

ACCURATE LEVEL MONITORING IN OBSTRUCTED SUMP APPLICATIONS

BACKGROUND

The Solutions team completed the installation and commissioning of a Siemens SITRANS LT500 HART-enabled transmitter/controller alongside a SITRANS LR110 non-contact 80 GHz radar to monitor and control a sump pump. The project addressed a site requirement for reliable, accurate level monitoring in a challenging environment where traditional contact level devices had previously suffered from relay hysteresis and interference due to numerous obstructions.

SIEMENS

CHALLENGE

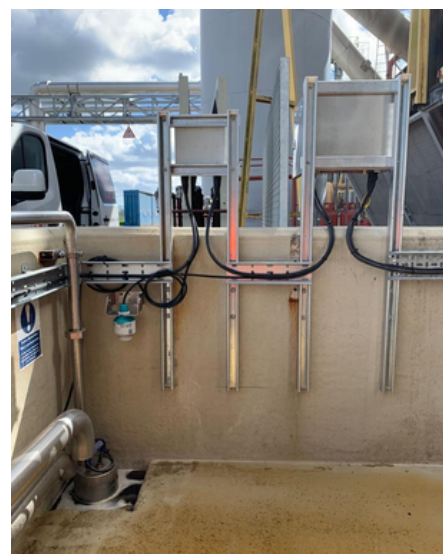
The customer needed a solution that could deliver precise, repeatable level measurement without the drawbacks of contact-based sensors. Previous installations had experienced false triggers, inconsistent readings, and maintenance issues, particularly in areas with obstructions that affected the operation of conventional devices.

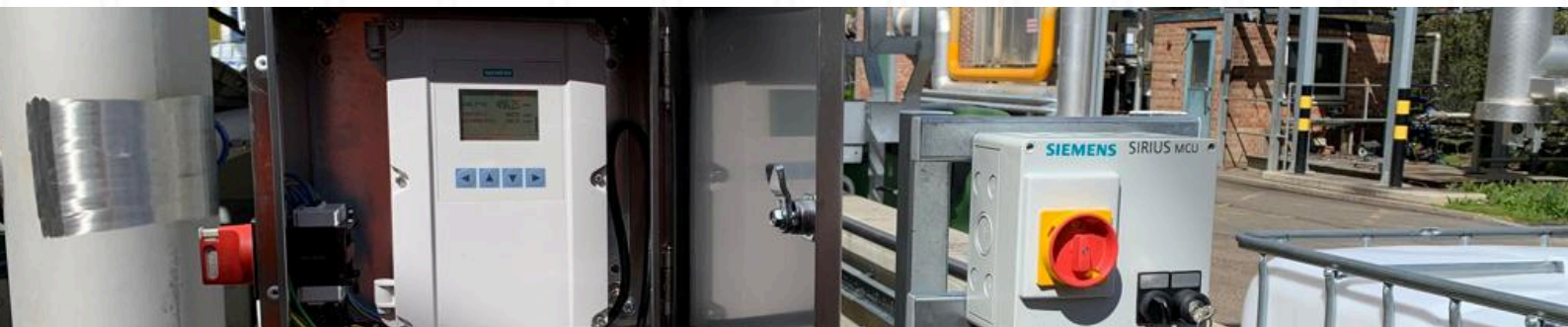
In addition, the system had to provide robust control of the sump pump, including duty/standby operation, start/stop functions, and high/low-level alarms.

SOLUTION

Our team installed the Siemens SITRANS LR110 radar, chosen for its non-contact measurement, narrow beam, and 80 GHz frequency, which allows it to operate reliably in obstructed environments. The radar was paired with a SITRANS LT500 controller/transmitter, ideal for sump pump applications due to its versatile analogue I/O, HART communication capabilities, and up to six configurable relays for pump duty, standby, and alarm functions.

The LT500 also provides a local digital display in either engineering units or percentage, a 32-point linearising table, and simple configuration of the LR100 series radar via the four-button HMI. Together, these devices ensure precise level measurement, automated pump control, and reliable alarms while minimising maintenance requirements.





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RESULT

The project was successfully completed, providing the customer with a robust, non-contact level monitoring and pump control solution. The combination of the SITRANS LR110 radar and LT500 controller eliminated previous hysteresis issues and false readings, offering consistent, accurate operation even in an obstructed sump environment.

The installation has improved system reliability, operational efficiency, and safety, while providing intuitive control and monitoring through the local display and HART interface.

EQUIPMENT SUPPLIED

Siemens SITRANS LT500 HydroRanger / Multiranger Level monitor controller

Siemens SITRANS LT500 is a versatile, single and multi-vessel level monitor/controller for virtually any application in a wide range of industries. SITRANS LT500 is available in wall, panel, or remote panel mounting options.



Siemens SITRANS LR110 Radar Transmitter

Siemens SITRANS LR110 is a compact radar transmitter for continuous level measurement of liquids, slurries, or solids to a range of 15 m (49.2 ft).



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