qLDX

DATA SHEET

NH_3, H_2O GAS ANALYZER

qLDX

Sw Technology gas analyzer qLDX is a system for the continuous monitoring of gases NH_3 and H_2O. Based on state-of-the-art Tunable Diode Laser Spectrometry (TDLS), the system has virtually no cross-sensitivity with other gases and features an innovative, patented measurement principle without the need for a physical reference-channel.

The gas measurements is based on an extractive system.

- Extremely high selectivity to the target gas
- Functional safety, continuous status reporting
- Long lifetime (10+ years)
- Fast response times
- Low power consumption possible
- Very low cost-of-ownership (no regular replacement and/or calibration)
- Touch screen and navigation keyboard
- Three access level Operator, Engineer and Service

Description

The qLDX analyzer is a new and innovative gas detector for continuous fast and reliable measurement of NH3 and H2O.

The unit is a standard 19" rack, ready-to-use system for selective detection and monitoring of gases.

Gas measurement is carried our at 190 °C and an external heated line must be used to maintain physical gas characteristics unaltered and preserve laser cell integrity.

Using an extractive system has several advantages versus in-situ solutions in terms of installation and maintenance costs.

Laser Gas Sensor

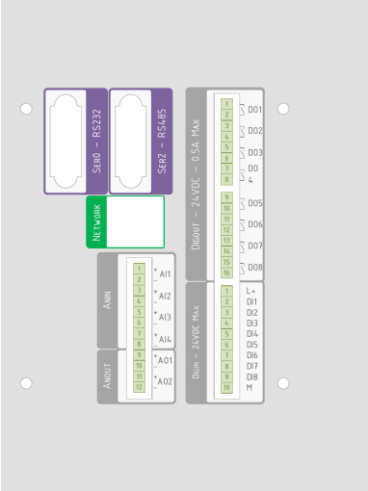
The sensor is based on a technology called "TDLS" – or Tunable Diode Laser Spectrometry, which has proven its validity in high-end laboratory and process control applications. It uses a laser to scan the specific absorption lines of a target gas with an extremely high resolution, which enables a precise measurement of the gas concentration with a very high selectivity.

I/O Interface

The unit is equipped with latest technology electronics. Two analog output with 12 bits resolution are supplied for the NH3 and H2O concentration.

Up to 8 free voltage contact relays provide state and calibration valve control.

Up to 8 digital inputs are available as control signals for controlling calibration cycles.



Terminal Blocks

Calibration

The Zero and Span calibration cycles can be performed in several different ways:

- on time basis by using internal RTC
- by means of dedicated digital input signal
- directly through the front panel display
- through the communication port

Front Panel

The front panel of the qLDX is equipped with a graphical color touch screen display and a navigation membrane keyboard.

Both display and keyboard are water-proof.

Available screens are browsed quickly with keys while all setting are done with on screen touch keyboard.

User interface is make even more by using modern style pop-up menus, buttons and other controls.

Back Panel

The back panel provides power supply socket, gas inlet and outlet fittings, I/O signals and communications sockets as well.

All sockets signal are clearly marked with proper tags in order to make the avoid connection errors.

Furthermore all I/O signals uses different size sockets that makes impossible to plug the socket in the wrong position. This prevents damages of the instrument due to the bad fitting of terminal block.

Auto Diagnostics

The qLDX uses a continuous diagnostic algorithm to check the integrity of the laser cell hence the gas measurement.

An output relay indicates the measurement quality state.

Communication

The qLDX have two serial lines and a 10/100 standard Ethernet socket.

- Ser0 is the RS232 console port for system administration, firmware update and so on.
- Ser2 is a 2 wire RS485 for MMI data exchange with ModBus RTU protocol.
- Network port has built in ModBus RTU over Ethernet.

SPECIFICATION

TARGET GAS		
NH3, H2O		
MEASUREMENT TYPE		
Extractive 190°C		
CERTIFIED MEASURING RANGE		
NH3	0-10/0-50	mg/Nm^3
H2O	0÷30	%
ANALOG OUTPUT		
NH3	4÷20	mA
H2O	4÷20	mA
CALIBRATION GASES		
Span	Typ. 80% Full Range	
Zero	Ambient Air (21%), N2	
TEMPERATURE		
Internal	15÷50 °C	
External	20÷40 °C with relative humidity < 90% without condensation.	
POWER SUPPLY		
Voltage	90-230 V.a.c. switching, 50/60 Hz	
Consumption	250 VA	
TECHNICAL DATA		
Accuracy	±2% Full Range	
Resolution	1/32000	
Precision	0.5 ppm	
TIMING		
Warm-Up	30 min	
Response	< 30 sec	
SIZING		
Height	4HE	
Width	19" rack	
Depth	270 mm	