

Core Competences: Hazardous Locations

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bürkert
FLUID CONTROL SYSTEMS

More than Experience.



Bürkert has been a leading manufacturer and supplier of fluid technology systems for more than 60 years. You will find our solutions in nearly every industry around the globe: from food and beverages through water treatment all the way to the pharmaceutical industry. Since more than 25 years Bürkert technology can also be found in hazardous locations.

Hazardous locations are especially challenging. The high demands placed on the products, solutions and systems and the numerous laws and standards, which vary according to region, require knowledge, experience and perfection from our development teams. Together with closeness to your requirements and comprehensive consulting we are able to provide you with the best possible solution.

All of these aspects define our standards for hazardous locations. This allows us to promise you quality that guarantees maximum safety, in combination with topmost efficiency and absolute simplicity in the selection and application of the right solution. See for yourself.

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We are Developers and Designers.

At Bürkert, all corporate divisions work hand in hand. We develop products, solutions and systems which, based on our engineering competence, integrate our expertise gained from production, sales and marketing. Therefore, they are cost-effective while fulfilling your individual requirements – and, of course, in compliance with all relevant standards.

To guarantee absolute safety in hazardous locations we participate in standards committees, to stay up to date on new developments. In addition, all of our employees are trained on a regular basis.

In short, our entire product portfolio for hazardous locations is characterised by modularity, efficiency and safety. And: Many of our products are available in versions for hazardous locations and conventional applications, which makes your choice even easier.



Radar fill level transmitter 8137 for general high-pressure applications, compact transmitter for fill level measurement up to 30m, 4...20 mA / 20 mA / Hart – 2 wires, ATEX Cat.1/2G



Membrane valve 2731 with electro-pneumatic process controller 8635 "SideControl"



Pneumatic valve 6519, servo-assisted; available in Ex m, Ex i, Ex n, XP, IS, NI according to ATEX, IEC-Ex, FM-Ex and CSA-Ex



Piston valve 0450 with flange and NAMUR flange



Power I/O Box 8643 for Profibus PA or Foundation Fieldbus



AirLINE 8644 electro-pneumatic automation system



Certifications that you can trust.

Our products are comprehensively tested and certified worldwide.



Ex certifications

- IEC
- ATEX 94/9/EG
- FM
- TIIS
- KOSHA
- CSA
- Rostekhnadzor

Other certifications

- UL Listed; Recognized, Classified
- AGA
- CGA
- KTW
- GL
- VDE
- DGRL 97/23/EG
- EHEDG
- 3A



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 Experience you can trust.

The Product Key makes it easy.

Type numbers contain the technical properties of the device:

- certification number of the ATEX certificate
- certification number of the IECEx certificate
- characteristics for use in hazardous gas locations
- characteristics for use in hazardous dust locations
- number of the certification authority that audited the production site
- serial number: Consecutive number based on the ID no.
- ID number: Unique article number/ordering number

The certification number of the ATEX certificate consists of the following elements:

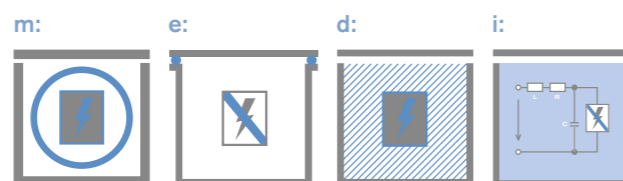
- the certification authority "PTB",
- the year of certification "06"
- the term "ATEX" and
- a continuous number "2051".

The certification number of the IECEx certificate consists of the following elements:

- IECEx
- the corresponding certification authority "PTB",
- the year of certification "10" and
- a continuous number "0019".

Both ATEX and IEC-Ex certifications are granted for an indefinite period of validity, which means that a certification – at least in theory – never expires and does not have to be extended or re-certified every three years, as with some other certifications. However, manufacturers must declare the conformity of their product to the most recent versions of standards. This often means that a certification refers to an outdated standard and bears the former device designation, while the manufacturer's declaration refers to the current standards and the labelling required on the type plate differs from the certification.

If engineering modifications to the device become necessary due to new standards, the certification must be supplemented or in some cases the device must be re-certified.



At a Glance.

Explanation of the characteristics for use in hazardous gas locations (according to ATEX)

- Device class II:** All applications except mining
- Device category 2G:** Even in case of a failure, device will not become a source of ignition; may be installed in Zone 1
- Device category (1)G:** The number in () refers to electrical connections on this device and not to the device itself; even in the case of two errors, they will not become a source of ignition; actuators and sensors may be operated in Zone 0 on these inputs and outputs
- Protection type e:** Increased safety; engineering measures ensure that no sparks or increased surface temperatures can occur
- Protection type mb:** Possible hot components are isolated from the surrounding atmosphere by encapsulation
- Protection type [ia]:** Electric intrinsic safety of specific connecting elements. Voltages, currents and power outputs are limited to a very small amount; permissible energy < test gas ignition energy
- Level (EPL Ga):** Describes the degree of safety of the intrinsically safe inputs and outputs; no possible sources of ignition also in case of 2 errors. EPL: Equipment Protection Level
- Gas group IIC:** The possible and permissible sparks in the intrinsically safe electric circuit have an electrical energy that poses no source of ignition for gases of Group IIC also in case of an error; C includes B and A, which permit higher energies
- Temperature class T4:** Describes the maximum surface temperature of the device in case of a failure – in this case max. 135 °C; there are some exceptions for very small surfaces
- EPL for overall device Gb:** Devices with this label may be installed in Zone 1

The device categories and the EPLs describe the zones in which a device may be installed. Labelling of equipment with its device category is regulated by ATEX Directive 94/9/EC. The EPLs were introduced in IEC standards, which today however are the basis of the national standards. This leads to redundancy in the labelling.





AirLINE Ex – Compact and modular

The combination of Siemens SIMATIC ET 200iSP® and Bürkert AirLINE Ex makes AirLINE Ex 8650 the first modular electro-pneumatic automation system for installation in Zone 1. The benefits:

A compact, space-saving design that significantly reduces the required wiring and documentation and can be adapted to your automation requirements. AirLINE Ex features uncomplicated diagnosis and parametrization via EDD (= Electronic Device Description) and enables complete integration in Siemens PCS7 and STEP7 (Classic & TIAPortal).

AirLINE Ex conforms to the international requirements in accordance with ATEX and IEC. Due to the plug & work principle, installation could not be easier. It is available as a pre-assembled, tested and certified system or as part of a complete and certified control cabinet.



AirLINE Ex 8650 can be configured with precision, exactly to customer requirements.



Power Box – robust and reliable

The Power I/O Box Type 8643 is a field device for especially easy switching of decentralised binary signals to a process control system.

The robust and reliable device features four intrinsically safe digital outputs for numerous actuators, such as solenoid valves or relays, while eight intrinsically safe NAMUR inputs receive signals from sensors and switches in the field. Used with the Profibus PA or Foundation Fieldbus H1 interface, Type 8643 fulfils the diverse requirements of process engineers and programmers.

The bodies, which are constructed for field use and are available in polyester or aluminium, fulfil the requirements of IP65 and are suitable for temperatures from -20 °C to +60 °C.

Easy connection of binary signals from systems with very low signal density also in hazardous locations.



Control cabinets – efficient and safe

Control cabinets from Bürkert combine engineering experience and assembling competence. This results in control cabinets that are well thought-out down to the last detail and that are easy to integrate in existing systems. The control cabinets are developed by the Bürkert Systemhaus teams in our German locations – Menden, Ingelfingen, Dresden – and also in Charlotte (USA) and Shuzou (China). The Systemhaus is a unique environment where experienced teams of consultants, project managers and engineers work together to make innovation possible. Our goal: To create the most cost-effective solution for you, as quickly possible. The result: very high-quality and highly functional control cabinets, which are especially impressive due to the electro-fluidic combinations.

This means that in addition to the electrical components, control cabinets from Bürkert often accommodate pneumatic circuits and, less frequently, even fluidic connections. Therefore, you need only one control cabinet, from one source, which reduces your space requirements and interfaces, as well as costs.

Bürkert control cabinets guarantee safety and simplicity with extensive documentation in ePLAN/WSCAD. The documentation kit, which includes a parts list, circuit diagram, installation diagram and operating manual in the form of 2D or 3D files, makes installation and operation of your control cabinet as easy as possible. Maximum safety is ensured by proof of intrinsic safety, a heat rise measurement, protective conductor test and leak test. The documentation in CAD systems such as ePLAN or WSCAD means that our scope of supply can very easily be integrated in the user's system.

Safety at every level: Building explosion-proof control cabinets is the stock in trade of our employees in the Menden Systemhaus.



We are Bürkert.

Our standard is to create perfect solutions. The crucial difference is our special Bürkert Service.

>> **Consulting: Personal & flexible**

We know that every customer has his own special requirements and priorities. That is our top priority. We listen, understand and contribute our experience, to create the best solution for you. And because the best solution for you is always individual to a certain extent, Bürkert offers you the necessary flexibility in designing your system.

>> **Engineering: Everything from a single source**

We are engineers, through and through. We can combine more than 10,000 products developed by us to create a suitable solution for you.

>> **Closeness: Always nearby.**

Bürkert stands for closeness to its customers. This has many implications for us. With locations in 37 countries we are never far away, so that our full range of services is available at all times to every customer on every continent in the world. Your contact person is almost always personally reachable. We also place high value on personal on-site support, for example during installation and commissioning or with training of operating personnel.

More than 2,400 Bürkert employees worldwide are committed to perfect service.



Bürkert – Close to You

For up-to-date addresses
please visit us at
www.burkert.com.

