CT5200

Industrial Gas Analyzer

Cascade's Industrial gas analyzers implement a hybrid multicomponent system (QCL and TDL), the system's interchangeable modular configuration will allow for up to nine lasers to detect up to 20 gases in a variety of industrial and harsh environments. The Industrial Gas Analyzers embedded ARM processor enables the system to fully operate autonomously and it's automated verification and health diagnostics reporting ensures smooth-running in hazardous and critical applications that necessitate high operational reliability.

CT5200 Industrial Gas Analyzer

Features and Benefits

The worlds first hybrid Multicomponent QCL, TDL analyzer

- "True multicomponent" analyzer – up to 20 gases
- All solid state, no moving parts
- Low maintenance and low lifetime cost
- Embedded ARM processor for fully autonomous operation
- No calibration required
- Continuous health diagnostic reporting
- Intuitive simple front panel user interface allows access to all instrument functions
- "At sensor" data download capability for offline analysis

Field serviceable and field configurable

- Interchangeable modular configuration for up to 9 lasers

Hazardous certification available

- Europe, ATEX II 2 G, groups IIC
- North America, Class I Division 2, groups A, B, C, D

Designed and rated for outdoor use

- No need to use valuable shelter real estate

Mounting options

- Available in wall mount and rack mount configurations

Applications

- Petrochemical process monitoring
- Ethylene/propylene product impurities
- Natural/shale gas
- Process analytics in hazardous environments
- Continuous Emissions Monitoring (CEMs)
- Other applications available on request

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Specifications

Table 1 - CT5200 Industrial Gas Analyzer

Specifications	
Value	
Application	Industrial Gas Analyzer
Measurement technique	IR Absorption Spectroscopy
IR source	QCL up to 6 and TDL up to 3
Laser classification	CLASS 1 BS EN 60825-1:2007 Safety of laser products Equipment classification and requirements (identical to IEC 60825-1 2007)
Performance	
Repeatability	±2 %
Accuracy	±2 %
Linearity	$R^2 > 0.999$
Measurement rate	up to 10 Hz
Environmental	
Temperature range	-20 to +55 °C
Sample gas temperature range	+20 to 190 °C factory set
Humidity range	10 to 95 %, non-condensing
Protection class	IP66/NEMA 4X
Hazardous area classification	Class I, Div 2; A,B,C & D; T6
Inputs and Outputs	
Analogue signal out	6 x 4–20 mA measurement output (option)
Analogue signal in	4 x 4–20 mA signal input (option)
Digital signal out	3 x normally closed contact fault relay outputs
Digital signal out	Modbus TCP, RTU [option], 10/100 Base T Ethernet, Fiber [option]
Inlet gas port connector	6 mm Swagelok type
Exhaust gas port connector	6 mm Swagelok type
Electrical Rating	
Power supply	120 VAC 60 Hz/240 VAC 50 Hz 200 V/A
Dimensions	
Size	500 x 618 x 200 mm [H x W x D]
Weight	30 kg
Installation	Wall mountable

Table 2 - Measurement Performance

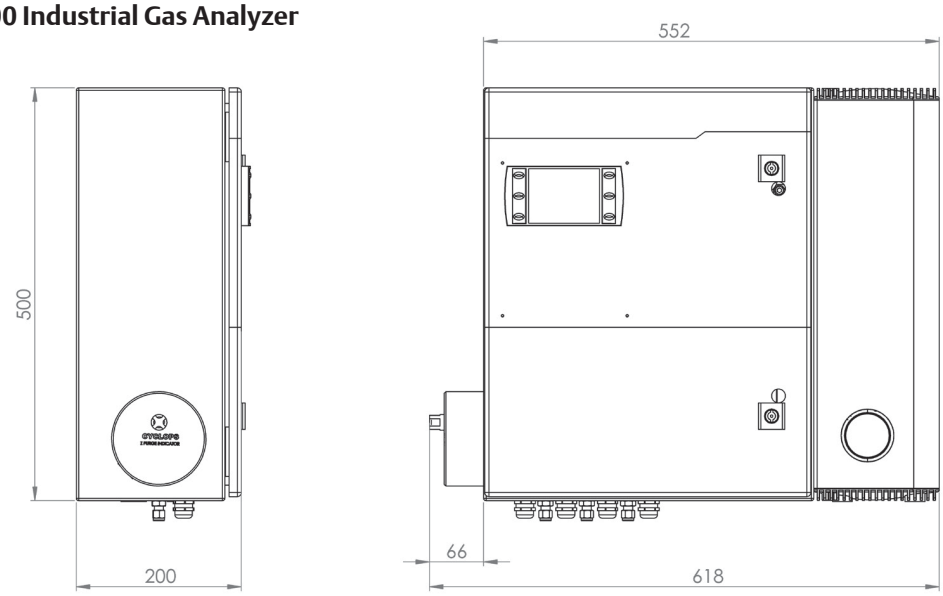
Name	Symbol	Units	Range	LOD
Nitric oxide	NO	ppm	10000	0.025
Nitrogen dioxide	NO_2	ppm	2000	0.01
Carbon monoxide	CO	ppm	20000	0.1
Carbon dioxide	CO_2	%	30	0.0002
Sulpher dioxide	SO_2	ppm	4000	0.075
Methane	CH_4	ppm	20000	0.075
Water	H_2O	%	40	0.001
Nitrous oxide	N_2O	ppm	10000	0.001
Ammonia	NH_3	ppm	4000	0.015
Formaldehyde	HCHO	ppm	100	0.015
Hydrogen peroxide	H_2O_2	ppm	800	0.1
Ethyne	C_2H_2	ppm	200	0.05
Ethene	C_2H_4	ppm	60	0.001
Ethane	C_2H_6	ppm	60	0.001
Propane	C_3H_8	ppm	100	0.015
Butane	C_4H_{10}	ppm	150	0.025
Methanol	CH_3OH	ppm	120	0.015
Nitromethane	CH_3NO_2	ppm	120	0.015
Hydrogen fluoride	HF	ppm	50	0.002
Hydrogen chloride	HCl	ppm	2000	0.01
Hydrogen sulphide	H_2S	ppm	50000	2
Oxygen	O_2	%	100	0.005

Other gases and ranges are available on request. The ranges and detection limits provided indicate typical analyzer performance but may change depending on your application. Please contact Rosemount Analytical for more information.

Recommended Installation

The drawings below represent the minimum recommended installation guidelines for the CT5200 Industrial Gas Analyzer. Please consult Rosemount Analytical for detailed installation recommendation of your application.

Figure 1 - CT5200 Industrial Gas Analyzer



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