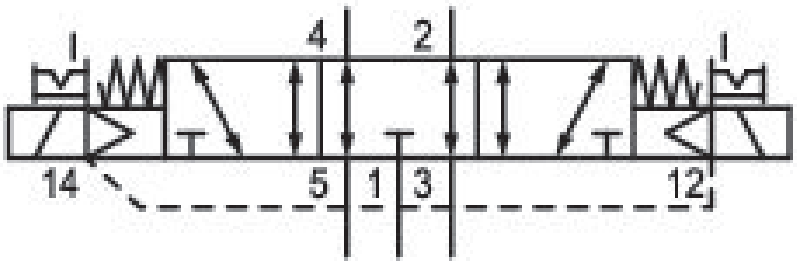
5/3-directional valve, Series 503

R503A1B50M11BF1

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 pro configurability, flexibility, and cos I/O and distribution architecture. compact 503 Series valves are i automation and piloting applicati a wide range of automotive and and beverage, pharmaceutical, p equipment, and general machine applications.



Technical data

Industry	Industrial
Activation	Electrically
Valve type	Spool valve, positive overlapping
Valve function	Exhausted Center
Actuating control	Double Solenoid
Sealing principle	metal/metal sealing
Connection type	Plate connection
Pilot control exhaust	with directional pilot air exhaust
Nominal flow Qn	1000 l/min

Working pressure min.	2 bar
Working pressure max	8 bar
Control pressure min.	2 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	20 ms
Typ. switch-off time	60 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/m³
Oil content of compressed air max.	5 mg/m³
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.	R503A1B50M11BF1

Technical information

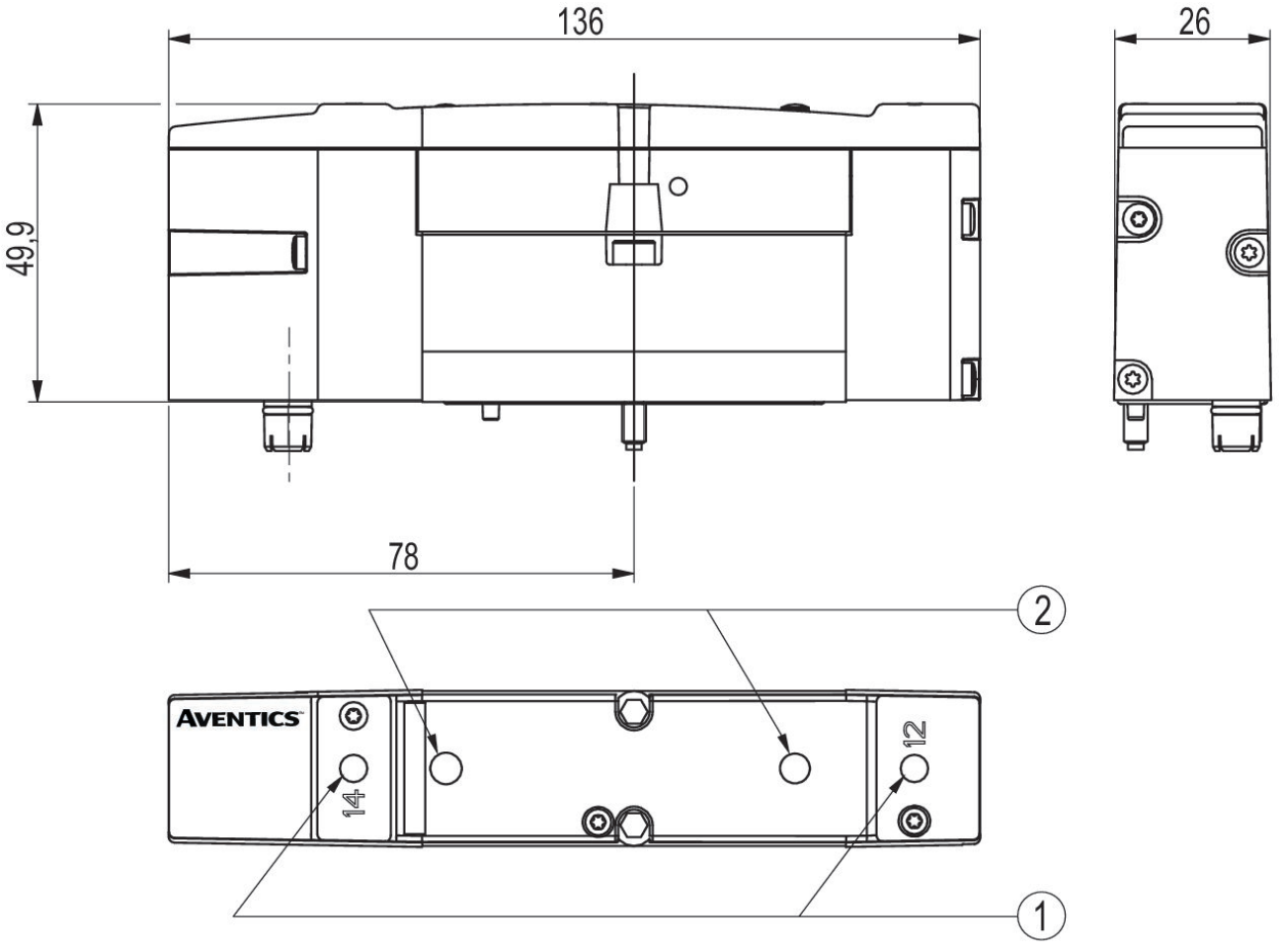
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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).

Dimensions



1) Manual override
2) LED