



LT GasAnalyzer

beyond standards

LT GasAnalyzer

Disturbances in the protective gas supply can cause production losses or affect product quality. In the worst case, it even can endanger life and health. LT GASETECHNIK offers the LT GasAnalyzer to permanently monitor the protective gas quality. This highly performant analyzer measures the concentration of technical gases based on a thermal conductivity sensor, an infrared sensor or a paramagnetic sensor. Combinations of these precise and robust sensors are as well possible.

Our solution

Modular system including numerous built-in functions, and is upgradable with multiple options:

- Extractive online measurement of the concentration of combustible or non-combustible gas components in gas mixtures
- Response time
 - o Thermal conductivity T_{90} time < 2 seconds
 - o Near infrared T_{90} time < 15 seconds
- Fully automatic operation, with integrated PCS, expandable to be used for a measurement-guided control of devices, such as gas mixers.
- Operation easy and intuitive, connection to superordinate control system possible
- Reliable, highly sensitive and precise
- Low drift sensors w. low cross-sensitivity, for high long-term stability
- For documentation of a constant gas mix quality optionally with integrated data logger and automatic calibration, to ensure a constant gas mix quality
- Suitable for installation outside ex-zones
- Modular system, configured to your specifications
- Tailored configurations possible

flexible – precise - modular

Measured gases

1. Thermal conductivity detector, standard gas combinations and ranges

Measured gas	Carrier gas	Smallest range	Largest range
H ₂	N ₂ or air	0 - 0,5 Vol. %	0 - 100 Vol. %
H ₂	Ar	0 - 0,4 Vol. %	0 - 100 Vol. %
H ₂	He	20 - 40 Vol. %	20 - 100 Vol. %
H ₂	CH ₄	0 - 0,5 Vol. %	0 - 100 Vol. %
H ₂	CO ₂	0 - 0,5 Vol. %	0 - 100 Vol. %
He	N ₂ or air	0 - 0,8 Vol. %	0 - 100 Vol. %
CO ₂	N ₂ or air	0 - 3 Vol. %	0 - 100 Vol. %
CO ₂	Ar	0 - 10 Vol. %	40 - 100 Vol. %
Ar	N ₂ or air	0 - 3 Vol. %	0 - 100 Vol. %
Ar	CO ₂	-	0 - 100 Vol. %
CH ₄	N ₂ or air	0 - 2 Vol. %	0 - 100 Vol. %
CH ₄	Ar	0 - 1,5 Vol. %	0 - 100 Vol. %
O ₂	N ₂	0 - 15 Vol. %	0 - 100 Vol. %
O ₂	Ar	0 - 2 Vol. %	0 - 100 Vol. %
N ₂	Ar	0 - 3 Vol. %	0 - 100 Vol. %
N ₂	CO ₂	0 - 4 Vol. %	0 - 100 Vol. %
NH ₃	H ₂	0 - 5 Vol. %	0 - 100 Vol. %
NH ₃	N ₂	0 - 10 Vol. %	0 - 100 Vol. %
CO	H ₂	0 - 2 Vol. %	0 - 100 Vol. %
SF ₆	N ₂ or air	0 - 2 Vol. %	0 - 100 Vol. %

Note: The measurement of CO₂ content with the thermal conductivity detector is possible, but the repeatability is not stable, so we recommend choosing an infrared sensor.

2. Infraredsensor, standard gases and ranges

	Smallest range	Largest range
CO	0 to 1000 Vol.ppm	0 to 100 Vol. %
CO ₂	0 to 30 Vol.ppm	0 to 100 Vol. %
CH ₄	0 to 5 Vol. %	0 to 100 Vol. %
NO	0 to 3000 Vol.ppm	0 to 4 Vol. %
SO ₂	0 to 1000 Vol.ppm	0 to 1 Vol. %
NH ₃	0 to 20 Vol.ppm	
CF ₄	0 to 2000 Vol.ppm	

3. Paramagnetic Sensor, ranges

	Smallest range	Largest range
O ₂	0 to 10 Vol. %	0 to 100 Vol. %

Design

Versatile analysis system with convenient features:

Convenient Features

- PLC Controller with integrated 6" color-TFT touch screen
- Interfaces: USB A and B, 10/100 Ethernet, 2 serial Ports (RS232 and RS 485), Modbus RTU, CANOpen
- 12x digital inputs (12V/24VDC) for processing external signals like eg. confirmation or start calibration), of this 4 usable as 10 kHz quick counter
- 6x relays outputs- up to 5A total current, for eg. gas mixer switch over or control of a solenoid valve for fuel gas flow switch off
- 4x 10-bit analogue input for 0-10V and 4-20mA, eg. for protocolling optional sensors like gas-pressure and gas-flow
- Sample gas up to. 10 barg, max. 40°C, throughput approx. 1 l/min
- Status messages (limits and failures) in the display, which are also provided via two potential-free contacts on terminals, eg. for transfer to the control system or for indication by a stack lamp
- Logging of gas analysis value (up to one year), for analysis with eg. Excel
- No additional software necessary

Operation and communication

- Easy and intuitive operation via 6" touchscreen
- Modern graphic color display
- Password protected program access
- Exhaustive self-diagnostic functions with messaging
- At request customized programs and adjustments for individual application
- Integrated PLC control eg. for plant-control, switching of gas mixers or switching to backup systems
- Multilanguage (currently DE, EN, FR, ES)
- Open interface architecture
- Temporary online customer support via remote support with ID and one-time password also behind firewalls, eg. to help with troubleshooting



*LT GasAnalyzer
In separate housing incl. isolated
barriers to the ex zone 1*

Options

Several standard options, individual configurations available upon request.

Options only in combination with LT gas mixers:

1. Integration into gas mixer (steel with lockable glassed door)
2. Gas sampling: Gas pipes and gas connections, monitoring of gas pressure and flow, 5-2-way valve for switching for calibration purposes between measured gas, zero gas and calibration gas
3. Automatic calibration with additional solenoid valves incl. control for automatic switching between measured gas, zero gas and calibration gas

Further options:

1. One analogue output for each sample gas component
2. Customized integration into plant remote monitoring systems (telemetry) via Modbus TCP / IP, Profibus, CANopen, Ethernet, 4-20 mA, Web Server, FTP Host
3. Automatic switch-over between gas mixers , or to backup system
4. Control of an solenoid valve for shutting-off fuel gas flow
5. Upgrade for outdoor erection
6. Installation in a steel case (600 x 600 x 210 mm) with lockable glass door for wall mounting
7. LED lights with horn stack, for status indication
8. GSM module for E-Mail or SMS dispatch at defined situations
9. VPN module for remote support or remote access
10. Status messages in clear text via GSM modem by SMS or E-Mail
11. Separate printer for documentation of measuring results
12. Redundant System to increase the availability
13. One LT GasAnalyzer to monitor two gas mixers



*Redundant LT GasAnalyzer in wall housing
with automatic gas mixer switch over
and automatic zero-point and end point calibration*

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