



FUX 3001 and FUX 3001 Ex Dust Spark Detectors

FTX 3001 and FTX 3001 Ex Dust Spark Test Detectors

*Cool down.
Fire Protection by*

MINIMAX

► Product ► Use + Advantages

- ▶ The FUX 3001 spark detector is the standard product of the Minimax spark detector range. It has proven its effectiveness and extreme reliability in pneumatic extraction systems over decades.
- ▶ In critical areas where contamination of the detector window can be expected, its optical capability can be monitored by a manual or cyclic repetitive test impulse controlled via the spark detection and extinguishing control panel using a spark test detector.
- ▶ Optical light guide cable are used for isolating the temperature of the detector electronics for application areas above 80 °C.
- ▶ Cleaning intervals can be reduced considerably through the use of air-jet devices if relatively frequent contamination of the detector window can be expected due to the material being conveyed.
- ▶ Spark detectors of the FUX 3001 range are utilised for detecting sparks in dark conveyor systems and driers. The most frequent application is in pneumatic conveyor systems where high functional reliability is required to effectively prevent fires and explosions.
- ▶ Ex-detectors conforming to ATEX 94/9/EC are used in areas where there is a risk of dust.
- ▶ Typical applications include:
 - timber and chipboard industry
 - paper industry
 - recycling industry
 - textile industry
 - mills
 - food industry
 - coal dust conveyance
 - rubber industry
 - chemical industry
 - fertiliser industry
 - drying systems
 - milk powder industry
- + A high degree of functional reliability
- + Automatic sensitivity tracking
- + Can be optimally used for nearly every application, due to its modular design
- + Mounting adaptors for flush mounted installation and easy maintenance. Fast maintenance device
- + Rapid checking of the operational readiness via an LED integrated in the detector housing
- + With SiEx 4000 and SiEx 4000 with air flushing non-Ex-detectors of existing systems can be modified for use in Ex monitoring areas in accordance with ATEX 94/9/EC for Zones 20, 21 and 22.
- + Contamination of the detector window can be reduced significantly with an air purge device
- + Adapters are available for high application temperatures up to 450 °C
- + Robust version for extreme industrial areas
- + Ex-classification in accordance with ATEX 94/9/EG for Zones 20/22

- ▶ **Minimax spark detectors** detect electromagnetic radiation in the near infrared range, a spectral range in which glowing particles radiate intensively. The sensing element is especially suitable for this application. Radiation in the visible and UV range is absorbed by a black glass filter. Intensity fluctuations emitted by sparks are measured via the photo-electric as well as an electronic evaluation circuit and transmitted to the control panel as an alarm signal.
- ▶ Spark detectors can be installed in straight ducts or piping of differing nominal diameters from approx. 150 mm without the need for design alterations. A minimum of two spark detectors are installed opposite each other to enable monitoring of the complete piping cross section. In case of large piping cross sections (≥ 500 mm), extremely high conveyor output and high density of conveyed material, several spark detectors must be used for each measuring point.
- ▶ Minimax spark detectors are distinguished by a range of special performance characteristics. Particularly noteworthy is the extremely high interference distance, despite its highly sensitive response behaviour. The entire system is distinguished by this characteristic.
- ▶ **Spark detector versions**
Detectors with a light-sensitive element and electronics thermally isolated from the hot area via a heat-resistant flexible optical light guide cable must be used in areas where particularly high ambient temperatures (≥ 80 °C) prevail (e.g. on exhaust gas piping or behind dryers).

The FUX 3001 L1 spark detector has proven its effectiveness here, as its nominal sensitivity is practically as high as that of the FUX 3001, due to special design characteristics. In addition, other versions can be supplied on request, e.g. for temperatures up to 450°C and versions with several meters long fibre optics.

▶ **Accessories for spark detectors**

The mechanical construction of the Minimax spark detector is such that impurities that collect on the window can be practically ruled out completely. Despite of this, detectors and the system require regular maintenance. The detectors are equipped with single-hole installation devices for easy checking and cleaning of the spark detector window. The detectors can be drawn out of the sleeve for maintenance purposes after loosening the union nut. In as far as the process allows this, an air purge device can be installed at the outset, at particularly critical positions, to prevent contamination of the detector window as far as possible.

Operational readiness can also be checked from the control panel with the aid of special spark test detectors. The spark test is conducted as a real test and includes testing of the optical capability of the detector and window damage. The test detector is mounted in a separate housing on the pipe wall opposite the spark detector.

Technical data

Spectral sensitivity	780 to 1,120 nm
Identification criteria	Rapid developing changes in intensity
Detection time	≤ 5 ms
Viewing angle	100°, 60° with air flushing
Casing dimensions (H x B x D)	75 x 80 x 57 mm
Weight	0.45 kg
Casing colour	RAL 5009
Ex protection class	Category 3D/1D
Nominal voltage	9 V DC
Operating voltage	7.6 to 13.2 V DC
Quiescent current	Approx. 1 mA at 9 V
Alarm current	Approx. 20 mA at 9 V
Alarm display	LED, red
Maximum detector number per line	5
Ambient temperature	-25 °C to +80 °C/120 °C/350 °C
Protection class	IP 65
VdS approval	G208191
Basic type authorisation	FM/VNIIPO (Russland)
Cable type (recommended)	5 x 0,5 mm ² LIYCY (electrostatic shielding required)
Max. outer cable diameter	6.8 mm
Max. cable length	max. 280 m, at 0.5 mm ²
Compatible with control panels	Minimax FMZ 4100 Series FMZ 5000 Reflex

Versions

Version	Art. No.	Installation
FUX 3001 single-hole	800021	Single-hole mounting/Single-hole mounting with air flushing
FUX 3001 Ex Dust single-hole	905096	Single-hole mounting/Single-hole mounting with air flushing
FUX 3001 L1 500 lg. single-hole	800033	Single-hole mounting/Single-hole mounting with air flushing
FUX 3001 Ex Dust L1 500 lg	905098	Single-hole mounting/Single-hole mounting with air flushing
FTX 3001 single-hole	800069	Single-hole mounting/Single-hole mounting with air flushing
FTX 3001 Ex Dust single-hole	905099	Single-hole mounting/Single-hole mounting with air flushing
FTX 3001 L1 single-hole	904480	Single-hole mounting/Single-hole mounting with air flushing
FTX Ex Dust L1 single-hole	905100	Single-hole mounting/Single-hole mounting with air flushing
FUX 3001 L1 PSU	836800	Food industry

Subject to technical alterations.

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