

# Infrared gas analyzers ДАК



**HART**  
COMMUNICATION PROTOCOL

**SIL2**  
IEC 61508 / IEC 61511



Gas analyzers are designed for continuous, automatic measurement of pre-explosive concentrations of methane (CH<sub>4</sub>), hydrocarbons including vapors of oil and oil products, associated petroleum gas, alcohols and also volume fraction of carbon dioxide CO<sub>2</sub>.

## Application

Monitoring of air of working areas of chemical, petrochemical, oil-refining and gas productions, other branches of industry. For application in the conditions of the Extreme North and the Arctic.



Principle of operation - optical absorbing.  
Type of gas analyzer - fixed, automatic, single-channel.  
Operation mode - continuous.  
Material of enclosure - aluminum / stainless steel.

## Basic technical characteristics

Designation	Name	Measurement unit	Calibration component	Measuring range on calibration component	Output signal	Operating temperature
ИБЯЛ.418414.071-26	ДАК-CO <sub>2</sub> -026	volume fraction %	carbon dioxide	0-4* 0-10* 0-20*	4-20 mA relay (250V; 1,0A) RS485	from -40 to +80 from -40 to +80 from -60 to +60
-27	ДАК-CH <sub>4</sub> -027	% LEL	methane	0-100	4-20 mA relay (250V; 1,0A) RS485	from -60 to +60
-29	ДАК-CH <sub>4</sub> -029	% LEL	methane	0-100	4-20 mA relay (250V; 1,0A) RS485	from -40 to +80
-30	ДАК-ΣСН-030	% LEL	propane	0-100	4-20 mA relay (250V; 1,0A) RS485	from -40 to +60
-31	ДАК-CO <sub>2</sub> -031	volume fraction %	carbon dioxide	0-4* 0-10* 0-20*	4-20 mA RS485	from -40 to +80 from -40 to +80 from -40 to +80
-32	ДАК-CH <sub>4</sub> -032	% LEL	methane	0-100	4-20 mA RS485	from -40 to +80
-33	ДАК-ΣСН-033	% LEL	propane	0-100	4-20 mA RS485	from -40 to +60
-35	ДАК-CO <sub>2</sub> -035	volume fraction %	carbon dioxide	0-4* 0-10* 0-20*	4-20 mA relay (250V; 1,0A) RS485, HART	from -40 to +80 from -40 to +80 from -40 to +80
-36	ДАК-CH <sub>4</sub> -036	% LEL	methane	0-100	4-20 mA relay (250V; 1,0A) RS485, HART	from -40 to +80
-37	ДАК-CH <sub>4</sub> -037	% LEL	methane	0-100	4-20 mA relay (250V; 1,0A) RS485, HART	from -60 to +90
-38	ДАК-ΣСН-038	% LEL	propane	0-100	4-20 mA relay (250V; 1,0A) RS485, HART	from -60 to +60

\* Measuring range of gas analyzers ДАК-CO<sub>2</sub> is determined when order is made.

# Infrared gas analyzers ДАК

## Basic technical characteristics

Characteristics	Values	Remarks
Explosion protection marking	1Exd[ib]IICT4 X/ 1Exd[ib]IIBT4 X 1ExdIIBT4	ДАК-31 ...-33 ДАК-26, -27, -29, -30, -34 ...-38
Degree of enclosure protection	IP 66	
Power consumed, W, not more	3,5	ДАК-37 - 6,0
Limits of intrinsic error	$\pm(2,5+0,05 \cdot C_{gx})$	for ДАК $\Sigma$ CH, CH <sub>4</sub>
Readings setting time T <sub>0,9</sub> , s	10	
Mean-cycles-between-failures, hours, not less	35000	
Interval between verifications, months	24	operation without readings adjustment - 12 months
Overall dimensions, mm	200x130x300	weight 4,0 kg

For power supply of gas analyzers ДАК secondary power supply and alarm units БПС-21М are used.

Gas analyzers ДАК are supplied with the set of cable gland (for armored cable, metal hose, tubing) on special order.

Material of enclosure:

> ДАК - aluminum (stainless steel on special order).

## Measured components

### ДАК-CH<sub>4</sub>

- > Methane CH<sub>4</sub>, benzene C<sub>6</sub>H<sub>6</sub>, toluene C<sub>7</sub>H<sub>8</sub>, acetone CH<sub>3</sub>-C(O)-CH<sub>3</sub>, ethylene C<sub>2</sub>H<sub>4</sub>;
- > Diesel fuel according to ГОСТ 305-82;
- > Natural gas according to ГОСТ 5542-87.

### ДАК-ΣCH

- > Jet fuel according to ГОСТ 10227-86, unleaded petrol according to ГОСТ P51866-2002, white spirit;
- > Liquefied gas according to ГОСТ 20448-90;
- > Automobile petrol according to TP TC 013/2011;
- > Aviation petrol according to ГОСТ 1012-72;
- > Propane C<sub>3</sub>H<sub>8</sub>, ethane C<sub>2</sub>H<sub>6</sub>, butane C<sub>4</sub>H<sub>10</sub>, pentane C<sub>5</sub>H<sub>12</sub>, hexane C<sub>6</sub>H<sub>14</sub>, octane C<sub>8</sub>H<sub>18</sub>, methanol CH<sub>3</sub>OH, ethanol C<sub>2</sub>H<sub>5</sub>OH, kerosene, oil.



### Delivery set

- > Gas analyzer ДАК;
- > SPTA set;
- > Documentation.