



# APPLICATION REPORT

## Salty Surroundings, Powerful Sensor



F31K2

Salt is everywhere at Frisia Zout. “Zout” is Dutch for salt and that is precisely what Frisia produces. However, salt is also in the air, as the company’s plant in the Dutch city of Harlingen is located only a few meters away from the sea.

3,000 meters below Harlingen lies the salt formation where Frisia Zout sources its raw material. Water is forced into the mineral formation at high pressure and salt-saturated brine is pumped up into the plant’s huge tanks.

### CORROSIVE CONDITIONS

The salt at Frisia is not only underneath the ground; also the air is salty and often wet as it is close to the sea. Corrosion caused by salt poses a significant problem for the switch boxes that control the company’s outdoor valves. All too often, the switch boxes have to be replaced due to corroded contacts and electrical parts. To solve this problem Frisia Zout was eager to try out Pepperl+Fuchs’ new F31K2 dual inductive sensor for valve position feedback. “For a six-month test phase we fitted two valve position sensors of the F31K2 Series to the sup-

ply pipes and two more to the drain pipes shortly afterwards,” recalls Rudolf Bergsma, head of the electrotechnical division at Frisia. Frisia switch boxes, mounted on the plant’s pneumatic valve actuators, are housed in aluminum boxes and use contacts that move mechanically. However, the harsh North Sea climate leads to constant corrosion inside; therefore boxes must be replaced frequently. Due to the excellent test phase with the Pepperl+Fuchs’ inductive dual sensors, Frisia now wants to replace all of its switch boxes with the F31K2 sensors.

## IMPRESSIVELY RUGGEDIZED

“The sensor has a number of advantages which impressed us immediately,” says Jos De Jong from Bray Controls, a valve company that enjoys a long-standing working relationship with both Pepperl+Fuchs and Frisia Zout. “This sensor is compact and the beacon in a weatherproof housing gives a very clear indication of the valve’s position. With the inductive sensors, there is no need for mechanical contacts – what is not there cannot corrode! The fully encapsulated housing design of the F31K2 guarantees additional protection and high impermeability. At a very reasonable price, the sensor looked like the perfect solution to me”, says De Jong. Optimized for outdoor use, housing materials provide high UV protection and are resistant to extreme temperatures, salt water and corrosion. The beacon is visible from a long distance and

gives on-site operators reliable valve position information at a glance. The modular housing is made of a ruggedized, translucent plastic and LEDs that indicate the power supply, sensor, and valve conditions are integrated into the encapsulated sensor module. Thanks to the large terminal compartment and pluggable terminal block, cables that are rigid or have large diameters do not pose any problems in environments where mounting work could prove difficult.

“The sensors have worked perfectly. The on-site operators are extremely satisfied, not least because of the high visibility of the signals given off by the beacon. I am certain that, over time, we shall replace all of our switch boxes with F31K2 sensors,” concludes Rudolf Bergsma.

Two F31K2 dual inductive sensors mounted on pneumatic valve actuators at Frisia Zout in Harlingen, the Netherlands.



The F31K2 is easy to mount directly onto the pneumatic actuator.

