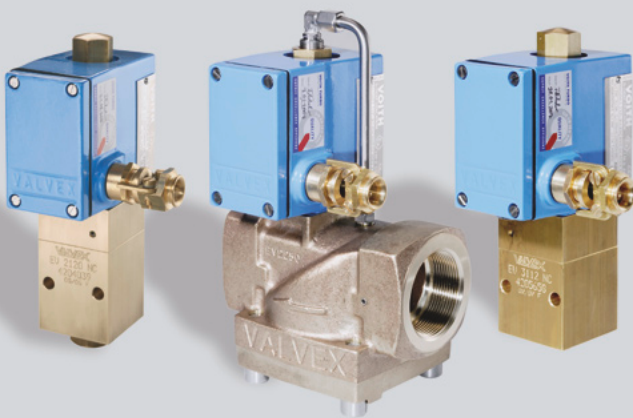


## Valvex Valves for Mining Applications



### Proven technology

The Electronic Drive Systems product group at Voith Turbo GmbH & Co. KG develops and produces explosion-proof Valvex solenoid valves and valve assemblies.

You can take advantage of all the experience we have gained from more than 40 years designing and constructing valves for explosion-hazard areas.

### The benefits to you

- Intrinsically safe equipment for use in mines with potentially explosive atmospheres.
- Components tested for many years under harsh mining conditions
- Rugged construction unaffected by dirty environments
- Optimized valve solutions
- Corrosion-resistant materials
- Modular principle for mechanical and electrical combinations
- Voltage-free feedback signal of switching status

### All the world's our home

Valvex valves are used worldwide in mining, where explosion protection and reliability are the key criteria. You can find Valvex valves in dust suppression systems, mine air cooling systems, mining equipment controls and in drive components for conveyor systems.

Voith Turbo's worldwide distribution and service network means that wherever you are, we are not far away.

# 2/2 way solenoid valve EV 2120 NC / NO

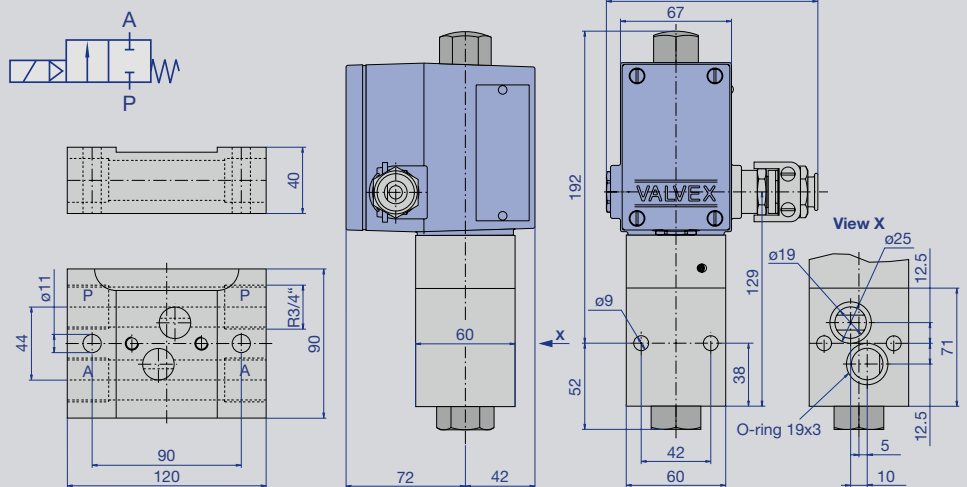
## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- Harsh conditions underground with a high switching frequency, for example in dust suppression sprinklers for cutters and crushers

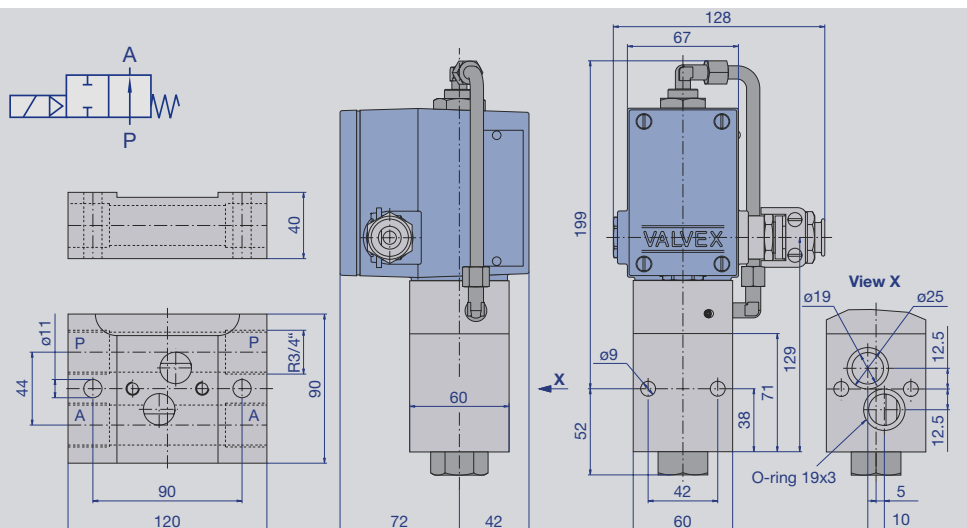
## Features

- Internal pilot-operated piston valve, normally closed (NC) or normally open (NO)
- Feedback contact for switching status
- Pressure range up to 80 bar
- Robust valve type
- Unaffected by pressure peaks
- Especially suitable for high switching frequency
- Block valve design for flanging onto connecting plate
- Multiple valves can be mounted in series on a supply pipe
- Flange valve design with separate connecting plate (on request)
- Manual operation (on request)

NC



NO



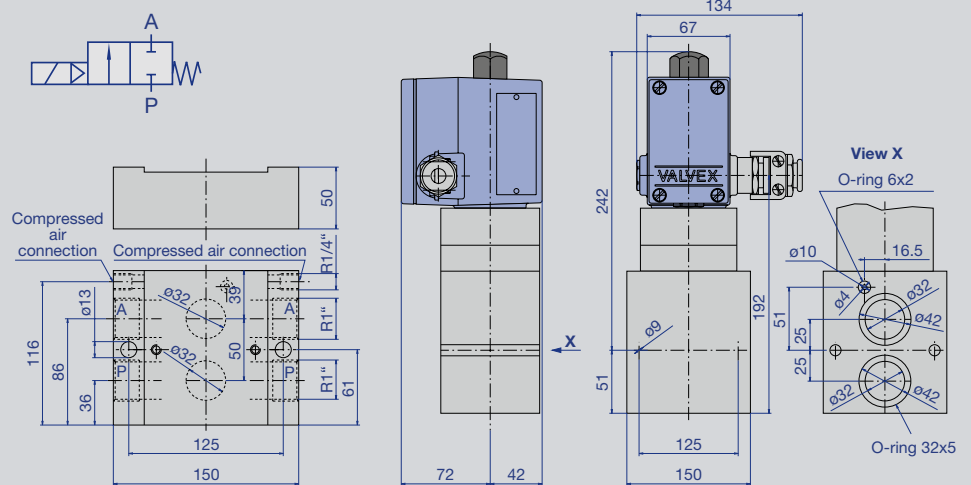
| Technical specifications EV 2120 NC/NO  |    |   |                                      |
|---|----|---|--------------------------------------|
| Mode of operation                       |    | 2/2 way, normally closed (NC) or normally open (NO)                                     |                                      |
| Function                                |    | Internal pilot-operated   |                                      |
| Pressure range                          | NC | 1 to 80 bar   |                                      |
|   | NO | 1 to 15 bar   |                                      |
| Nominal diameter                        |    | 20 mm   |                                      |
| K <sub>v</sub> value (water)            |    | 110 l/min = 6.6 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |                                      |
| Pipe connection                         |    | Flange plate, R 3/4" internal thread  |                                      |
| Response times                          | NC | Opening   | 600 ms                               |
|   |    | Closing   | Depends on pressure, no water impact |
|   | NO | Closing   | 600 ms                               |
|   |    | Opening   | Depends on pressure, no water impact |
| Pressure differential                   |    | Min. 1.0 bar for full opening of cross-section  |                                      |
| Mass                                    |    | 5.7 kg  |                                      |
| Valve housing material                  |    | Brass   |                                      |
| Internal valve components               |    | Stainless steel   |                                      |
| Sealing materials                       |    | NBR, FPM (Viton) on request   |                                      |
| Media                                   |    | Neutral, gaseous or liquid  |                                      |
| Media temperature                       |    | -20°C to +80°C, regardless of type of media   |                                      |
| Ambient temperature                     |    | -20°C to +40°C  |                                      |
| Installation position                   |    | Any, preferably solenoid actuator vertically upwards                                    |                                      |
| Rated voltage                           |    | 12 VDC, -30%/+10%   |                                      |
| Current consumption                     |    | 150 mA  |                                      |
| Nominal operation                       |    | Continuous operation, 100% operating time   |                                      |
| Electrical connection                   |    | Cable gland M20 x 1.5<br>or PROMOS connector  |                                      |
| Switching capacity of feedback contacts |    | 24 VDC, 1 A, potential-free relay contacts (change-over contact)                        |                                      |
| Solenoid actuator housing material      |    | Brass   |                                      |
| Approvals                               |    |   |                                      |
| ATEX                                    |    | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281  |                                      |
| MSHA                                    |    | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0     |                                      |
| SIMTARS                                 |    | Ex ib I, IP 66, AUS Ex 02.2553X   |                                      |
| SIMTARS-JOY                             |    | Ex ib I, IP 66, ANZEx_07_2000   |                                      |
| IECEX                                   |    | Ex ia, IP 66, IECEX SIM 10.0002   |                                      |

# 2/2 way solenoid valve EV 2132 NC

## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- Harsh conditions underground, particularly for underground water supplies with a high level of contamination and low supply pressures, for example fill-controlled turbo couplings in conveyor or belt drives

NC



## Features

- Seat valve pilot operated with compressed air, normally closed (NC)
- For opening, no differential pressure across the main seat is necessary
- Feedback contact for switching status
- Pressure range up to 12 bar
- Control air min. 3.5 bar
- Robust valve type
- Unaffected by contaminated media (normally water)
- High switching speed
- Block construction design with separate flange plate
- Flange valve design with separate connecting plate (on request)

| Technical specifications EV 2132 NC     |  |        |
|---|--|--------|
| Mode of operation                       | 2/2 way, normally closed (NC)  |        |
| Function                                | Pilot-operated with compressed air   |        |
| Control air pressure                    | 3.5 to 7 bar   |        |
| Pressure range                          | 0 to 12 bar  |        |
| Nominal diameter                        | 32 mm  |        |
| K <sub>v</sub> value (water)            | 260 l/min = 15.6 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |        |
| Pipe connection                         | Flange plate, R 1" internal thread   |        |
| Response times                          | Opening  | 600 ms |
|   | Closing  | 100 ms |
| Compressed air connection               | R 1/4"   |        |
| Valve mass                              | 11.5 kg  |        |
| Flange plate mass                       | 5.2 kg   |        |
| Valve and flange plate housing material | Brass  |        |
| Internal valve components               | Stainless steel  |        |
| Sealing materials                       | NBR, FPM (Viton) on request  |        |
| Media                                   | Neutral, gaseous or liquid   |        |
| Media temperature                       | -20°C to +80°C, regardless of type of media  |        |
| Ambient temperature                     | -20°C to +40°C   |        |
| Installation position                   | Any, preferably solenoid actuator vertically upwards                                     |        |
| Rated voltage                           | 12 VDC -30%/+10%   |        |
| Current consumption                     | 150 mA   |        |
| Nominal operation                       | Continuous operation, 100% operating time  |        |
| Electrical connection                   | Cable gland M20 x 1.5<br>or PROMOS connector   |        |
| Switching capacity of feedback contacts | 24 VDC, 1 A, potential free relay contacts (change-over contact)                         |        |
| Solenoid actuator housing material      | Brass  |        |
| Approvals                               |  |        |
| ATEX                                    | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281   |        |
| MSHA                                    | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0      |        |
| SIMTARS                                 | Ex ib I, IP 66, AUS Ex 02.2553X  |        |
| SIMTARS-JOY                             | Ex ib I, IP 66, ANZEx_07_2000  |        |
| IECEX                                   | Ex ia, IP 66, IECEX SIM 10.0002  |        |

# 2/2 way solenoid valve EV 2150 NC

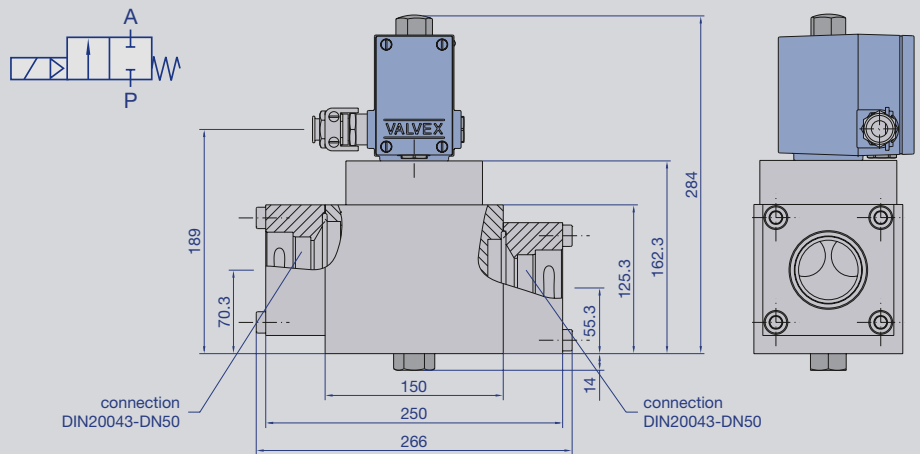
## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- Harsh underground conditions with a high switching frequency, e.g. in shearer loaders

## Features

- Internal pilot-operated piston valve, normally closed (NC)
- Feedback contact for switching status
- Pressure range up to 120 bar
- Robust valve type
- Unaffected by pressure peaks
- Especially suitable for high switching frequency
- Valve mount (on request)

NC



| Technical specifications EV 2150 NC     |         |   |
|---|---------|---|
| Mode of operation                       |         | 2/2 way, normally closed (NC)   |
| Function                                |         | Internal pilot-operated   |
| Pressure range                          |         | 0.5 to 120 bar  |
| Nominal diameter                        |         | 50 mm   |
| K <sub>v</sub> value (water)            |         | 1000 l/min = 60 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |
| Pipe connection                         |         | DIN 20043 50 mm   |
| Response times                          | Opening | 600 ms  |
|   | Closing | Depends on pressure, no water impact  |
| Pressure differential                   |         | Min. 0.5 bar for full opening of cross-section  |
| Mass                                    |         | 32 kg   |
| Valve housing material                  |         | Brass   |
| Internal valve components               |         | Stainless steel   |
| Sealing materials                       |         | NBR, FPM (Viton) on request   |
| Media                                   |         | Neutral, gaseous or liquid  |
| Media temperature                       |         | -20°C to +80°C, regardless of type of media   |
| Ambient temperature                     |         | -20°C to +40°C  |
| Installation position                   |         | Any, preferably solenoid actuator vertically upwards                                    |
| Rated voltage                           |         | 12 VDC, -30%/+10%   |
| Current consumption                     |         | 150 mA  |
| Nominal operation                       |         | Continuous operation, 100% operating time   |
| Electrical connection                   |         | Cable gland M20 x 1.5<br>or PROMOS connector  |
| Switching capacity of feedback contacts |         | 24 VDC, 1 A, potential-free relay contacts (change-over contact)                        |
| Solenoid actuator housing material      |         | Brass   |
| Approvals                               |         |   |
| ATEX                                    |         | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281  |
| MSHA                                    |         | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0     |
| SIMTARS                                 |         | Ex ib I, IP 66, AUS Ex 02.2553X   |
| SIMTARS-JOY                             |         | Ex ib I, IP 66, ANZEx_07_2000   |
| IECEX                                   |         | Ex ia, IP 66, IECEX SIM 10.0002   |

# 2/2 way solenoid valve EV 2225 NC / NO

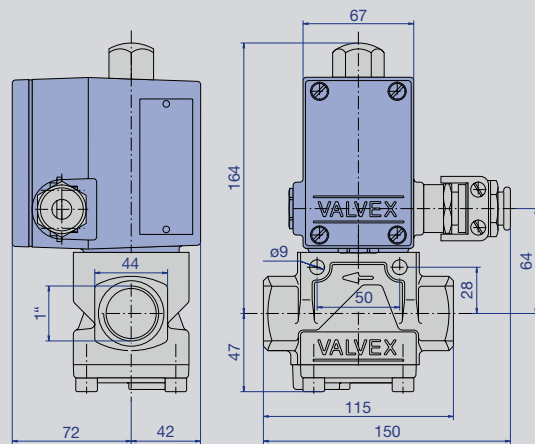
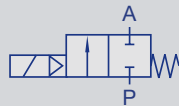
## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- General applications in underground mining, e.g. dedusting, belt transfer sprinklers, coupling controls etc.

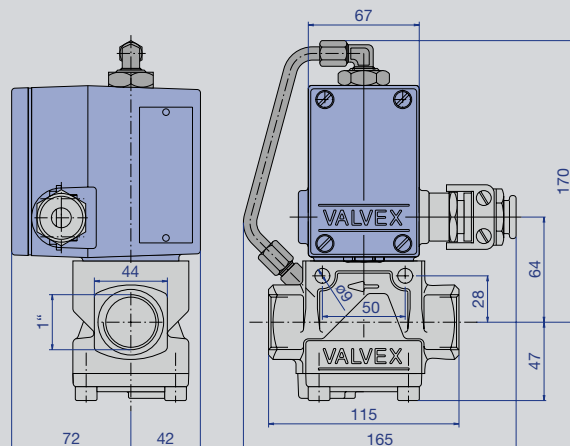
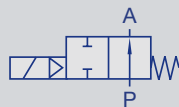
## Features

- Internal pilot-operated diaphragm valve, normally closed (NC) or normally open (NO)
- Feedback contact for switching status
- Pressure range up to 60 bar
- Low pressure loss
- Robust valve type
- Compact design
- Simple mechanical construction with only two moving parts
- Maintenance work (cleaning) easy to perform on site, no dismantling of solenoid actuator required
- Manual operation (on request)

NC



NO





| Technical specifications EV 2225 NC / NO |    |   |                                      |
|--|----|---|--------------------------------------|
| Mode of operation                        |    | 2/2 way, normally closed (NC) or normally open (NO)                                     |                                      |
| Function                                 |    | Internal pilot-operated   |                                      |
| Pressure range                           | NC | 0.5 to 60 bar   |                                      |
|  | NO | 0.5 to 15 bar   |                                      |
| Nominal diameter                         |    | 25 mm   |                                      |
| K <sub>v</sub> value (water)             |    | 125 l/min = 8.1 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |                                      |
| Pipe connection                          |    | R 1"  |                                      |
| Response times                           | NC | Opening   | 600 ms                               |
|  |    | Closing   | Depends on pressure, no water impact |
|  | NO | Closing   | 600 ms                               |
|  |    | Opening   | Depends on pressure, no water impact |
| Pressure differential                    |    | Min. 0.5 bar for full opening of cross-section  |                                      |
| Mass                                     |    | 5.7 kg  |                                      |
| Valve housing material                   |    | Brass   |                                      |
| Internal valve components                |    | Stainless steel   |                                      |
| Sealing materials                        |    | NBR, FPM (Viton) on request   |                                      |
| Media                                    |    | Neutral, gaseous or liquid  |                                      |
| Media temperature                        |    | -20°C to +80°C, regardless of type of media   |                                      |
| Ambient temperature                      |    | -20°C to +40°C  |                                      |
| Installation position                    |    | Any, preferably solenoid actuator vertically upwards                                    |                                      |
| Rated voltage                            |    | 12 VDC -30%/+10%  |                                      |
| Current consumption                      |    | 150 mA  |                                      |
| Nominal operation                        |    | Continuous operation, 100% operating time   |                                      |
| Electrical connection                    |    | Cable gland M20 x 1.5<br>or PROMOS connector  |                                      |
| Switching capacity of feedback contacts  |    | 24 VDC, 1 A, potential-free relay contacts (change-over contact)                        |                                      |
| Solenoid actuator housing material       |    | Brass   |                                      |
| Approvals                                |    |   |                                      |
| ATEX                                     |    | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281  |                                      |
| MSHA                                     |    | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0     |                                      |
| SIMTARS                                  |    | Ex ib I, IP 66, AUS Ex 02.2553X   |                                      |
| SIMTARS-JOY                              |    | Ex ib I, IP 66, ANZEx_07_2000   |                                      |
| IECEX                                    |    | Ex ia, IP 66, IECEX SIM 10.0002   |                                      |

# 2/2 way solenoid valve EV 2250 NC / NO

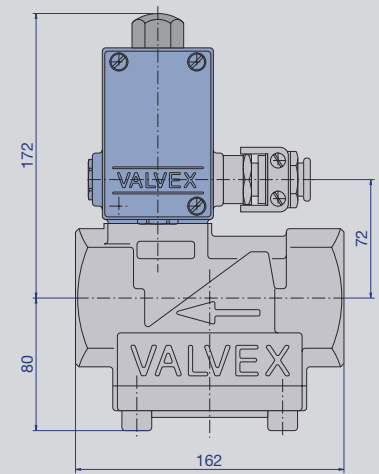
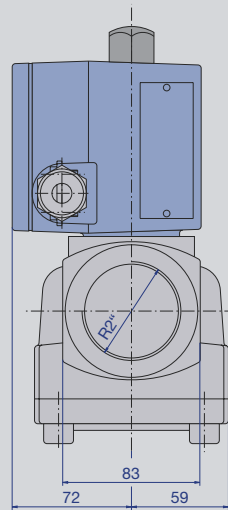
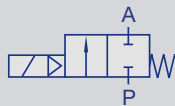
## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- General applications in underground mining, e.g. dedusting

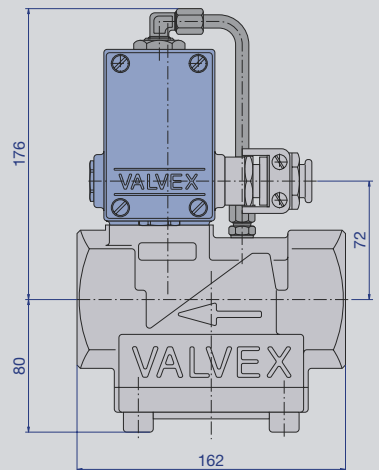
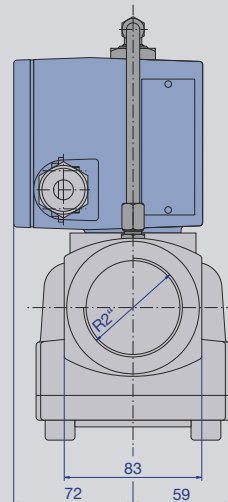
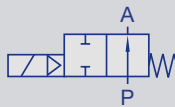
## Features

- Internal pilot-operated diaphragm valve, normally closed (NC) or normally open (NO)
- Feedback contact for switching status
- Pressure range up to 40 bar
- Low pressure loss
- Robust valve type
- Compact design
- Simple mechanical construction with only two moving parts
- Maintenance work (cleaning) easy to perform on site, no dismantling of solenoid actuator required
- Manual operation (on request)

NC



NO



| Technical specifications EV 2250 NC / NO |    |  |                                      |
|--|----|--|--------------------------------------|
| Mode of operation                        |    | 2/2 way, normally closed (NC) or normally open (NO)                                    |                                      |
| Function                                 |    | Internal pilot-operated  |                                      |
| Pressure range                           | NC | 1 to 40 bar  |                                      |
|  | NO | 1 to 15 bar  |                                      |
| Nominal diameter                         |    | 50 mm  |                                      |
| K <sub>v</sub> value (water)             |    | 550 l/min = 33 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |                                      |
| Pipe connection                          |    | R 2"   |                                      |
| Response times                           | NC | Opening  | 600 ms                               |
|  |    | Closing  | Depends on pressure, no water impact |
|  | NO | Closing  | 600 ms                               |
|  |    | Opening  | Depends on pressure, no water impact |
| Pressure differential                    |    | Min. 1.0 bar for full opening of cross-section   |                                      |
| Mass                                     |    | 10.6 kg  |                                      |
| Valve housing material                   |    | Brass  |                                      |
| Internal valve components                |    | Stainless steel  |                                      |
| Sealing materials                        |    | NBR, FPM (Viton) on request  |                                      |
| Media                                    |    | Neutral, gaseous or liquid   |                                      |
| Media temperature                        |    | -20°C to +80°C, regardless of type of media  |                                      |
| Ambient temperature                      |    | -20°C to +40°C   |                                      |
| Installation position                    |    | Any, preferably solenoid actuator vertically upwards                                   |                                      |
| Rated voltage                            |    | 12 VDC -30%/+10%   |                                      |
| Current consumption                      |    | 150 mA   |                                      |
| Nominal operation                        |    | Continuous operation, 100% operating time  |                                      |
| Electrical connection                    |    | Cable gland M20 x 1.5<br>or PROMOS connector   |                                      |
| Switching capacity of feedback contacts  |    | 24 VDC, 1 A, potential-free relay contacts (change-over contact)                       |                                      |
| Solenoid actuator housing material       |    | Brass  |                                      |
| Approvals                                |    |  |                                      |
| ATEX                                     |    | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281   |                                      |
| MSHA                                     |    | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0    |                                      |
| SIMTARS                                  |    | Ex ib I, IP 66, AUS Ex 02.2553X  |                                      |
| SIMTARS-JOY                              |    | Ex ib I, IP 66, ANZEx_07_2000  |                                      |
| IECEX                                    |    | Ex ia, IP 66, IECEX SIM 10.0002  |                                      |

# 2/2 way solenoid valve EV 22100 NC

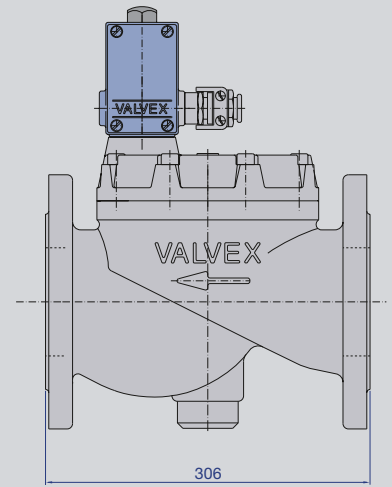
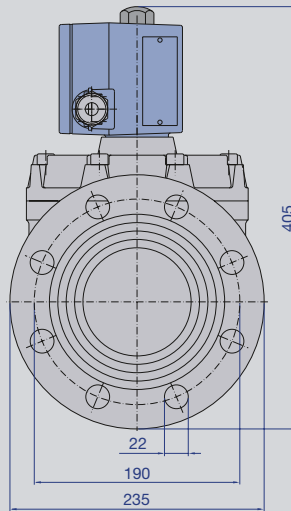
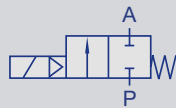
## Applications

- Control of neutral gases and liquids in mines with potentially explosive atmospheres
- General applications in underground mining, e.g. dust removal

## Features

- Internal pilot-operated diaphragm valve, normally closed (NC)
- Feedback contact for switching status
- Pressure range up to 40 bar
- Low pressure loss
- Robust valve type
- Compact design
- Maintenance work (cleaning) can be performed on site

NC



| Technical specifications EV 22100 NC    |         |  |
|---|---------|--|
| Mode of operation                       |         | 2/2 way, normally closed (NC)  |
| Function                                |         | Internal pilot-operated  |
| Pressure range                          |         | 1 to 40 bar  |
| Nominal diameter                        |         | 100 mm   |
| K <sub>v</sub> value (water)            |         | 2166 l/min = 130 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |
| Pipe connection                         |         | Flange compliant with EN 1092-1/21/B1/DN 100   |
| Response times                          | Opening | 600 ms   |
|   | Closing | Depends on pressure, no water impact   |
| Pressure differential                   |         | Min. 1.0 bar for full opening of cross-section   |
| Mass                                    |         | 45 kg  |
| Valve housing material                  |         | Stainless steel  |
| Internal valve components               |         | Stainless steel  |
| Sealing materials                       |         | NBR, FPM (Viton) on request  |
| Media                                   |         | Neutral, gaseous or liquid   |
| Media temperature                       |         | -20°C to +80°C, regardless of type of media  |
| Ambient temperature                     |         | -20°C to +40°C   |
| Installation position                   |         | Any, preferably solenoid actuator vertically upwards                                     |
| Rated voltage                           |         | 12 VDC -30%/+10%   |
| Current consumption                     |         | 150 mA   |
| Nominal operation                       |         | Continuous operation, 100% operating time  |
| Electrical connection                   |         | Cable gland M20 x 1.5<br>or PROMOS connector   |
| Switching capacity of feedback contacts |         | 24 VDC, 1 A, potential-free relay contacts (change-over contact)                         |
| Solenoid actuator housing material      |         | Brass  |
| Approvals                               |         |  |
| ATEX                                    |         | I M2 Ex ib I, IP 65, BVS 03 ATEX E 281   |
| MSHA                                    |         | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0      |
| SIMTARS                                 |         | Ex ib I, IP 66, AUS Ex 02.2553X  |
| SIMTARS-JOY                             |         | Ex ib I, IP 66, ANZEx_07_2000  |
| IECEX                                   |         | Ex ia, IP 66, IECEX SIM 10.0002  |

# 3/2 way solenoid valve EV 3112 NC / NO

## Applications

- Control of compressed air in mines with potentially explosive atmospheres
- General compressed air applications in underground mining, e.g. conveyor belt braking systems and air door controls

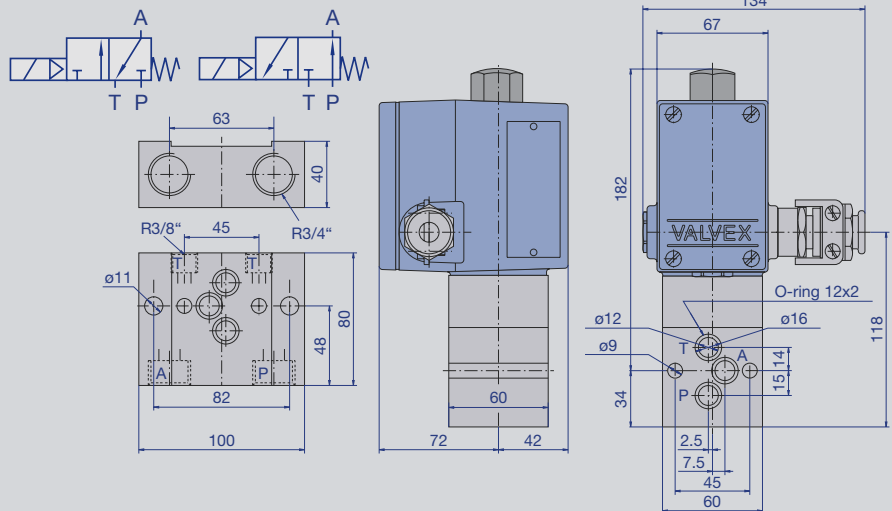
## Features

- Internal pilot-operated seat valve, normally closed (NC) or normally open (NO).
- Feedback contact for switching status
- For compressed air applications
- Pressure range up to 10 bar
- For extreme service life requirements
- Simple mechanical construction with few moving parts
- Flange valve design with separate connecting plate (on request)

### Note:

Valve also available in 4/2 way design (EV 4112)

NC NO

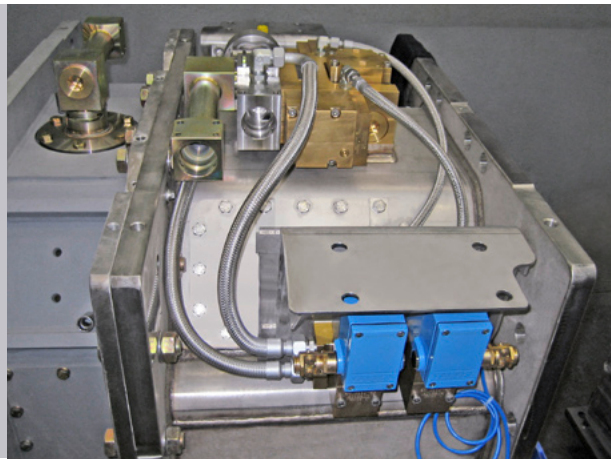


| Technical specifications EV 3112 NC / NO |  |  |            |        |
|--|--|--|------------|--------|
| Mode of operation                        |  | 3/2 way, normally closed (NC) or normally open (NO)                                    |            |        |
| Function                                 |  | Internal pilot-operated  |            |        |
| Pressure range                           |  | 1 to 10 bar  |            |        |
| Nominal diameter                         |  | 12 mm  |            |        |
| K <sub>v</sub> value                     |  | 35 l/min = 2.1 m <sup>3</sup> /h<br>(measured at 20°C and pressure differential 1 bar) |            |        |
| Pipe connections on the flange plate     |  | P, A   | R 3/4"     |        |
|  |  | T  | 2 x R 3/8" |        |
| Response times                           |  | NC   | Opening    | 600 ms |
|  |  |  | Closing    | 100 ms |
|  |  | NO   | Closing    | 600 ms |
|  |  |  | Opening    | 100 ms |
| Mass (with flange plate)                 |  | 7.5 kg   |            |        |
| Valve housing material                   |  | Brass  |            |        |
| Internal valve components                |  | Stainless steel  |            |        |
| Sealing material                         |  | NBR  |            |        |
| Media                                    |  | Compressed air   |            |        |
| Media temperature                        |  | -20°C to +80°C, regardless of type of media  |            |        |
| Ambient temperature                      |  | -20°C to +40°C   |            |        |
| Installation position                    |  | Any, preferably solenoid actuator vertically upwards                                   |            |        |
| Rated voltage                            |  | 12 VDC -30%/+10%   |            |        |
| Current consumption                      |  | 150 mA   |            |        |
| Nominal operation                        |  | Continuous operation, 100% operating time  |            |        |
| Electrical connection                    |  | Cable gland M20 x 1.5<br>or PROMOS connector   |            |        |
| Switching capacity of feedback contacts  |  | 24 VDC, 1 A, potential free relay contacts (changeover contact)                        |            |        |
| Solenoid actuator housing material       |  | Brass  |            |        |
| Approvals                                |  |  |            |        |
| ATEX                                     |  | I M2 Ex ib I, IP65, BVS 03 ATEX E 281  |            |        |
| MSHA                                     |  | Intrinsic Safety Evaluation No. 18-ISA080003-0,<br>Certification No. 18-NXA080001-0    |            |        |
| SIMTARS                                  |  | Ex ib I, IP 66, AUS Ex 02.2553X  |            |        |
| SIMTARS-JOY                              |  | Ex ib I, IP 66, ANZEx_07_2000  |            |        |
| IECEX                                    |  | Ex ia, IP 66, IECEx SIM 10.0002  |            |        |

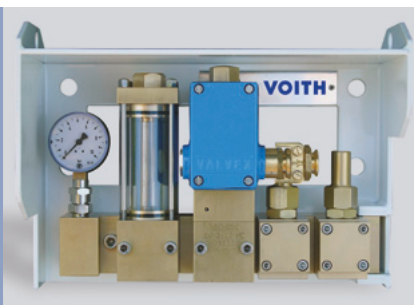
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