

Vehicle-Mounted Methane Leak Search

Ensured safety through reliable leak detection

Leak detection of methane – a major component of natural gas – along gas distribution networks is growing in importance. A large number of leak detection OEM's have decided to design their solutions based on the Axetris LGD F200.

Detection of leaks along natural gas distribution networks

Natural gas is one of the most important fuel types in today's world economy. A safe distribution of this fuel through long-range gas pipelines, as well as through city gas distribution networks, is absolutely essential. Unfortunately, a large part of such distribution networks is old and prone to leaks, with no reliable system in place to detect and repair gas leaks. Methane emissions from gas pipelines are a major safety hazard, as well as a serious challenge for reducing greenhouse gas (GHG) pollution.

Tunable Diode Laser Spectroscopy (TDLS) is fast becoming a very popular method to detect methane due to key advantages such as quick response time, high selectivity, exceptional accuracy and lower cost of ownership than traditional NDIR or FID technologies.

LGD F200 installed on leak detection vehicles

A number of leak detection OEM's have chosen to design their products based on the Axetris LGD F200. Typically, the LGD F200 is integrated with the required electronics and software interface into a special purpose leak detection vehicle. The ambient air to be tested is sampled into the LGD F200's measurement cell through a sampling system fitted with suction nozzles located close to the ground at the front end of the vehicle. Often, the complete system is fitted with further features such as GPS tracking for leak location. Leak detection results are then saved in comprehensive geographic information systems (GIS). The LGD F200 provides leak detection OEM's with access to a TDLS-based solution with key advantages



Axetris LGD F200 Advantages:

- ✓ Quick response time; T90 < 1 second
- ✓ Selective measurement / No false alarms
- ✓ Wide range of detection: from sub-ppm to %
- ✓ No consumables, low cost-of-ownership

over traditional technologies. A quick response time is guaranteed, which allows the leak detection vehicle to drive at faster speeds, which helps operators cover larger areas in a short time. The high selectivity of methane detection rules out any false alarms due to the presence of other gases or hydrocarbons. The technology can measure over a wide dynamic range – from sub ppm detection up to % level, thereby eliminating the need to install multiple sensors.

Besides vehicle-mounted solutions, the Axetris LGD F200 can be integrated in a further variety of ways, e.g. as portable solutions for leak checking by safety personnel.

Laser Gas Detection Modules for OEM Integration

Axetris' Laser Gas Detection (LGD) Modules are self-contained, ready-to-use devices for the measurement of gases such as NH₃, HCl, CH₄, CO₂, (H₂O). The modules are designed for integration by OEM's, active in the field of gas detection and monitoring in diverse industries.

The high sensitivity and the large dynamic range of the TDLS detection technology enables measurement from sub-ppm level to high percentage concentration without physical adaptation of the device. The design of the LGD F200 enables a tailor-made application fit for a wide range of gases and applications, including process control, environmental compliance, research and medical.



About Axetris

Axetris is serving OEM customers with micro technology based (MEMS) infrared light sources, laser gas detection modules, gas flow sensors and controllers and micro-optical components used in industrial, telecom, environmental, medical and automotive applications.

Our multi-disciplinary and highly skilled engineering and manufacturing teams combine broad experience in design, manufacturing and metrology from MEMS components to advanced optical and electronic sensor modules. Axetris supports its customers with in-depth application know-how. Customers

benefit from excellent product value, consistent high product quality and outstanding customer support. OEMs rely on Axetris worldwide as a competent partner for customer-specific solutions from conception to volume production. Axetris is ISO 9001:2008 certified and ISO TS 16949 compliant and operates its own 6" to 8" wafer MEMS foundry for its own products and contract manufacturing for external customers. A wafer back end, a sensor assembly and calibration facility under clean room conditions completes the manufacturing infrastructure of Axetris.

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