



AV03 series valve system

- Configurable valve systems, Multipole, Field bus, IO-Link, AV03/AV05, ATEX optional



| | |
|----------------------------------|------------------|
| Mounting orientation | Any |
| Working pressure min./max. | -0,95 ... 10 bar |
| Control pressure min./max. | 3 ... 8 bar |
| Ambient temperature min./max. | -10 ... 60 °C |
| Medium temperature min./max. | -10 ... 60 °C |
| Medium | Compressed air |
| Max. particle size | 40 µm |
| Oil content of compressed air | 0 ... 5 mg/m³ |
| Nominal flow Q _n | 300 l/min |
| Number of valve positions max. | 64 |
| Protection class with connection | IP65 |
| DC operating voltage | 24 V |
| Voltage tolerance DC | -10% / +10% |

Overview of variants

| | Version | You have the following options: | Max. |
|---|---|--|--|
|  | Multipole | D-Sub plug, 25-pin, top D-Sub plug, 44-pin, top | 24 valves (24 coils) 36 valves (40 coils) |
|  | Multipole | D-Sub plug, 25-pin, on the side D-Sub plug, 44-pin, on the side | 24 valves (24 coils) 36 valves (40 coils) |
|  | IO-Link | | 24 valves (24 coils) |
|  | Field bus connection with I/O functionality (AES) | PROFINET IO EtherCAT DeviceNet POWERLINK PROFIBUS DP CANopen EtherNET/IP POWERLINK | 64 valves (128 coils) |
|  | AV03/AV05 in combination | D-Sub plug, 25-pin, on the side D-Sub plug, 44-pin, on the side IO-Link PROFINET IO EtherCAT DeviceNet POWERLINK PROFIBUS DP CANopen EtherNET/IP POWERLINK | 24 valves (24 coils) 36 valves (40 coils) 24 valves (24 coils) 64 valves (128 coils) |
|  | ATEX | D-Sub plug, 25-pin, top D-Sub plug, 44-pin, top D-Sub plug, 25-pin, on the side D-Sub plug, 44-pin, on the side PROFINET IO EtherCAT DeviceNet POWERLINK PROFIBUS DP CANopen EtherNET/IP POWERLINK | 24 valves (24 coils) 36 valves (36 coils) 24 valves (24 coils) 36 valves (36 coils) 22 valves (22 coils) |

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 under 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 the MediaCentre).

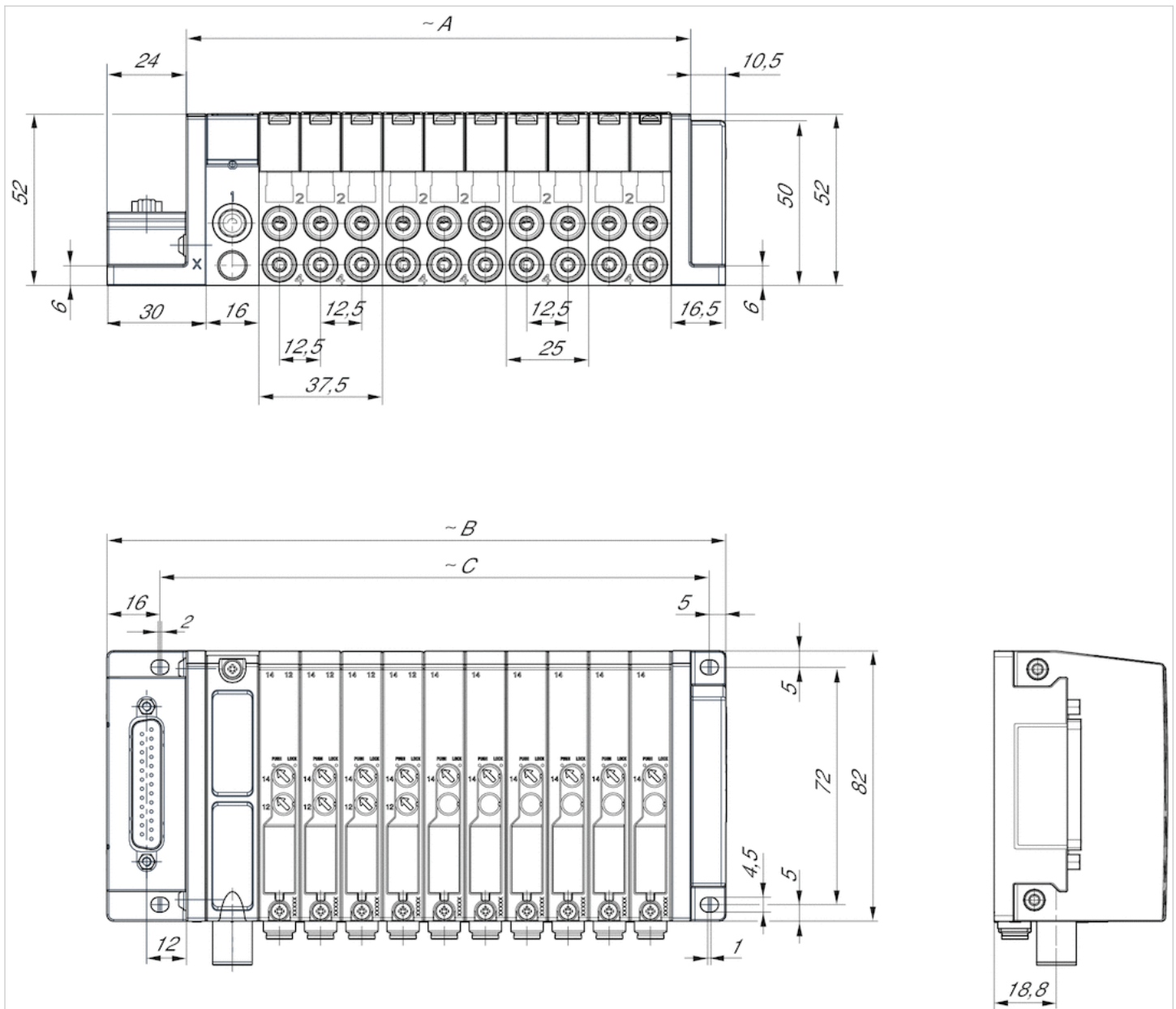
When using polyurethane tubing, we recommend using additional stiffener sleeves.
For push-in fittings, only use plug accessories made of plastic (polyamide) from our catalog.
The combination of double and triple base plates allows a configuration in increments of 1.
See the following pages on the series for technical data on individual components.
See the Media Centre for information on pin assignment (version A and version B) of the D-Sub connector.
AV03-BP: Only 2x base plates
For assembly in a control cabinet with direct sealing or when using transition plates, a supply plate must be configured after 8 valves
ATEX:AV valve systems are certified components in accordance with directive 2014/34/EUThe maximum input power must not exceed 20 W.The valve system must be installed in an ATEX-certified control cabinet with at least IP 54.The maximum expansion stage is set in the configurator. Min./max. ambient temperature -10 ... [45 °C]Min./max. medium temperature -10 ... [45 °C]
ATEX-certified valve systems with identification II 3G Ex nA IIC Gc can be generated in the Internet configurator.

Technical information

| Material | |
|--------------|---------------------|
| End plate | Aluminum, Polyamide |
| Base plate | Polyamide |
| Supply plate | Aluminum |

Dimensions

Dimensions D-Sub plug 25-pin top



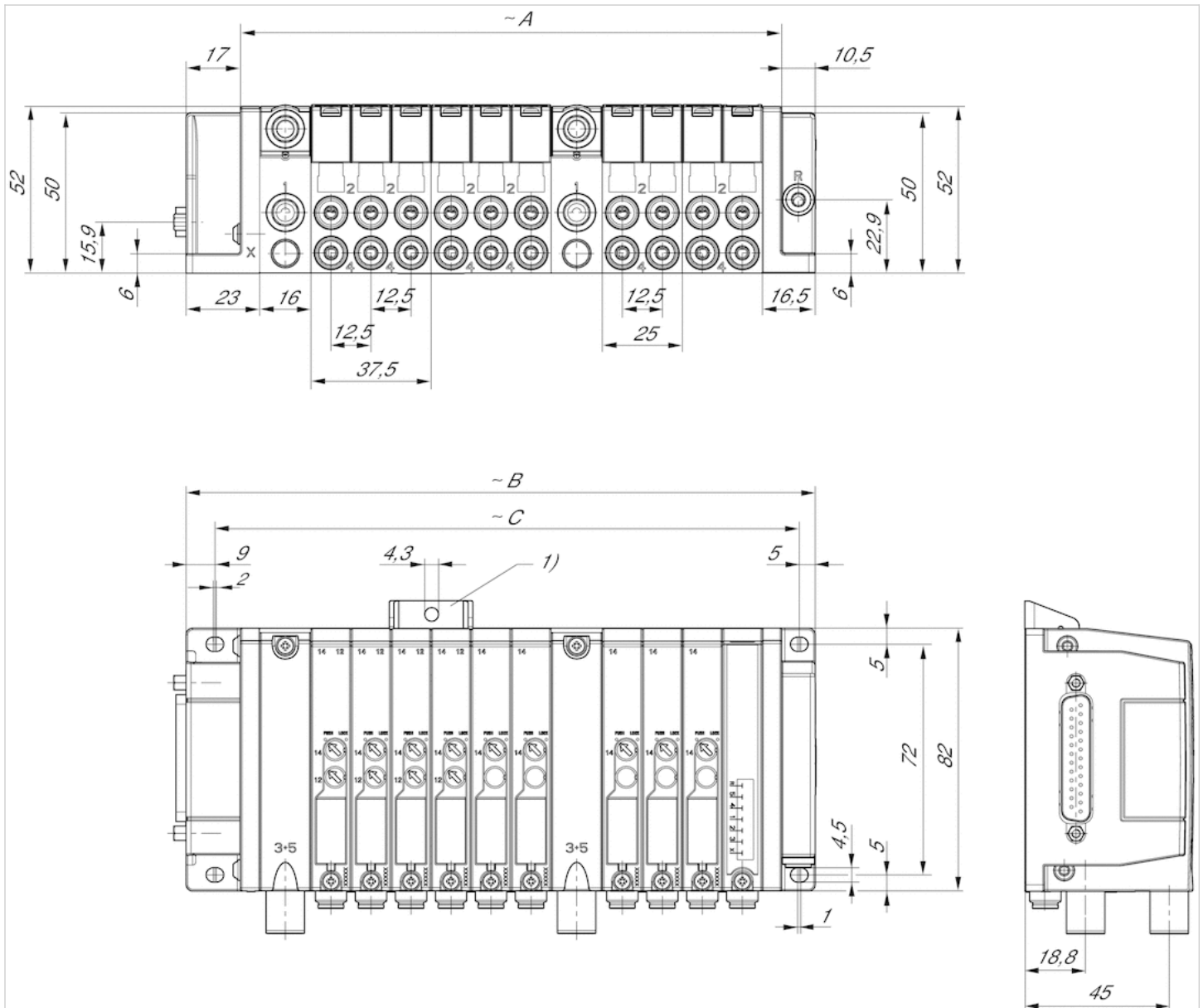
$A = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 12 \text{ mm}$
 $B = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 46.5 \text{ mm}$
 $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 25.5 \text{ mm}$

The supply plate in front of the first valve must be taken into consideration in the dimensions.

1 = push-in fitting $\varnothing 4 \text{ mm}$, $\varnothing 6 \text{ mm}$, and $\varnothing 8 \text{ mm}$. Connection angle 1: straight and 90° (exchangeable)
 2 and 4 = push-in fitting $\varnothing 3 \text{ mm}$. Connection angle: 90°
 2 and 4 = push-in fitting $\varnothing 4 \text{ mm}$ and $\varnothing 6 \text{ mm}$. Connection angle: straight and 90° (exchangeable)
 3 and 5 = push-in fitting $\varnothing 8 \text{ mm}$. Connection angle: straight
 R = collected exhaust air, push-in fitting $\varnothing 4 \text{ mm}$. Connection angle: straight
 X = external pilot, push-in fitting $\varnothing 4 \text{ mm}$. Connection angle: straight

An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

Dimensions D-Sub plug 25-pin on the side



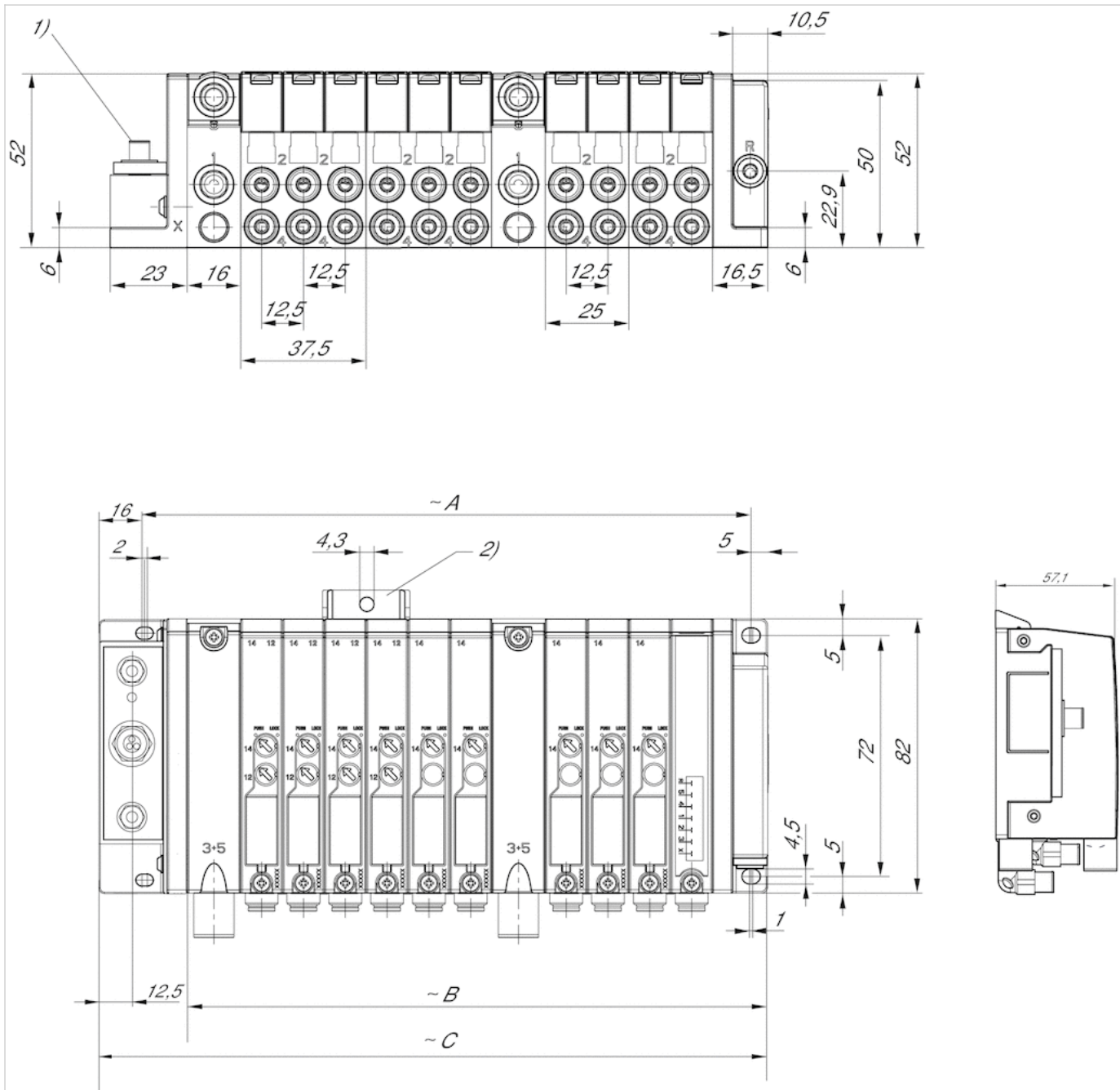
1) Retaining bracket (optional)

A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 12 mm B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 39.5 mm C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 25.5 mm
The supply plate in front of the first valve must be taken into consideration in the dimensions.

1 = push-in fitting Ø 4 mm, Ø 6 mm, and Ø 8 mm. Connection angle 1: straight and 90° (exchangeable) 2 and 4 = push-in fitting Ø3 mm. Connection angle: 90° 2 and 4 = push-in fitting Ø 4 mm and Ø 6 mm. Connection angle: straight and 90° (exchangeable) 3 and 5 = push-in fitting Ø8 mm. Connection angle: straight R = collected exhaust air, push-in fitting Ø 4 mm. Connection angle: straight X = external pilot, push-in fitting Ø 4 mm. Connection angle: straight

An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

Dimensions IO-Link



1) IO-Link

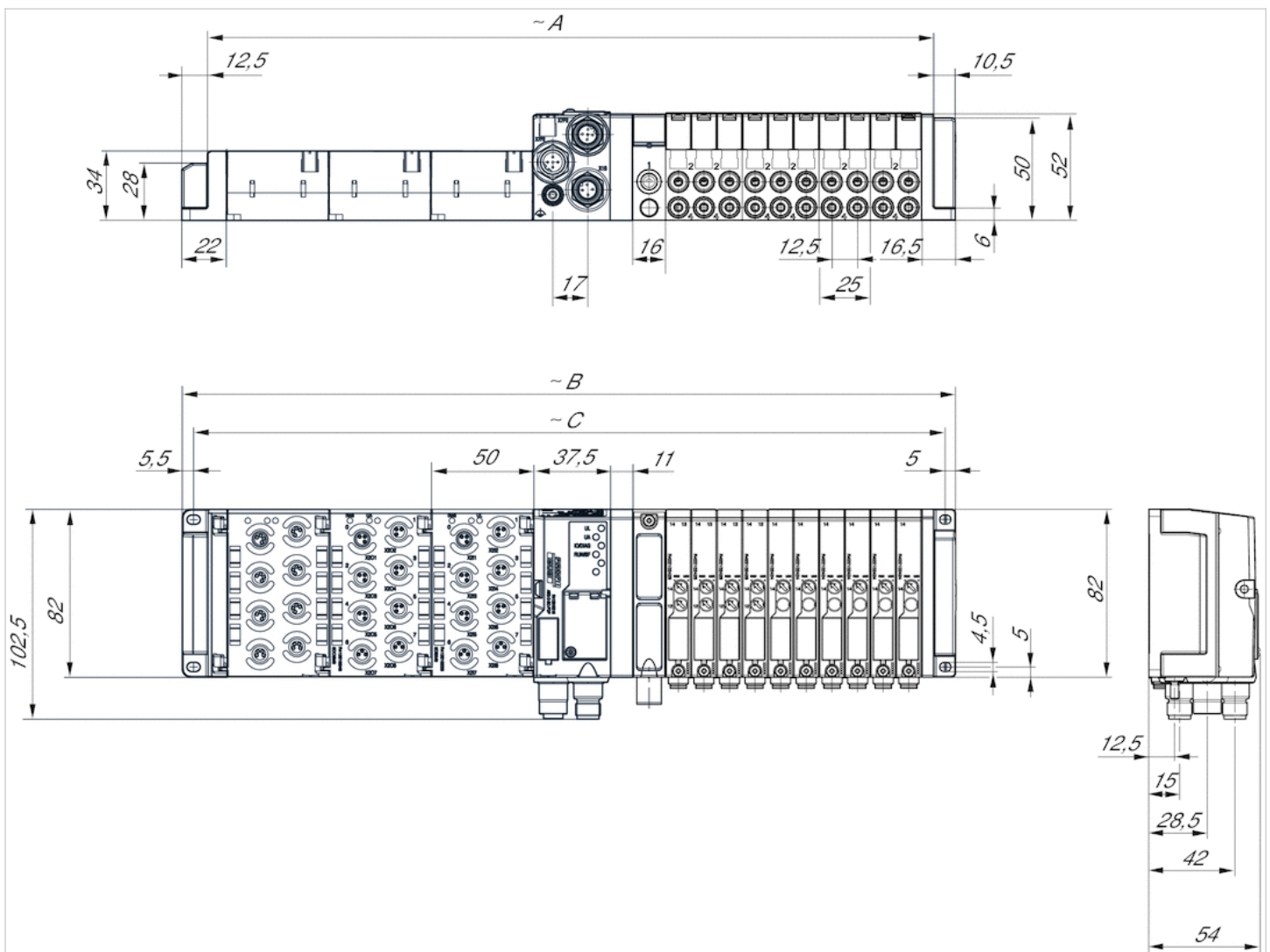
2) Retaining bracket (optional)

$A = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 12 \text{ mm}$
 $B = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 39.5 \text{ mm}$
 $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 25.5 \text{ mm}$
 The supply plate in front of the first valve must be taken into consideration in the dimensions.

1 = push-in fitting $\varnothing 4 \text{ mm}$, $\varnothing 6 \text{ mm}$, and $\varnothing 8 \text{ mm}$. Connection angle 1: straight and 90° (exchangeable)
 2 and 4 = push-in fitting $\varnothing 3 \text{ mm}$. Connection angle: 90°
 2 and 4 = push-in fitting $\varnothing 4 \text{ mm}$ and $\varnothing 6 \text{ mm}$. Connection angle: straight and 90° (exchangeable)
 3 and 5 = push-in fitting $\varnothing 8 \text{ mm}$. Connection angle: straight
 R = collected exhaust air, push-in fitting $\varnothing 4 \text{ mm}$. Connection angle: straight
 X = external pilot, push-in fitting $\varnothing 4 \text{ mm}$. Connection angle: straight

An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

Dimensions Field bus connection with I/O functionality (AES)



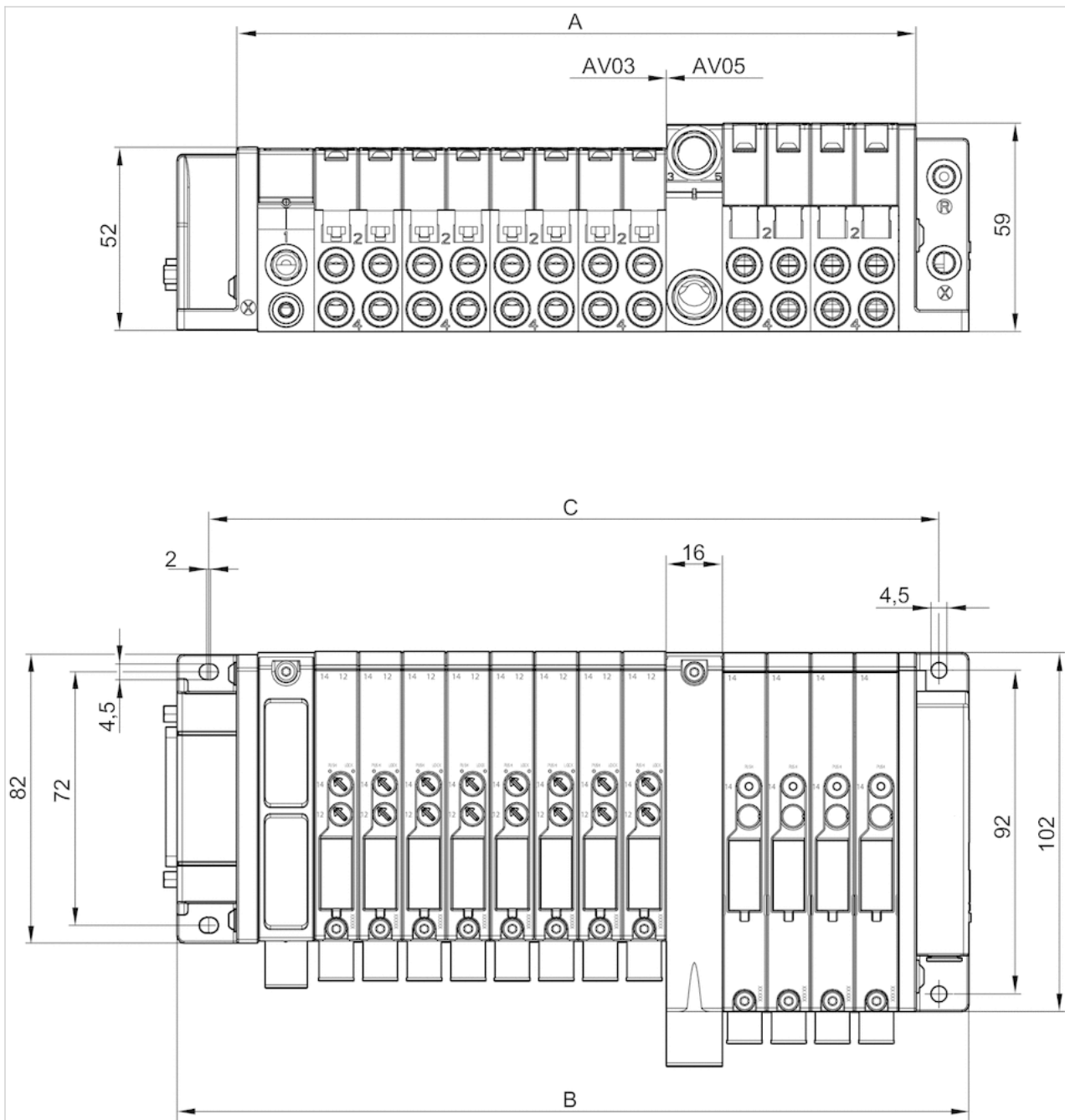
$A = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 64 \text{ mm}$
 $B = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 87 \text{ mm}$
 $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 76.5 \text{ mm}$

The supply plate in front of the first valve must be taken into consideration in the dimensions.

1 = push-in fitting Ø 4 mm, Ø 6 mm, and Ø 8 mm. Connection angle 1: straight and 90° (exchangeable)
 2 and 4 = push-in fitting Ø 3 mm. Connection angle: 90°
 2 and 4 = push-in fitting Ø 4 mm and Ø 6 mm. Connection angle: straight and 90° (exchangeable)
 3 and 5 = push-in fitting Ø 8 mm. Connection angle: straight
 R = collected exhaust air, push-in fitting Ø 4 mm. Connection angle: straight
 X = external pilot, push-in fitting Ø 4 mm. Connection angle: straight

An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

Dimensions AV03/AV05 in combination



D-Sub plug, top or side

A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 11 mm B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 43 mm C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 25.5 mm
Bus coupler

A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + number of I/O x 50 mm + 63 mm B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + number of I/O x 50 mm + 90.5 mm C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + number of I/O x 50 mm + 76.5 mm

The supply plate in front of the first valve must be taken into consideration in the dimensions.

1 = push-in fitting Ø12 mm. Connection angle 1: straight (exchangeable fittings) 2 and 4 = push-in fitting Ø6 mm and Ø8 mm.

Connection angle: straight and 90° (exchangeable fittings) 3 und 5 = push-in fitting Ø12 mm. Connection angle: straight R = collected pilot exhaust air, push-in fitting Ø6 mm. Connection angle: straight X = external pilot, push-in fitting Ø6 mm. Connection angle: straight