level of the Pump Start Probe, the control panel activates the pump and water is pumped out of the sump.
- B** When the water level is pumped below the Stop Pump Probe, the control panel deactivates the pump. Any oil on top of the water remains a safe distance from the pump inlets.
- C** If the water level continues to rise due to an unusually high volume of water entering the sump (greater than 140 l/min) and reaches the level of the High Water Level Probe, the control panel will go into High Water Level Alarm and the second pump will be activated if fitted.

Sensor unit cycle with varying water levels and a significant volume of oil:



- D** If water entering the sump raises the level of oil to the High Oil Level Float Switch, the system goes into High Oil Alarm. The pump is not activated in this scenario because the water level has not reached the Pump Start Probe.
- E** If the water level continues to rise and reaches the Pump Start Probe, still in High Oil Alarm, the pump is activated and pumps out only water until the water level drops below the Pump Stop Probe.
- F** When oil is no longer lifting the High Oil Float Switch, the control panel will no longer be in High Oil Alarm and activity will have been logged for future analysis. Oil on top of the water always remains a safe distance away from the pump inlets.

Sensor unit function with low water and dry bund alarm:



- G** For BundGuard® 6 to function correctly there must always be water in the sump and any oil floating on the surface of the water will be a safe distance from the pump inlets.
- H** If the water level drops below the Low Water Level Probe, the system will go into alarm, the pump will stop, alerts sent to remote monitoring systems. There is an option for relays to control a valve or pump to top up water in the sump from an IBC if the low water alarm is triggered.
- I** If the sump is dry and the Low Oil Level Float Switch is activated, the system will shut off and the pump inlets will be contaminated with oil. The pump inlets need cleaning and the sump needs topping up with water before the system can operate safely again.

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Special builds

Andel has a team of experts that can adapt BundGuard® to deal with a variety of site conditions and special requirements:

Special-build units can detect a wide range of pollutants, keeping them contained within the bund.

Special-build BundGuard® units can take inputs from other probes that can detect a wide range of pollutants and unwanted contaminants in site trade effluent, as well as being able to interface to customers' existing pollutant detection systems.

If predetermined levels of a pollutant are detected, the system will go into alarm, pumps will be deactivated to ensure contaminants are contained within the bund. Alarm notifications will be sent to BMS and other remote monitoring systems.

Typical special-build requirements include:

- Semi ATEX units – sensors and pumps for zone 0 areas and control panels fitted in non-hazardous areas
- Units linked to pH sensors
- Units linked to ammonia sensors
- Units linked to detect unwanted contaminants in site trade effluent
- Units linked to FliterSepta®, Andel's above-ground interceptor
- Power coupling for portable generators.



Special-build that interfaces with existing glycol alarm system.



TECHNICAL INFORMATION

STAINLESS STEEL CONTROL PANEL:

- Power: 110/230 VAC, 440 Watts (1 pump running), 970 Watts (2 pumps running)
- Construction: Stainless steel, IP66 rated
- Dimensions: (H) 415 x (W) 317 (excluding mounting lugs) x (D) 118 mm
- Indicator LEDs:
 - Power – GREEN
 - High Oil Alarm – RED
 - High Water Alarm – RED
 - System Fault – RED
 - Pump 1 Active – GREEN
 - Pump 2 Active – GREEN
 - Pump 1 Disabled – YELLOW
 - Pump 2 Disabled – YELLOW
- Display: 2 x 16 characters LCD for pump cycle counter and system status plus set-up menus when accessed
- Fixing: wall/surface mount via external fixing lug

STAINLESS STEEL SUBMERSIBLE SENSOR UNIT:

- Power and Voltage: nominal
- Construction: Stainless steel, immersion proof
- Dimensions: (H) 550 (600 including lifting eye) x (W) 240 x (L) 490 mm
- Fixing: Free standing in base of sump

STANDARD PUMP:

- Power and Voltage: 230 VAC (110 VAC optional)
- Construction: Stainless steel, immersion proof
- Dimensions: (H) 250 x (W) 160 mm
- Safety: Thermal trip with self-reset
- Flow Rate: 140 litres per minute at 2-3 metre head
- Fixing: Integrated – part of the sensor unit

CONFIGURATION:

The unit is configured in the factory prior to delivery though some on-site adjustment may be required on installation. No further calibration is required. Maintenance should be carried out every 6 to 12 months depending on site conditions.

PLUG-AND-PLAY OPTION:

A Plug-and-Play option is also available to simplify site maintenance where site conditions mean that BundGuard® units may require more frequent attention. All connections between the sensor unit and the control panel are via IP68 connectors.

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