АНАЛИТПРИБОР
СМОЛЕНСК

Gas analyzers ДАМ

Designed for continuous automatic measurement of concentration of one component (oxygen, hydrogen, carbon dioxide, deuterium) in the air of working area of buildings and outdoor processing stations, monitoring of process media of industrial enterprises.

Application: monitoring systems of technological processes of power engineering, chemical, petrochemical and other branches of industry, including hazardous areas of buildings and outdoor processing stations, and as a part of system СКАПО (Industrial atmosphere monitoring system) and with БПС21М.

Principle of operation - thermomagnetic or thermoconductometric.
Type of gas analyzer - fixed.
Operating position – vertical sensor up
Sampling:
- diffusion (ИБЯЛ.407111.002 -15, -16, -22, -23,-24);
- all versions - forced.

Attention!
To provide diffusion sampling (versions ИБЯЛ.407111.002-15,-16,-22,-23,-24) it is necessary to set the diffusion sampling cover from SPTA set.
Mode of operation - continuous.

Basic technical characteristics

Designation	Measured component	Measuring range, volume fraction, %	Maximum permissible intrinsic fiducial error (λд), %	Analyzed medium composition
ИБЯЛ.407111.002-03	O_2	0 – 2	± 6,0	oxygen-argon
-04		0 – 5	± 2,5	oxygen -nitrogen
-05		0 – 5	± 4,0	
-06		0 – 10	± 4,0 (± 2,5)*	
-07		0 – 30	± 4,0 (± 2,5)*	
-08		0 – 50	± 4,0 (± 2,5)*	
-09		15 – 30	± 4,0 (± 2,5)*	
-10	O_2	0 – 2	± 4,0	oxygen - combustion gas**
-11		0 – 5	± 2,5	
-12		0 – 5	± 4,0	
-13		0 – 10	± 2,5	
-14		0,0 – 10	± 4,0	
-15		0,0 – 21	± 2,5	oxygen - air
-16		0,0 – 30	± 4,0 (± 2,5)*	
-17		0 – 10	± 7,5	oxygen - acetylene
-18	H_2	0 – 1	± 5,0	hydrogen - nitrogen
-19		0 – 2	± 4,0	
-20		0 – 3	± 5,0 (± 2,5)*	
-21		60 – 100	± 5,0 (± 2,5)*	
-22		0 – 1	± 10,0	hydrogen - air
-23		0 – 2	± 4,0	
-24		0 – 3	± 4,0	
-25		0 – 1	± 5,0	hydrogen - oxygen
-26		0 – 2	± 5,0	
-27		0 – 3	± 5,0	
-28		50 – 100	± 5,0 (± 2,5)*	hydrogen - hydrocarbons
-29		70 – 100	± 5,0 (± 2,5)*	
-30	O_2	0 – 1	± 5,0	oxygen - hydrogen
-31		0 – 2	± 5,0	
-32		0 – 3	± 5,0	

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Designation	Measured component	Measuring range, volume fraction, %	Maximum permissible intrinsic fiducial error (λд), %	Analyzed medium composition
-33	CO_2	0 – 10	± 10,0	carbon dioxide - nitrogen
-34		0 – 20	± 5,0	
-35		0 – 40	± 5,0	
-36		30 – 50	± 5,0	
-37		40 – 100	± 5,0	
-38	O_2	0 – 1	± 5,0	oxygen - deuterium
-39		0 – 3	± 5,0	
-40	deuterium	0 – 1	± 5,0	deuterium - oxygen
-41		0 – 3	± 5,0	
-42	O_2	0 – 2	± 4,0	oxygen - combustion gas ***
-43		0 – 5	(± 2,5)*	
-44		0 – 10	(± 2,5)*	
-45		0 – 5	± 5,0	
-46		0 – 10	± 5,0	
-47	H_2	80 – 100	± 5,0 (± 2,5)*	hydrogen - nitrogen
-48		90 – 100	± 5,0 (± 2,5)*	
-49		95 - 100	± 5,0 (± 2,5)*	

Notes:
* - determined during gas analyzer order.
** - Combustion gases composition:
hydrogen volume fraction (H2) – up to 1 %;
methane volume fraction (CH4) – up to 1 %;
carbon dioxide volume fraction (CO2) – up to 25 %;
nitrogen (N2) – the rest.
*** - Combustion gases composition:
hydrogen volume fraction (H2) - up to 1 %;
methane volume fraction (CH4) - up to 1 %;
carbon dioxide volume fraction (CO2) from 7 to 13 %;
nitrogen (N2) - the rest.
Versions ИБЯЛ.407111. 002, -47..-49 can be used for monitoring of hydrogen purity in generators.

Gas analyzers have:
- unified current signal (4 - 20) mA, galvanically isolated from gas analyzer power-supply circuit;
- communication channel with PC through interface Rs232, RS485, communication protocol MODBUS-RTU (rate of exchange 1200 bauds).

Gas analyzers ДАМ have explosion protection marking "1Exd[ib]IICT6X". Degree of protection - IP54.

Gas analyzers are powered from:
- when mounting in non-hazardous areas – from dc source with voltage (23,5 ± 12,5) V with peak output current not less 200 mA;
- when mounting in hazardous areas - from dc source with voltage (18 ± 7) V, with explosion protection marking [Exib]IIC with parameters of intrinsically safe electric circuit according to ГОСТ Р 51330.10-99.

Ambient temperature range is from 1 to +50 °C (for versions ИБЯЛ.407111.002 -15, -16 from -40 to +50 °C).

Length of three-wire communication line, when gas analyzer mounting in hazardous areas and operation with unit БПС-21М, not more 1 km (at capacitance not more 0,25 μF; inductance not more 1 mH, ohmic resistance 7 Ω per core).

Flow rate of analyzed medium - (0,75 ± 0,25) l/min.

Power consumption, not more 3 W.

Current consumption, not more 165 mA.

Overall dimensions, not more 165x130x280 mm.

Weight not more 5,0 kg.

Delivery set:

Gas analyzer, SPTA set, operation papers.

Supplied on special order:

TGM-SSS cylinders, fine adjustment valve (ИБЯЛ.306577.002),flow rate indicator (ИР - ИБЯЛ.418622.003-05), antispray shield for gas analyzer extra protection from sprays, flow rate pump ПР-7КВ in explosion proof version, control desk (ИБЯЛ.422411.005) for gas analyzers ИБЯЛ.407111.002-03...-49, designed for gas analyzers adjustment of TGM-SSS, malfunction test.

On special order the versions of ДАМ ИБЯЛ.407111.002-18...-41, -47...-49 are manufactured with operating pressure 294 kPa.

Attention! Control desk or remote control and indication unit (depending on gas analyzer version) are necessary for gas analyzer adjustment of TGM-SSS, malfunction test.

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