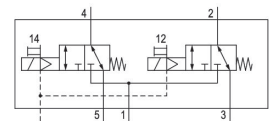


AVENTICS Series 503 Directional Control Valves

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 ideal for automation and piloting applications across a wide range of automotive and tire, food and beverage, pharmaceutical, packaging equipment, and general machinery applications.

- Available in either spool-and-sleeve or rubber seal models
- Proprietary and ISO versions enable the valve to meet a variety of applications
- Increased energy efficiency via pressure regulators
- Low power consumption (1.7 W for DC applications)
- Modular design and plug-in circuit boards for easy configuration and elimination of wiring
- Machine cycle rate can be optimized via speed controls
- Pressure isolation of individual valves for easy maintenance



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

2x3/2-directional valve, Series 503

R503A2BD0MA00F1

Series 503

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Manual override	without detent
Pilot control exhaust	with directional pilot air exhaust
Nominal flow Qn	1000 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	TVS 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
Min. oil content of compressed air	0 mg/m ³
Max. oil content of compressed air	5 mg/m ³
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 Polyurethane
Material front plate	Polyamide
Material end plate	Polyamide

Part No.	R503A2BD0MA00F1
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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>).

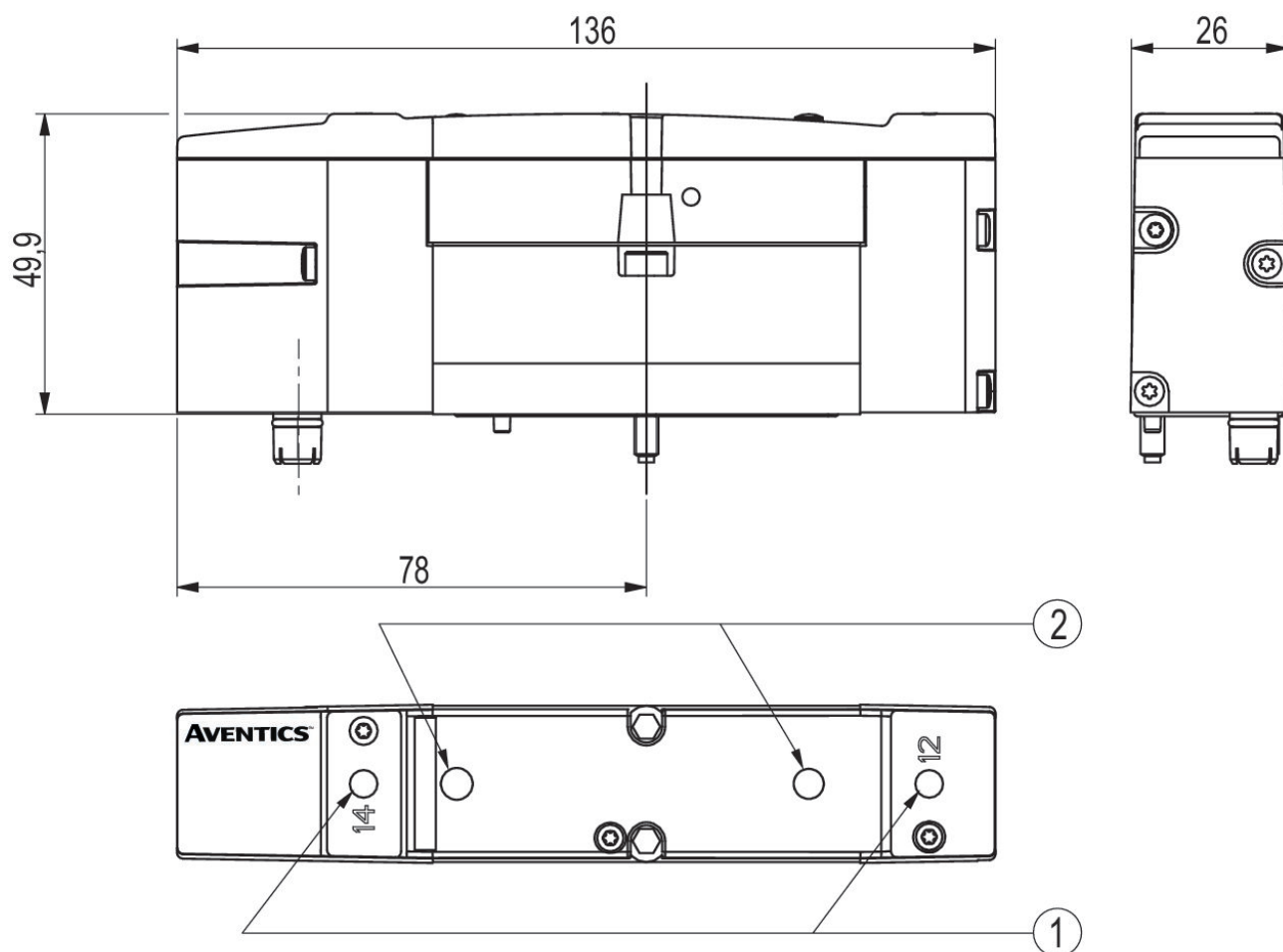
2x3/2-directional valve, Series 503

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Dimensions



1) Manual override

2) LED

2x3/2-directional valve, Series 503

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Accessories overview

