

AV05 series valve system

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



Blocking principle

Working pressure min./max.

Control pressure min./max.

Ambient temperature min./max.

Medium temperature min./max.

Medium

Max. particle size

Oil content of compressed air

Nominal flow Q_n

Operational voltage electronics

Number of valve positions max.

Protection class with connection

Voltage tolerance DC

Combination of double and triple base plate principles

-0,95 ... 10 bar

3 ... 8 bar

-10 ... 60 °C

-10 ... 60 °C

Compressed air

40 µm

0 ... 5 mg/m³

700 l/min

24 V DC


64

IP65

-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	type B	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)
	AV05-BP	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	22 valves (24 coils) 32 valves (40 coils) 32 valves (64 coils)

	Version	You have the following options:	Max.
	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.

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]

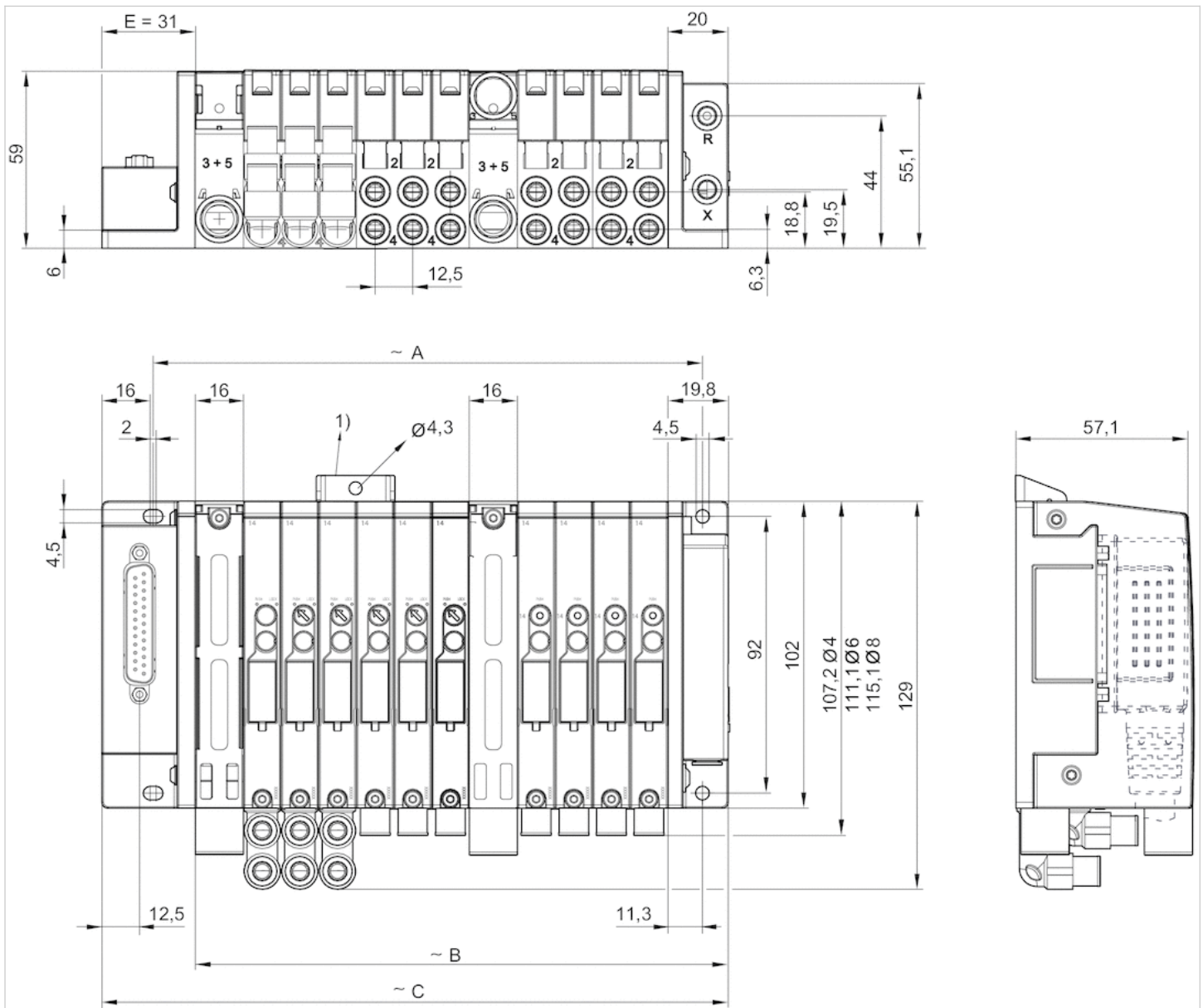
ATEX-certified valve systems with identification II 3G Ex nA IIC Gc can be generated in the Internet configurator.

Technical information

Material	
End plate	Polyamide, fiber-glass reinforced
Base plate	Polyamide, fiber-glass reinforced
Supply plate	Aluminum Polyamide, fiber-glass reinforced

Dimensions

Dimensions in mm D-Sub plug 25-pin 44-pin top



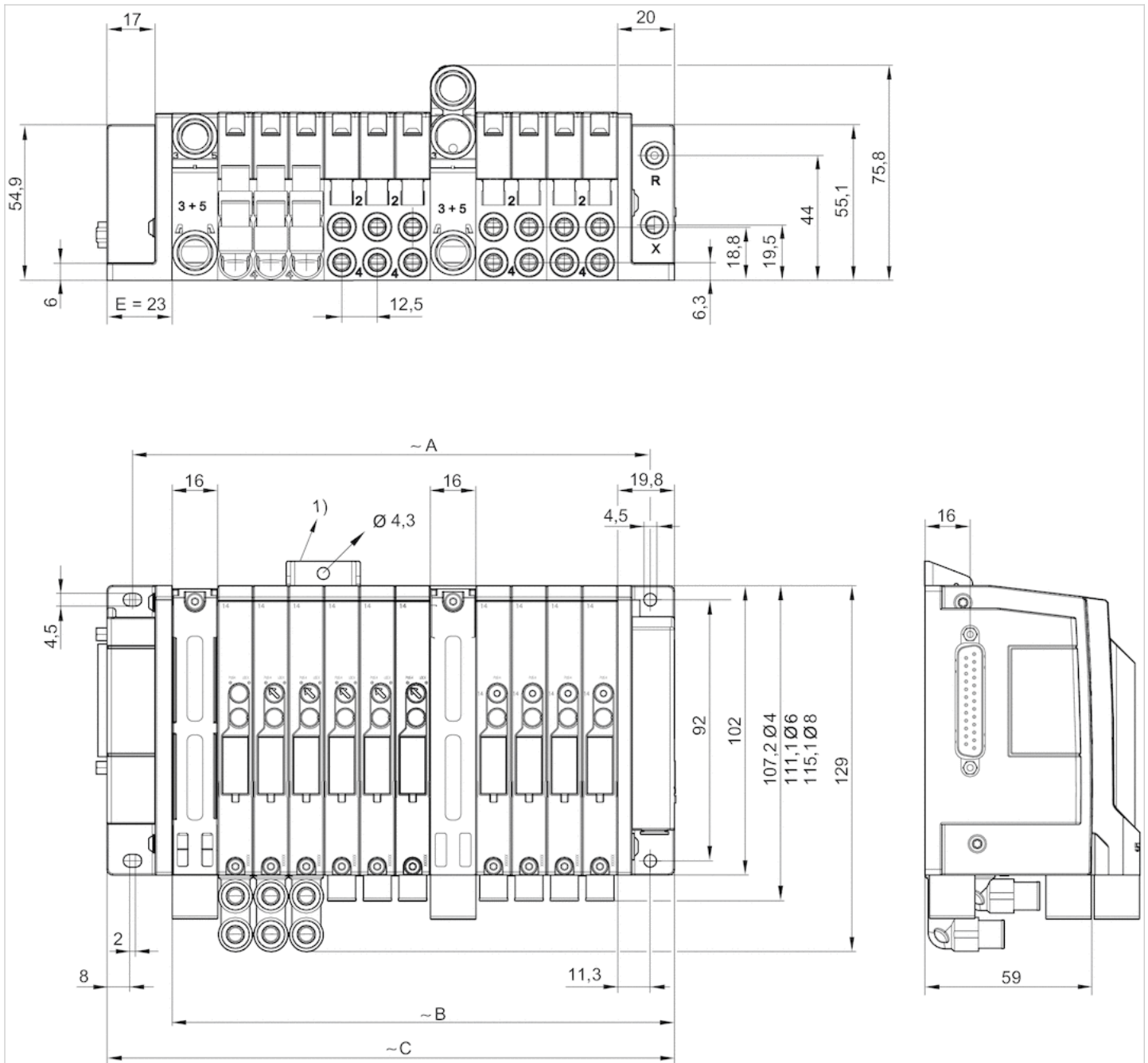
1) Retaining bracket (optional)

A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 25.5 mm B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 20 mm C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 51 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
An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.



1) Retaining bracket (optional)

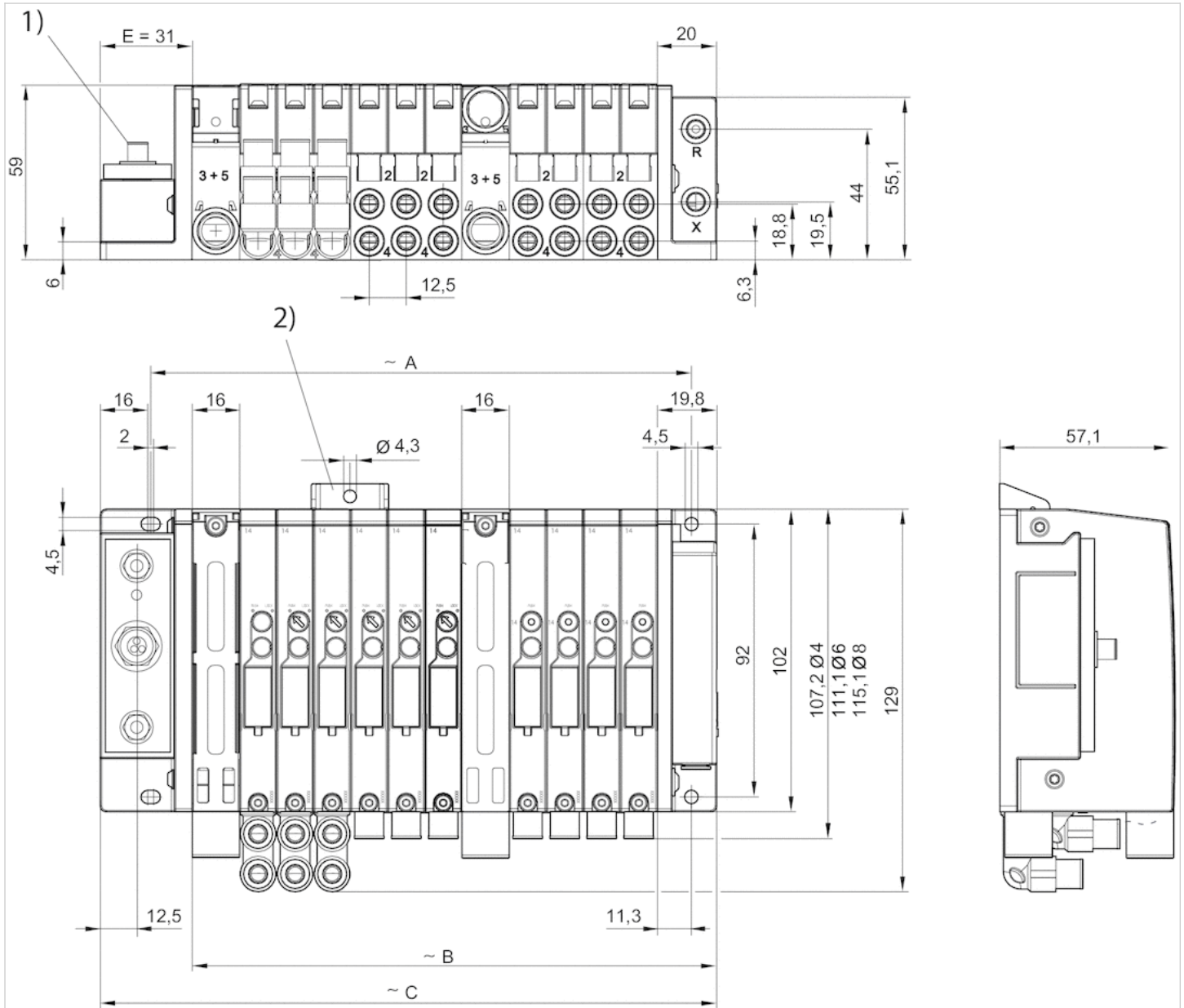
A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 25.5 mm B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 20 mm C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 43 mm

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

Dimensions in mm IO-Link



1) IO-Link

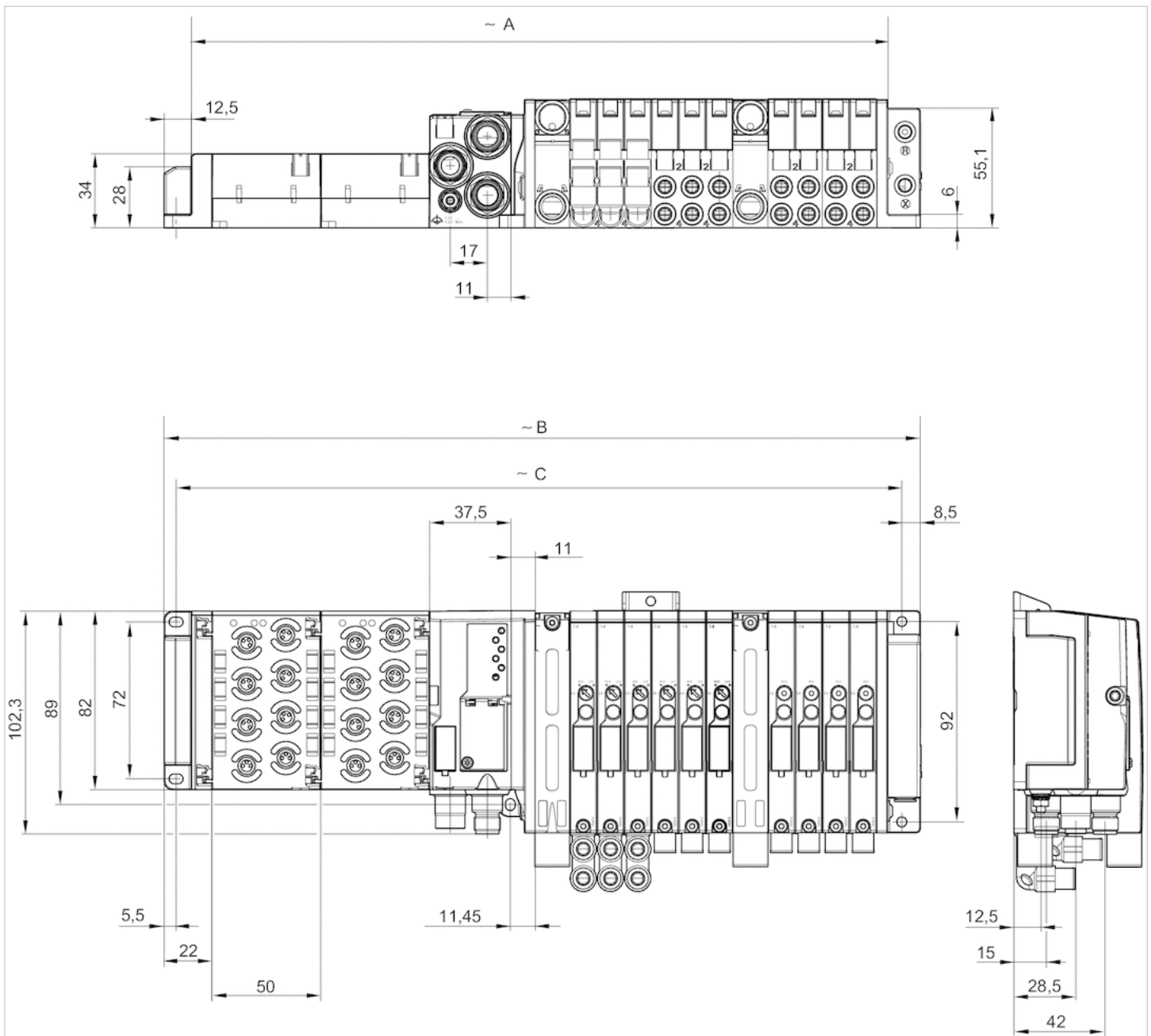
2) Retaining bracket (optional)

A = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 25.5 mm
 B = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 20 mm
 C = number of valve positions x 12.5 mm + number of supply plates x 16 mm + 43 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 and 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
 An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

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



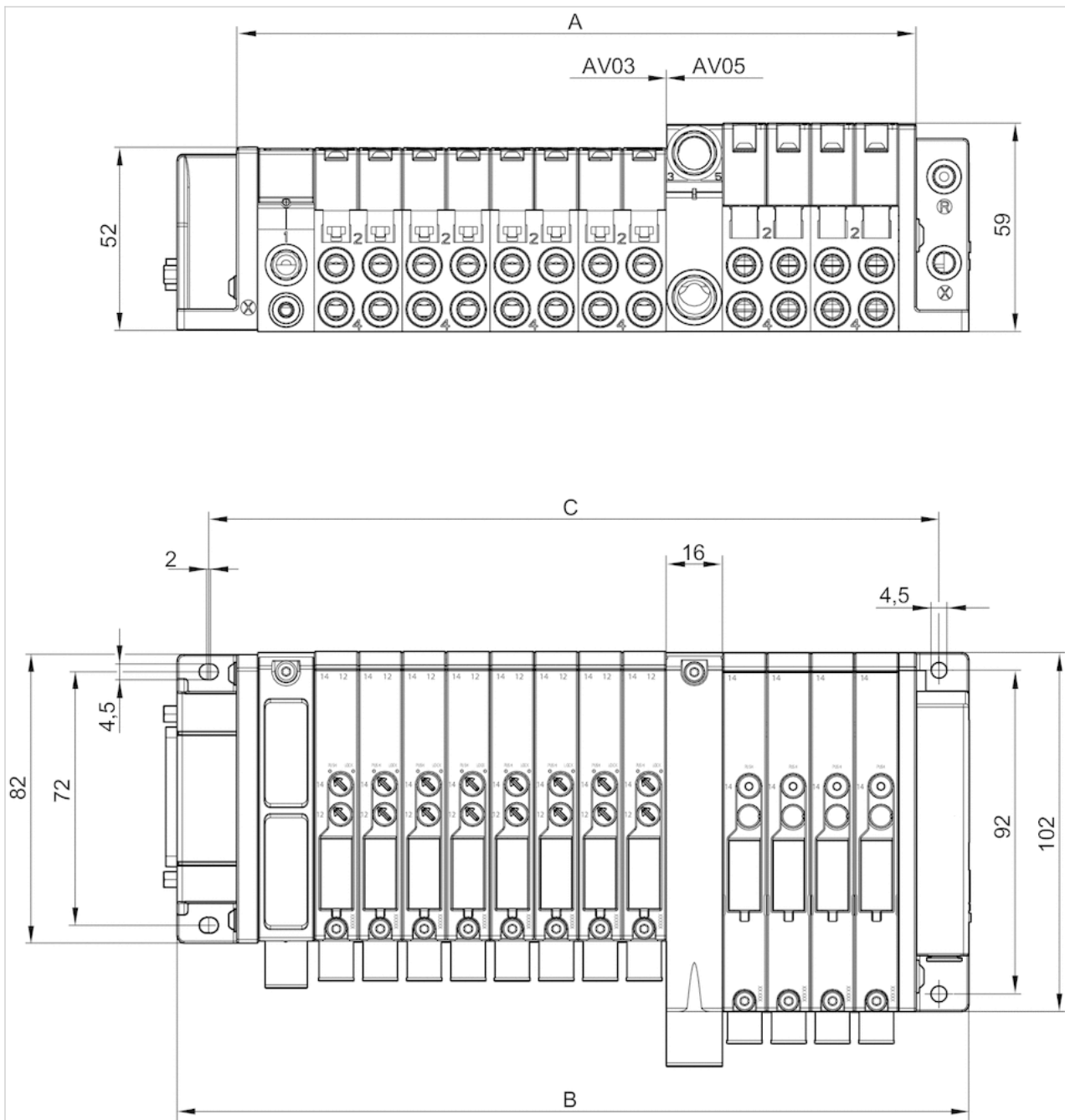
A = number of valve positions $\times 12,5$ mm + number of supply plates $\times 16$ mm + number of I/O $\times 50$ mm + 63 mm
 B = number of valve positions $\times 12,5$ mm + number of supply plates $\times 16$ mm + number of I/O $\times 50$ mm + 90,5 mm
 C = number of valve positions $\times 12,5$ mm + number of supply plates $\times 16$ mm + number of I/O $\times 50$ 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 $\varnothing 12$ mm. Connection angle 1: straight (exchangeable fittings) 2 and 4 = push-in fitting $\varnothing 6$ mm and $\varnothing 8$ mm.

Connection angle: straight and 90° (exchangeable fittings) 3 and 5 = push-in fitting $\varnothing 12$ mm. Connection angle: straight R = collected pilot exhaust air, push-in fitting $\varnothing 6$ mm. Connection angle: straight X = external pilot, push-in fitting $\varnothing 6$ 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

$A = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 11 \text{ mm}$
 $B = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 43 \text{ mm}$
 $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + 25.5 \text{ mm}$

Bus coupler

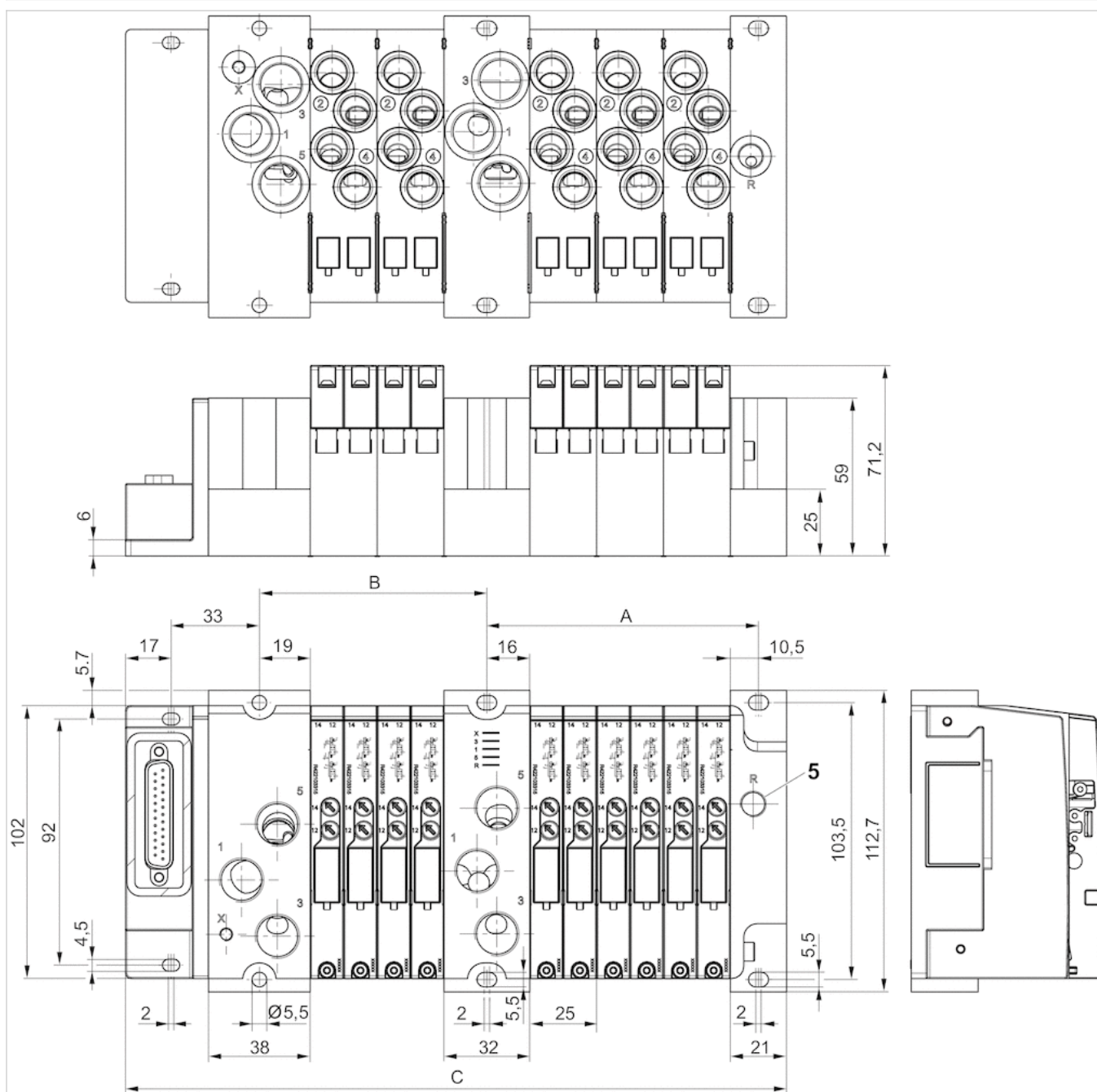
$A = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 63 \text{ mm}$
 $B = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 90.5 \text{ mm}$
 $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of supply plates} \times 16 \text{ mm} + \text{number of I/O} \times 50 \text{ mm} + 76.5 \text{ mm}$

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

1 = push-in fitting $\varnothing 12 \text{ mm}$. Connection angle 1: straight (exchangeable fittings) 2 and 4 = push-in fitting $\varnothing 6 \text{ mm}$ and $\varnothing 8 \text{ mm}$.

Connection angle: straight and 90° (exchangeable fittings) 3 and 5 = push-in fitting $\varnothing 12 \text{ mm}$. Connection angle: straight R = collected pilot exhaust air, push-in fitting $\varnothing 6 \text{ mm}$. Connection angle: straight X = external pilot, push-in fitting $\varnothing 6 \text{ mm}$. Connection angle: straight

Dimensions AV-BP


$$A = \text{number of valve positions} \times 12.5 \text{ mm} + 26.5 \text{ mm}$$

$$B = \text{number of valve positions} \times 12.5 \text{ mm} + 35 \text{ mm}$$

D-SUB: $C = \text{number of valve positions} \times 12.5 \text{ mm} + \text{number of I/Os} \times 32 \text{ mm} + 90 \text{ mm}$
 AES: $C = \text{number of valve positions} \times 12.5 + \text{number of I/Os} \times 32 + \text{number of I/Os} \times 50 + 129$.

Connections 1, 3, 5 on bottom: G3/8, depth 10.5 mm, max. external push-in fitting diameter: 24 mm
Connections 1, 3, 5 on top: G3/8, depth 12 mm, max. external push-in fitting diameter: 24 mm

Connection X: M5, depth 8 mm, max. external push-in fitting diameter: 12 mm