



GM35 In-Situ Gas Analyzer

Multi-Component Analyzer
for CO, CO₂ and H₂O as well as
for Temperature and Pressure



Efficient Control of Combustion Processes and Dehydration Plants

AREAS OF APPLICATION

- Power stations and cement plants
- Refuse incineration plants
- Petrochemical industry
- Chemical industry
- Pulp and paper industry
- Drying and dehydration plants

GM35 PROBE VERSION GMP

- One side duct access
- Easy installation
- Integrated zero point path
- Measurement performance independent from the duct dimensions
- General purpose device, suitable for dust content up to 3 g/m³
- Economic version

GM35 PROBE VERSION GPP

- One side duct access
- Suitable for applications with high dust contents
- Integrated zero point path
- Measurement performance independent from the duct dimensions
- EPA compliant test gas measurement possible
- Suitable for turbulent gas flow condition

GM35 CROSS-DUCT

- Representative results due to the measurement across the entire duct cross-section
- Particularly low maintenance
- Fast response time

KEY FEATURES

- Compact sender/receiver unit with built-in zero-point reflector, gas cell and grid filter – thus enables a **real zero and span point test** (QAL 3)
- Provides the H₂O measuring values
- Fullfills compliances for example:
 - Guidelines regarding qualification tests for measuring equipment intended for continuous emission measurements
 - Suitability test as a multi-component measuring device for plants as defined by 13th (2001/80/EC) and 17th Implementing Ordinances (2000/76/EC) and the German Pure Air Regulations TA Luft
 - Meets international standards, such as GOST and U.S. EPA specifications



SYSTEM COMPONENTS

GM35 model with measuring probe

- **Sender/receiver unit** with the optical and electronical modules.
- **Probe** with temperature and pressure sensor, 2 Versions:
 - Probe with an aperture (GMP)
 - Gas diffusion probe (GPP)

GM35 cross duct model

- **Sender/receiver unit** with optical and electronical modules.
- **Reflector unit** with triple reflector and a purge air attachment with flange and tube.

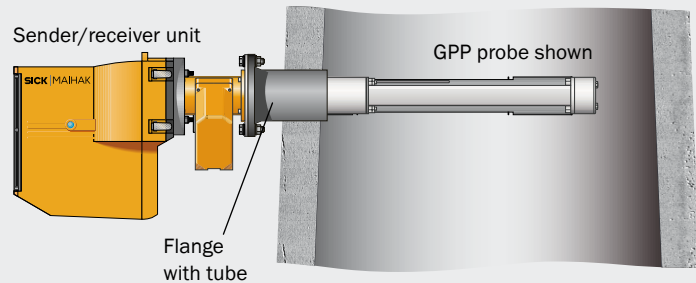
Additional Components

- **Control unit** for processing, control and output of measuring data. The following parts are included: display and control components, interfaces and signals to the plant periphery. The control unit can be installed up to a distance of 1,000 m (3,300 ft) from the analyzer measuring point, for example in a control room.
- **Purge air unit** when using a GMP measuring probe or for the cross duct configuration, offering protection against contamination and aggressive gases.

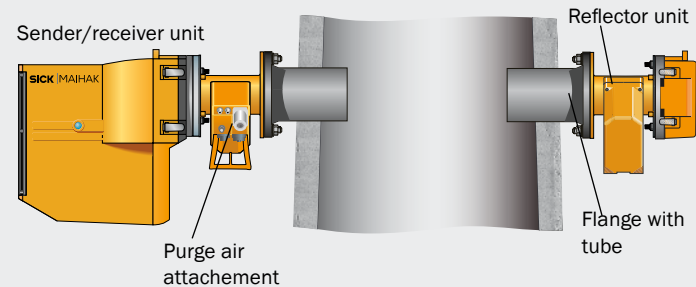
Optional components

- Flange with tube for the mounting of device components
- Weather protection for outdoor applications
- Temperature- and pressure probe for cross duct

Configuration with Measuring Probe



Cross Duct Configuration



In-situ advantages:

- Continuous and rapid measurements, directly in the gas duct
- Easy to install, commission and very low maintenance
- Remote diagnosis via modem
- Integrated temperature and pressure measurement
- Calculated value output (ppm, vol %, mg/m³ in operating/standard state)

Technical Data		GM35 series		
Model	GM35 Probe model (GMP)	GM35 Probe model (GPP)	GM35 Cross-duct model	
Measuring parameters				
Measuring principle	IR filter/gas filter correlation			
Measuring component	CO, CO ₂ , H ₂ O, temperature, pressure			
Available measuring range	Minimum measuring range ¹⁾		Maximum measuring range ¹⁾	
<ul style="list-style-type: none"> • CO • CO₂ • H₂O • Temperature • Pressure 	0 ... 225 mg/m ³	0 ... 22.5 vol.%	0 ... 25 vol.%	20.000 ppm 100 vol.% 100 vol.% according to the application range 600 ... 1200 hPa (8.7 ... 17.4 psi)
Accuracy	Stability related to measuring end value (full scale) <ul style="list-style-type: none"> • zero point: ± 2% • sensitivity: ± 2% (within maintenance interval) 			
Measurement conditions	Probe model (GMP)	Probe model (GPP)	Cross-duct model	
Meas. gas temperature	max. 430 °C/ 806 °F	max. 430 °C	max. 500 °C / 932 °F	
Meas. gas pressure	< 120 hPa (1.74 psi)	< 250 hPa (1.74 psi)	depending on purge air supply	
Ambient conditions				
Ambient temperature	-40 ... +55 °C ²⁾			
Approval				
Conformities	2001/80/EC, 2000/76/EC German Pure Air Regulations TA Luft GOST regulation, certificate no. DE.C.31.001.A no. 11933 U.S. EPA specifications CFR 40, Part 60, 75 and 29 CFR 1310			
Protection class	IP 66/NEMA 4x			
Electrical safety	CE, EN 14181			
Inputs, outputs, controls via AWE evaluation unit				
Analog outputs	3 analog outputs: 0 ... 20 mA max. load 500 Ω; electrically isolated			
Analog inputs	1 input: 0 ... 20 mA; optional for gas temperature and pressure			
Digital outputs	3 outputs: potential-free; 48 V AC/DC Status signal: malfunction (normally closed contact), maintenance request (normally open contact), Function control (normally open contact)			
Digital inputs	3 inputs for the connection of floating contacts; for 24 V			
Interfaces	RS232 (service)			
Bus protocol	PROFIBUS (option)			
General	Probe model (GMP)	Probe model (GPP)	Cross-duct	
System components	<ul style="list-style-type: none"> • Sender/receiver unit • Probe • Control unit • Purge air unit for cross duct and GMP probe 	<ul style="list-style-type: none"> • Sender/receiver unit • Probe • Flange with tube • Control unit 	<ul style="list-style-type: none"> • Sender/receiver unit • Purge air adapters • Reflector • Control unit • Purge air unit for cross duct and GMP probe 	
Check function	Integrated check cycle for zero and span check			
Mounting	1 installation location on the duct	1 installation location on the duct	2 installation locations opposite on the duct	

¹⁾ At 20 °C, 1000 hPa, 1 m measuring path. The maximum measuring ranges are subject to conditions on-site and on the individual configuration.

²⁾ For continuous operation