gas detection

GasCar LASER

Laser-Gas detection vehicle for fast and effective pipeline network monitoring of underground pipelines in road areas.

The main advantages of the second generation Esders GasCar (EGC) using a Laser sensor system are:

- **Selective measurement of Methane**, no cross sensitivity on diesel or gasoline engine exhaust, LPG, propane, butane and other hydro carbons as occur in oil or gasoline laugh
- **High accuracy** in a wide measurement range of 1 to more than 40.000 ppm
- **No adjustment of the sensor system is necessary** due to the long time stability and accuracy of the laser sensor.
- **Very fast reaction time of 2 to 3 seconds;** reading after the gas was sucked into the suction bar
- Automatic cleaning of the suction system by air purging with compressed air
- Automatic functional system test controlled by the control unit

Technical data	
Visualisation and operation	Windows tablet or laptop
Power supply	12 Volt DC
Detectable gases	Only Methane, CH_4
Measurement range	0 to ≥ 40,000 ppm with high accuracy
Cross sensitivity	No known cross sensitivity
Sampling pump	Automatic adjusted flow amount between 700 and 1,600 l/hour
Weight	12 kg without display unit
Dimensions	370 mm x 290 mm x 500 mm (B x H x T)
Data interface	USB
Operating temperature	Outside car: -20 to +50°C, Inside car: 0 to +50°C

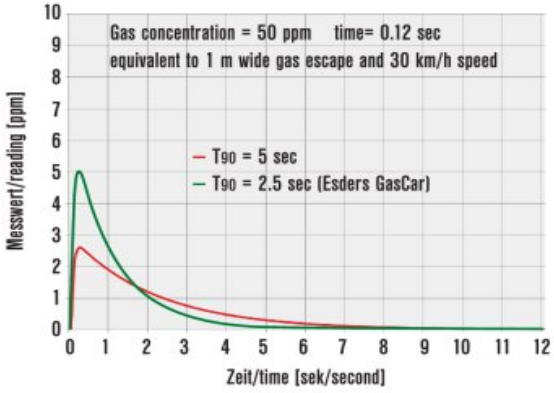
Esders

GasCar LASER

In conjunction with a vehicle of the client's choice, the **EGC (Esders GasCar)** system unit can operate as a high-performance gas detection vehicle.

EGC Sampling unit

The **EGC** sampling unit's bell probe system is mounted to the front of the vehicle and consists of a two-part stainless steel intake bar with a total of 8 bell probes. Additionally to the bell probes there are tube probes included which offer advantages at bad road conditions.
Each probe is mounted using a quick coupler and is equipped with an effective dust filter. The quick coupler enables each sensor unit to be exchanged or cleaned very quickly.
A high-performance pump conveys the gas sample to the sensor unit. The pump's power output is documented and monitored and the user is informed of any drops in its output. The pump's power output is regulated depending on the vehicle's driving speed and the gas sample is taken in optimally without needlessly diluting the leakage gas with the ambient air.
A partial flow is siphoned off from this gas sample and fed to the sensor unit via a hydrophobic filter.



High sensitive methane detection

The **EGC** sensor unit uses a laser diode sensor to determine whether the sample contains traces of methane. It has a detection limit of 1 ppm and a reaction time of 2 to 3 seconds (reading after the gas was sucked into the suction bar. This technology is employed by a laser diode sensor, ensuring the selective detection of methane with high sensitivity and resolution. No adjustment of the sensor system is necessary due to the long time stability and accuracy of the laser sensor.
The system is offered with a 3 year warranty period.

EGC automatic cleaning unit

The EGC has an automatic cleaning system for cleaning the connected suction system by air purging with compressed air. This has the advantage that dust and dirt can be removed very easy by just pressing a button. By regularly cleaning the settling of stubborn soiling can be prevented. This allows an extension of the service life of the internal filter. As pressurized air source, a 12V compressor is used. No high pressure bottle and refilling of these bottles are required. The system is always fully operational.

Functional test of the system

The test is performed by injecting a defined, very small gas sample into the intake. The gas release is controlled by the control unit by pressing a key. This also allows to monitor the response time (T90), the maximum value, the reset time to zero and the change in these values over previous tests. The test unit is connected to the control unit. This test unit has to be placed on the suction inlet and the test has to be started by the operator via the control unit. So the whole sampling line is included in the test. As gas reservoir standard Esders test gas cans can be used. No high pressure bottles are required.

A major factor in the detection of gas is the right balance between the flow of the suction pump and driving speed of the gas detection vehicle. At high pump flow and low speed, low gas concentrations are diluted unnecessary and the alert threshold is not reached eventually. If the suction flow at a higher speed however is too low, the gas amount drawn from a limited gas expansion can be too small and also lead to levels below the alert level.
For this reason, the pump flow of the **Esders GasCar system** is controlled proportional to the driving speed.

EGC Control unit

PC System for convenient evaluation of gas measurement data in use with the GasCar system. The operation can be done either on the trackpad or keyboard as well as on the multi-touch display.

- 4th Gen Intel® Core™ i5 Processor
- Windows 8.1
- 2 x USB 2.0, 1 x USB 3.0
- 15“ HD 10-point multitouch 16:9 widescreen display
- 128GB SSD
- Bluetooth® 4.0
- Intel 7260 b/g/n Wireless Adapter
- 12V car charger

The system comes with a car holder, including adjustment in all directions plus the adjustment of the working height, allowing perfect ergonomics when working with the laptop in the vehicle.

EGC GPS unit

The USB 2.0 multi GNSS Receiver with vehicle mounted antenna for high sensitivity. This antenna provides an optimal GPS signal for the recording of GPS data in the vehicle based gas leak detection.

Specification

- Supported Sattelites: GPS, GLONASS, BEIDOU COMPASS, GALILEO E1, QZSS L1
- Accepts the signals of up to 72 satellites at the same time
- Supports SBAS (WAAS, EGNOS, QZSS and MSAS)
- Supports NMEA 0183
- IPX7 protection class
- Operating temperature: -20 °C to 60 °C
- Positioning accuracy: 2 m CEP with SBAS

			
202008 Dust filter 23.5 mm diameter (50 pieces)	505020 Hydrophobic filter, D=30 mm, 1 µm, yellow	002000 Dust sintered filter element	372001 Testgas 100 ppm methane - 1ltr - 12 bar
			
612004 Panasonic Full Ruggedized Touchpad	712002 Tube probes for suction bar GasCar Including filter and quick connector	712001 Bellprobe for suction bar GasCar Including filter and quick connector	712018 Testgasadapter GasCar Laser Typ2

Technical specifications subject to change!

Esders

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