OIL STORAGE MAINTENANCE AND COMPLIANCE

BundGuard® 5

Market-leading, automatic bund dewatering and high-oil alarm solution for site operators



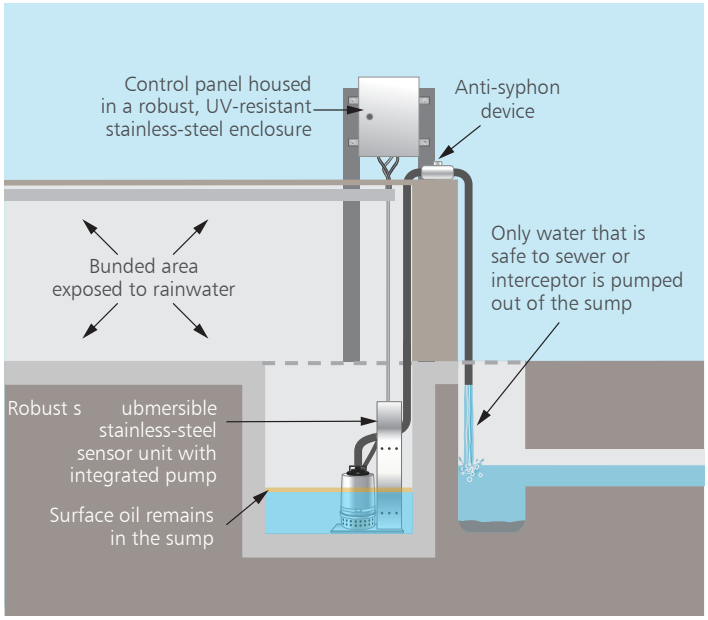
Over 50,000 BundGuard® units are protecting customer assets and the environment in over 20 countries

Andel's BundGuard® system was developed in 1992 as a response to the UK electricity industry's need for an effective dewatering solution at substation sites. Today, over 50,000 BundGuard® units are operating in over 20 countries, protecting site operators and protecting the environment from contamination from oil spills.

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

BundGuard® is a robust, cost-effective and easy-to-fit dewatering and high-oil alarm system, comprising control panel, submersible sensor/pump assembly and mounting system with a proven track record that speaks for itself.

In rigorous tests, BundGuard® is shown to separate oil and water effectively, in fact less than 5 parts per million of oil present in pumped discharge water.



BundGuard® expels rainwater and keeps oil contained within the bund

Because most bunds are exposed to the elements and are likely to fill with rainwater, the containment capacity of a bund can be compromised creating the risk of oil overtopping the wall in the event of a tank failure.

Using advanced circuitry and micro-controller technology, BundGuard® discriminates between oil and water, keeping oil contained and pumping water from the sump in the bunded containment area.

The robust, submersible stainless-steel sensor unit monitors the different liquid levels via a series of conductive probes. The control unit activates the pump as required to remove only clean water, safe to sewer or interceptor, depending on site circumstances.





Robust and reliable

BundGuard® can be relied upon to give consistently accurate readings, avoiding problems often experienced with some other dewatering pumps, where sensor units are prone to false readings or repeatedly activating on and off, damaging pumps and burning out components.

BundGuard® control panel and submersible sensor unit are supplied as standard in robust, UV-resistant, stainless-steel enclosures. With regular maintenance, BundGuard® units have proven to perform for upwards of 15 years in all weather conditions.

For more information:
+44 (0)1484 845 000 or
help@andel.co.uk
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BundGuard® offers a number of features that provide enhanced control with advanced communications and functionality:



- 2-pump Capability
- LCD Menu Display
- High Oil Alarm
- High Water Alarm
- Mains Failure Alarm
- System Fault Alarm
- Pump Disable
- Historical Data
- Delay Customisation
- Technical Support Code
- Connector Disconnection Alarm
- Textual Alarms
- Filter Back-pressure Monitoring Support
- Outlet Water Meter Support
- Pump Current Monitoring
- Auto Changeover
- Over-current Disable
- Battery Backup
- Modbus RTU Interface
- SMS Alarm Forwarding (optional)

Optional xenon amber flashing alarm beacon

Compact, vandal-proof with light diffuser for improved visibility. Weatherproof to IP67. Choice of installation locations.



Benefits at a glance:

- 10-year control panel warranty
- Low maintenance
- A market-leading established product
- Robust and reliable with a proven track record
- Over 50,000 BundGuard® units are currently installed in over 20 countries around the world, protecting site operators and the environment
- Fully automatic water pumping, oil is always retained within the bund
- Rigorous tests show BundGuard® performs to less than 5 parts per million of oil in pumped discharge water
- With regular maintenance, BundGuard® units have proven to perform for upwards of 15 years in all weather conditions
- Clear LED display
- Removes the need for regular bund emptying by waste contractors, reducing costs, carbon footprint and environmental impact
- Early warning alarm for abnormal oil level allowing for timely action to prevent damage to the environment
- Array of onward communications for remote monitoring – VFC, Modbus and SMS
- Pump current monitoring and maintenance alarm – extends the life of your pumps
- Can be adapted to deal with a variety of site conditions and special requirements

A choice of submersible sensor units

As well as the Standard unit, the XL unit is available for larger sumps. Compact and Mini units are also available for customers with an existing sump with smaller dimensions than a standard modern sump.



XL Standard Compact Mini

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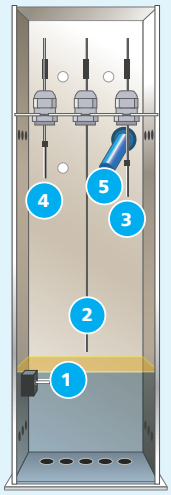
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The submersible sensor unit is equipped with a number of conductive probes that can be configured to suit each individual installation



1. **COMMON PROBE**
2. **STOP PUMP PROBE**
3. **START PUMP PROBE**
4. **HIGH WATER ALARM PROBE**
5. **HIGH OIL LEVEL FLOAT SWITCH ALARM**

The COMMON PROBE 1 creates conductivity with the other probes when immersed in water.

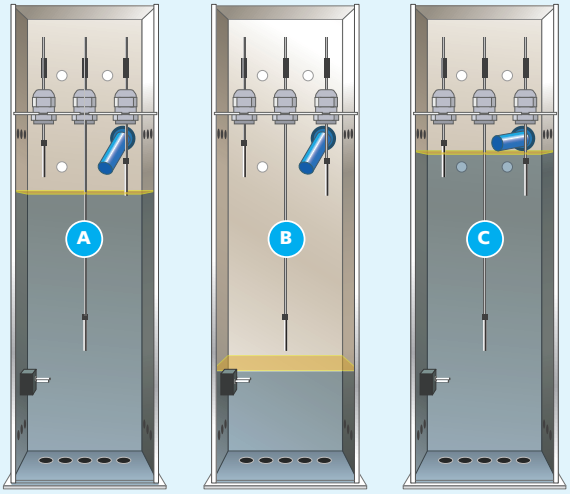
The sensitivity of the probes can be configured to suit all site conditions, ensuring BundGuard® always delivers optimum performance, even in bund water that has low conductivity.

The control unit monitors conductivity between the probes and activates the pump when the water level reaches the START PUMP PROBE 3 and switches the pump off when the water level drops below the STOP PUMP PROBE 2.

If the water level rises and reaches the HIGH WATER ALARM PROBE 4 a second pump will be activated (if fitted).

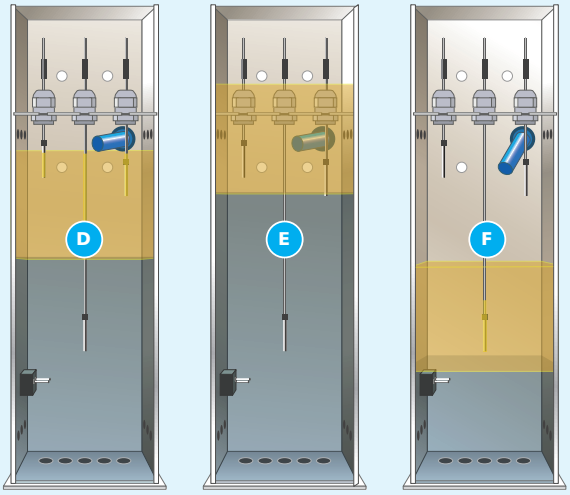
The HIGH OIL LEVEL FLOAT SWITCH ALARM 5 puts the control panel into high oil alarm and deactivates the alarm as the level drops below the float switch.

Sensor unit cycle with rising and falling water levels and a thin film of oil



- **A** When water entering the sump reaches the level of the START PUMP PROBE and 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 is kept well away from the pump inlets.
- **C** If the water level keeps rising, due to an unusually high volume of water entering the sump (greater than 150 l/m) and reaches the level of the HIGH WATER ALARM PROBE, the control panel will go into high water level alarm and the second pump will be activated (if fitted).

Sensor unit cycle with rising and falling water levels and a significant volume of oil



- **D** With a more significant volume of oil in the sump, if water entering the sump raises the level of the oil to the HIGH OIL LEVEL FLOAT SWITCH, the control panel will go into high oil alarm. Because the water has not reached the START PUMP PROBE, the pump is not activated.
- **E** If the water level rises and reaches the START PUMP PROBE, still in high oil alarm, the pump is activated and water is pumped out of the sump.
- **F** When the water level drops and oil is no longer lifting the HIGH OIL LEVEL FLOAT SWITCH, the control panel will come out of high oil alarm. The data will have been logged for future analysis. When water is pumped below the STOP PUMP PROBE, the pump is deactivated. The oil is never allowed to reach the pump inlets.

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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:

- 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 a site's trade effluent
- Control units can be supplied in GRP enclosures if required to fit customer specifications
- Automatic sump frost protector systems for extreme weather conditions
- Adapted to include power coupling for portable generators

Special builds can be linked to sensors to detect unwanted contaminants in a site trade effluent, where if high levels are detected, the system will deactivate the pump so the contaminants are contained within the bund and do not reach the drainage system.

Example

The bespoke, special-build system below was built to meet customer specifications with control units in GRP enclosures.

The system interfaces with the cutomer's existing glycol alarm system. If the glycol alarm triggers, a signal is sent to immediately disable the BundGuard® pump. The system also alerts the site to initiate a speedy response.



Bespoke special-build installation using National Grid specification enclosures, designed to incorporate a glycol loss detection 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 (Also available to National Grid spec in GRP enclosure)
- Dimensions: (H)410 x (W)262 x (D)100 mm
- Indicator LEDs
  1. Power – Green
  2. System Fault – Red
  3. Pump 1 Active – Green
  4. Pump 2 Active – Green
  5. High Oil Alarm – Red
  6. High Water Alarm – Red
  7. Pump 1 Disabled – Yellow
  8. 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

SENSOR UNIT:

- Power and Voltage: nominal
- Construction: Stainless steel, immersion proof
- Dimensions:
  XL – (H)1000mm x (W)180mm x (D)70mm
  Standard – (H)570mm x (W)180mm x (D)70mm
  Compact – (H)450mm x (W)180mm x (D)70mm
  Mini – (H)300mm x (W)220mm x (D)55mm
- Fixing: Free standing in base of sump

STANDARD PUMP:

- Power: 250W
- Voltage: 220-240Vac/50Hz
- Construction: 304 stainless steel with mechanical shaft seal
- Dimensions: (H)320mm x (W)168mm
- Weight: 6kg
- Max Flow: 140 litres per minute
- Max Head: 8m
- Outlet: 1.25 inches BSP
- Fixing: Integrated as part of the sensor unit
- 10m flying lead for power connection

FIXING AND CONFIGURATION:

BundGuard® is supplied complete with a fixing kit, anti-syphon device and 5 metres of 18 bar flexible hose. 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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