

Be on the Intrinsically Safe Side!

Automation System, Type 8650, AirLINE Ex 



bürkert
FLUID CONTROL SYSTEMS

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- Option to exchange individual valves and modules during operation and under explosion-hazard conditions / front access
- Control (PROFIBUS DP-is) and electrical I/O functions via SIMATIC™ ET 200iSP
- Seamless integration in SIMATIC™ ET 200iSP (mechanical, electrical, project planning and diagnostics)

Systematic Cost-cutting

Decentralized installation is a crucial factor when it comes to realizing more cost-effective solutions in process automation. Connecting sensors and actuators to bus systems substantially reduces cabling effort and expense, and modular peripheral systems allow higher “local” efficiency and flexibility. These advantages can now also be implemented in explosion-hazard applications with AirLINE Ex, which achieves several savings options at once and requires less wiring, less planning and less documentation.

Premiere in the Ex Zone

The first modular, electropneumatic automation system can be used in explosion-hazard areas with a gas or dust atmosphere and is consequently virtually predestined for the chemical and pharmaceutical industries as well as the paint processing and petrochemical sectors, among others. In conjunction with the Siemens SIMATIC™ ET 200iSP system, all options for the distributed combination of electrical and pneumatic systems in explosion-hazard zone 1, including extensive maintenance and diagnostic functions, are open. The result: a state-of-the-art functional unit that links the control system to the process system.

Future-proof

The Siemens intrinsically safe SIMATIC™ ET 200iSP periphery system communicates via IS couplers PROFIBUS DP. This means that the solution not only offers maximum openness and flexibility, but also guarantees a high level of availability and investment security due to the international standardization of the bus protocol. With this solution developed by technology leaders Bürkert and Siemens, mechatronics and electronics have been merged to achieve high efficiency.

Configuration and Integrability

All electrical connections are configured automatically when assembling the modules in line with the application. Accessibility from the front allows far better handling, particularly when exchanging a module or valve. Any module or valve can be easily exchanged at any time under explosion-hazard conditions and during operation. Largely identical handling, as with the Siemens components, achieves a high level of universality. Owing to the IP30 type of protection, the system is generally mounted in a suitable Ex-e approved control cabinet. Bürkert Systemhaus delivers the right solution for this as well.



The project planning can either be carried out using GSD for any PROFIBUS DP system or, for seamless integration in the SIMATIC™ world, using EDD (SIMATIC™ PDM) and HSP (SIMATIC™ STEP7/Classic/TIA-Portal/PCS7).

Expansion and Flexibility

The maximum configuration allows up to 32 electronic/valve modules in the complete Siemens SIMATIC™ ET 200iSP system. Fieldbus modules and power supply modules can be configured in duplicate, i.e. redundant, if necessary, using special terminal modules. The number of possible valve positions varies depending on size. Up to 48 valves (or up to 88 valve functions with 2x3/2-way valves) can be configured, with it also being possible to combine valves with differing flow rates. Additional electrical modules can be plugged in on the right-hand end of the pneumatic block.

Upshot

An automation system with an intrinsically safe valve island is now available for explosion-hazard zone 1. An efficient and flexible solution featuring technology from Bürkert and Siemens that affords all the advantages of decentralization.

**Typ 8650 AirLINE Ex from Bürkert –
a technical lead from the innovation leader!**

Technical Data

Pressure Range

- 2.5 – 7 bar (extended range with auxiliary control air)
- 0 – 8 bar (specific valve designs with auxiliary control air)

Temperature Range

- 0° C to 55° C (horizontal installation position, 100% duty cycle)
- 0° C to 50° C (all other installation positions, 100% duty cycle)

Valve positions

- up to 48 valves 6524/25 (Q_{nn}=300 l/min) or
- up to 32 valves 6526/27 (Q_{nn}=700 l/min) or
- up to 44 2x3/2-way valves 6524 (Q_{nn}=300 l/min)
- The quad modules 11/16.5 mm can be combined as desired.

Number of modules

- up to 32 electronic/valve modules in the overall system
- at least 1 interface module and at least 1 power supply module for each (optionally 2 for redundancy)

Power supply

- 24 V DC in Ex-e (via Siemens “PS” power supply module)
- 110 - 230 V AC

Electrical power rating

3.6 W (max. consumption per valve disc)

Control

PROFIBUS DP-IS (via Siemens “IM152” interface module)

Diagnostics

Yes; including coil short-circuit/output discontinuity (channel-by-channel), cycle counter

Materials

- PC UL94VO (terminal and valve modules)
- PA (pneumatic modules)
- NBR (sealing elements)
- Steel (connecting elements)

Type of protection

IP30

Mounting

On “S7 mounting rail” (Siemens)

Module connection

Diagonal tie-rod (3 mm hexagon socket)

Explosion protection

Intrinsic safety “ib” or increased safety “e”

Ex Approvals

- Electronic module:
- KEMA 06 ATEX 0093
 - IECEx KEM 07.0032
- Terminal module:
- KEMA 06 ATEX 0092
 - IECEx KEM 07.0033

Dimensions

Breite:

- Width per station of the quad valve discs for 6524/-25: 44 mm
- Width per station of the quad valve discs for 6526/-27: 66 mm
- Width per station of the connection discs: 44 mm
- Max. 660 mm (pneumatic block)
- Max. 1095 mm (including all Siemens modules, one power supply module and one interface module each)
- Max. 1185 mm (including all Siemens modules, two power supply modules and two interface modules each)

Depth:

- 168mm (from mounting face of the S7 mounting rail)

Height:

- 190mm



Thanks to the modular design, the system is predestined for control cubicle construction.