Linde trucks with innovative gas warning system for explosion protection zone 2

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Centrexpert and Proplan present a new gas warning system for industrial trucks in explosion protection zone 2

Industrial trucks operating in explosion protection zone 2, ATEX category 3 G (gas), require either appropriate safety modifications (complete protection) or must be fitted with a gas warning system, which constantly monitors the concentration of gas in the surrounding atmosphere and safely shuts down the truck if the limits are exceeded. The innovative, radio-controlled gas warning system from French specialists Centrexpert is now available as an option for Linde electric trucks with a load capacity of between 1.4 and 3.5 tonnes destined for use in explosion protection zone 2. The recently certified system includes functions such as access control, pre-shift checks, self-calibration and easy servicing. All safety-relevant data—such as gas concentration and the operating temperature of the engine—is shown on the display. Reporting, maintenance scheduling and a wireless connection to stationary gas sensors complete the package.

The gas warning system from Centrexpert consists of a tablet PC with explosion protection, a sensor with a small tank for the test gas mixture and a relay box with controller. The wireless connection between the temperature sensors and the controller is provided via the highly resilient and secure "ZIGBEE" wireless protocol.

"By offering the radio-controlled gas warning system from Centrexpert, we are creating a unique selling point for Linde trucks that are destined for operation in explosion protection zone 2", explains Herbert Kunkel, Chief Executive for Proplan Transport- und Lagersysteme GmbH, a subsidiary of Linde Material Handling. The entire gas detection unit is contained in a single housing which is the size of a drinks can. Since the system calibrates itself and checks the functionality of the sensors every time the truck is started, it is much more user-friendly than comparable systems on the market. During operation, the system continuously shows the driver all operating conditions relevant to explosion protection, such as temperature or gas concentration in the air. The box with the sensor and test gas mixture only needs replacing once a year, as part of routine maintenance carried out by a service engineer. The system can simultaneously be used for access control. Drivers, operations managers and service engineers can all be assigned different PIN codes. Once a driver has successfully logged in, there is the option of presenting a brief acknowledgement process before the truck starts up, reminding the driver that they are driving a specialised truck that is operating in explosion protection zone 2. During the shift, the system creates a continuous log of gas concentrations, regardless of whether or not the concentrations in the air exceeded the given limit. If the limit is exceeded, the truck is brought to a controlled stop and, if required, the system can send a notification via radio communication to the operations manager. As soon as the gas concentration drops back below the acceptable limit, the driver is notified on-screen. The truck can then be approved by a supervisor and put back into operation. Alternatively, the truck can be set up to allow the operator to restart the truck independently.

The innovative, radio-controlled gas warning system from French specialists Centrexpert is now available as an option for Linde electric forklift trucks used in explosion-protection zone 2 with a load capacity of between 1.4 and 3.5 tonnes.

For operations managers, the integrated reporting functionality significantly increases transparency, as they are able to view all events, such as alarms, or the progression of the gas concentration in the reports. "Using this monitoring system, an operations manager can check the existing operational safety concept frequently", says Kunkel. "The system will be of particular interest to operating companies, not least because of the connectivity options with other stationary or mobile monitoring, safety and reporting systems". Used in this way, the system could prevent the truck from even entering an area in which the gas concentration has already exceeded acceptable levels. In addition, trucks or fleets of trucks can be integrated into a cross-departmental safety concept for the entire plant, with daily documentation and monitoring of safety-related conditions.

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