POLON-IZOT

Industrial dust meters
Online meters: dust concentration, temperature, humidity, pressure

Air dust meters - online dust meters are used for continuous monitoring of the degree of air pollution with dusts of natural and artificial origin.

Functions:

- measurement of dust concentration;
- measurement of pressure, temperature and humidity;
- meter indications correction;
- light and acoustic signaling of exceeding the programmed ones concentration thresholds;
- communication with the company's contamination control system z data acquisition.

Designing the device

Each device is tailored to specific needs and user requirements, so it is imperative studying the conditions of his work. In order to shorten design phase please contact us.

Mine dust monitoring system.
Detector and radiation emitter (ATEX version)

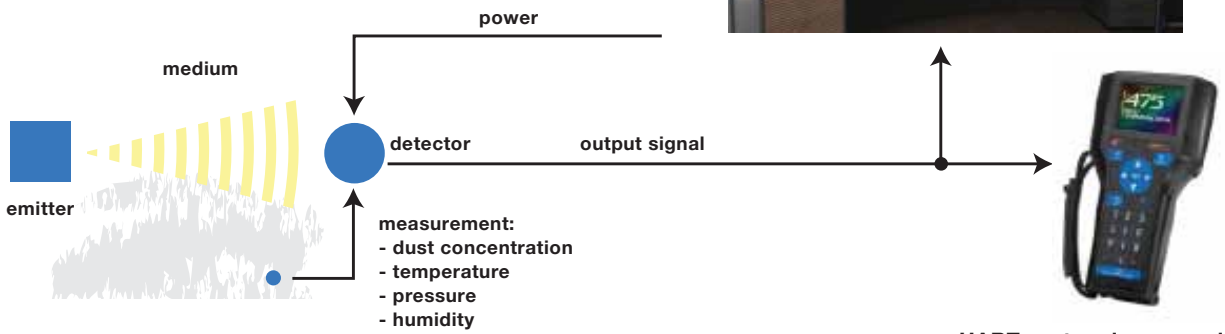
Apps

- measurement of industrial dust concentrations in channels / chimneys;
- measurement of dust concentrations in hazardous areas explosion;
- processes related to heat treatment in furnaces industrial, condition monitoring filters;
- chemical, foundry and metallurgical washing, mining.

Remote surveillance system

Convenient supervision over measured parameters. Possibility of connection multiple devices. Control of many process parameters.

Remote supervision system



HART protocol communicator

The explosion of combustible dust can only occur at the specified time concentration, i.e. when the content of the combustible component is in mixture with air is in the explosive range. Minimum and maximum explosive concentrations, for which ignition is already possible or still possible are different for individual combustible dusts. However, you have to remember that exceeding these limits does not result explosion hazard elimination. Dust concentration can in change at any time, due to the change of conditions local and find yourself in the explosive range. Quantity is taken as the lower explosive limit airborne dust of 20 g / m3.

The basic factors influencing the explosiveness combustible dusts are: chemical composition of dust particles, particle size, moisture content, dust concentration and class dust explosiveness.

Dust explosions are a serious problem in a variety of industries industries. This problem concerns practically all workplaces with dust flammable. Combustible dust includes both dust of origin organic, e.g. wood, coal, product dust food (flour, sugar) or chemical dust (e.g. organic pigments) as well as metal dust that in common opinion they are considered non-flammable. For flammable metal dusts include, among others aluminum dust and magnesium dust. Wood dust and dust are the most common explosions crops - 34% and 24% of all outbreaks, respectively. The share of coal dust accounts for approx. 10% of explosions.

Material	Dust density [g/m^3]
wood / pine (sawdust)	35
flour, wheat	50
sugar	45
powdered milk	50
aluminum for priming	45-120
aluminum filings	40-60
magnesium aluminum (alloy)	20
tin	190
zinc	460
silicone	160
magnesium for priming	30
manganese	125
carbon	50-1000

Example (g/m^3)

Measurement method

To measure the concentration of dust in the air, the device uses the phenomenon of attenuation of ionizing radiation by measured medium. So the system is essentially a densimeter. To extract the dust content from the sample measurement, it is necessary is the knowledge of the current air density, which is calculated as a function of temperature, pressure and humidity. Collimated the radiation beam coming out of the emitter traverses the measurement space and goes to the detector where the intensity radiation is converted into an electrical signal. The signal is amplified and digitized – including form goes through a serial interface to the controller, which calculates the dust concentration based on the difference in air density and density of the measuring space. The controller has outputs to turn on the light and acoustic signaling in the case of exceeding the permissible dust levels. Setting the dust thresholds takes place from the controller keyboard level. The dust meters are made in a standard version and for use in potentially explosive atmospheres. **Our devices have an Ex-type examination certificate according to Directive 94/9 / WE.**

POLON - IZOT sp. z o.o. continues business activities of world-known company POLON United Nuclear Devices Works, established in 1956 which functioned as Office of Nuclear Technology Devices.
We closely co-operate with Central Radiological Safety Laboratory (Warsaw), Radiochemistry and Nuclear Technology Institute (Warsaw), Atomic Energy Institute (Świerk) and Institute of Physics at Warsaw University. Our long experience in narrow specialization allows us to reduce production costs, what gives our produts very competitive price.

The company holds Permits of the Ionization Radiation Application Supervision Department of the National Atomic Agency of Poland for the manufacture of isotopic equipment and XRF spectrometers.

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