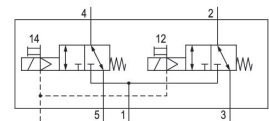


## AVENTICS Series 501 Directional Control Valves

The AVENTICS Series 501 is a line of general purpose automation valves designed for directional control and piloting applications requiring compact size, high flow capability, and energy savings. Engineers can achieve the flow of a 15 mm to 20 mm valves in a more compact package, saving space, cost, and energy in their machine designs. In addition, no other valve in its class offers such a broad range of pressure regulator, pressure shut-off, and exhaust flow control accessories. The 501 Series valve's pressure shut —off option permits users to replace individual valves without stopping their production process — reducing line downtime and maintenance.

2x3/2, 5/2, 5/3 spool valves

- Modular design permits easy configuration and modification
- Sub-base mounted valve is well suited for in-panel valve piloting applications
- High flow rate, compact size, and optional mounting plate enable efficient use of cabinet space
- Dual three-way version enables placement of two, three-way valves in the space of a four-way valve
- Compatible with AVENTICS Series G3 and 580 electronic fieldbus platforms
- 580 CHARM node is compatible with DeltaV distributed control system with electronic marshalling



## Technical data

|                       |                                    |
|-----------------------|------------------------------------|
| Industry              | Industrial                         |
| Activation            | Electrically                       |
| Valve type            | Spool valve, positive overlapping  |
| Switching principle   | 2x 3/2 NC/NC, with spring return   |
| Valve function        | NC/NC                              |
| Actuating control     | Single Solenoid                    |
| Sealing principle     | Soft seal                          |
| Connection type       | Plate connection                   |
| Manual override       | with detent                        |
| Pilot control exhaust | with directional pilot air exhaust |

# 2x3/2-directional valve, Series 501

R501A2BD0M11BF1

Series 501

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|                                    |                                                           |
|------------------------------------|-----------------------------------------------------------|
| Nominal flow Qn                    | 405 l/min                                                 |
| Min. working pressure              | 2 bar                                                     |
| Max. working pressure              | 8 bar                                                     |
| Min. control pressure              | 2 bar                                                     |
| Max. control pressure              | 8 bar                                                     |
| Protection class with connection   | IP65                                                      |
| Protective circuit                 | Varistor                                                  |
| Reverse polarity protection        | Protected against polarity reversal                       |
| Operational voltage                | 24 V DC                                                   |
| Voltage tolerance DC               | -15 % / +10 %                                             |
| Pilot                              | External                                                  |
| LED status display                 | Yellow                                                    |
| Power consumption DC               | 0.68 W                                                    |
| Duty cycle                         | 100 %                                                     |
| Typ. switch-on time                | 18 ms                                                     |
| Typ. switch-off time               | 18 ms                                                     |
| Blocking principle                 | Single base plate principle, can be assembled into blocks |
| Can be assembled into blocks       | Can be assembled into blocks                              |
| Min. ambient temperature           | -10 °C                                                    |
| Max. ambient temperature           | 50 °C                                                     |
| Min. medium temperature            | -10 °C                                                    |
| Max. medium temperature            | 50 °C                                                     |
| Medium                             | Compressed air                                            |
| Min. oil content of compressed air | 0 mg/m <sup>3</sup>                                       |
| Max. oil content of compressed air | 5 mg/m <sup>3</sup>                                       |
| Max. particle size                 | 50 µm                                                     |
| Mounting screws                    | with hexagon socket                                       |
| Mounting screw tightening torque   | 0.45 Nm                                                   |
| Weight                             | 0.93 kg                                                   |

## Material

|                      |                                          |
|----------------------|------------------------------------------|
| Housing material     | Die cast zinc                            |
| Seal material        | Nitrile butadiene rubber<br>Polyurethane |
| Material front plate | Polyamide                                |
| Material end plate   | Polyamide                                |

|          |                 |
|----------|-----------------|
| Part No. | R501A2BD0M11BF1 |
|----------|-----------------|

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in <https://www.emerson.com/en-us/support>).

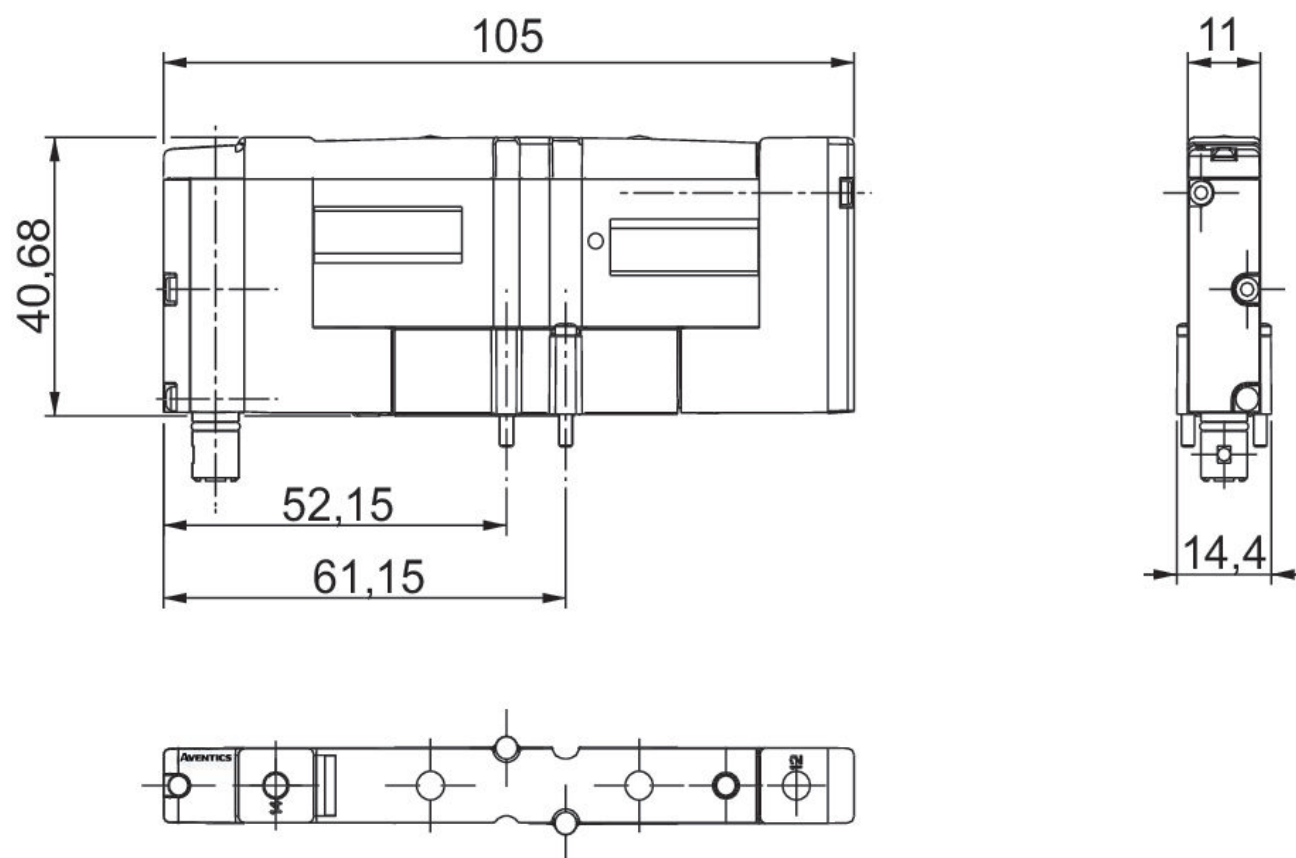
# 2x3/2-directional valve, Series 501

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## Dimensions



# 2x3/2-directional valve, Series 501

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## Accessories overview

