



AirLINE - the valve island optimised for process automation

- Safety-related shut-off of valves possible
- Easy diagnostics via LC display
- Process reliability through pneumatic functions
- Optimised for installation at the bottom of the control cabinet
- Explosion-proof variants according to ATEX / IECEx Zone 2

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

| | | |
|--|---|---|
| | Type ME43 Fieldbus gateway | ▶ |
| | Type 2012 Pneumatically operated 2/2 way globe valve CLASSIC | ▶ |
| | Type 8695 Control head for de-centralised automation of ELEMENT process valves | ▶ |
| | Type 8920 Bürkert Communicator | ▶ |
| | Type 8653 AirLINE Field - the valve island optimised for process automation | ▶ |
| | Type 8614 Pneumatic control cabinet solutions for hygienic process environments | ▶ |
| | Type SV04 Wear part sets pneumatic valves for Type 8652 | ▶ |

Type description

The valve island Type 8652 AirLINE has been especially developed for process automation requirements. New diagnostic functions can be visualised on the LC display, both in clear text as well as symbols. This makes it easy to relate to the shown messages and helps to save time during start-up and maintenance. Furthermore, the diagnostic message is also available at the controller. This, therefore, enables a fast overview of the plant status. The hardware is optimised for installation at the bottom of the control cabinet. Installation on a standard rail is, of course, also possible. Moreover, key pneumatic functions ensure increased process reliability. For instance, check valves in the exhaust air ducts make sure there is no unplanned actuation due to pressure peaks.

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1. General Technical Data

| Product properties | |
|--------------------------------------|---|
| Materials | |
| Body | PA (Polyamide) |
| Seal | NBR and PUR |
| Width/station | 11 mm |
| Pressure range | Vak. bis 10 bar |
| Max. number of modules | 6 |
| Number of valve positions per module | 4 valve positions (max. 8 valve functions) |
| Max. number valve functions | 48 |
| Manual override | Latching, spring-return (optional: lockable) |
| Electrical data | |
| Operating voltage | 24 V DC |
| Voltage tolerance | ± 10 % |
| Nominal power per valve | 0.7 W (0.175 W after power reduction) |
| Rated current per valve | 29 mA (10 mA after power reduction) |
| Performance data | |
| Valve island | |
| Flow rate | 310 l/min ¹⁾ |
| Pilot valve Type 6534 | |
| Flow rate: Q _{Nn} value air | Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference |
| Switching times | Measured according to ISO 12238 |
| Medium data | |
| Medium | Compressed air, lubricated, oil free, dry; neutral gases (5 µm filter recommended) |
| Compressed air quality | ISO 8573-1:2010, Class 7.4.4 |
| Product connections | |
| Valve island | |
| Working port | Connector diameter 6 mm, D ¼" |
| Air supply port | Connector diameter 10 mm, D ⅜" |
| Communication interface | |
| Communication | PROFIBUS DP Industrial Ethernet (PROFINET I/O, EtherNet IP, Modbus TCP, EtherCAT) CC-Link CANopen būS ²⁾ (for networking with Bürkert devices) |
| Communication module | Type ME43 ▶ |
| Approvals and Certificates | |
| Approvals | ATEX, Zone 2 (BVS 20 ATEX E 031 U) IECEX, Zone 2 (IECEX BVS 20.0024 U) |
| Degree of protection | IP20, IP65 in closed field housing |
| Environment and installation | |
| Ambient temperature | -10...+55 °C |
| Storage temperature | -10...+60 °C |
| Installation position | Any |

1.) Maximum flow rate depending on valve function – see table "2. Circuit functions" on page 4.

2.) The Bürkert Communicator software ▶ and the corresponding USB-būS Interface Set 1 with Article no. 772426 are required for commissioning.

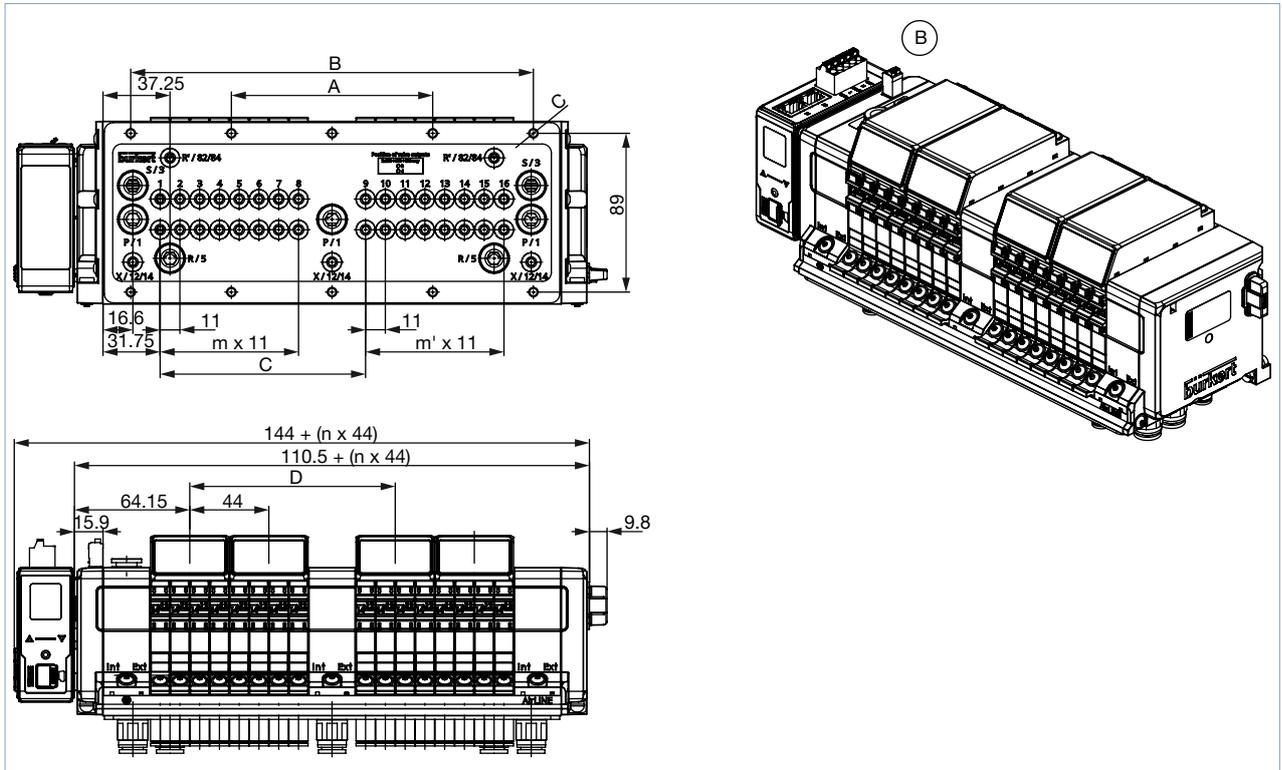
2. Circuit functions

| Control function | Description |
|------------------|--|
| | Type: C, solenoid valve 2 x 3/2 way Servo-controlled, with manual override Normally closed |
| | Type: C, solenoid valve 2 x 3/2 way (SIA variant) Servo-controlled Normally closed |
| | Type: D, solenoid valve 2 x 3/2 way Servo-controlled, with manual override Normally open |
| | Type: H, solenoid valve 5/2 way Servo-controlled, with manual override, with auxiliary pilot air Normally open |
| | Type: H, solenoid valve 5/2 way (SIA variant) Servo-controlled Normally open |
| | Type: L, solenoid valve 5/3 way Centre position all connections locked, with manual override Normally closed |
| | Type: L, solenoid valve 5/3 way (SIA variant) Centre position all connections locked Normally closed |
| | Type: Z, solenoid valve 5/2 way Impulse version with 2 coils, with manual override Normally open |

3.2. Version 16-, 20- and 24-fold

Note:

Dimensions in mm



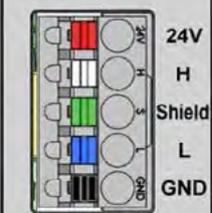
| Version | A | B | C | D | m | m' | n |
|---------|-----|-----|---------|-------|----|----|---|
| 16-fold | 112 | 224 | 10 x M5 | 114.3 | 7 | 7 | 4 |
| 20-fold | 134 | 268 | 10 x M5 | 158.3 | 11 | 7 | 5 |
| 24-fold | 156 | 312 | 10 x M5 | 158.3 | 11 | 11 | 6 |

4. Device/Process connections

4.1. Power supply for communication and display

Note:

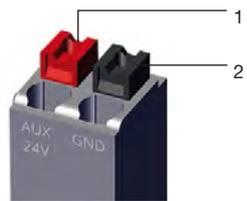
- Connect the 5 pin spring-loaded terminal according to the assignment.
- Possible cable cross-section: $\leq 1.5 \text{ mm}^2$

| Spring-loaded terminal 5 pin | Color | Assignment |
|---|-------|------------------------|
|  | Red | 24 V DC |
| | White | CAN H (bùS connection) |
| | Green | SHIELD |
| | Blue | CAN L (bùS connection) |
| | Black | GND |

4.2. Power supply for pneumatic valves

Note:

The interface plate has a 2 pin spring-loaded terminal to which the supply voltage of the pneumatic valves is connected.

| Spring-loaded terminal 2 pin | Clip | Assignment |
|--|----------|------------|
|  | 1, Red | AUX 24 V |
| | 2, Black | GND |

4.3. Fieldbus interface

Note:

CANopen requires two termination resistors: one at the beginning and one at the end of the network. An indicator of the correct bus termination is the resistance between CAN_H and CAN_L when the power supply is disconnected; this should be about 60 Ohm.

| CANopen / bÜS - Spring terminal 5 pin | Color | Assignment |
|---------------------------------------|-------|------------------------|
| | Red | 24 V DC |
| | White | CAN H (bÜS connection) |
| | Green | SHIELD |
| | Blue | CAN L (bÜS connection) |
| | Black | GND |

| Industrial Ethernet RJ45 - Interface X1 and X2 | Pin | Assignment |
|--|-----|------------|
| | 1 | TX+ |
| | 2 | TX- |
| | 3 | RX+ |
| | 4 | N.C. |
| | 5 | N.C. |
| | 6 | RX- |
| | 7 | N.C. |
| | 8 | N.C. |

| PROFIBUS-DPV1 D-Sub 9 - D-Sub 9 pin female | Pin | Assignment |
|--|-----|--|
| | 1 | SHIELD |
| | 2 | M24 (optional) |
| | 3 | RxD/TxD-P (B-Line) |
| | 4 | CNTR-P (optional) |
| | 5 | DGND |
| | 6 | +5 V (Supply for the termination resistor) |
| | 7 | +24 V (optional) |
| | 8 | RxD/TxD-N (A-Line) |
| | 9 | CNTR-N (optional) |

| CC Link D-Sub 9 pin female | Pin | Assignment |
|----------------------------|-----|--------------------------|
| | 1 | N.C. |
| | 2 | N.C. |
| | 3 | DA data cable - (A-Line) |
| | 4 | DG data ground |
| | 5 | N.C. |
| | 6 | N.C. |
| | 7 | N.C. |
| | 8 | DB data cable + (B-Line) |
| | 9 | N.C. |

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5. Product installation

5.1. Technical data AirLINE Quick

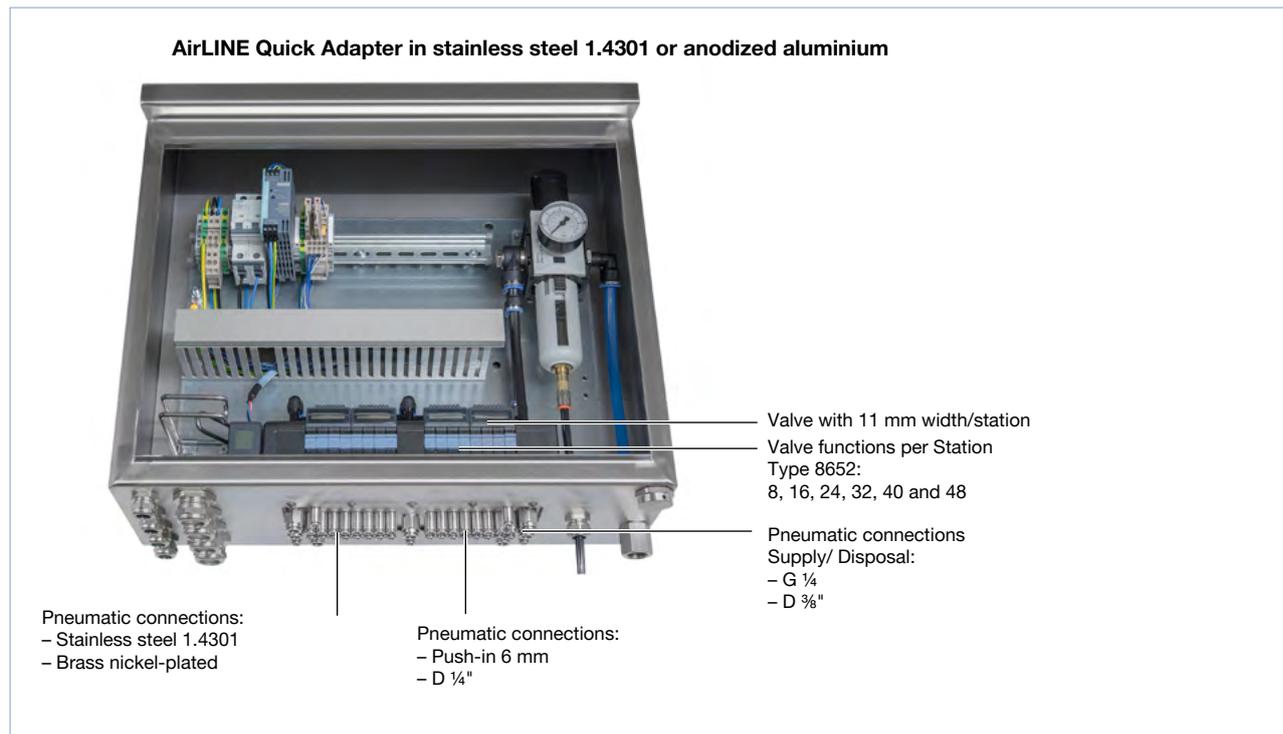
AirLINE Quick considerably reduces the use of components in the control cabinet. With the AirLINE Quick Adapter, the valve terminal is adapted directly to the control cabinet floor or wall.

Advantages:

- Reduced space requirement in the control cabinet
- This makes it possible to use more compact control cabinets
- Reduced installation effort due to hose connections directly at the bottom of the switch cabinet

| Product properties | |
|-------------------------------------|---|
| Material: AirLINE Quick Adapter | Stainless steel 1.4301 Aluminium anodized |
| Material: pneumatic connection | Stainless steel 1.4301 brass nickel-plated |
| Valve functions per station | 8, 16, 24, 32, 40 and 48 |
| Product connections | |
| Connection: pneumatic feeding | G ¼, D ⅜" |
| Connection: pneumatic service ports | Push-in D6 mm, D ¼" |
| Environment and installation | |
| Installation position | Wall control cabinet Floor control cabinet |

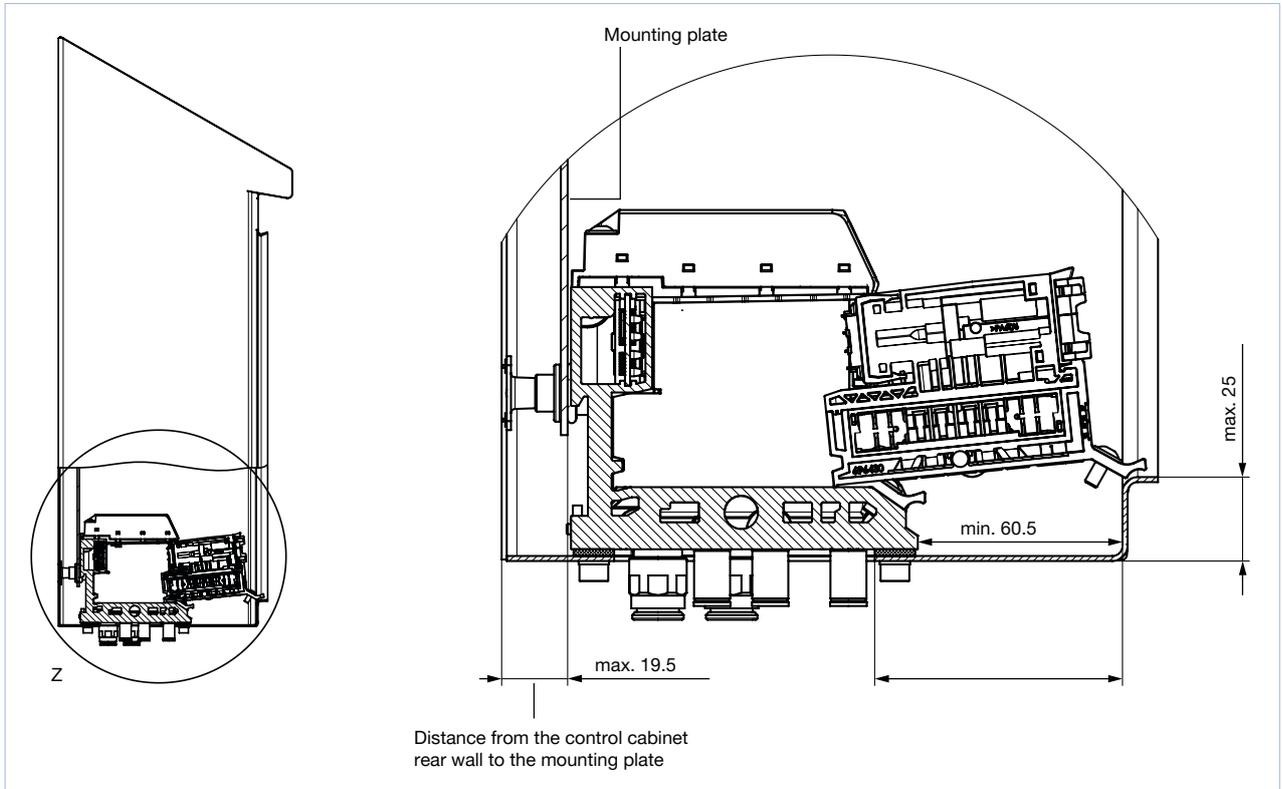
AirLINE Quick Adapter in stainless steel 1.4301 or anodized aluminium



5.2. Installation notes

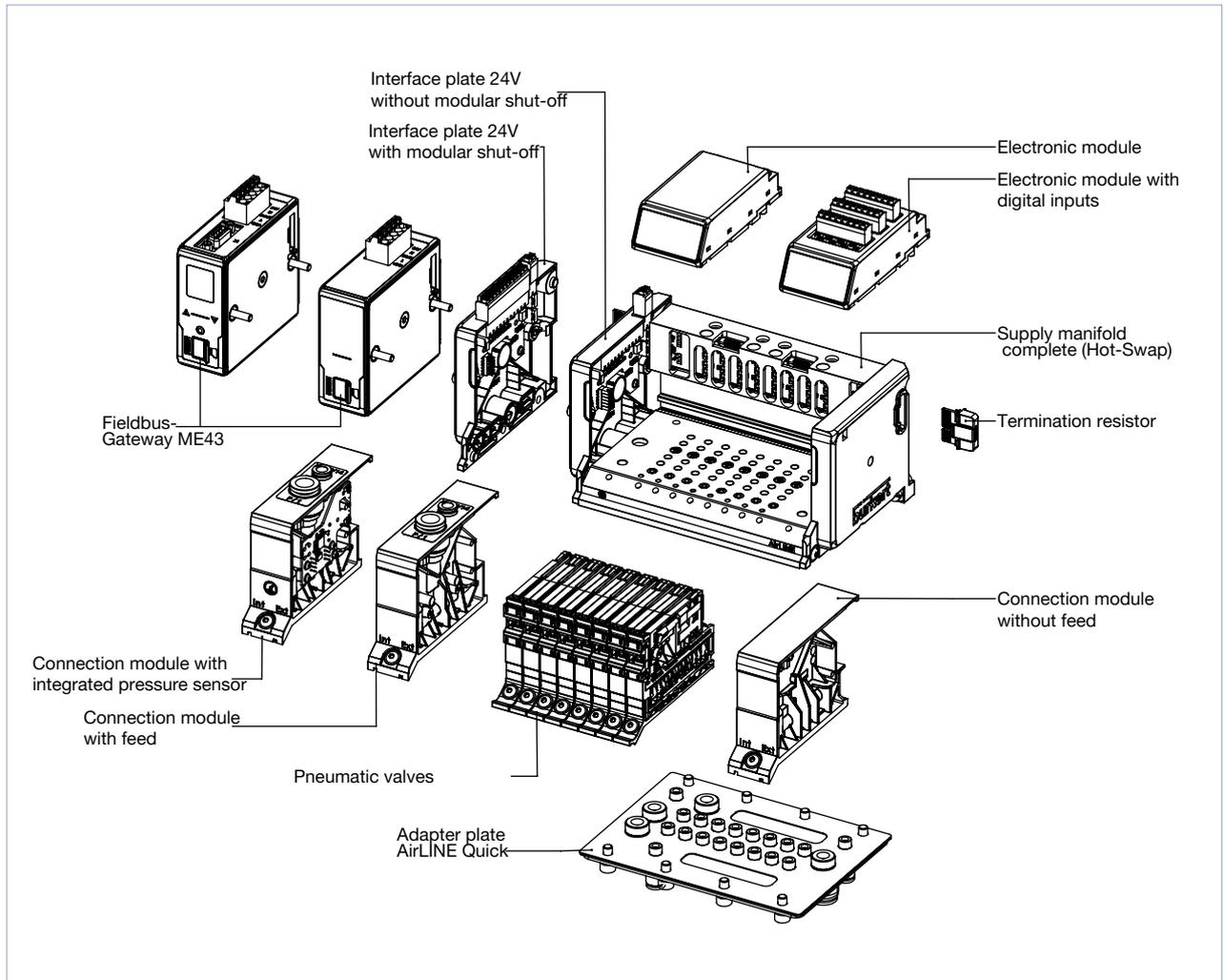
Installation situation of the valve terminal in the control cabinet

To be able to utilize the Hot Swap function always observe a minimum distance to the front edge of the control cabinet when installing the valve island in the control cabinet. Please also refer to the detailed description in the operating instructions.



6. Product design and assembly

6.1. Product assembly

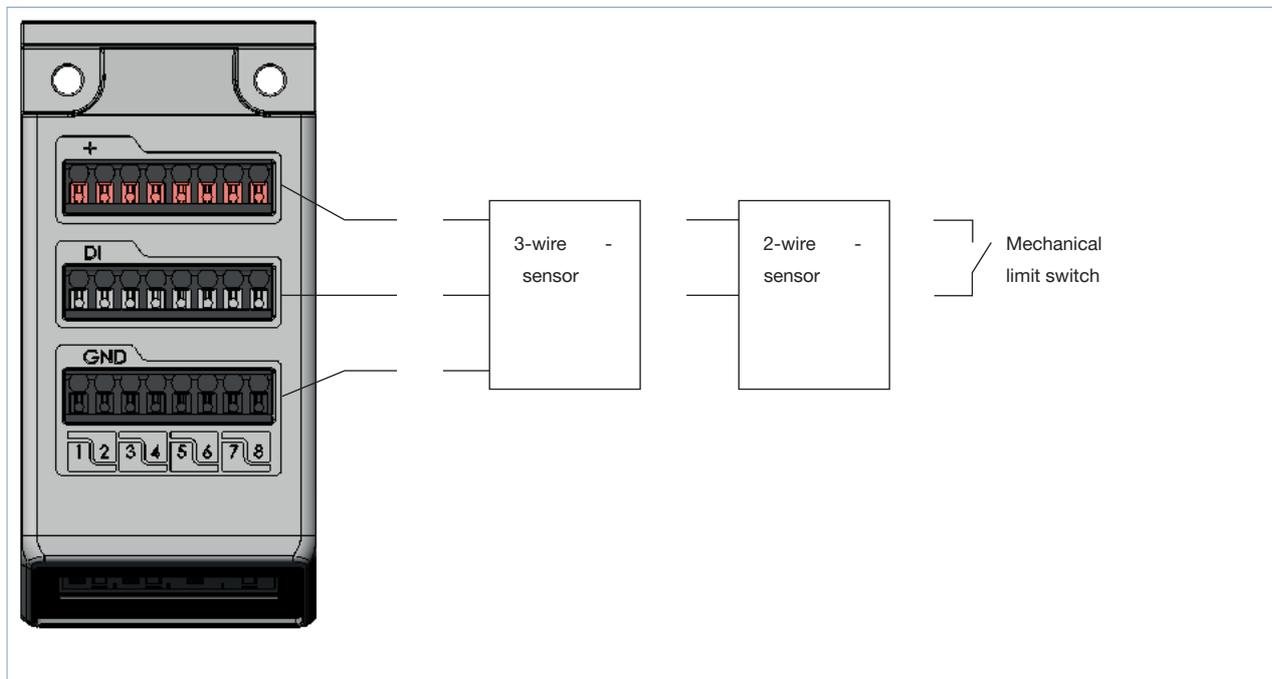


6.2. Electronic module with digital inputs (optional)

The position feedbacks are supplied (24 V) by the electronic module. The current is limited to maximum 30 mA per position feedback. Standard 3-wire sensors and 2-wire sensors with voltages between 10...30 V as well as mechanical limit switches can be used.

Note:

- Connect position feedbacks according to the assignment on the electronic module.
- Possible cable cross-section: $\leq 1.5 \text{ mm}^2$
- Maximum cable length: <30 m



The following data may be output depending on the sensor used:

| Possible data | 3-wire sensors | 2-wire sensors | Mechan. limit switches |
|---------------------|----------------|----------------|------------------------|
| Sensor actuated | X | X | X |
| Sensor not actuated | X | X | X |
| Short circuit | X | - | - |
| Broken wire | - | X | - |

6.3. Valve Type 6534 for safety-related shut-off, SIA variant (optional)

Note:

Type 6534 valves for safety-related shut-off (SIA variant) are equipped with additional connection terminals. The circuit of a valve can therefore be interrupted by an external switch. Manual override is not required for these valve variants. The technical data of the Type 6534 SIA variant valves corresponds to the data of the standard device. To use the shut-off function, connect the connection to a potential-free contact (mechanical switch or relay). The switching contact must be located in the same control cabinet as the valve block. The line length must be limited to a maximum of 2 m.

| | |
|--|---|
| | <p>The yellow connection terminals are pluggable and can be removed to facilitate connection of a cable. Except for CFH, there are always 2 connection terminals. To avoid mixing up the connections, the connection terminals are coded.</p> <p>On delivery, the connection terminals are provided with a bridge to ensure the valve can be put into operation immediately. Remove the bridge before connecting a cable.</p> |
|--|---|

| | |
|---|--|
| Connection terminals: | Pluggable screw-type terminal, 2 pin, coded wire cross-section (rigid or flexible) 0.14 mm ² ...1.5 mm ² (AWG 28...16) |
| Required switching capacity of the contact: | 0.5 A / 24 V DC |

| Connection designation | Circuit diagram | | | | | | | | | | | |
|-----------------------------|---|-----------------------------|------------------------|------|-------------------|---------------------------|----|--------|-------------------|---------------------------|----|--------|
| | <table border="1"> <tr> <td>Electrical connection valve</td> <td>Potential free contact</td> <td>Coil</td> </tr> <tr> <td>12 (+) 24 V ==</td> <td rowspan="2">Connection terminal 12</td> <td rowspan="2">12</td> </tr> <tr> <td>12 (-)</td> </tr> <tr> <td>14 (+) 24 V ==</td> <td rowspan="2">Connection terminal 14</td> <td rowspan="2">14</td> </tr> <tr> <td>14 (-)</td> </tr> </table> | Electrical connection valve | Potential free contact | Coil | 12 (+) 24 V == | Connection terminal 12 | 12 | 12 (-) | 14 (+) 24 V == | Connection terminal 14 | 14 | 14 (-) |
| Electrical connection valve | Potential free contact | Coil | | | | | | | | | | |
| 12 (+) 24 V == | Connection terminal 12 | 12 | | | | | | | | | | |
| 12 (-) | | | | | | | | | | | | |
| 14 (+) 24 V == | Connection terminal 14 | 14 | | | | | | | | | | |
| 14 (-) | | | | | | | | | | | | |

| Connection designation | Circuit diagram | | | | | | | |
|-----------------------------|---|-----------------------------|------------------------|------|-------------------|---------------------------|----|--------|
| | <table border="1"> <tr> <td>Electrical connection valve</td> <td>Potential free contact</td> <td>Coil</td> </tr> <tr> <td>14 (+) 24 V ==</td> <td rowspan="2">Connection terminal 14</td> <td rowspan="2">14</td> </tr> <tr> <td>14 (-)</td> </tr> </table> | Electrical connection valve | Potential free contact | Coil | 14 (+) 24 V == | Connection terminal 14 | 14 | 14 (-) |
| Electrical connection valve | Potential free contact | Coil | | | | | | |
| 14 (+) 24 V == | Connection terminal 14 | 14 | | | | | | |
| 14 (-) | | | | | | | | |

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6.4. Module-based safety shutdown (optional)



To use the switch-off function, connect the connection to a potential-free contact (mechanical switch or relay). The contact must be located in the same control cabinet as the valve terminal, but limit the cable length to a maximum of 2 m.

| | |
|---|--|
| Connection: | Pluggable spring-loaded terminal*, 12 pin Conductor cross-section (rigid or flexible) 0.14 mm ² ...1.5 mm ² (AWG 26...16) |
| Required switching capacity of the contact: | 1.5 A / 24 V DC |

7. Ordering information

7.1. Bürkert eShop – Easy ordering and quick delivery

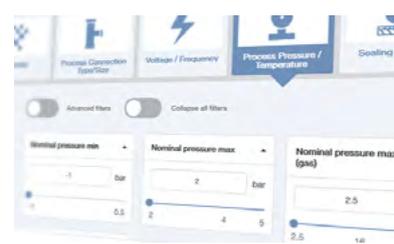


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7.2. Bürkert product filter



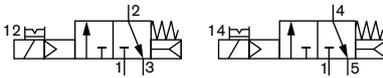
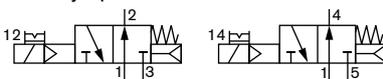
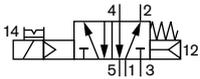
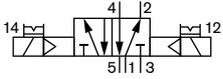
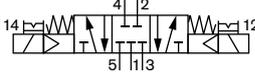
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7.3. Ordering chart spare valves

Standard version

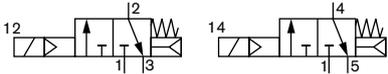
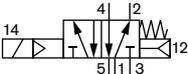
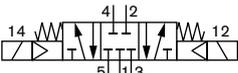
| Circuit function | Nominal diameter/ Orifice | Q _{Nn} value ^{1.)} Air | Pressure range | Switching times | | Voltage/ Frequency | Article no. ^{2.)} incl. screw |
|--|------------------------------|---|----------------------------------|-----------------|--------------|-----------------------|--|
| | | | | Opening [ms] | Closing [ms] | | |
| C, solenoid valve 2 × 3/2 way Servo-controlled, with manual override Normally closed  | 4 | 270 l/min | Vac. 10 ^{3.)} 3...10 | 15 | 15 | 24 V DC | 301374  |
| D, solenoid valve 2 × 3/2 way Servo-controlled, with manual override Normally open  | 4 | 310 l/min | Vac. 10 ^{3.)} 3...10 | 15 | 15 | 24 V DC | 301375  |
| H, solenoid valve 5/2 way Servo-controlled, with manual override, with auxiliary pilot air Normally open  | 4 | 290 l/min | Vac. 10 ^{3.)} 3...10 | 20 | 25 | 24 V DC | 301376  |
| Z, solenoid valve 5/2 way Impulse version with 2 coils, with manual override Normally open  | 4 | 290 l/min | Vac. 10 ^{3.)} 3...10 | 20 | 25 | 24 V DC | 301377  |
| L, solenoid valve 5/3 way Centre position all connections locked, with manual override Normally closed  | 4 | 275 l/min | Vac. 10 ^{3.)} 3...10 | 15 | 15 | 24 V DC | 301380  |
| Dummy valve | – | – | – | – | – | – | 335779  |

1.) With HotSwap function approx. 3% flow reduction

2.) The valves are components or spare parts of the Type 8652 Valve Terminal and can only be used on the Type 8652 Valve Terminal.

3.) Separate auxiliary control air min. 3 bar, please consider control pressure table in operating instructions.

Second port for shutdown (SIA variant)

| Circuit function | Nominal diameter/ Orifice | Q _{Nn} value ^{1.)} Air | Pressure range | Switching times | | Voltage/ Frequency | Article no. ^{2.)} incl. screw |
|---|------------------------------|---|----------------------------------|-----------------|--------------|-----------------------|---|
| | [mm] | [l/min] | [bar] | Opening [ms] | Closing [ms] | [V/Hz] | |
| C, solenoid valve 2 × 3/2 way Servo-controlled Normally closed  | 4 | 270 l/min | Vac. 10 ^{3.)} 3...10 | 15 | 15 | 24 V DC | 338802 |
| H, solenoid valve 5/2 way Servo-controlled Normally open  | 4 | 290 l/min | Vac. 10 ^{3.)} 3...10 | 20 | 25 | 24 V DC | 338805 |
| L, solenoid valve 5/3 way Centre position all connections locked Normally closed  | 4 | 275 l/min | Vac. 10 ^{3.)} 3...10 | 15 | 15 | 24 V DC | 346830 |

1.) With HotSwap function approx. 3 % flow reduction

2.) The valves are components or spare parts of the Type 8652 Valve Terminal and can only be used on the Type 8652 Valve Terminal.

3.) Separate auxiliary control air min. 3 bar, please consider control pressure table in operating instructions.

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