

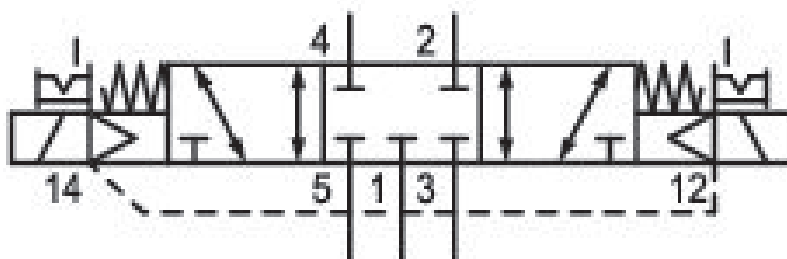
# 5/3-directional valve, Series 503

R503A2B60M11BF1

## General series information

### AVENTICS Series 503 Directional Control Valves

■ The AVENTICS Series 503 is a line of pneumatic directional control valves with ultra-high flow ratings per valve size. This enables design and specifying engineers to use smaller, lower-cost valves and components that do more work with less air, energy, and cost. Designers can choose to generate greater speed of motion for their components using the same size valve. The 503 Series valves are designed to complement the benefits of AVENTICS G3 fieldbus electronics. When assembled together, original equipment manufacturers can leverage assemblies that combine ultra-high flow rates with ease of use, plus fieldbus technology that provides configurability, flexibility, and cost-effective I/O and distribution architecture. The compact 503 Series valves are used in a wide range of automotive and industrial applications, including food and beverage, pharmaceutical, process equipment, and general machine applications.



## Technical data

Industry

Industrial

Activation

Electrically

Valve type

Spool valve, positive overlapping

Valve function

Closed Center

Actuating control

Double Solenoid

Sealing principle

soft seal

Connection type

Plate connection

Pilot control exhaust

with directional pilot air exhaust

Nominal flow Qn

1400 l/min

|                                    |                                                           |
|------------------------------------|-----------------------------------------------------------|
| Working pressure min.              | 2 bar                                                     |
| Working pressure max               | 8 bar                                                     |
| Control pressure min.              | 4 bar                                                     |
| Control pressure max.              | 8 bar                                                     |
| Protection class with connection   | IP65                                                      |
| Protective circuit                 | Z-diode                                                   |
| 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               | 1.4 W                                                     |
| Duty cycle                         | 100 %                                                     |
| Typ. switch-on time                | 15 ms                                                     |
| Typ. switch-off time               | 20 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                                            |
| Oil content of compressed air min. | 0 mg/m <sup>3</sup>                                       |
| Oil content of compressed air max. | 5 mg/m <sup>3</sup>                                       |
| Max. particle size                 | 50 µm                                                     |
| mounting screws                    | with hexagon socket                                       |
| Mounting screw tightening torque   | 2.9 Nm                                                    |
| Weight                             | 0.236 kg                                                  |

## Material

|                  |                          |
|------------------|--------------------------|
| Housing material | Die cast zinc            |
| Seal material    | Nitrile butadiene rubber |

|                      |                 |
|----------------------|-----------------|
| Material front plate | Polyurethane    |
| Material end plate   | Polyamide       |
| Part No.             | R503A2B60M11BF1 |

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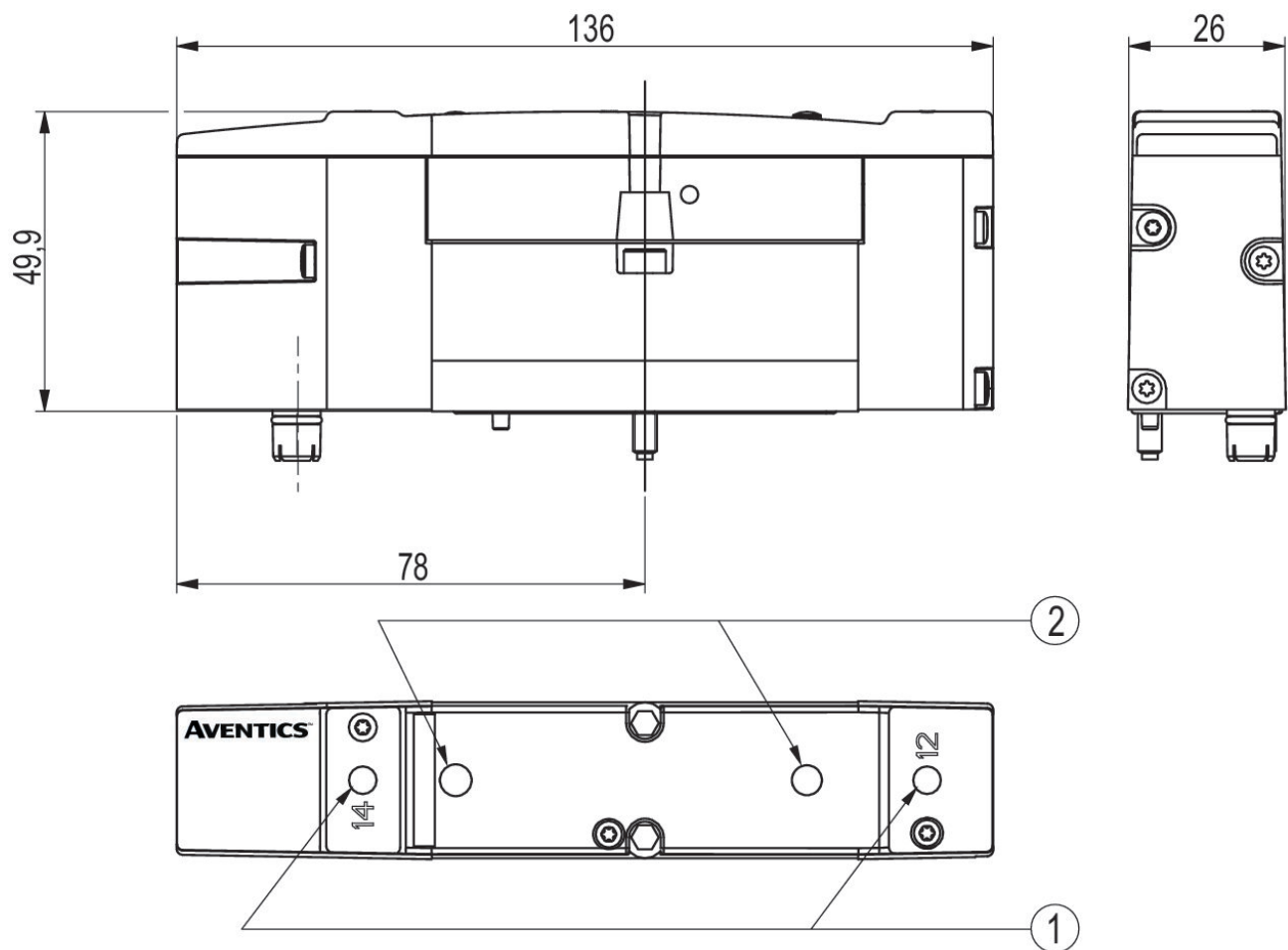
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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>).

## Dimensions



- 1) Manual override  
2) LED