

SICK MAIHAK news

SICK MAIHAK'S CUSTOMER INFORMATION

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The new stars of gas flow measurement with ultrasound

FLAWSIC100

www.flawsic100.com

Ultrasonic gas flowmeter

FLAWSIC600 optimizes gas transfers on the Yamal-Europe pipeline.

Synthetic diesel

Analyzers from SICK MAIHAK in revolutionary new type of refinery.

Biogas processing

Controlled processing: Swiss put faith in SIDOR for continuous gas monitoring.



Ultrasonic meters optimize gas transfers on the Yamal-Europe pipeline:

Now the bills tally

Until the Baltic Sea “Nord Stream” pipeline is built, the 2,000-kilometre-long Yamal-Europe pipeline remains the most important gas line for conveying Russian gas from Siberia to Germany. However, measuring station operators and transportation companies at the national borders frequently get annoyed about losses due to the billing process when relaying it onward into the gas networks. This is due to measuring equipment that is imprecise and prone to breakdowns. The FLOWSIC600 from SICK MAIHAK is now helping to solve this problem. Following an installation at the Mallnow transfer station in Brandenburg, the station at Kondratki in the East of Poland is now being modernized using this highly precise, low-maintenance ultrasonic meter.

>> Around 33 billion cubic metres of natural gas flow to the West every year through the Yamal-Europe pipeline. About 90% of this is conveyed from Kondratki to the German border near Frankfurt (Oder) by EuRoPol Gaz, a Polish transportation company. Given such large volumes, the interest in accurate metering equipment is naturally very high: “Even if measurements are only tenths of a percent out, large volumes of natural gas would be billed incorrectly every day. That soon adds up,” explains Edward Sucharda, SICK Poland’s project manager.

When the pipeline was built in 1999, Kondratki was equipped with conventional metering technology using orifice me-

ters. As in-line secondary measurement the constructors installed turbine-type gas meters. Their disadvantages soon became apparent – they needed factory overhauls and high-pressure calibration much more frequently than expected. That cost time and tens of thousands of euros per meter on each occasion.

Work convincing Russian decision-makers bears fruit

EuRoPol Gaz ultimately contracted SICK MAIHAK in Poland to install the FLOWSIC600 ultrasonic meter at the Kondratki station. The decisive factor in this was the meter’s reliability and excellent track record at the German station

in Mallnow, where the operators, the German/Russian gas supplier WINGAS (Wintershall/GAZPROM) had the FLOWSIC600 fitted already. “But it was only after we’d done a lot of work convincing primarily the Russian decision-makers at GAZPROM, who were still very attached to conventional turbine-type metering technology,” says product manager Jörg Tretner, recalling numerous meetings, presentations and comparative measurements in Russia.

The subsequent Kondratki order nearly became a mammoth project. As the station’s ongoing operations needed to be disturbed as little as possible, the old turbine-type meters had to be removed one after another from its six massive metering sections (each 600 mm in diameter) and the FLOWSIC600 meters in turn fitted perfectly in their place.

Conversion in record time with no break in operations

In preparing and carrying out what was therefore both tricky mechanical and electrical conversion work SICK Poland was assisted by Gazoprojekt, the Polish project management firm, and by the experts from SICK MAIHAK in Dresden. Every single parameter – such as flange sizes and internal diameters – had to be adapted to the existing facility. The connection of the existing volume converter also had to be readjusted in terms of both

frequency and signal level. In order that the volume converter could – as planned – be swapped out at a later date, the measuring system was provided with additional signal outputs.

The conversion, including the staged tests recommended by SICK MAIHAK and the crane work with equipment weighing many tons, was then carried out in record time of just five weeks. Inflow sections and gas meters were removed from each measuring line, with new flow conditioners, inlet sections and meters fitted in their place. With 24 giant threaded bolts and 48 nuts for each one, the labourers used torque wrenches to screw every individual flange connection tight.

In total 50 tons of equipment was installed. Each section of pipe and each meter were provided in the process with material certificates to EN 10204. Even all of the smaller assembly parts have got their own “passport”. “The documentation weighed just as much as the materials,” says Edward Sucharda with a smile.

High pressure flow calibration

In order to achieve the best possible measurement results, the FLOWSIC600 meters, including inflow sections and flow conditioners, were calibrated in the Bernoulli Laboratory at the NMI (Nederlands Meetinstituut). This was done at operating pressure of 62 bar and with gas flows of 800 to 16,000 m³/h. The calibration made it possible to reduce the inaccuracy to a minimum.



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at the HANOVER TRADE FAIR!
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More about the trade fair on page 34.



Further product information:
www.flowsic600.com

Can you simply switch off?



Better, faster and with greater precision! There is no end to such demands – even for the measurement of process gases and monitoring of emissions. Increasingly fewer people have to meet more rigid process specifications and stricter laws and environmental regulations. That is a lot of responsibility for each and every one. SICK MAIHAK is conscious of this responsibility and sees itself in analysis and process measurement field as much more than just a provider of measuring devices and analysis systems. SICK MAIHAK provides optimum solutions for the measurement of gases, liquids and particle matter. All from a single source in order to give our customers total confidence. So that is possible to simply switch off!

>> “It’s all about the successful combinations of process-specific necessity on the one side with intelligent application solutions on the other,” points out Frank Hehl, Head of Product Management. That often means the fewest measuring devices possible, yet as much measuring capacity as required. SICK MAIHAK’s products feature a markedly broad array of measurement technologies. Therefore, we are able to offer the ideal solution for your monitoring job, even in explosion hazardous areas. On top of this comes customer support that covers engineering, commissioning and maintenance. It is an all-round service for our customers that leaves little to be desired.

Every industry has its specific requirements. It is therefore all the more important to understand each individual sector and its industry-specific process-

es. Our expert team is familiar with the market and its challenges. Incineration plants, power stations and steel and cement works are just as much SICK MAIHAK’s domain as the oil, gas, chemical and petrochemical industries.

We are near to our customers all over the world – in more than 50 countries. An international presence of appreciable value. We supply centrally from Germany and yet ensure personal support for our customers wherever they may be.

And sometimes it’s that “something extra” that money just can’t buy. SICK MAIHAK.



Further product information:
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Controlled biogas processing: Swiss put faith in SIDOR

The great issue of the future is the exploration of alternative energy sources. The focus here is falling increasingly on CO₂-neutral biogas as a source of energy. In Switzerland processed biogas, that is monitored with SICK MAIHAK technology, is already being fed into the natural gas network. It is estimated that around 3.5 million litres of petrol per year can be replaced in this way. The technical challenge is the preparation of the gas so it can be fed into the network. Swiss plant operators are monitoring this process using the innovative SIDOR infrared photometer from SICK MAIHAK.

>> Biogas is produced in the digestion towers of sewage treatment works and in fermentation plants recycling green waste, household rubbish or agricultural refuse. It is thus possible to obtain energy from unwanted waste materials. To date, the methane 'resource', which makes up around 55 ... 60% of biogas, has only been used in gas engines for producing heat and electricity.

However, processing biogas for feeding into the natural gas network is also an interesting option. It offers two major benefits: the efficiency level after subtracting the required operating energy is >90% and thus significantly higher than for gas engines. In contrast to electricity, the energy produced can also be saved in the huge natural gas network. Connecting biogas plants to existing distribution systems is simple.

An average-sized fermentation plant for green waste, which produces around 100 m³/h of raw gas, can, for example, replace

500,000 litres of petrol if the gas is used to drive gas-powered cars.

The natural gas distributors' quality requirements have to be met for biogas to be fed into the existing network. Thus, the continuous monitoring of the gas at the feed-in point becomes of key importance, for if the required quality is not reached, the gas has to be burnt off. This results in loss of revenue for the operator.

With minute drift values and regular automatic adjustment, the SIDOR works very reliable in such 'unmanned' facilities. One manufacturer's attempts at providing a solution for processing plants using simple IR photometers from ambient air monitoring did not prove successful. Six plants in Switzerland alone have therefore already been equipped with SICK MAIHAK instrumentation.

Further product information:
www.sick-maihak.com

Synthetic diesel:

SICK MAIHAK partakes in revolutionary major project

In the Persian Gulf state, Qatar „clean“ diesel is produced from natural gas. The synthetic liquid fuel contains no pollutants. The demand on the oil industry is to develop environment-friendly fuels. One option is to mix clean synthetic diesel, produced from liquid natural gas, with conventional diesel.

This promising product will be produced, using a specifically developed process. The principle sees natural gas first changed into synthesis gas and then transformed into liquid hydrocarbons. By hydrocracking and fractionation of the liquid hydrocarbons, products like e.g. diesel, kerosene can be produced.

SICK MAIHAK has won against world-wide competition with its measuring and analysing systems.

These are TOCOR700 systems for monitoring condensate, coolant and effluent as well as the S700 gas analyzers for process gas measurement and emission monitoring for various applications – also in Ex-Zone 1. In future, NH₃ will be measured by the laser analyzer device GM700.

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