

# ISATEC RHADOX 7100

## Analyzer for Wobbe Index and Air Demand



### TYPICAL APPLICATIONS:

- ✓ Off-gases from blast furnaces
- ✓ Off-gases from chemical and petrochemical plants
- ✓ Off-gases from water treatment plants and biomass plants
- ✓ Quality control in the glass industries

To allow the economic use of Off-gases from processes, a reliable control of the burners requires Wobbe-Index and Air demand as control values, to adjust to the ever-changing gas composition. These two parameters can be measured with ISATEC RHADOX 7100 Analyser.

The principle of ISATEC RHADOX 7100 is based on the determination of the Air demand to achieve complete combustion. A sample of the fuel gas and air are brought to identical temperature and pressure and are mixed homogenous. The resulting gas and air mixture are then oxidised in a catalytic reactor. During oxidation the Oxygen content of the gas mixture is measured continuously. By integrating the calibration parameters Wobbe-index and Air demand are measured.

ISATEC RHADOX 7100 Analysers are mounted on a metal mounting plate with the component's catalytic reactor, gas mixing chamber, electronic evaluation unit, power supply and measuring signal distribution, installed in separated sheet metal housings. If required ISATEC RHADOX 7100 can also be supplied as integrated system installed in an analyser shelter including gas monitoring.

The Wobbe-Analyser RHADOX 7100 is calibrated by using two calibration gases which represent the low and high measuring range, which have to be determined for every Off-gas individually.

ISATEC RHADOX 7100 Analysers are available for use in hazardous areas classified as Zone 1 and 2.

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### TECHNICAL SPECIFICATIONS

Ex-classification	ATEX II 2G Ex px IIB+H2 T4 Gb X (Ex-Zone 1) ATEX II 3G IIB+H2 T3 (Ex-Zone 2)
Measuring components/range	<i>Air demand:</i> smallest measuring span 1,5 m <sup>3</sup> Air / m <sup>3</sup> Gas largest measuring span 30 m <sup>3</sup> Air / m <sup>3</sup> Gas <i>Wobbe-Index:</i> smallest measuring span 5 MJ / m <sup>3</sup> largest measuring span 120 MJ / m <sup>3</sup>
Analogue output port	2* 4 ... 20 mA, galvanically separated
Reproduceability	0,15 % of measuring value
Long term drift	≤ 0,2 % of measuring value / month
T-90 Time	ca. 5...15 seconds, depending on viscosity of the measuring gas
Display	2* 16 digit illuminated LCD display for Wobbe-Index, Air Demand and status signals Option: full colour graphic display
Digital communication	serial interface RS232 Options: RS 485, Ethernet
Ambient Temperature	-20°C up to +60°C
Operating Temperature	+5°C up to +60°C - option: special version up to +105°C
Gas connections: Inlet Outlet	Calibration gas 3 mm, Measuring gas, Instrument Air 6 mm, Ferrule pack Gas outlet 12 mm, Bypass 6 mm Ferrule pack
Gas flow volume	Measuring gas 20 ... 100 NI/h Instrument Air 50 ... 500 NI/h (depending on Air demand)
Gas pressure (at Inlet)	≥ 0,1 bar (g) Instrument Air ≥ 2 bar (g), max. 8 bar (g)
Power supply	115 or 230 VAC / 50 - 60 Hz, 1000 VA
Protection class/Housing/ Dimensions	Standard IP65/ h x b x t 1000 x 900 x 350 mm
Weight	100 ... 140 kg, depending on options and protection class