SEWERIN
Technologies for leak detection.

LaserGasPatroller LGP 800

Vehicle-based solution for the network inspection of underground gas pipes
economical – laser-based – fully automatic

LEAK DETECTION
made in Germany

LaserGasPatroller LGP 800 – economical – laser-based

The ***LaserGasPatroller*** is a vehicle-based solution for the economical network inspection of underground gas pipes. Gas leaks are detected when the laser-based measuring system ***LGP 800*** is driven over the gas pipes. The ***LGP 800*** is operated by the ***SeCuRi® SAT*** software system. ***SeCuRi® SAT*** is the world's most sophisticated documentation system for pipe network inspection.

Principle

Natural gas (methane CH4) is a light gas which escapes from a leak in a gas pipe and diffuses through the soil to the road surface. As the ***LaserGasPatroller*** drives over the gas pipe, it draws in a sample, which is transferred to the ***LGP 800*** measuring system and analysed. Leaks are detected and automatically recorded by the ***SeCuRi® SAT*** software.

Measurement unit - *LGP 800*

The ***LGP 800*** measurement unit is built into a very compact 19" metal enclosure. Its space-saving design means that the measurement unit can be mounted anywhere in the vehicle. All components are tested under harsh conditions, particularly in respect of vibration, which is an everyday hazard.

The ***LGP 800***'s sensor is based on the principle of Tunable Diode Laser Spectroscopy (TDLS). This method determines the concentration from a measured absorption of the gas in question, for example methane. The source of the radiation is a laser diode, which is why TDLS is classed as a laser spectroscopy technique. The laser measuring cell thus measures methane exclusively. There is no interference from other gases. The ***LGP 800*** is also optimised with regard to electricity usage. With a maximum power consumption of 2 A, the system can be operated from a standard car battery. This means that electric vehicles can also be used.

With three external outputs, a rotating warning light or a siren, for example, can also be connected via the ***SeCuRi® SAT*** software.

Gas sample module

With a standard vehicle width the gas sample is drawn in via eight bell probes. The bell probes ensure an optimum detection of natural gas components in the air. A heavy-duty pump in the ***LGP 800*** efficiently transfers the gas sample to the measuring system.

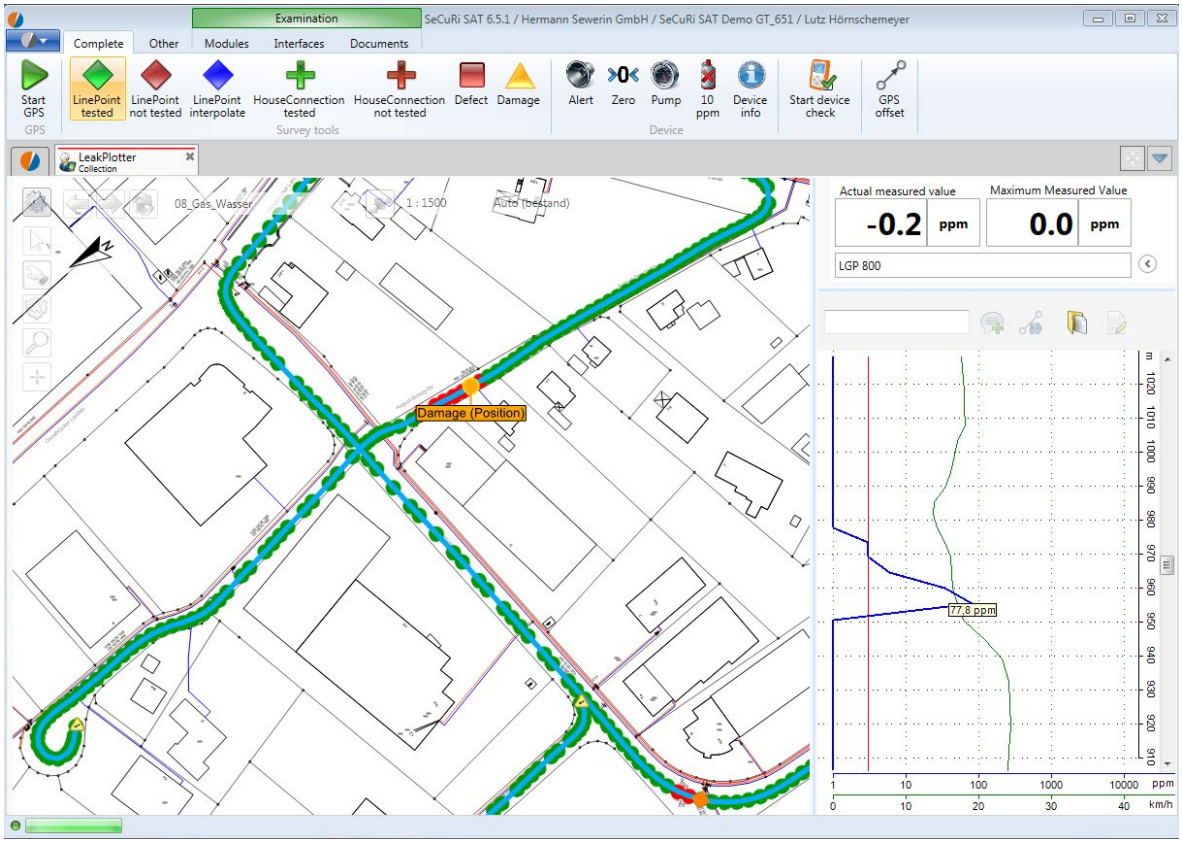
PC control unit – *SeCuRi® SAT*

The ***LGP 800*** is connected via Bluetooth to a Windows laptop or tablet PC. The ***SeCuRi® SAT*** software controls the ***LGP 800*** and automatically documents the pipe network inspection. All relevant data, including GPS location, time, distance travelled and gas value, is documented once per second and stored in a database. Leaks are recorded as damage. A special damage symbol is automatically displayed on the map at the location of the highest gas concentration. ***SeCuRi® SAT*** can be operated both with and without existing map material. ***SeCuRi® SAT*** offers a powerful interface to all GIS systems via DXF and DWG, the most widely-used file exchange formats, for this purpose. However, georeferenced aerial images can also be imported.

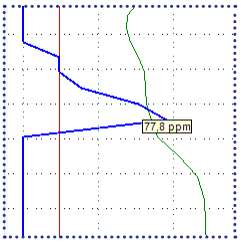
– fully automatic

SeCuRi® SAT includes versatile recording tools for documenting advanced tasks in addition to the pipe network inspection. For example, structures or planting encroaching on the course of the pipe network can be recorded by means of the Defect button.

The software also includes a powerful print and export function. The recorded data and map material can be exported in KML file format for Google Earth, for example.



Location of leak



Highest gas concentration

Damage button

GPS system with dead reckoning

The ***LGP 800*** has an integrated GPS system with dead reckoning support. If the GPS signal is lost because of a high building or tunnel, the position is calculated from the speed, direction and distance travelled. This dead reckoning support ensures that GPS positioning is effective even on streets flanked by tall buildings. Only with this support can full GPS documentation of the pipe network inspection be achieved.

Upgrade

The ***Portafid LP Leakplotter*** module can be replaced easily and at very low cost with the new ***LaserGasPatroller LGP 800***. This means that existing Leakplotter vehicles can continue to be used.

Features

- Selective methane measurement
- Fully compatible with Sewerin FID Leakplotters (interchangeable with plug-and-play capability)
- Multilingual
- Interchangeable modules (plug and play) for easy servicing
- Dead reckoning – continuous GPS positioning even in tunnels and street canyons
- Fully automatic device check with up to two different test gases
- Low test gas consumption (gas cans, not gas bottles)
- Fully automatic control via ***SeCuRi® SAT***. Can be used with or without map material
- All stored data (GPS locations, leaks, etc.) including map material (pipes, land register data) can be exported in KML format, for example (for viewing with Google Earth)
- ***LGP 800*** + GPS communication (Bluetooth) via just one COM port
- Very compact dimensions
- Very low power consumption, no additional vehicle battery required
- Three external outputs (siren, rotating light, etc.) controllable via ***SeCuRi® SAT***

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Equipment

Interface:	Bluetooth, USB
Processor:	8-bit microcontroller, dual USB host controller
GPS:	with dead reckoning
Sensor:	laser
Pump:	suction pump, 14 l/min

Certificates

Certificate:	E13*10R00*10R04*13309*00
Marking:	CE E13 10R-0413309

Technical data

Power supply:	12 V, max. 2 A
Operating temperature:	-10 °C – +50 °C
Storage temperature	-40 °C – +80 °C
Humidity:	0 – 90 % r.h., non-condensing
Atmospheric pressure:	800 – 1100 hPa
Protection rating:	IP20
Measuring range:	0 – 40,000 ppm in synthetic air
Dimensions (W x D x H):	483 x 356 x 267 mm
Weight:	approx. 10 kg approx. 15 kg with metal enclosure

www.sewerin.com

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Subject to technical changes.

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