



ANKERSMID Online Infrared Analyzer
ABYSS FlueGas Series 100-900



* Picture may vary

Application

The general applications are Boiler (furnace exhaust emission gas and combustion efficiency monitoring), cement production line process and security as well as continuous emission monitoring systems (CEMS) of waste gas generated from pollution sources such as fire-coal smoke-stacks, steel works, cement plans, aluminium manufacturing factories, nonferrous metallurgy plants, phosphate fertilizer factories, nitric plants, sulphuric acid factories, petrochemical works, chemical fibre plants and large industrial chimney stacks.

Description

The analyzers can be used for the measurement of the concentration of up to 5 gases such as SO₂, NO, CO₂, CO and O₂.

The measurement is based on micro-flow detectors (NDIR) for SO₂, NO and CO (all in ppm ranges) as well as dual-beam detectors (NDIR) for CO₂ and CO (% range) and an Electro-chemical detector (ECD) for O₂ (%). Optional O₂ (%) could be also measured with a paramagnetic cell.

- **Measurement of up to 5 gases with combination of NDIR and ECD gas sensor technology**

Dual-beam NDIR technology

- **Constant temperature control of gas bench for high stability**
- **320*240 LCD display with menu operation**
- **Integrated flow meter with needle valve**
- **RS232 interface**
- **Automatic zero calibration**
- **2 freely configurable alarm levels per measuring channel**
- **NO₂ to NO converter for NO_x measurement (ppm range)**

| Version | Part number | Gas components |
|-------------------|-------------|--|
| ABYSS FlueGas 900 | AFG 900 | SO ₂ +NO+CO+CO ₂ +O ₂ |
| ABYSS FlueGas 800 | AFG 800 | SO ₂ +NO+CO+O ₂ |
| ABYSS FlueGas 700 | AFG 700 | SO ₂ +NO+O ₂ |
| ABYSS FlueGas 600 | AFG 600 | SO ₂ +NO |
| ABYSS FlueGas 500 | AFG 500 | SO ₂ +O ₂ (NO+O ₂) |
| ABYSS FlueGas 400 | AFG 400 | SO ₂ (NO) |
| ABYSS FlueGas 300 | AFG 300 | CO+CO ₂ +O ₂ combustion efficiency |
| ABYSS FlueGas 200 | AFG 200 | CO+O ₂ |
| ABYSS FlueGas 100 | AFG 100 | CO (ppm content) |



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ABYSS FlueGas Series 100-900

Technical data

| Specifications | | | | | | |
|----------------------------------|---|---|------------------------|------------------------|---------------------|------|
| Measurement | SO ₂ , NO, CO ₂ , CO and O ₂ | | | | | |
| Gas flow | 0.7 - 1.2 l/min, external flow meter with needle valve, (internal flow regulator 100ml/min for paramagnetic O ₂ detector) external pump is recommended | | | | | |
| Pressure of gas inlet | < 1bar | | | | | |
| Sampling gas requirement | Remove water vapor, dust (<1um) and oil | | | | | |
| Response time T90 | <10s (NDIR-TCD) <2s (PMG) <15s ECD (O ₂) | | | | | |
| Warm-up time | 30min (NDIR) for full performances <1h (PMG) for full performances | | | | | |
| Interface | RS232 (real time and memory data download software included) | | | | | |
| Output | 4 - 20mA per measuring channel | | | | | |
| Digital | 3 common relays for default, low and high gas alarms | | | | | |
| Gas alarm levels | 2 levels (low/high) per channel, configurable by software | | | | | |
| Configuration/calibration | By software, via key pad on front panel 5 points factory calibration per measuring channel, stored in the memory 2 points (Zero/Span) user calibration | | | | | |
| Display | LCD 240*320 with back-light function Simultaneous indication of the measures and units | | | | | |
| | Programmable auto-zero function, relay and solenoid valve | | | | | |
| Data logging | Up to 1500 sets of data; logging rate adjustable from 3-99sec Possibility to identify 10 different sites and up to 100 measuring points | | | | | |
| Operating temperature | 0 to +50°C | | | | | |
| Relative humidity | 5 - 85% | | | | | |
| Ambient air pressure | 86 – 108kPa | | | | | |
| Power supply | 230V/50Hz (115V/60Hz on request) | | | | | |
| Dimension | 19"-3U rack enclosure, 485mm x 457mm x 132mm (W x L x H) | | | | | |
| Weight | ± 11Kg | | | | | |
| Gas | Method | Range max | Display resolution min | Display resolution max | Full scale accuracy | T90 |
| CO ₂ | NDIR (dual-beam) | 0-5%, 10%, 25% | 0,01% | 0,1% | ±2% | <10s |
| CO | NDIR (dual-beam) | 0-100% | 0,001% | 0,1% | ±2% | <10s |
| CO | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm, 10000ppm | 1ppm | | ±1% | <10s |
| SO ₂ | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm | 1ppm | | ±1% | <10s |
| NO | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm | 1ppm | | ±1% | <10s |
| O ₂ | Electro-chemical | 0-5%, 25% | 0,01% | 0,1% | ±2% | <15s |
| O ₂ | Paramagnetic (optional) | 0-100% | 0,001% | 0,1% | ±2% | <2s |
| NO _x | Catalytic converter, efficiency >95% | 0-5000ppm | 1ppm | | ±2% | <10s |



ANKERSMID Online Infrared Analyzer
ABYSS FlueGas Series 100P-900P



* Picture may vary

Application

The general applications are Boiler (furnace exhaust emission gas and combustion efficiency monitoring), cement production line process and security as well as continuous emission monitoring systems (CEMS) of waste gas generated from pollution sources such as fire-coal smoke-stacks, steel works, cement plants, aluminium manufacturing factories, nonferrous metallurgy plants, phosphate fertilizer factories, nitric plants, sulphuric acid factories, petrochemical works, chemical fibre plants and large industrial chimney stacks.

Description

The ABYSS portable infrared FlueGas analyzer is powered by Li-ion battery and can be used without AC power supply.

A nylon carrying bag for analyzer and accessories is included as standard.

The analyzers can be used for the measurement of the concentration of up to 5 gases such as SO₂, NO, CO₂, CO and O₂.

The measurement is based on micro-flow detectors (NDIR) for SO₂, NO and CO (all in ppm ranges) as well as dual-beam detectors (NDIR) for CO₂ and CO (% range) and an Electro-chemical detector (ECD) for O₂ (%). Optional O₂ (%) could be also measured with a paramagnetic cell.

- **Measurement of up to 5 gases with combination of NDIR and ECD gas sensor technology**
- **Dual-beam NDIR technology**
- **Constant temperature control of gas bench for high stability**
- **320*240 LCD display with menu operation**
- **Integrated flow meter with needle valve**
- **RS232 interface**
- **Automatic zero calibration**
- **Built-in sampling pump**

| Version | Part number | Gas components |
|--------------------|-------------|--|
| ABYSS FlueGas 900P | AFG 900p | SO ₂ +NO+CO+CO ₂ +O ₂ |
| ABYSS FlueGas 800P | AFG 800p | SO ₂ +NO+CO+O ₂ |
| ABYSS FlueGas 700P | AFG 700p | SO ₂ +NO+O ₂ |
| ABYSS FlueGas 600P | AFG 600p | SO ₂ +NO |
| ABYSS FlueGas 500P | AFG 500p | SO ₂ +O ₂ (NO+O ₂) |
| ABYSS FlueGas 400P | AFG 400p | SO ₂ (NO) |
| ABYSS FlueGas 300P | AFG 300p | CO+CO ₂ +O ₂ combustion efficiency |
| ABYSS FlueGas 200P | AFG 200p | CO+O ₂ |
| ABYSS FlueGas 100P | AFG 100p | CO (ppm content) |



ANKERSMID Portable Infrared Analyzer
ABYSS FlueGas Series 100P-900P

Technical data

| Specifications | | | | | | |
|----------------------------------|---|---|---------------------------|------|----------------------------|------------|
| Measurement | SO ₂ , NO, CO ₂ , CO and O ₂ | | | | | |
| Gas flow | 0.7 - 1.2 l/min, external flow meter with needle valve, (internal flow regulator 100ml/min for paramagnetic O ₂ detector) external pump is recommended | | | | | |
| Pressure of gas inlet | < 1bar | | | | | |
| Sampling gas requirement | Remove water vapor, dust (<1um) and oil | | | | | |
| Response time T90 | <10s (NDIR-TCD) <2s (PMG) <15s ECD (O ₂) | | | | | |
| Warm-up time | 30min (NDIR) for full performances <1h (PMG) for full performances | | | | | |
| Interface | RS232 (real time and memory data download software included) | | | | | |
| Output | 4 - 20mA per measuring channel | | | | | |
| Digital | 3 common relays for default, low and high gas alarms | | | | | |
| Gas alarm levels | 2 levels (low/high) per channel, configurable by software | | | | | |
| Configuration/calibration | By software, via key pad on front panel 5 points factory calibration per measuring channel, stored in the memory 2 points (Zero/Span) user calibration | | | | | |
| Display | LCD 240*320 with back-light function Simultaneous indication of the measures and units Programmable auto-zero function, , relay and solenoid valve | | | | | |
| Data logging | Up to 1500 sets of data; logging rate adjustable from 3-99sec Possibility to identify 10 different sites and up to 100 measuring points | | | | | |
| Operating temperature | 0 to +50°C | | | | | |
| Relative humidity | 5 - 85% | | | | | |
| Ambient air pressure | 86 – 108kPa | | | | | |
| Power supply | External: 230V/50Hz Internal: with battery and charger; autonomy of > 4h with pump in operation | | | | | |
| Dimension | 380mm x 380mm x 255mm (L x D x H) | | | | | |
| Weight | ± 5Kg | | | | | |
| Gas | Method | Range max | Display resolution | | Full scale accuracy | T90 |
| CO ₂ | NDIR (dual-beam) | 0-5%, 10%, 25% | 0,01% | 0,1% | ±2% | <10s |
| CO | NDIR (dual-beam) | 0-100% | 0,001% | 0,1% | ±2% | <10s |
| CO | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm, 10000ppm | 1ppm | | ±1% | <10s |
| SO ₂ | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm | 1ppm | | ±1% | <10s |
| NO | NDIR (mirco-flow) | 0-500ppm, 1000ppm, 2000ppm, 5000ppm | 1ppm | | ±1% | <10s |
| O ₂ | Electro-chemical | 0-5%, 25% | 0,01% | 0,1% | ±2% | <15s |
| O ₂ | Paramagnetic (optional) | 0-100% | 0,001% | 0,1% | ±2% | <2s |
| NO _x | Catalytic converter, efficiency >95% | 0-5000ppm | 1ppm | | ±2% | <10s |