Series ES05

AVENTICS™ Series ES05

EMERSON.

Valve system, Series ES05

- Configurable valve systems

Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
Operational voltage electronics	24 V DC
Number of valve positions max.	12
Number of solenoid coils max.	24
Protection class with connection	IP65 IP50
DC operating voltage	24 V
Voltage tolerance DC	-15% / +10%
Duty cycle	100 %

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

Overview of variants

	Version	You have the following options:
	Multipole	D-Sub plug, 25-pin, on the side
	Single plug-in wiring	Electrical connection Valve plug connector form C industry
	Single plug-in wiring	Electrical connection M8x1 (3-pin)
	Fieldbus connection with I/O functionality (AES)	PROFINET IO EtherCAT DeviceNet POWERLINK PROFIBUS DP CANopen EtherNET/IP POWERLINK
	IO-Link	type B

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).

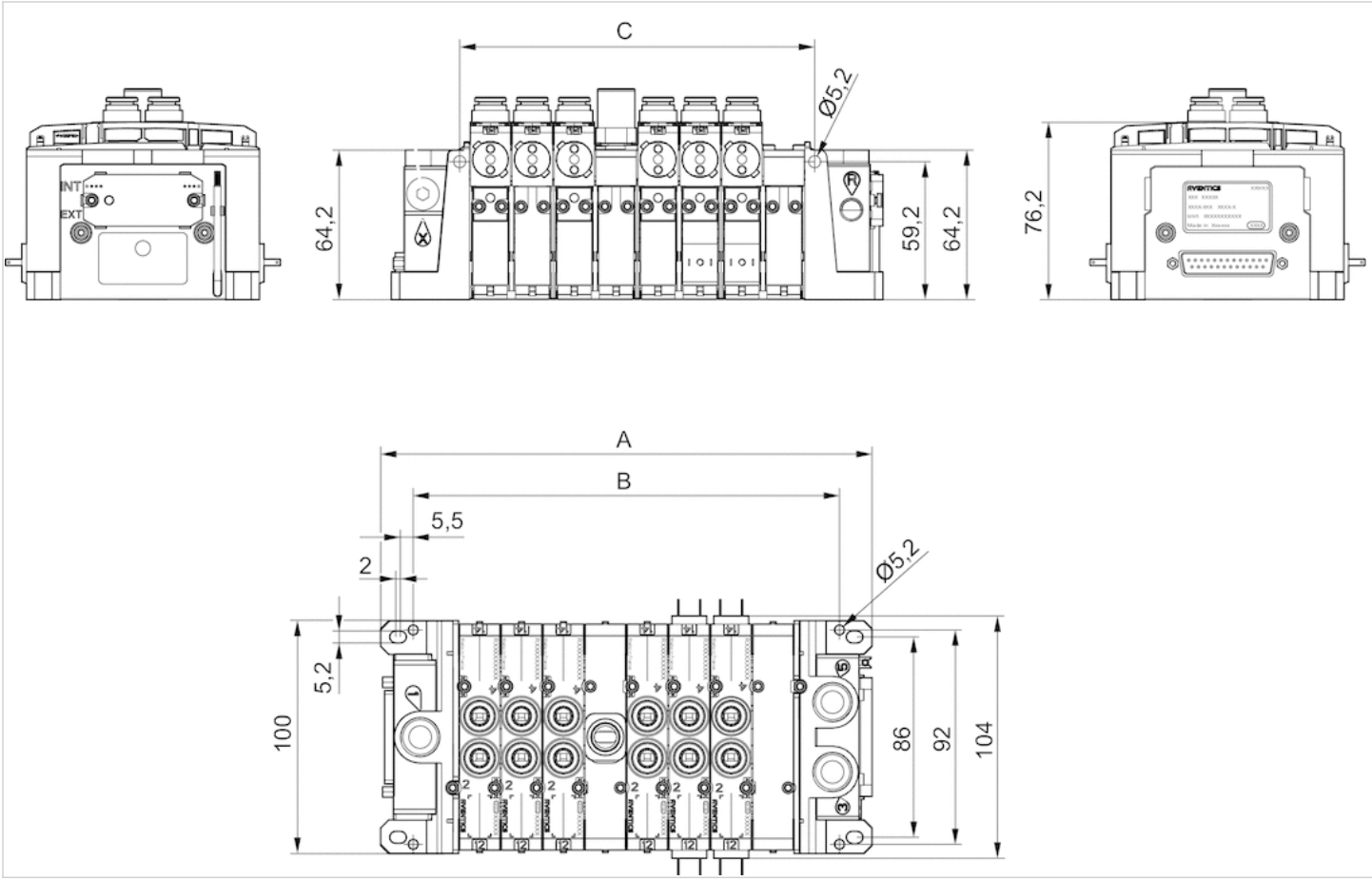
See the following pages on the series for technical data on individual components.
Do not permanently control more than 2 neighboring valves (see operating instructions)
Only use fittings with cylindrical threads (BSPP).

Technical information

Material	
End plate	Polyamide fiber-glass reinforced
Base plate	Polyamide fiber-glass reinforced

Dimensions

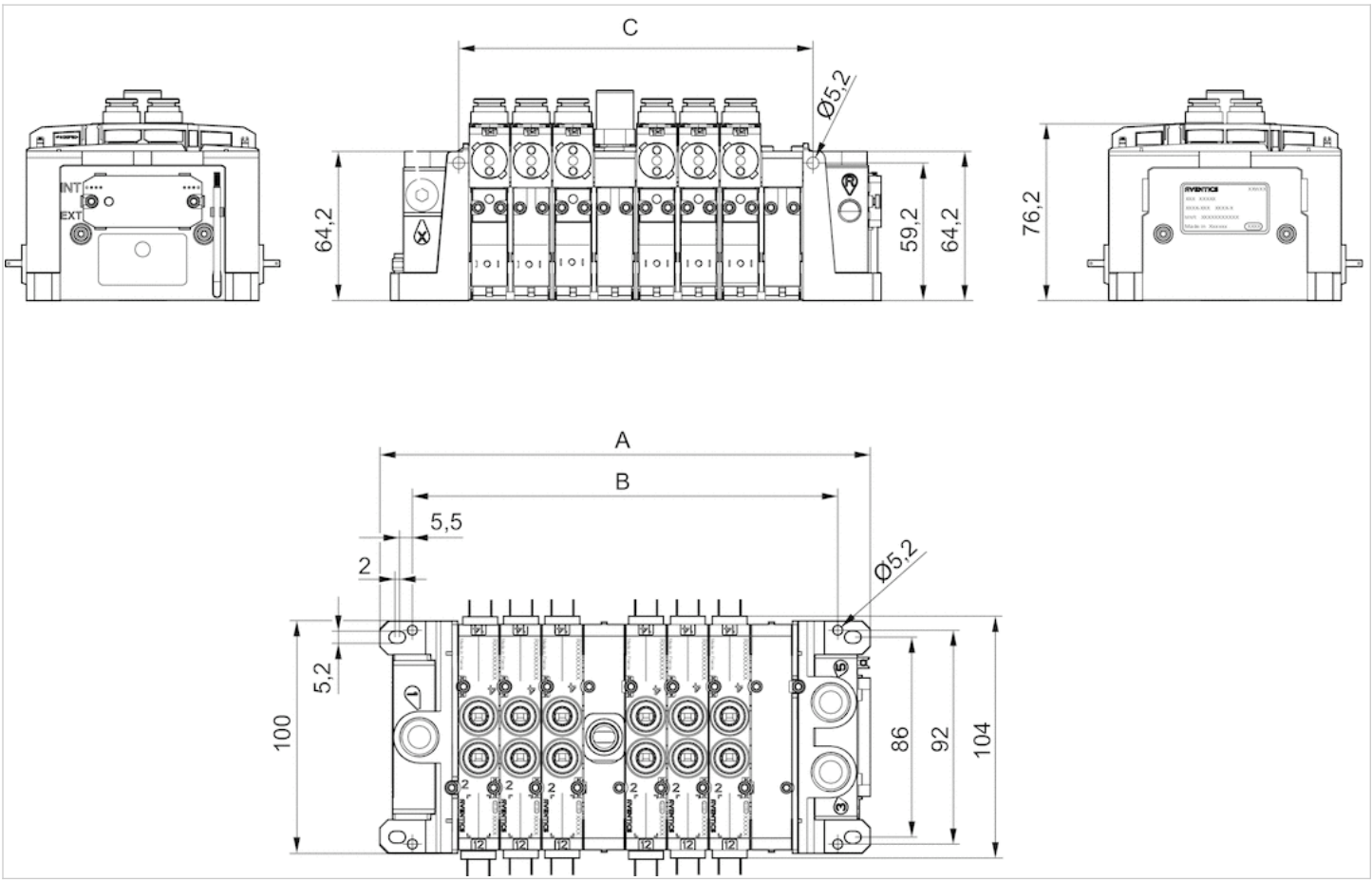
Dimensions, D-Sub plug, 25-pin, on the side



A = number of subbases x 36 + 67 mm
B = number of subbases x 36 + 39 mm
C = number of subbases x 36 + 8,4 mm
1 = compressed air connection, G3/8″
2, 4 = working connection, Ø8 or D3/8″

3, 5 = exhaust, G3/8″
R = pilot exhaust air, G1/8″
X = connection for external pilot, G1/8”
An example configuration is shown. You can calculate the dimensions for your configuration using the formula or read them directly in the configurator.

Dimensions, Valve plug connector form C industry



A = number of subbases x 36 + 67 mm
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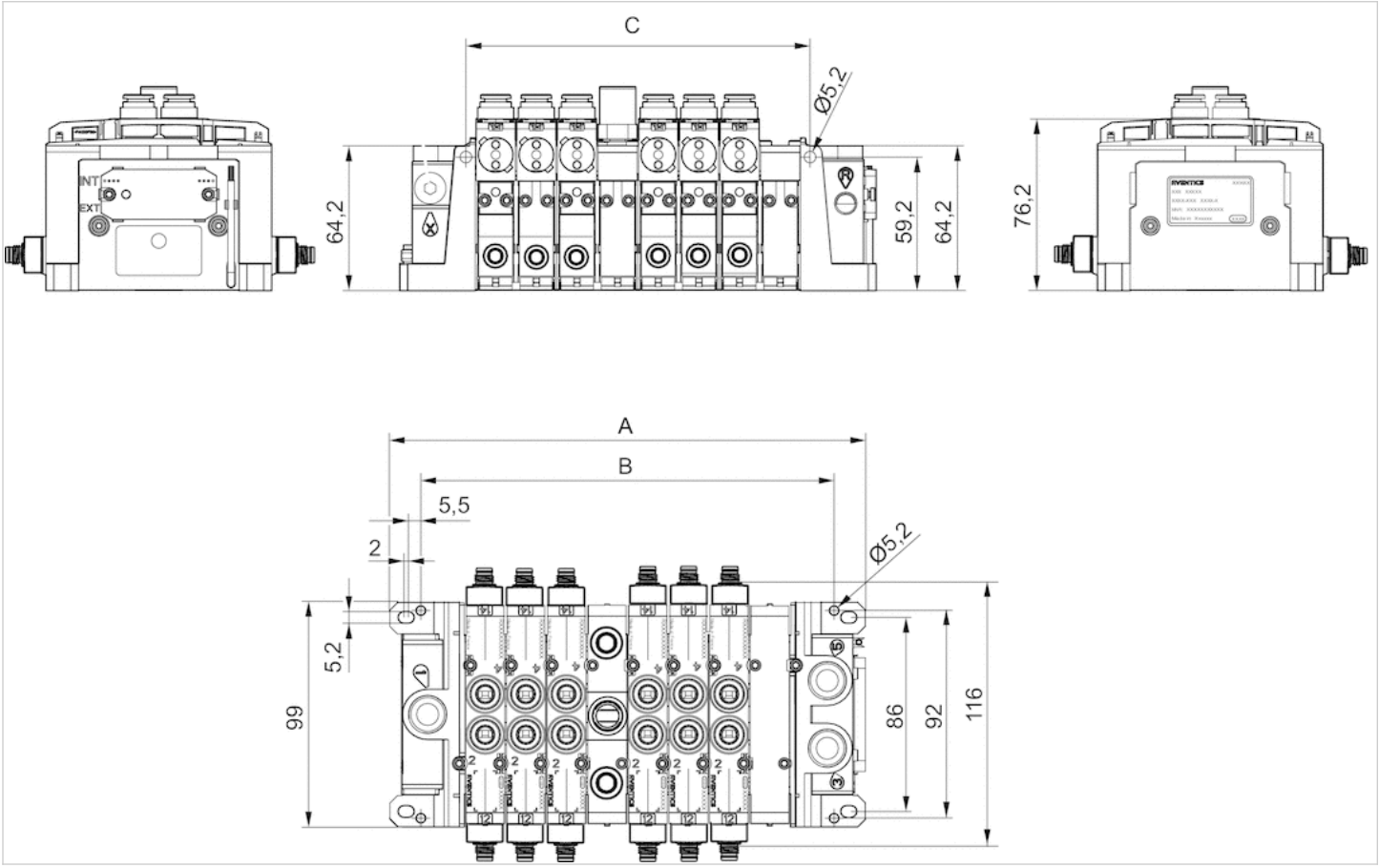
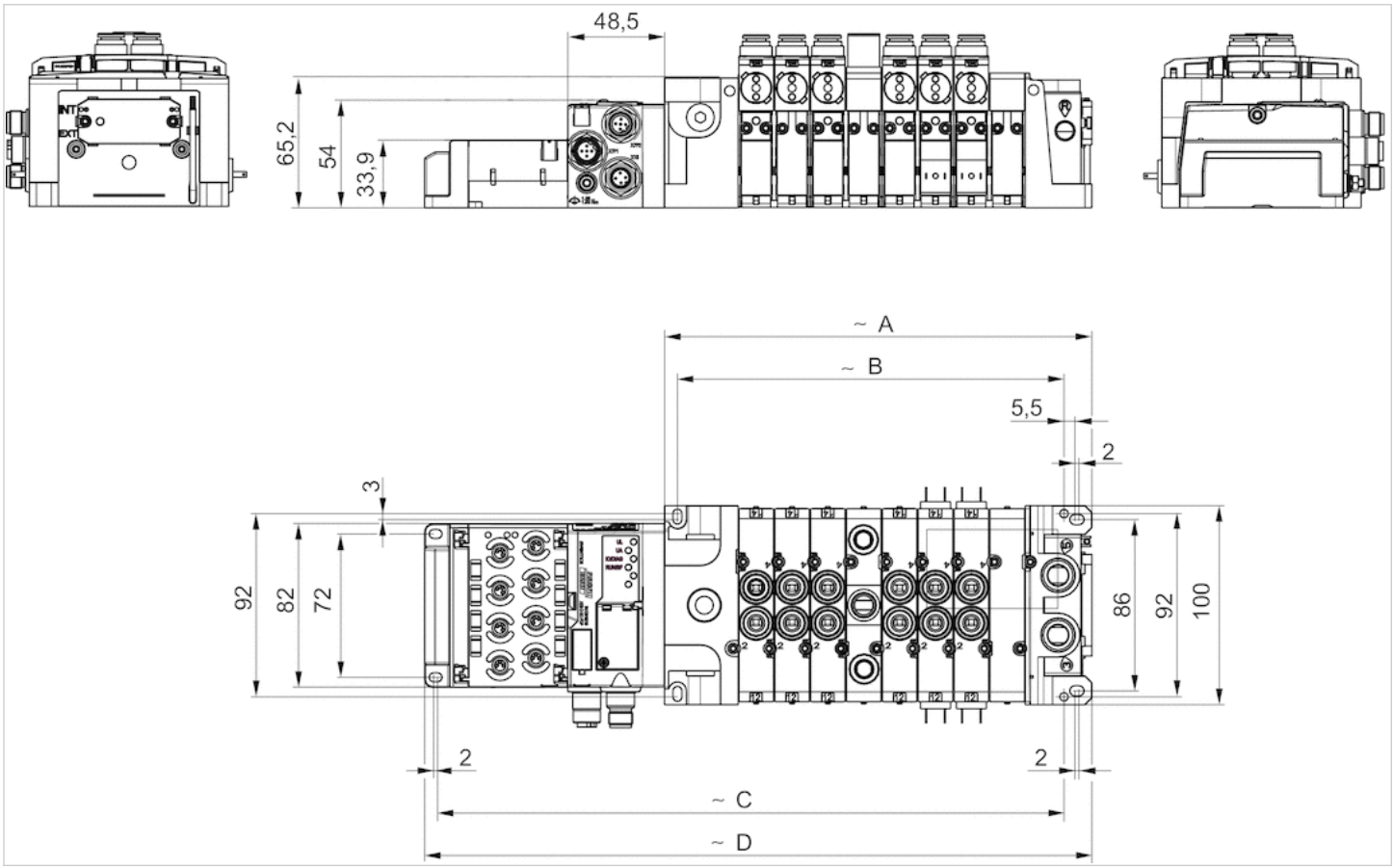
C = number of subbases x 36 + 8,4 mm
1 = compressed air connection, G3/8″
2, 4 = working connection, Ø8 or D3/8″
3, 5 = exhaust, G3/8″
R = pilot exhaust air, G1/8″
X = connection for external pilot, G1/8”
An example configuration is illustrated. The delivered product may thus deviate from the illustration.

Dimensions, Electr. connection: M8, 3-pin



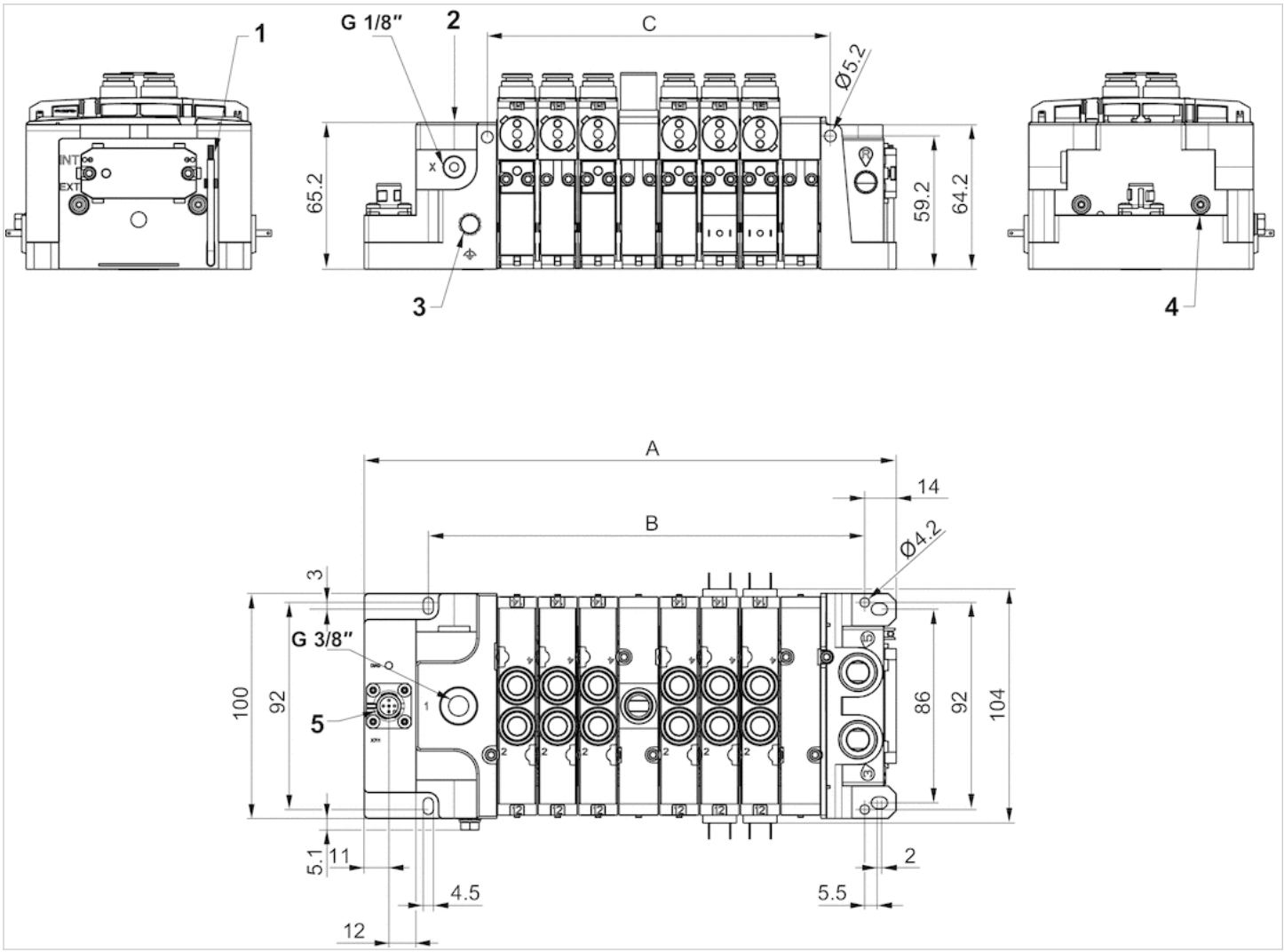
A = number of subbases x 36 + 67 mm
B = number of subbases x 36 + 39 mm
C = number of subbases x 36 + 8,4 mm
1 = compressed air connection, G3/8″
2, 4 = working connection, Ø8 or D3/8″
3, 5 = exhaust, G3/8″
R = pilot exhaust air, G1/8″
X = connection for external pilot, G1/8”
An example configuration is illustrated. The delivered product may thus deviate from the illustration.

Dimensions, Fieldbus connection with I/O functionality (AES)



A = number of subbases x 36 + 70,5 mm
B = number of subbases x 36 + 50 mm
C = number of subbases x 36 + number of I/O modules x 50 + 120.5 mm
D = number of subbases x 36 + number of I/O modules x 50 + 141 mm
1 = compressed air connection, G3/8″
2, 4 = working connection, Ø8 or D3/8″
3, 5 = exhaust, G3/8″
R = pilot exhaust air, G1/8″
X = connection for external pilot, G1/8”
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) Hexalobular socket (TORX) ISO 10664-10
2) End plate left, IO-Link
3) Ground
4) Hexalobular socket (TORX) ISO 10664-10
5) M12 plug

2x3/2-directional valve, Series ES05

- 2x3/2
- Qn = 370-500 l/min
- NC/NC NO/NO
- Compressed air connection output : Ø 8
- Electrical connection : form C, industry
- Manual override : without detent
- single solenoid

Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422103177		NC/NC	Ø 8	Ø 8
R422103178		NO/NO	Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103177	Ø 8	24 V	-15% / +10%
R422103178	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Nominal flow Qn	Switch-on time	Switch-off time
	DC			
R422103177	2 W	500 l/min	20	20
R422103178	2 W	370 l/min	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar

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).
The pilot valve is UL (Underwriters Laboratories) certified.

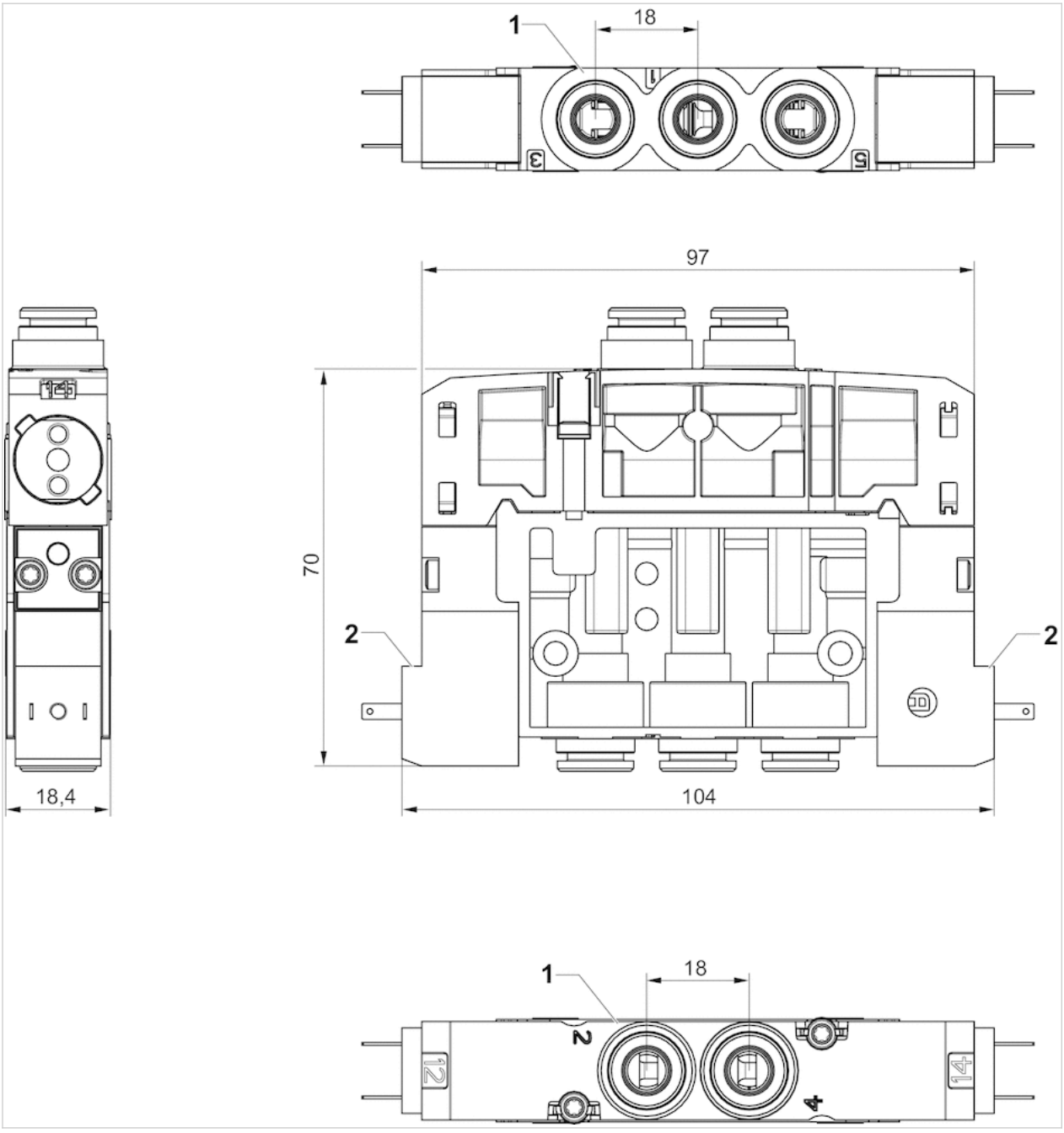
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced

Dimensions

Dimensions



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 2 pilot valves with external electrical connection

2x3/2-directional valve, Series ES05

- 2x3/2
- Qn = 370-500 l/min
- NC/NC NO/NO
- Compressed air connection output : Ø 8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- single solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422103857		NC/NC	Ø 8	Ø 8
R422103858		NO/NO	Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103857	Ø 8	24 V	-15% / +10%
R422103858	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Nominal flow Qn	Switch-on time	Switch-off time
	DC			
R422103857	2 W	500 l/min	20	20
R422103858	2 W	370 l/min	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar

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).

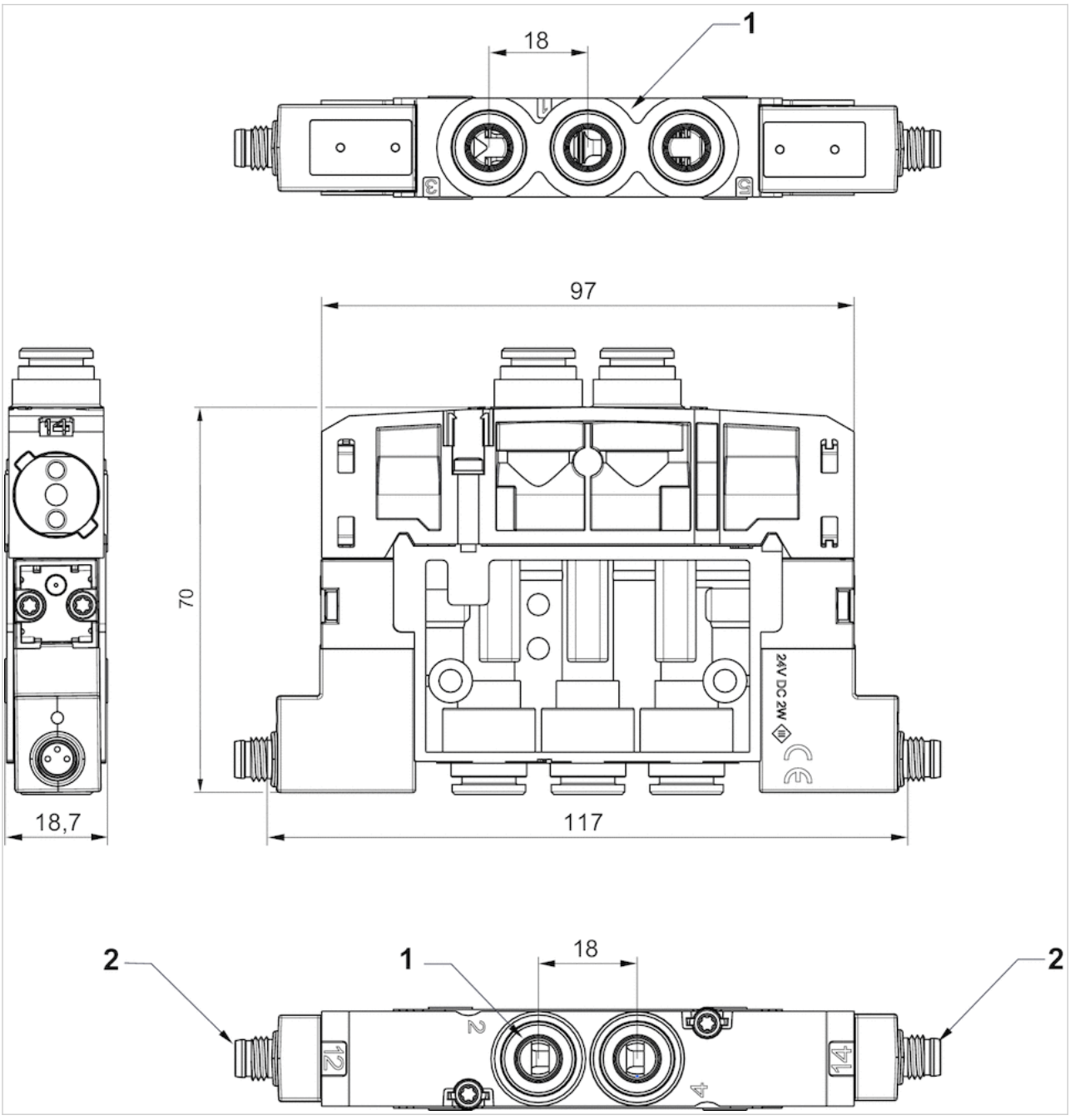
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced

Dimensions

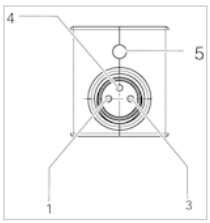
Dimensions



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 1 pilot valve with electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

5/2-directional valve, Series ES05

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 8
- Electrical connection : form C, industry
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103175		Ø 8	Ø 8
R422103176		Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103175	Ø 8	24 V	-15% / +10%
R422103176	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time	Fig.
	DC			
R422103175	2 W	20	35	Fig. 1
R422103176	2 W	20	20	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

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).
The pilot valve is UL (Underwriters Laboratories) certified.

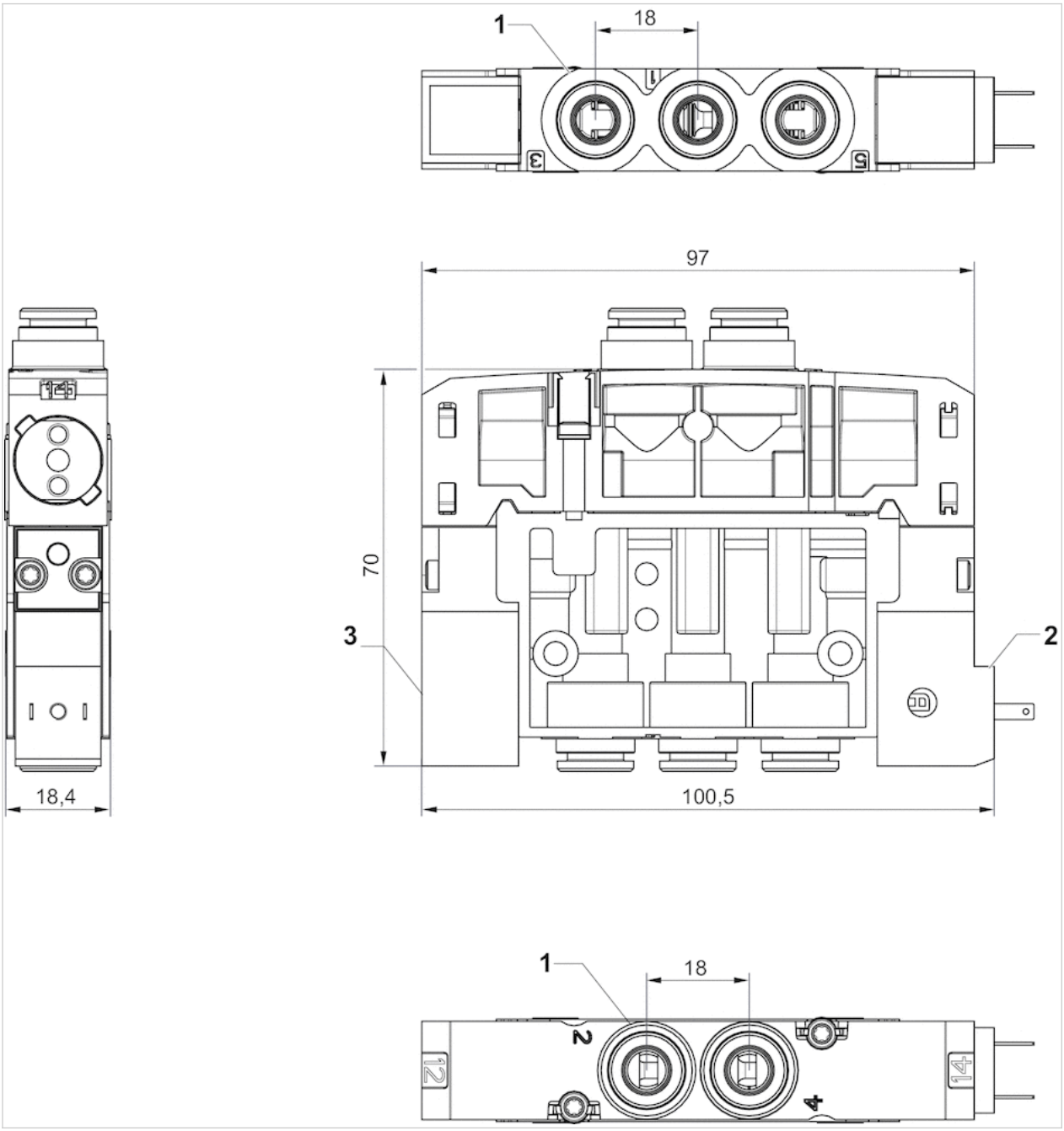
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

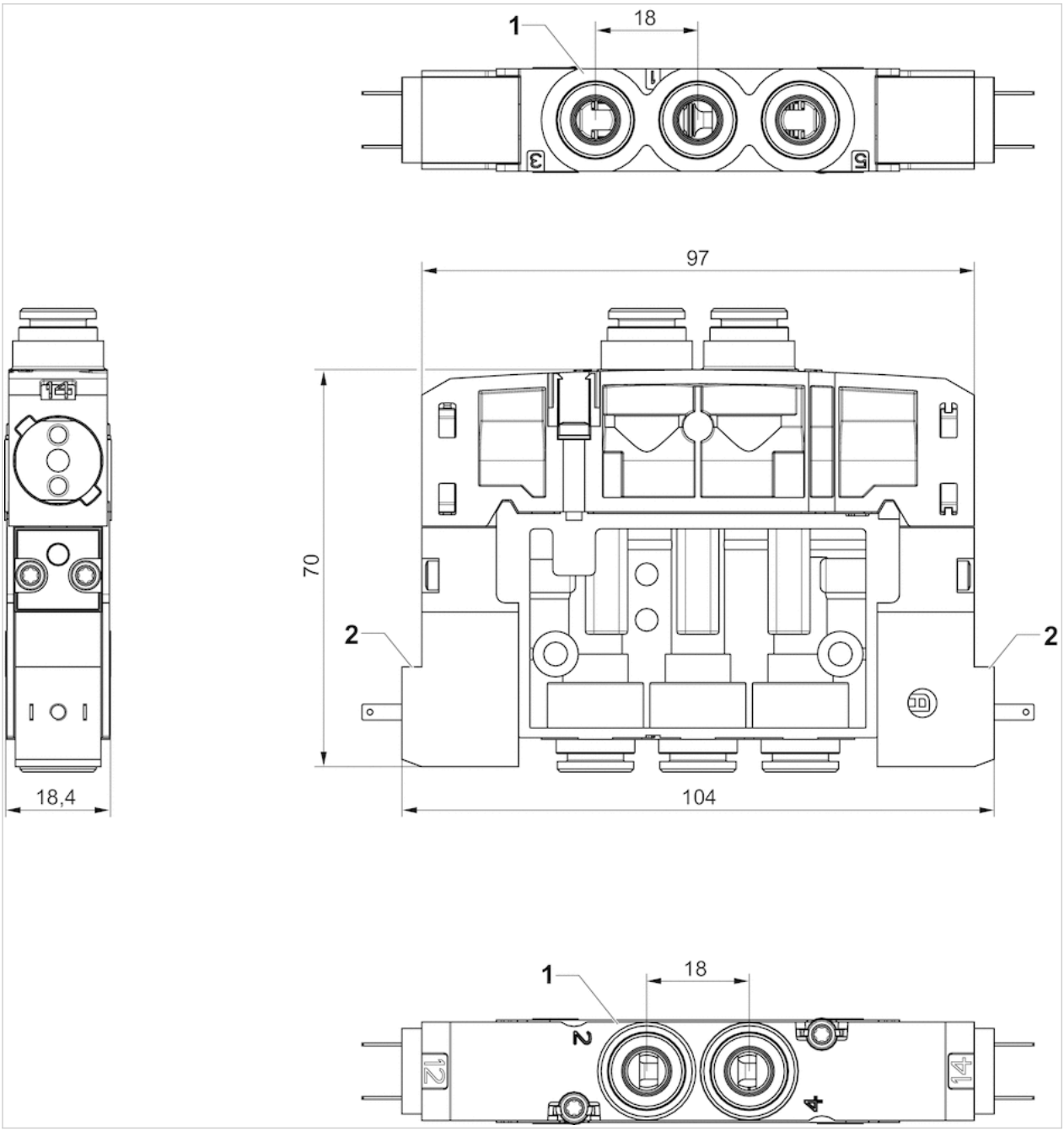
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 1 pilot valve with electrical connection
3) Pilot blanking plate

Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 2 pilot valves with external electrical connection

5/2-directional valve, Series ES05

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103855		Ø 8	Ø 8
R422103856		Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103855	Ø 8	24 V	-15% / +10%
R422103856	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time	Fig.
	DC			
R422103855	2 W	20	35	Fig. 1
R422103856	2 W	20	20	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

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).

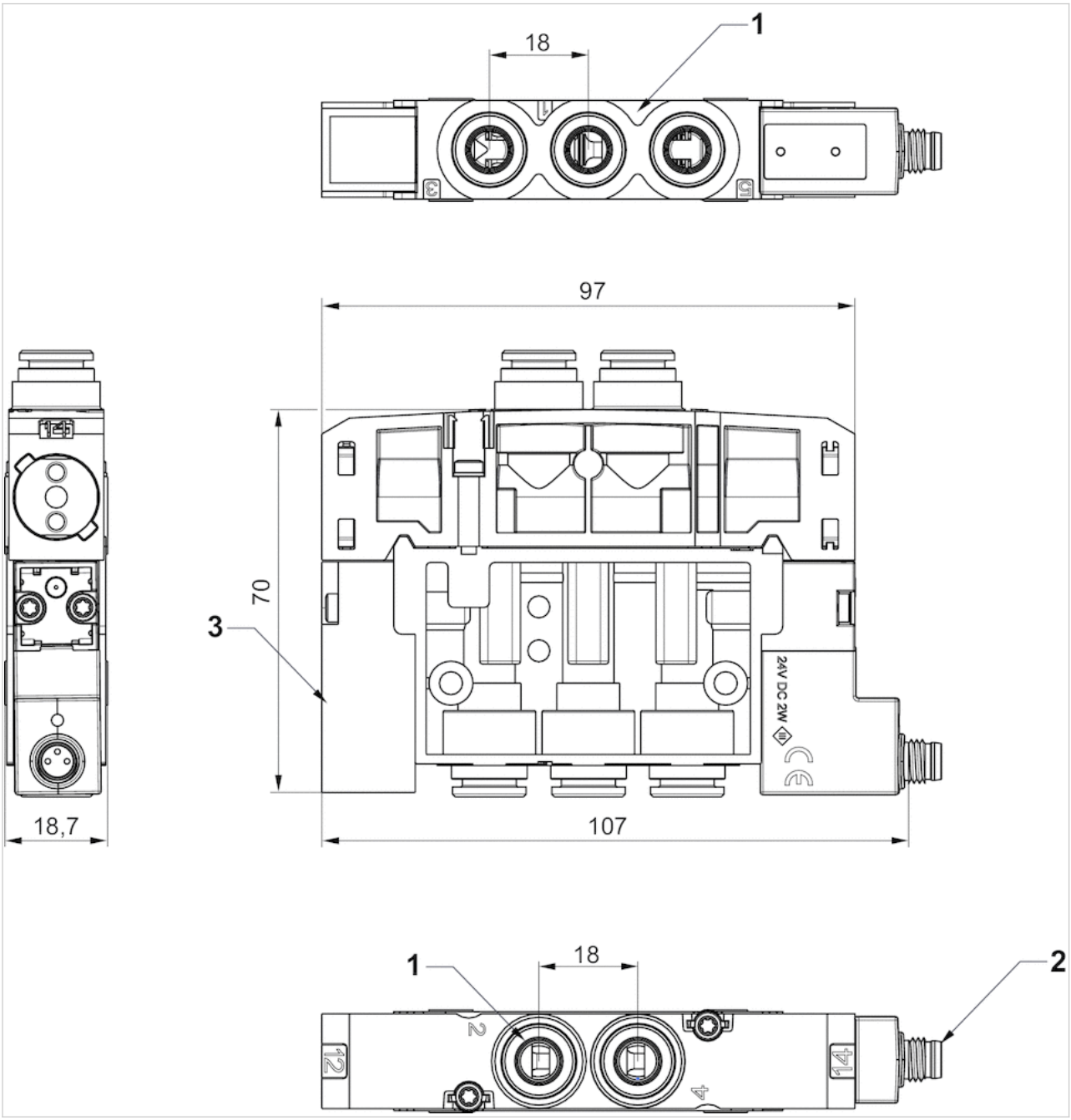
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

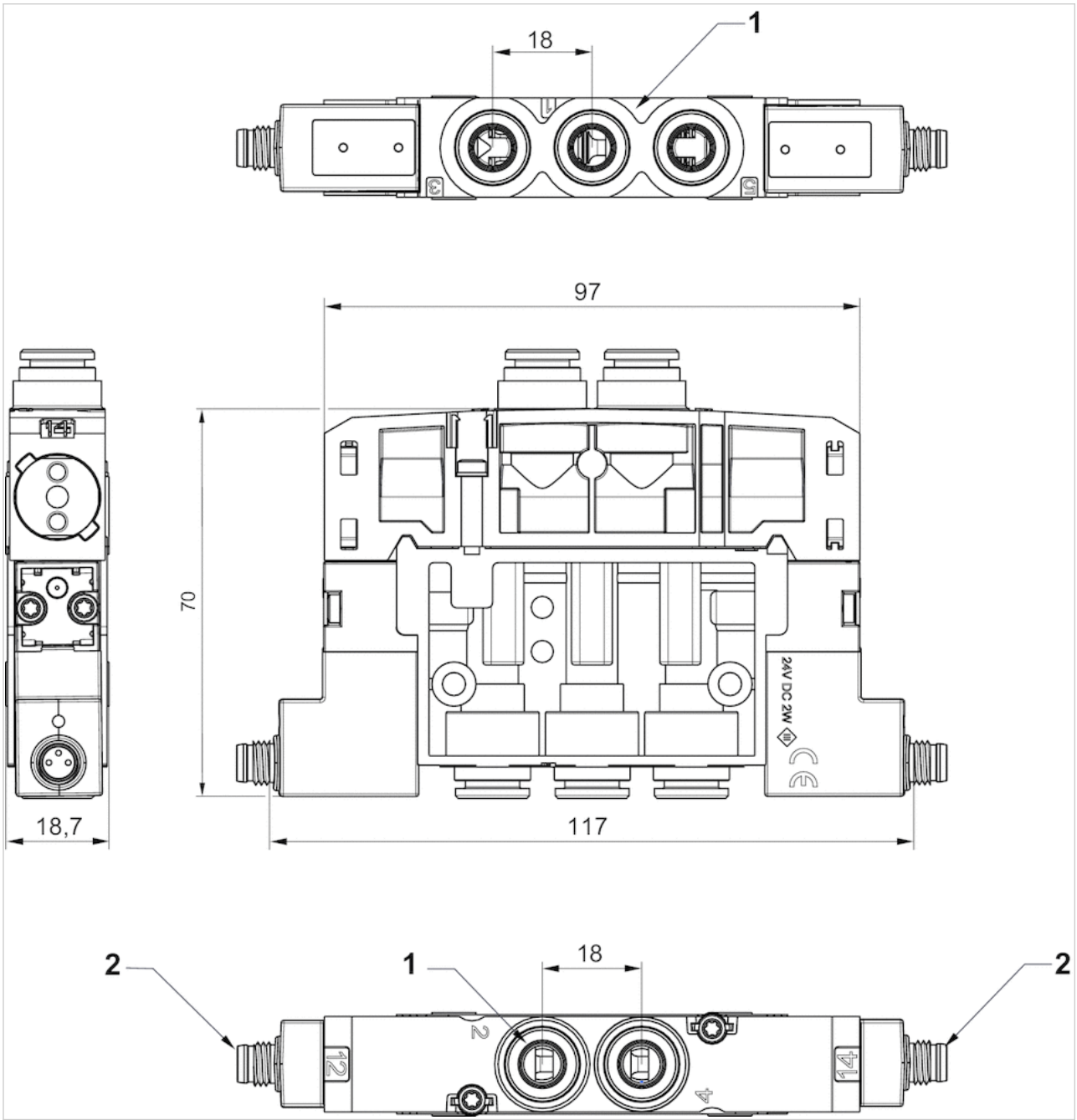
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection M8x1
3) Pilot blanking plate

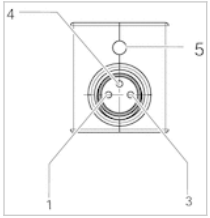
Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 2 pilot valves with external electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:

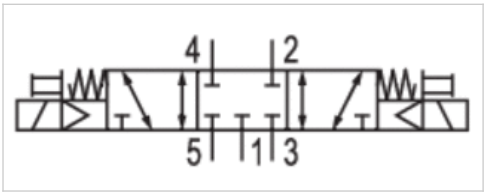
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

5/3-directional valve, Series ES05

- 5/3
- Qn = 500 l/min
- closed center
- Compressed air connection output : Ø 8
- Electrical connection : form C, industry
- double solenoid

Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
Protection class with connection	IP65
LED status display	Yellow
Duty cycle	100 %



Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103183	closed center	Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103183	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time
	DC		
R422103183	2 W	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar, MO = Manual override

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).
The pilot valve is UL (Underwriters Laboratories) certified.

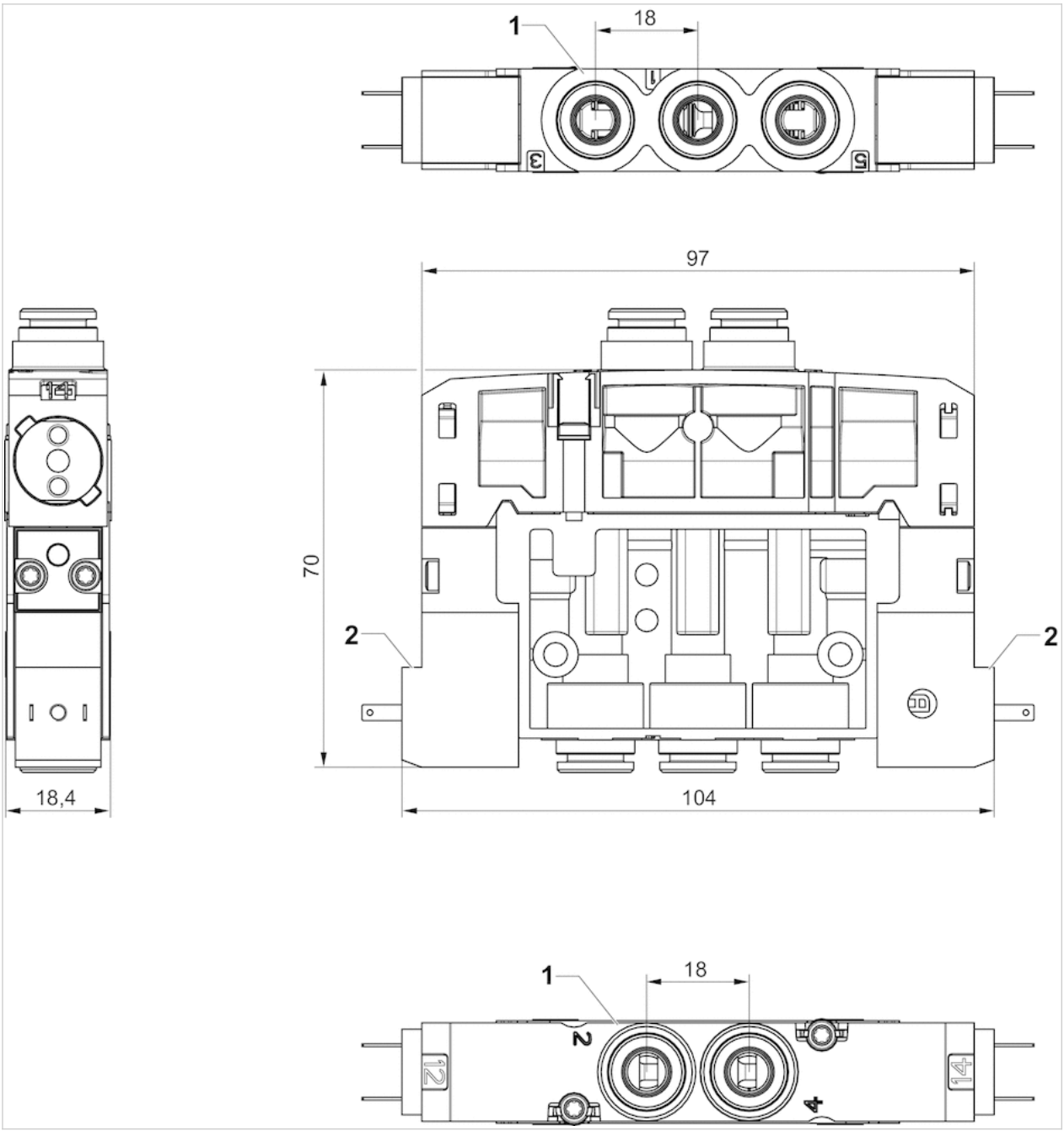
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

double solenoid

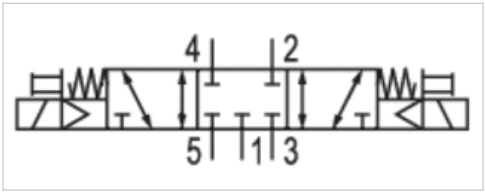


1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 2 pilot valves with external electrical connection

5/3-directional valve, Series ES05

- 5/3
- Qn = 500 l/min
- closed center
- Compressed air connection output : Ø 8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- double solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
Protection class with connection	IP65
LED status display	Yellow
Duty cycle	100 %



Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103863	closed center	Ø 8	Ø 8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103863	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time
	DC		
R422103863	2 W	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar, MO = Manual override

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).

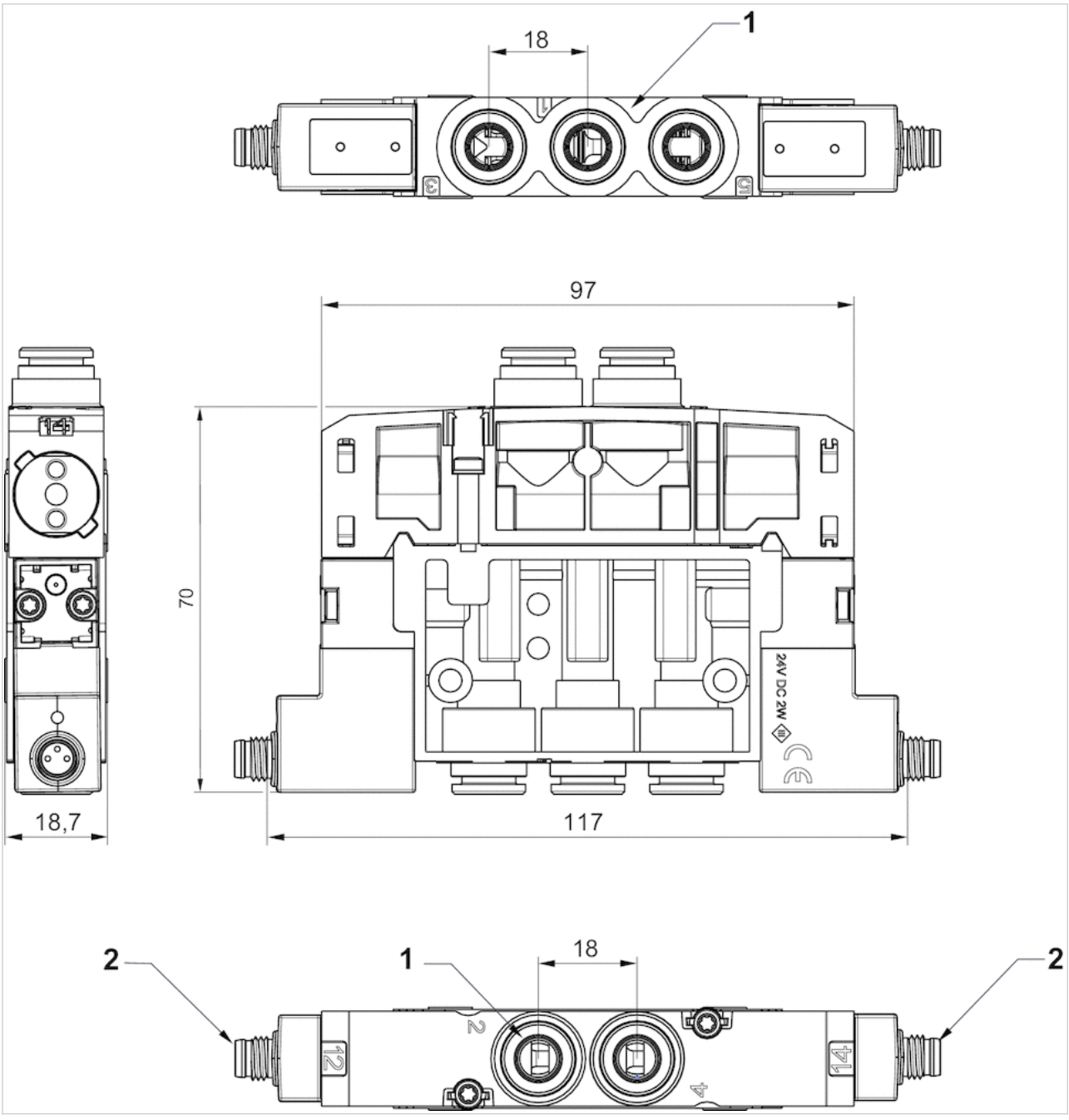
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

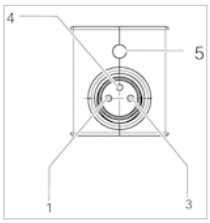
double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 2 pilot valves with external electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

2x3/2-directional valve, Series ES05 - inch

- 2x3/2
- Qn = 370-500 l/min
- NC/NC NO/NO
- Compressed air connection output : Ø 3/8
- Electrical connection : form C, industry
- Manual override : without detent
- single solenoid

Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422103181		NC/NC	Ø 3/8	Ø 3/8
R422103182		NO/NO	Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103181	Ø 3/8	24 V	-15% / +10%
R422103182	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Nominal flow Qn	Switch-on time	Switch-off time
	DC			
R422103181	2 W	500 l/min	20	20
R422103182	2 W	370 l/min	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar

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).
The pilot valve is UL (Underwriters Laboratories) certified.

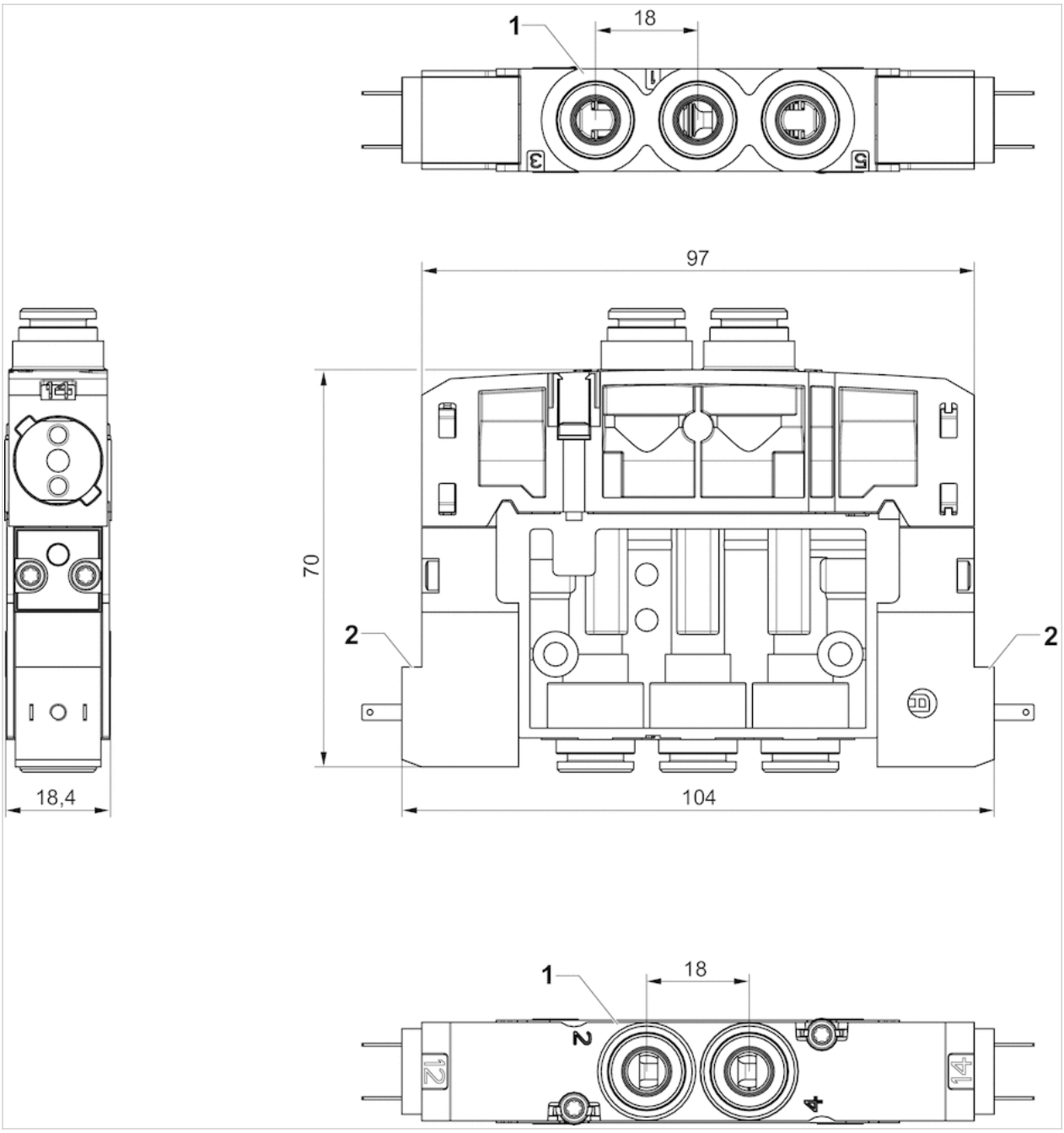
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection

2x3/2-directional valve, Series ES05 - inch

- 2x3/2
- Qn = 370-500 l/min
- NC/NC NO/NO
- Compressed air connection output : Ø 3/8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- single solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422103861		NC/NC	Ø 3/8	Ø 3/8
R422103862		NO/NO	Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103861	Ø 3/8	24 V	-15% / +10%
R422103862	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Nominal flow Qn	Switch-on time	Switch-off time
	DC			
R422103861	2 W	500 l/min	20	20
R422103862	2 W	370 l/min	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar

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).

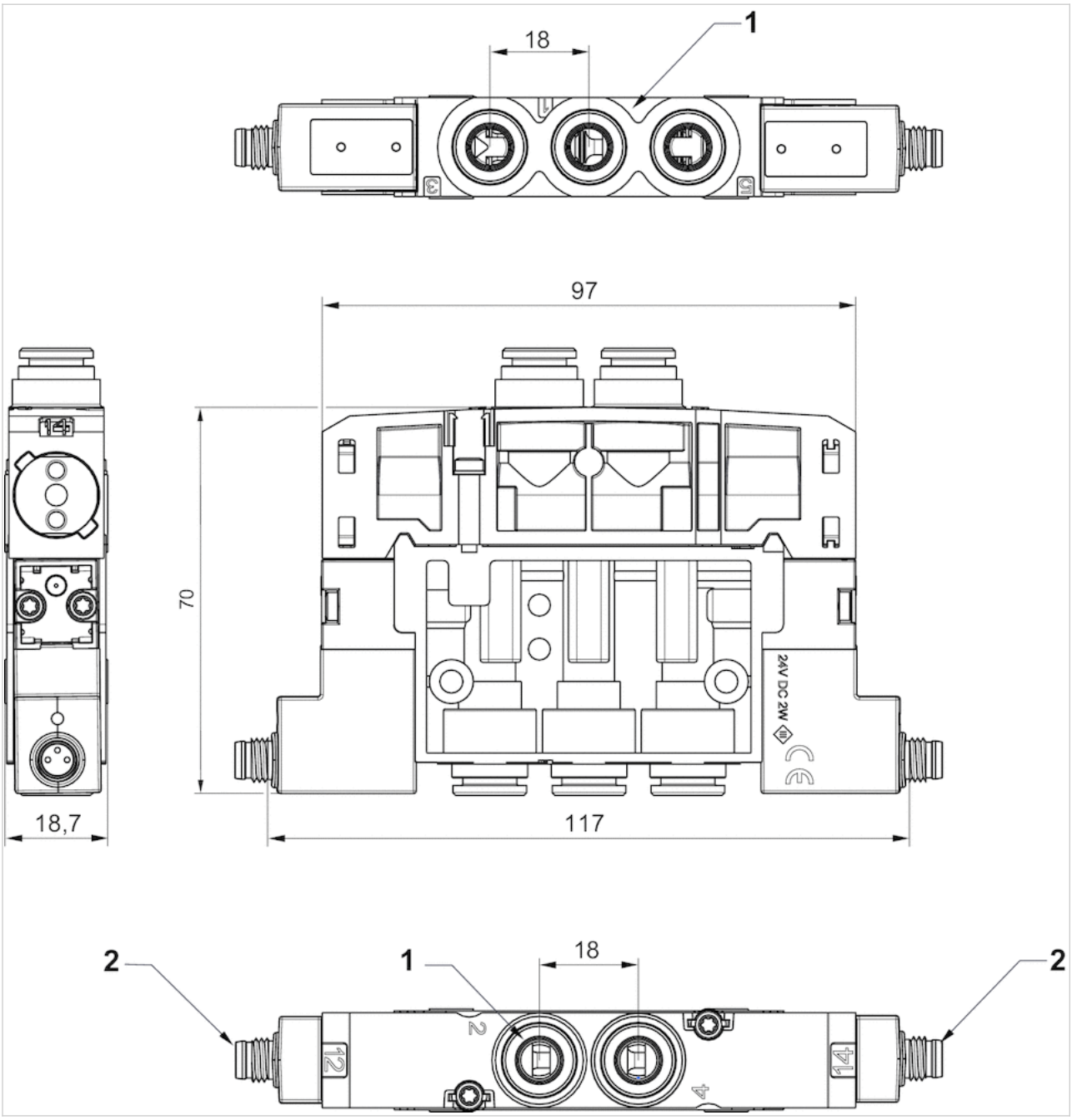
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

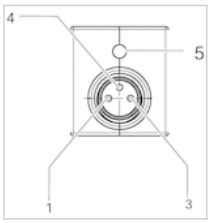
Dimensions



1) Connections [1 ,3 ,5, 2, 4] Ø 8
2) 1 pilot valve with electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

5/2-directional valve, Series ES05 -inch

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 3/8
- Electrical connection : form C, industry
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103179		Ø 3/8	Ø 3/8
R422103180		Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103179	Ø 3/8	24 V	-15% / +10%
R422103180	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time	Fig.
	DC			
R422103179	2 W	20	35	Fig. 1
R422103180	2 W	20	20	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

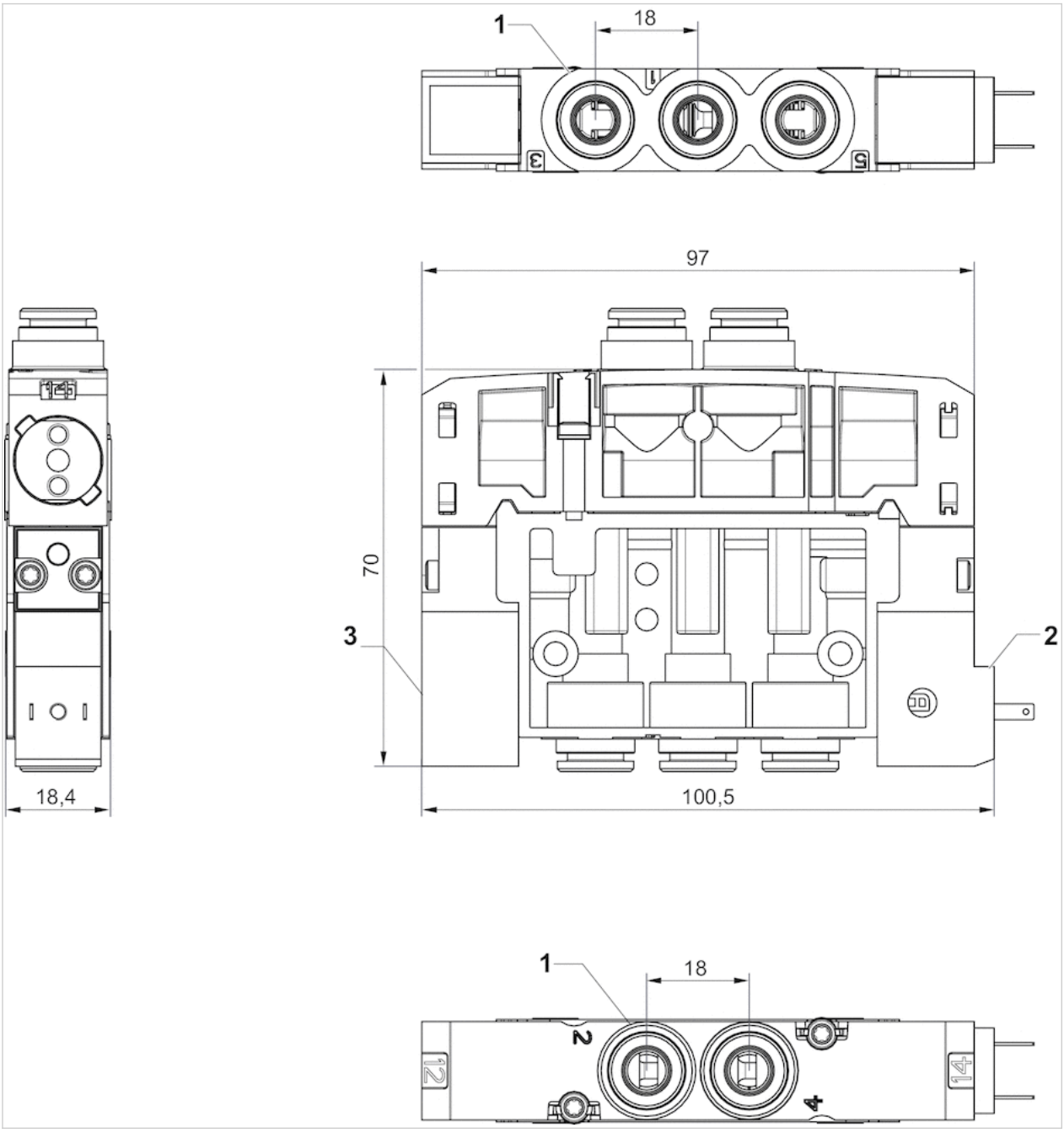
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
The pilot valve is UL (Underwriters Laboratories) certified.
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

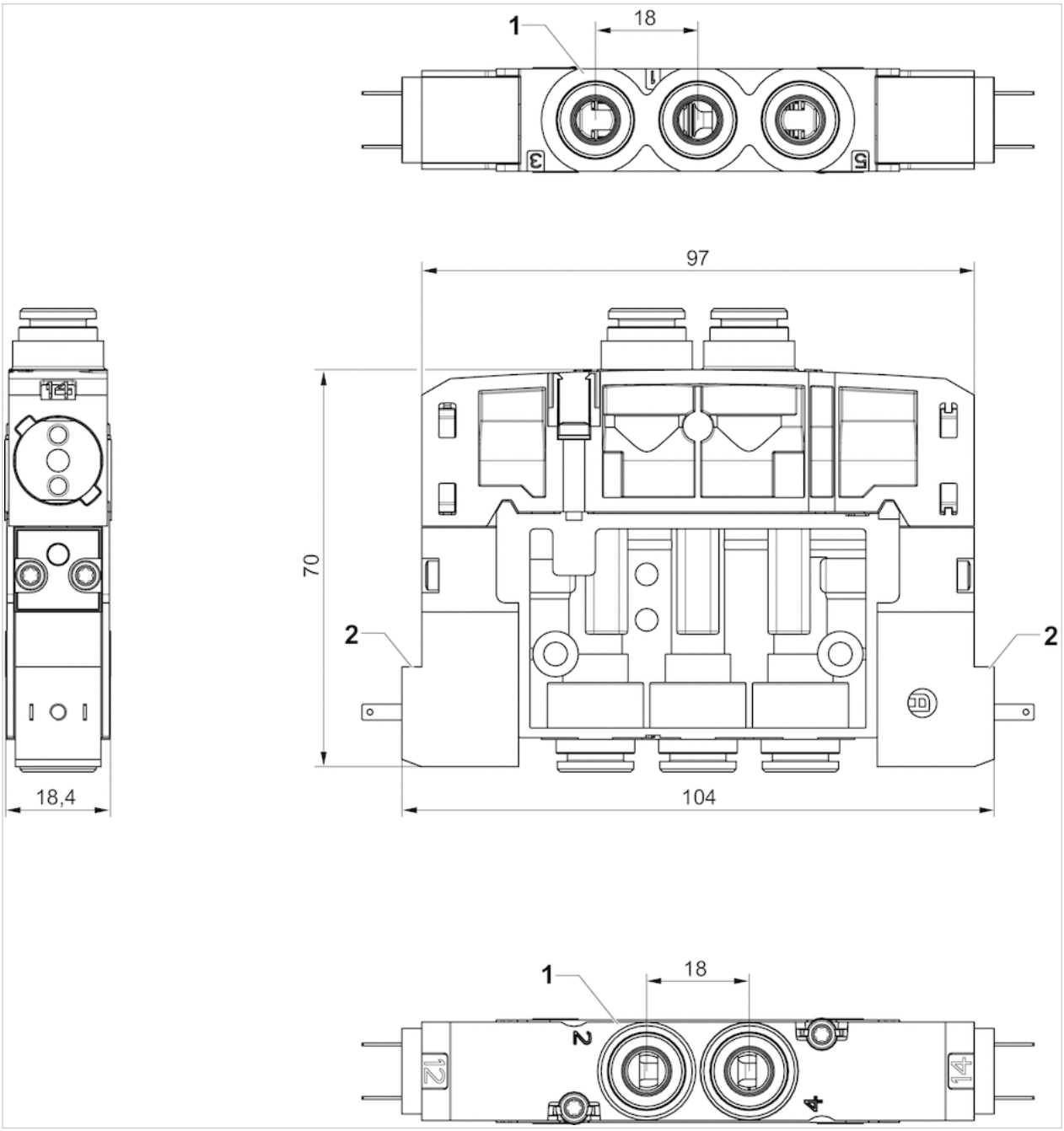
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 1 pilot valve with electrical connection
3) Pilot blanking plate

Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection

5/2-directional valve, Series ES05 -inch

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 3/8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422103859		Ø 3/8	Ø 3/8
R422103860		Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103859	Ø 3/8	24 V	-15% / +10%
R422103860	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Switch-on time	Switch-off time	Fig.
	DC			
R422103859	2 W	20	35	Fig. 1
R422103860	2 W	20	20	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

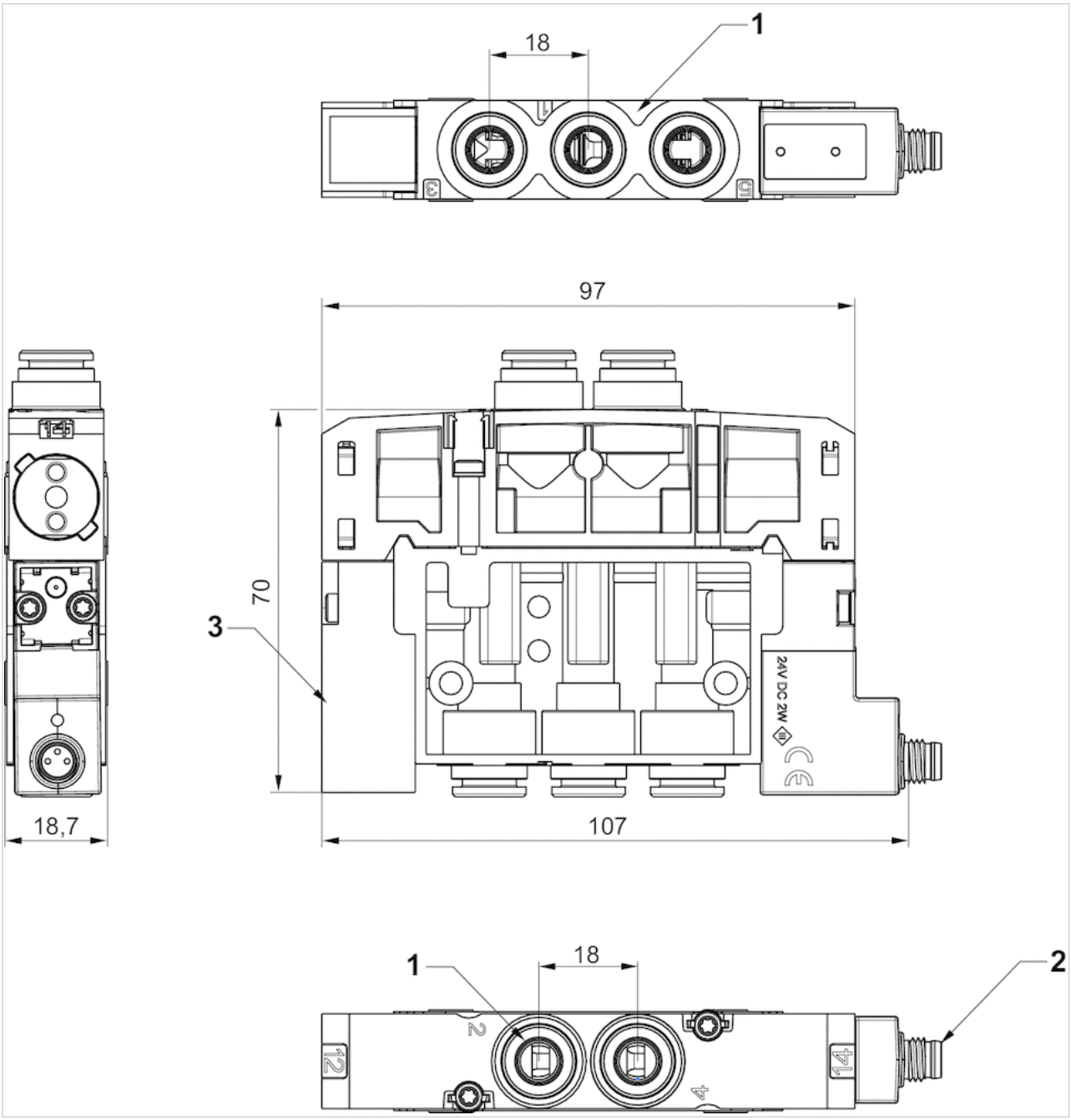
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

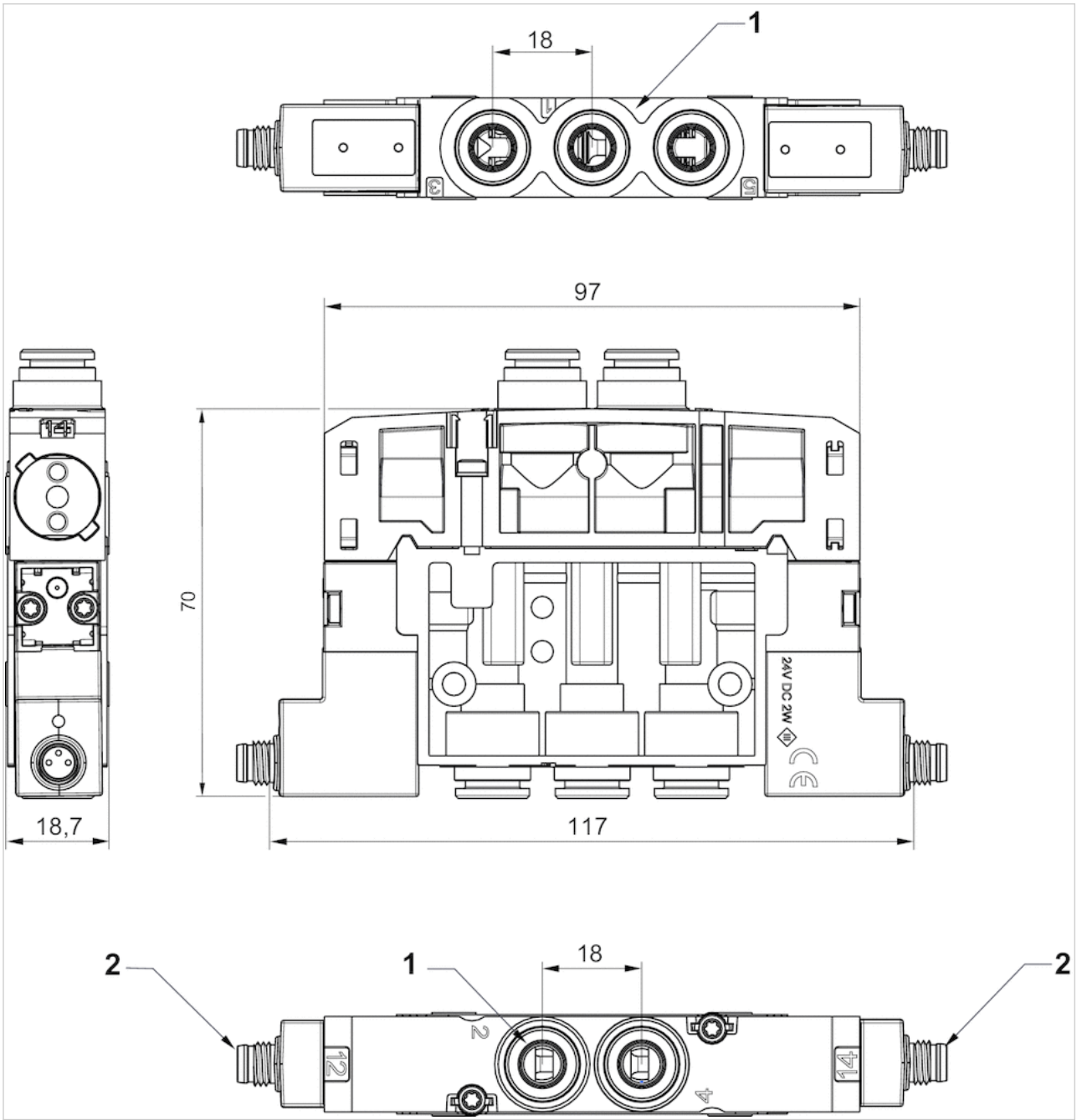
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection M8x1
3) Pilot blanking plate

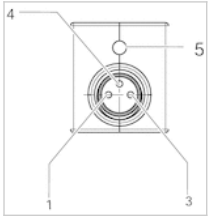
Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



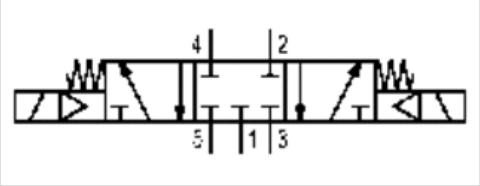
Pin assignment:

1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

5/3-directional valve, Series ES05 -inch

- 5/3
- Qn = 500 l/min
- Compressed air connection output : Ø 3/8
- Electrical connection : form C, industry
- double solenoid



Activation	Electrically
Certificates	UR (Underwriters Laboratories)
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
Protection class with connection	IP65
LED status display	Yellow
Duty cycle	100 %

Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422103184	Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103184	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption
	DC
R422103184	2 W

Nominal flow Qn at 6 bar and Δp = 1 bar

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).
The pilot valve is UL (Underwriters Laboratories) certified.

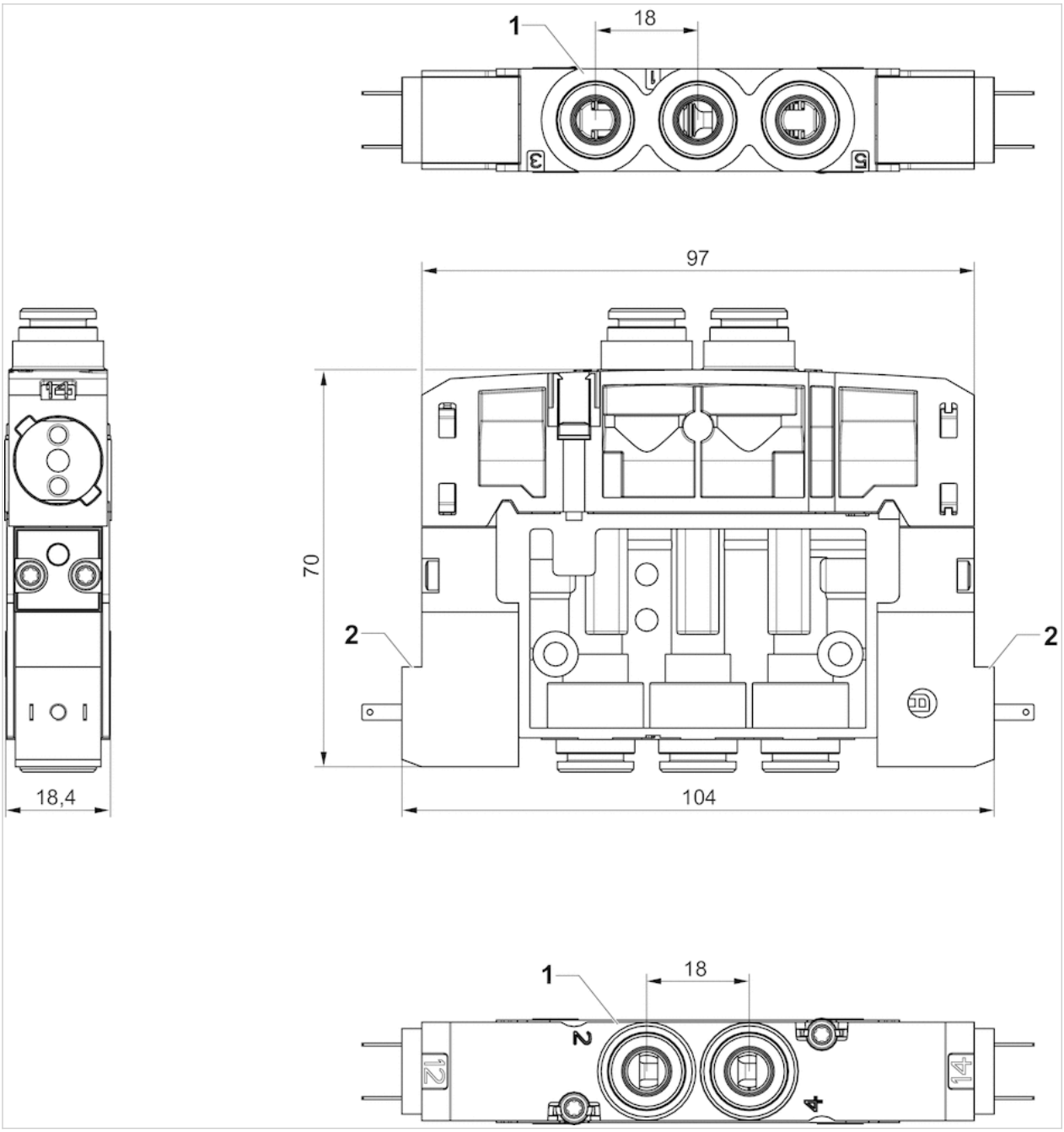
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

double solenoid

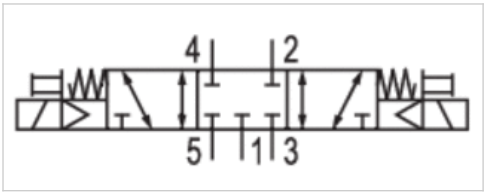


1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection

5/3-directional valve, Series ES05 -inch

- 5/3
- Qn = 500 l/min
- Compressed air connection output : Ø 3/8
- Electrical connection : M8x1, 3-pin
- Manual override : without detent
- double solenoid

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
Protection class with connection	IP65
LED status display	Yellow
Duty cycle	100 %



Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422103864	Ø 3/8	Ø 3/8

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103864	Ø 3/8	24 V	-10% / +15%

Part No.	Power consumption	Switch-on time	Switch-off time
	DC		
R422103864	2 W	20	20

Nominal flow Qn at 6 bar and Δp = 1 bar, MO = Manual override

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).

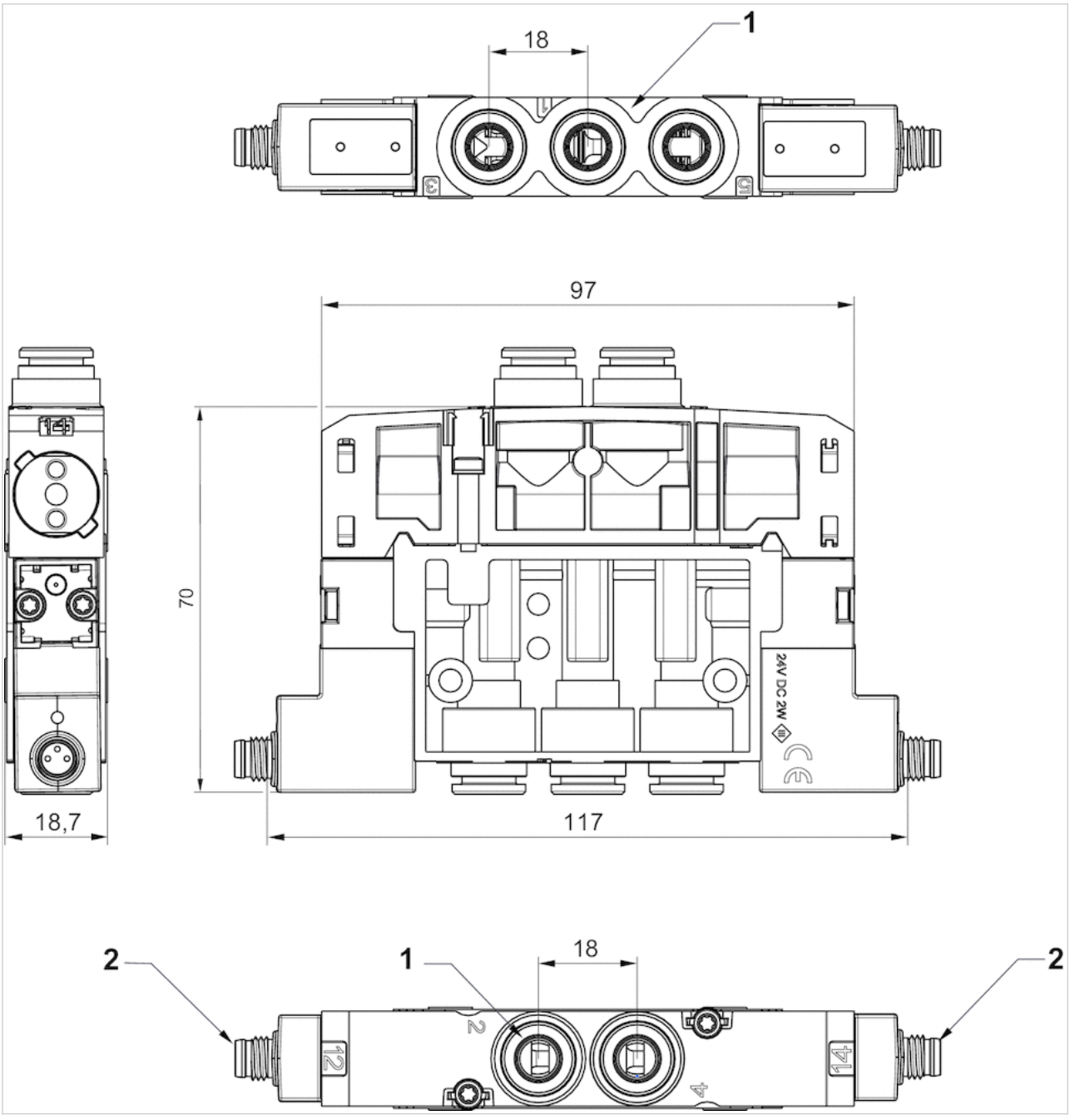
Exhaust air throttling may only be used in operating lines

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

Dimensions

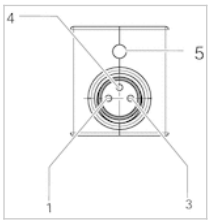
Dimensions, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) 2 pilot valves with external electrical connection M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

2x 3/2 directional valve function, Series ES05

- 2x3/2
- Qn = 370-500 l/min
- NO/NO NC/NC
- Compressed air connection output : Ø 8
- Manual override : without detent
- single solenoid
- With spring return

Activation	Electrically
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422102638		NO/NO	Base plate	Ø 8
R422P02638		NO/NO	Base plate	Ø 8
R422102637		NC/NC	Base plate	Ø 8
R422P02637		NC/NC	Base plate	Ø 8

Part No.	Nominal flow Qn	Switch-on time	Switch-off time	Delivery unit
R422102638	370 l/min	20	20	1 piece
R422P02638	370 l/min	20	20	5 piece
R422102637	500 l/min	20	20	1 piece
R422P02637	500 l/min	20	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

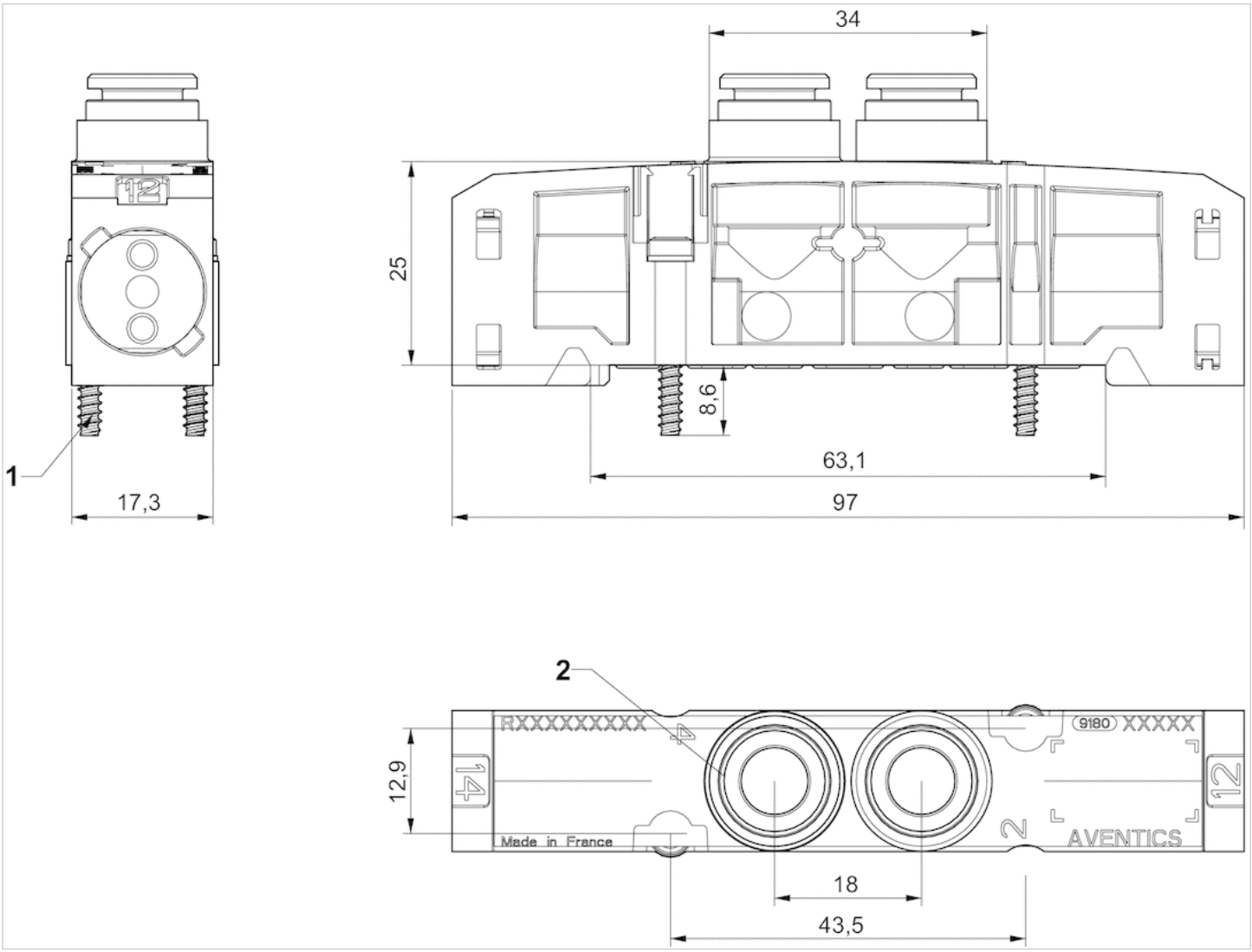
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Screws for plastic Ø3
2) Ø 8

5/2 directional valve function, Series ES05

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 8
- single solenoid double solenoid
- With spring return

Activation	Electrically
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.		Compressed air connection	Compressed air connection	Switch-on time
		Input	Output	
R422102601		Base plate	Ø 8	20
R422P02601		Base plate	Ø 8	20
R422102636		Base plate	Ø 8	20
R422P02636		Base plate	Ø 8	20

Part No.	Switch-off time	Delivery unit
R422102601	35	1 piece
R422P02601	35	5 piece
R422102636	20	1 piece
R422P02636	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

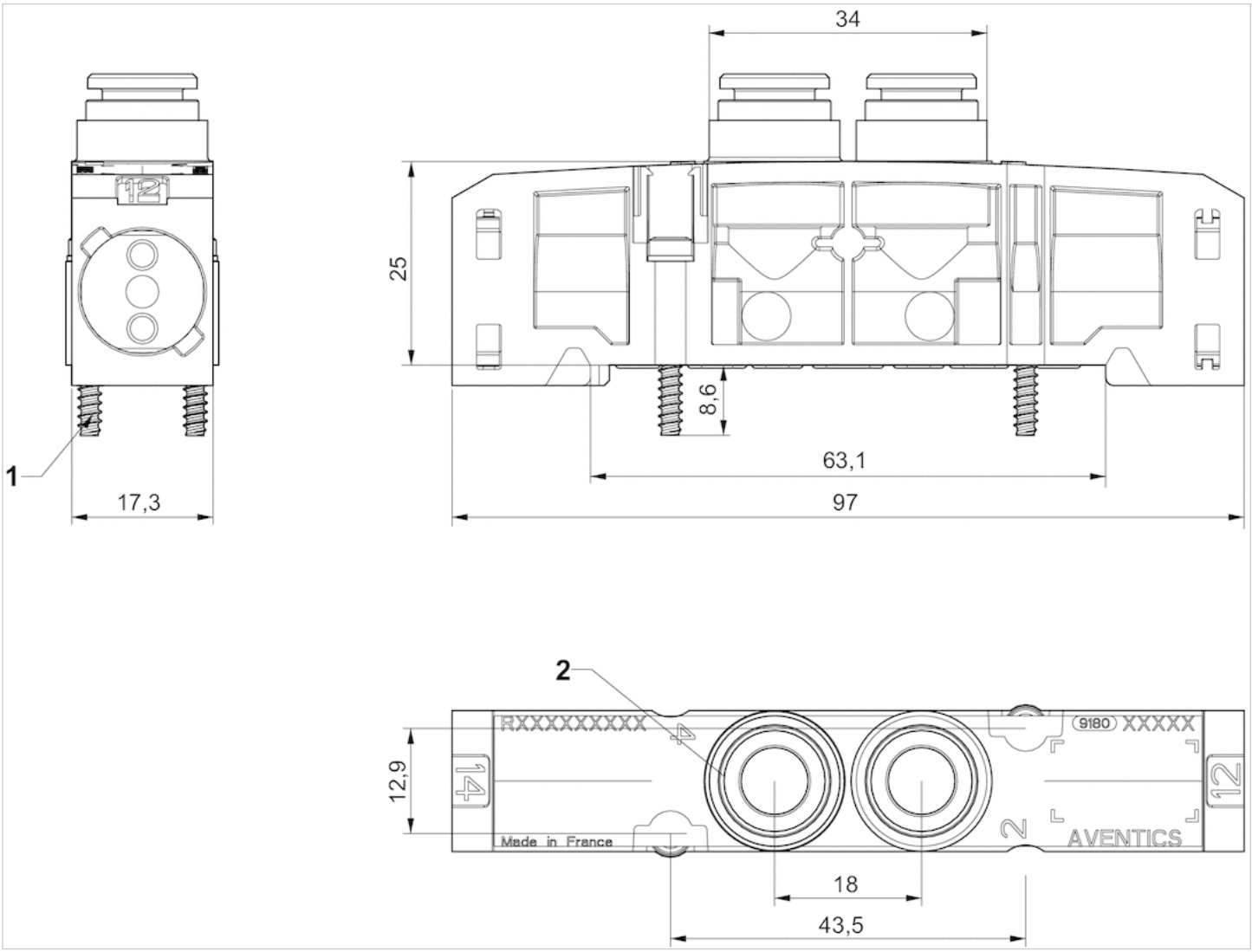
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions

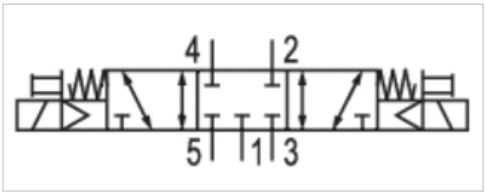
Dimensions



1) Screws for plastic Ø3
2) Ø 8

5/3 directional valve function, ES05

- 5/3
- Qn = 500 l/min
- closed center
- Compressed air connection output : Base plate
- double solenoid



Activation	Electrically
Sealing principle	Soft sealing
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT
Weight	0.16 kg

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422003639	closed center	Ø 8	Base plate
R422P03639	closed center	Ø 8	Base plate

Part No.	Switch-on time	Switch-off time	Delivery unit
R422003639	20	20	1 piece
R422P03639	20	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

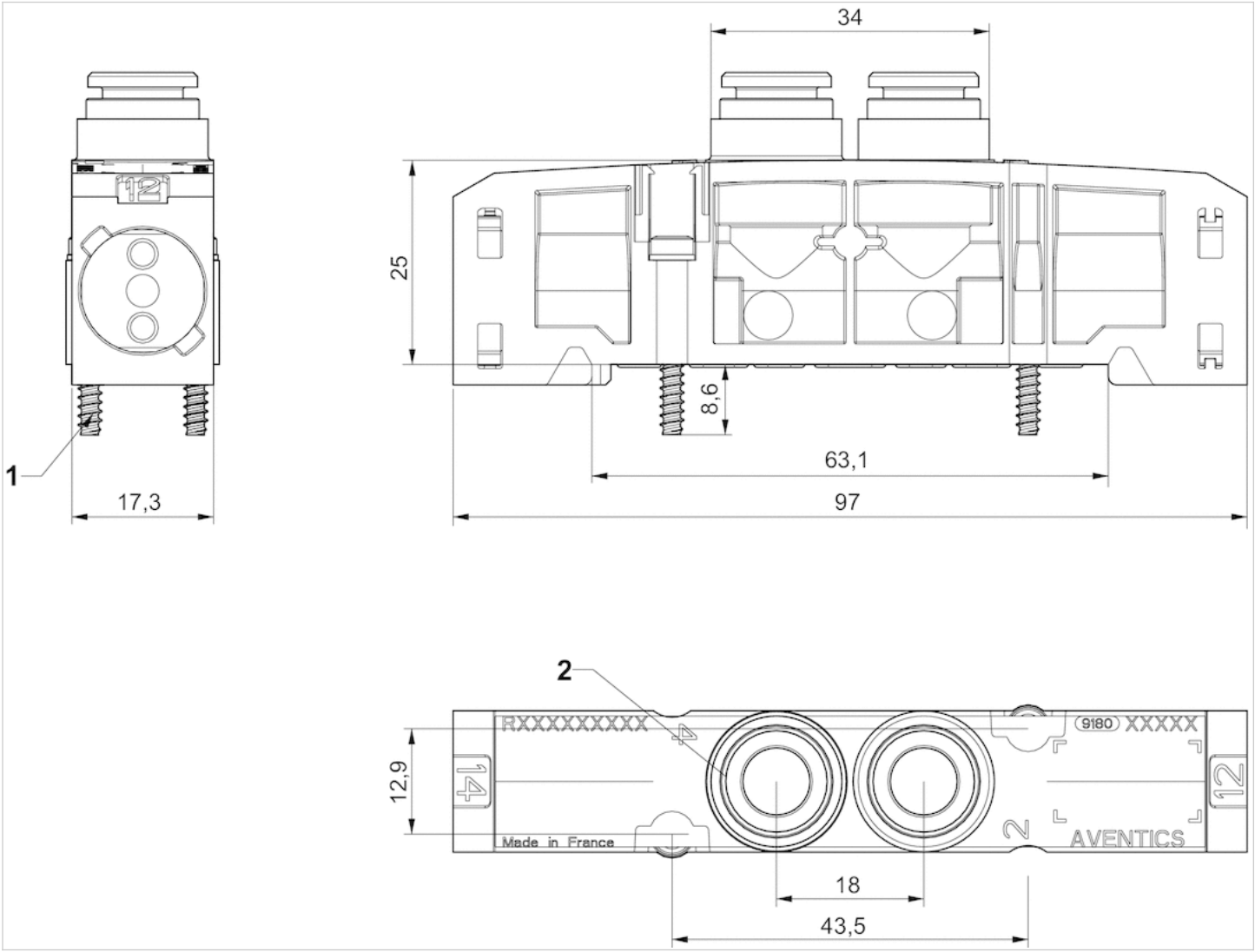
Technical information

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).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions



2x 3/2 directional valve function, Series ES05 -inch

- 2x3/2
- Qn = 370-500 l/min
- NC/NC NO/NO
- Compressed air connection output : Ø 3/8
- single solenoid
- With spring return

Activation	Electrically
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	See table below
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.			Compressed air connection	Compressed air connection
			Input	Output
R422103171		NC/NC	Base plate	Ø 3/8
R422P03171		NC/NC	Base plate	Ø 3/8
R422103172		NO/NO	Base plate	Ø 3/8
R422P03172		NO/NO	Base plate	Ø 3/8

Part No.	Nominal flow Qn	Switch-on time	Switch-off time	Delivery unit
R422103171	370 l/min	20	20	1 piece
R422P03171	370 l/min	20	20	5 piece
R422103172	500 l/min	20	20	1 piece
R422P03172	500 l/min	20	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

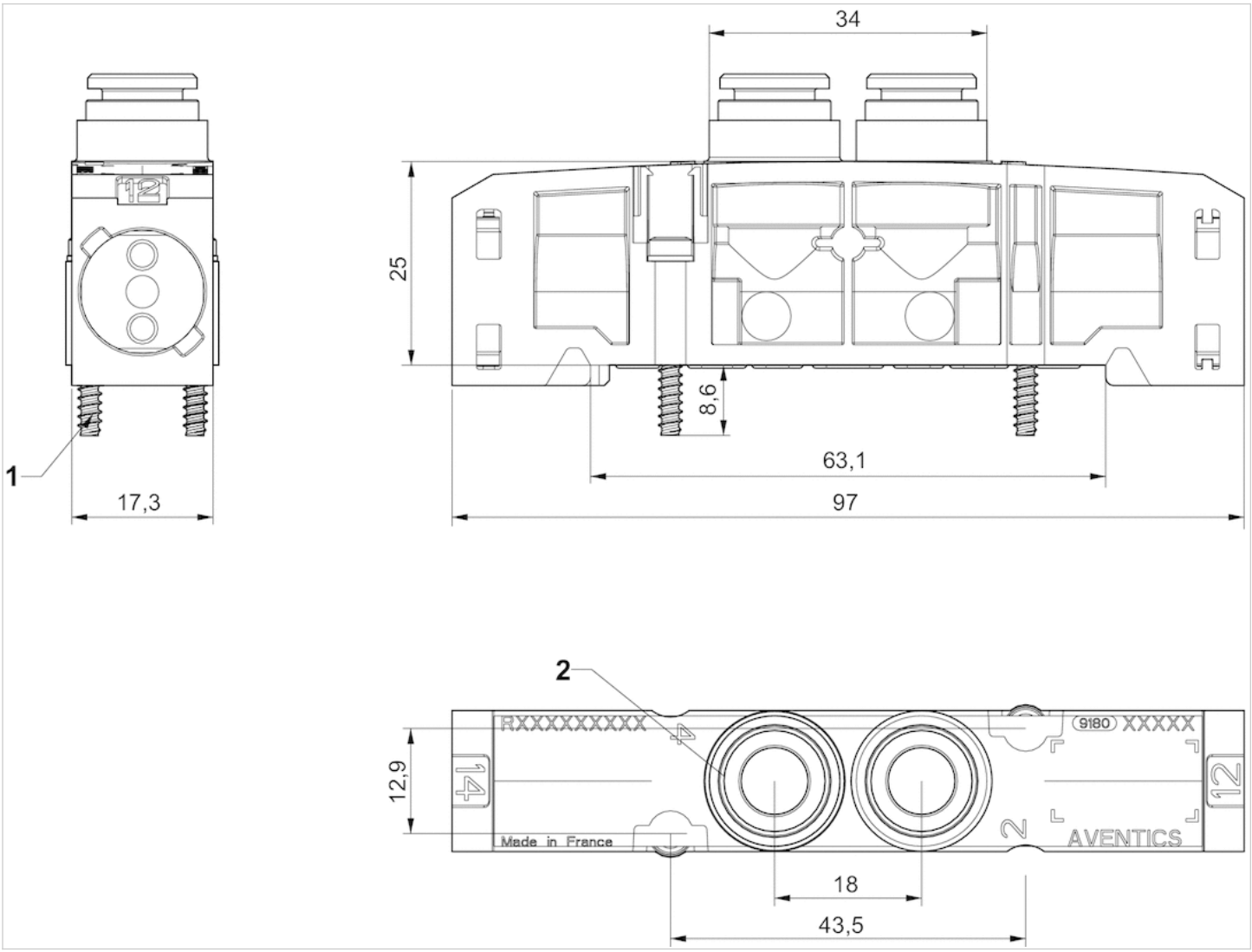
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Screws for plastic Ø3
2) 3/8″

5/2 directional valve function, Series ES05 -inch

- 5/2
- Qn = 610 l/min
- Compressed air connection output : Ø 3/8
- single solenoid double solenoid
- With spring return

Activation	Electrically
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	610 l/min
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.		Compressed air connection	Compressed air connection	Switch-on time
		Input	Output	
R422103169		Base plate	Ø 3/8	20
R422P03169		Base plate	Ø 3/8	20
R422103170		Base plate	Ø 3/8	20
R422P03170		Base plate	Ø 3/8	20

Part No.	Switch-off time	Delivery unit
R422103169	35	1 piece
R422P03169	35	5 piece
R422103170	20	1 piece
R422P03170	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

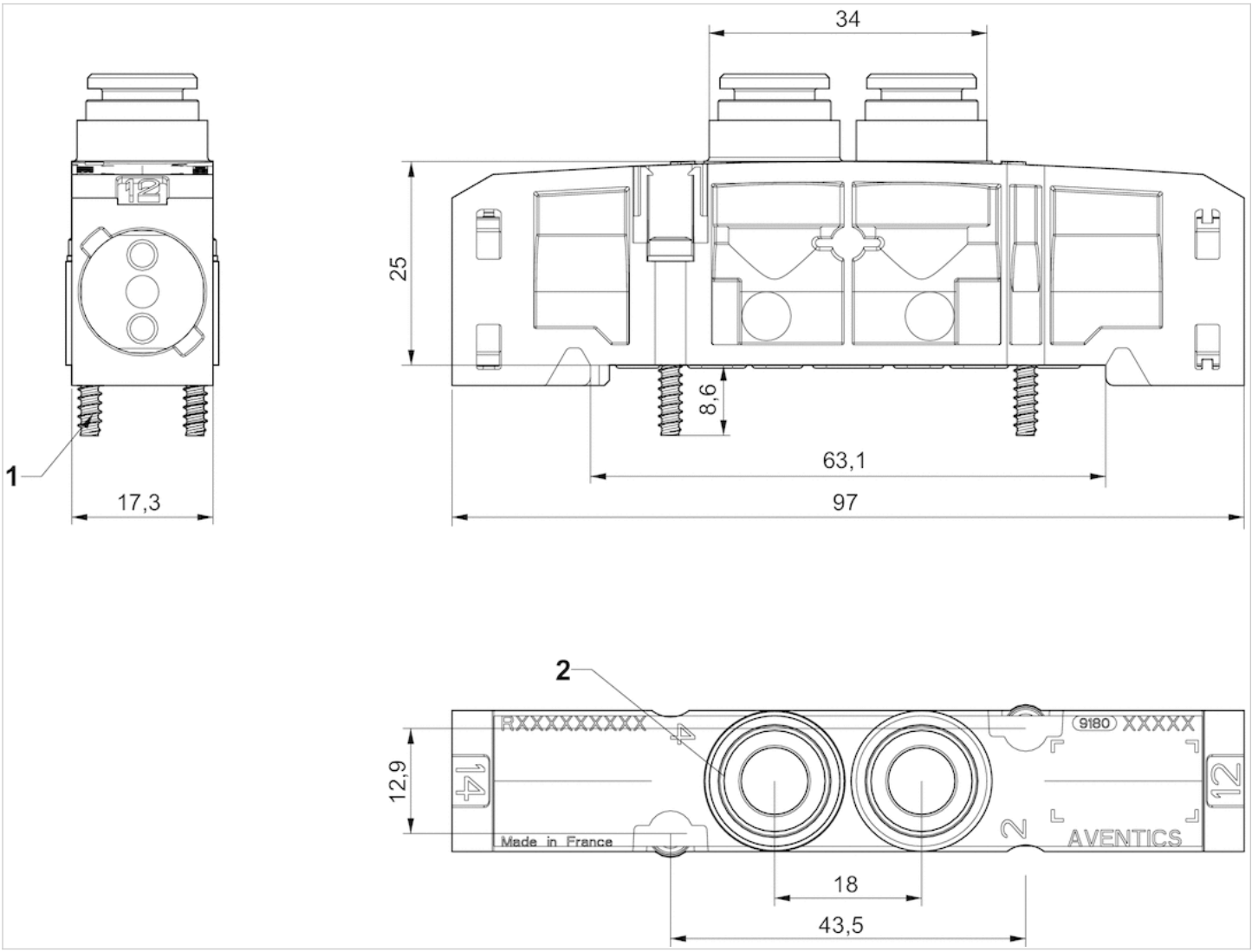
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions

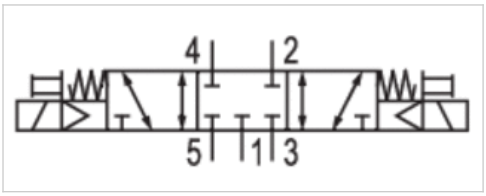
Dimensions



1) Screws for plastic Ø3
2) 3/8″

5/3 directional valve function, ES05 - inch

- Qn = 500 l/min
- closed center
- Compressed air connection output : Base plate
- double solenoid



Activation	Electrically
Sealing principle	Soft sealing
Working pressure min./max.	-0.8 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Nominal flow Qn	500 l/min
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT
Weight	0.16 kg

Technical data

Part No.		Compressed air connection	Compressed air connection
		Input	Output
R422003640	closed center	Ø 3/8	Base plate
R422P03640	closed center	Ø 3/8	Base plate

Part No.	Switch-on time	Switch-off time	Delivery unit
R422003640	20	20	1 piece
R422P03640	20	20	5 piece

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

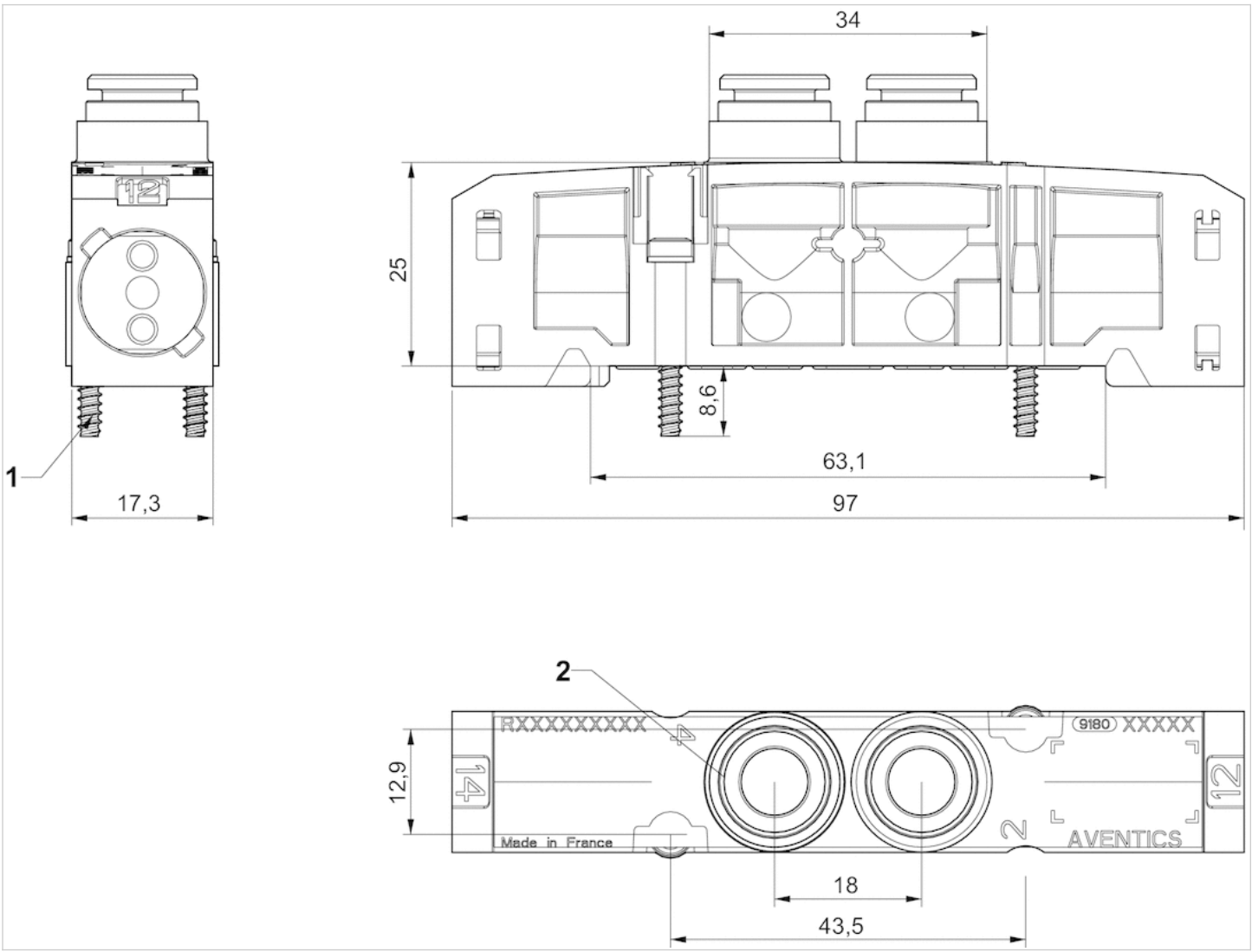
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Screws for plastic Ø3
2) Ø 3/8″

End plate kit for single wiring

- for ES05

Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Compressed air connection Input [1]	Compressed air connection Exhaust [3 / 5]	Pilot control exhaust
R422003340	G 3/8	G 3/8	G 1/8
R422P03340	G 3/8	G 3/8	G 1/8

Part No.	Delivery unit
R422003340	1 piece
R422P03340	5 piece

Scope of delivery: 1 left end plate, 1 right end plate, 2 initial tie rods, 4 tie rod screws, 1 seal, and 2 blanking plugs G1/8

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).

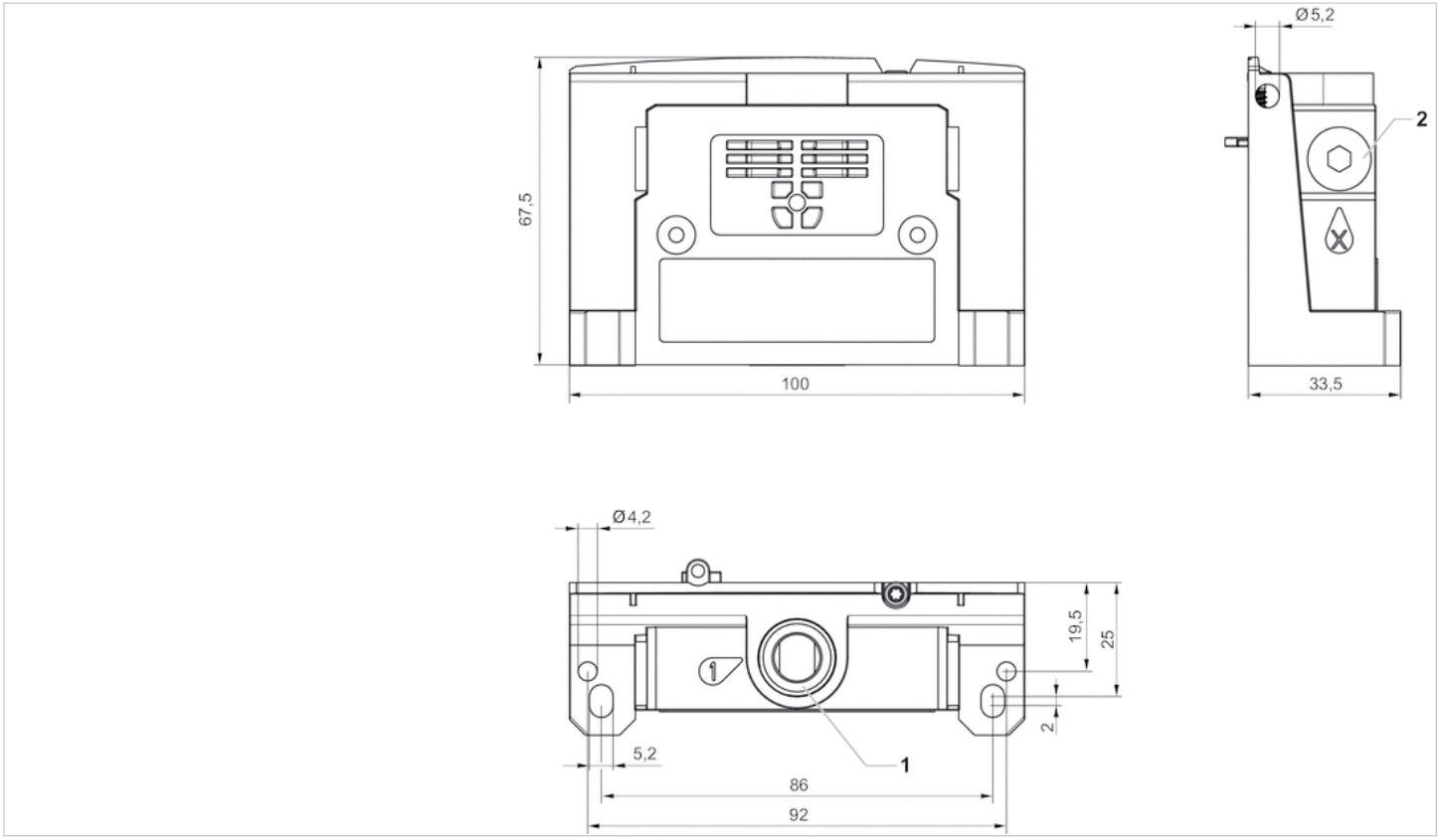
Only use fittings with cylindrical threads (BSPP).

Technical information

Material	
Screws	Stainless steel

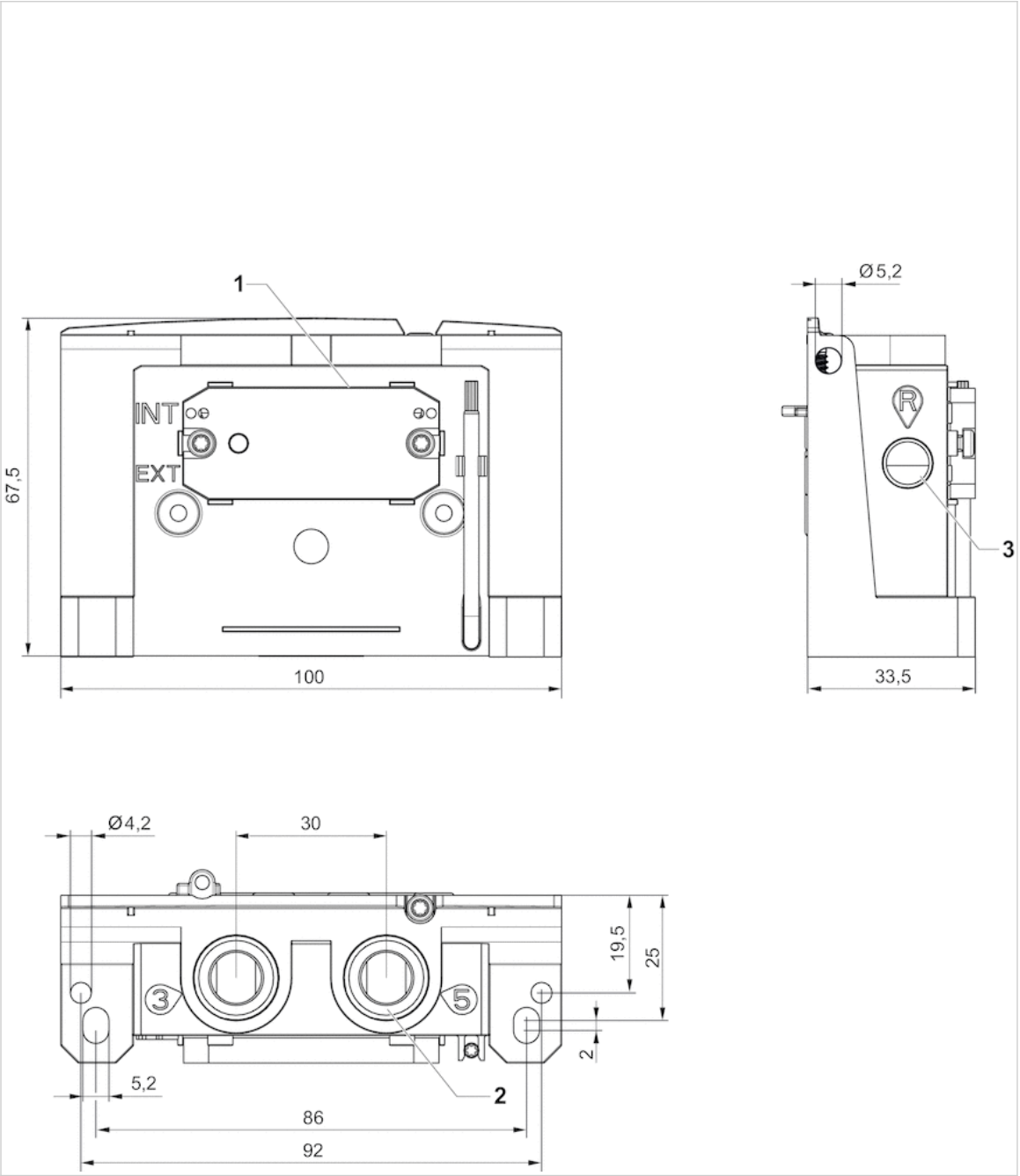
Dimensions

Dimensions, Left end plate, Port 1, X



1) Port 1 G 3/8″
2) 2 connections X G 1/8″

Dimensions, Right end plate, Port 3 , 5 , R



1) Plate for internal or external pilot
2) Port 3, 5 G 3/8″
3) 2 connections R G1/8″

End plate kit for D-Sub

- D-Sub plug, 25-pin, on the side
- for ES05

Version	Multipole
Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
electr. connection	D-Sub plug, 25-pin, on the side
Protection class	IP50
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Type	Compressed air connection Input [1]	Compressed air connection Exhaust [3 / 5]
R422003346	type A	G 3/8	G 3/8
R422P03346	type A	G 3/8	G 3/8
R422003355	type B	G 3/8	G 3/8
R422P03355	type B	G 3/8	G 3/8

Part No.	Pilot control exhaust	Pilot connection	Delivery unit
R422003346	G 1/8	G 1/8	1 piece
R422P03346	G 1/8	G 1/8	5 piece
R422003355	G 1/8	G 1/8	1 piece
R422P03355	G 1/8	G 1/8	5 piece

Scope of delivery: 1 left end plate, 1 right end plate, 2 initial tie rods, 4 tie rod screws, 1 seal, and 2 blanking plugs G1/8

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).

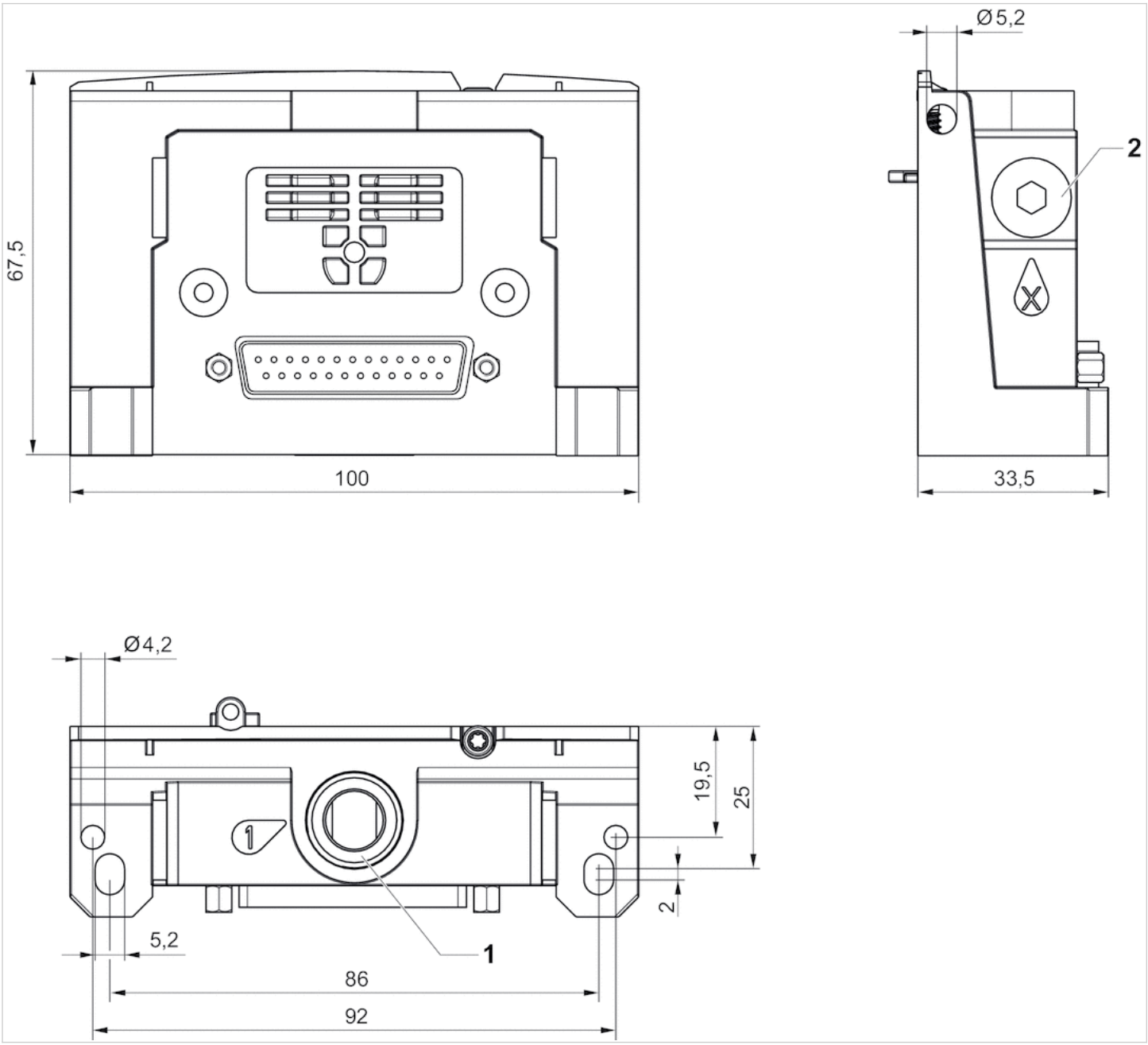
Only use fittings with cylindrical threads (BSPP).

Technical information

Material	
Housing	Polyamide Polyoxymethylene
Screws	Stainless steel

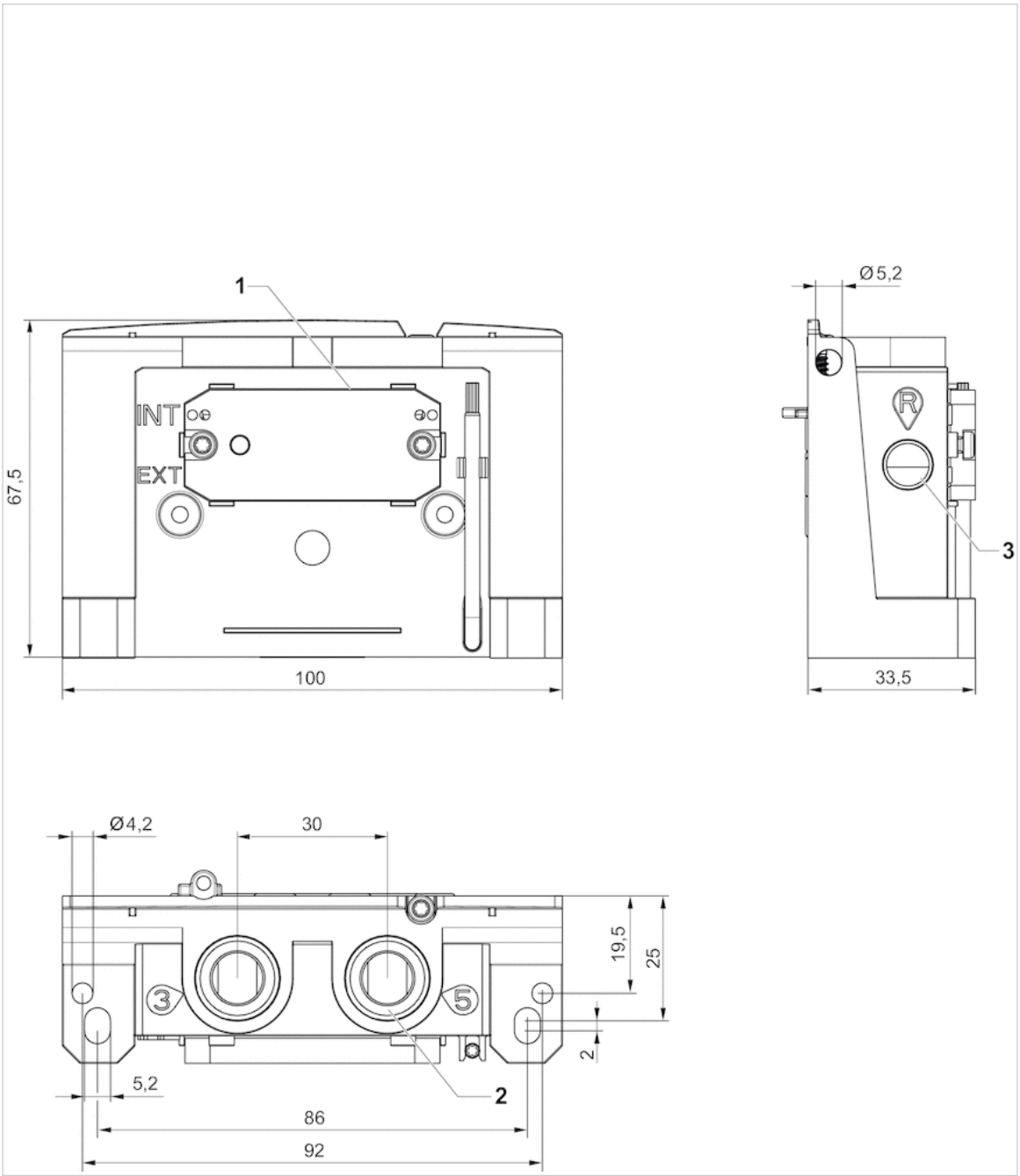
Dimensions

Dimensions, Left end plate, Port 1, X



1) Port 1 G 3/8″
2) 2 connections X G 1/8″

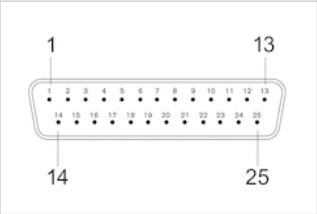
Dimensions, Right end plate, Port 3 , 5 , R



1) Plate for internal or external pilot
2) Port 3, 5 G 3/8″
3) 2 connections R G1/8″

Pin assignments

PIN assignment and cable colors, cable identification as per DIN 47100



Plug

Valve position	1	2	3	4	5	6	7	8	9
Pin	1 / 2	3 / 4	5 / 6	7 / 8	9 / 10	11 / 12	13 / 14	15 / 16	17 / 18
Coil	14 / 12	14 / 12	14 / 12	14 / 12	14 / 12	14 / 12	14 / 12	14 / 12	14 / 12

10	11	12	
19 / 20	21 / 22	23 / 24	25
14 / 12	14 / 12	14 / 12	0 V DC

Valve position	Coil	Pin
1	14 / 12	1 / 14
2	14 / 12	2 / 15
3	14 / 12	3 / 16
4	14 / 12	4 / 17
5	14 / 12	5 / 18
6	14 / 12	6 / 19
7	14 / 12	7 / 20
8	14 / 12	8 / 21
9	14 / 12	9 / 22
10	14 / 12	10 / 23
11	14 / 12	11 / 24
12	14 / 12	12 / 25
	0 V DC	13

Base plate, Series ES05

- Base plate 2x for internal electrical control
- for ES05

Working pressure min./max.	0 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 25 mg/m³
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Type	Scope of delivery	Delivery unit	Fig.
R422102671	single solenoid	Base plate 2x, incl. 1 seal	1 piece	Fig. 1
R422P02671	single solenoid	Base plate 2x, incl. 1 seal	5 piece	Fig. 1
R422102621	double solenoid	Base plate 2x, incl. 1 seal	1 piece	Fig. 2
R422P02621	double solenoid	Base plate 2x, incl. 1 seal	5 piece	Fig. 2

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).

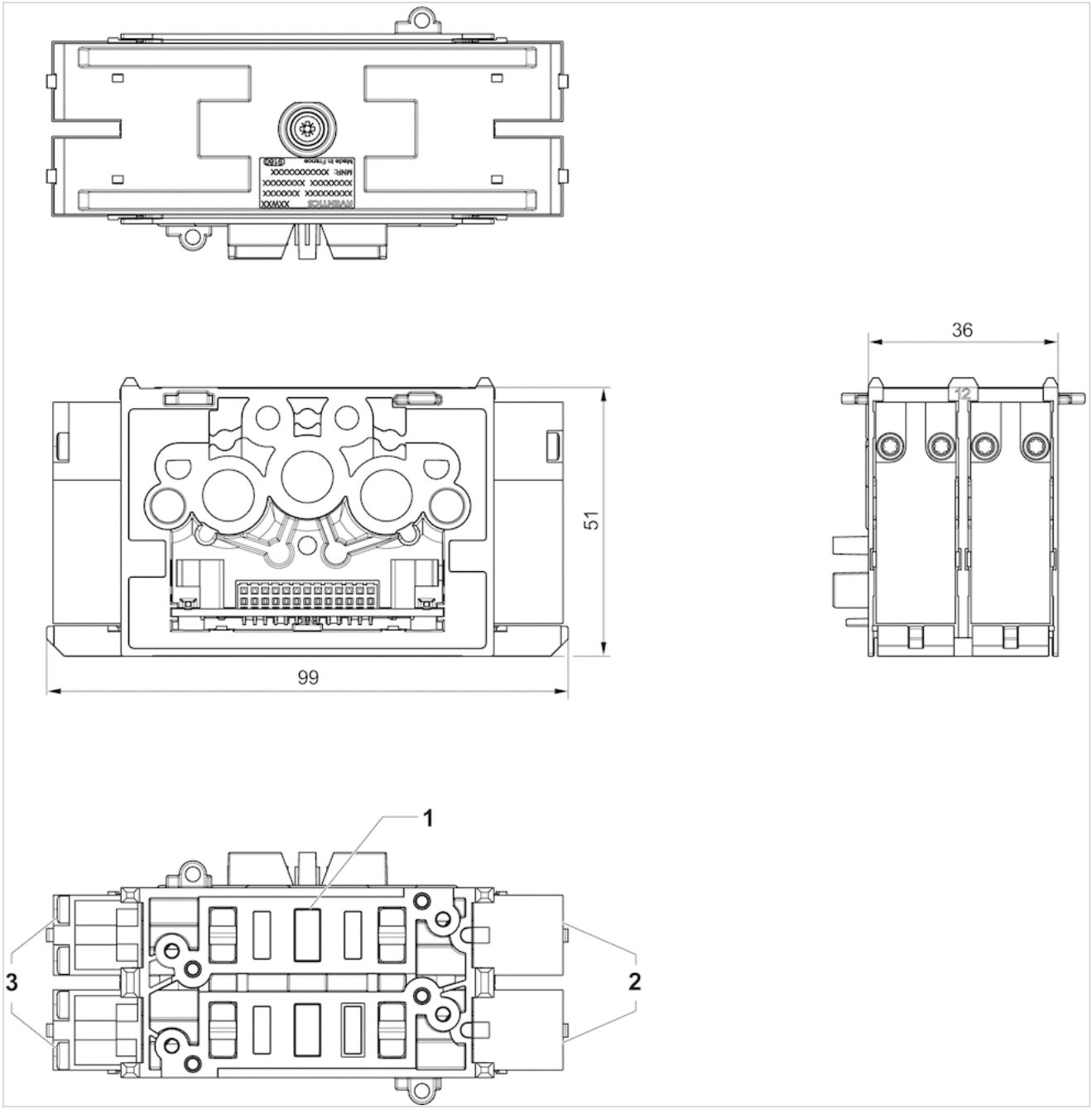
For use in conjunction with end plate kit with D-Sub

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seal	Nitrile butadiene rubber

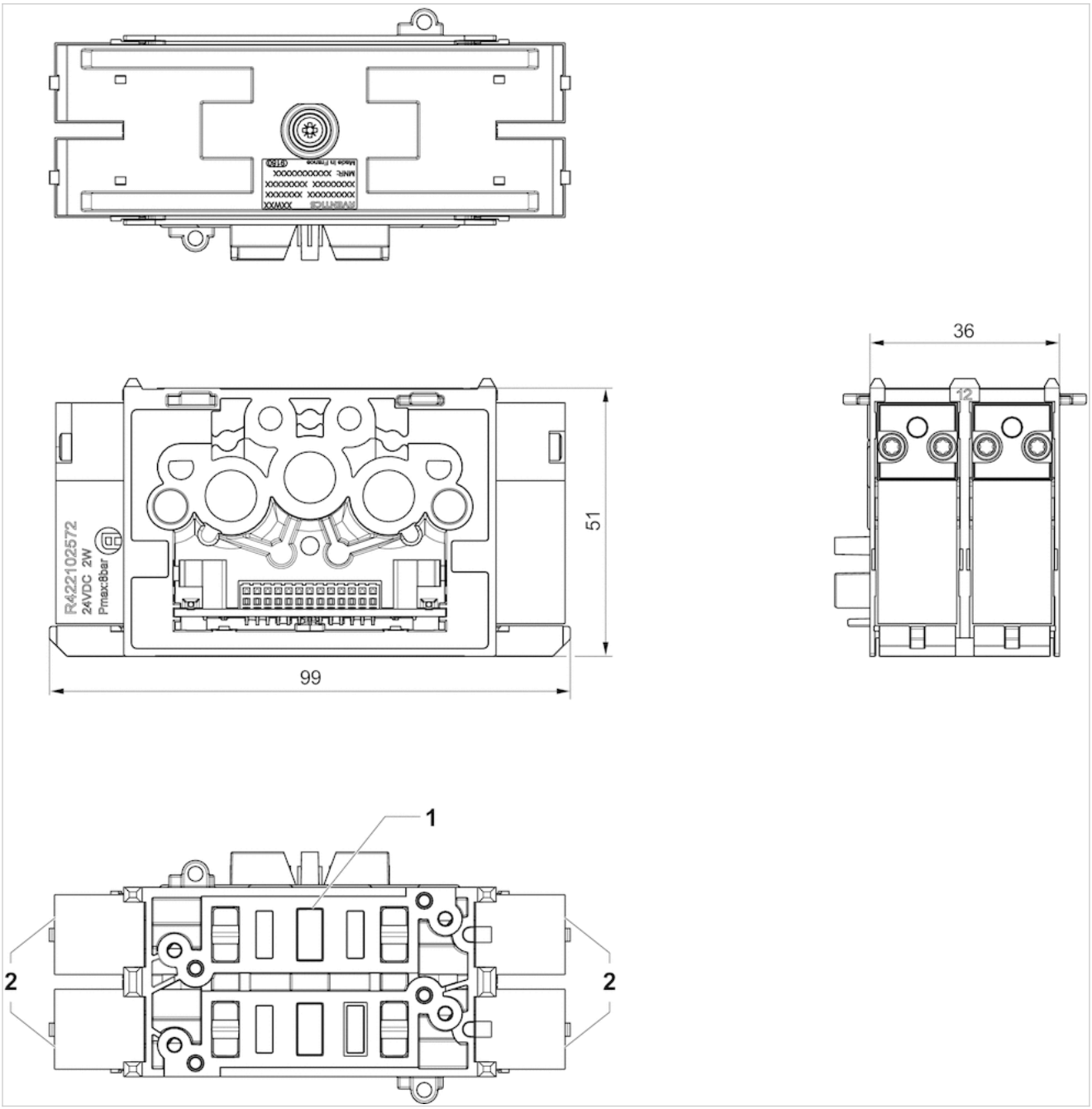
Dimensions

Dimensions, Fig. 1



1) Place for 2 valves
2) 2 pilot valves
3) Pilot blanking plate
Only for single solenoid 5/2 direction valve function

Dimensions, Fig. 2



1) Place for 2 valves
2) 4 pilot valves

Base plate, Series ES05

- Base plate 2x for single wiring
- Valve plug connector form C industry
- for ES05

Working pressure min./max.	0 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 25 mg/m³
electr. connection	Valve plug connector form C industry
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Type	Scope of delivery	Delivery unit	Fig.
R422003358	single solenoid	2 base plates, incl. 1 seal	1 piece	Fig. 1
R422P03358	single solenoid	2 base plates, incl. 1 seal	5 piece	Fig. 1
R422003341	double solenoid	2 base plates, incl. 1 seal	1 piece	Fig. 2
R422P03341	double solenoid	2 base plates, incl. 1 seal	5 piece	Fig. 2

Technical information

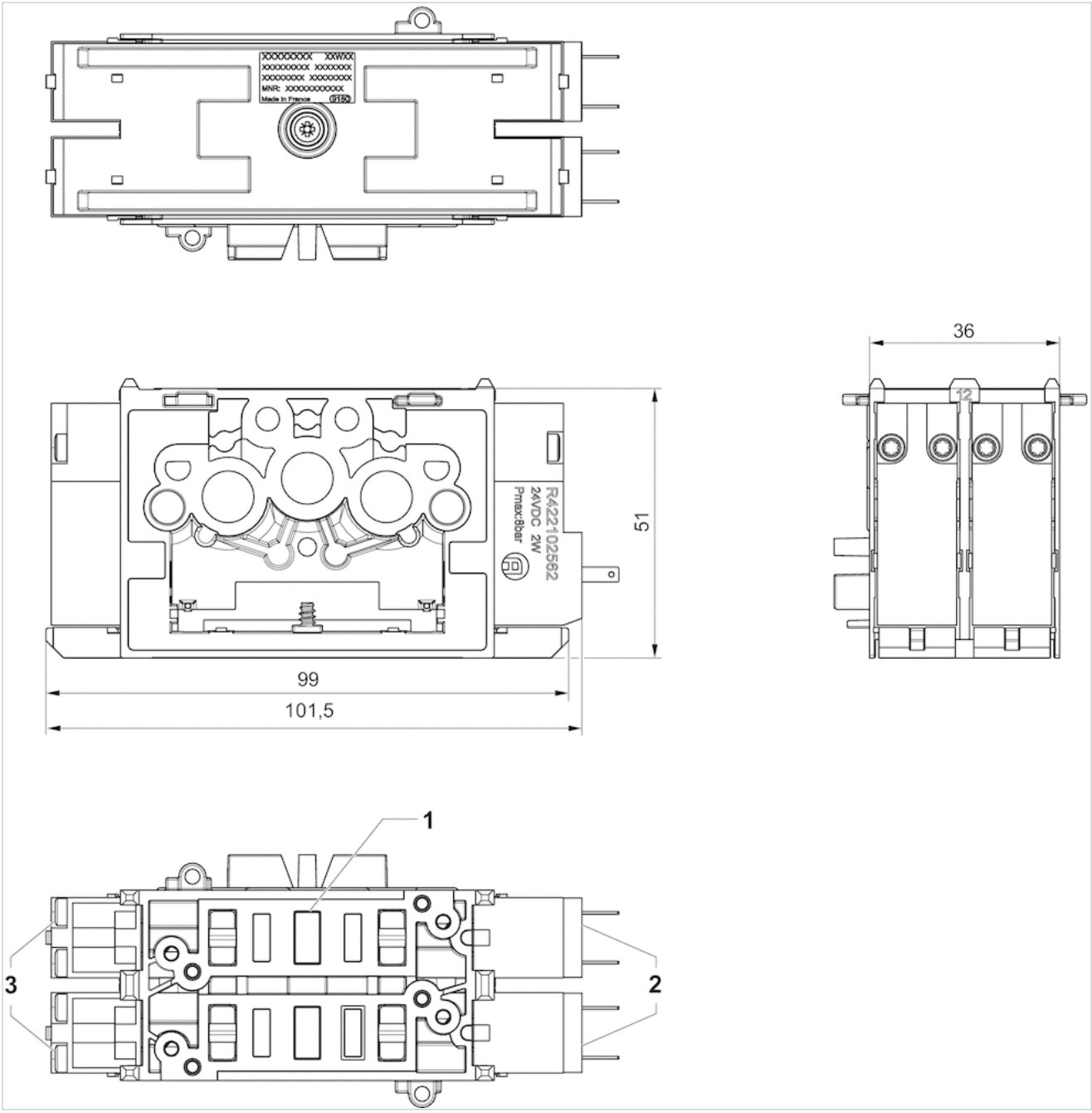
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seal	Nitrile butadiene rubber

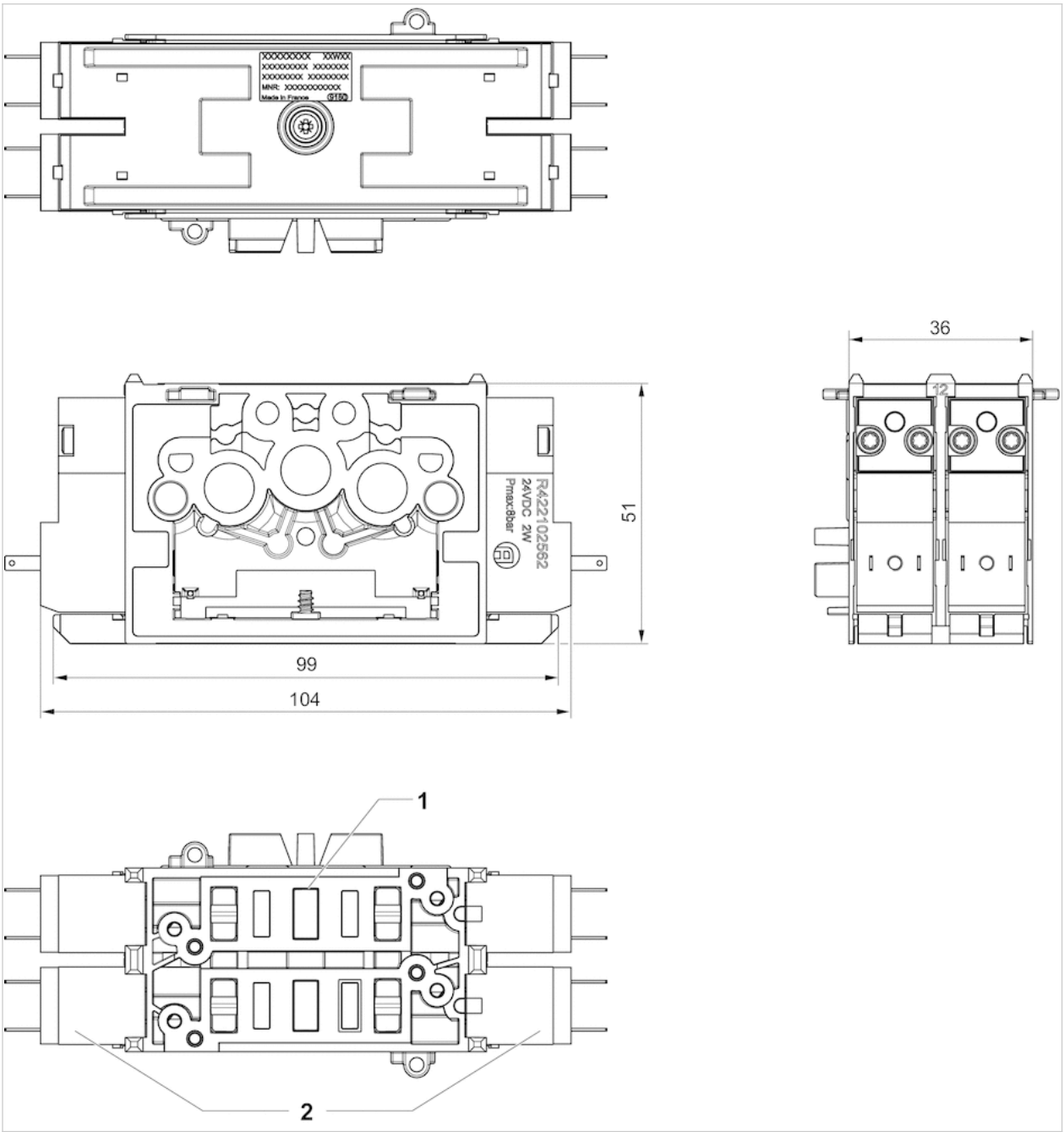
Dimensions

Dimensions, Fig. 1



1) 2 pilot valves with external electrical connection
2) Place for 2 valves
3) Pilot blanking plate

Dimensions, Fig. 2



1) 4 pilot valves with external electrical connection
2) Place for 2 valves

Base plate, Series ES05

- Base plate 2x for single wiring
- M8x1 (3-pin)
- for ES05

Working pressure min./max.	0 ... 8 bar
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 25 mg/m³
electr. connection	M8x1 (3-pin)
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Type	Scope of delivery	Delivery unit	Fig.
R422103848	single solenoid	Base plate 2x, incl. 1 seal	1 piece	Fig. 1
R422P03848	single solenoid	Base plate 2x, incl. 1 seal	5 piece	Fig. 1
R422103849	double solenoid	Base plate 2x, incl. 1 seal	1 piece	Fig. 2
R422P03849	double solenoid	Base plate 2x, incl. 1 seal	5 piece	Fig. 2

Technical information

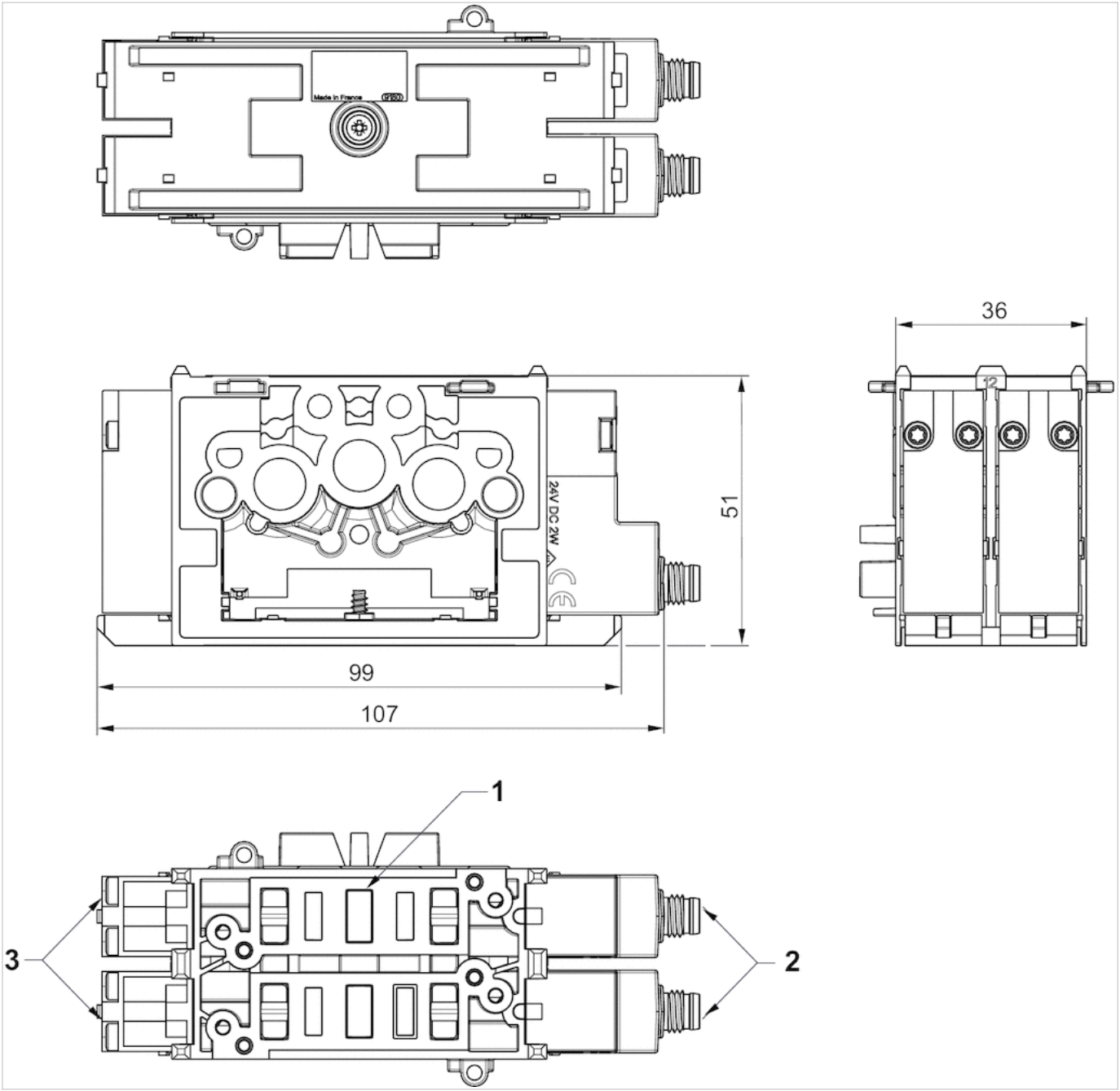
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seal	Nitrile butadiene rubber

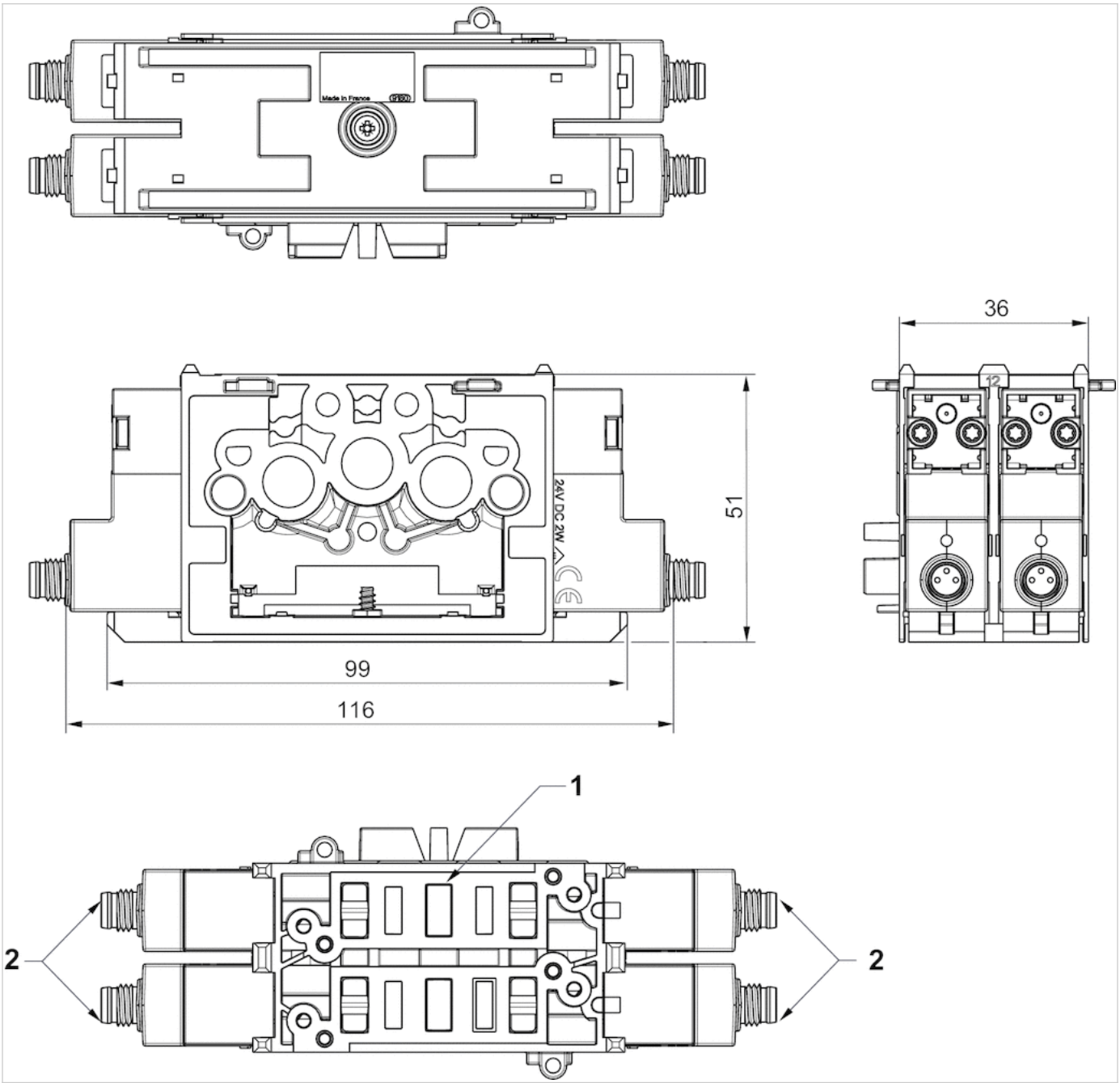
Dimensions

Dimensions, Fig. 1



1) Place for 2 valves
2) 2 pilot valves M8x1
3) Pilot blanking plate
Only for single solenoid 5/2 direction valve function

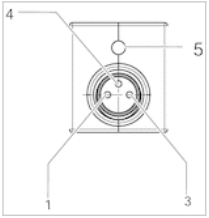
Dimensions, Fig. 2



1) Place for 2 valves
2) 4 pilot valves M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:

1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

Supply plate

- input [1] Ø 12
- for ES05

Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Compressed air connection Input [1]	Delivery unit
R422102622	Ø 12	1 piece
R422P02622	Ø 12	5 piece

Delivery includes sealing kit and 2x mounting screw

Technical information

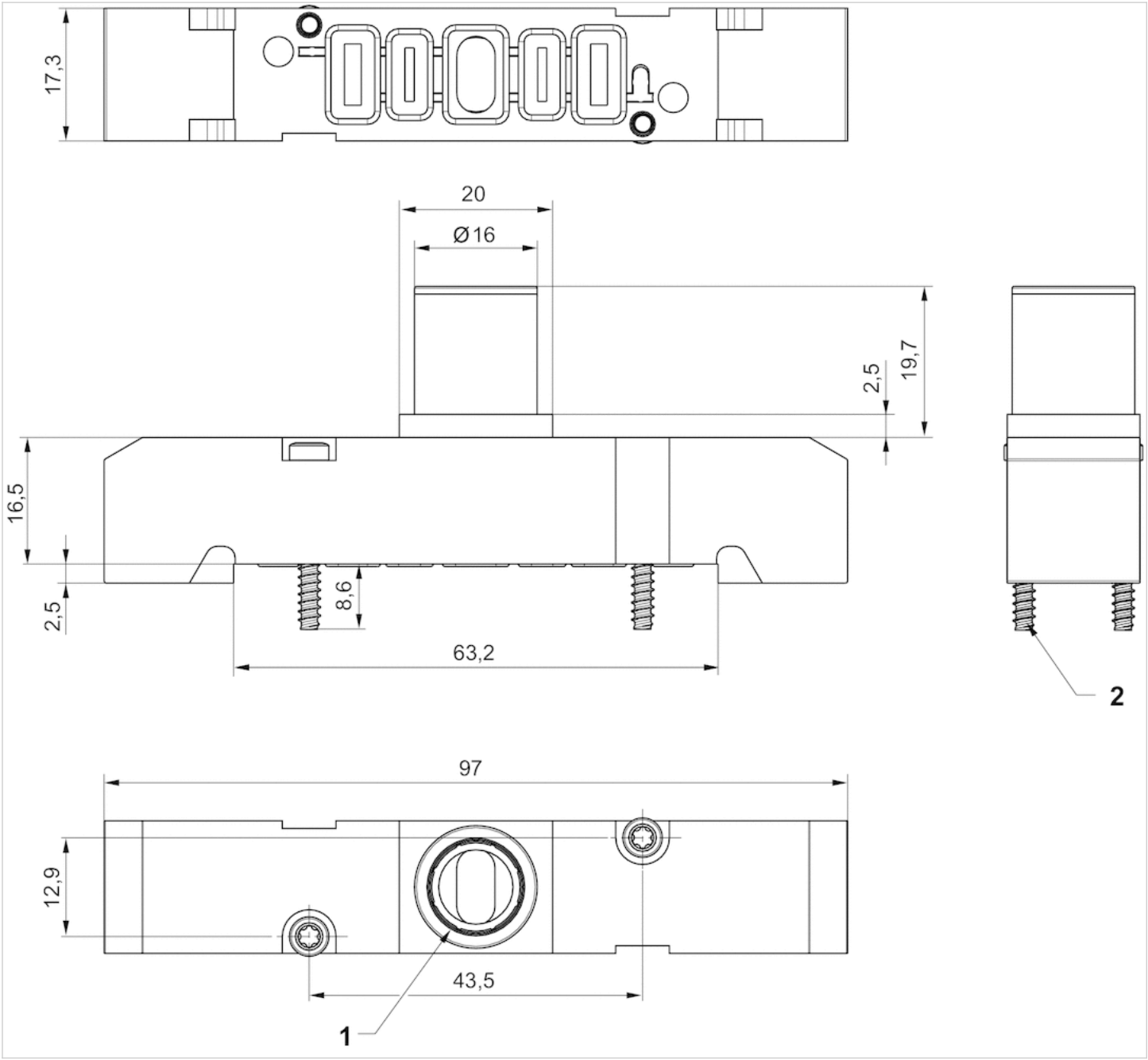
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Aluminum
Screws	Steel

Dimensions

Dimensions



1) input [1] Ø 12
2) Screws for plastic Ø3

Supply plate

- input [1] Ø 12, Output [3/5]: Ø8
- for ES05

Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Compressed air connection Input [1]	Compressed air connection Exhaust [3 / 5]	Delivery unit
R422102809	Ø 12	Ø 8	1 piece
R422P02809	Ø 12	Ø 8	5 piece

Delivery includes sealing kit and 2x mounting screw

Technical information

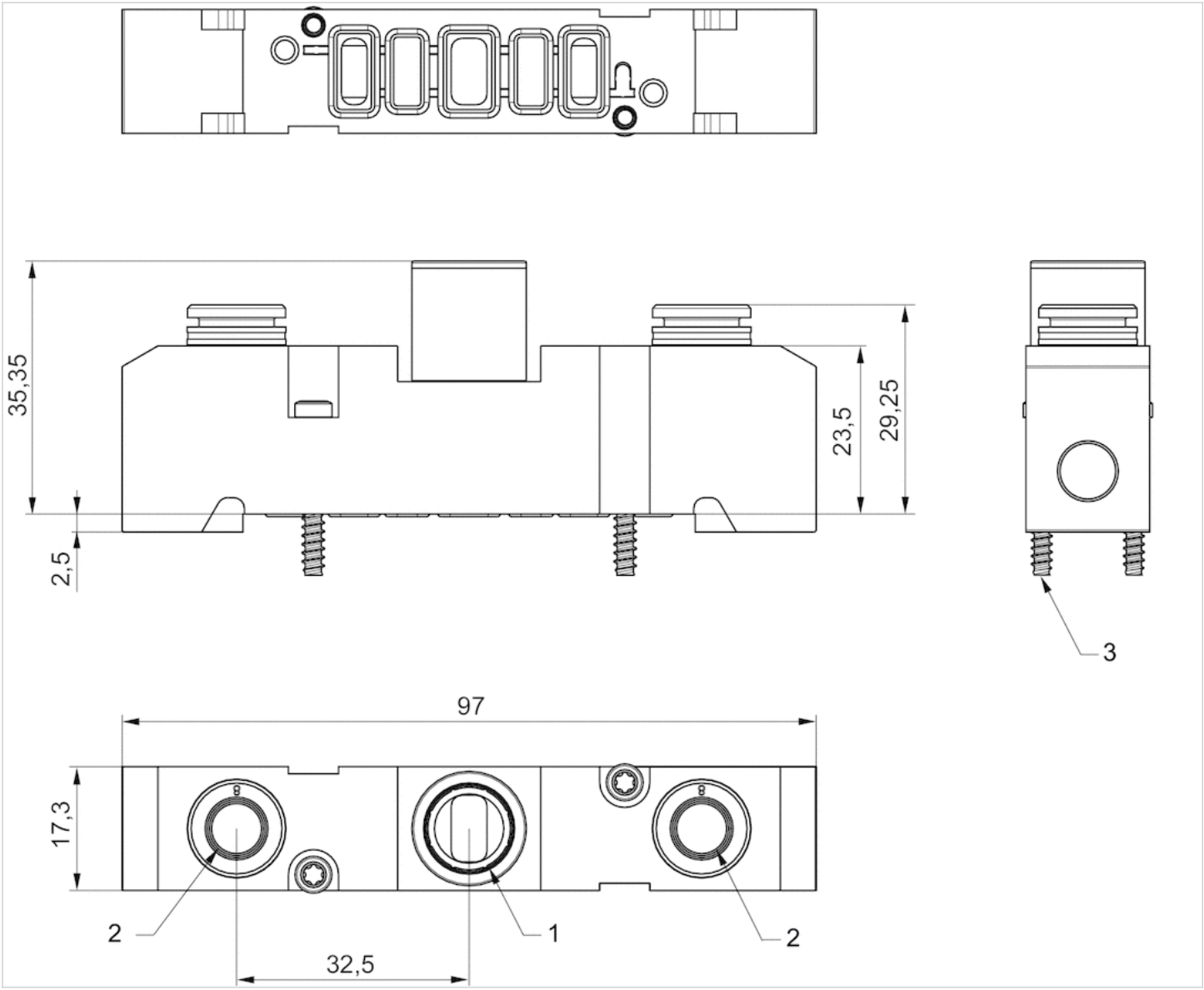
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Aluminum
Screws	Steel

Dimensions

Dimensions



1) input [1] Ø 12
2) Output [3/5]: Ø8
3) Screws for plastic Ø3

Supply plate

- input [1] Ø 3/8
- for ES05 -inch

Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Compressed air connection Input [1]	Delivery unit
R422103345	Ø 3/8	1 piece
R422P03345	Ø 3/8	5 piece

Delivery includes sealing kit and 2x mounting screw

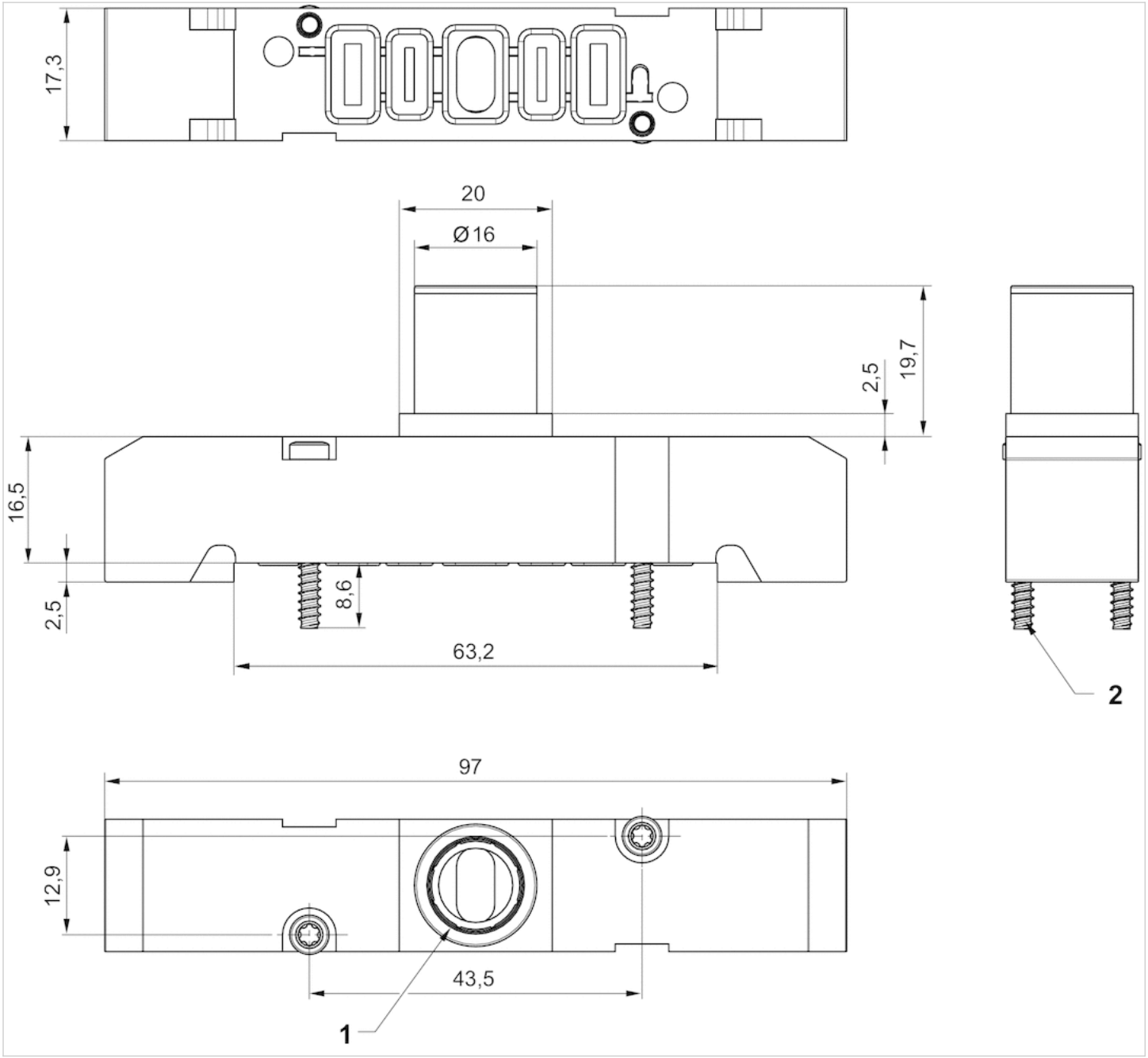
Technical information

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).

Technical information

Material	
Seal	Aluminum
Screws	Steel

Dimensions



1) input [1] Ø 3/8
2) Screws for plastic Ø3

Supply plate

- input [1] Ø 3/8, Output [3/5]: Ø3/8
- for ES05 -inch

Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Compressed air connection Input [1]	Compressed air connection Exhaust [3 / 5]	Delivery unit
R422102810	Ø 3/8	Ø 3/8	1 piece
R422P02810	Ø 3/8	Ø 3/8	5 piece

Delivery includes sealing kit and 2x mounting screw

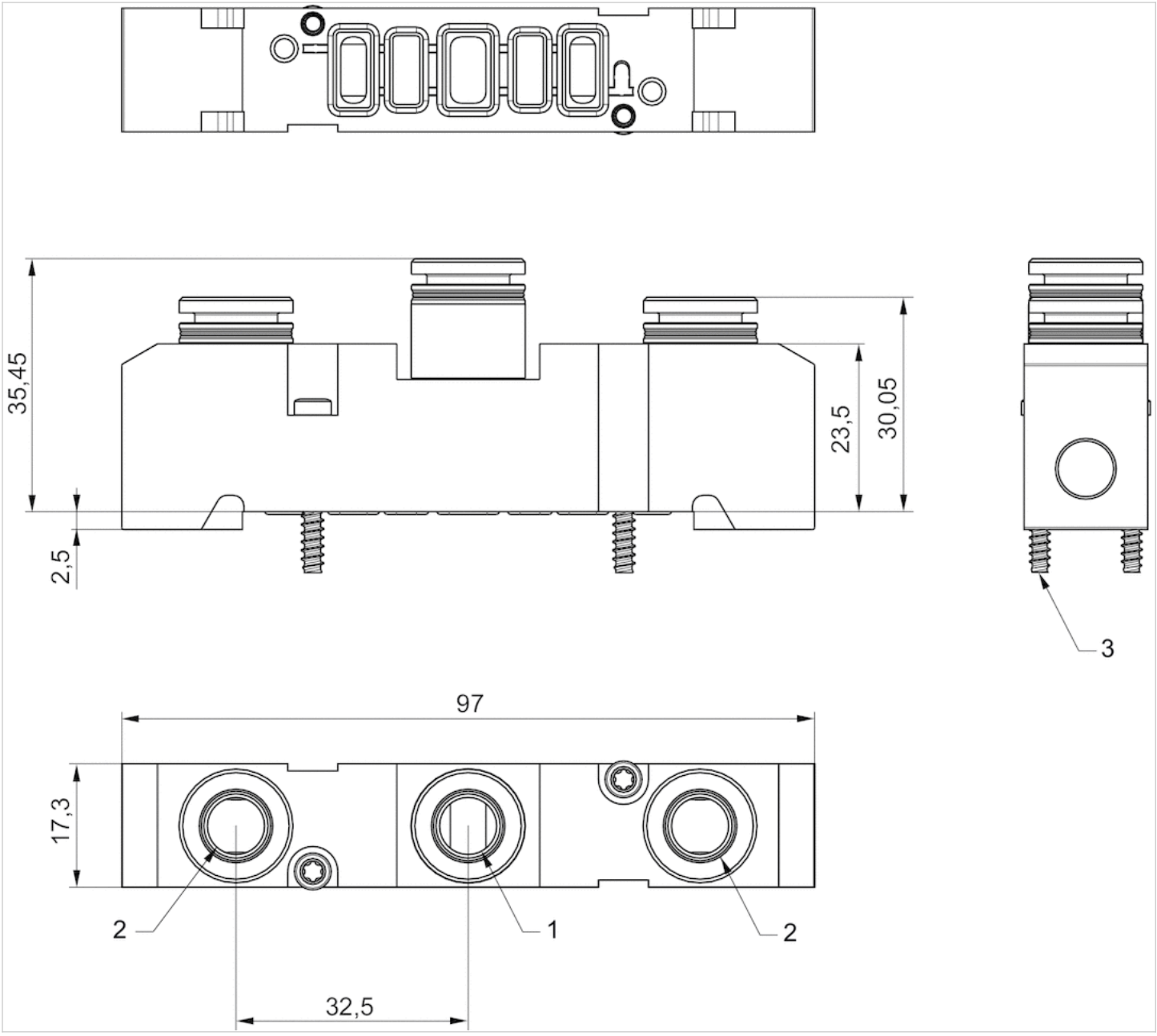
Technical information

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).

Technical information

Material	
Seal	Aluminum
Screws	Steel

Dimensions



1) input [1] Ø 3/8
2) Output [3/5]: Ø3/8
3) Screws for plastic Ø3

Blanking plate

- for ES05

Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Mounting screw	Hexalobular socket (TORX) ISO 10664-10
Tightening torque for mounting screws	0.9 Nm

Technical data

Part No.	Delivery unit
R422102718	1 piece
R422P02718	5 piece

Delivery includes sealing kit and 2x mounting screw

Technical information

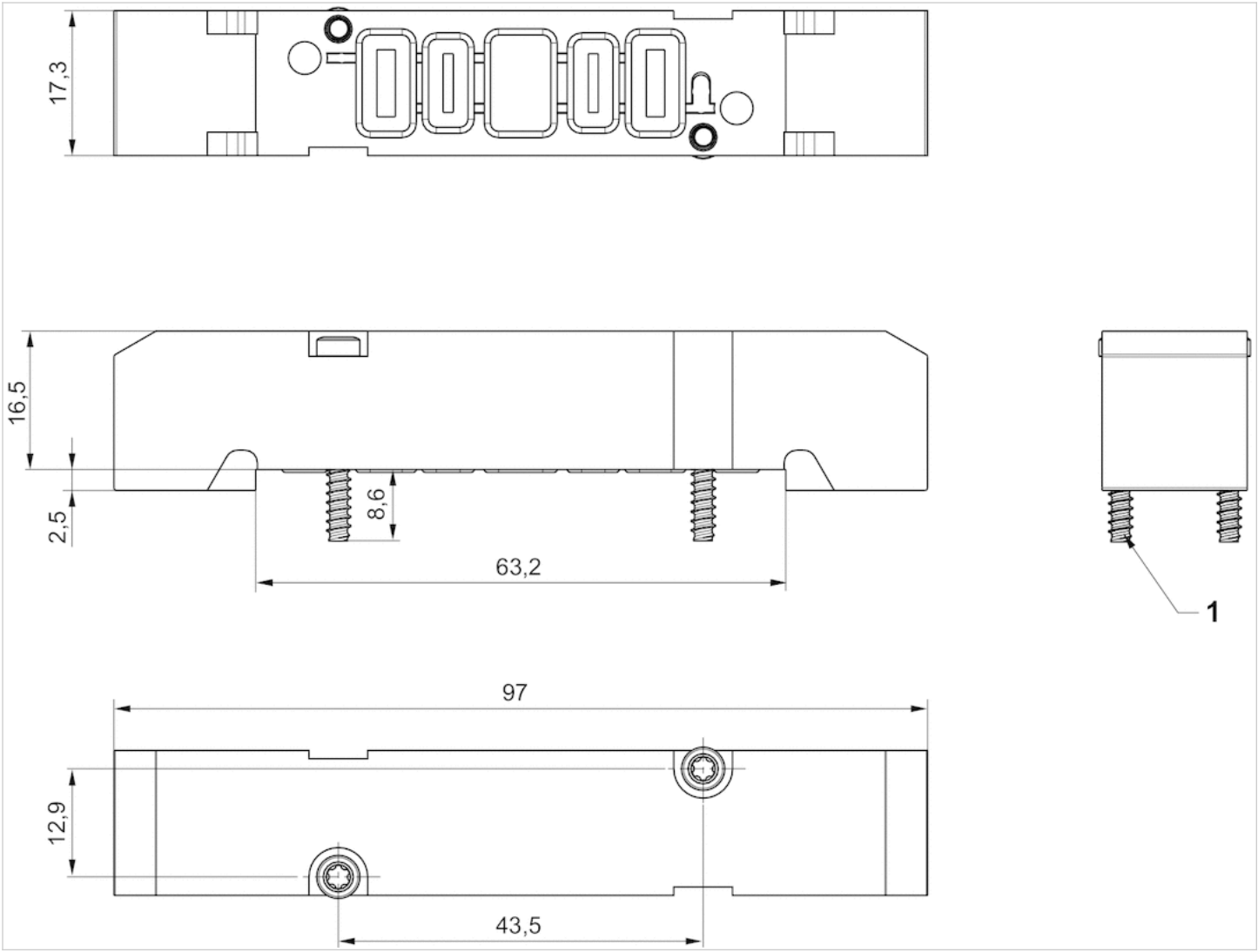
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Aluminum
Screws	Steel

Dimensions

Dimensions



1) Screws for plastic Ø3

Single subbase, Series ES05

- Compressed air connection output : Base plate
- Manual override : without detent
- single solenoid double solenoid
- With spring/air spring return

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422102746	Ø 8	Base plate
R422102747	Ø 8	Base plate

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422102746	Ø 8	24 V	-15% / +10%
R422102747	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Fig.
	DC	
R422102746	2 W	Fig. 1
R422102747	2 W	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

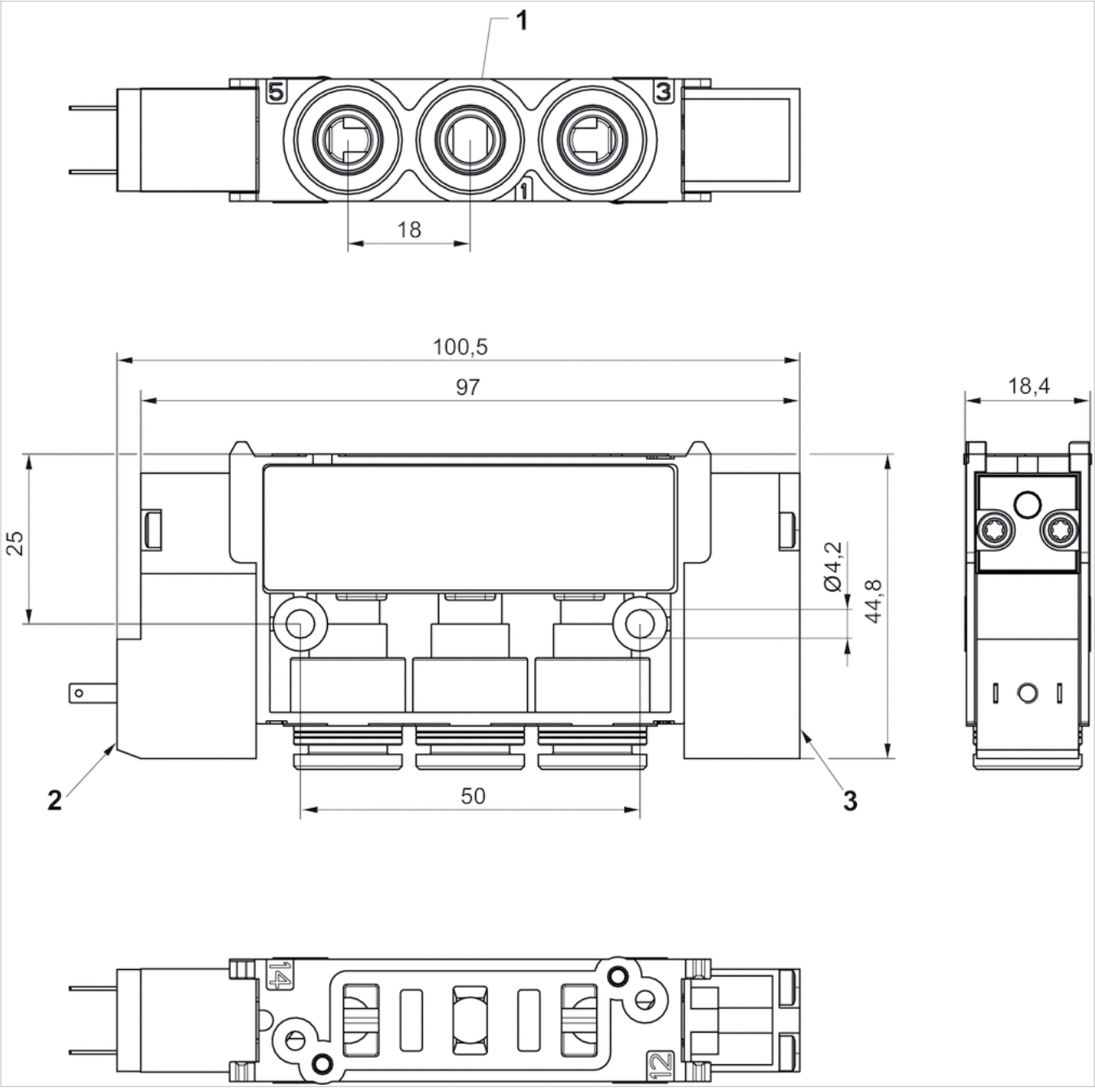
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene

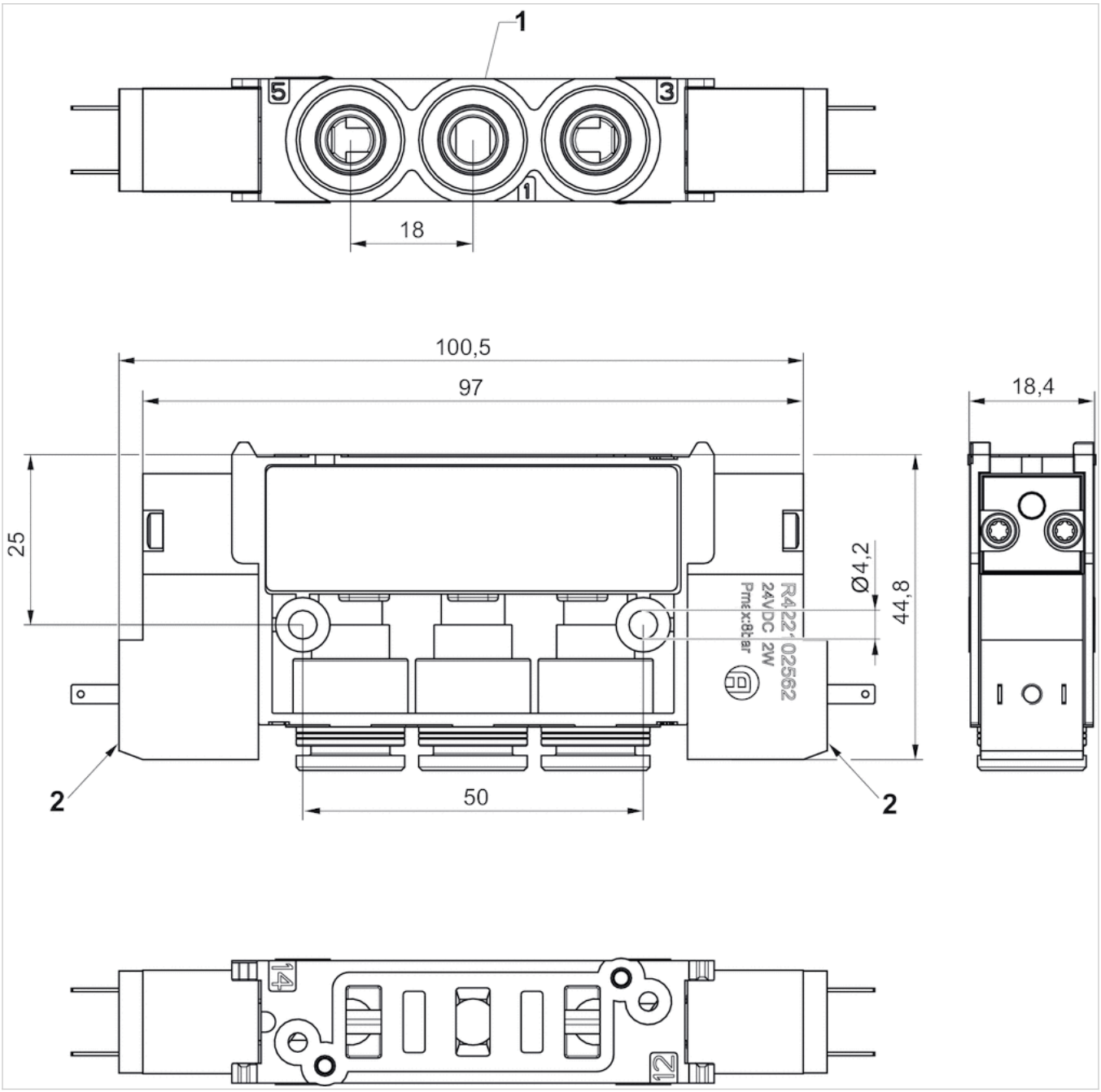
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5] Ø 8
2) Pilot valve with external electrical control
3) Pilot blanking plate

Fig. 2, double solenoid



1) Connections [1 ,3 ,5] Ø 8
2) Pilot valve with external electrical control

Single subbase, Series ES05

- Compressed air connection output : Base plate
- Electrical connection : M8, 3-pin
- Manual override : without detent
- single solenoid double solenoid
- With spring/air spring return

Activation	Electrically
Working pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422103850	Ø 8	Base plate
R422103851	Ø 8	Base plate

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103850	Ø 8	24 V	-15% / +10%
R422103851	Ø 8	24 V	-15% / +10%

Part No.	Power consumption	Fig.
	DC	
R422103850	2 W	Fig. 1
R422103851	2 W	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

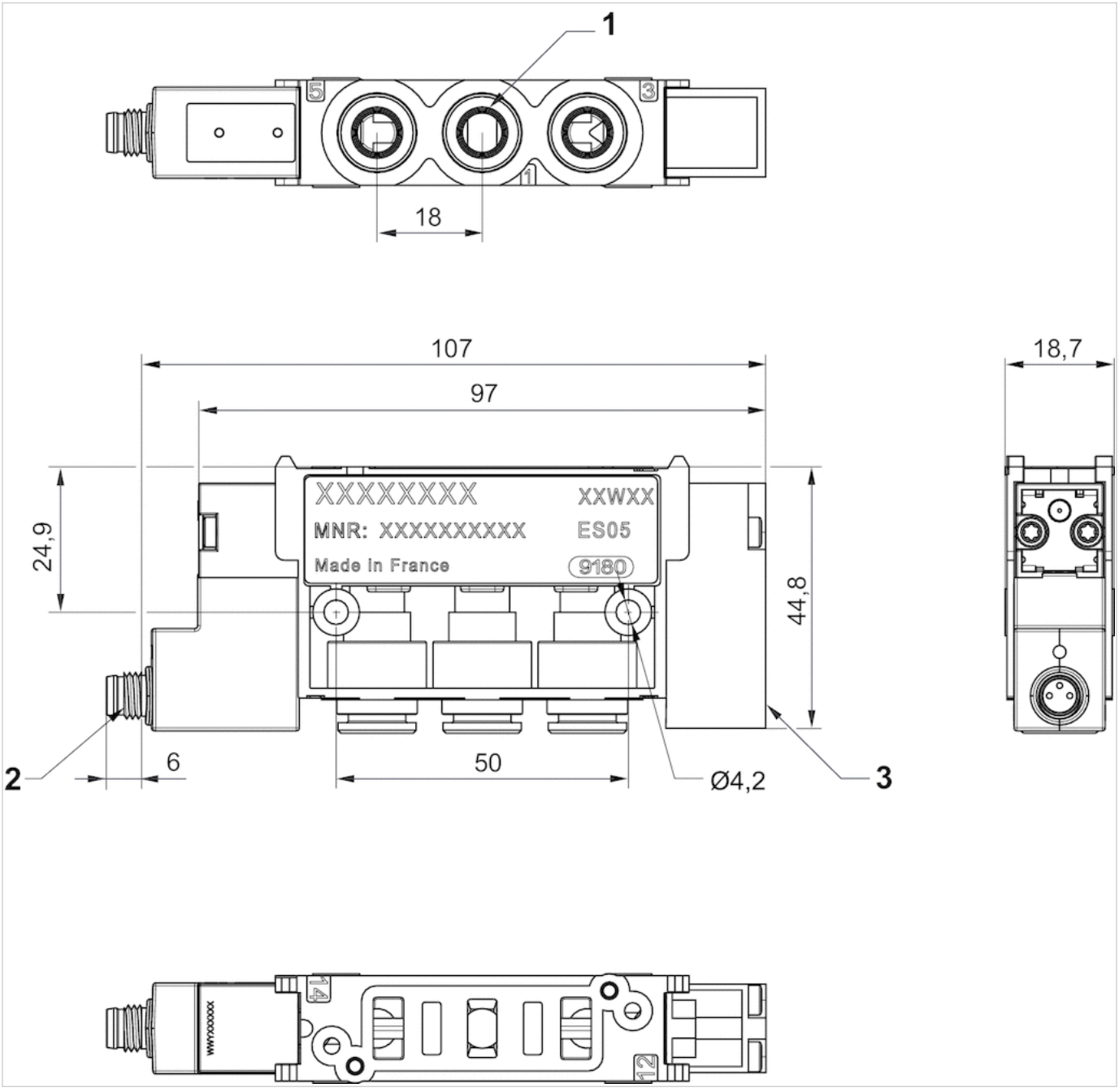
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene

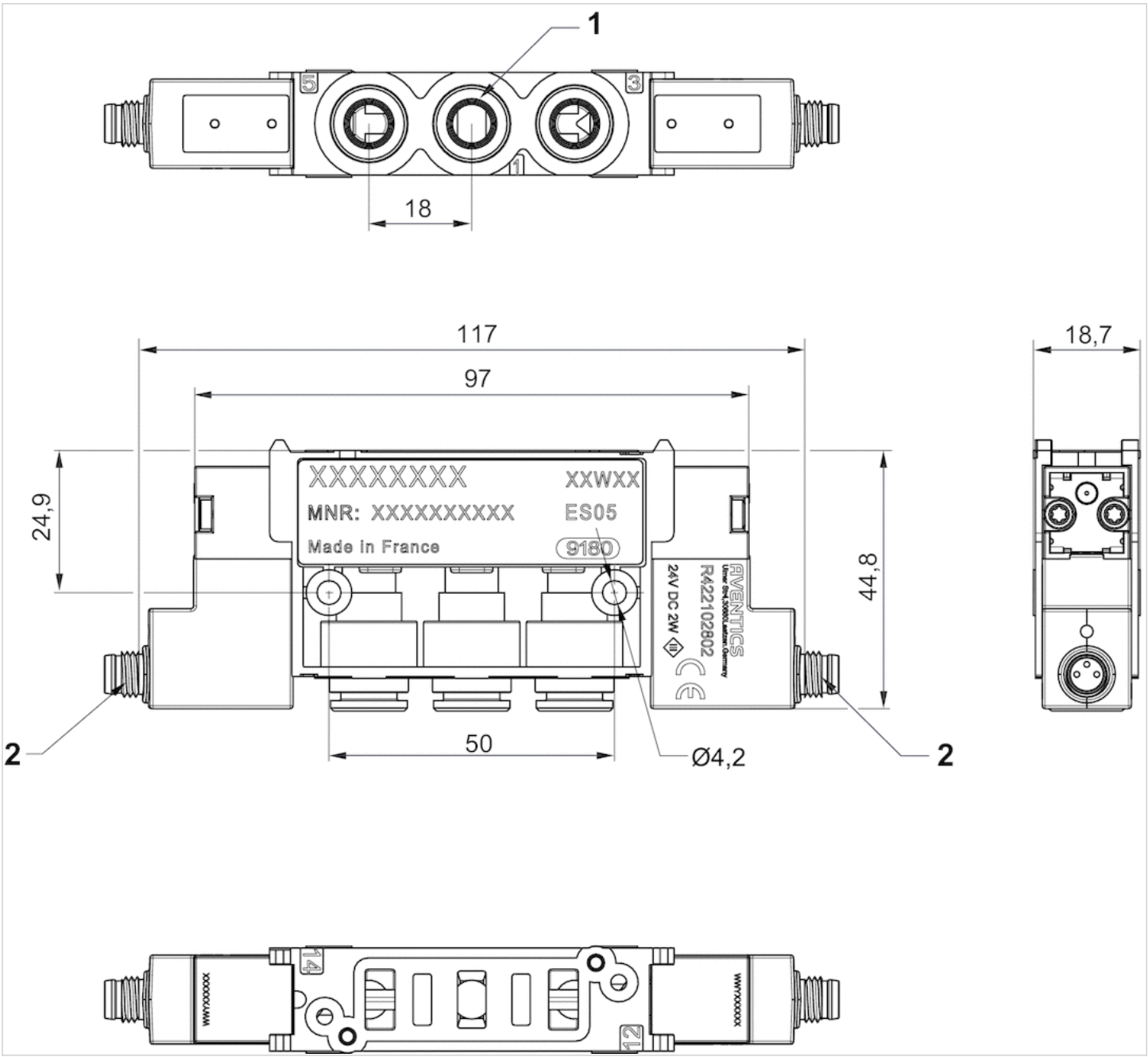
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5] Ø 8
2) Pilot valve with external electrical control: M8x1
3) Pilot blanking plate

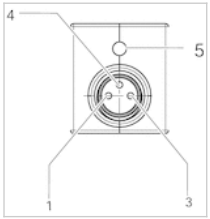
Fig. 2, double solenoid



1) Connections [1 ,3 ,5] Ø 8
2) Pilot valve with external electrical control: M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned

3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

Single subbase, Series ES05 -inch

- Compressed air connection output : Base plate
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422102748	Ø 3/8	Base plate
R422102749	Ø 3/8	Base plate

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422102748	Ø 3/8	24 V	-15% / +10%
R422102749	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Fig.
	DC	
R422102748	2 W	Fig. 1
R422102749	2 W	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

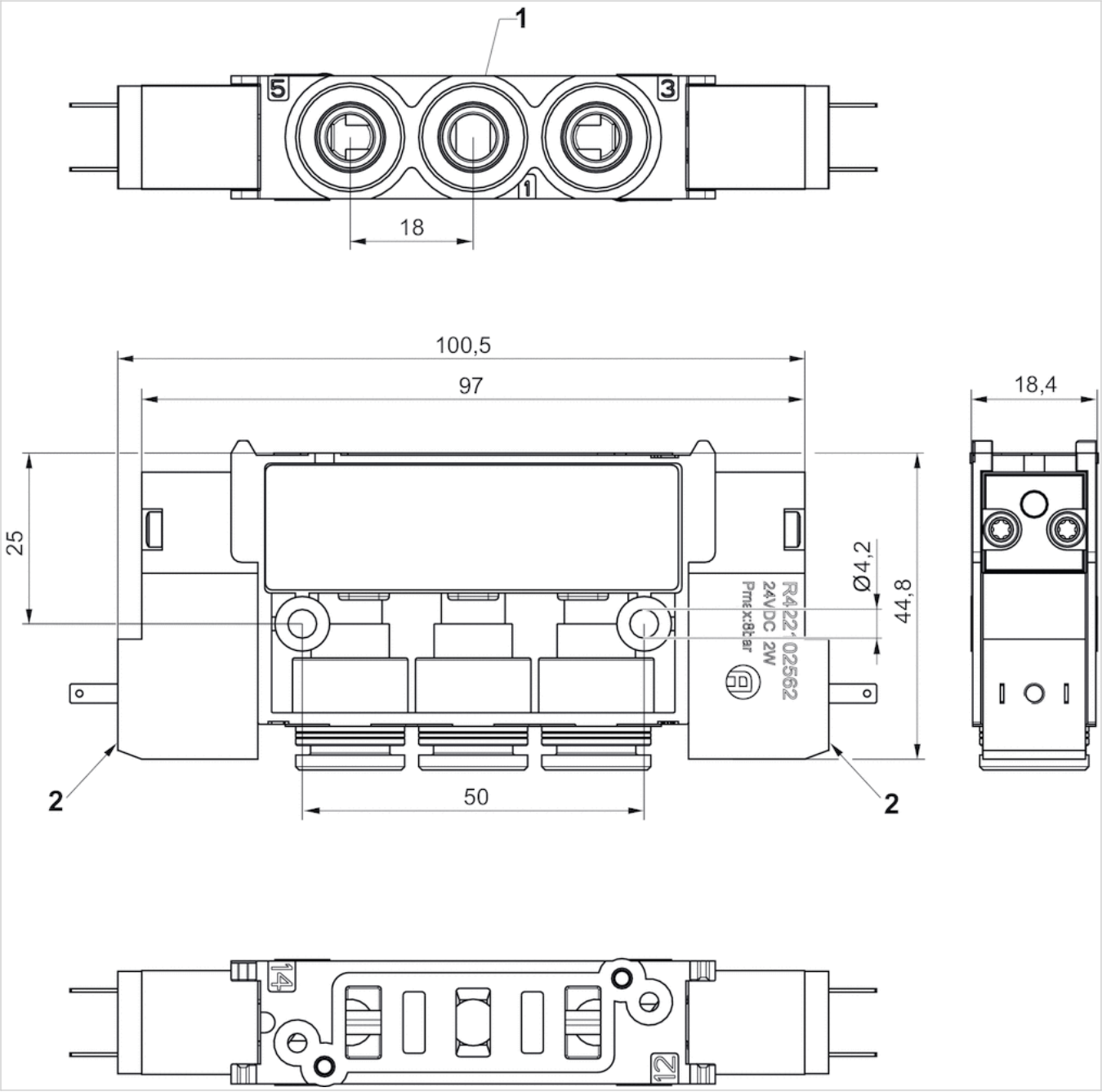
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene

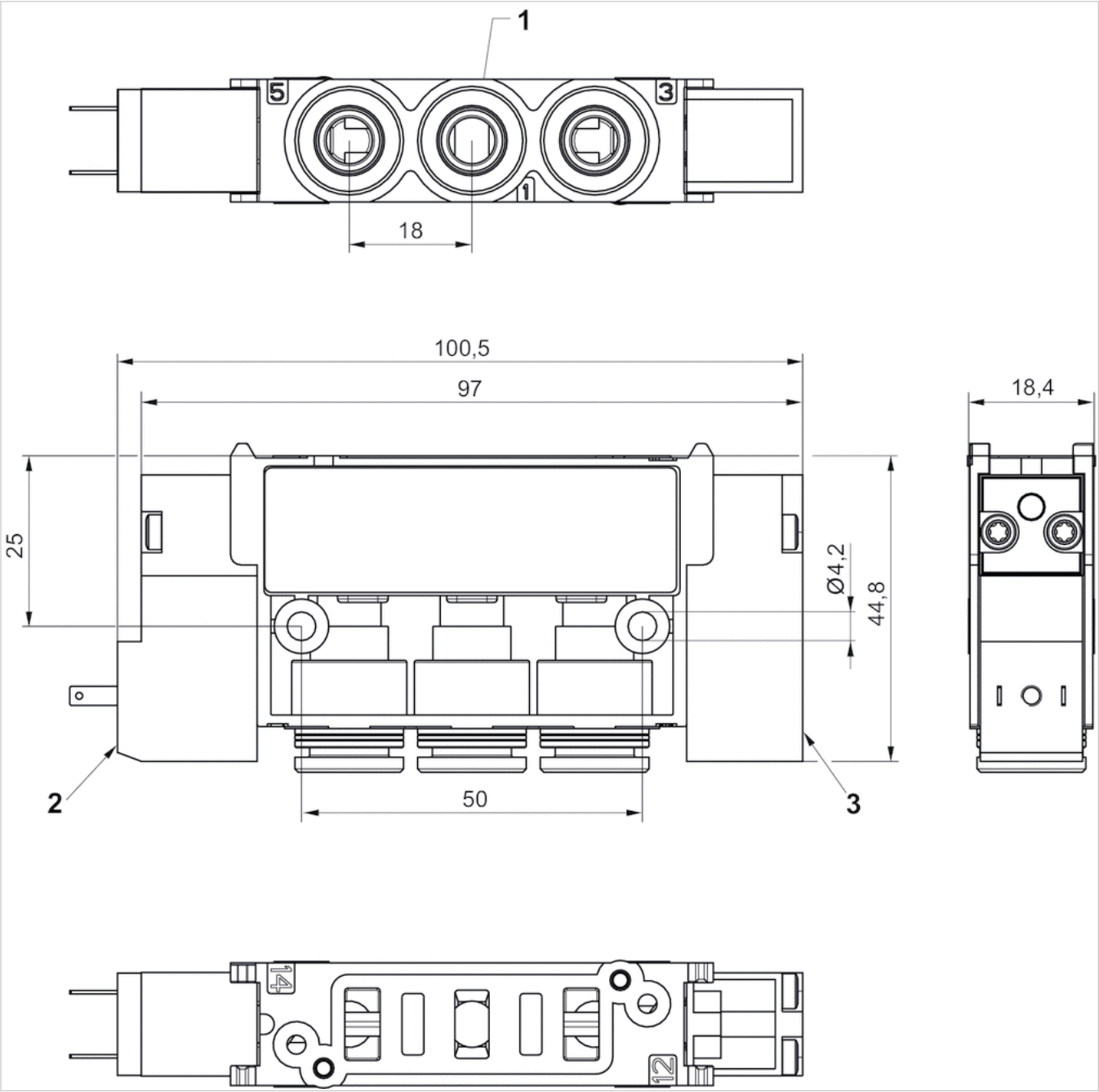
Dimensions

Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) Pilot valve with external electrical control

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) Pilot valve with external electrical control
3) Pilot blanking plate

Single subbase, Series ES05 -inch

- Compressed air connection output : Base plate
- Electrical connection : M8, 3-pin
- Manual override : without detent
- single solenoid double solenoid

Activation	Electrically
Working pressure min./max.	0 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	40 µm
Oil content of compressed air	0 ... 5 mg/m³
Protection class with connection	IP65
Duty cycle	100 %

Technical data

Part No.	Compressed air connection	Compressed air connection
	Input	Output
R422103852	Ø 3/8	Base plate
R422103853	Ø 3/8	Base plate

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R422103852	Ø 3/8	24 V	-15% / +10%
R422103853	Ø 3/8	24 V	-15% / +10%

Part No.	Power consumption	Fig.
	DC	
R422103852	2 W	Fig. 1
R422103853	2 W	Fig. 2

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

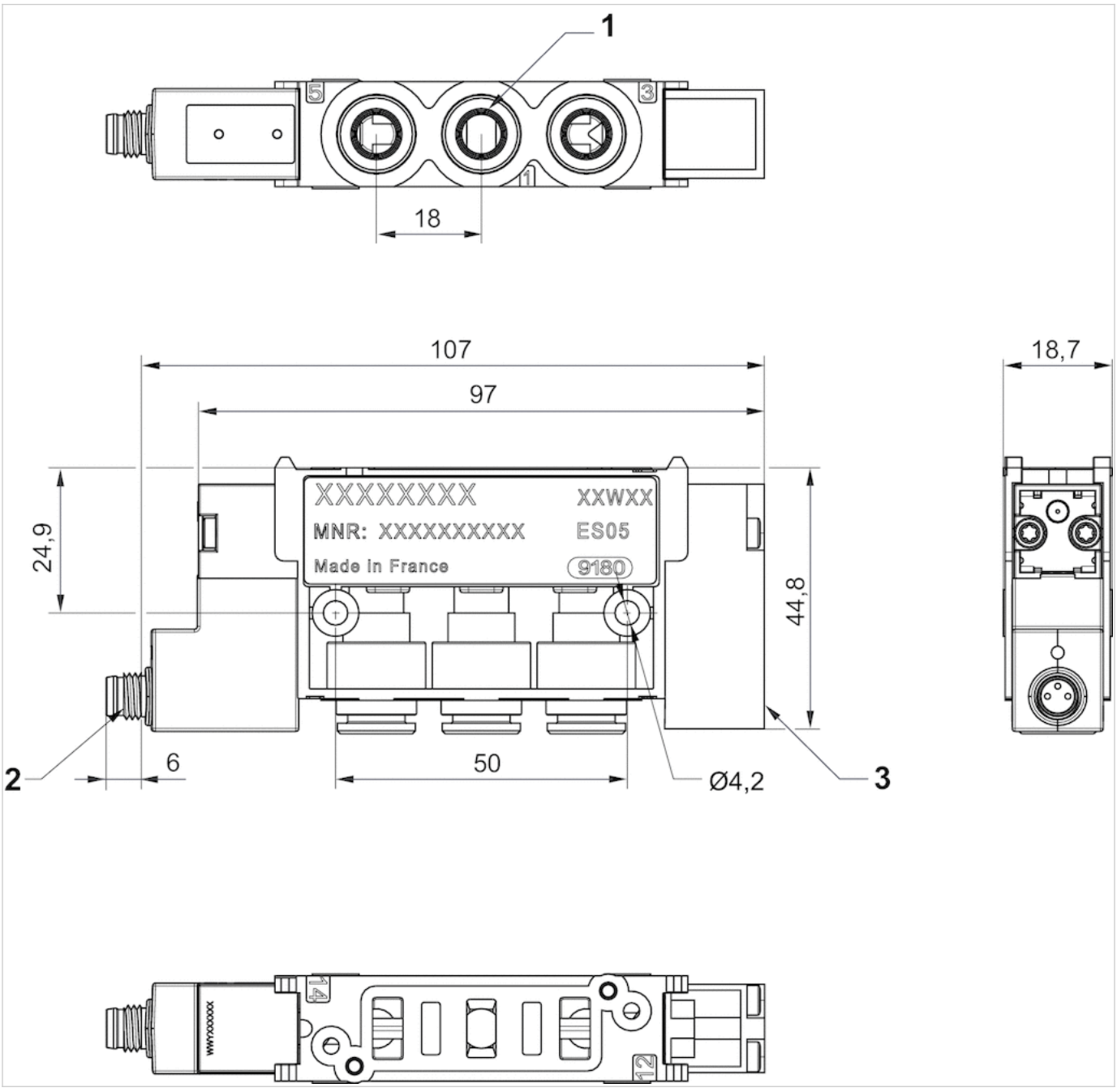
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide Polyoxymethylene

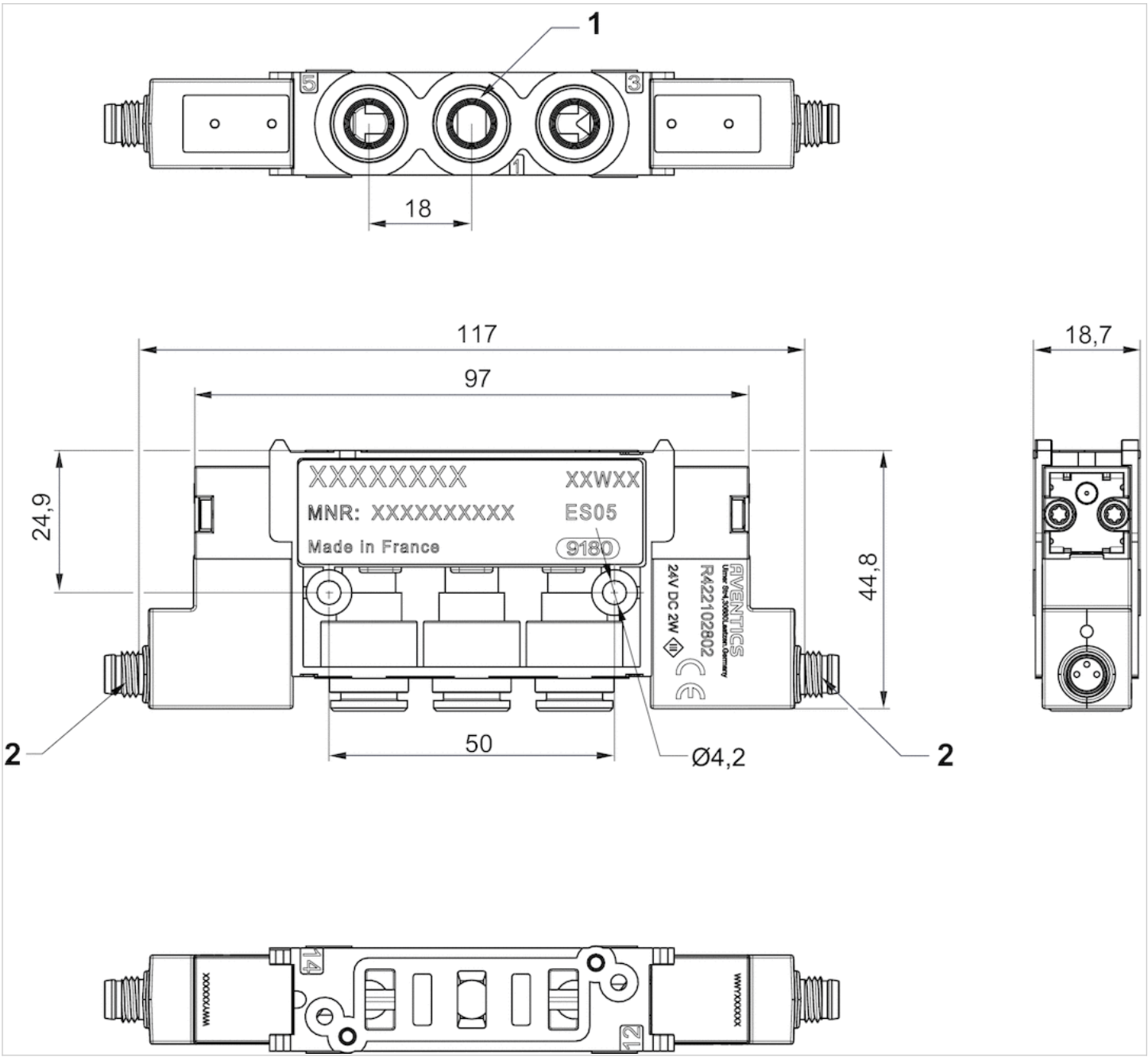
Dimensions

Fig. 1, single solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) Pilot valve with external electrical control: M8x1
3) Pilot blanking plate

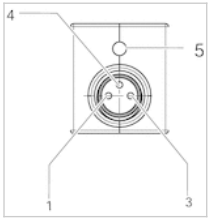
Fig. 2, double solenoid



1) Connections [1 ,3 ,5, 2, 4] Ø 3/8
2) Pilot valve with external electrical control: M8x1

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned

3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

Pilot valve, Series ES05

- Pilot valve for internal electrical control
- Electrical connection : form C, industry
- Manual override : without detent

Activation	Electrically
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.	Operational voltage	Voltage tolerance	Power consumption	Delivery unit
	DC	DC	DC	
R422003356	24 V	-15% / +10%	2 W	1 piece
R422P03356	24 V	-15% / +10%	2 W	5 piece

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).

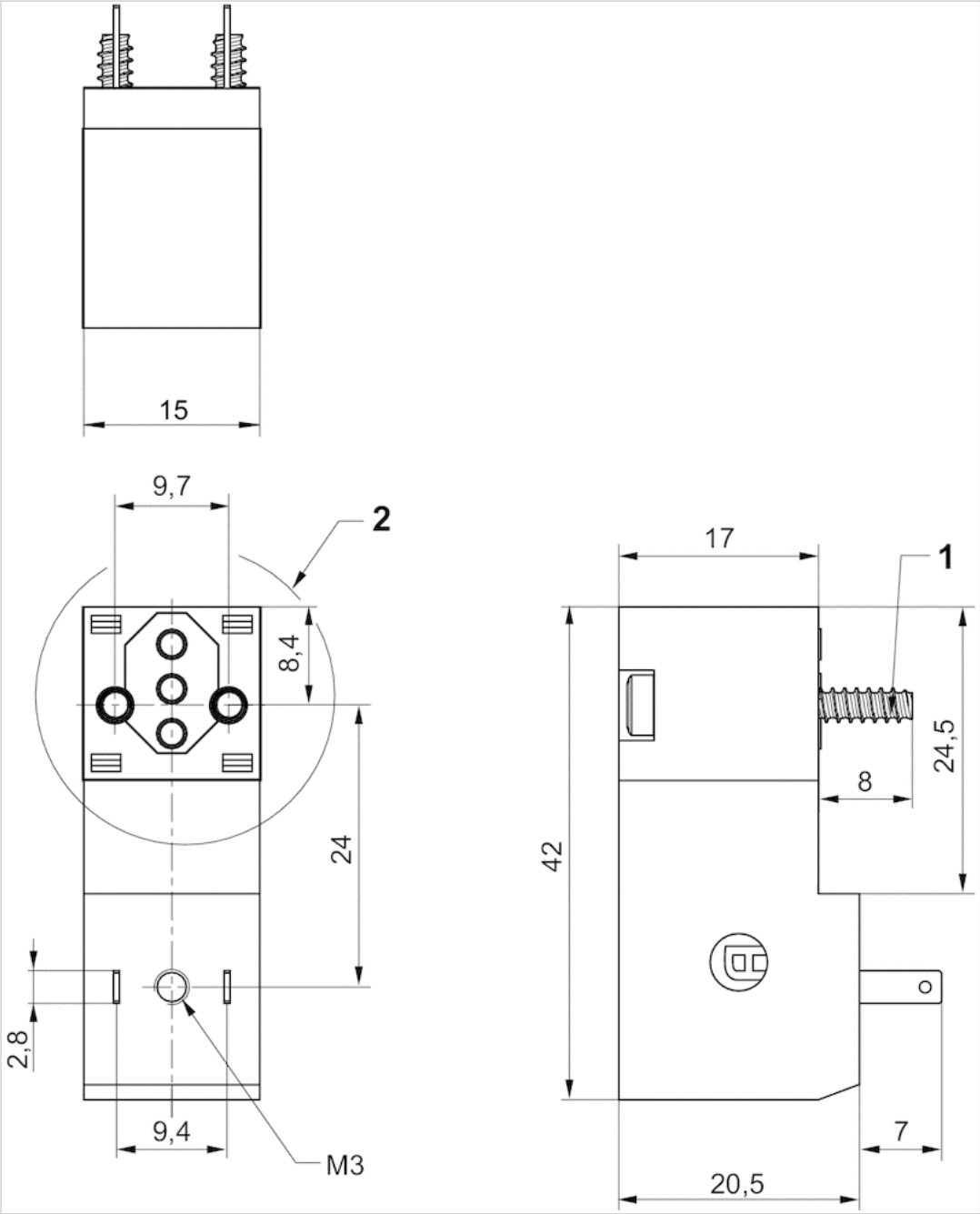
Coil for single wiring connection, rotatable

Technical information

Material	
Housing	Polyamide
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Screws for plastic Ø3
2) rotatable 90°

Pilot valve, Series ES05

- Pilot valve with external electrical connection, Single wiring
- Electrical connection : form C, industry
- Manual override : without detent

Activation	Electrically
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Duty cycle	100 %
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.	Operational voltage	Voltage tolerance	Power consumption	Delivery unit
	DC	DC	DC	
R422003357	24 V	-15% / +10%	2 W	1 piece
R422P03357	24 V	-15% / +10%	2 W	5 piece

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).

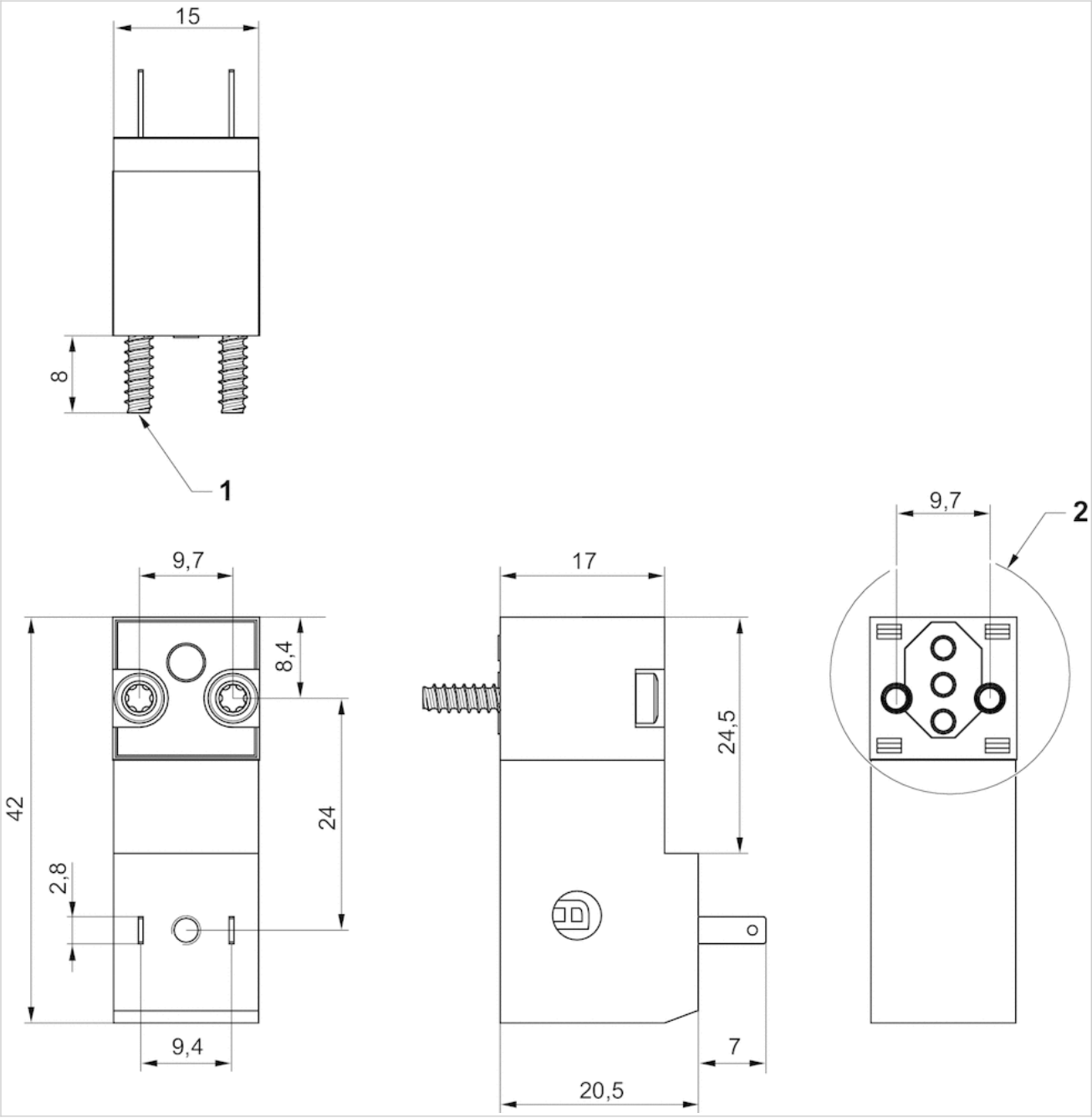
Coil for internal electrical control, rotatable

Technical information

Material	
Housing	Polyamide
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



1) Screws for plastic Ø3
2) rotatable 90°

Pilot valve, Series ES05

- Pilot valve with external electrical connection, Single wiring
- Electrical connection : M8x1, 3-pin

Activation	Electrically
Control pressure min./max.	3 ... 8 bar
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Duty cycle	100 %
mounting screws	Hexalobular socket (TORX) ISO 10664-10
Mounting screw tightening torque	0.9 Nm
Tightening torque tolerance	±0,1 mT

Technical data

Part No.	Operational voltage	Voltage tolerance	Power consumption	Delivery unit
	DC	DC	DC	
R422P03854	24 V	-15% / +10%	2 W	5 piece
R422103854	24 V	-15% / +10%	2 W	1 piece

Technical information

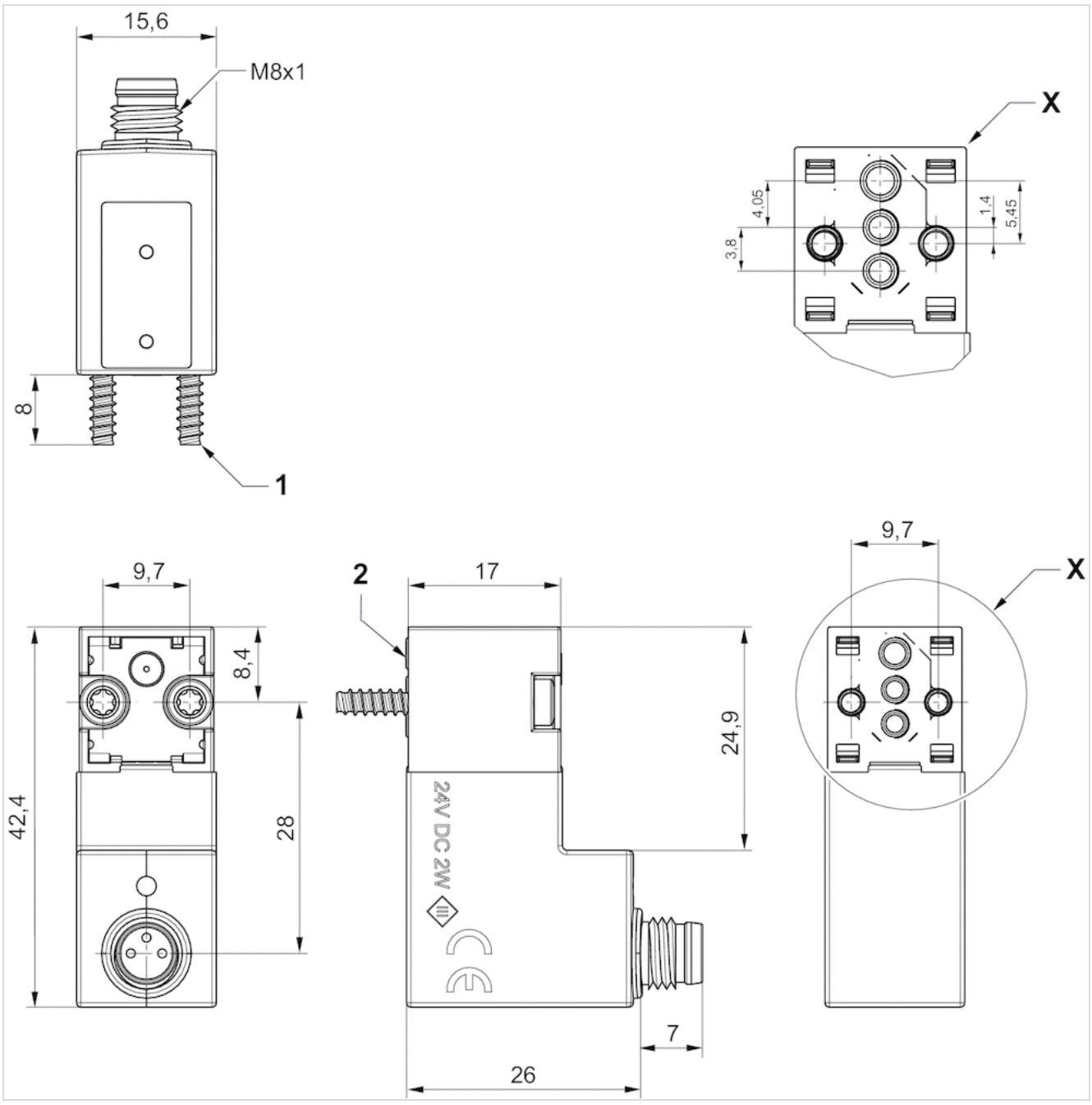
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Polyamide
Seals	Acrylonitrile butadiene rubber

Dimensions

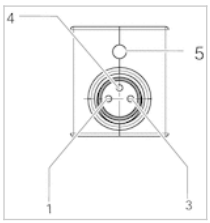
Dimensions



1) Screws for plastic Ø3
2) rotatable 90°

Pin assignments

PIN assignment for valve plug connectors



Pin assignment:
1) Pin not assigned
3) 0 V
4) 24 V
5) LED

Note: Bi-polar protective circuit to prevent overvoltage

Bus coupler, series AES

R412018218

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Fieldbus protocol
PROFIBUS DP

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
Short circuit
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Plug

Communication port, Thread size
M12x1

Communication port, Number of poles
5-pin

Communication port, Coding
B-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
5-pin

Communication port 2
B-coded

Weight
0.16 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018218

Technical information

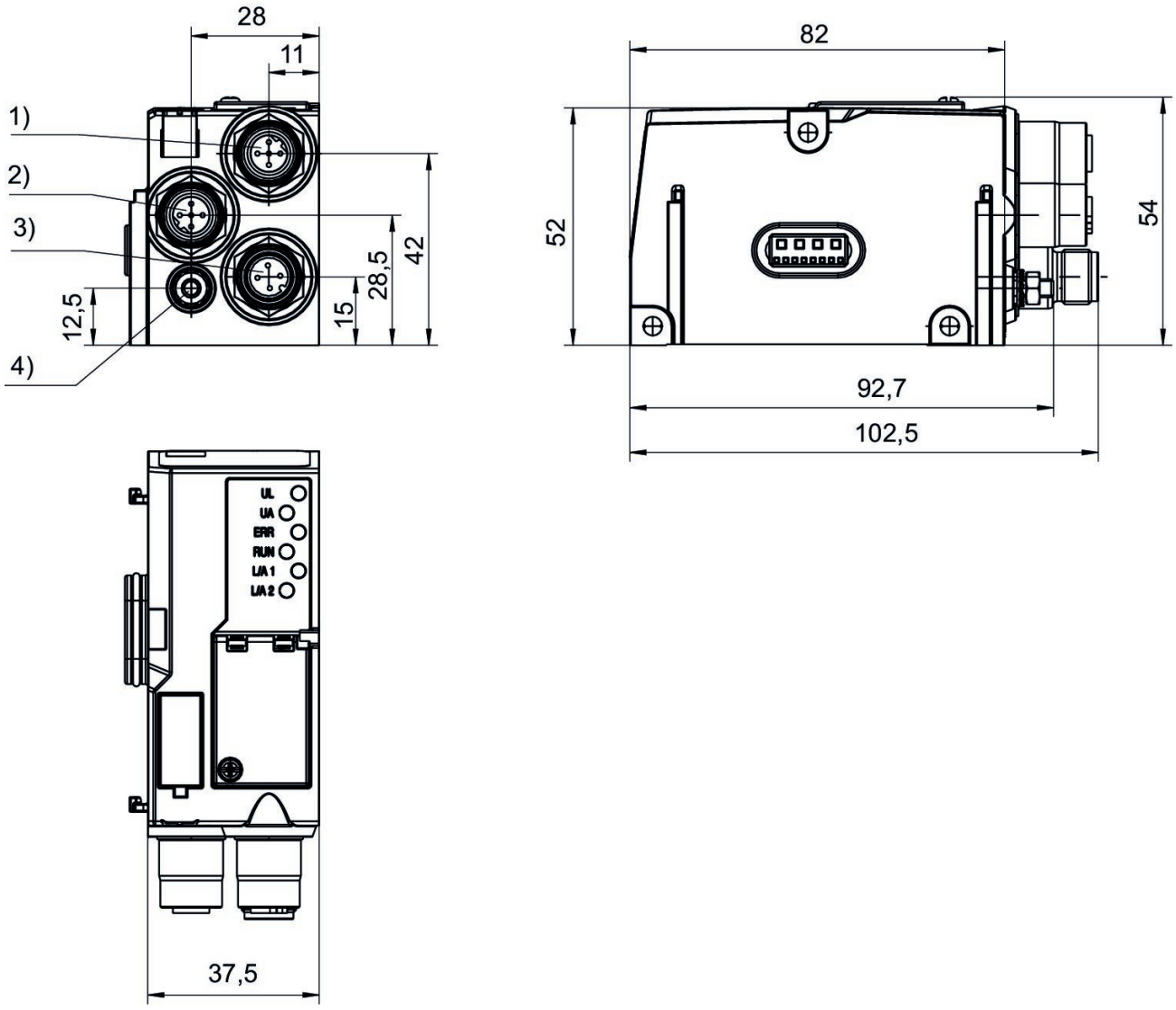
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018220

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Fieldbus protocol
CANopen

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
Short circuit
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Plug

Communication port, Thread size
M12x1

Communication port, Number of poles
5-pin

Communication port, Coding
A-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
5-pin

Communication port 2
A-coded

Weight
0.16 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018220

Technical information

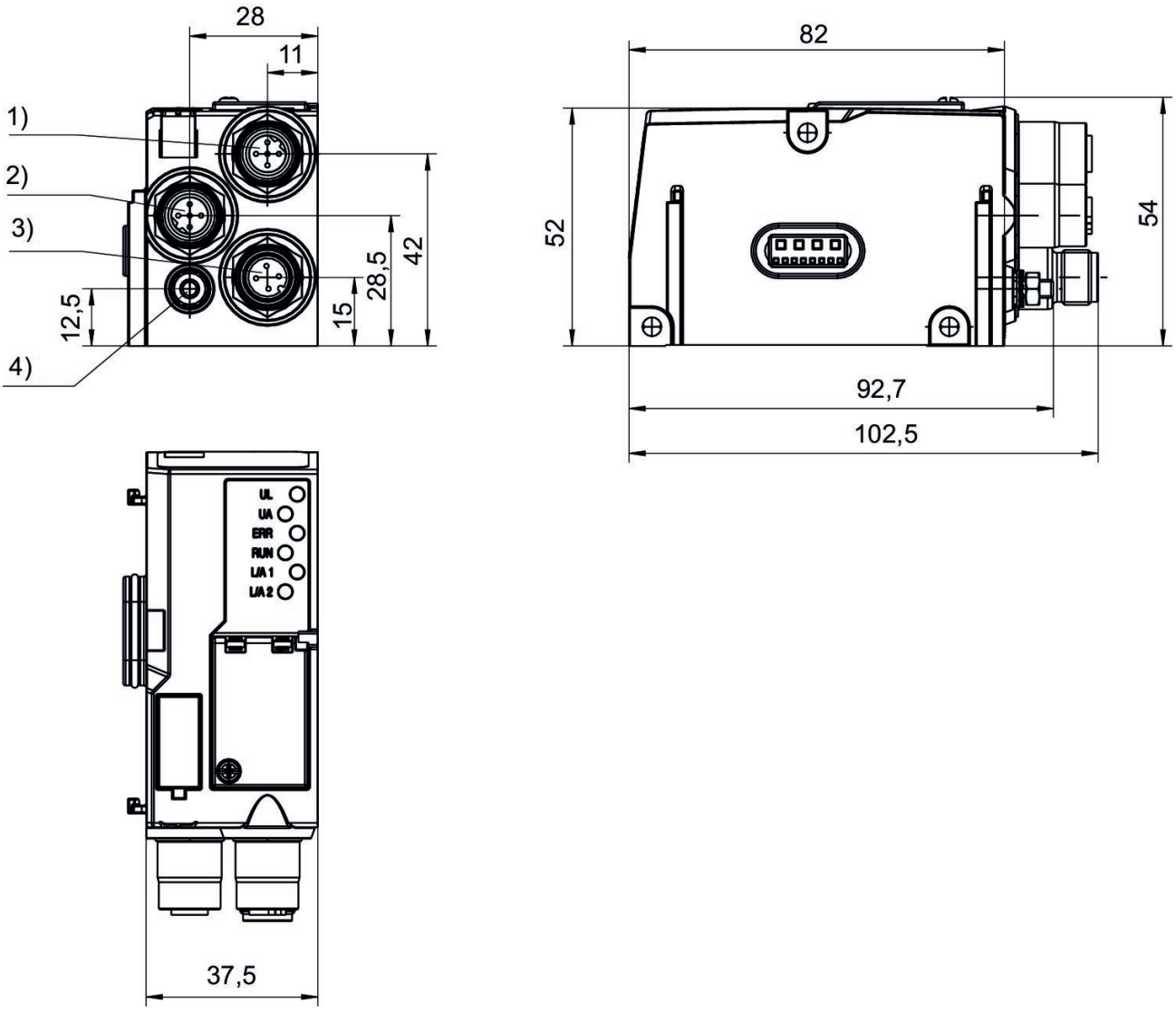
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018221

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Fieldbus protocol
DeviceNet

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
Short circuit
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Plug

Communication port, Thread size
M12x1

Communication port, Number of poles
5-pin

Communication port, Coding
A-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
5-pin

Communication port 2
A-coded

Weight
0.16 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018221

Technical information

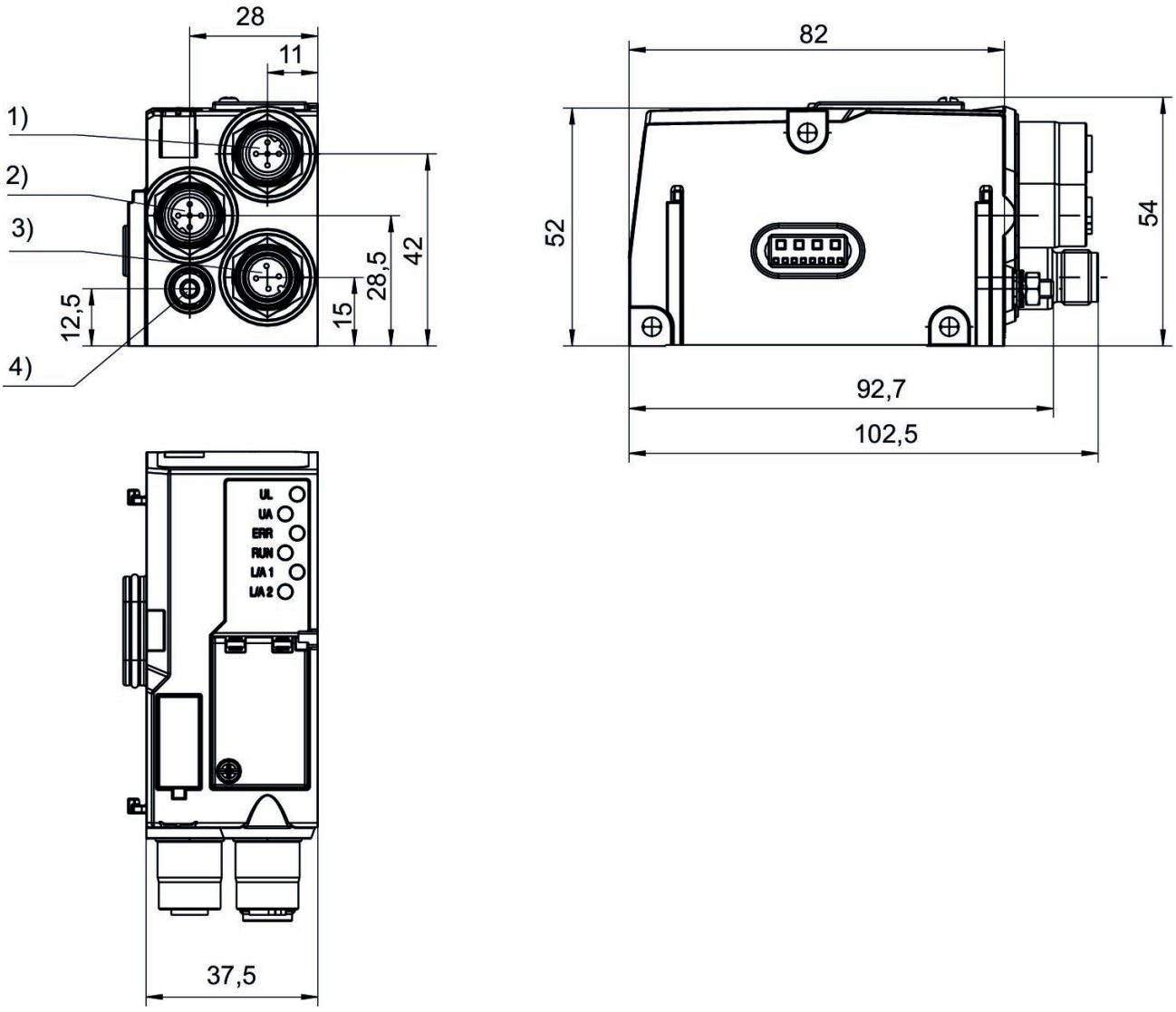
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412088222

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Type
Generation 2
Note: supports DLR

Fieldbus protocol
EtherNet/IP

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412088222

Technical information

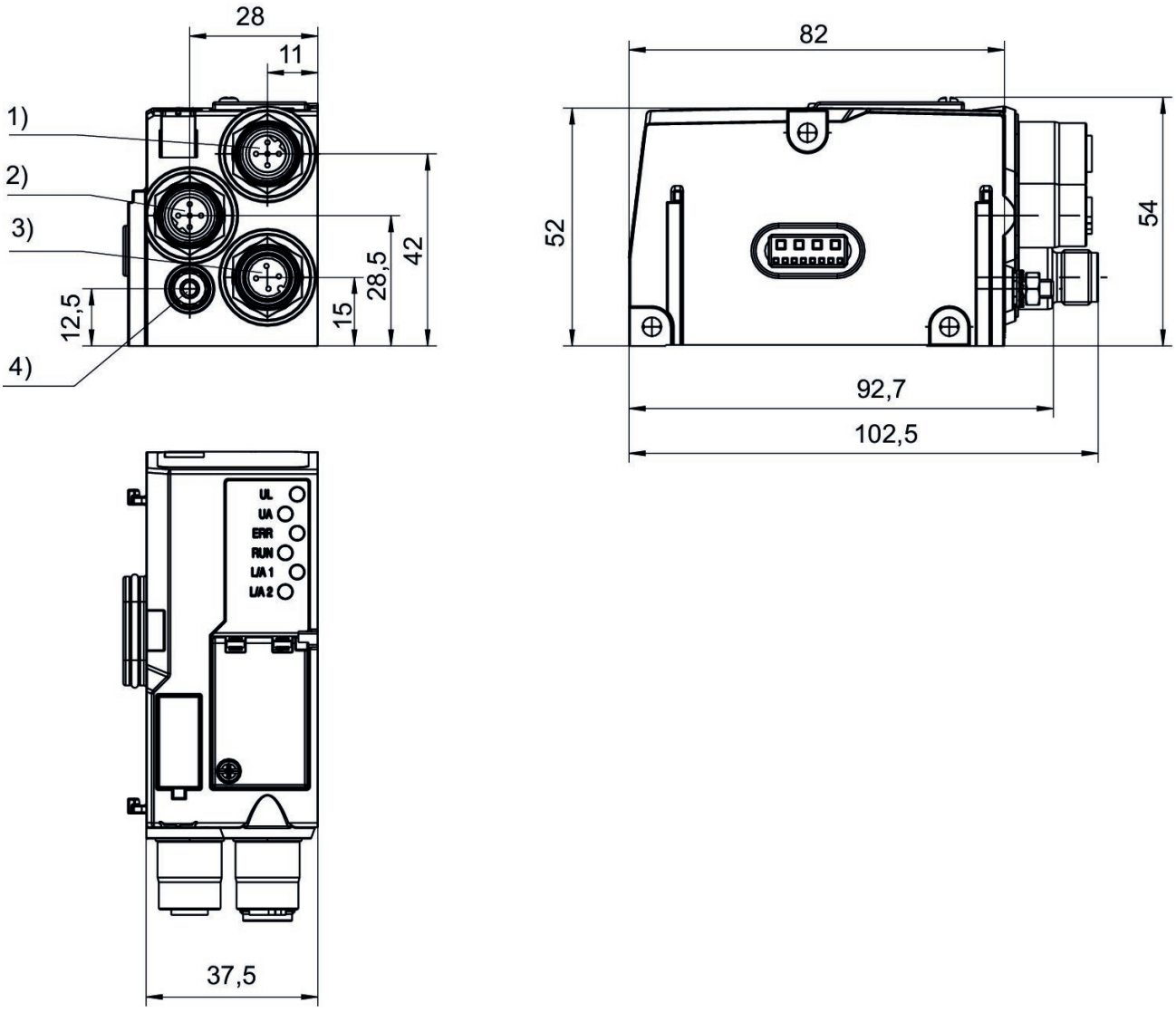
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018222

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Note
Do not use in new constructions!

Fieldbus protocol
EtherNet/IP

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018222

Technical information

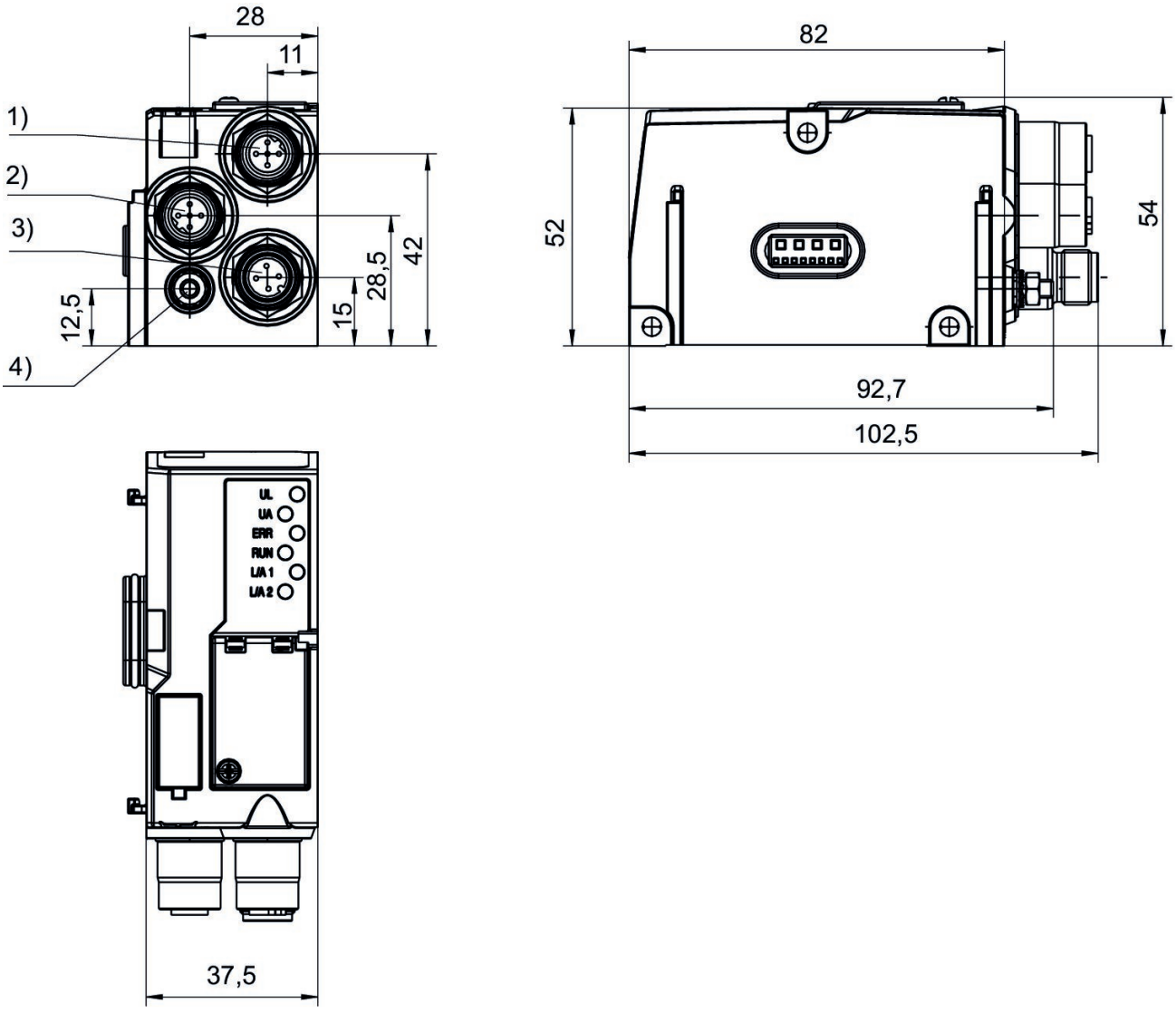
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412088223

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Type
Generation 2
Note: supports MRP and IRT (RT_CLASS 3)

Fieldbus protocol
PROFINET IO

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412088223

Technical information

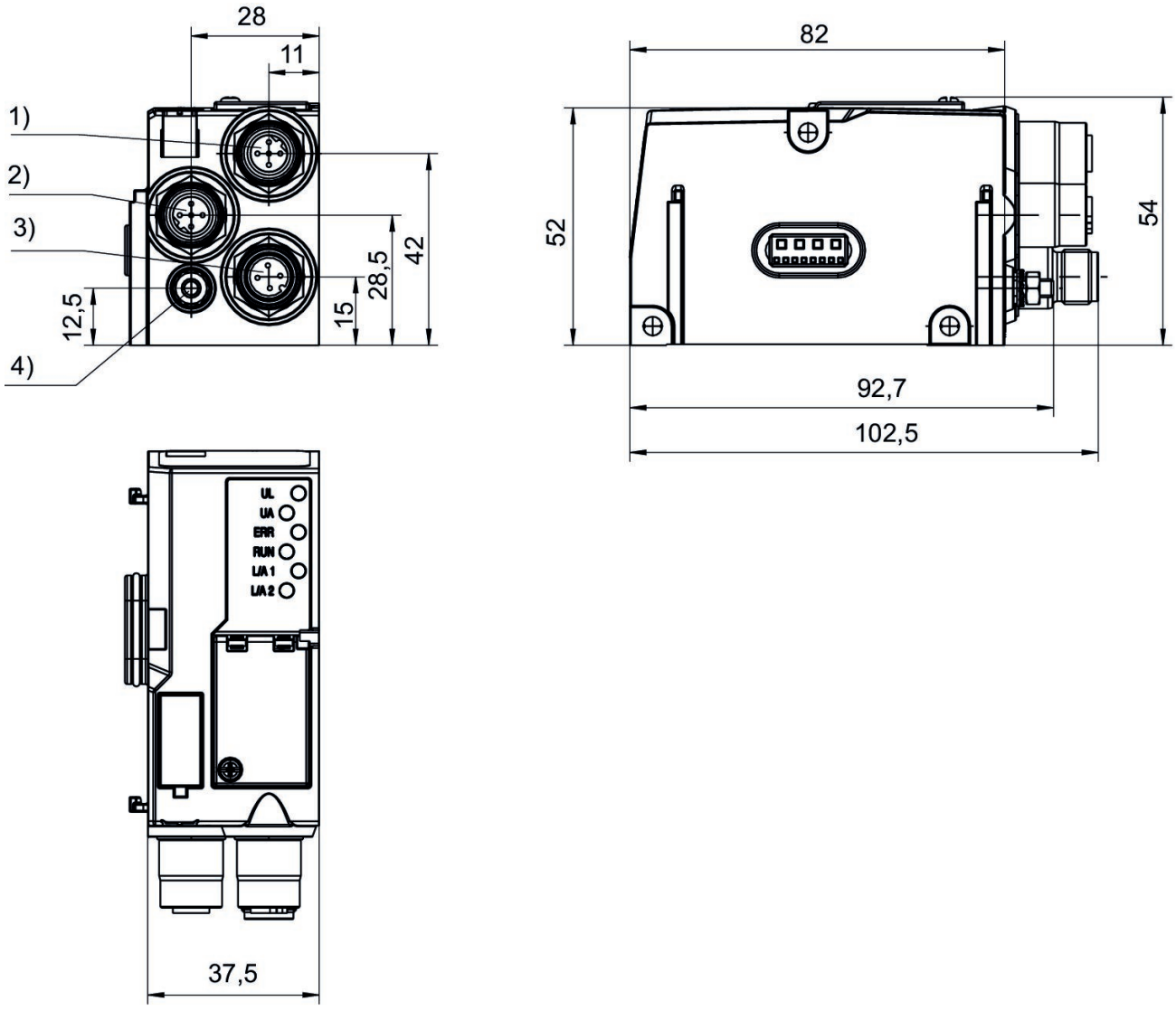
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018223

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Note
Do not use in new constructions!

Fieldbus protocol
PROFINET IO

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018223

Technical information

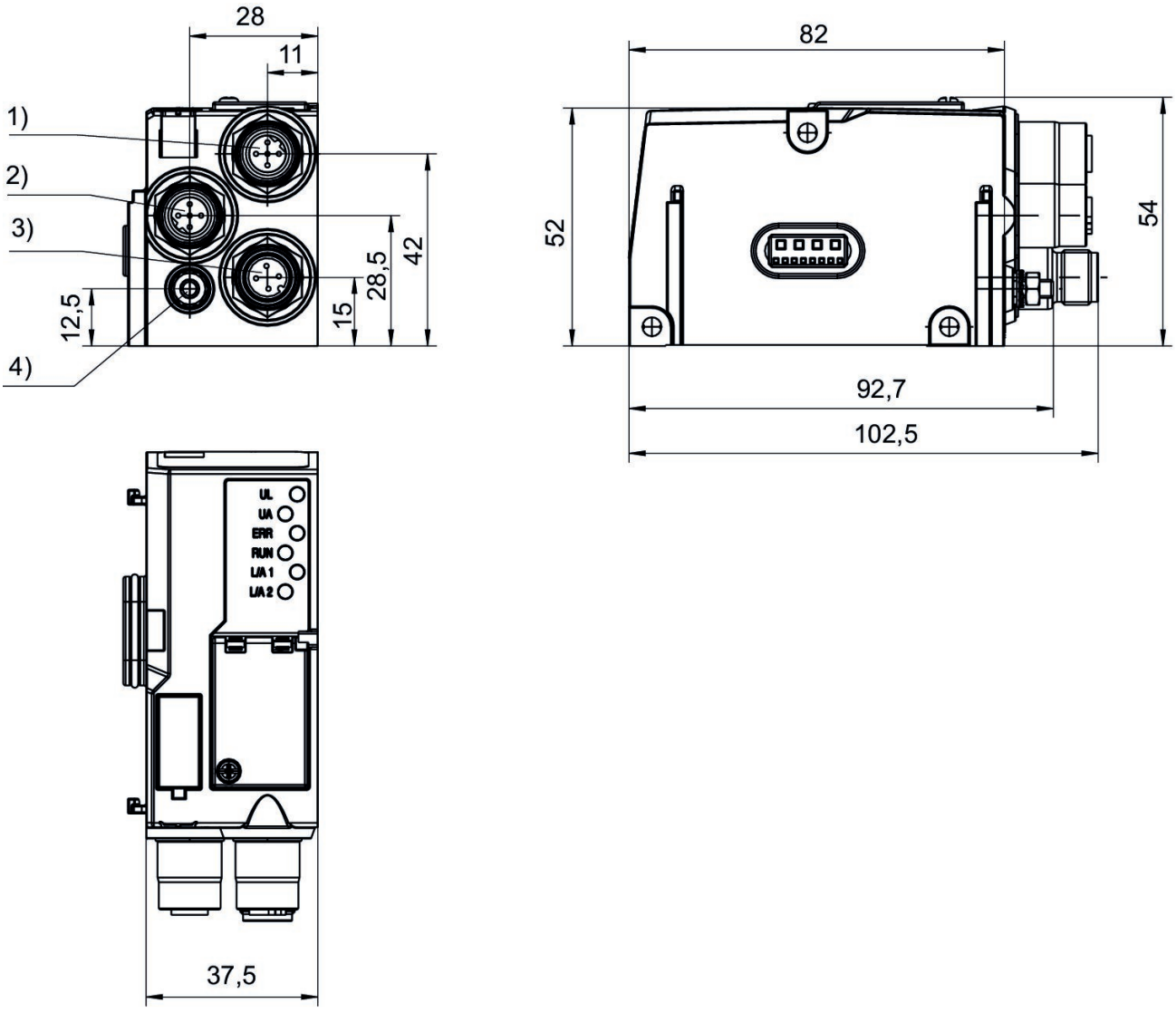
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412088225

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Type
Generation 2

Fieldbus protocol
EtherCAT

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412088225

Technical information

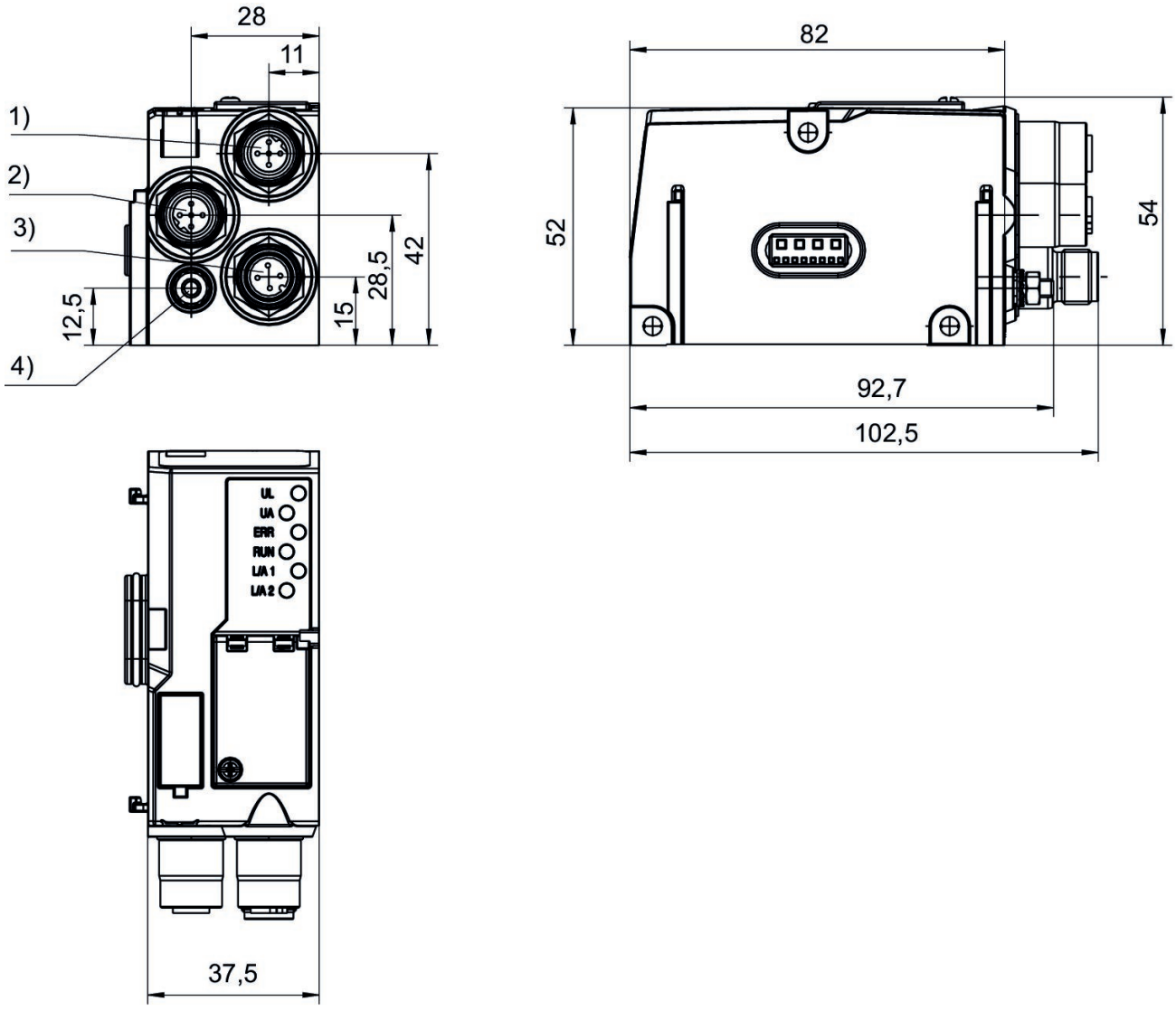
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018225

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Note
Do not use in new constructions!

Fieldbus protocol
EtherCAT

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018225

Technical information

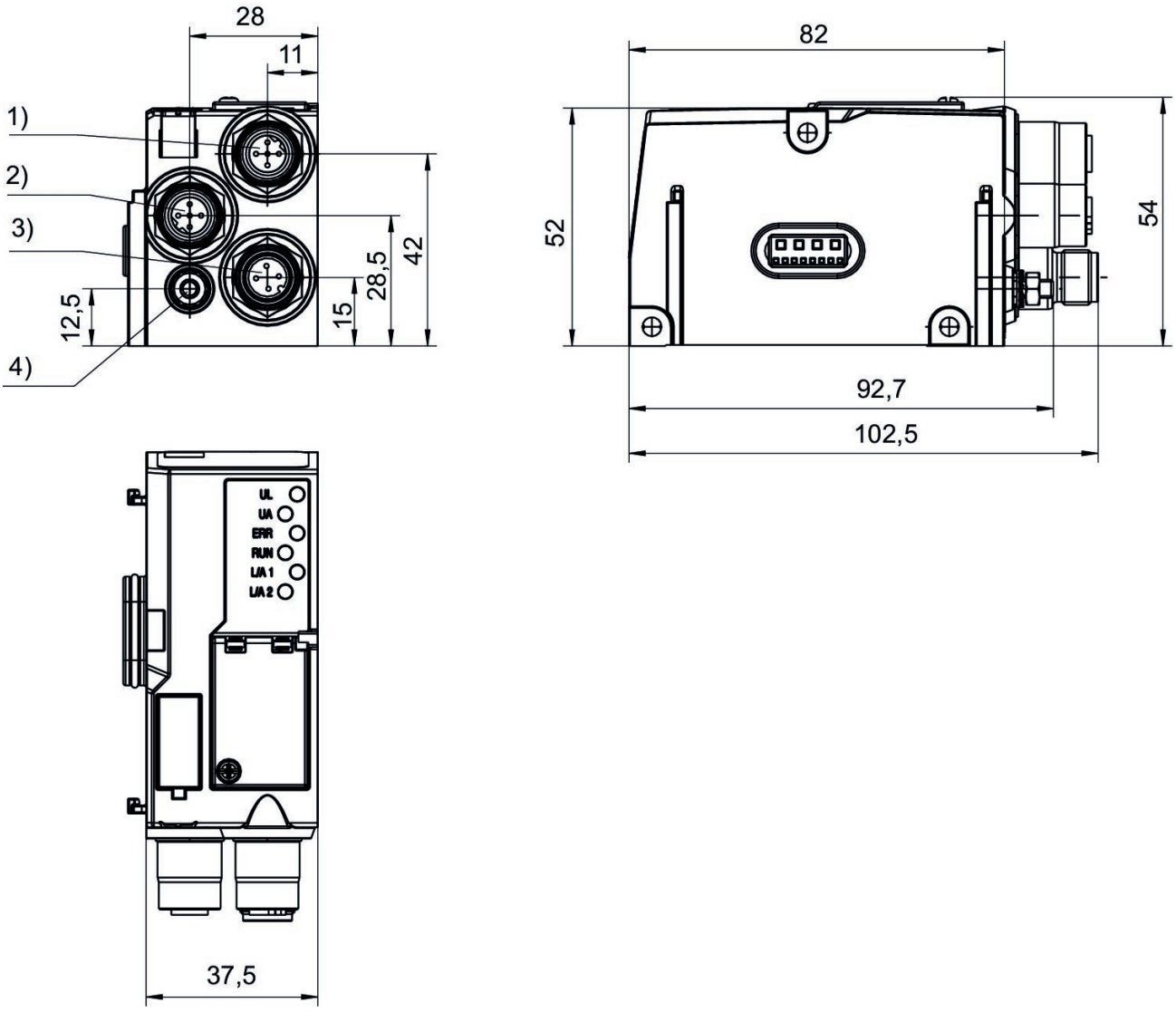
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412088226

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Type
Generation 2

Fieldbus protocol
POWERLINK

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412088226

Technical information

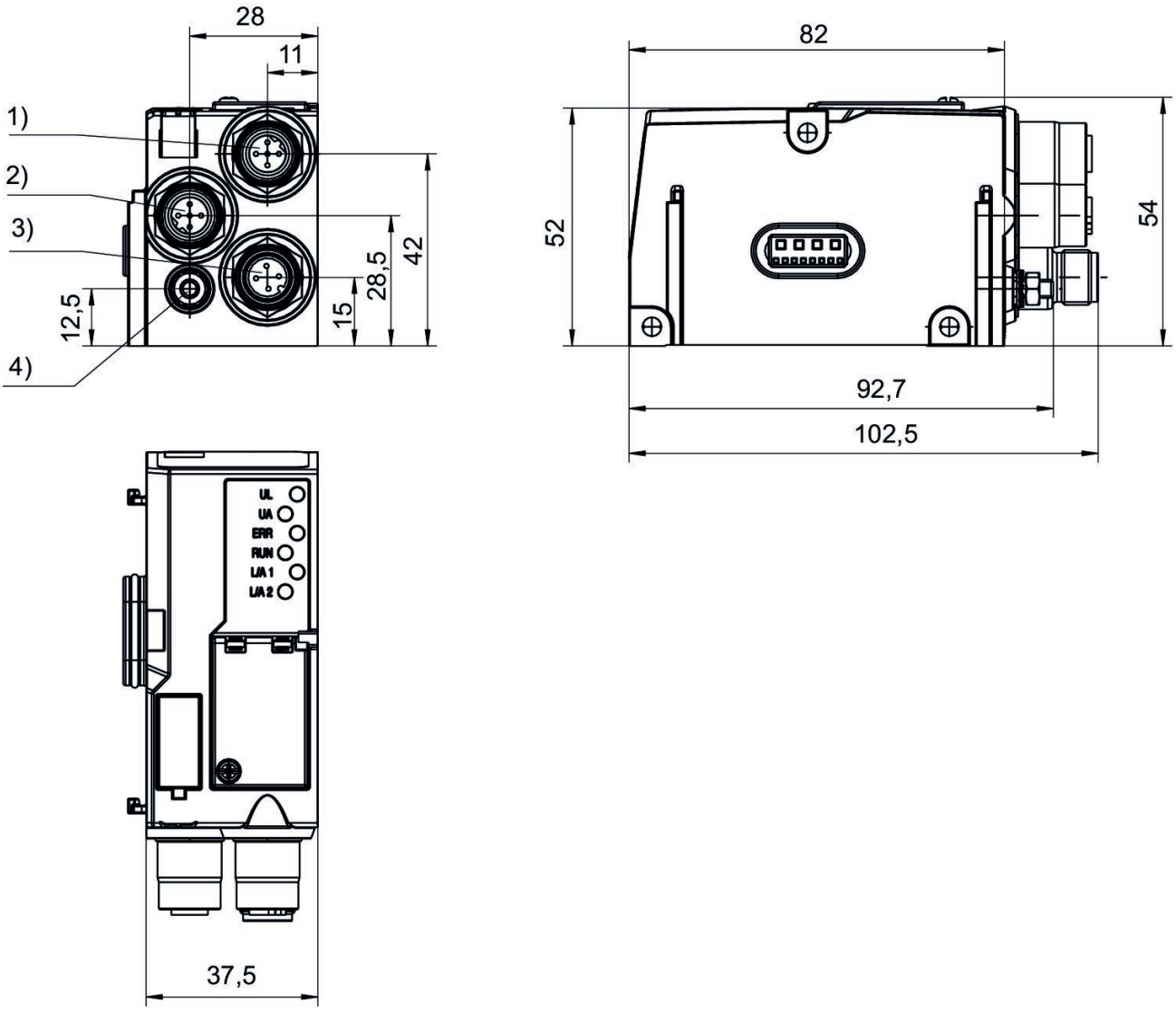
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412018226

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Note
Do not use in new constructions!

Fieldbus protocol
POWERLINK

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
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Max. ambient temperature
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Number of solenoid coils max.
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IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412018226

Technical information

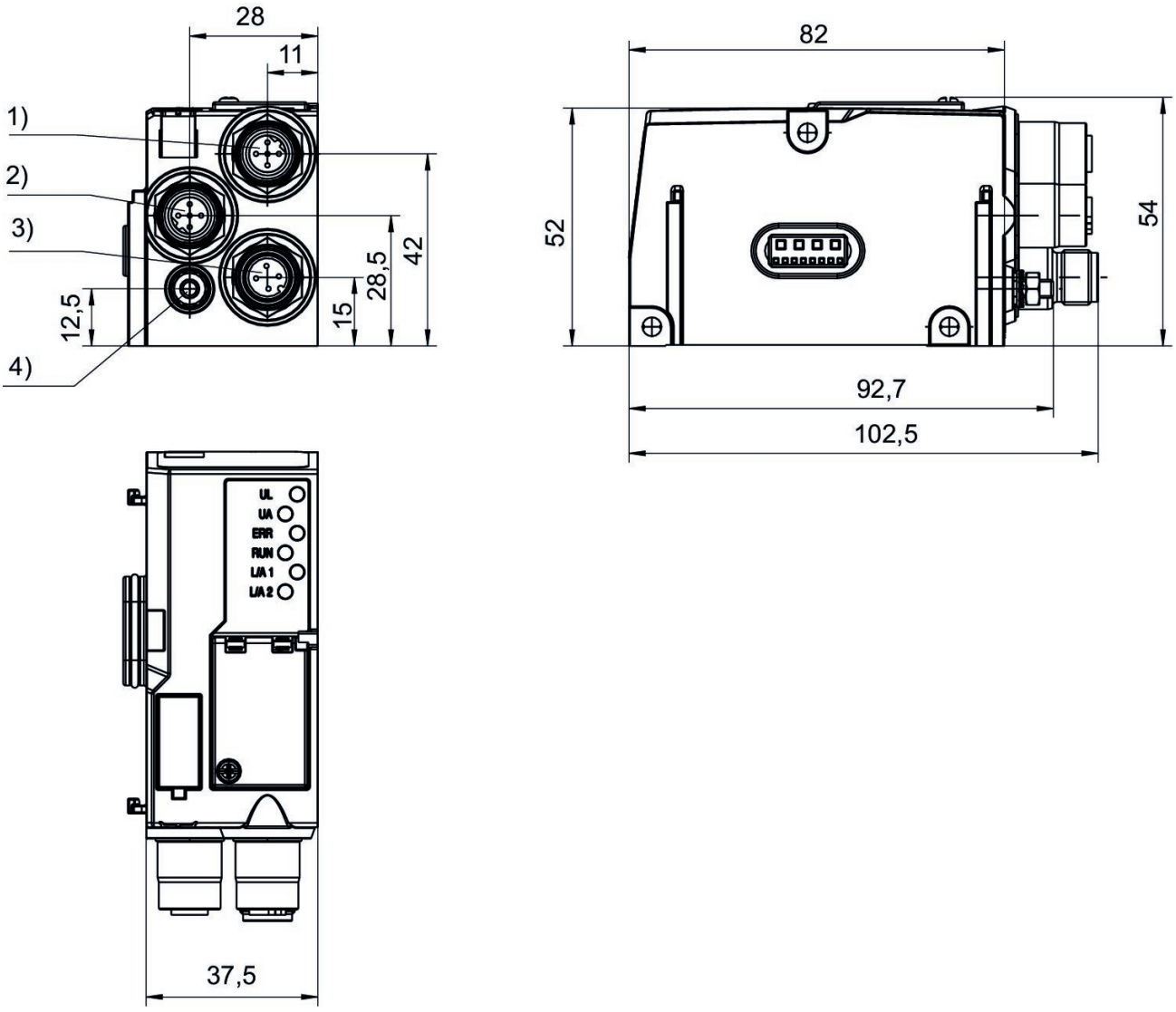
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

Voltage and short-circuit monitoring per LED.

During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

Scope of delivery: Incl. mounting screws 3x

Dimensions



1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Bus coupler, series AES

R412088227

General series information
Series AES

- The AVENTICS Series AES fieldbus connection can be integrated into all AVENTICS fieldbus-compatible valve systems or can also be configured as a stand-alone solution. AES connects your AVENTICS valve system to all relevant fieldbus protocols and offers the integration of I/O-modules and enables optimized decentralized wiring of sensors. The integration of the Digital Twin enables users to be IIoT ready and use the AES to solve their interoperability challenges.

Technical data

Industry
Industrial

Version
Bus coupler

Type
Generation 2

Fieldbus protocol
MODBUS TCP

E/A capable
connection with I/O

Number of I/O connections
512 inputs / 512 outputs

Power plug IN type
Plug

Power plug IN size
M12x1

Power plug IN number of pole
4-pin

Power plug IN coding
A-coded

Fieldbus design
D-design

Min. ambient temperature
-10 °C

Max. ambient temperature
60 °C

Number of solenoid coils max.
128

Max. number of valve positions
64

Operational voltage electronics
24 V DC

Electronics voltage tolerance
-25% / +25%

Power consumption electronics
0.1 A

Operating voltage, actuators
24 V DC

Total current for actuators
4 A

Protection class
IP65

Cycle time at 256 bits
< 1 ms

Logic/actuator voltage
Galvanically isolated

Diagnosis
System error
Undervoltage

I/O module extension max.
10

Generic emission standard in accordance with norm
EN 61000-6-4

Generic immunity standard in accordance with norm
EN 61000-6-2

Communication port Type
Socket

Communication port, Thread size
M12x1

Communication port, Number of poles
4-pin

Communication port, Coding
D-coded

Communication port 2
Socket

Communication port 2
M12x1

Communication port 2
4-pin

Communication port 2
D-coded

Weight
0.175 kg

Material

Housing material
Polyamide fiber-glass reinforced

Part No.
R412088227

Technical information

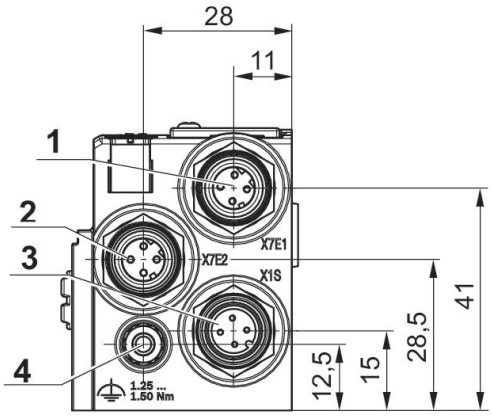
You will find assignment schemes for the product in the operating instructions, or contact the nearest AVENTICS sales office.

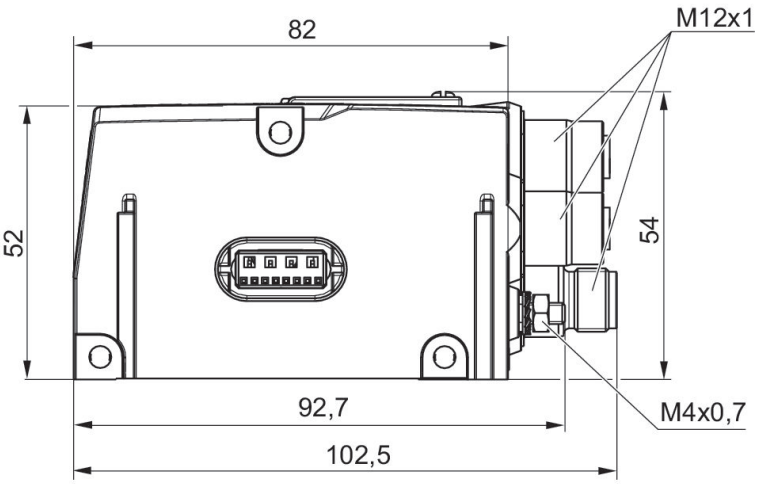
Voltage and short-circuit monitoring per LED.

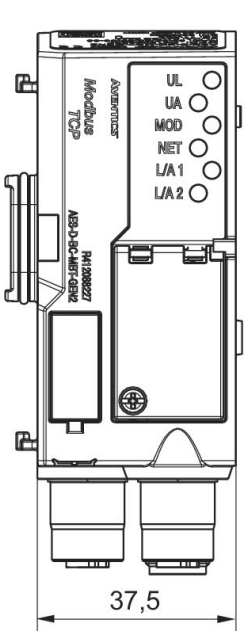
During cyclical data transfer, the bus coupler can send 512 bits of input data to the controller and receive 512 bits of output data from the controller.

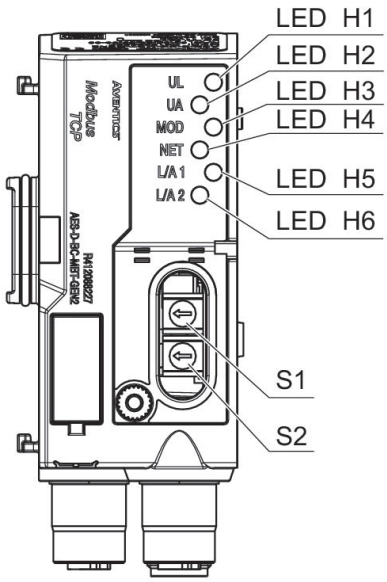
Scope of delivery: Incl. mounting screws 3x

Dimensions



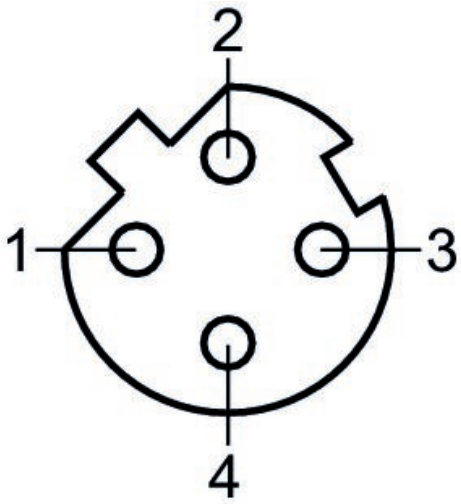




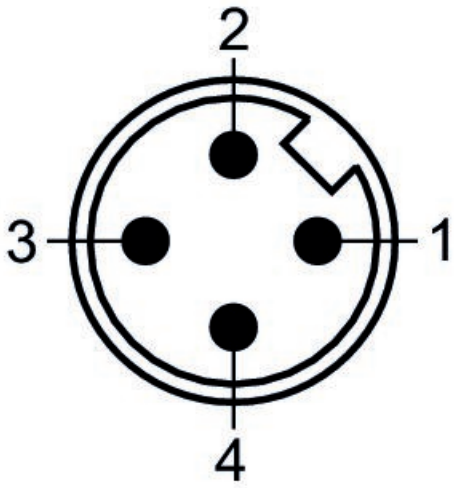


1) Fieldbus connection 2) Fieldbus connection 3) Power supply 4) Functional ground

Pin assignment, socket



Plug pin assignment



QR1-S-RPN standard series

- Straight fitting
- External thread
- G 1/8 G 3/8
- push-in fitting
- Ø 4 Ø 12
- QR1-S-RPN

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	See table below

Technical data

Part No.	Port G	Port D	Delivery unit	Weight per piece
2121004180	G 1/8	Ø 4	10 piece	0.014 kg
2121012380	G 3/8	Ø 12	10 piece	0.045 kg

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
Thread seal with captive O-ring

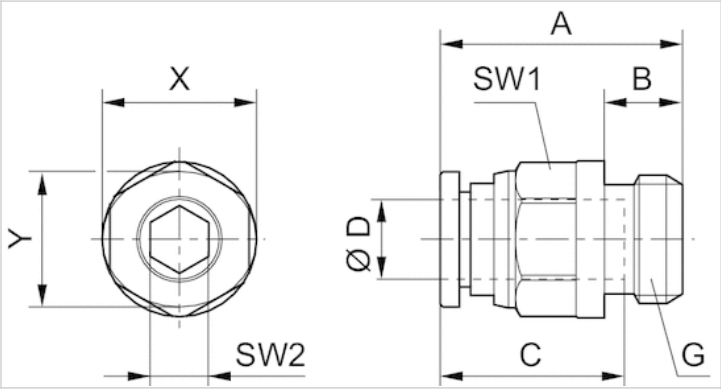
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Brass, nickel-plated
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated
Thread	Brass, nickel-plated

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B	C	SW1	SW2	X	Y
2121004180	Ø 4	G 1/8	20.1	5	16	10	3	12	10
2121012380	Ø 12	G 3/8	33.5	7	23	21	9	23	21

QR1-S-RVT standard series

- Elbow fitting
- External thread
- G 1/8 G 3/8
- push-in fitting
- Ø 4 Ø 12
- QR1-S-RVT

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	See table below

Technical data

Part No.	Port G	Port D	Delivery unit	Weight per piece
2122004180	G 1/8	Ø 4	10 piece	0.012 kg
2122012380	G 3/8	Ø 12	10 piece	0.044 kg

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
Thread seal with captive O-ring

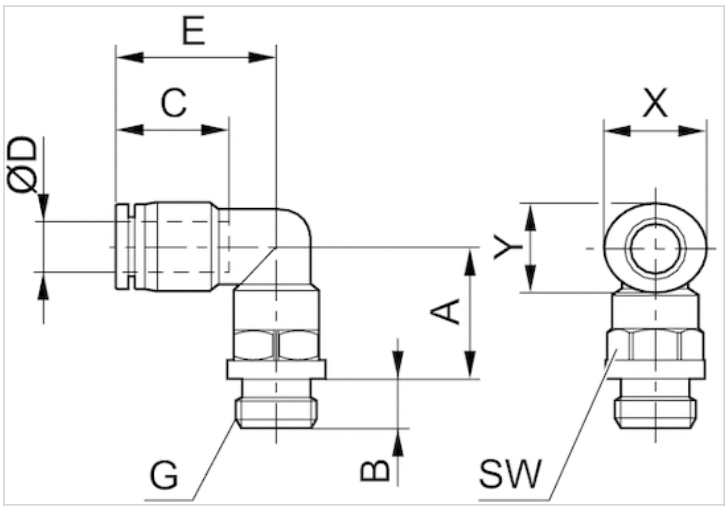
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated
Thread	Brass, nickel-plated

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B	C	E	SW	X	Y
2122004180	Ø 4	G 1/8	9.5	5	16	18.5	13	12	10
2122012380	Ø 12	G 3/8	15.3	7	22.5	29.2	20	23	21

QR1-S-RED standard series

- Straight push-in fitting, reducing
- push-in fitting
- Ø 4 Ø 6
- pin bushing
- Ø 8
- QR1-S-RED

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.004 kg

Technical data

Part No.	Port G	Port D	Delivery unit
2121708040	Ø 4	Ø 8	10 piece
2121708060	Ø 6	Ø 8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined

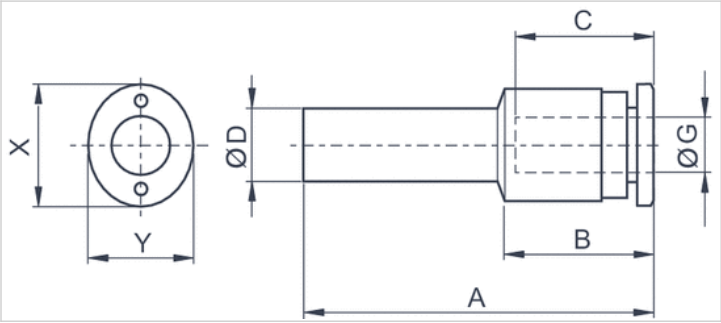
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B	C Insertion depth	X	Y
2121708040	Ø 8	Ø 4	42.6	18.2	16	12	10
2121708060	Ø 8	Ø 6	43.3	19.2	17	14	12

QR1-S-RED standard series

- Straight push-in fitting, reducing
- push-in fitting
- Ø5/16 Ø1/4
- pin bushing
- Ø 3/8
- QR1-S-RED

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.005 kg

Technical data

Part No.	Port G	Port D	Delivery unit
R432000068	Ø5/16	Ø 3/8	10 piece
R432000067	Ø1/4	Ø 3/8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

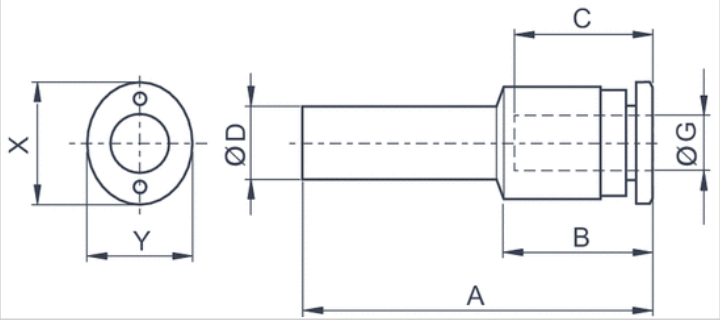
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions in inches



Dimensions in inches

Part No.	Port D	Port G	A	B	C	X	Y
R432000068	Ø 3/8	Ø5/16	1.872	0.801	0.827	0.63	0.552
R432000067	Ø 3/8	Ø1/4	1.82	0.756	0.827	0.552	0.473

QR1-S-RVA standard series

- Angled plug-in connector
- pin bushing
- Ø 8
- push-in fitting
- Ø 8
- QR1-S-RVA

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.008 kg

Technical data

Part No.	Port G	Port D	Delivery unit
2121308080	Ø 8	Ø 8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined

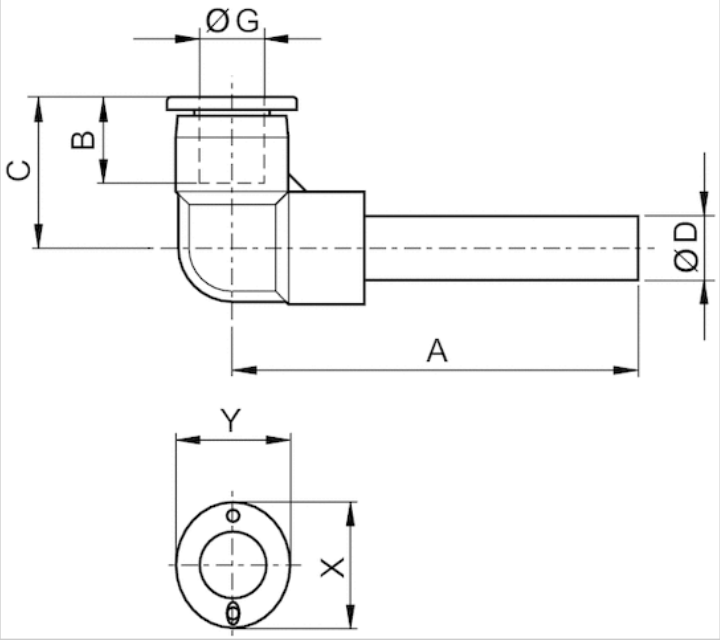
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B Insertion depth	C	X	Y
2121308080	Ø 8	Ø 8	42	18.5	22.8	16	14

QR1-S-RLL standard series

- Angled plug-in connector
- Pin bushing, long
- Ø 8
- push-in fitting
- Ø 8
- QR1-S-RLL

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.008 kg

Technical data

Part No.	Port G	Port D	Delivery unit
R412005041	Ø 8	Ø 8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined

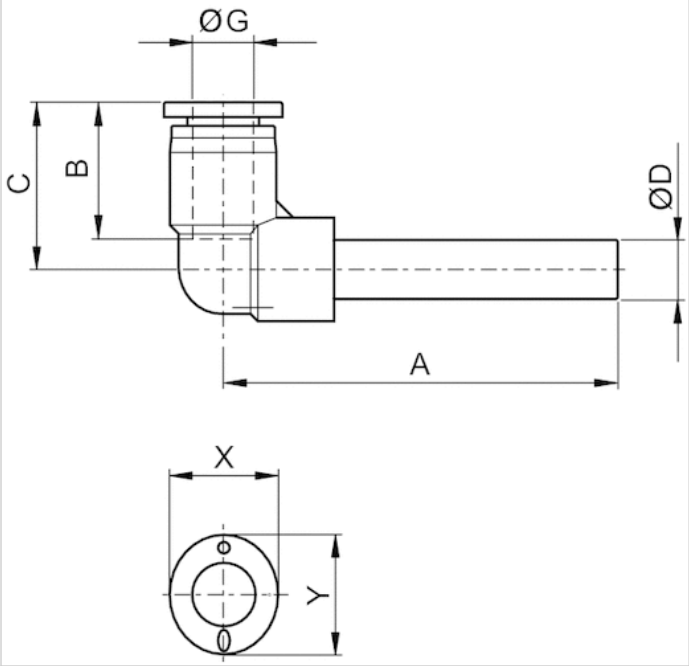
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B	C	X	Y
R412005041	Ø 8	Ø 8	54.5	18.5	22.8	16	14

QR1-S-RLL standard series

- Angled plug-in connector, long
- pin bushing
- Ø 3/8
- push-in fitting
- Ø 3/8
- QR1-S-RLL

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.014 kg

Technical data

Part No.	Port G	Port D	Delivery unit
R432000090	Ø 3/8	Ø 3/8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

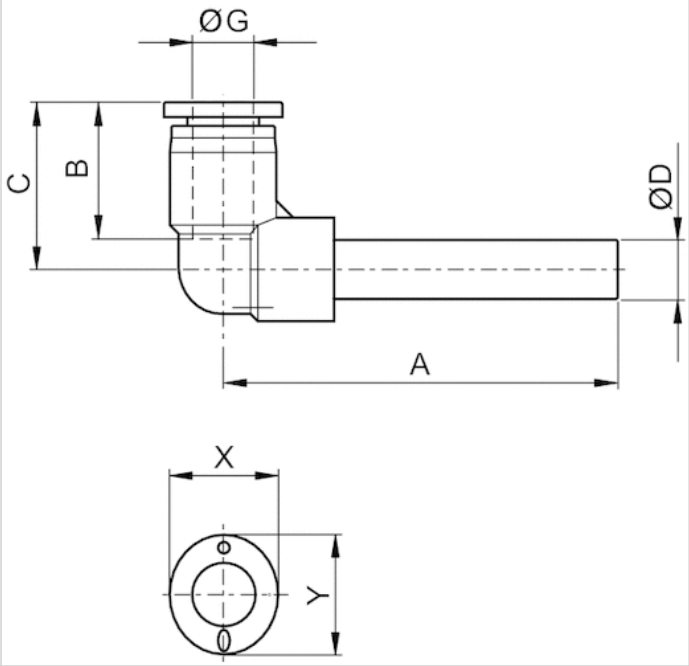
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions in inches



Dimensions in inches

Part No.	Port D	Port G	A	B	C	X	Y
R432000090	Ø 3/8	Ø 3/8	2.44	0.83	1.03	0.75	0.67

QR1-S-RVA standard series

- Angled plug-in connector
- pin bushing
- Ø 3/8
- push-in fitting
- Ø 3/8
- QR1-S-RVA

Working pressure min./max.	-0.95 ... 10 bar
Ambient temperature min./max.	0 ... 60 °C
Weight per piece	0.014 kg

Technical data

Part No.	Port G	Port D	Delivery unit
R432000191	Ø 3/8	Ø 3/8	10 piece

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

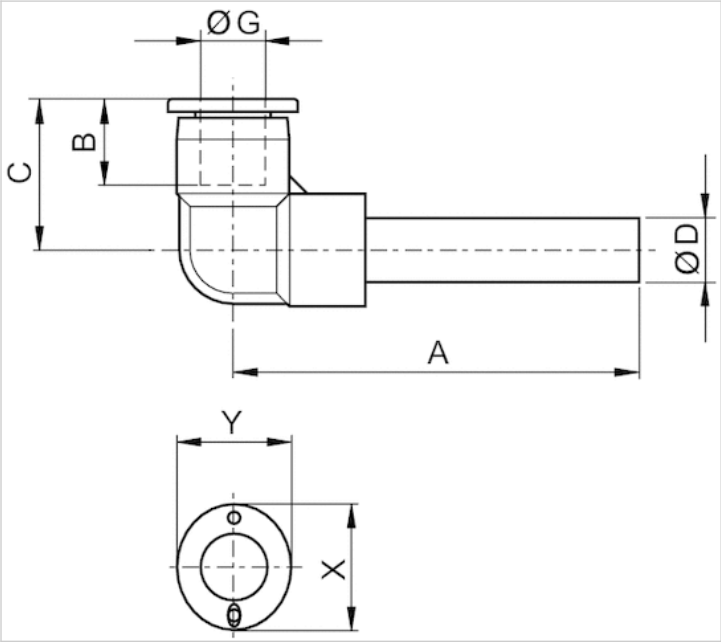
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Material	nickel-plated
Housing	Polybutyleneterephthalate
Seal	Acrylonitrile butadiene rubber
Tooth lock washer	Stainless steel
Release ring	Polyoxymethylene
Release ring holder	Die cast zinc Brass, nickel-plated

Dimensions

Dimensions in inches

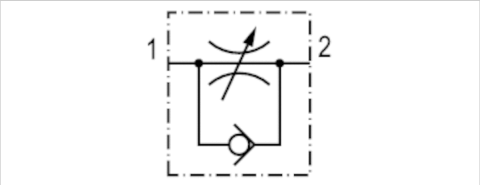


Dimensions in inches

Part No.	Port D	Port G	A	B	C	X	Y
R432000191	Ø 3/8	Ø 3/8	1.85	0.83	1.03	0.75	0.67

Check-choke valve, Series CC04

- Qn 1▸2 = 360 l/min
- direction of throttle 1 ▸ 2
- inlet-side throttling
- push-in fitting / pin bushing



Working pressure min./max.	0.5 ... 10 bar
Ambient temperature min./max.	-10 ... 70 °C
Medium temperature min./max.	-10 ... 70 °C
Medium	Compressed air

Technical data

Part No.	Port 1	Port 2	Throttle bore	Flow
			Ø	Qn 1▸2
R412007405	Ø 8	Ø 8	3.5 mm	360 l/min

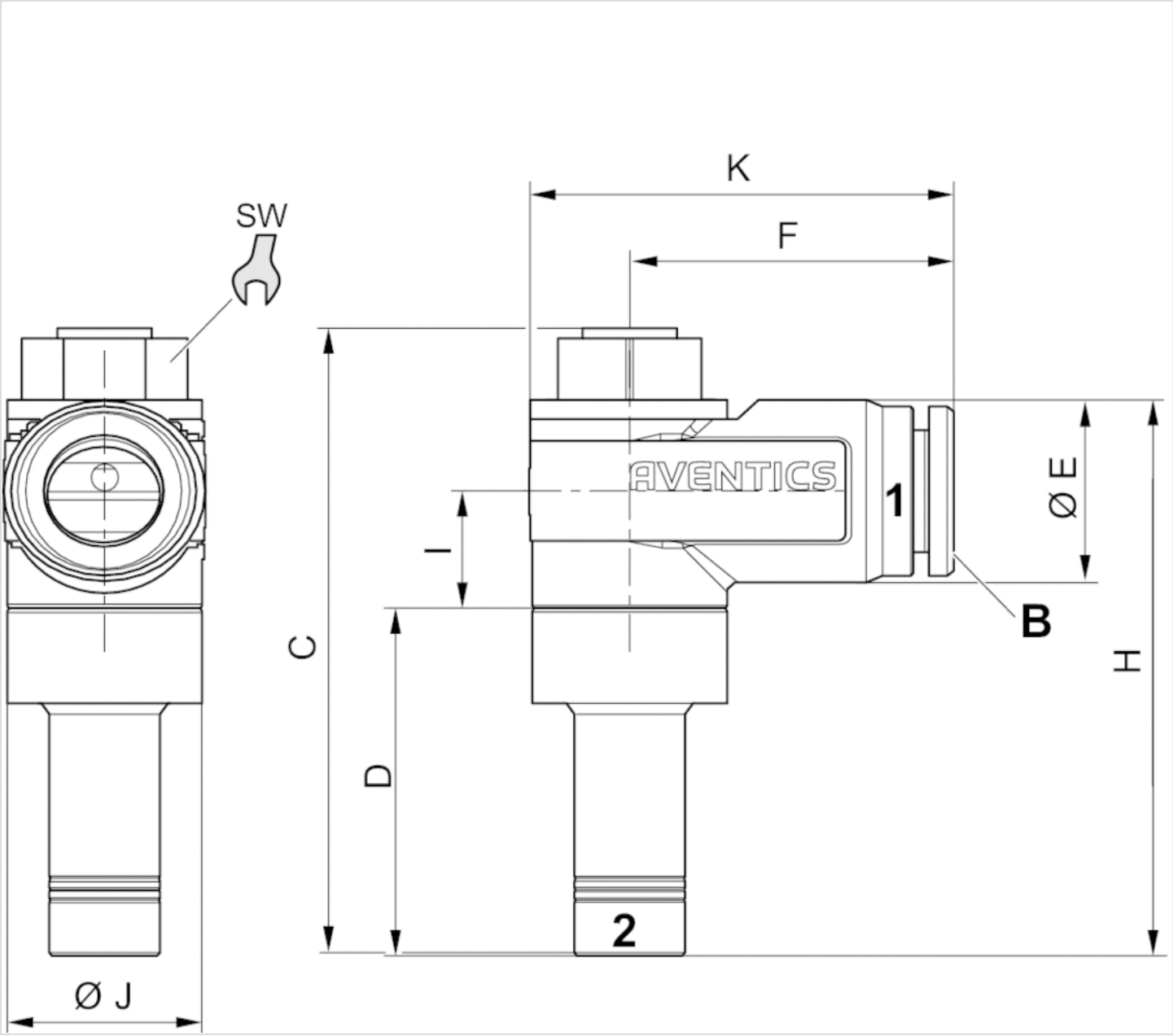
Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

Material	
Housing	Polyamide
Flow control screw	Brass
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions

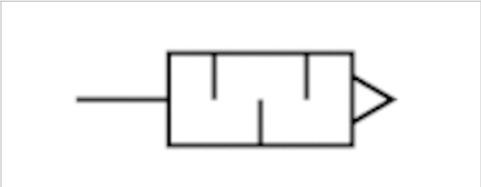


Dimensions

Part No.	Port 1	Port 2	C	D	ØE	F	H	I	ØJ	K	SW
R412007405	Ø 8	Ø 8	52,9	29,7	13,5	24,2	47,2	9,8	13,6	31,1	10

Silencers, series SI1

- G 1/8 G 3/8
- Polyethylene



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	See table below
Weight	See table below

Technical data

Part No.	Compressed air connection	Sound pressure level	Flow	Delivery unit	Weight
			Qn		
1827000019	G 1/8	78 dB	1560 l/min	5 piece	0.002 kg
1827000021	G 3/8	85 dB	5682 l/min	2 piece	0.008 kg

Weight per piece

Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

Technical information

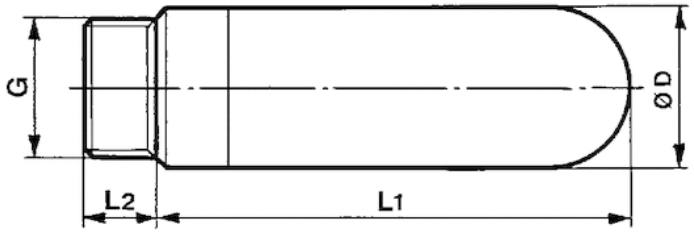
Flow characteristic curves can be found under “Diagrams”.

Technical information

Material	
Silencer	Polyethylene
Thread	Polyethylene

Dimensions

Dimensions

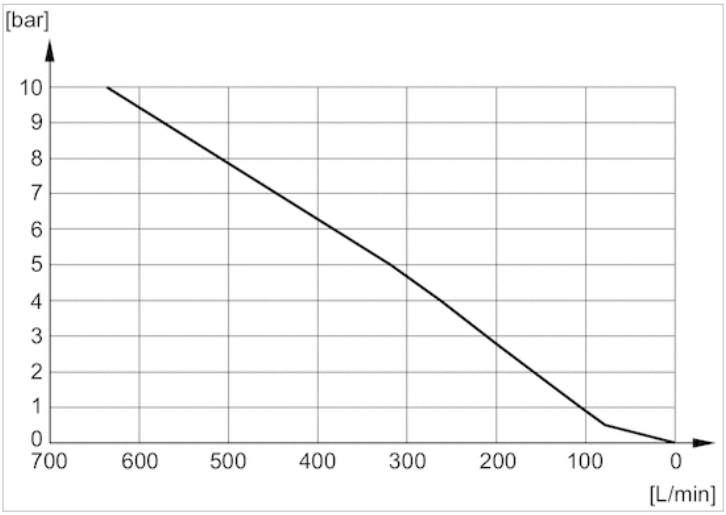


Dimensions

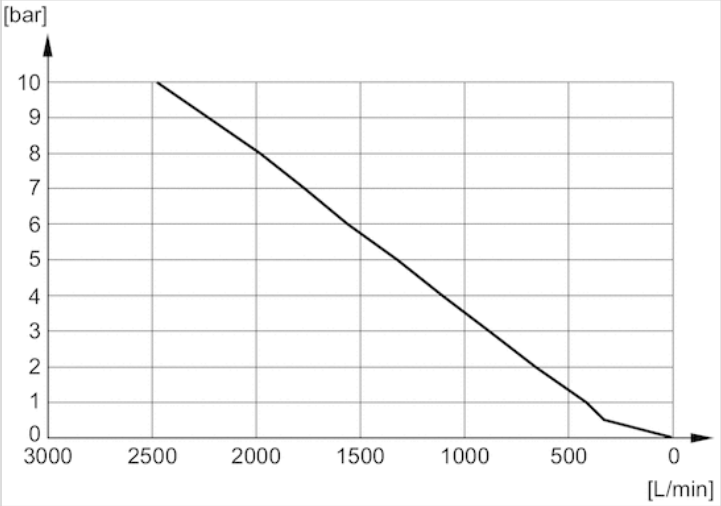
Part No.	Port G	Ø D	L1	L2
1827000019	G 1/8	12.5	28.5	5.5
1827000021	G 3/8	18.5	56	11.5

Diagrams

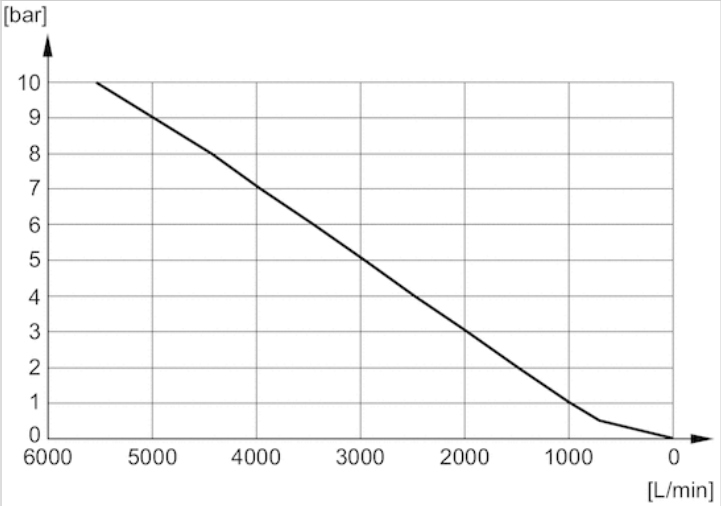
Flow diagram, 1827000018



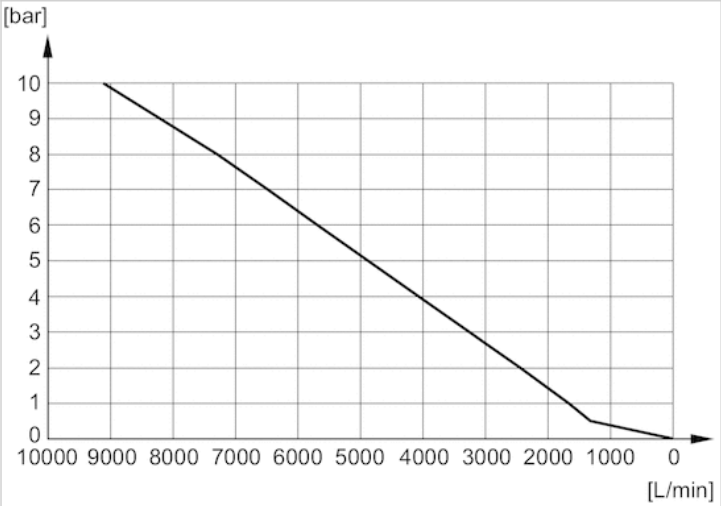
Flow diagram, 1827000019



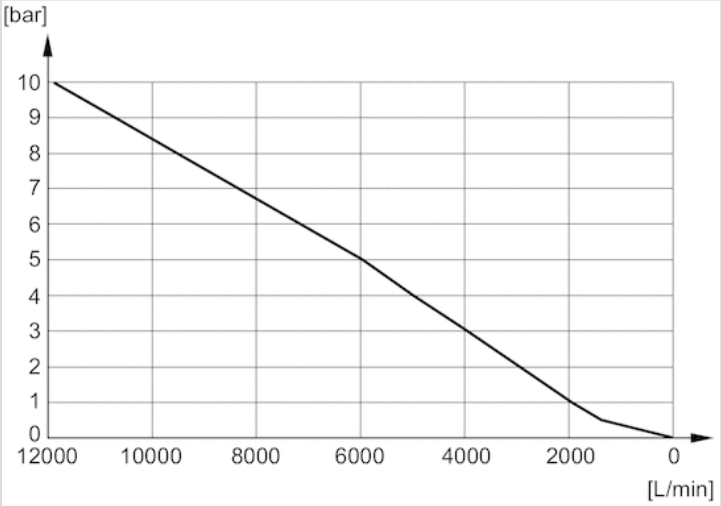
Flow diagram, 1827000020



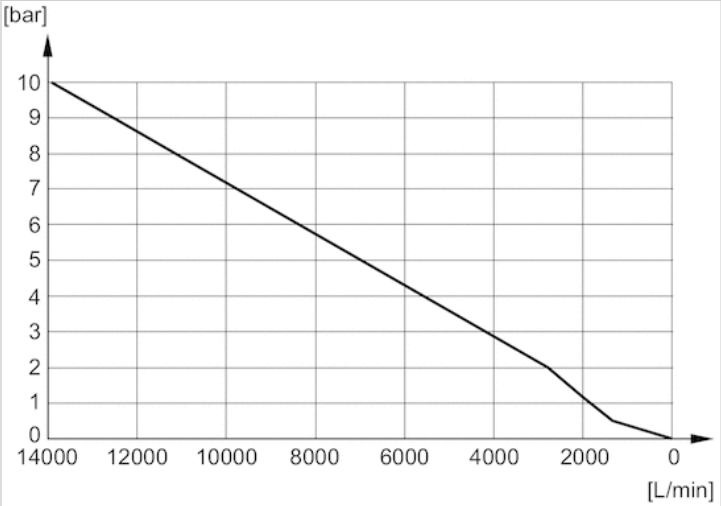
Flow diagram, 1827000021



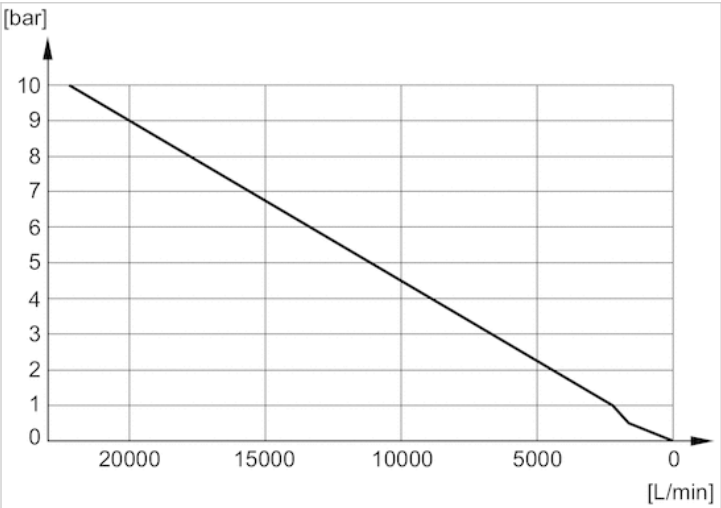
Flow diagram, 1827000022



Flow diagram, 1827000023

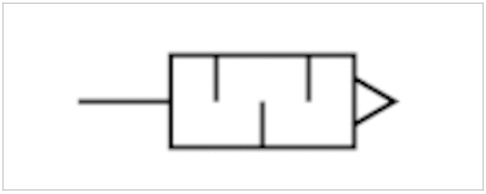


Flow diagram, 1827000024



Silencers, series SI1

- Ø 8
- Polyethylene



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	90 dB
Weight	0.002 kg
Comment	Flow characteristic curves can be found under “Diagrams”.

Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
R412007520	Ø 8	1366 l/min	5 piece

Weight per piece

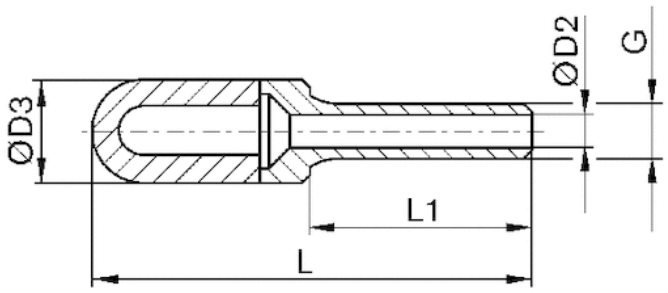
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

Technical information

Material	
Silencer	Polyethylene
Thread	Polyethylene

Dimensions

Dimensions

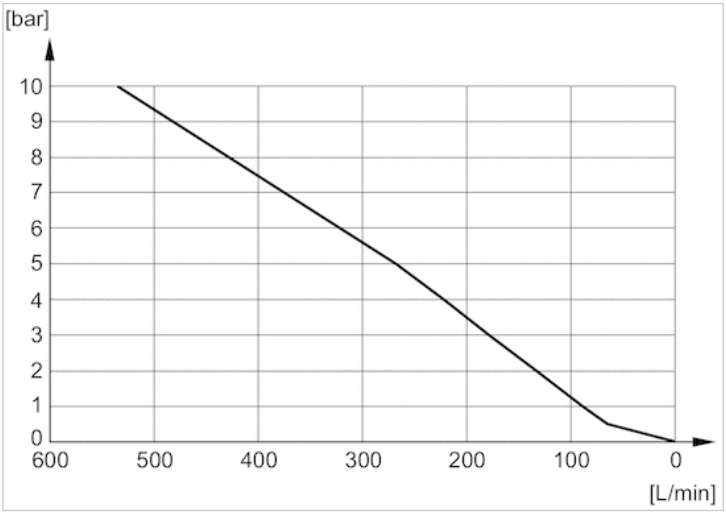


Dimensions

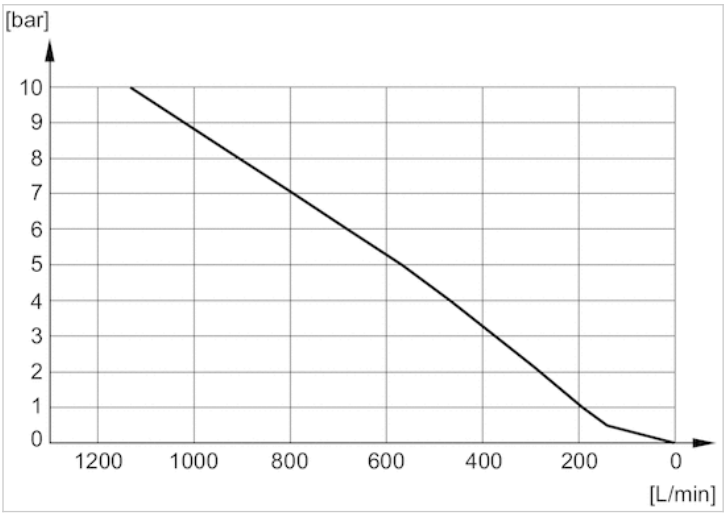
Part No.	Port G	Ø D2	Ø D3	L1	L
R412007520	Ø 8	4.8	13.5	21.5	43.5

Diagrams

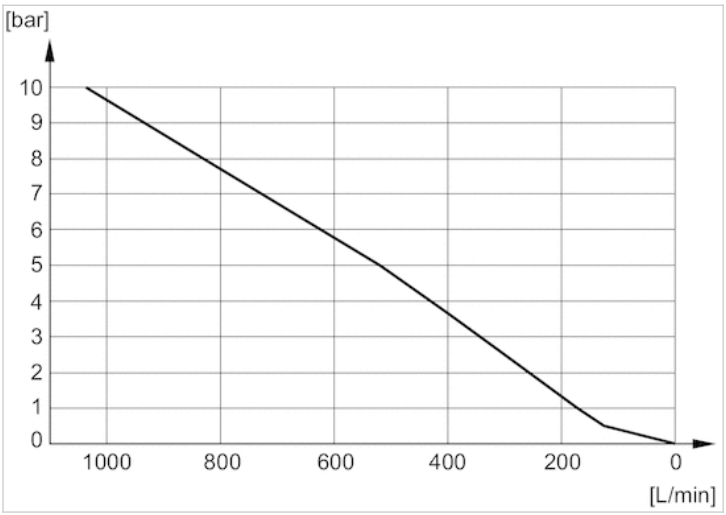
Flow diagram, R412007519



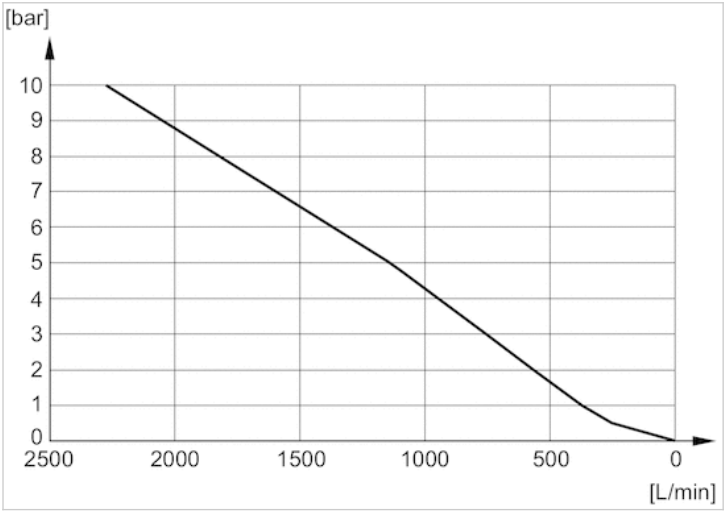
Flow diagram, R412007899



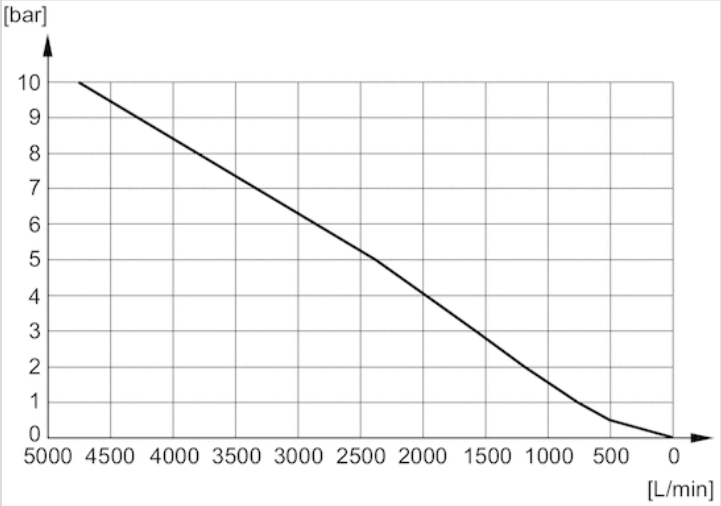
Flow diagram, R412000591



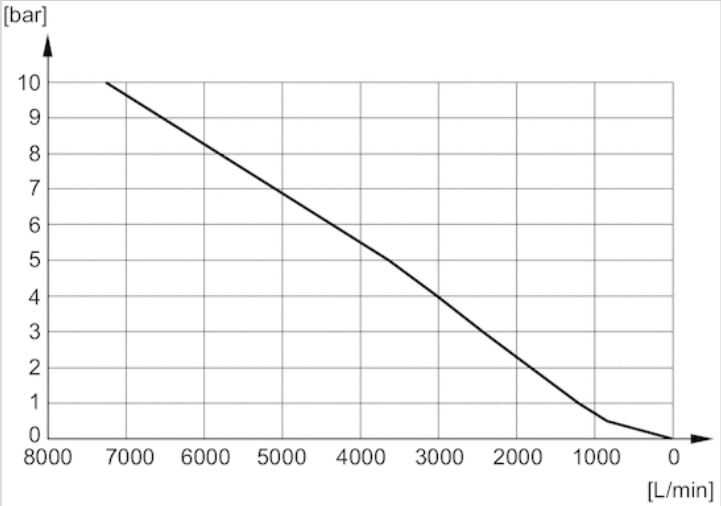
Flow diagram, R412007520



Flow diagram, R412000593



Flow diagram, R412007715



Tie rod extension kit

- for ES05

Weight See table below

Technical data

Part No.	Type	Delivery unit	Weight
R422102761	Tie rod extension for 2 valve positions	1 piece	0.025 kg
R422P02761	Tie rod extension for 2 valve positions	5 piece	0.025 kg
R422102760	Tie rod extension for 4 valve positions	1 piece	0.05 kg
R422P02760	Tie rod extension for 4 valve positions	5 piece	0.05 kg
R422102772	Tie rod extension for 6 valve positions	1 piece	0.075 kg
R422P02772	Tie rod extension for 6 valve positions	5 piece	0.075 kg

Scope of delivery: 2 tie rod extensions

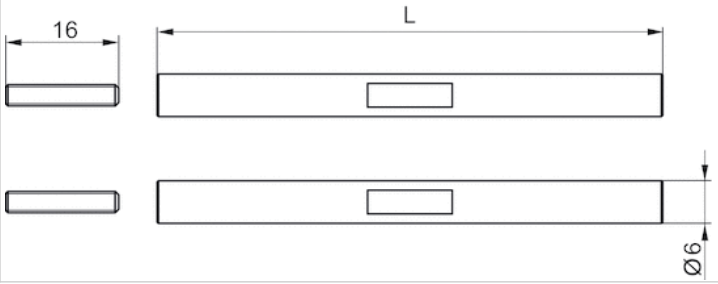
Technical information

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

Technical information

Material	
Housing	Aluminum
Screws	Steel

Dimensions



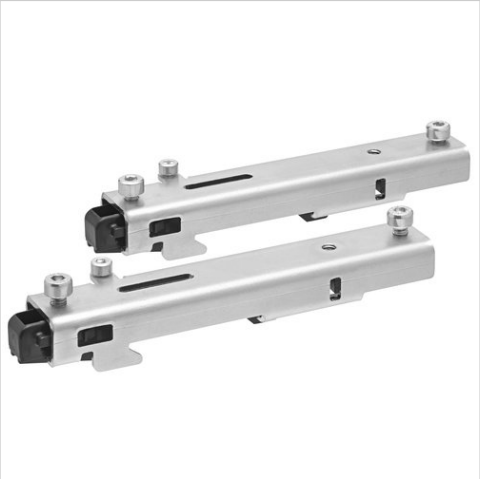
Dimensions

Part No.	L
R422102761	36
R422P02761	36
R422102760	72
R422P02760	72
R422102772	108
R422P02772	108

L = length

Mounting kit for DIN rail

- for AV03, AV05, AES, ES05



Technical data

Part No.
R412019468

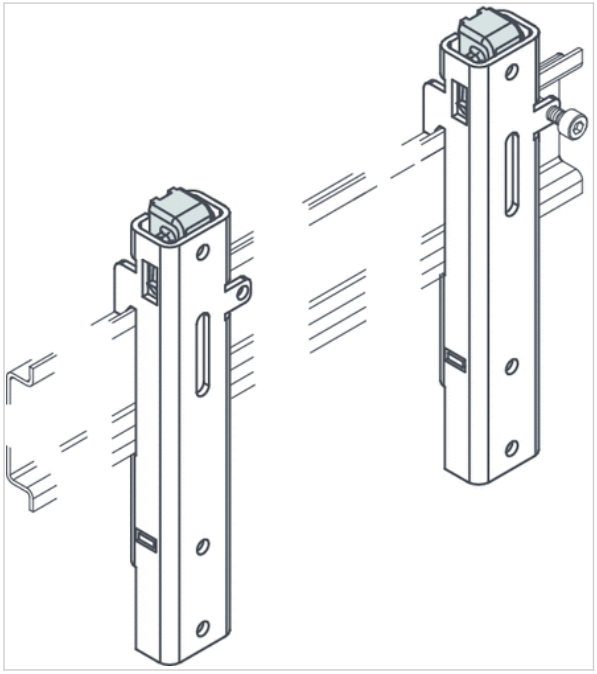
Scope of delivery: 2 clamps, 4 screws M4x8 DIN 912, 1 screw M3x14 DIN 912, Note: The valve system should not be equipped with more than the maximum number of components. After maximum equipment of the valve system, we recommend no longer assembling the valve system on a DIN rail.

Technical information

Material	
Housing	Steel, chrome-plated

Dimensions

Dimensions

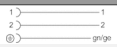
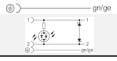


Valve plug connector, series CON-VP

- Socket, 2+E, angled, 90° Socket, form C, industry, 2+E, angled, 90°
- Industry standard
- unshielded
- with LED Yellow

Connection type	Screws
Ambient temperature min./max.	-20 ... 80 °C
Operational voltage	See table below
Protection class	IP65
Mounting screw tightening torque	0.4 Nm
Weight	See table below

Technical data

Part No.		Electrical connection
		1
1834484050		Socket 2+E angled 90°
4402030330		Socket form C, industry 2+E angled 90°

Part No.	Operational voltage	Max. current	Protective circuit	Contact assignment	LED status display
1834484050	-	6 A	-	2+E	-
4402030330	24 V AC/DC	6 A	Z-diode	2+E	Yellow

Part No.	suitable cable-Ø min./max	Seal	Weight	Fig.	
1834484050	4 / 6 mm	caoutchouc/butadiene caoutchouc	0.12 kg	Fig. 1	1)
4402030330	4 / 6 mm	-	0.012 kg	Fig. 2	-

1) Scope of delivery incl. flat gasket

Technical information

The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Seals	caoutchouc/butadiene caoutchouc

Dimensions

Fig. 1

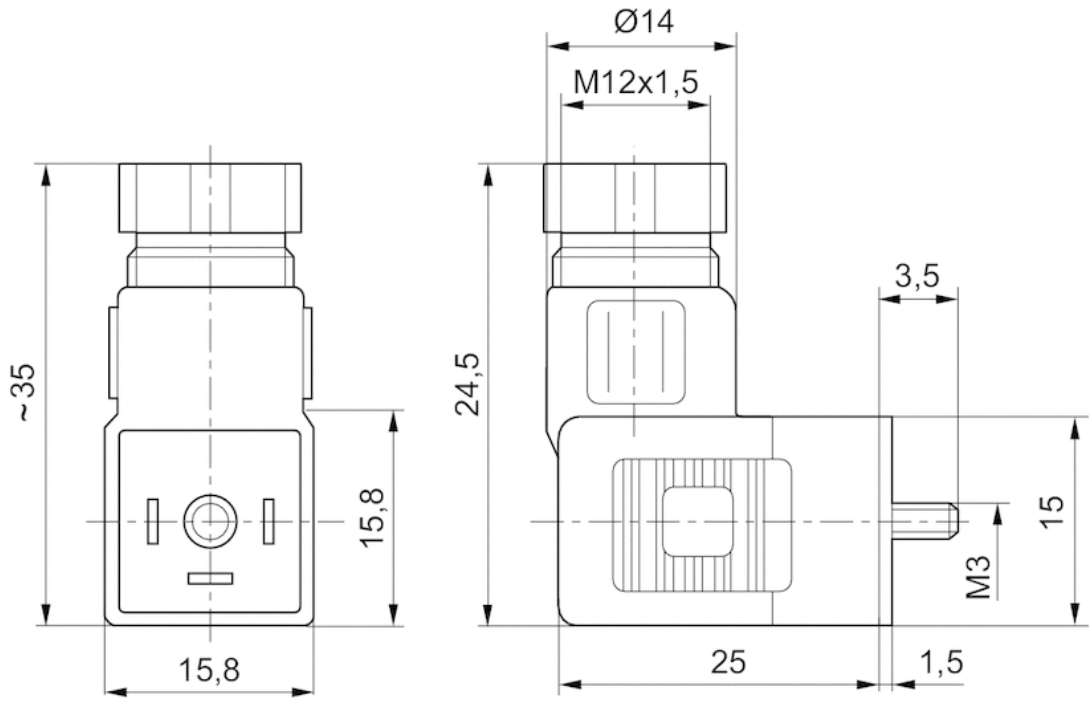
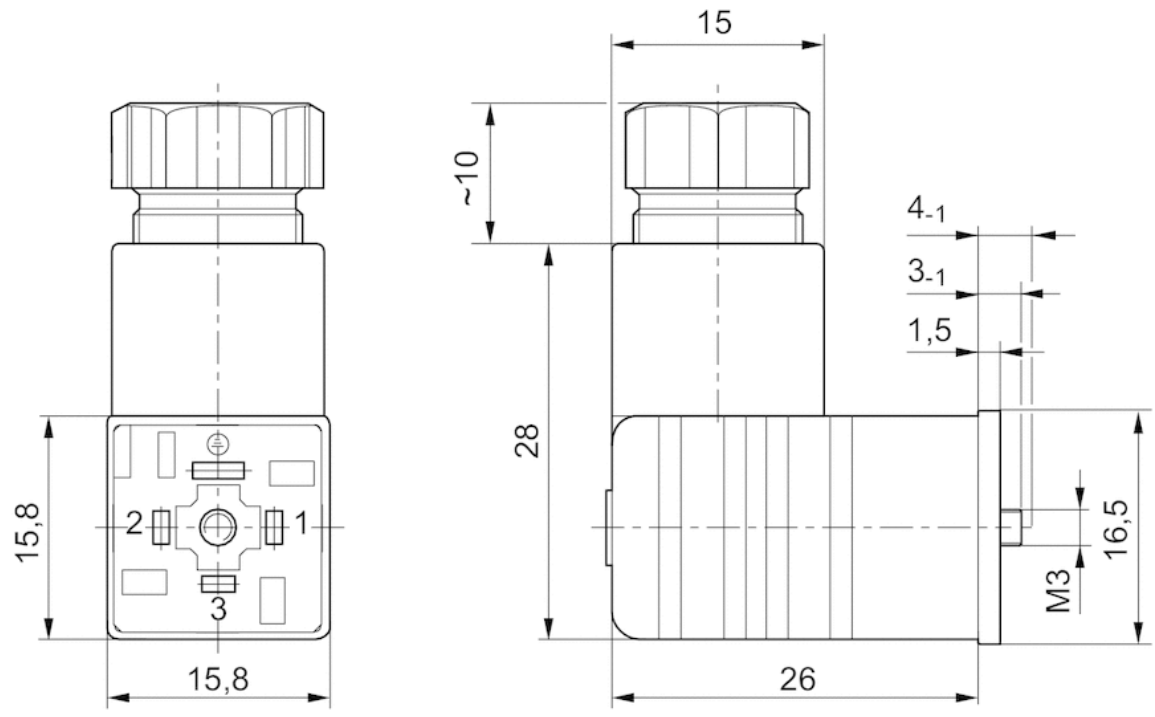
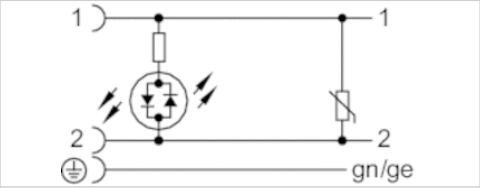


Fig. 2



Valve plug connector, series CON-VP

- Socket form C, industry 4-pin angled 90°
- open cable ends 3-pin
- with cable
- unshielded



Ambient temperature min./max.	-25 ... 90 °C
Operational voltage	24 V AC/DC
Protection class	IP65
Protective circuit	Varistor
Wire cross-section	0.5 mm²
Mounting screw tightening torque	0.4 Nm
Weight	0.12 kg

Technical data

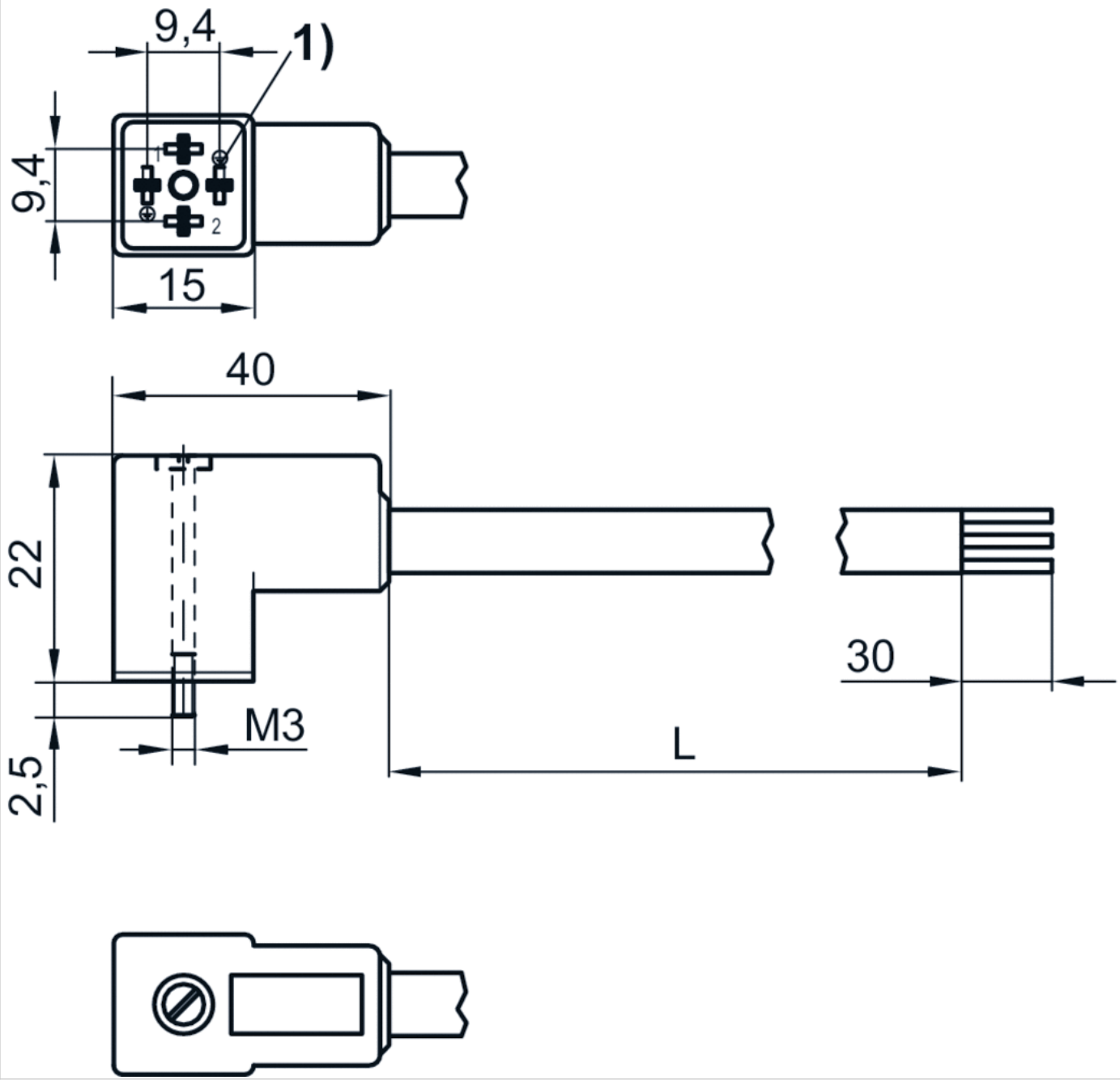
Part No.	Max. current	Contact assignment	LED status display	Number of wires	Cable length
R412024833	1.5 A	2+E	Yellow	3	3 m
R412024834	1.5 A	2+E	Yellow	3	5 m
R412024835	1.5 A	2+E	Yellow	3	10 m

Technical information

Material	
Housing	Polyamide
Seals	caoutchouc/butadiene caoutchouc
Cable sheath	Polyvinyl chloride

Dimensions

Dimensions

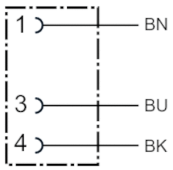


1) Coding pin
L = length

Round plug connector, Series CON-RD

- Socket M8x1 3-pin A-coded straight 180°
- open cable ends
- with cable
- UL (Underwriters Laboratories)
- unshielded

Ambient temperature min./max.	-25 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Wire cross-section	0.24 mm²
Weight	See table below



Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Certification	Weight
1834484166	4 A	3	4.5 mm	3 m	UL (Underwriters Laboratories)	0.087 kg
1834484168	4 A	3	4.5 mm	5 m	UL (Underwriters Laboratories)	0.141 kg
1834484247	4 A	3	4.5 mm	10 m	UL (Underwriters Laboratories)	0.277 kg

Technical information

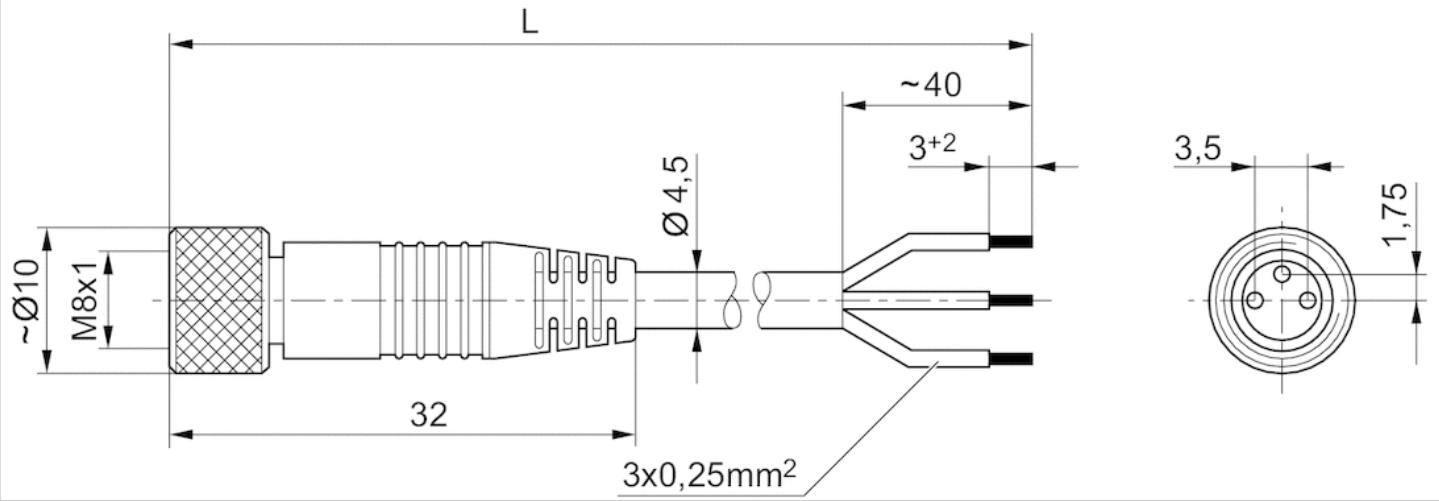
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane

Dimensions

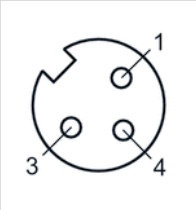
Dimensions



L = length

Pin assignments

Pin assignment, socket



(1) BN=brown
(3) BU=blue
(4) BK=black

Multipole plug, series CON-MP

- Socket, D-Sub, 25-pin, Angled/straight, 90°/180° Plug, D-Sub, 25-pin, Angled/straight, 90°/180°
- unshielded

Connection type	Soldering/crimping
Ambient temperature min./max.	-5 ... 50 °C
Operational voltage	24 V DC
Protection class	IP65
Weight	0.042 kg

Technical data

Part No.	Electrical connection	Max. current	suitable cable-Ø min./max
	1		
R412011240	Socket D-Sub 25-pin Angled/straight 90°/180°	3 A	4 / 16 mm
R412011241	Plug D-Sub 25-pin Angled/straight 90°/180°	3 A	4 / 16 mm

Scope of delivery: multipole plug including 1 tube nut and 1 elbow fitting

Technical information

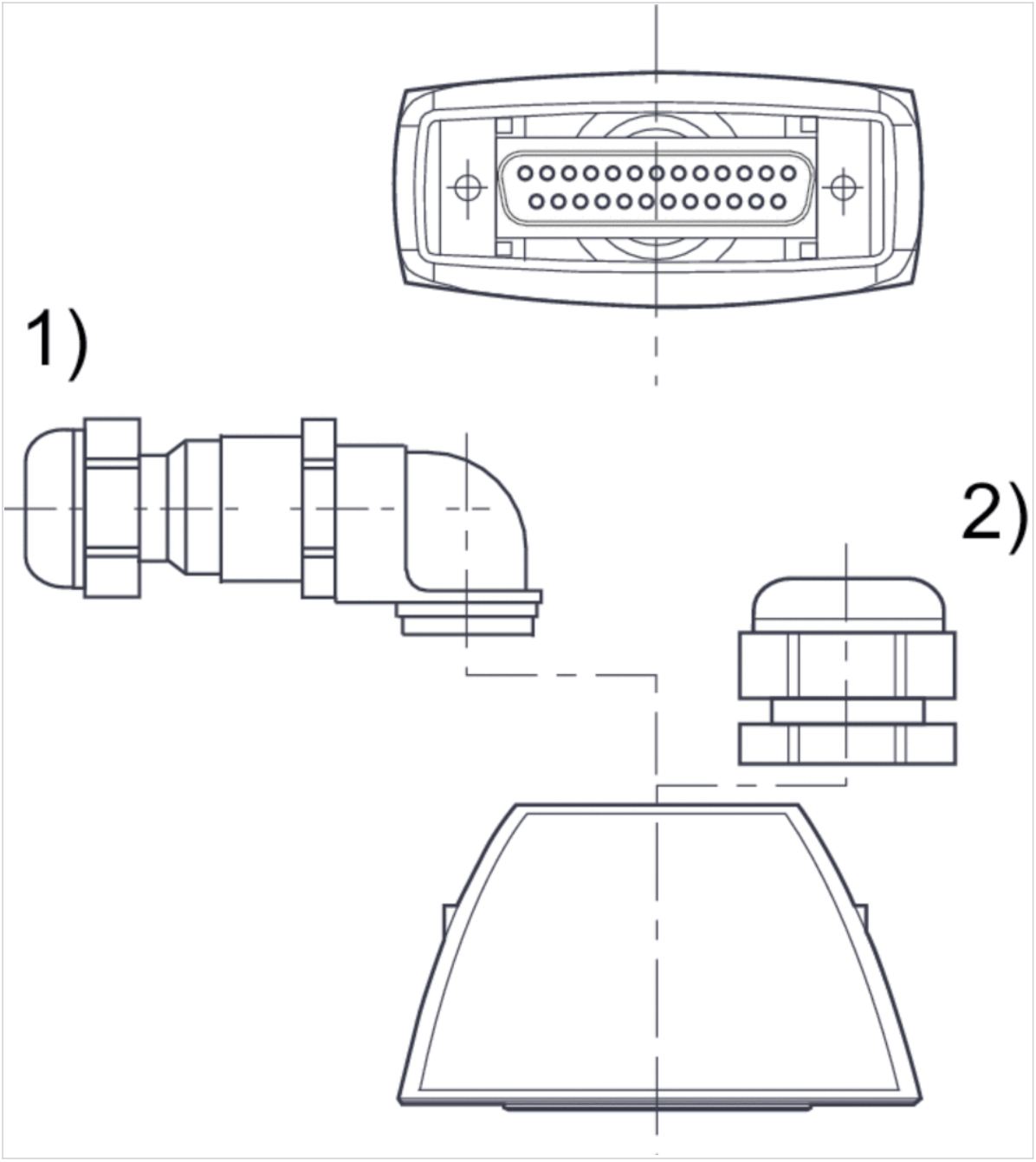
The specified protection class is only valid in assembled and tested state.
Note for use with VS LP04: The plug can only be used in the LP04 versions with a side electrical connection.

Technical information

Material	
Housing	Polyamide

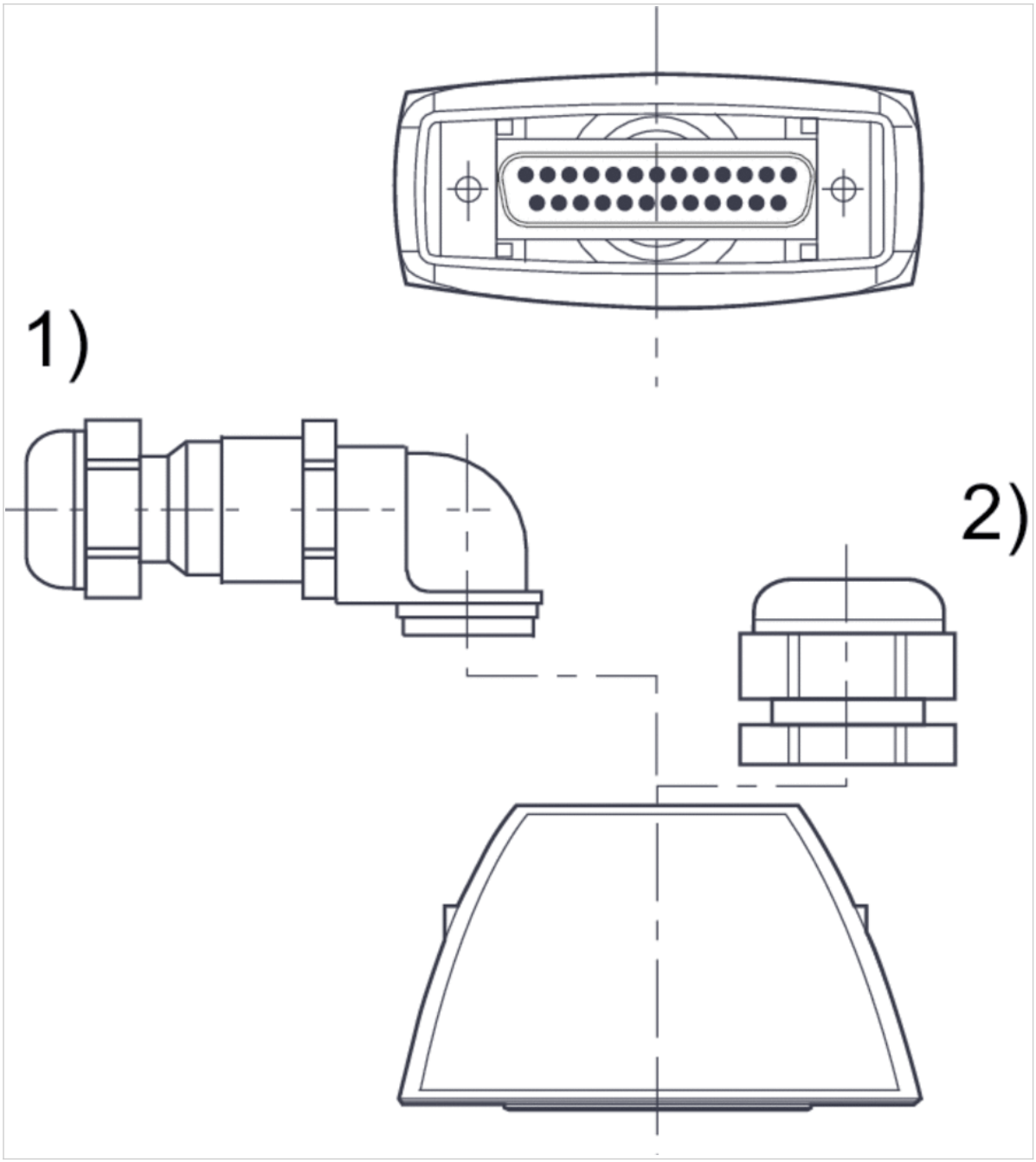
Dimensions

Dimensions



1) Elbow fitting
2) tube nut

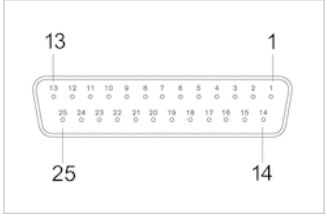
Dimensions



1) Socket
2) tube nut

Pin assignments

PIN assignment and cable colors, cable identification as per DIN 47100



Socket

Multipole plug, series CON-MP

- open cable ends 25-pin
- with cable
- unshielded

Ambient temperature min./max.	-20 ... 80 °C
Operational voltage	24 V DC
Protection class	IP67
Wire cross-section	0.22 mm²
Weight	See table below

Technical data

Part No.	Electrical connection	Max. current	Number of wires	Cable sheath
	1			
R419500454	Socket D-Sub 25-pin straight 180°	3 A	25	Polyvinyl chloride
R419500455	Socket D-Sub 25-pin straight 180°	3 A	25	Polyvinyl chloride
R419500456	Socket D-Sub 25-pin straight 180°	3 A	25	Polyvinyl chloride
R412022156	Socket D-Sub 25-pin straight 180°	3 A	25	Polyvinyl chloride
R419500457	Socket D-Sub 25-pin straight 180°	3 A	25	Polyurethane
R419500458	Socket D-Sub 25-pin straight 180°	3 A	25	Polyurethane
R419500459	Socket D-Sub 25-pin straight 180°	3 A	25	Polyurethane
R419500460	Socket D-Sub 25-pin angled 90°	3 A	25	Polyvinyl chloride
R419500461	Socket D-Sub 25-pin angled 90°	3 A	25	Polyvinyl chloride
R419500462	Socket D-Sub 25-pin angled 90°	3 A	25	Polyvinyl chloride
R412022352	Socket D-Sub 25-pin angled 90°	3 A	25	Polyvinyl chloride
R419500463	Socket D-Sub 25-pin angled 90°	3 A	25	Polyurethane
R419500464	Socket D-Sub 25-pin angled 90°	3 A	25	Polyurethane
R419500465	Socket D-Sub 25-pin angled 90°	3 A	25	Polyurethane

Part No.	Bending radius min.	Cable-Ø	Cable length	Weight		Fig.
R419500454	-	8.5 mm	3 m	0.465 kg	-	Fig. 1
R419500455	-	8.5 mm	5 m	0.731 kg	-	Fig. 1
R419500456	-	8.5 mm	10 m	1.373 kg	-	Fig. 1
R412022156	-	8.5 mm	15 m	2.002 kg	-	Fig. 1
R419500457	78.75 mm	10.5 mm	3 m	0.51 kg	1)	Fig. 1
R419500458	78.75 mm	10.5 mm	5 m	0.789 kg	1)	Fig. 1
R419500459	78.75 mm	10.5 mm	10 m	1.491 kg	1)	Fig. 1
R419500460	-	8.5 mm	3 m	0.46 kg	-	Fig. 2
R419500461	-	8.5 mm	5 m	0.707 kg	-	Fig. 2
R419500462	-	8.5 mm	10 m	1.334 kg	-	Fig. 2
R412022352	-	8.5 mm	15 m	1.982 kg	-	Fig. 2

Part No.	Bending radius min.	Cable-Ø	Cable length	Weight		Fig.
R419500463	78.75 mm	10.5 mm	3 m	0.484 kg	1)	Fig. 2
R419500464	78.75 mm	10.5 mm	5 m	0.767 kg	1)	Fig. 2
R419500465	78.75 mm	10.5 mm	10 m	1.461 kg	1)	Fig. 2

1) suitable for dynamic laying

Technical information

The specified protection class is only valid in assembled and tested state.
The increased wire cross-section of pin 25 is 0.82 mm².

Technical information

Material	
Housing	Thermoplastic elastomer
Cable sheath	Polyvinyl chloride Polyurethane

Dimensions

Fig. 1

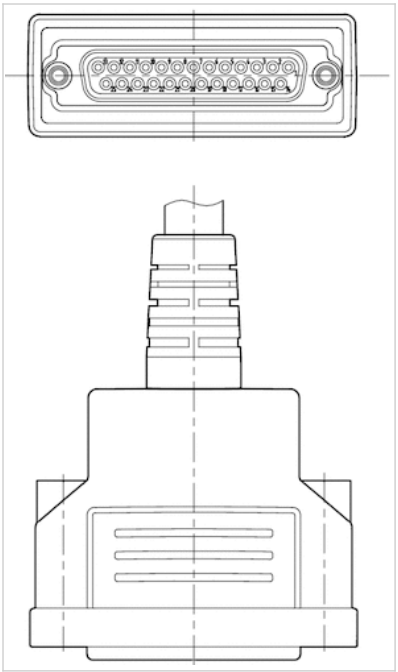
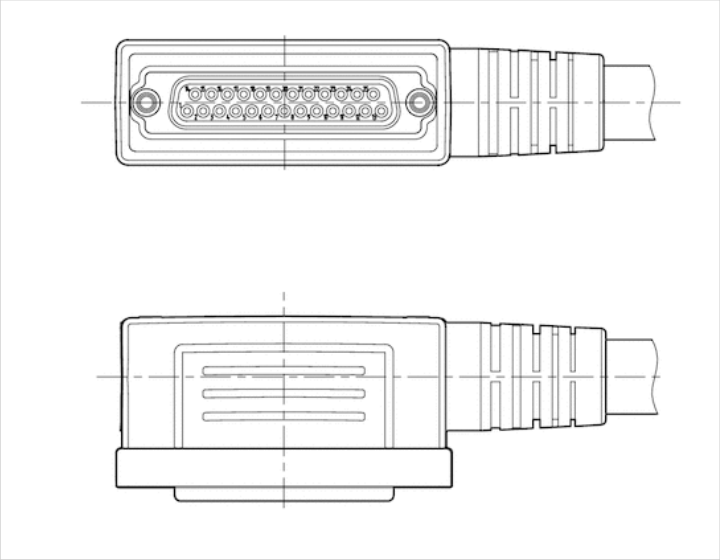
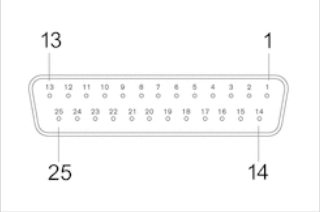


Fig. 2



Pin assignments

PIN assignment and cable colors, cable identification as per DIN 47100



Socket

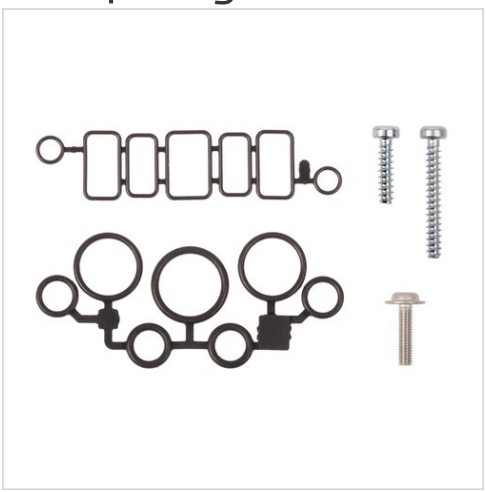
Pin	1	2	3	4	5	6	7	8	9
Color	white	brown	green	yellow	gray	pink	blue	red	black

10	11	12	13	14	15
violet	gray/pink	red/blue	white/green	brown/green	white/yellow

16	17	18	19	20	21
yellow/brown	white/gray	gray/brown	white/pink	pink/brown	white/blue

22	23	24	25
brown/blue	white/red	brown/red	white/black

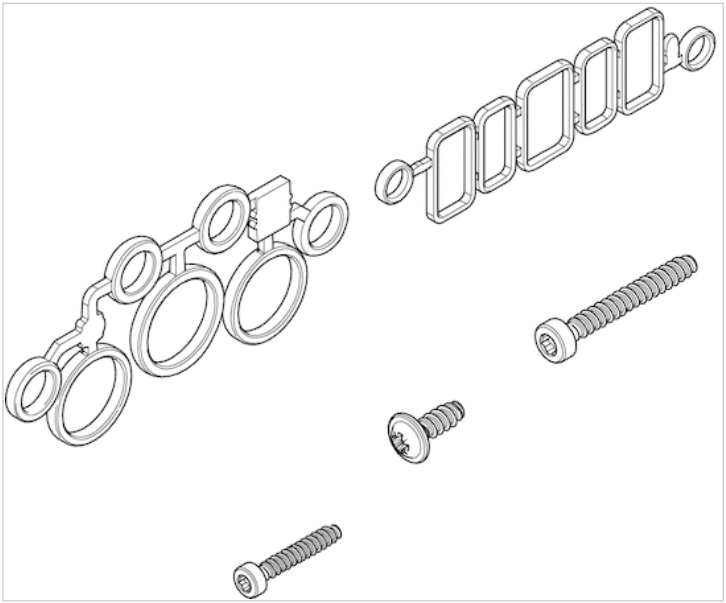
Coupling kit, Series ES05



Technical data

Part No.	Scope of delivery
R422102806	10x screws for valve function, 10x screws for tie rod, 10x screws for end plate, 10x seals for valve function, 10x seals for base plate

Dimensions



Assembly accessories

- for ES05

Technical data

Part No.	Type	Delivery unit
R412025511	Labels (DIN A4 with 65 labels each)	10 piece
R415016543	Essential Test Box	1 piece
R415017113	Essential Test Box, inch	1 piece
R499001652	Torque screwdriver	1 piece

Separator

- for ES05
- standard ISO 5599-1

Standards	ISO 5599-1
Weight	0.025 kg

Technical data

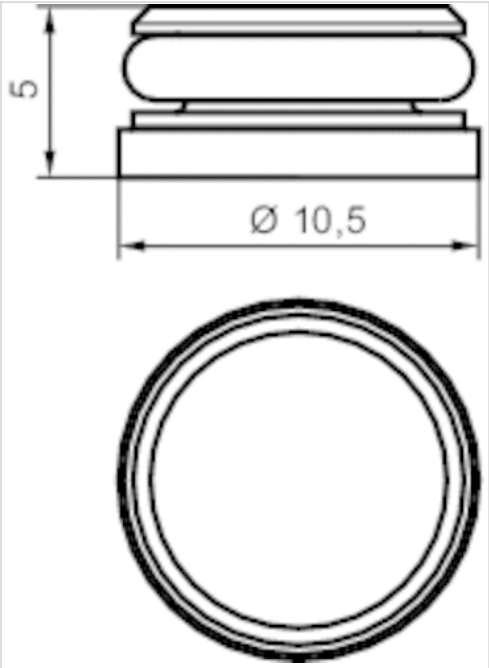
Part No.	Type	Delivery unit
R422003353	Separator for channel 1	1 piece
R422P03353	Separator for channel 1	5 piece

When using a separator, a pressure supply plate must be used on the right side.

Technical information

Material	
Housing	Brass
Seal	Acrylonitrile butadiene rubber

Dimensions



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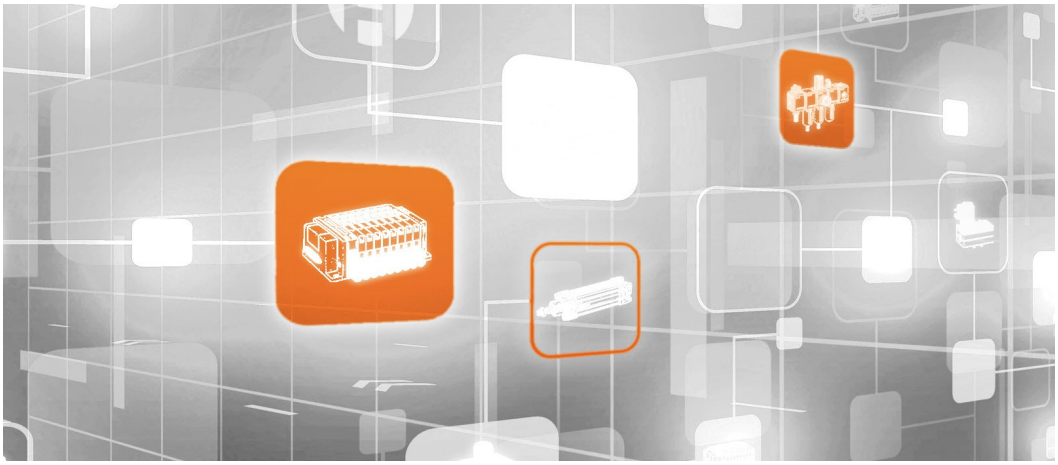

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