Stationary Photoionization Detector SPID3

The Stationary Photoionization Detector SPID3 is a continuously measuring detector for volatile organic compounds (VOCs) with an ionization potential <10.6 eV. (optional with 11.8 eV lamp). The use of new technologies for the excitation source and the sensor allows a high stability of measurement and longer maintenance intervals. An integrated active carbon filter and the sampling circuit make an automatic fresh air setup and automatic calibration possible.

The device is designed and approved for use in explosive atmospheres.

Extended measuring range

A new sensor unit allows three staggered measuring ranges from 20 ppm up to 5 000 ppm (isobutene) with high resolution at low concentrations.

Easy user interface

A graphic display with intuitive user guidance, clear text instructions and step-by-step configuration support the ease of use.

High performance PID lamp

The ionisation source is a hollow cathode lamp with an energy of 10.6 eV. The Ceramic Discharge Channel ensures high stability and a longer lifetime of up to 15 000 hours and more.

Extended service interval

The high stability of the lamp and the special design of the sensor in conjunction with automatic feeding of pollutant-free air through an activated carbon filter results in longer maintenance intervals.

Automatic fresh air setup

For testing and adjusting the zero-point, pollutant-free air is applied via the activated carbon filter periodically through the gas path.

Temperature / humidity compensation

The integrated humidity / temperature sensor measures the physical environment data in addition to the sensor signal and compensates their influence on the measuring result.

Simple calibration

Even in heavy environment, only one calibration gas is required for the simple menu driven two-point calibration. The applied active carbon filter provides the zero point.

Flexible connections

A wide range of supply voltage, a configurable current loop output, alarm and error relays, a RS485 interface with MODBUS and Hart protocol facilitate integration into your system.

IECEx / ATEX certification

The SPID3 fulfils the requirements for use in potentially explosive atmospheres and has the appropriate certifications in accordance with ATEX and IECEx.

Technical Data

Detector principle	VUV-Photoionization with 10.6 eV hollow cathode lamp with Ceramic Discharge Channel technology (optional 11.8 eV lamp)
Detection ranges	R0 – 0 … 2 000 ppm Isobutene * R1 – 0 … 20 ppm Isobutene * R2 – 0 … 5000 ppm Isobutene *
Display range	0 … 99 999 ppm, depending on response factor of detected substance
Lower detection limit	R0 – typisch 0,05 ppm Isobutene * R1 – typisch 0,005 ppm Isobutene * R2 – typisch 0,5 ppm Isobutene *
Display Resolution	Dynamic
Response time	T90 < 10 s *
Signal integrity	Up to 100 ppm typical > 98 % * Up to 2 000 ppm typical > 95 % *
Influence of humidity and temperature	Humidity and temperature compensation at 0 … 50 °C and 0 … 90 % rH residual effect less than < 10 %
Operating conditions	-10 … 55 °C 0 … 95 % rH, non-condensing
Storage conditions	-20 … 60 °C 0 … 95 % rH, non-condensing
Gas sampling	Integrated diaphragm pump (about 250 ml/min) with flow detection, Sample inlet with dust filter and water protection cap
PID lamp lifetime	10.6 eV: Min. 8 000 h, typical more than 15 000 h 11.8 eV: 4 months from date of delivery
Alarms	2 adjustable alarm levels
Power supply	10 … 28 VDC, max. 4 W, recommended 24 VDC
Signalisation	1 x LED (multicolor) for status and alarms
Relays	3 x SPDT 30 V / 2 A (surge current), 2 x for alarms, 1 x for error (type-dependent)
Analog output	Current loop: 4 … 20 mA, 0 … 5 mA or 0 … 10 mA (type-dependent)
Digital interface	RS485 (MODBUS) (type-dependent); HART (type-dependent)
Calibration	Automatic two-point calibration Zero gas via activated charcoal filter, span gas via sample inlet
Response factors	Selectable built-in response factors, changeable via remote service program
User interface	Graphical monochrome OLED display, touch keys
Dimension, weight	200 mm x 370 mm x 133 mm (L x W x H), about 2200 g
Ingress Protection	IP64
Warranty	2 years, except for components in gas path and wearing parts
Approvals	ATEX / IECEx II 2G Ex db IIC T6 Gb -40 °C ≤ Ta ≤ +60 °C EMC directive 2014/30/EU

* The indicated values were obtained under standardized conditions with 10.6 eV lamp.
Test gas was isobutene in synthetic air.

Contact

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