

REDUCTION IN MAINTENANCE COSTS:

More effective remote monitoring of odorization systems

“Gas distribution systems which have odorizers must be monitored at regular intervals. This can easily be done remotely and, in so doing, maintenance costs can be kept to a minimum.”

The intervals for inspecting odorization systems can be up to six months depending on the dimensions of the odorant containers. The remote monitoring of all of the relevant parameters for an odorization system means it is possible to reduce the on-site inspections enormously and this, in turn, leads to a reduction in maintenance costs.

Even though the level of automation in gas supply networks is high, even nowadays many distribution systems with odorizers are not monitored remotely and must be inspected on a weekly basis. And yet, from a technical point of view, it is easy to retrofit remote monitoring systems in existing plants or to plan them into new plants. What used to be a hurdle, i.e. the lack of signal or data connections, has long been overcome since the widespread introduction of radio or GSM modems. In order to achieve longer control periods, it is necessary to have the following components:

- ▶ An odorization system with analog/digital in and outputs
- ▶ A station computer with a DSFG interface and a data transmission unit
- ▶ A device to indicate the level of odorant in the container

The odorization system

The system feeds odorant to the gas. In processes where the flow is not constant there may be fluctuations in the concentration of the odorant and, therefore, there is normally a dosage of odorant which is in relation to the volume of gas. In order to have a perfect remote monitoring process, it is necessary for the odorization system to have the following parameters:

- ▶ Error warning system
- ▶ Dosage rate
- ▶ Displacement level
- ▶ Level of odorant container

If the metering system includes a measurement of the flow of the odorant and a measurement of the concentration in the gas, then these values, together with any occasions where the minimum or maximum limits are exceeded, are also monitored remotely.



Fig. 1: Odorization system with a weighed 45kg bottle container



Fig. 2: Medium-sized odorization system with an 800 litre tank. The level is monitored by a magnetic flap.



Fig. 3: Magnetic flap indicator with a guided float

Measuring the level of odorant

The measuring principle for the odorant container depends on the design of the tank. Small bottle containers that can either be replaced or filled up again are normally weighed to measure how much is still in the container. Medium-sized and large tanks are normally monitored with the aid of a magnetic flap indicator. Both systems can easily be retrofitted.

Remote monitoring

The monitoring of the odorization system is normally done by modern station computers with a DSfG interface. These devices determine the parameters necessary for a controlled dosage of the



Fig. 4: Platform scales

odorant depending on the volume of gas and at the same time send a precise gas volume pulse to the odorizing station. In order to remotely monitor the odorization process it is necessary that the resulting parameters (error warnings, dosage rates, displacement levels, level of odorant) are sent back to the station computer via a standardized interface. The station computer stores these values, which can then either be called up via a remote data transmission link or transferred to any EDP system (control centre or laptop) at predefined intervals or in the case of an alarm. When using a



Fig. 5: Screen display on the remote monitoring unit

remote data transmission link it is useful if the user interface is identical with that of the local operation panel.

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Fig. 6: Remote monitoring unit, 19" slide-in cassette version