

KTM100 RUS[®]

ULTRASONIC FLARE GAS FLOW METER



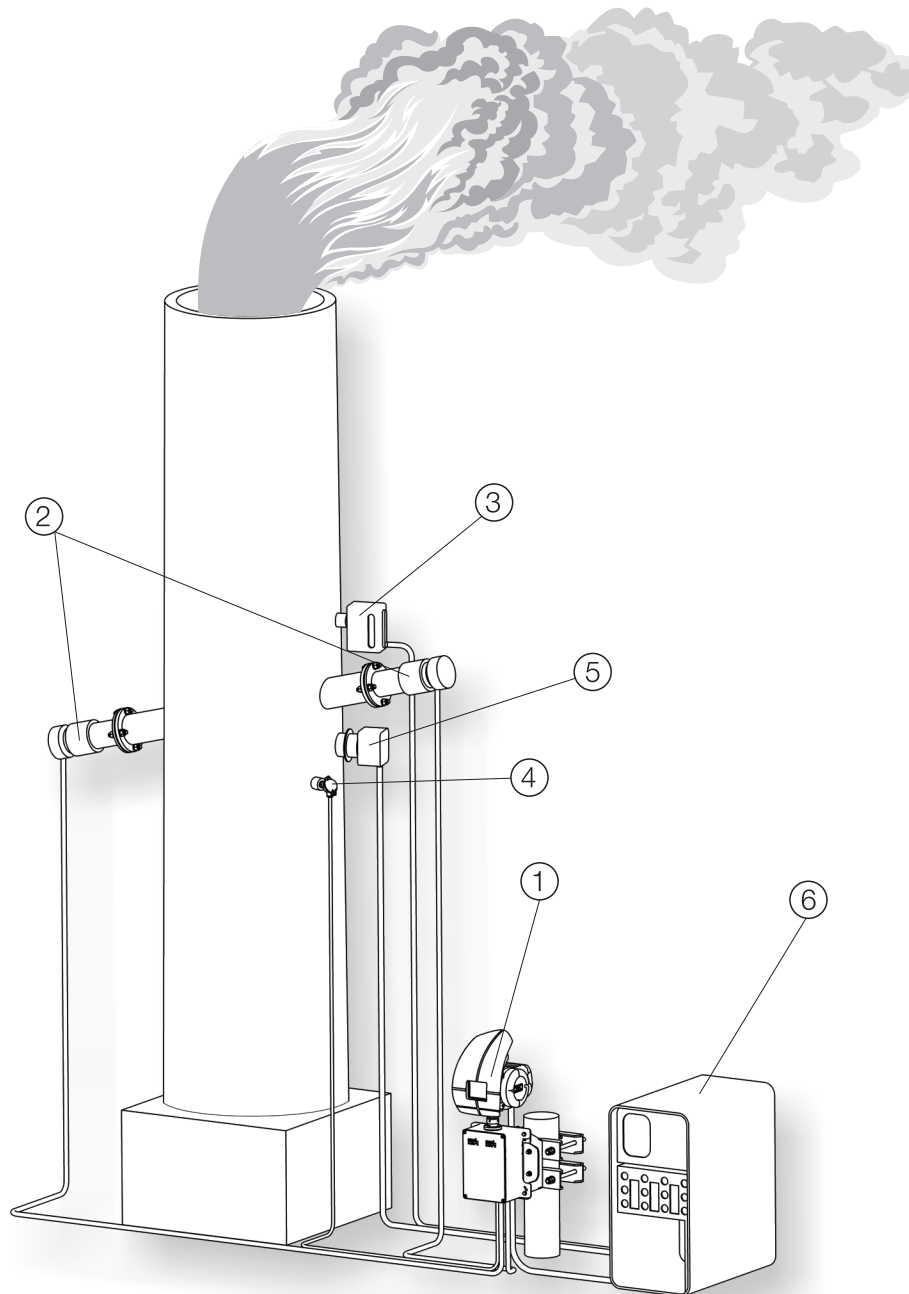


KTM100 RUS ULTRASONIC FLARE GAS FLOW METER

The Research and Production Enterprise KuibishevTelecom-Metrology provides a solution for continuously monitor emissions. KTM100 RUS Ultrasonic flare gas flow meter, which is an integral and most important part of the entire emission control system, since on its accuracy depend reliability of entire emission control system.

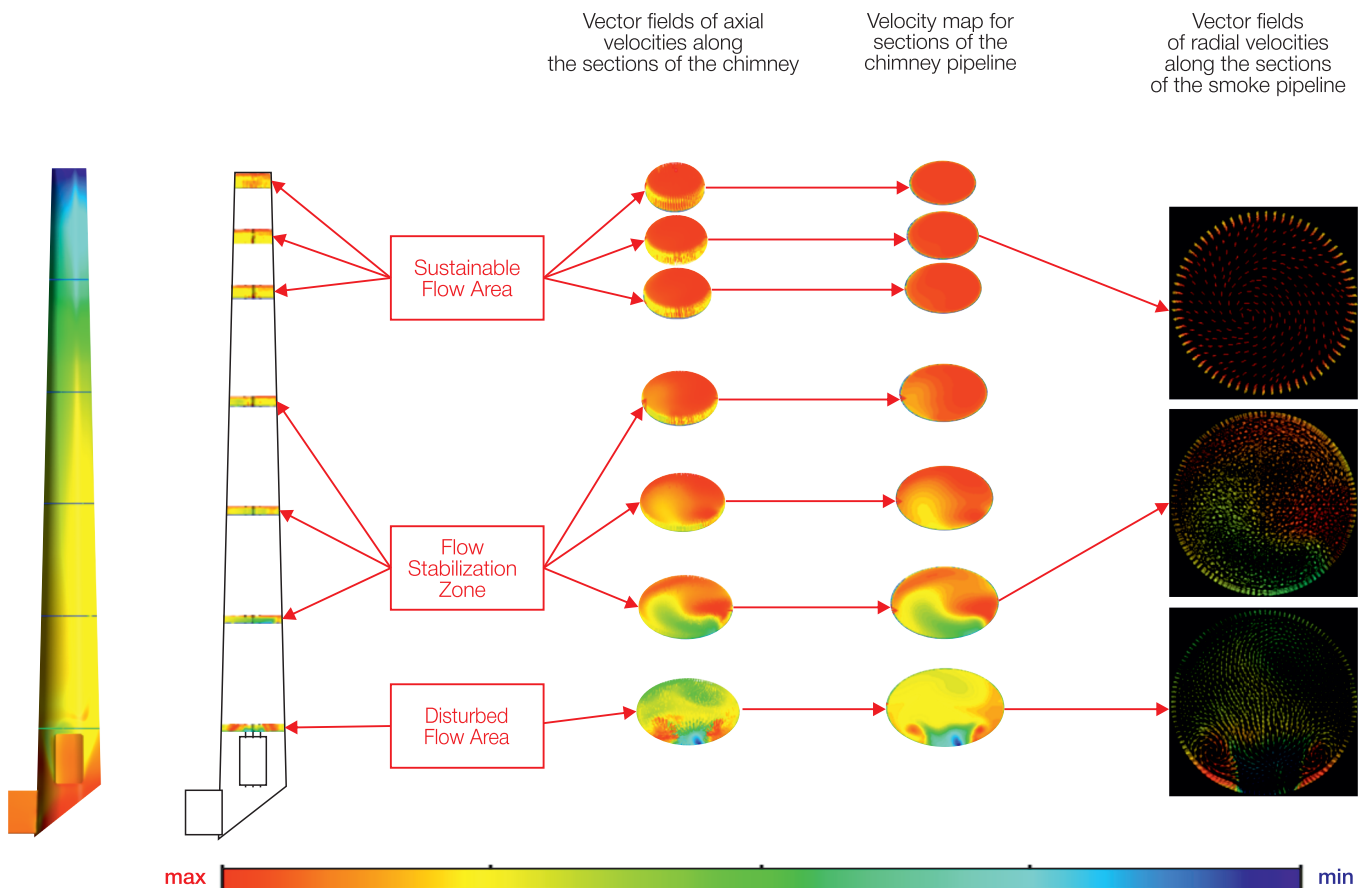
An important advantage of the KTM100 RUS is its easy integration with various computers and upper-level systems. We are ready to provide a full range of solutions for continuous environmental monitoring of smoke emissions for your business. *

*cooperation with leading manufacturers of systems for the emissions of pollutants into the atmosphere automatic control of



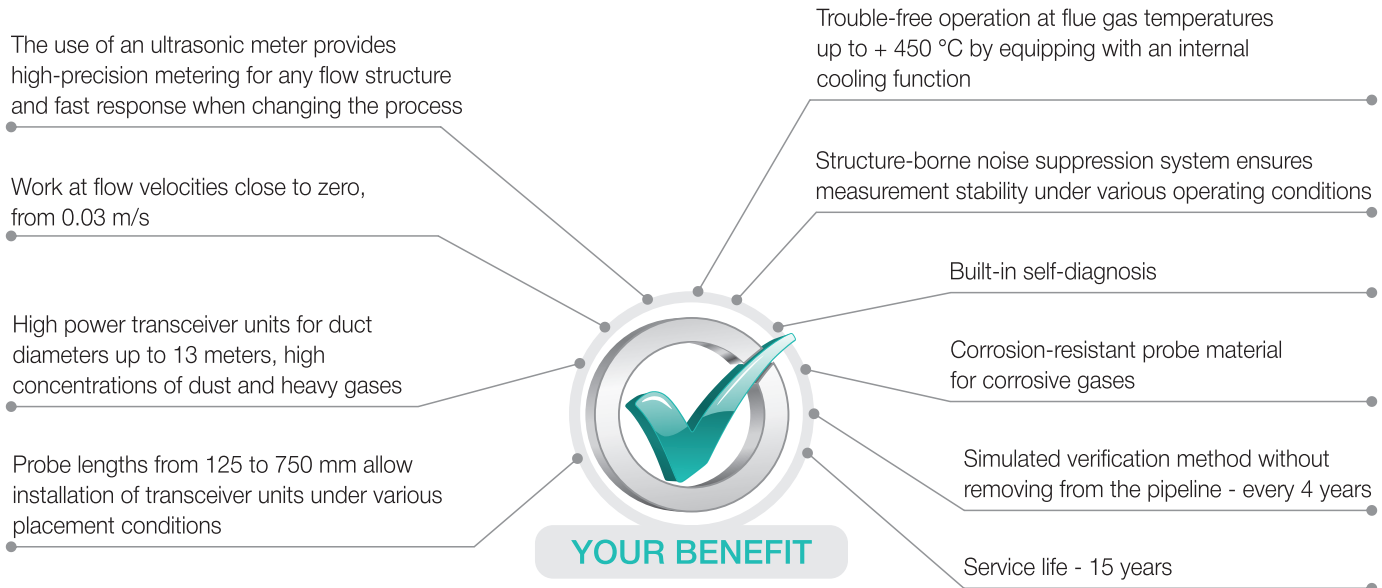
1. data processing unit KTM100 RUS
2. transceiver Units
3. sampling System
4. pressure Sensor / Temperature Sensor
5. dust Analyzer
6. system of analysis and accounting of smoke emissions

The velocity at different points of the gas duct is not the same and the flow profile can change from laminar to turbulent; in these conditions, the ability to measure along the entire flow profile is possible only with an ultrasonic flow meter (USM). The sensors are located on opposite walls of the pipe and work "beam to beam", thereby allowing measurements to be made both in the center and along the walls, which allows taking into account the minimum and maximum flow rates. Sustainable flow area.



- Flow velocity at the outlet of the pipeline <math>< 1\text{ m/s}</math> under normal conditions
- The gas flow is formed due to the pressure difference between the inlet and outlet of the section of the flue pipe
- The gas pressure is atmospheric
- In case of an emergency gas release, the outlet flow rate can reach up to 40 m/s, and the temperature up to 450 °C
- The pressure inside the pipeline can vary from 0.9 to 1.1 bar
- To ensure high accuracy of the ultrasonic flow meter, it is necessary to install it in an area of stable, formed gas flow
- If this is not possible, then it is necessary to parameterize the flow meter by entering the calculated correction factors

Due to the specificity of smoke sources, the installation of flow meters shall be carried out at a high altitude and only an ultrasonic flow meter, due to simulation verification, compact size of transceivers and high reliability, requires minimal operating costs. In turn, as a means of measuring other methods, it entails the dismantling of equipment with its subsequent verification in the laboratory on a test bench and, as a result, the measuring point may temporarily remain un-equipped with a metering device.



TECHNICAL DETAILS

Measured Value Recording										
Measured values	Gas flow rate, flow rate, flow rate, gas temperature, speed of sound									
Measurement Range	Lower range from -40 to 0 m/s, upper range from 0 to +40 m/s, infinitely adjustable									
Accuracy of emission measurement ¹⁾	±0,1 m/s									
Reproducibility of performance measurements, standard transceiver units	± 1% for V> 2 m/s; ± 0.02 m/s for V> 2 m/s									
Decay time	1 ... 300 sec.; freely selectable									
Indication										
LCD display	Display of measurement results, error messages, warnings									
LED display	Power supply, malfunction, need for maintenance									
Indication										
HIPS100	M	B	PR	CA	CD	C CO	B CO	CP	BP	BUP
Measuring distance Transducer - Transducer [m] ²⁾	0,2 - 4 ³⁾	2-15 ⁴⁾	0,27 - 0,28	0,2 - 2	0,2 - 2	0,2 - 4	2 - 13	0,5 - 3	1 - 10	2 - 13
Inner diameter flue gas duct [m] ⁵⁾	0,15 - 3,4	1,4 - 13	>0,40	0,15 - 1,7	0,15 - 1,7	0,15 - 3,4	1,4 - 11,3	0,35 - 2,5	0,7 - 8,7	1,4 - 11,3
Temperature [°C]	-40 ... +260			-40 ... +150		-40 ... +450		-40 ... +450		
Mounting angle (recommended) [°] ⁶⁾	45 ... 60		45	45 ... 60				45 ... 60		
Maximum pressure in flue gas duct [bar]	±0,1							±0,03 ⁷⁾ ; ±0,1 ⁸⁾		
Maximum dust concentration [g/m ³ well] ⁹⁾	1	100 ¹⁰⁾		1			100 ¹⁰⁾	100		

- 1) Accuracy of flow measurement depends on calibration, installation conditions, flow profile, pressure and temperature ranges
Typical values for 1-beam measurement are 1 ... 5%
- 2) The maximum possible measuring distance depends on the dust concentration, gas temperature and gas composition
- 3) The maximum possible measuring distance (probes and Hastelloy transducer) is 2 m
- 4) The maximum possible measuring distance (probes and Hastelloy transducer) is 5 m
- 5) The minimum diameter is valid for an installation angle of 45°, the maximum diameter for a mounting angle of 60°
- 6) For high dust concentrations, use an installation angle of 60°
- 7) With standard purge air unit
- 8) Equipped with a purge air fan at overpressure > 0.03 bar (request from KGM)
- 9) The maximum possible dust concentration depends on the measuring distance and the gas temperature
- 10) For dry and non-sticky dust only