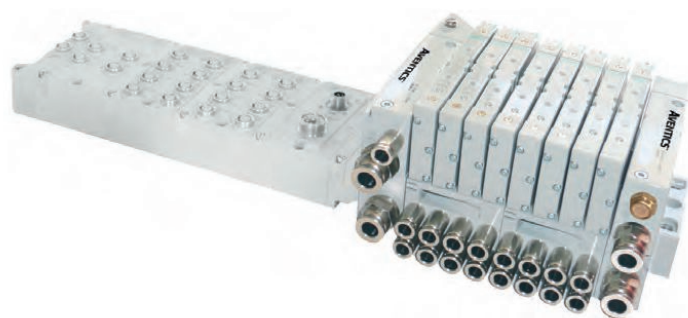


Series 503



AVENTICS™

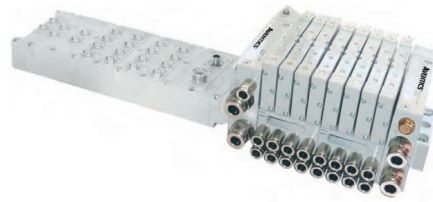
**AVENTICS Series 503 Directional
Control Valves**


EMERSON™

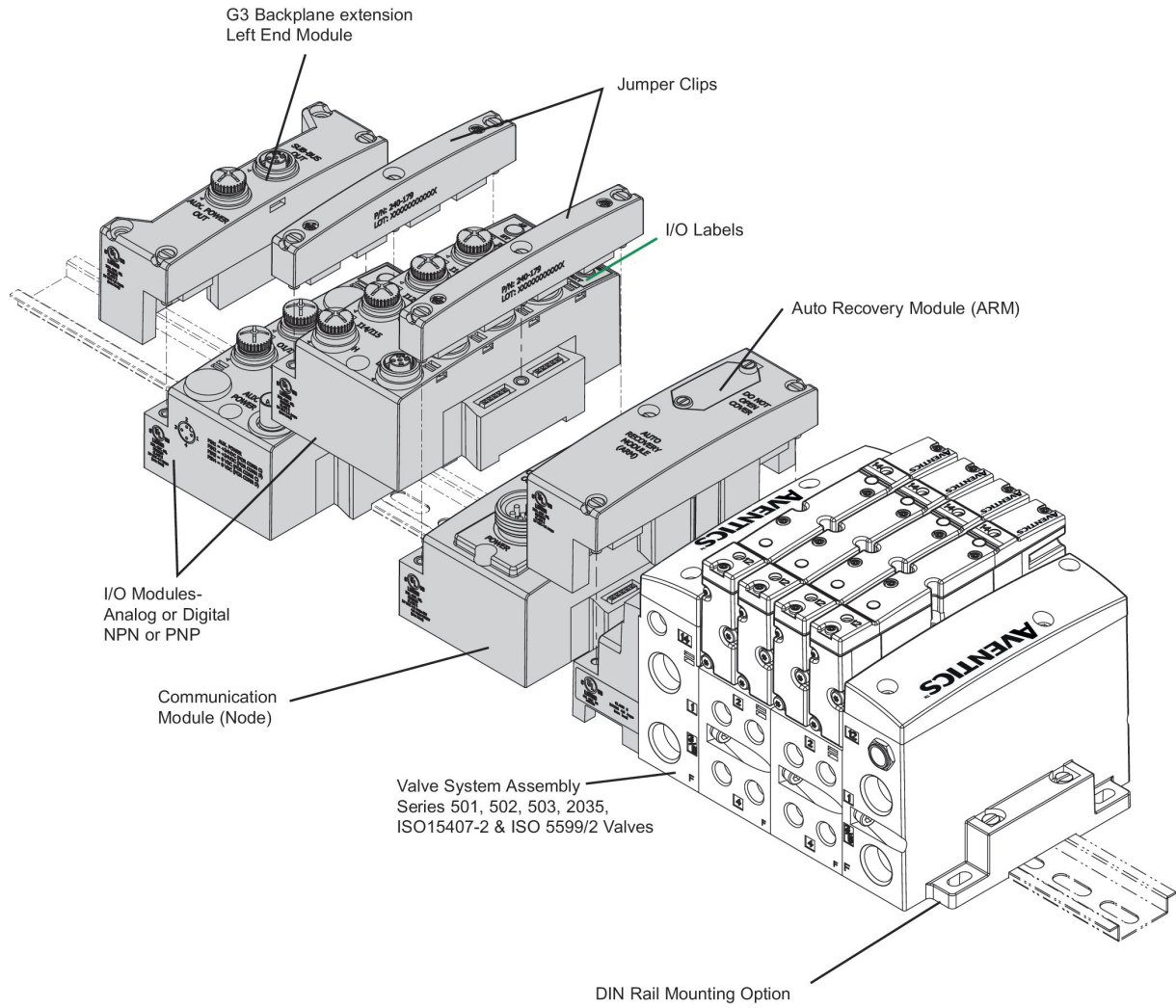
Series 503

The AVENTICS Series 503 is a line of pneumatic directional control valves with ultra-high flow ratings per valve size. This enables design and specifying engineers to use smaller, lower-cost valves and components that do more work with less air, energy, and cost. Designers can choose to generate greater speed of motion for their components using the same size valve. The 503 Series valves are designed to complement the benefits of AVENTICS G3 fieldbus electronics. When assembled together, original equipment manufacturers can leverage assemblies that combine ultra-high flow rates with ease of use, plus fieldbus technology that provides configurability, flexibility, and cost-effective I/O and distribution architecture. The compact 503 Series valves are ideal for automation and piloting applications across a wide range of automotive and tire, food and beverage, pharmaceutical, packaging equipment, and general machinery applications.

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



Accessories overview



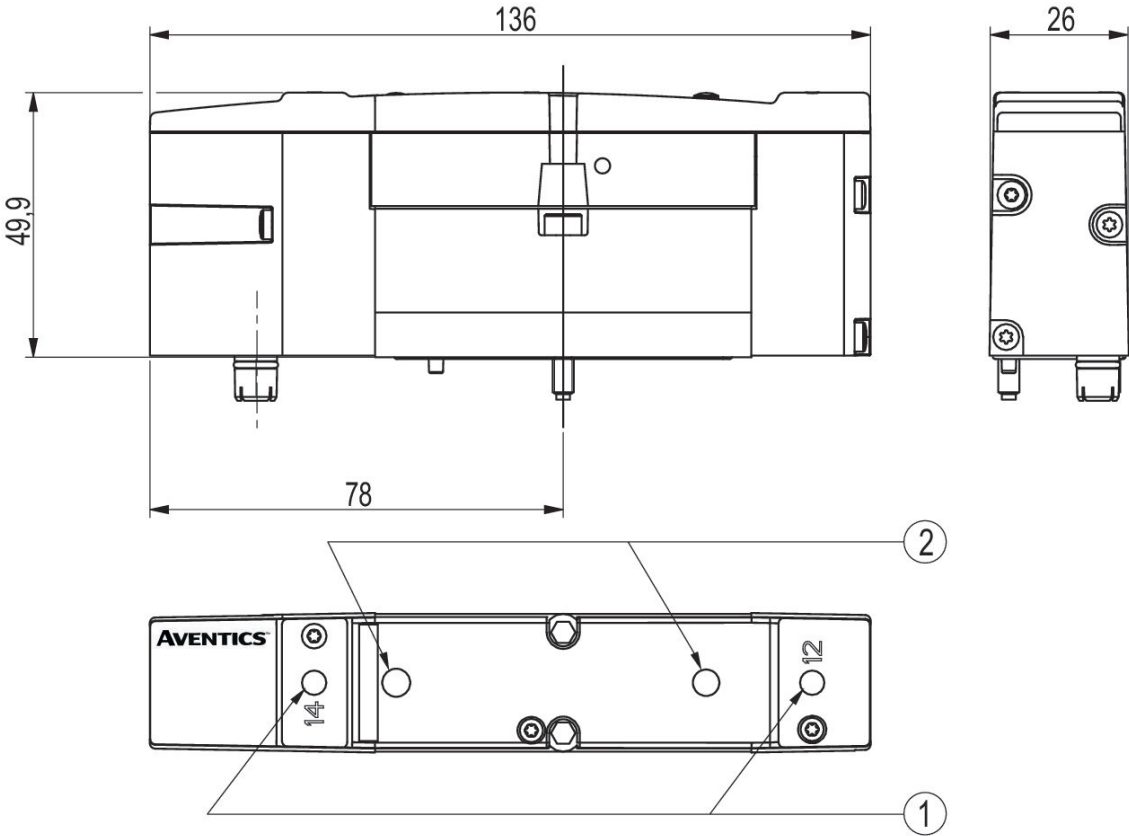
2x3/2-directional valve, Series 503

Double Solenoid
Electrically



Manual override	Valve function	Operational voltage	Pilot	Voltage tolerance DC	Power consumption DC [W]	Part No.
without detent	NC/NC	24 V DC	External	-15% / +10%	1.4	R503A2B-D0MA00F1
without detent	NO/NO	24 V DC	External	-15% / +10%	1.4	R503A2BA0MA00F1
with detent	NC/NC	24 V DC	External	-15% / +10%	1.4	R503A2B-D0M11BF1
with detent	NO/NO	24 V DC	External	-15% / +10%	1.4	R503A2BA0M11BF1

Dimensions



1) Manual override
2) LED

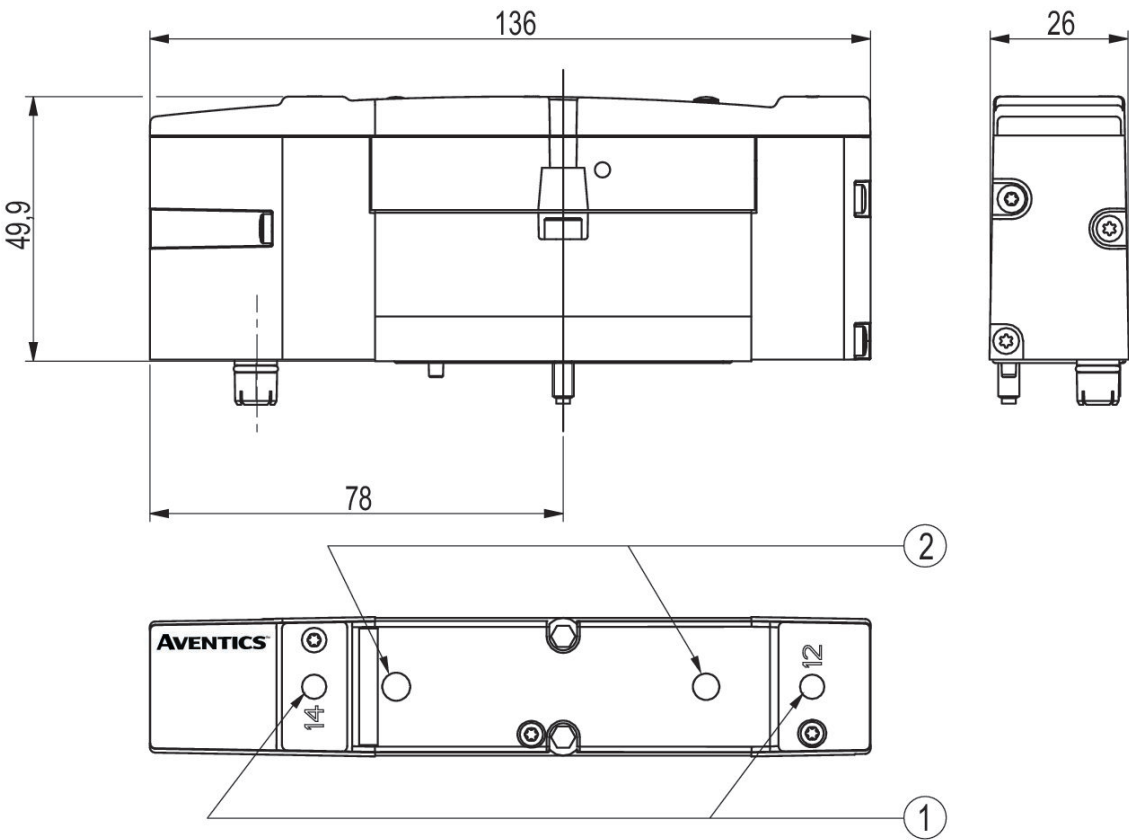
5/2-directional valve, Series 503

Single Solenoid
Electrically



Manual override	Operational voltage	Pilot	Voltage tolerance DC	Power consumption DC [W]	Part No.
without detent	24 V DC	External	-15% / +10%	1.4	R503A1B10MA00F1
with detent	24 V DC	External	-15% / +10%	1.4	R503A1B10M11BF1
without detent	24 V DC	External	-15% / +10%	1.4	R503A2B10MA00F1
with detent	24 V DC	External	-15% / +10%	1.4	R503A2B10M11BF1
without detent	24 V DC	External	-15% / +10%	1.4	R503A2B-N0MA00F1
with detent	24 V DC	External	-15% / +10%	1.4	R503A2B-N0M11BF1

Dimensions



- 1) Manual override
- 2) LED

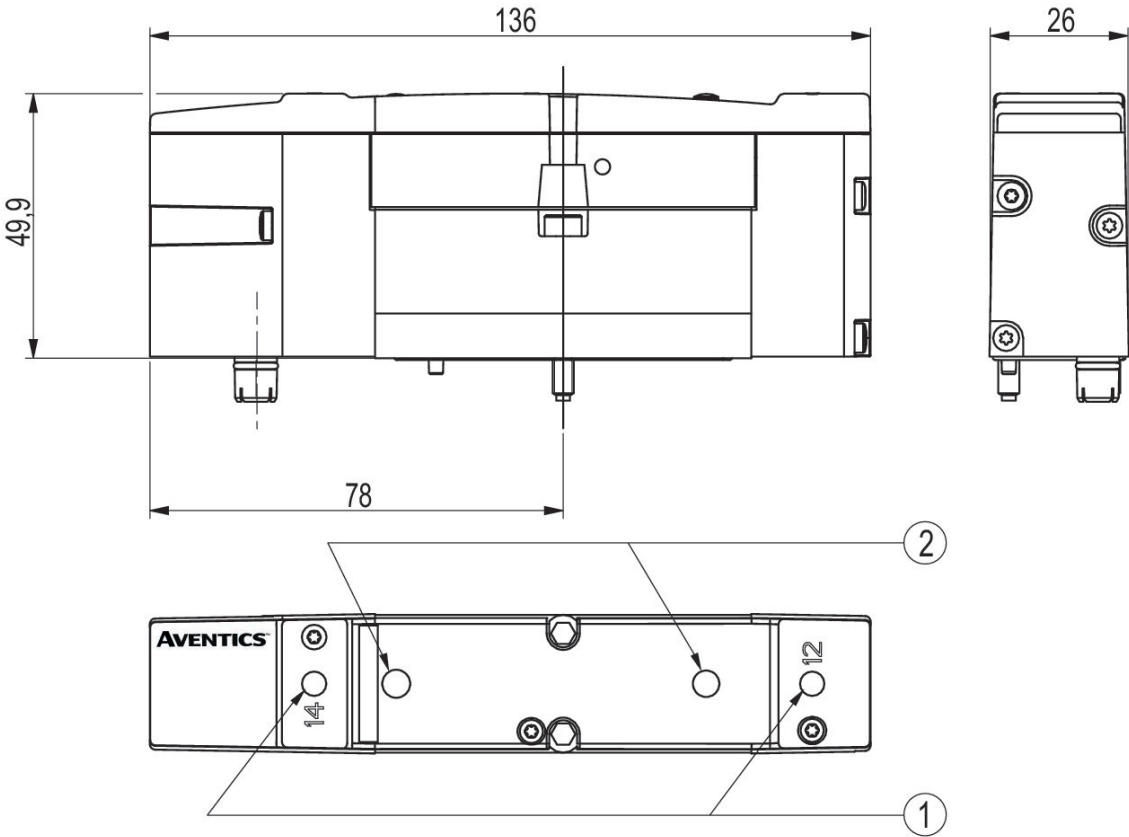
5/2-directional valve, Series 503

Double Solenoid
Electrically



Manual override	Operational voltage	Pilot	Voltage tolerance DC	Power consumption DC [W]	Part No.
without detent	24 V DC	External	-15% / +10%	1.4	R503A1B40MA00F1
with detent	24 V DC	External	-15% / +10%	1.4	R503A1B40M11BF1
with detent	24 V DC	External	-15% / +10%	1.4	R503A2B40M11BF1
without detent	24 V DC	External	-15% / +10%	1.4	R503A2B40MA00F1

Dimensions



- 1) Manual override
- 2) LED

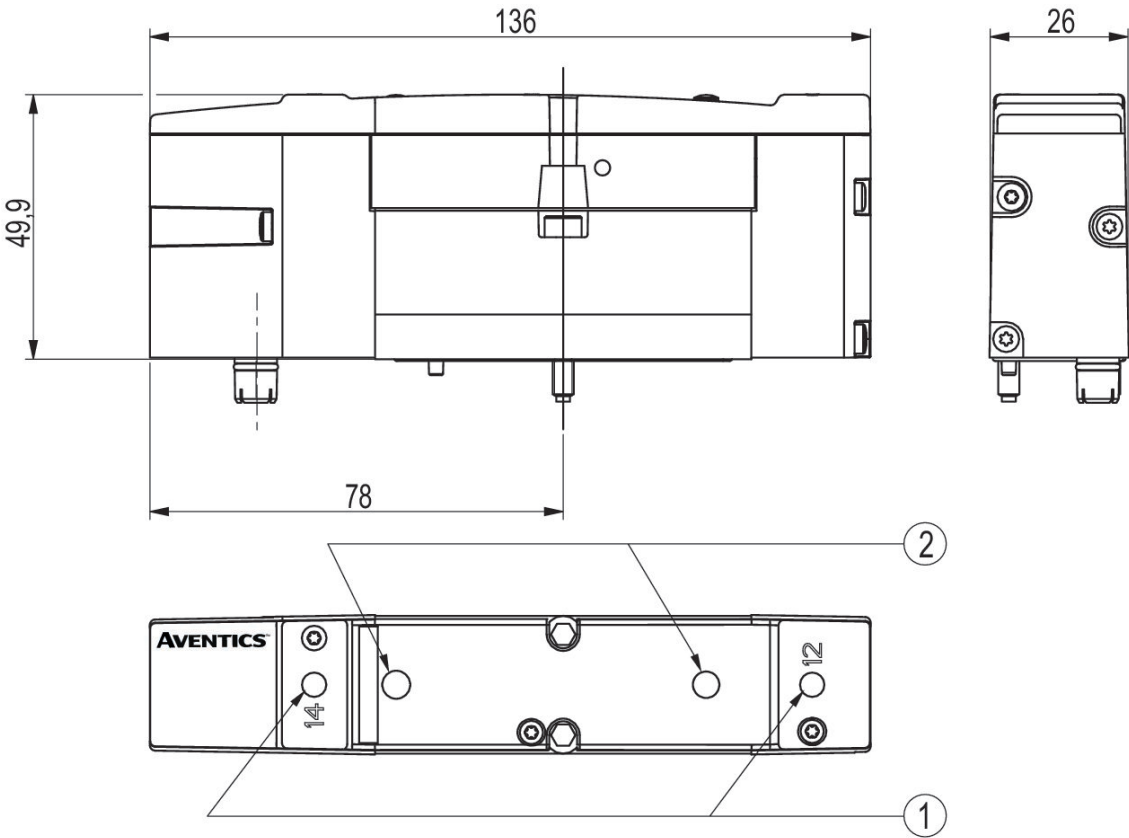
5/3-directional valve, Series 503

Double Solenoid
Electrically



Manual override	Valve function	Operational voltage	Pilot	Voltage tolerance DC	Power consumption DC [W]	Part No.
without detent	Exhausted Center	24 V DC	External	-15% / +10%	1.4	R503A1B50MA00F1
without detent	Pressurized Center	24 V DC	External	-15% / +10%	1.4	R503A1B70MA00F1
with detent	Exhausted Center	24 V DC	External	-15% / +10%	1.4	R503A1B50M11BF1
with detent	Pressurized Center	24 V DC	External	-15% / +10%	1.4	R503A1B70M11BF1
without detent	Closed Center	24 V DC	External	-15% / +10%	1.4	R503A2B60MA00F1
without detent	Pressurized Center	24 V DC	External	-15% / +10%	1.4	R503A2B70MA00F1
with detent	Exhausted Center	24 V DC	External	-15% / +10%	1.4	R503A2B50M11BF1
with detent	Closed Center	24 V DC	External	-15% / +10%	1.4	R503A2B60M11BF1
with detent	Pressurized Center	24 V DC	External	-15% / +10%	1.4	R503A2B70M11BF1
without detent	Exhausted Center	24 V DC	External	-15% / +10%	1.4	R503A2B50MA00F1

Dimensions



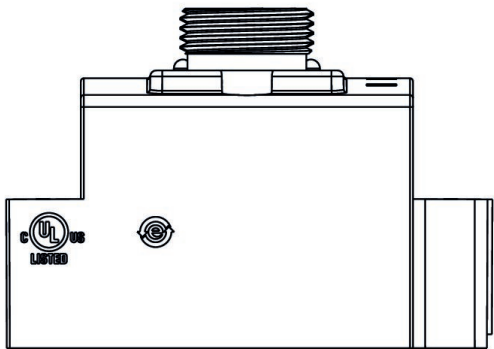
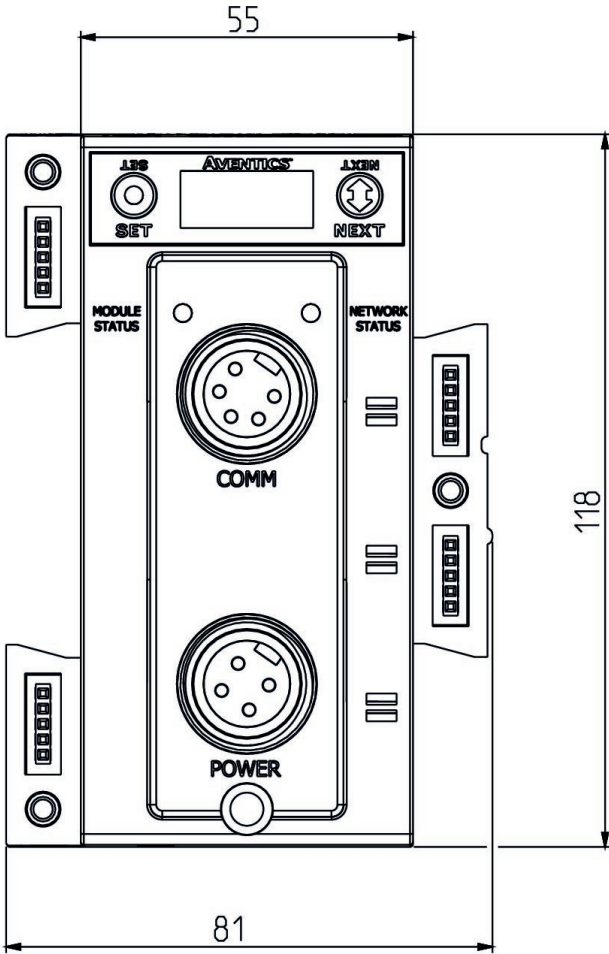
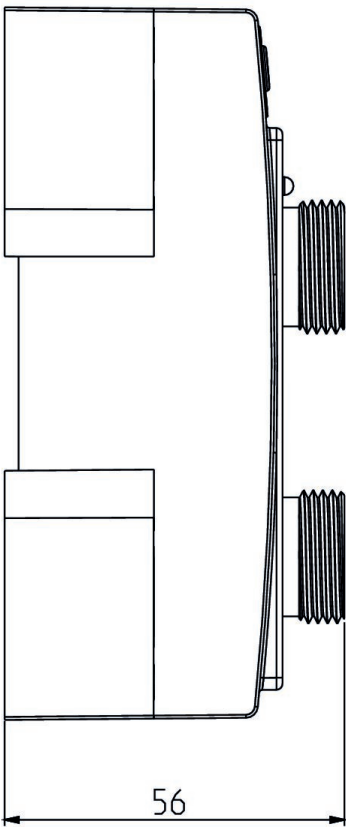
- 1) Manual override
- 2) LED

Bus coupler, Series G3

Plug
7/8"



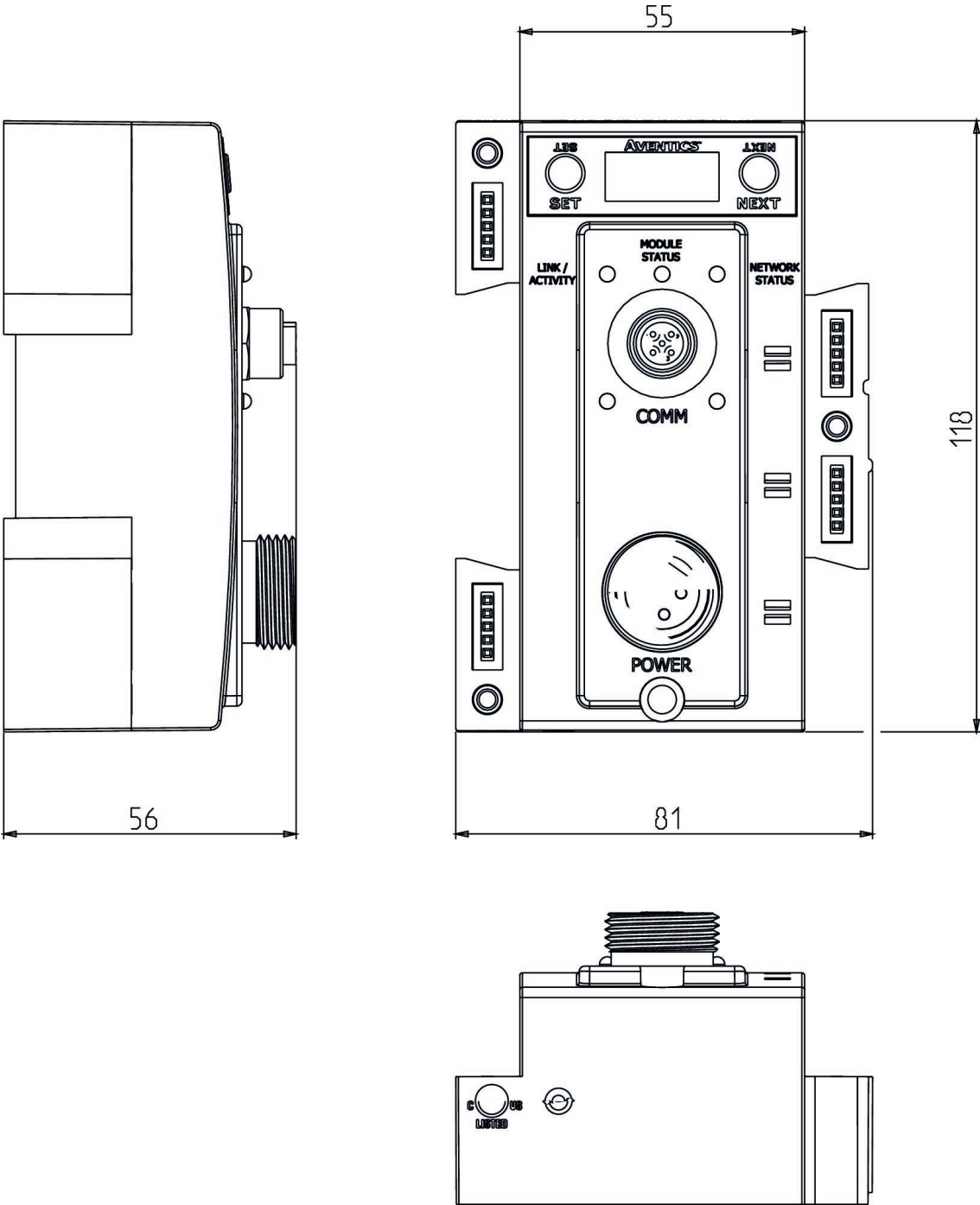
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
DeviceNet	4-pin	24 V DC	-10% / +10%	240-180



Series G3



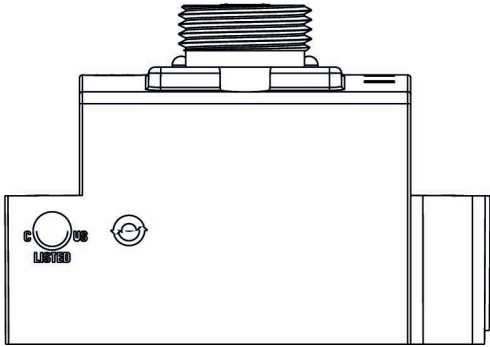
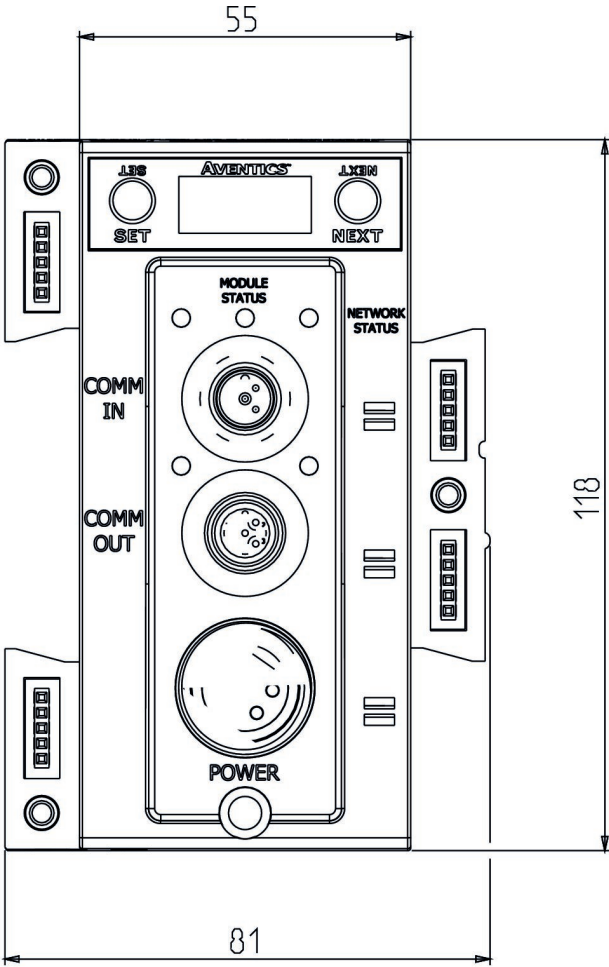
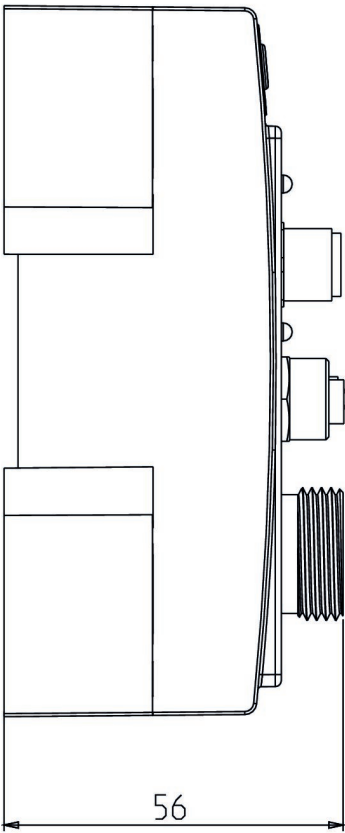
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
MODBUS TCP	4-pin	24 V DC	-10% / +10%	240-292



Series G3



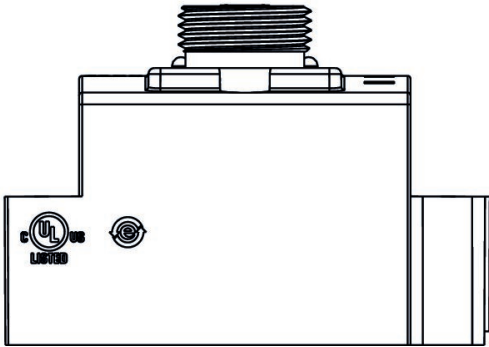
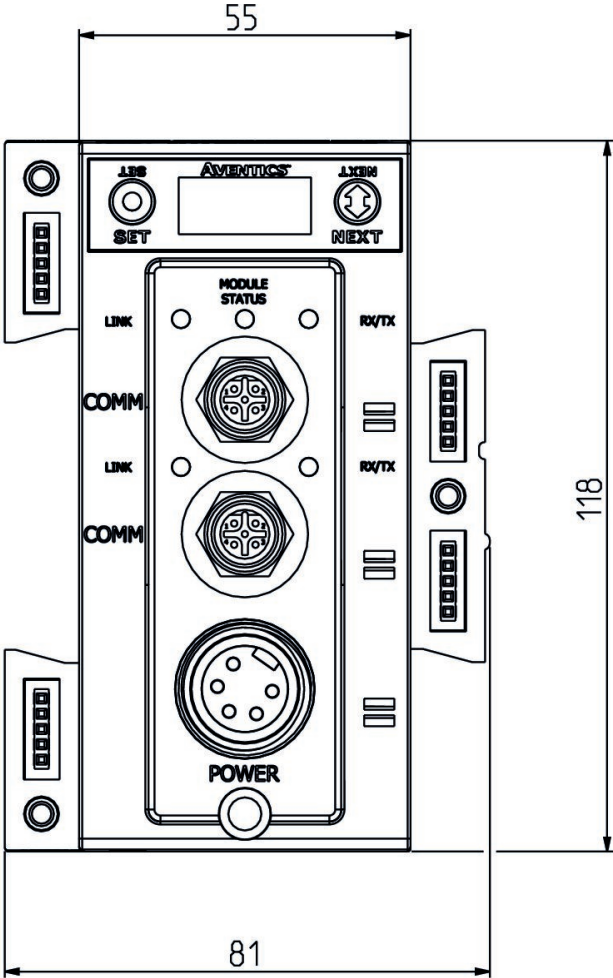
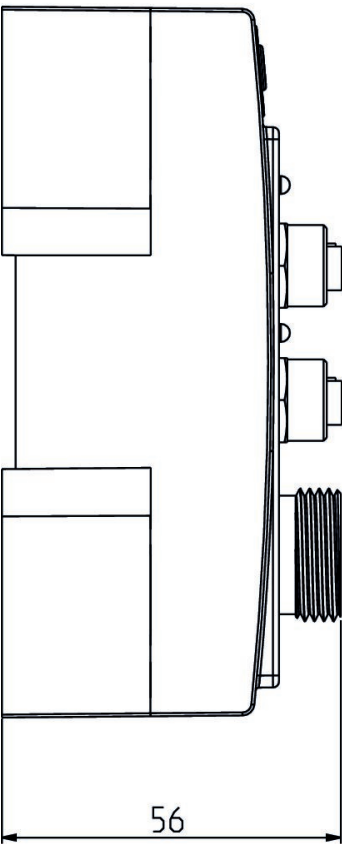
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
PROFIBUS DP	5-pin	24 V DC	-10% / +10%	240-239



Series G3



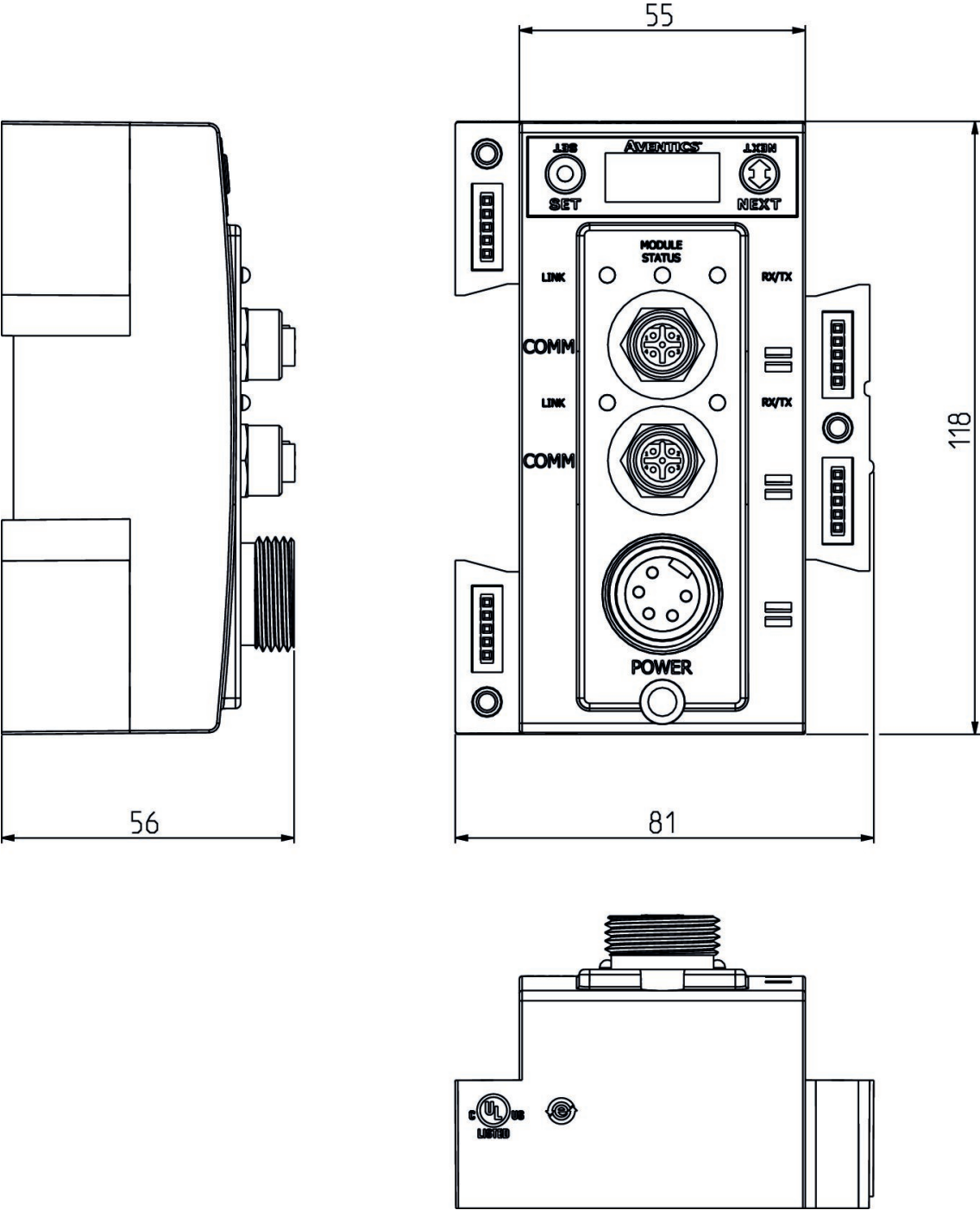
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
Profinet	5-pin	24 V DC	-10% / +10%	240-240



Series G3



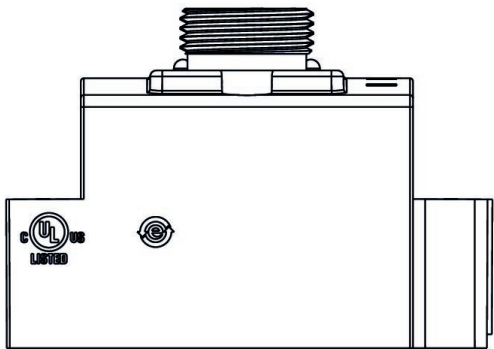
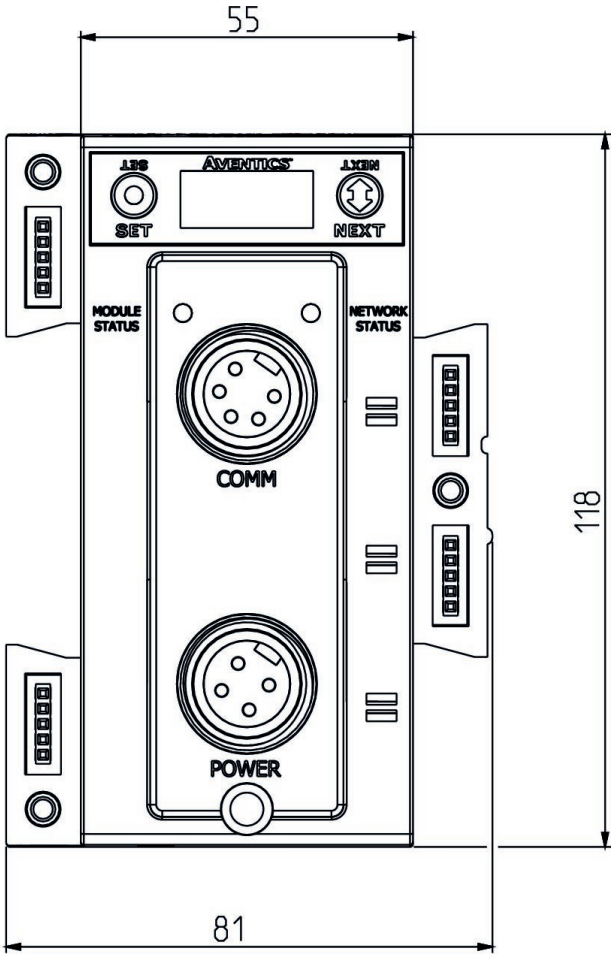
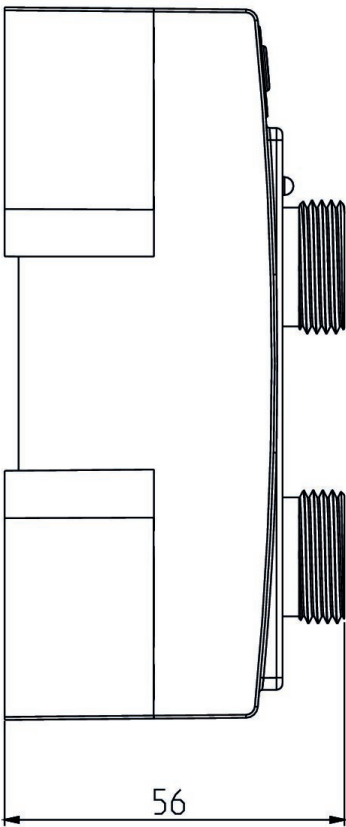
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
POWERLINK	5-pin	24 V DC	-10% / +10%	240-309



Series G3



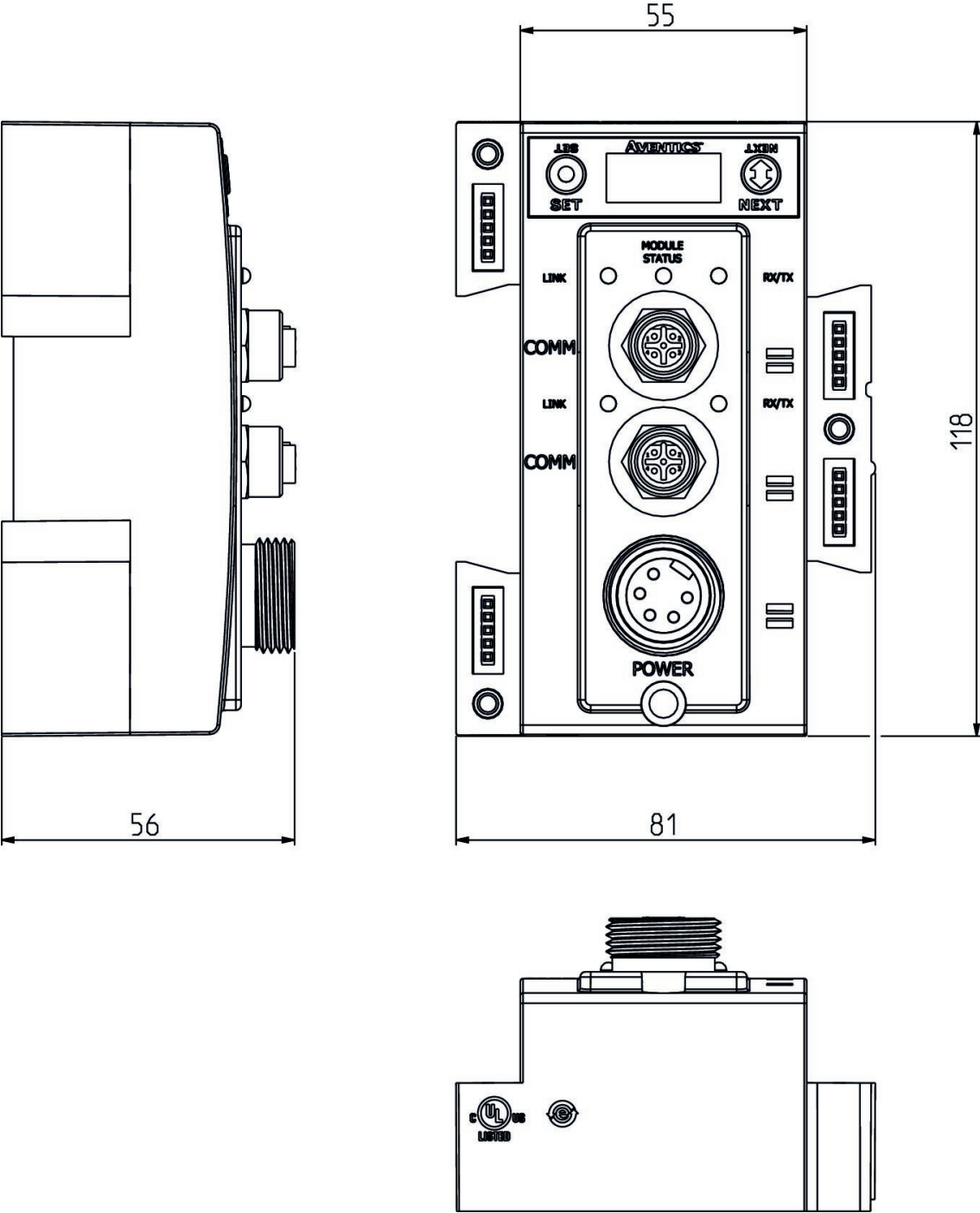
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
CANopen	4-pin	24 V DC	-10% / +10%	240-291



Series G3



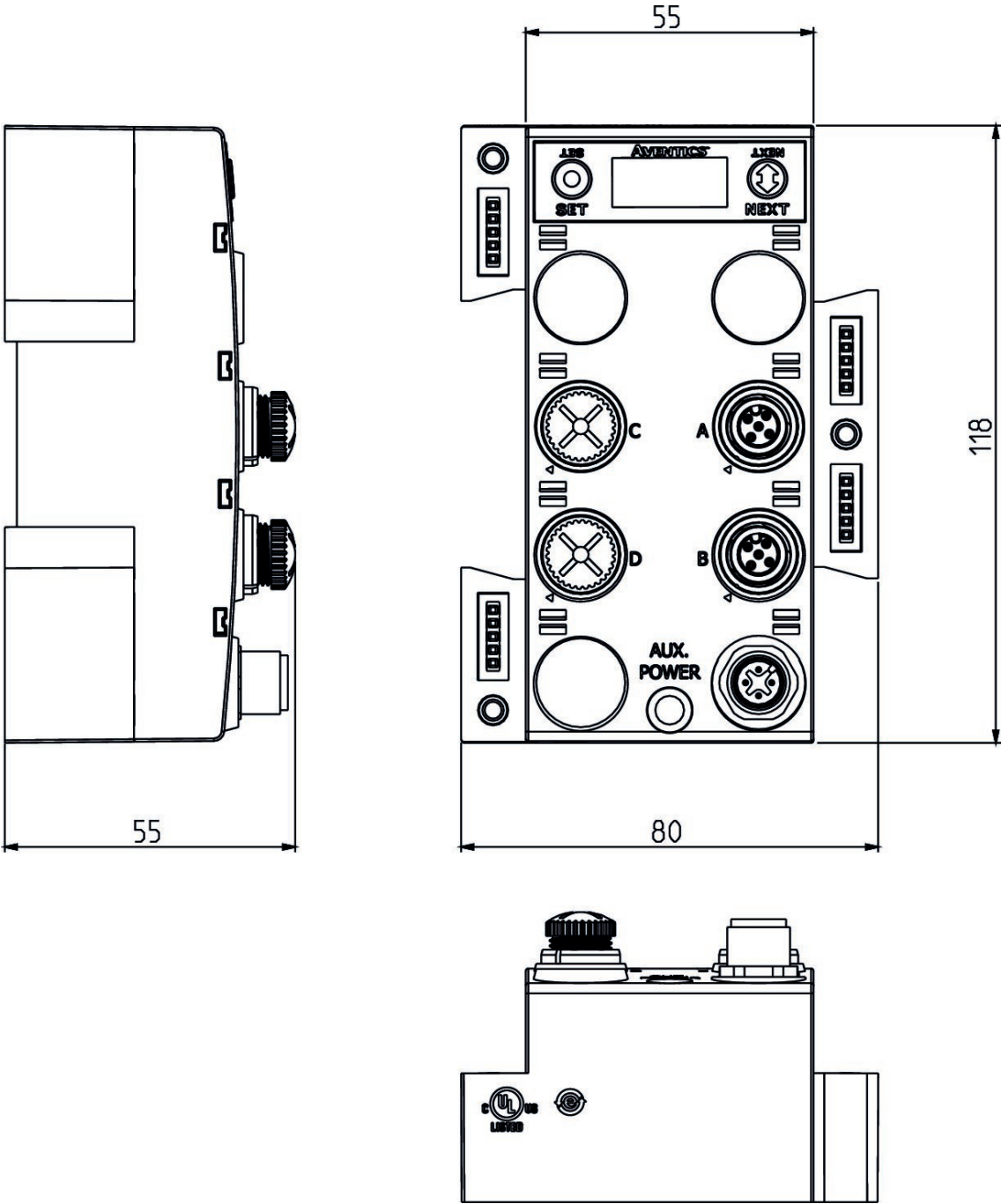
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
EtherNet/IP	4-pin	24 V DC	-10% / +10%	240-325



Series G3

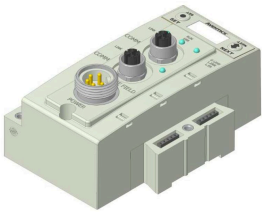


Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
EtherCAT	4-pin	24 V DC	-10% / +10%	240-310

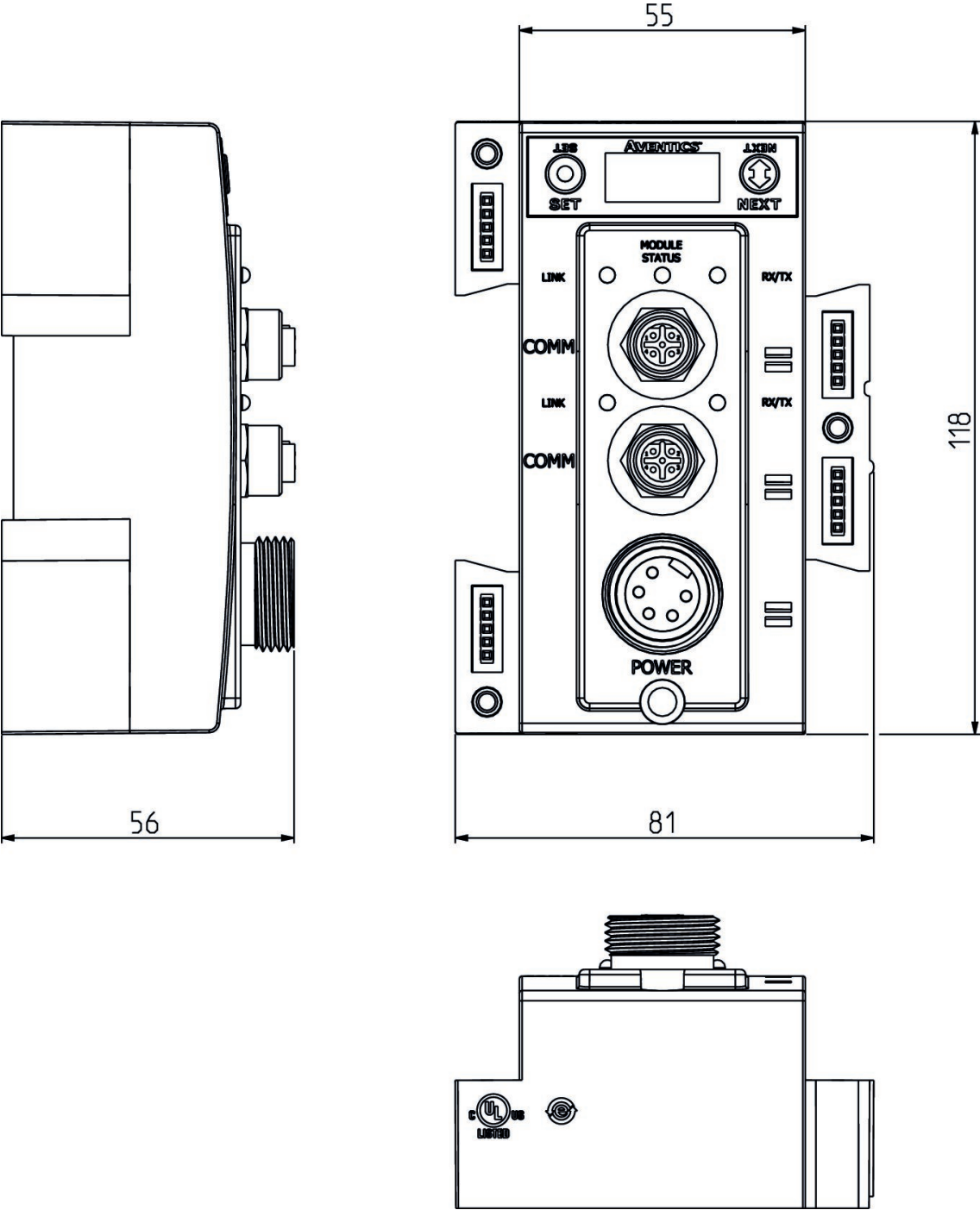


Series G3

Plug
7/8"



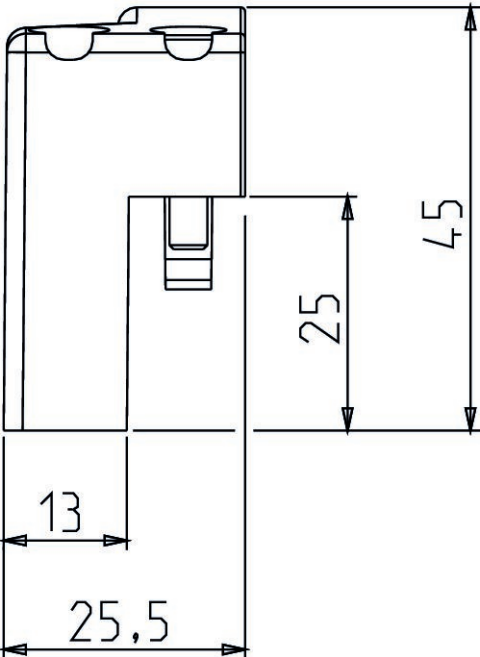
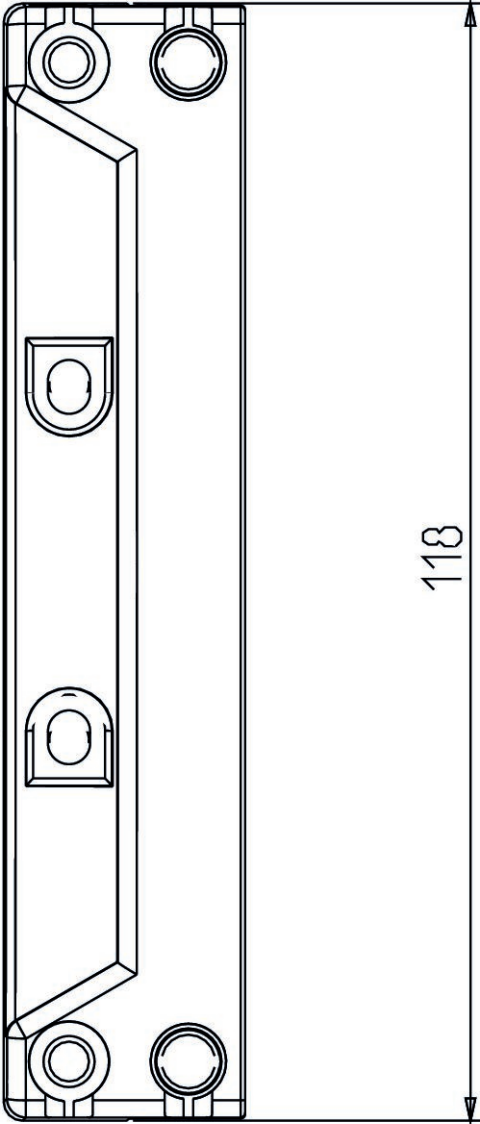
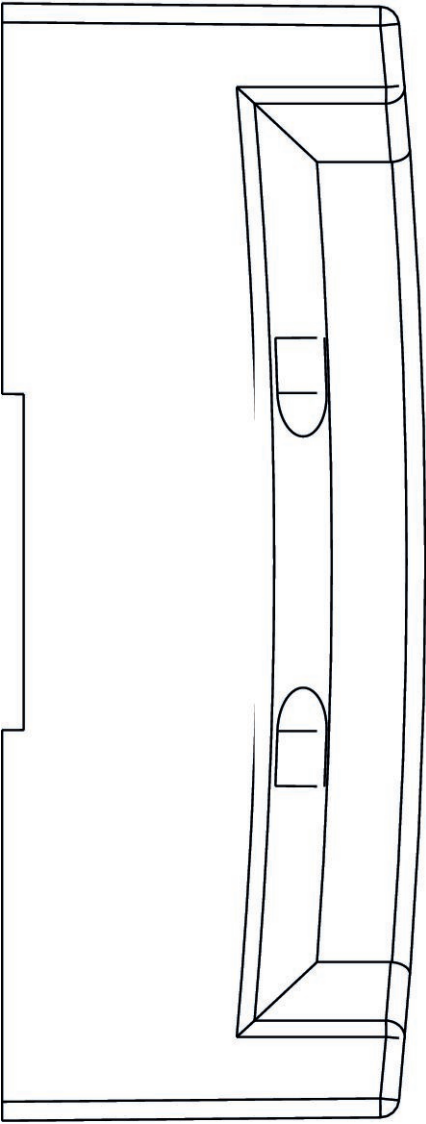
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
EtherCAT	4-pin	24 V DC	-10% / +10%	240-362



End plate left



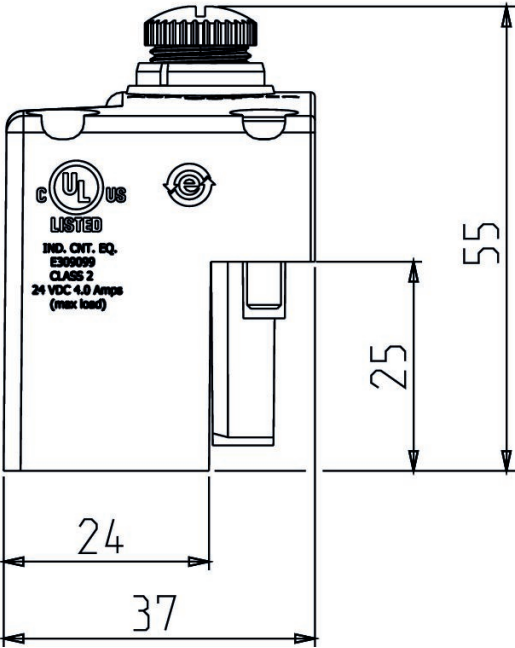
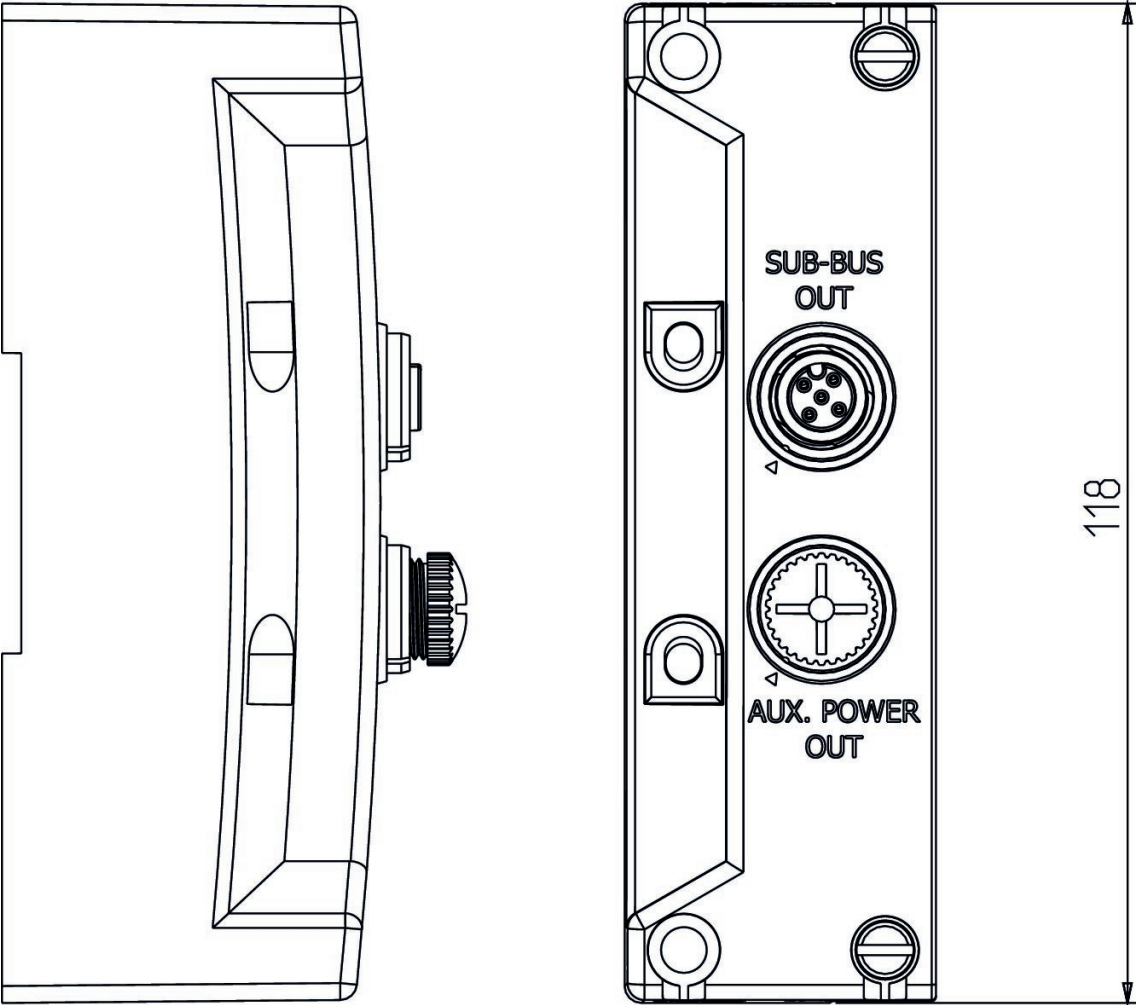
Operational voltage electronics	Operational voltage electronics	Part No.
24 V DC	-10% / +10%	240-184



Left end plate for Subbus G3



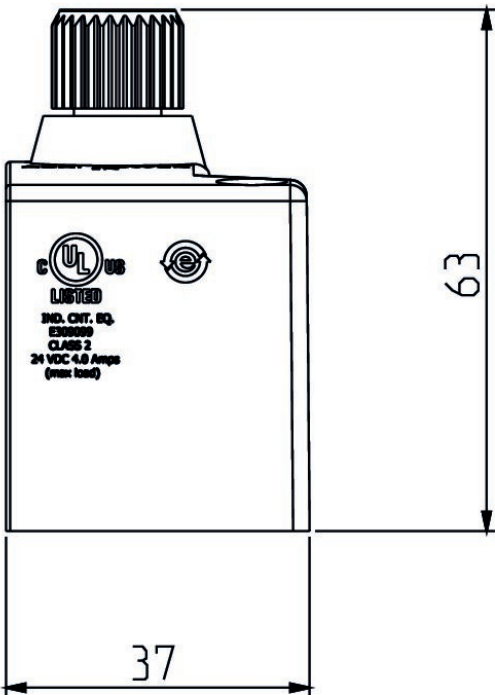
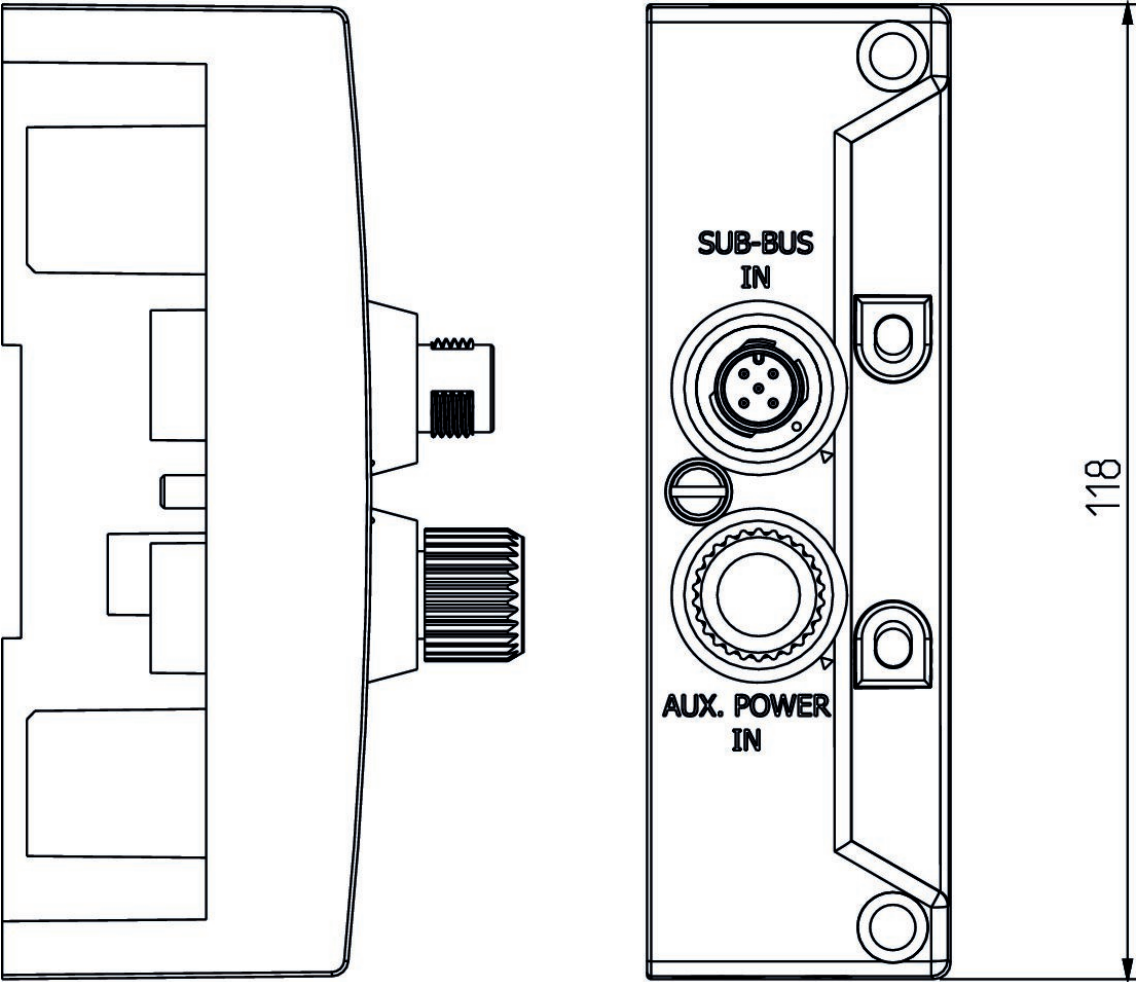
Operational voltage electronics	Operational voltage electronics	Part No.
24 V DC	-10% / +10%	240-183



Right end plate for Subbus G3



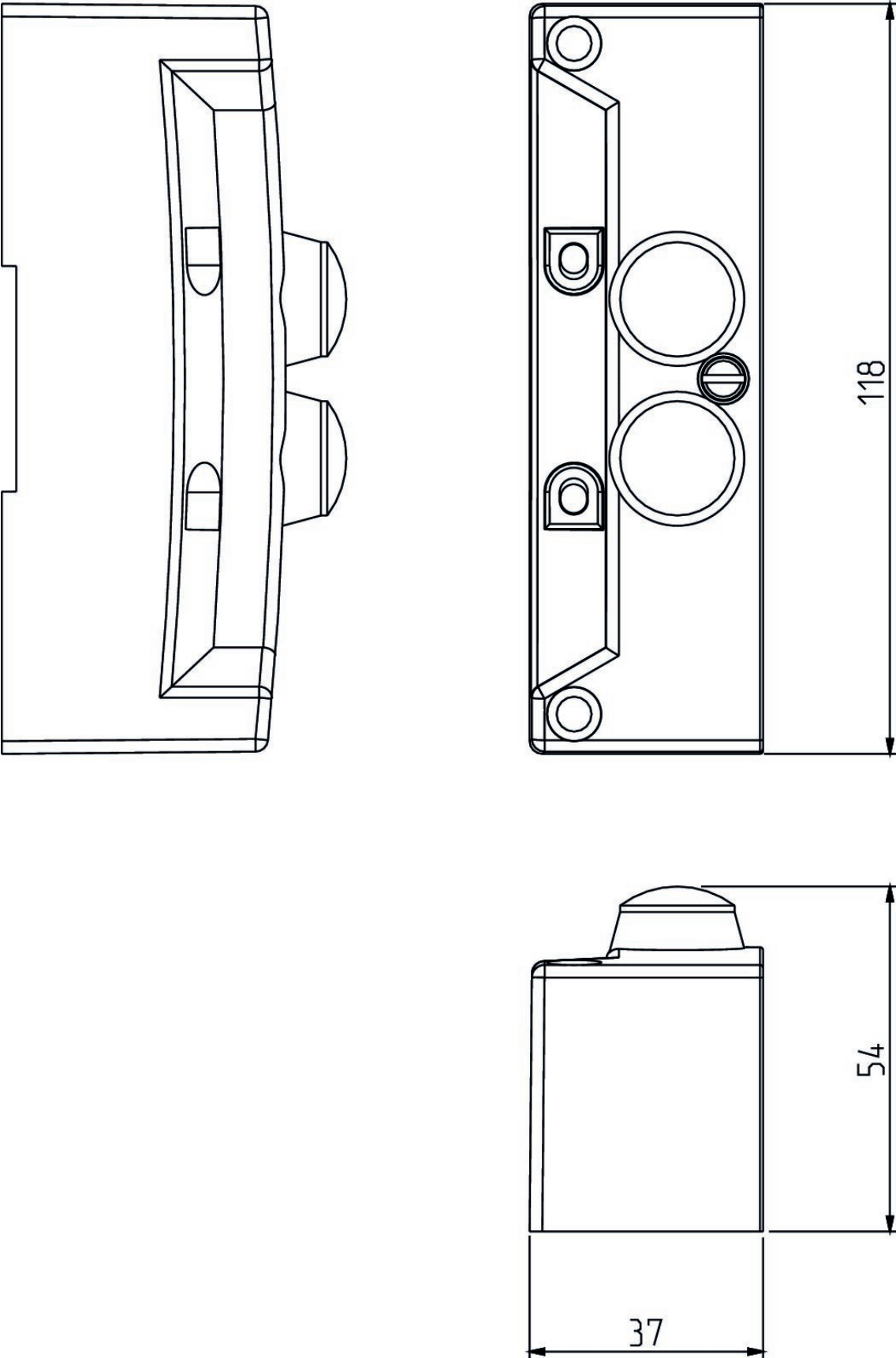
Operational voltage electronics	Operational voltage electronics	Part No.
24 V DC	-10% / +10%	240-185



Right end plate for G3 Standalone



Operational voltage electronics	Operational voltage electronics	Part No.
24 V DC	-10% / +10%	240-255

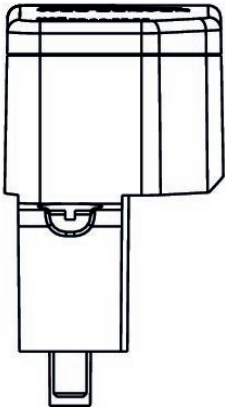
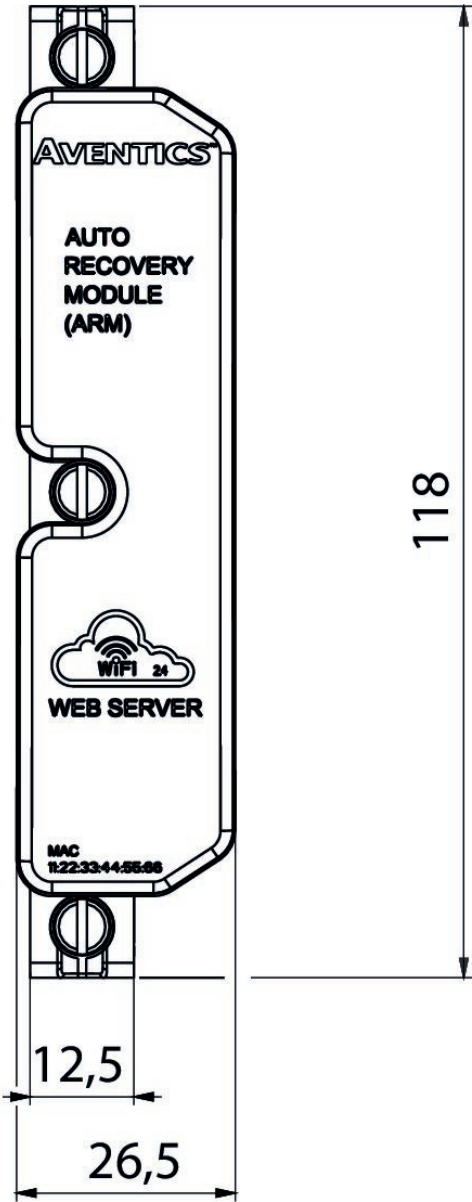
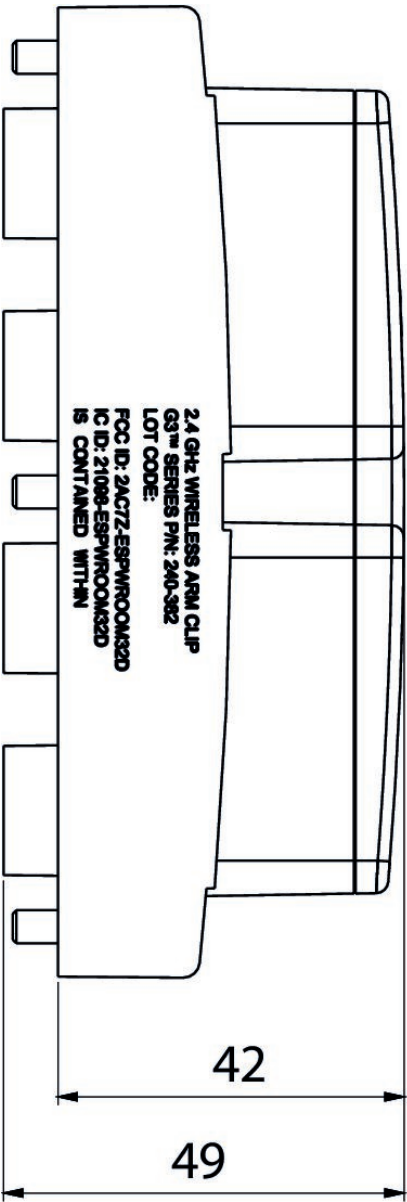


Wireless auto-recovery module, series G3

G3



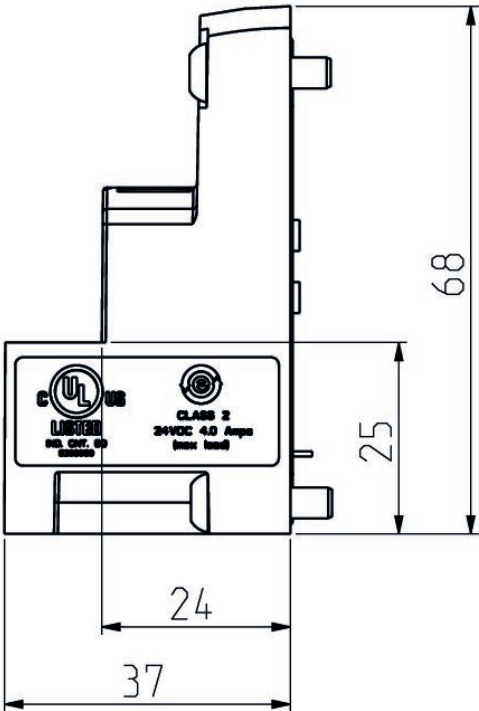
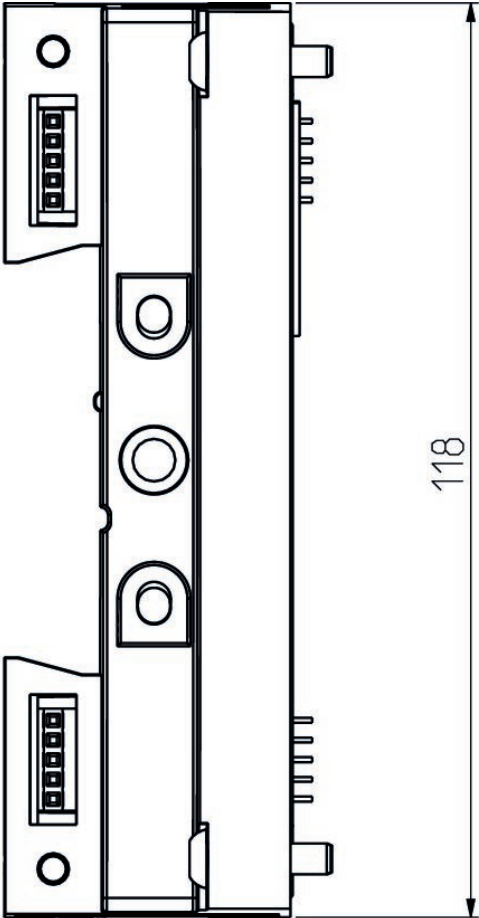
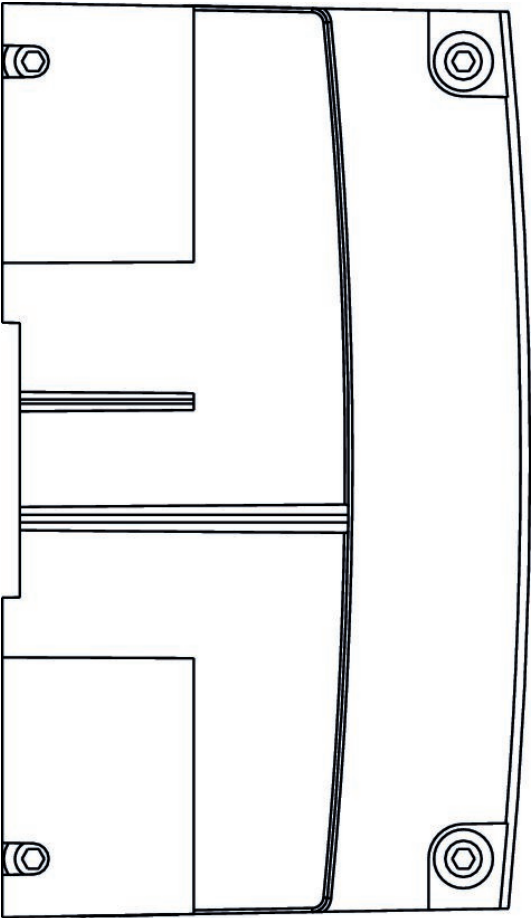
Part No.
240-382



Distributor



Operational voltage electronics	Operational voltage electronics	Part No.
24 V DC	-10% / +10%	P599AE508827001

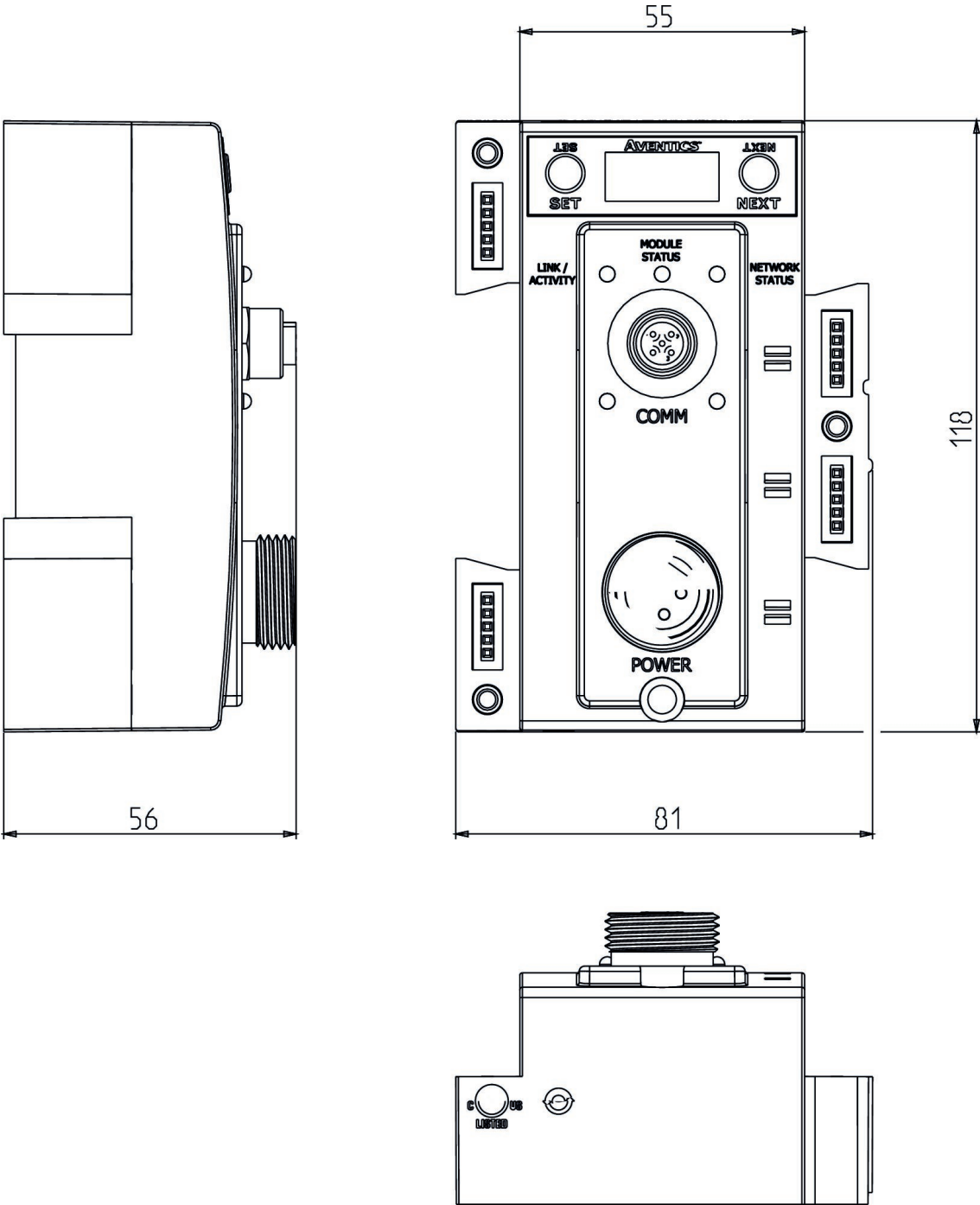


G3 Subbus module

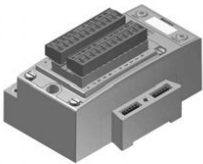
Plug
7/8"



Number of poles	Operational voltage electronics		Part No.
4-pin	24 V DC	-10% / +10%	240-241

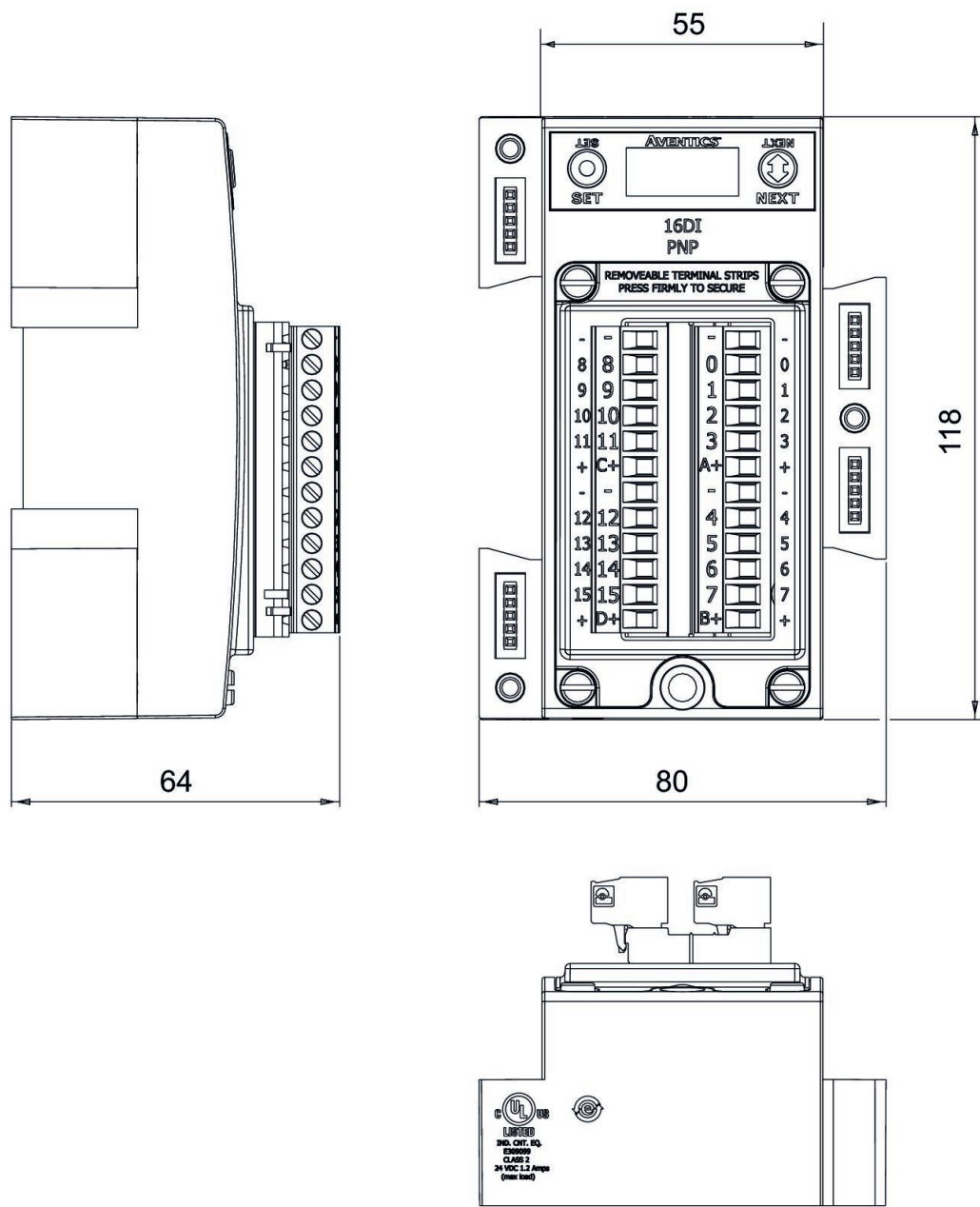


I/O modules, Series G3

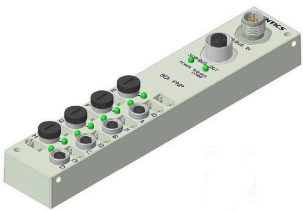


Number of inputs	Number of outputs	I/O module version	Operational volt- age electronics	Operational volt- age electronics	Part No.
16		digital inputs PNP	24 V DC	-10% / +10%	240-203
16		digital inputs NPN	24 V DC	-10% / +10%	240-204
8		digital inputs PNP	24 V DC	-10% / +10%	240-316
	16	digital inputs NPN	24 V DC	-10% / +10%	240-330

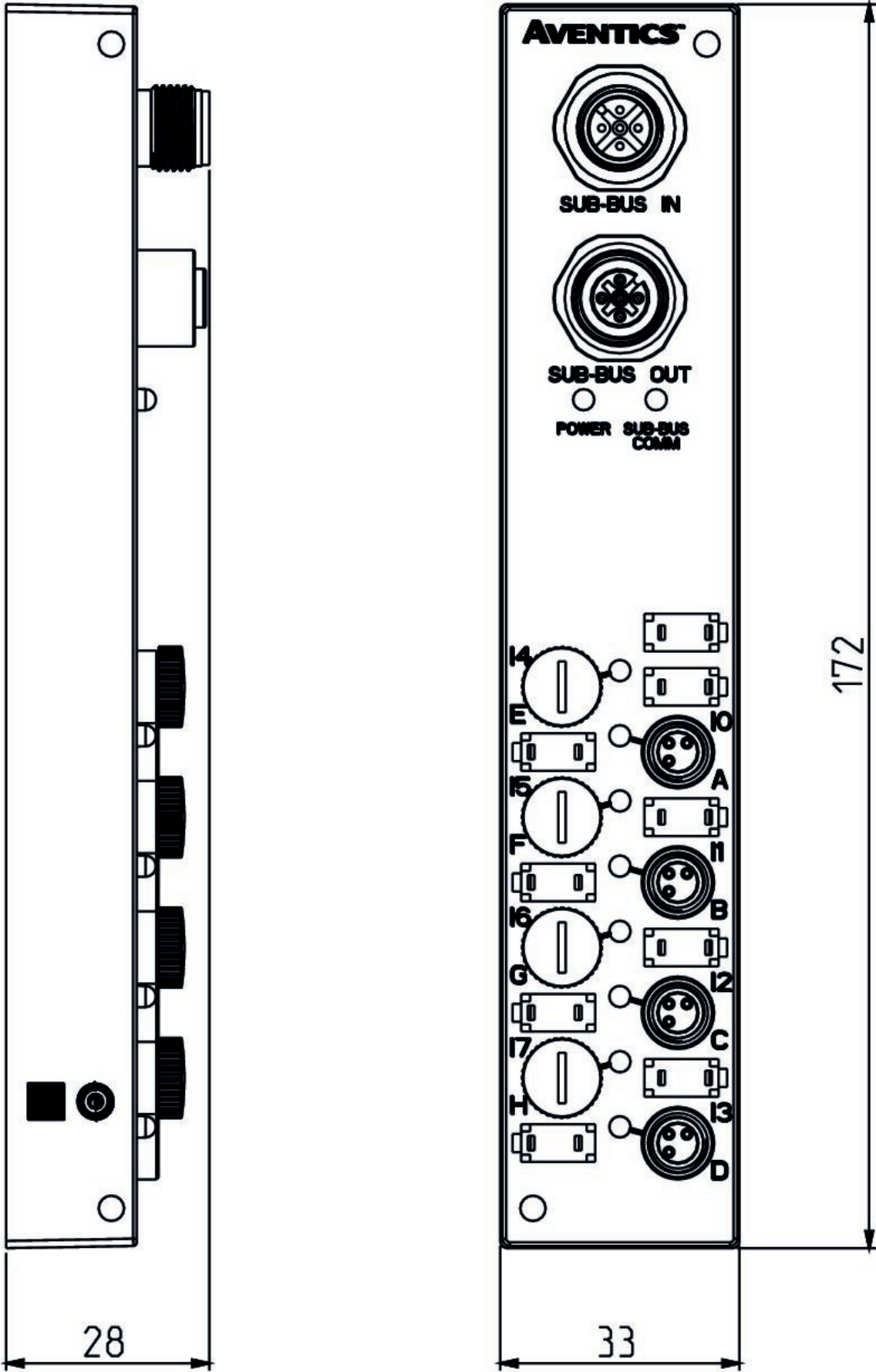
Dimensions



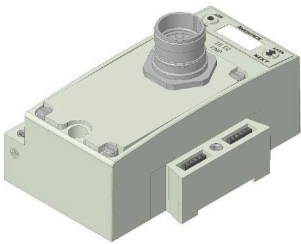
I/O modules, Series G3



Number of inputs	I/O module version	Operational volt- age electronics	Operational volt- age electronics	Part No.
8	digital inputs PNP	24 V DC	-10% / +10%	240-379



I/O modules, Series G3

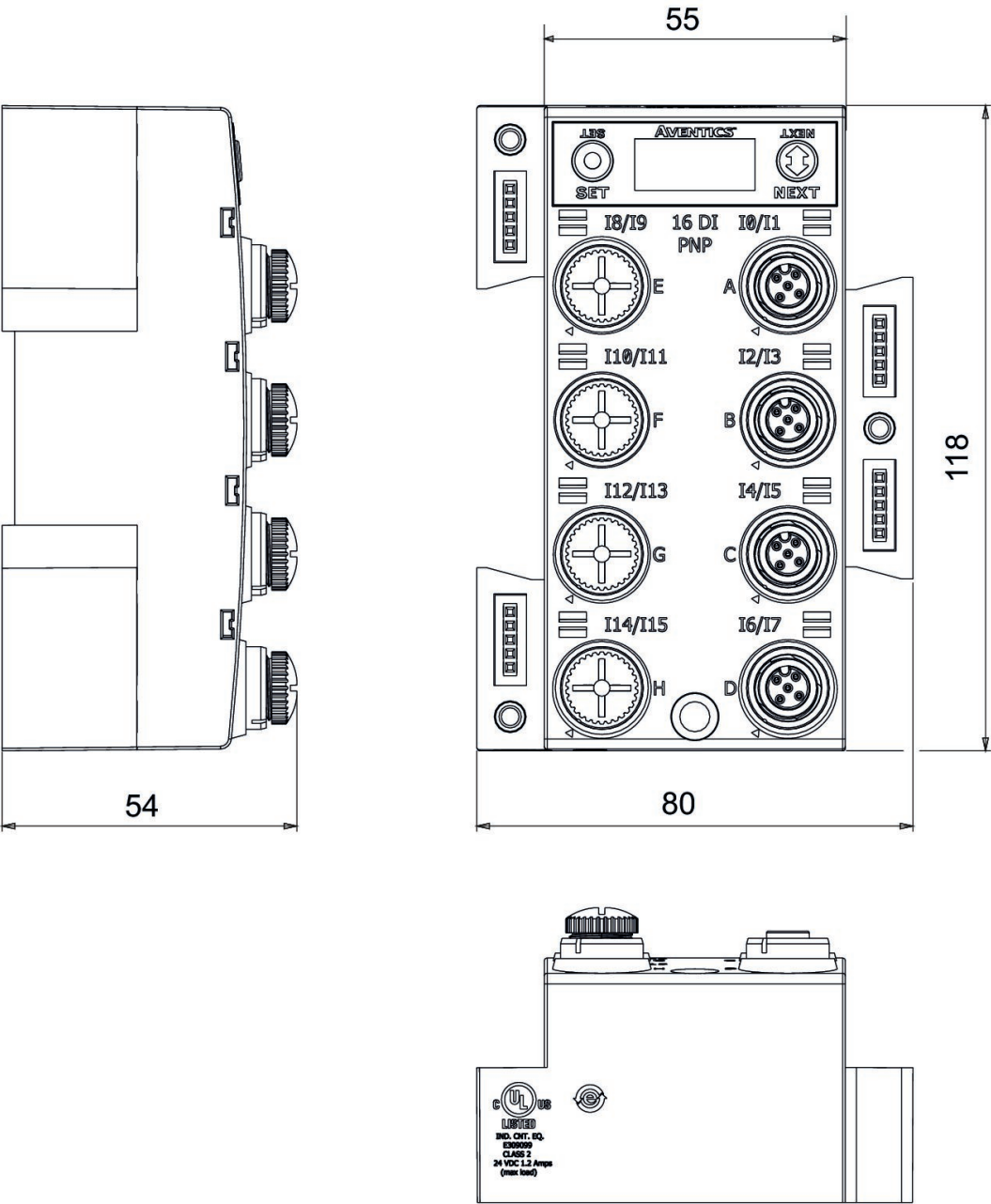


Number of inputs	I/O module version	Part No.
16	digital inputs PNP	240-323

I/O modules, Series G3



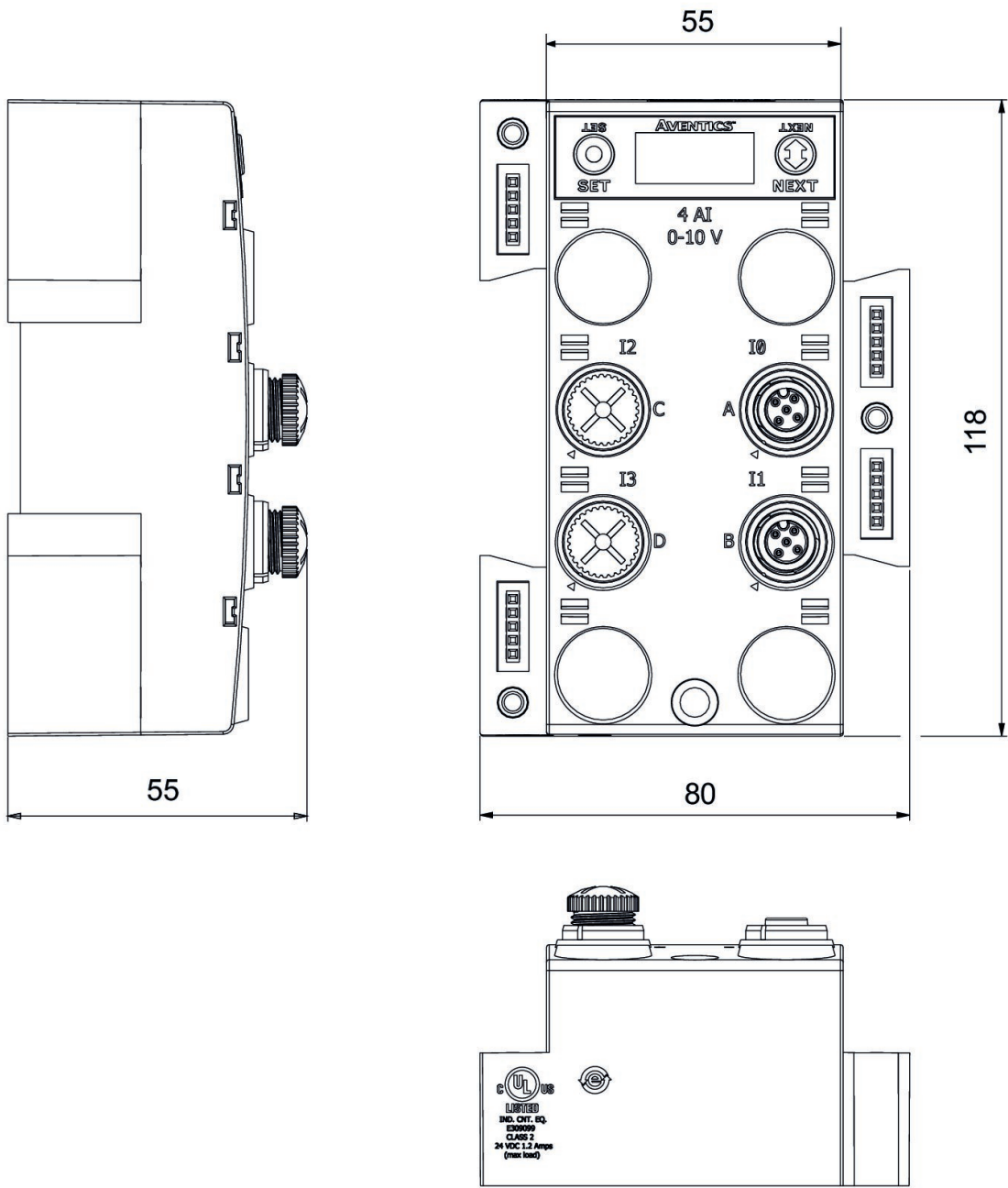
Type	Number of inputs	Number of outputs	I/O module version	Operational voltage electronics	Operational voltage electronics	Part No.
16DI8M12, digital inputs PNP	16		digital inputs PNP	24 V DC	-10% / +10%	240-205
8DI8M8, digital inputs PNP	8		digital inputs PNP	24 V DC	-10% / +10%	240-206
16DO8M12, digital outputs PNP		16	Digital outputs	24 V DC	-10% / +10%	240-207
8DO8M12, digital outputs PNP		8	digital outputs PNP	24 V DC	-10% / +10%	240-208
16DI8M12, digital inputs NPN	16		digital inputs NPN	24 V DC	-10% / +10%	240-209
8DI8M12, digital inputs NPN	8		digital inputs NPN	24 V DC	-10% / +10%	240-210
8DO8M12, digital inputs/outputs PNP	8	8	digital inputs/outputs PNP	24 V DC	-10% / +10%	240-211
8DO8M12		8	Digital outputs	24 V DC	-10% / +10%	240-300



I/O modules, Series G3



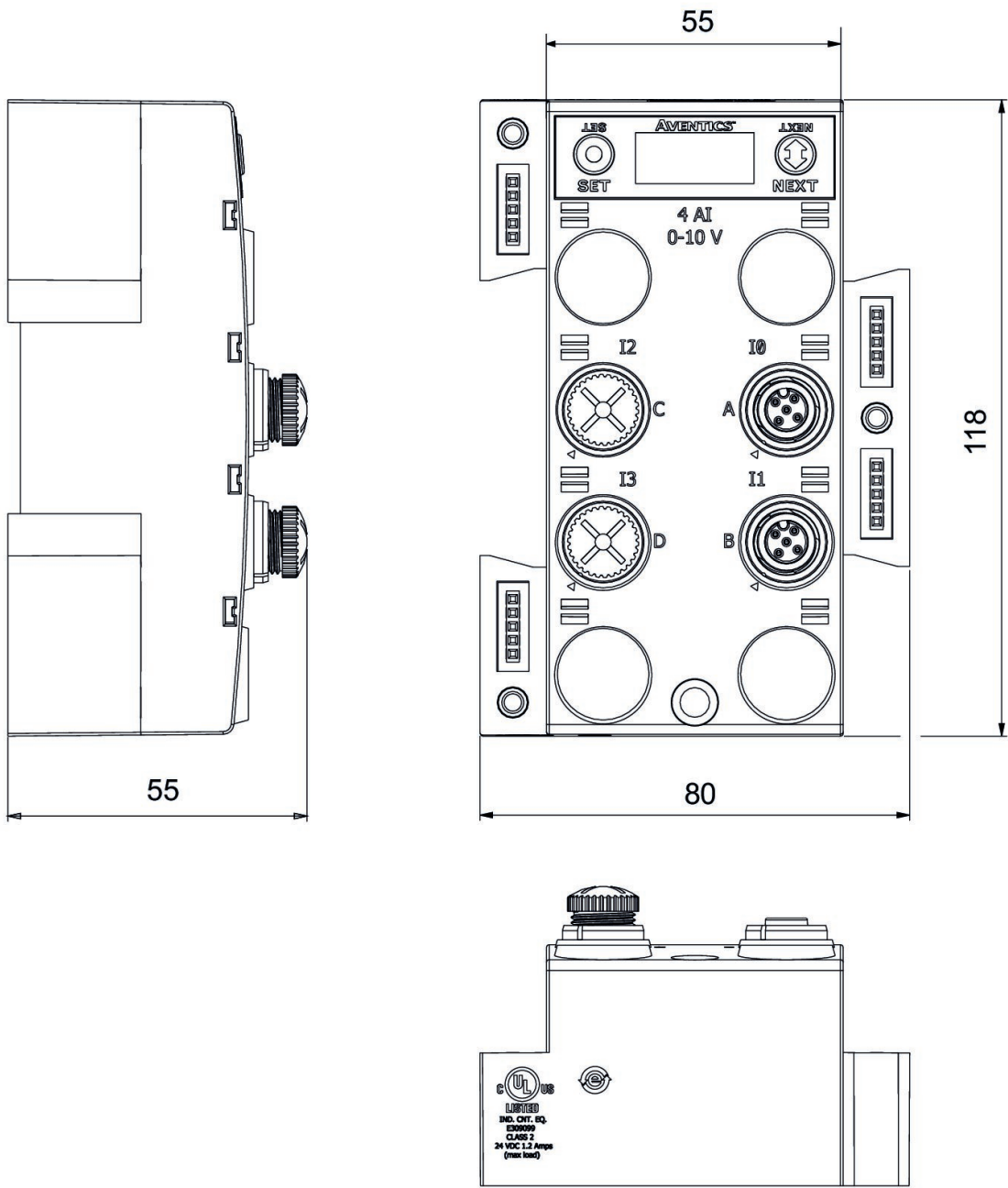
Type	Number of inputs	Number of outputs	I/O module version	Operational voltage electronics	Operational voltage electronics	Part No.
4AI4M12-E	4		Analog inputs	24 V DC	-10% / +10%	240-212
2AIAO8M12	2	2	analog inputs/outputs	24 V DC	-10% / +10%	240-213
4AI4M12-E	4		Analog inputs	24 V DC	-10% / +10%	240-214
2AIAO4M12	2	2	analog inputs/outputs	24 V DC	-10% / +10%	240-215
2AIAO8M12	2	2	analog inputs/outputs	24 V DC	-10% / +10%	240-307
	4	4	analog inputs/outputs	24 V DC	-10% / +10%	240-363



Series G3



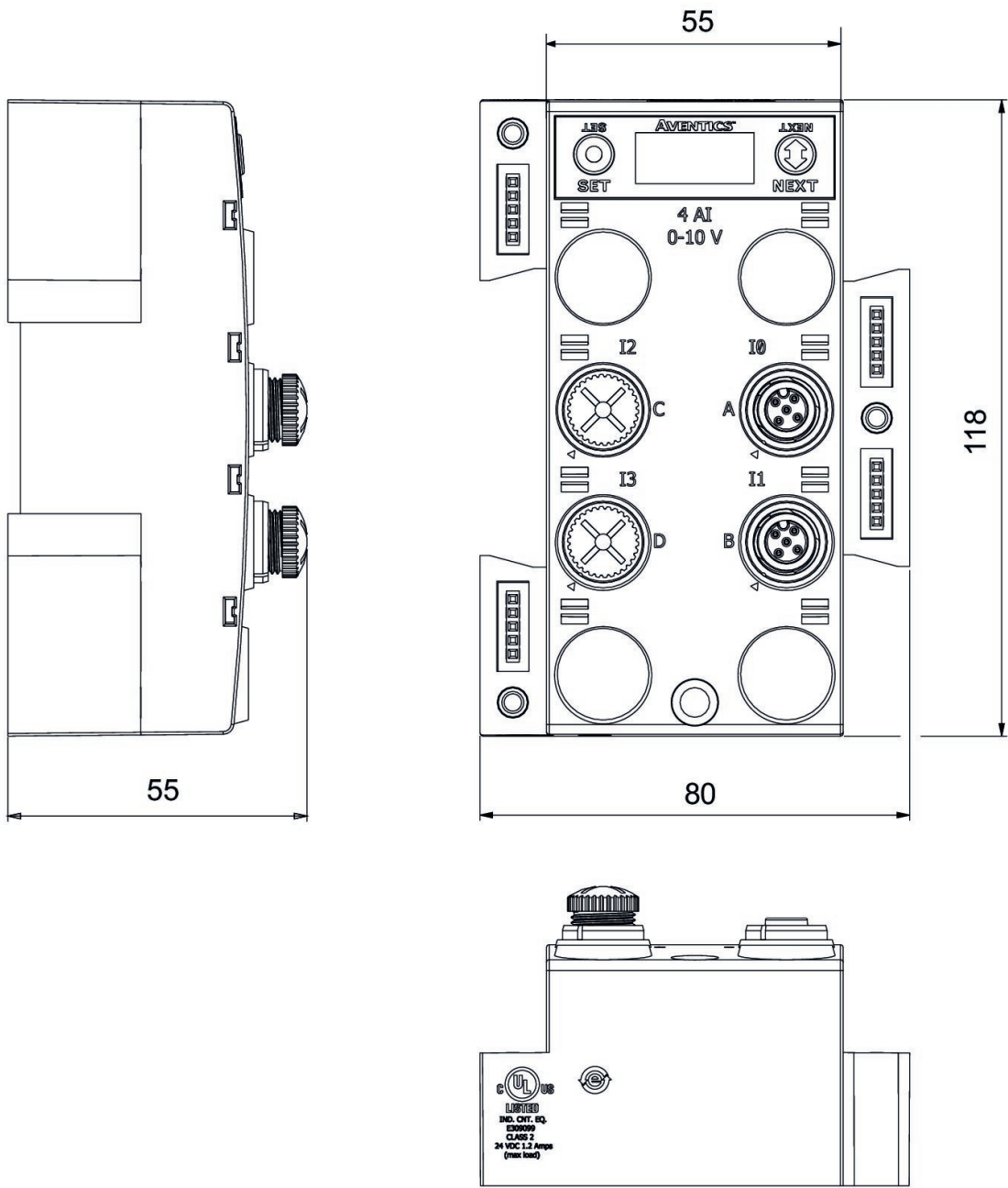
Type	I/O module version	Operational volt- age electronics	Operational volt- age electronics	Part No.
Socket, M12x1	Analog inputs	24 V DC	-10% / +10%	240-311



I/O modules, Series G3



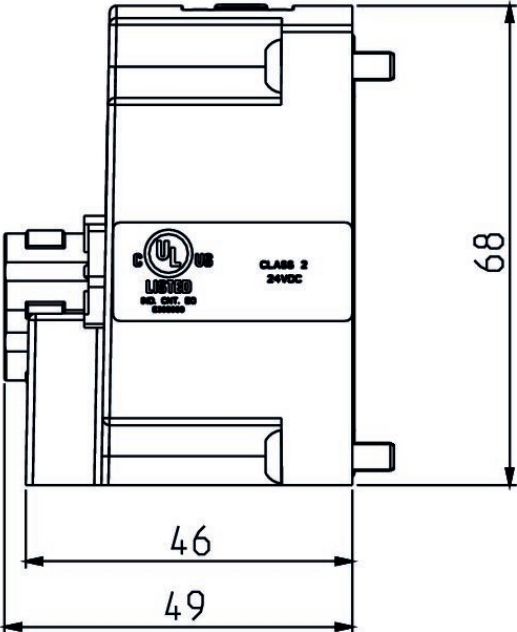
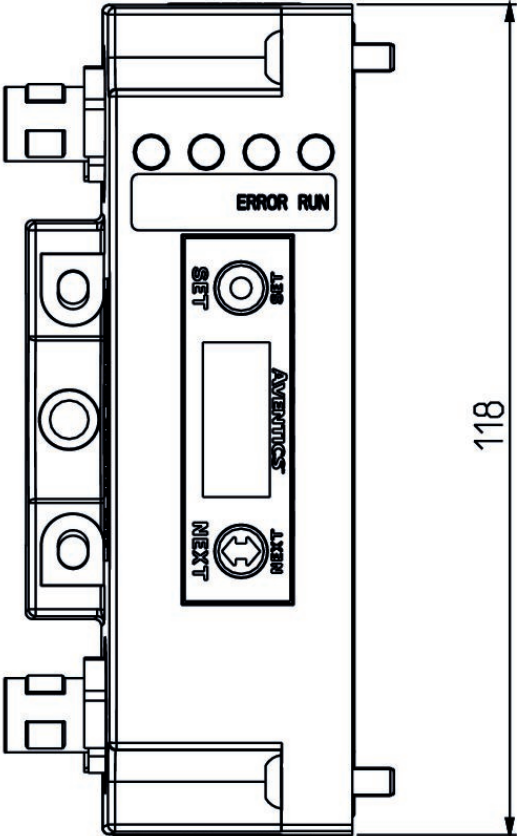
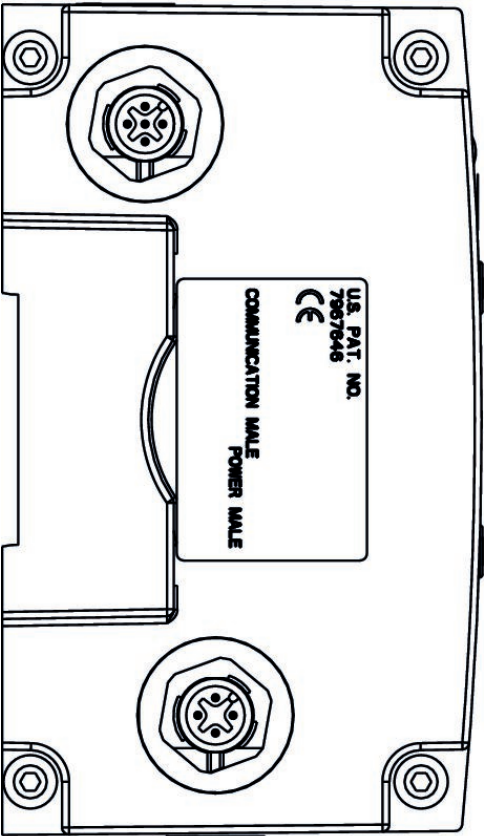
Number of inputs	E/A capable	Number of I/O connections	Part No.
8	connection with I/O	8 inputs	240-326



Bus coupler, Series 580



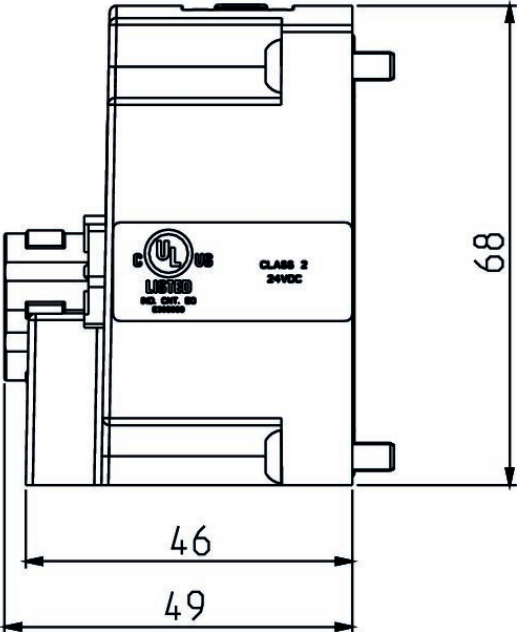
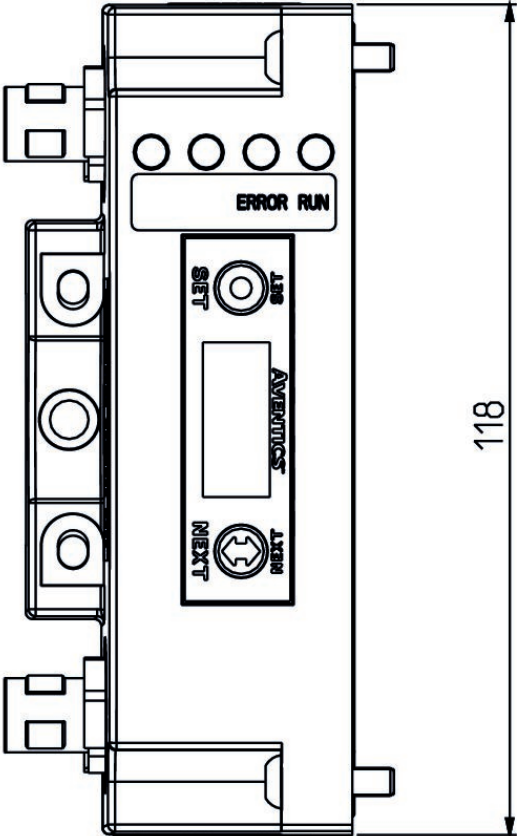
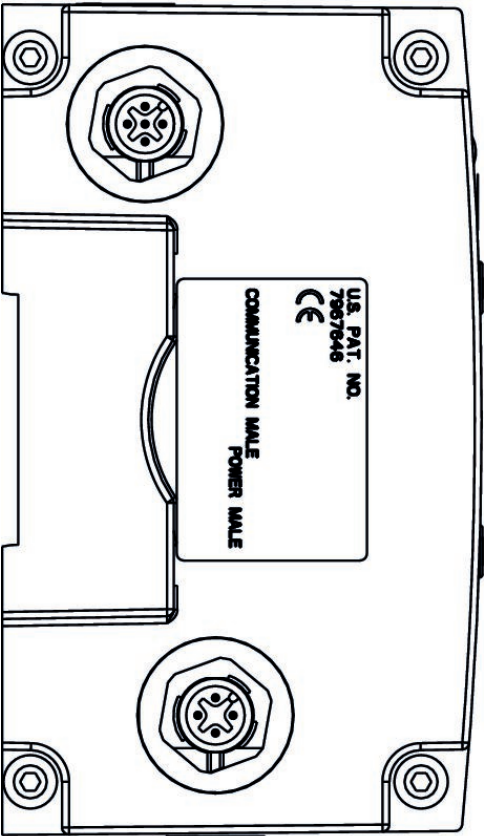
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
CANopen	4-pin	24 V DC	-10% / +10%	P580AE- CO1010A00



Series 580



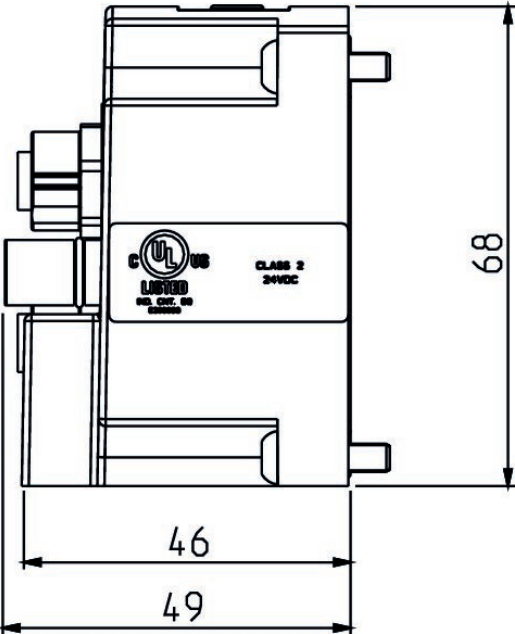
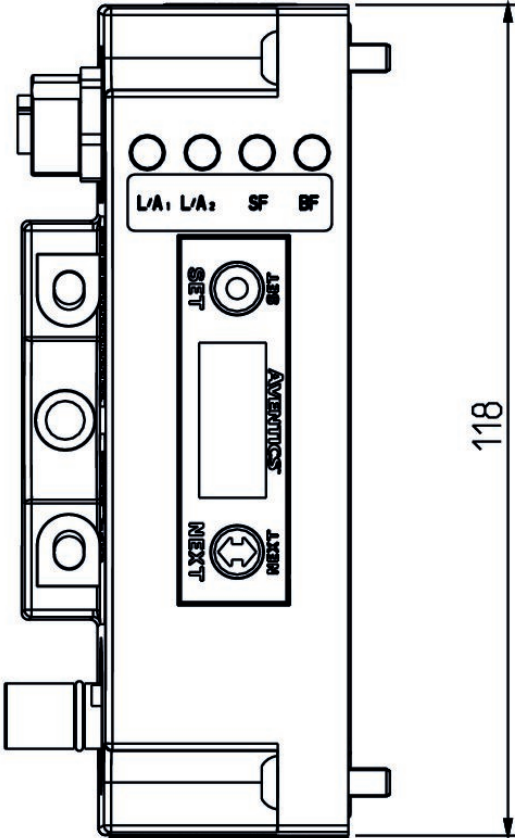
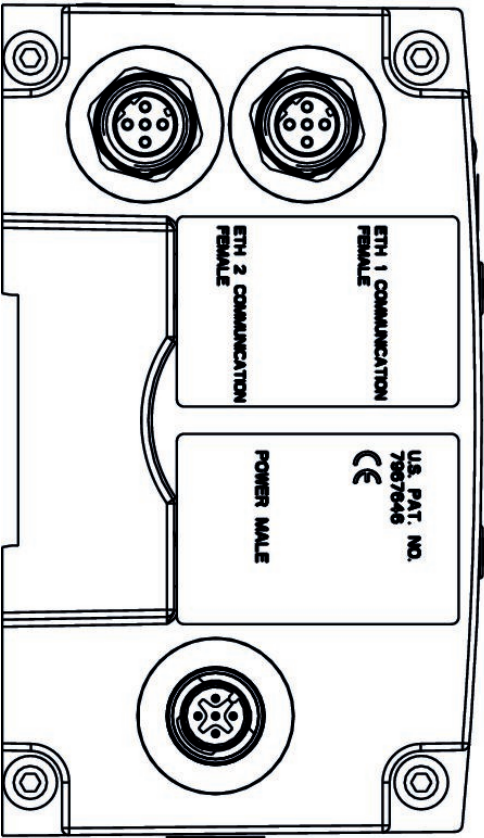
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
DeviceNet	4-pin	24 V DC	-10% / +10%	P580AEDN1010A00



Series 580



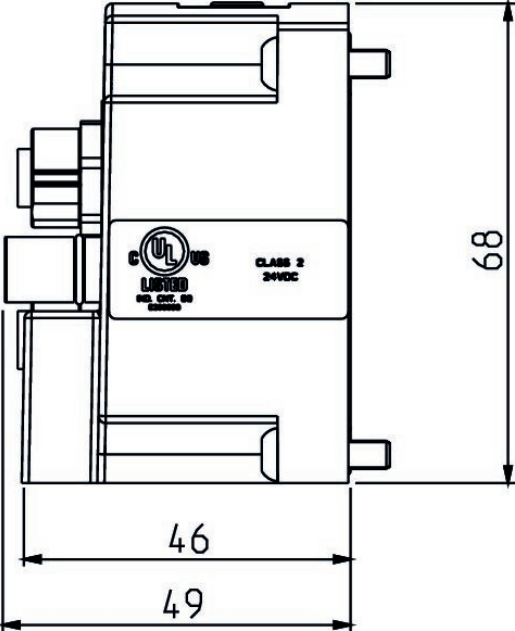
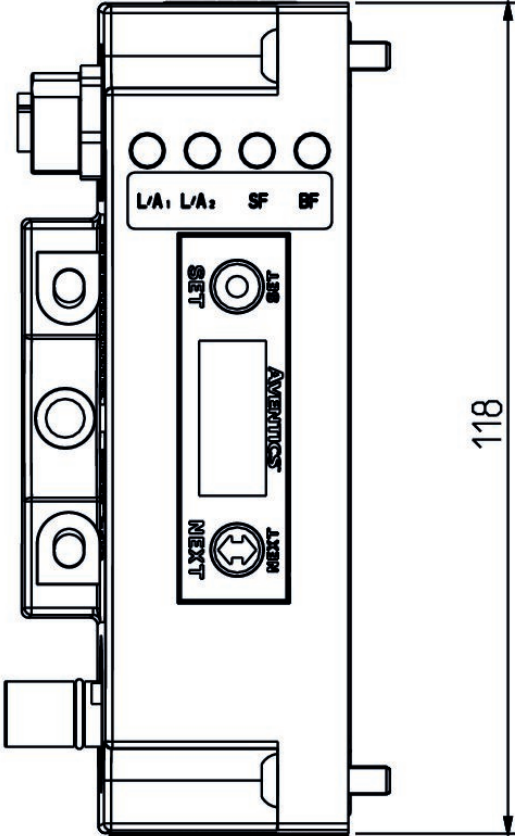
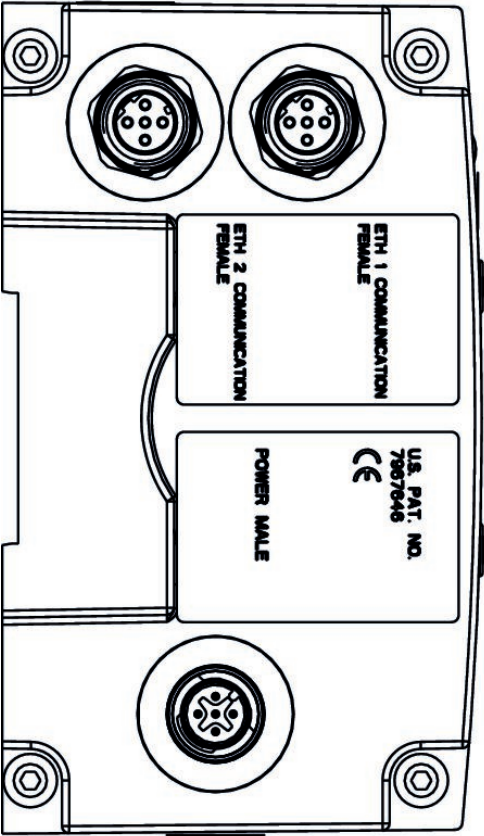
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
EtherCAT	5-pin	24 V DC	-10% / +10%	P580AEEC1010A00



Series 580



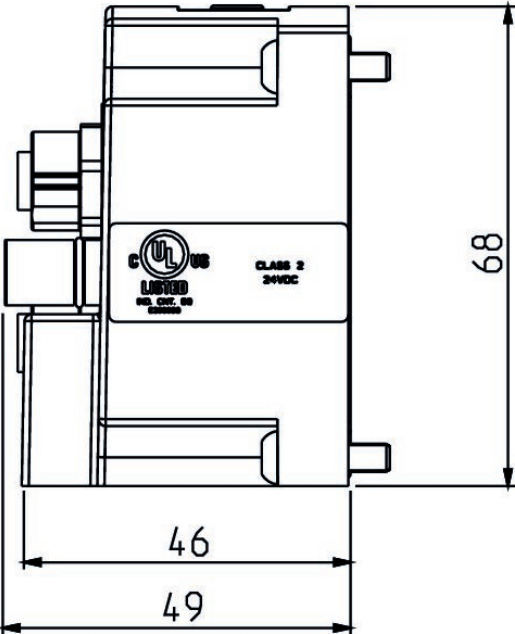
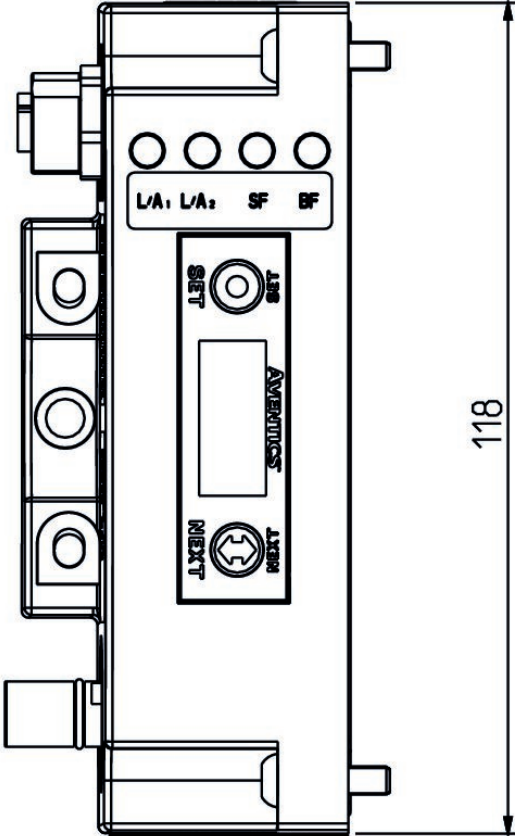
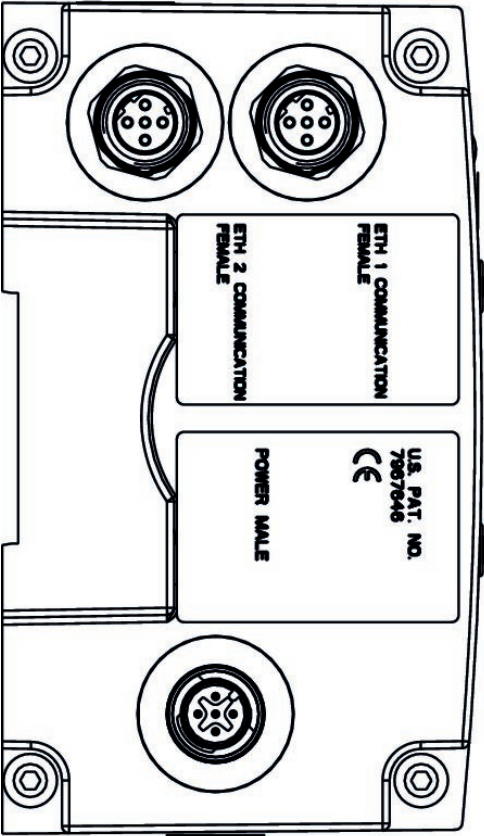
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
EtherNet/IP	4-pin	24 V DC	-10% / +10%	P580AEED1010A00



Series 580



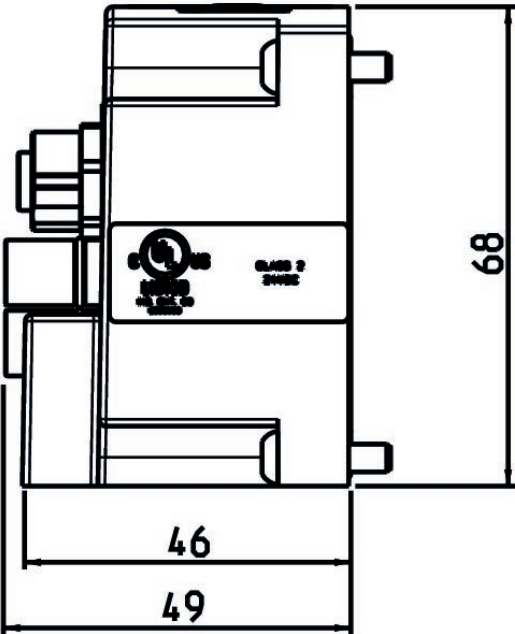
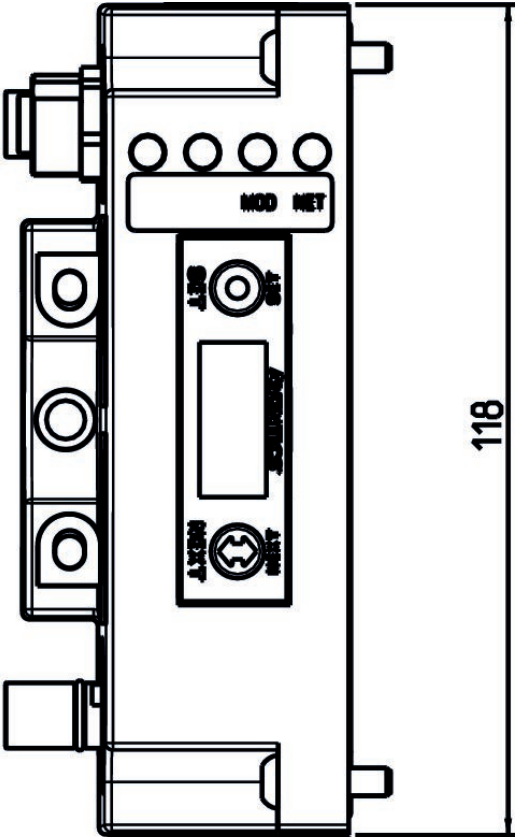
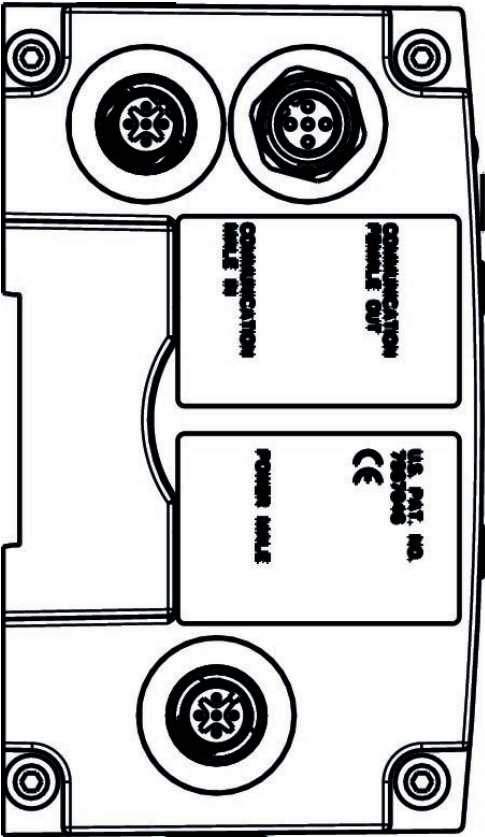
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
POWERLINK	4-pin	24 V DC	-10% / +10%	P580AEPL1010A00



Series 580



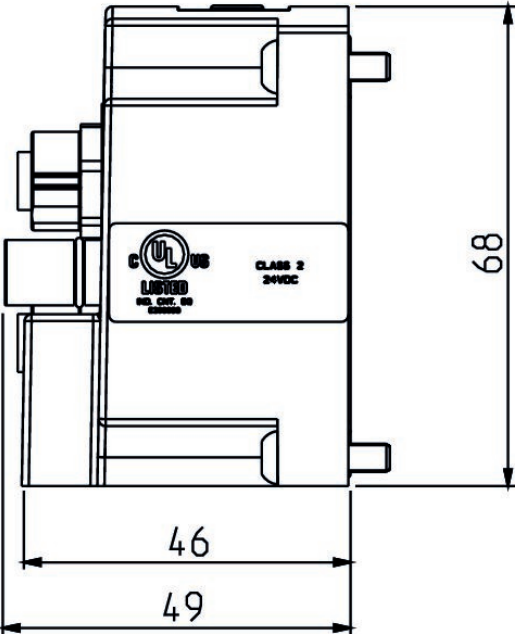
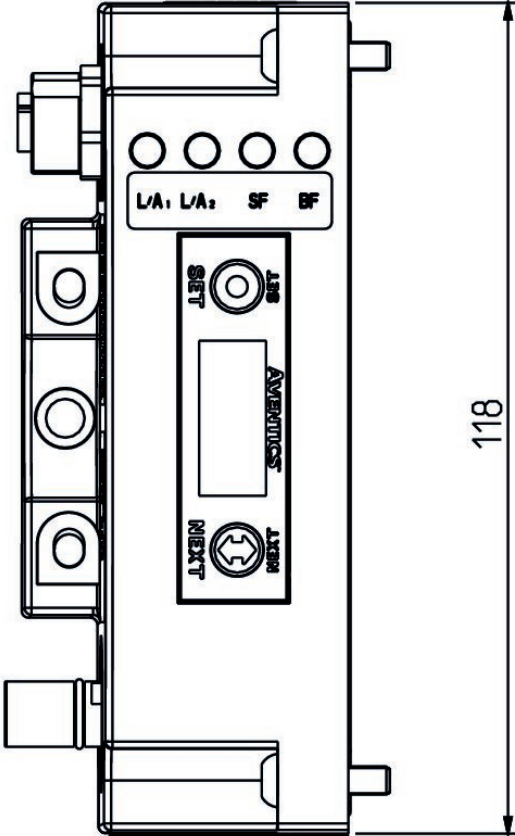
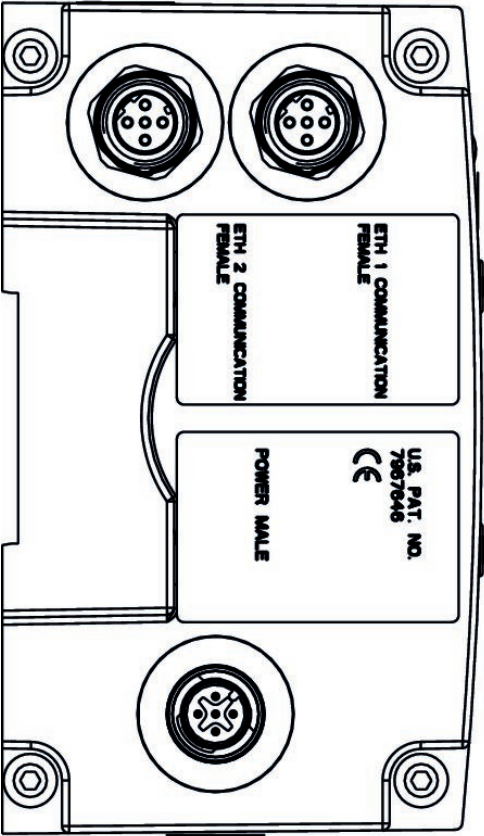
Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
PROFIBUS DP	5-pin	24 V DC	-10% / +10%	P580AEPT1010A00



Series 580



Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
Profinet	5-pin	24 V DC	-10% / +10%	P580AEPN1010A00

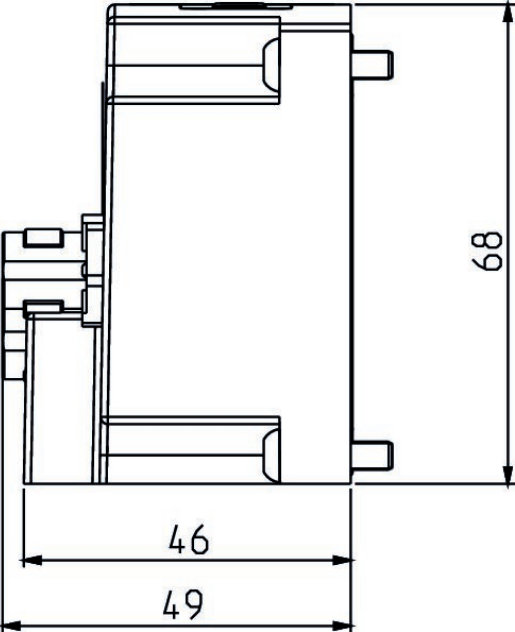
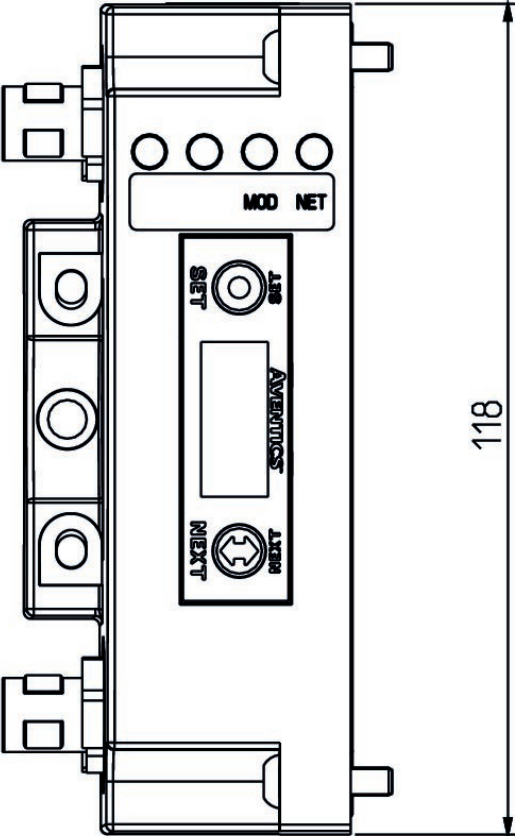
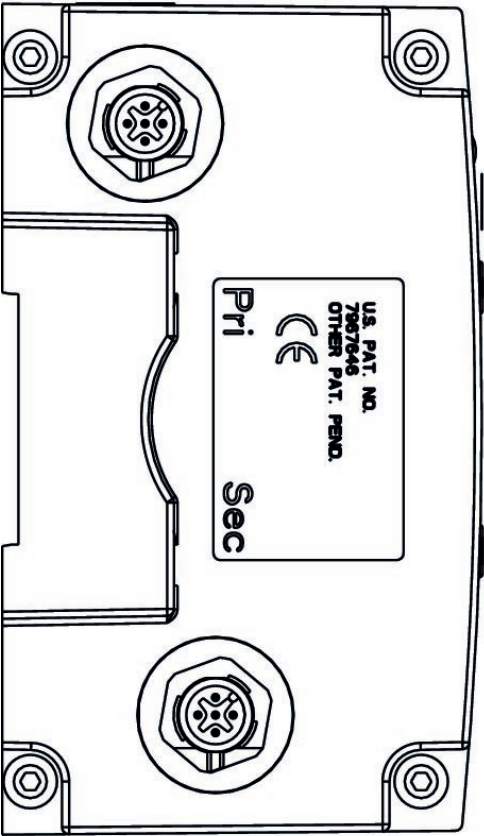


Bus coupler, Series 580

Plug
M12x1



Fieldbus protocol	Number of poles	Operational volt- age electronics	Operational volt- age electronics	Part No.
DeltaV	5-pin	24 V DC	-10% / +10%	P580AECH2010A00

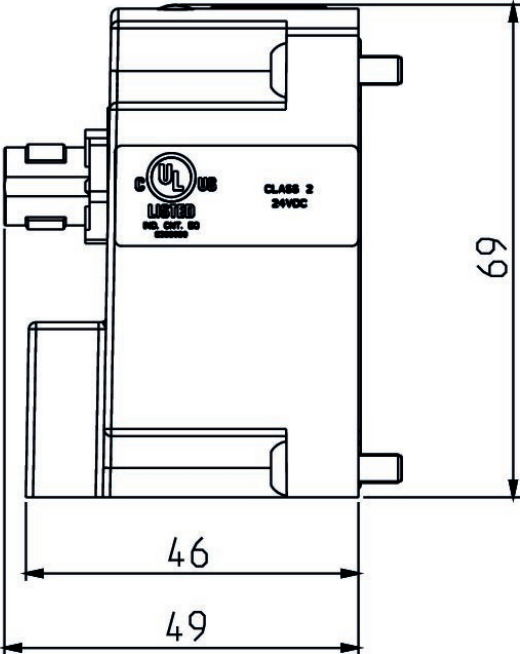
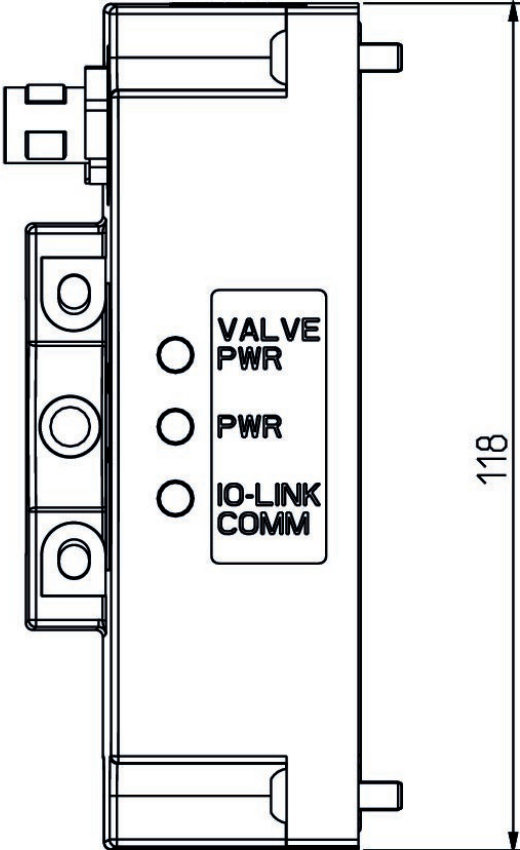
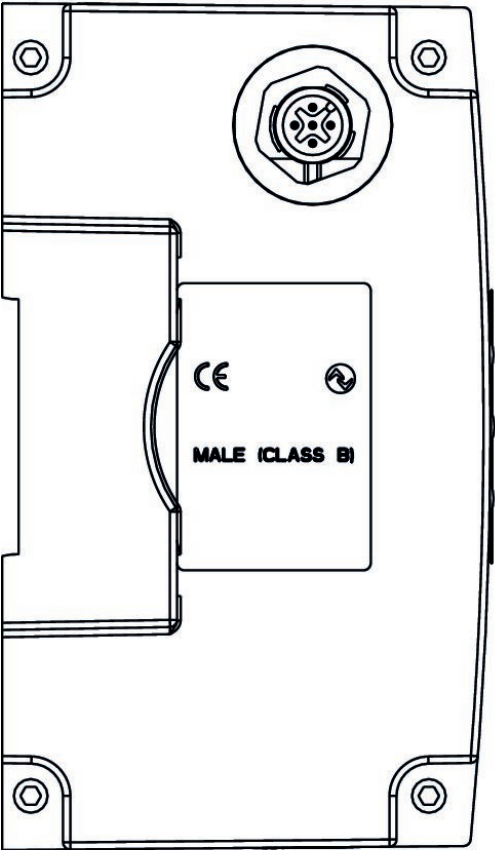


Series 580



Fieldbus protocol	Operational voltage electronics		Part No.
IO-Link	24 V DC	-10% / +10%	P580AELM1010A00
IO-Link	24 V DC	-10% / +10%	P580AELM2010A00

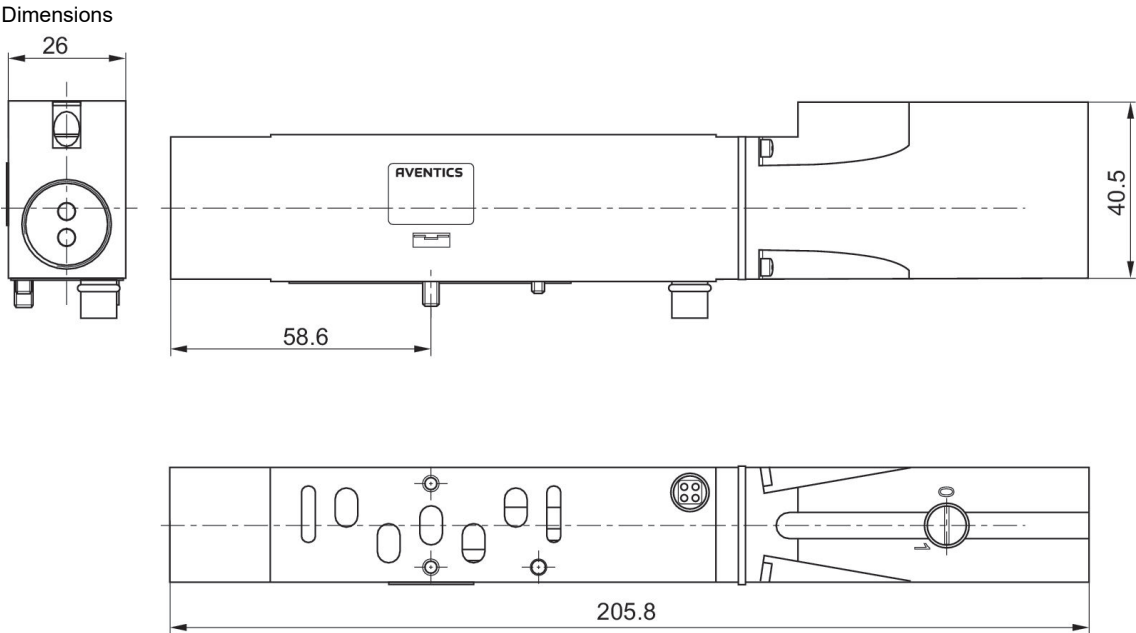
Dimensions



Shut-off sandwich plate lockable ISO 15407-2 accessory, series 503



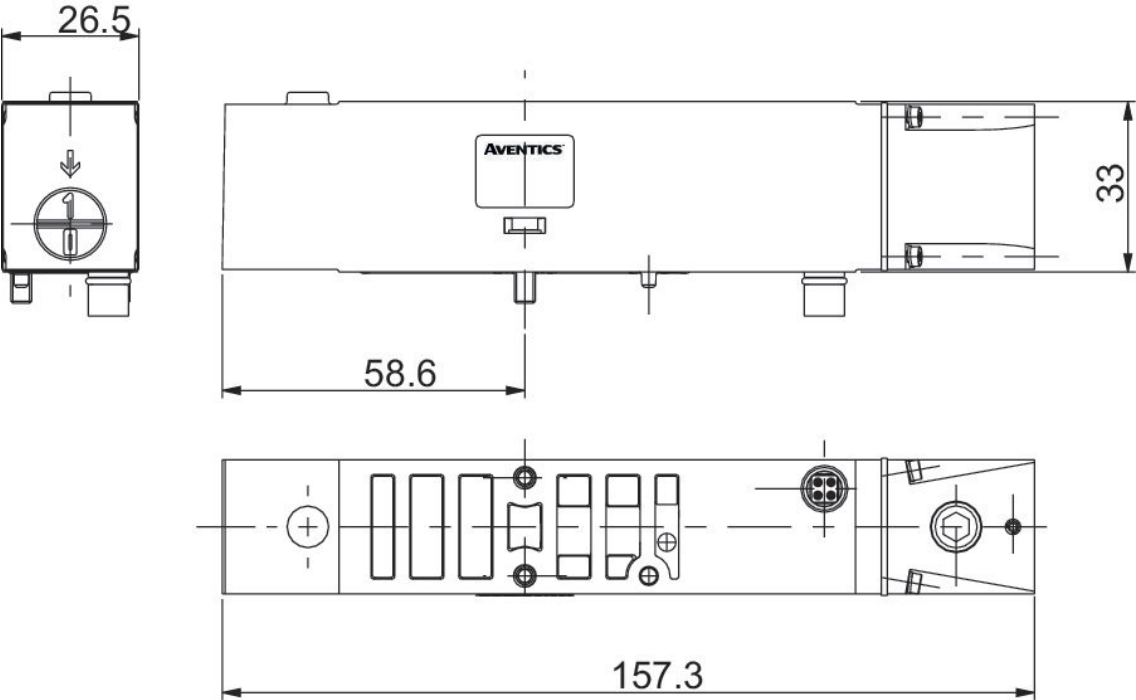
Type	Scope of delivery	Part No.
	Sandwich plate, sealing kit, mounting screws	R503AY426707001
lockable	Sandwich plate, sealing kit, mounting screws	R503AY426707003



Shut-off sandwich plate accessories



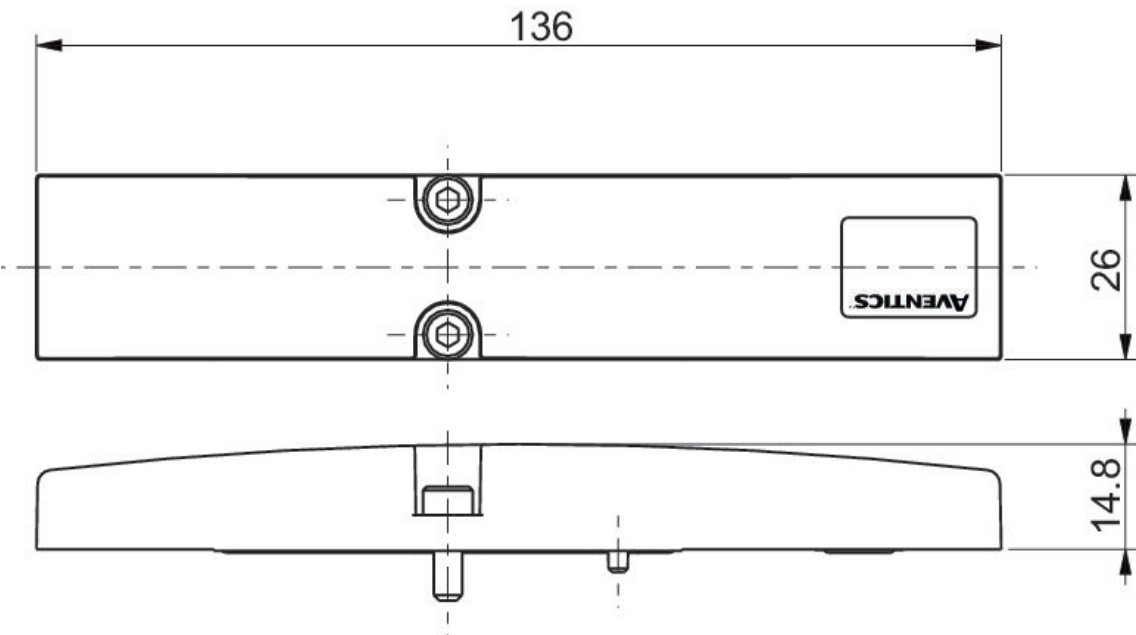
Scope of delivery	Part No.
Shut-off sandwich plate, sealing kit, mounting screws	R503AY426707002



Blanking plate, series 503



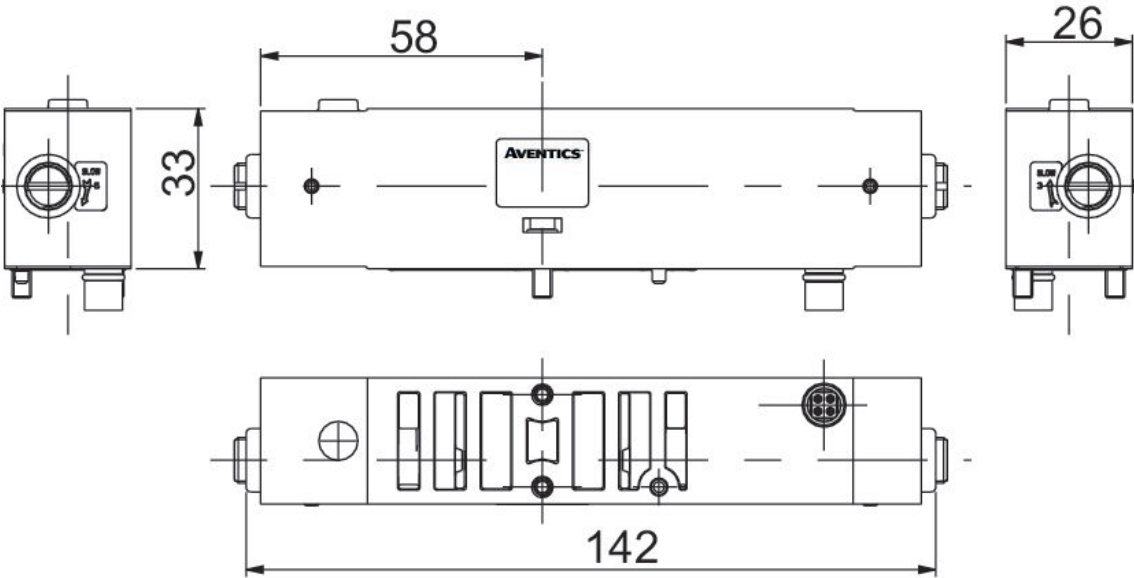
Scope of delivery	Part No.
Blind plate, sealing kit, mounting screws	P503AB428359001



Throttle sandwich plate ISO 15407-2 accessory, series 503



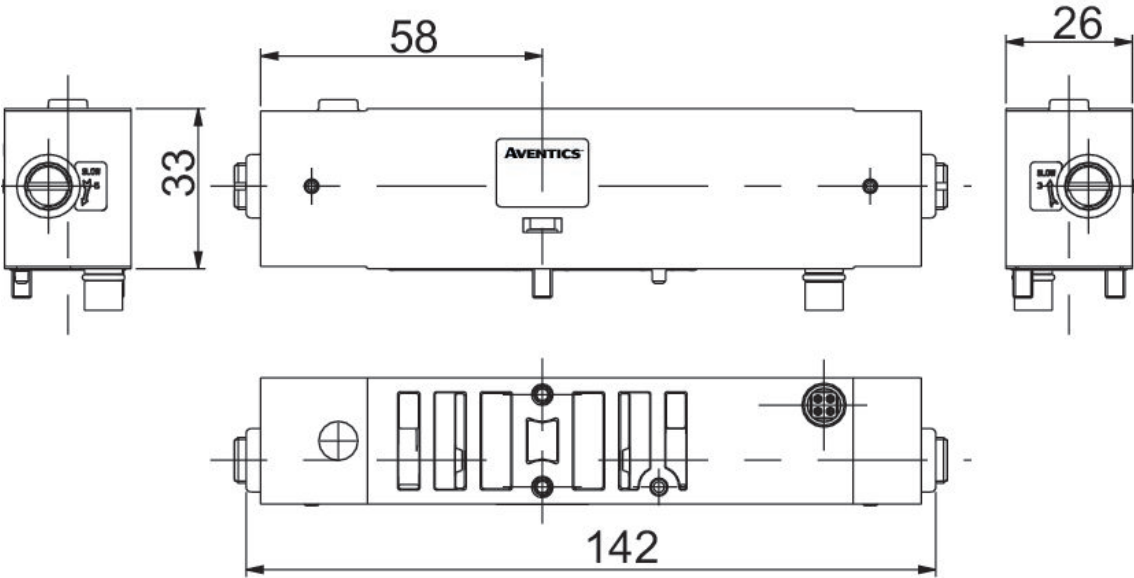
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	R503AS425575001



Throttle sandwich plate accessories, series 503



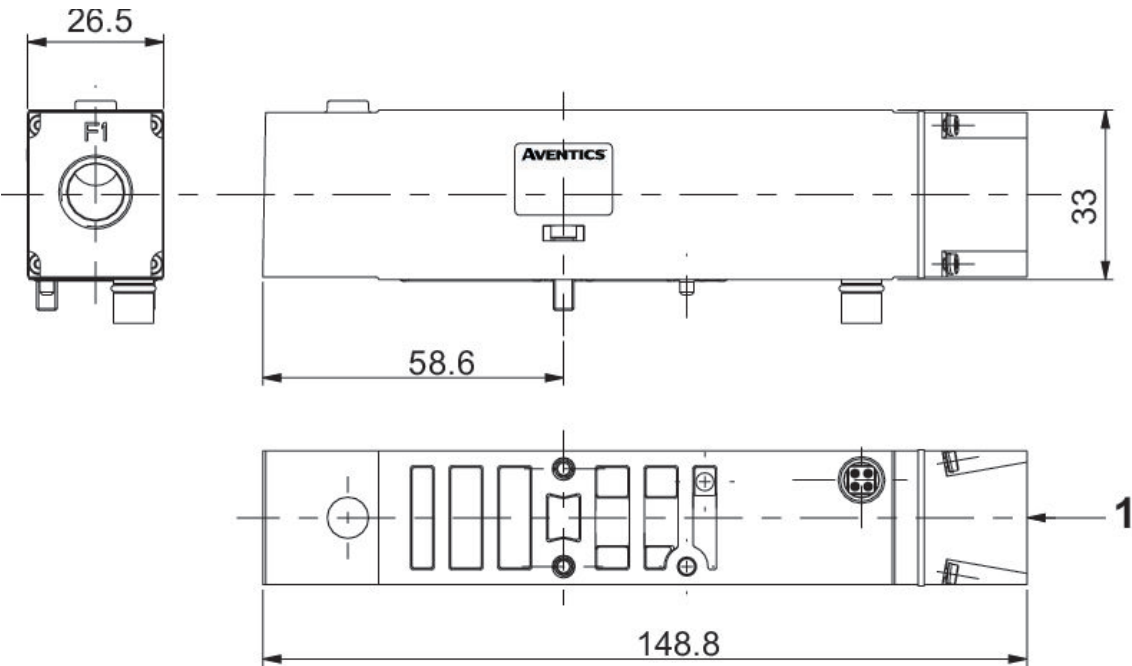
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	R503AS425575002



Sandwich plate for additional pressure supply, series 503



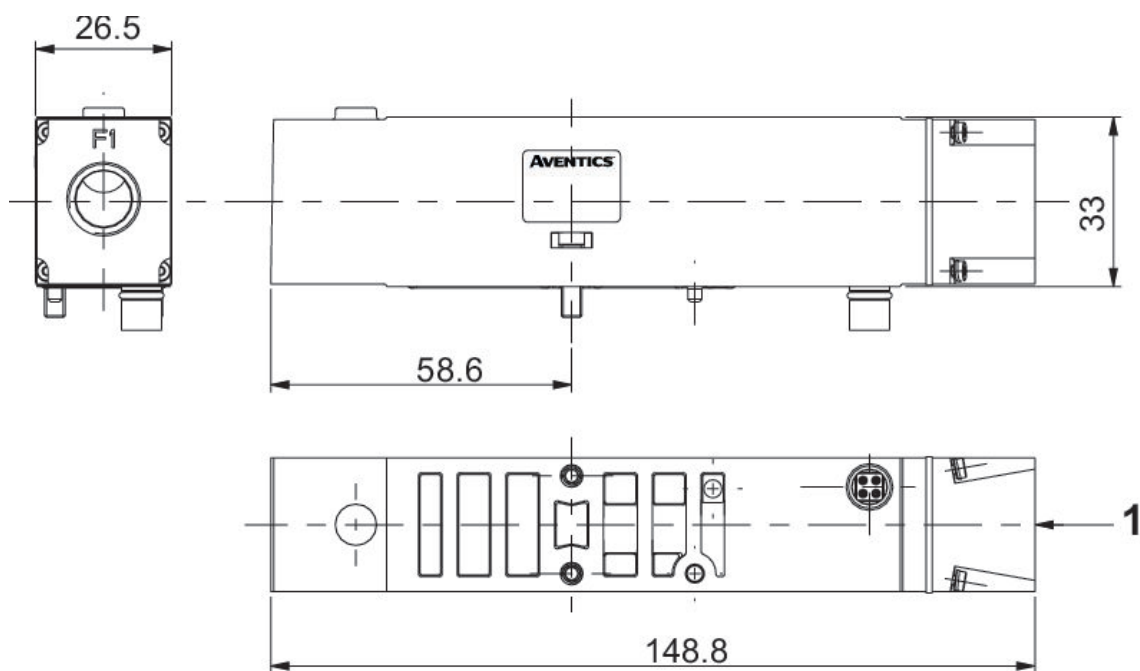
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AW428300004



Sandwich plate ISO 15407-2 for additional pressure supply, series 503



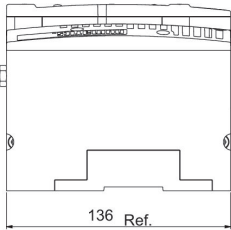
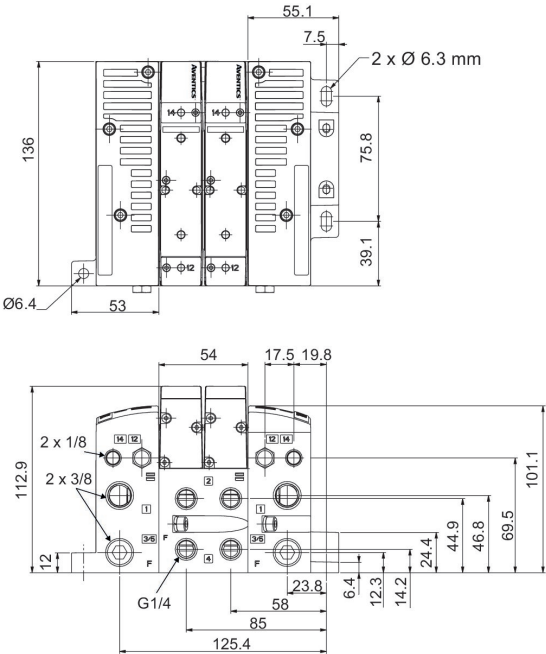
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AW428300003



End plate, series 503



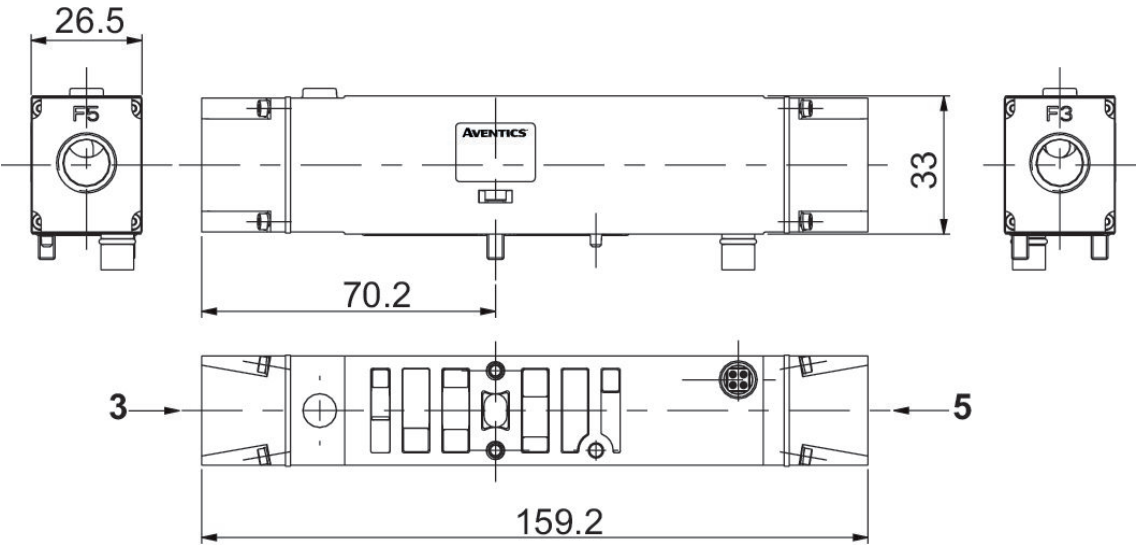
Scope of delivery	Part No.
Left and right end plate, sealing kit, mounting screws	G503AK428327013



Sandwich exhaust plate, series 503



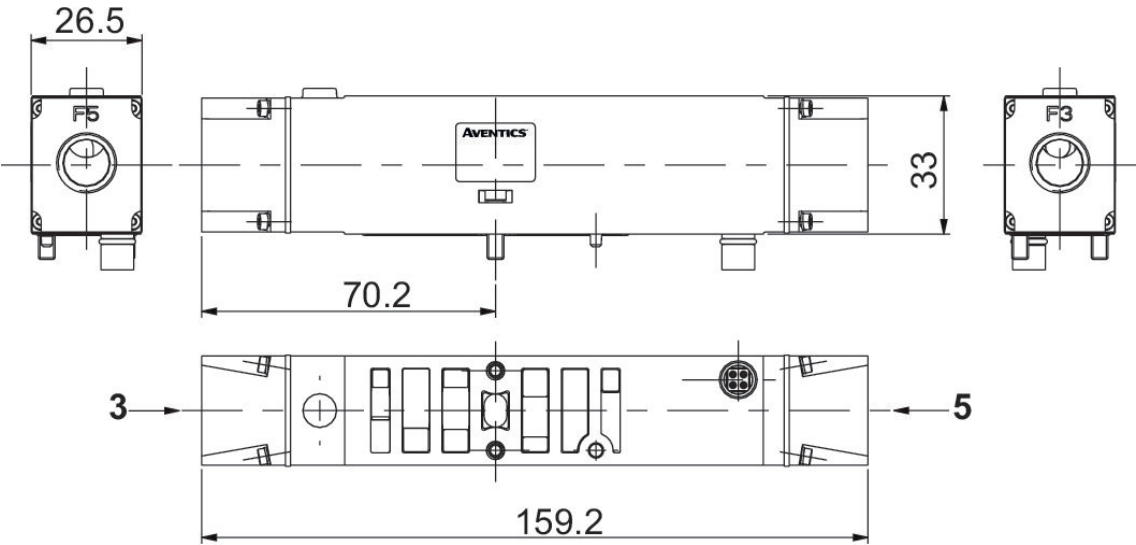
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AX428300002



Exhaust sandwich plate ISO 15407-2 for vertical stacking assembly, series 503



Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AX428300001

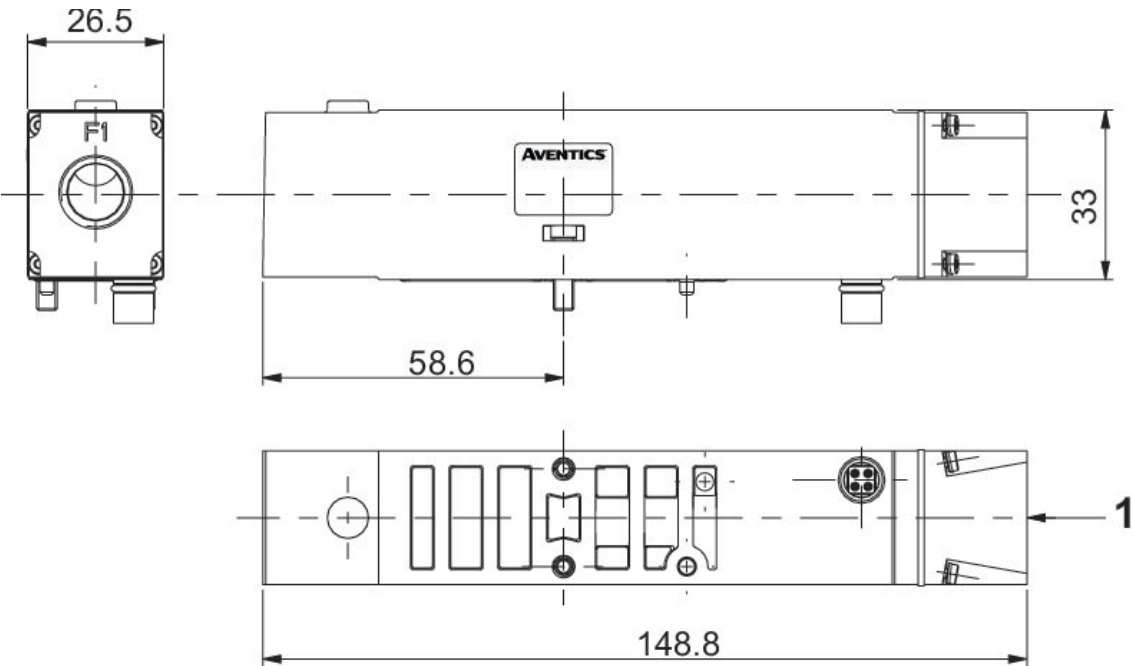


Sandwich plate for separate pressure supply

503



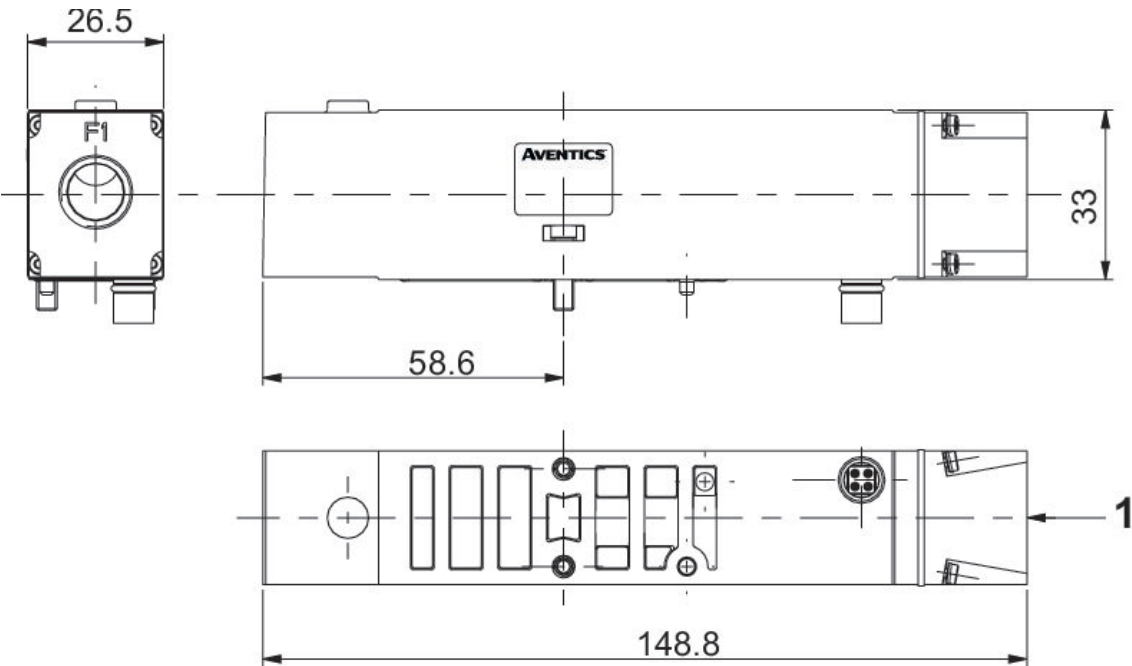
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AP428300006



Sandwich plate ISO 15407-2 for additional pressure supply, series 503



Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	G503AP428300005

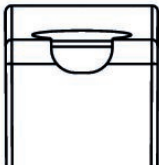
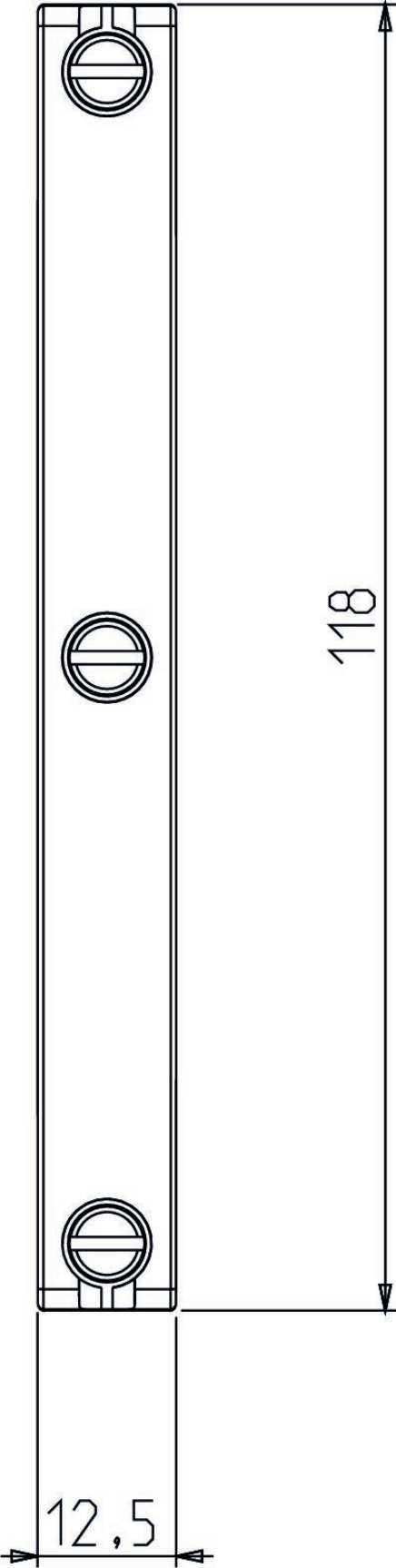
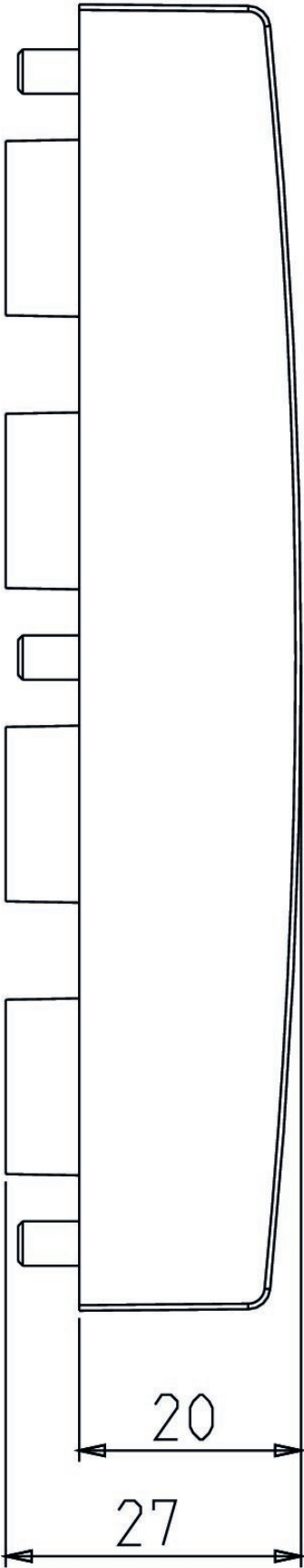


Connection piece

G3
501
502
503



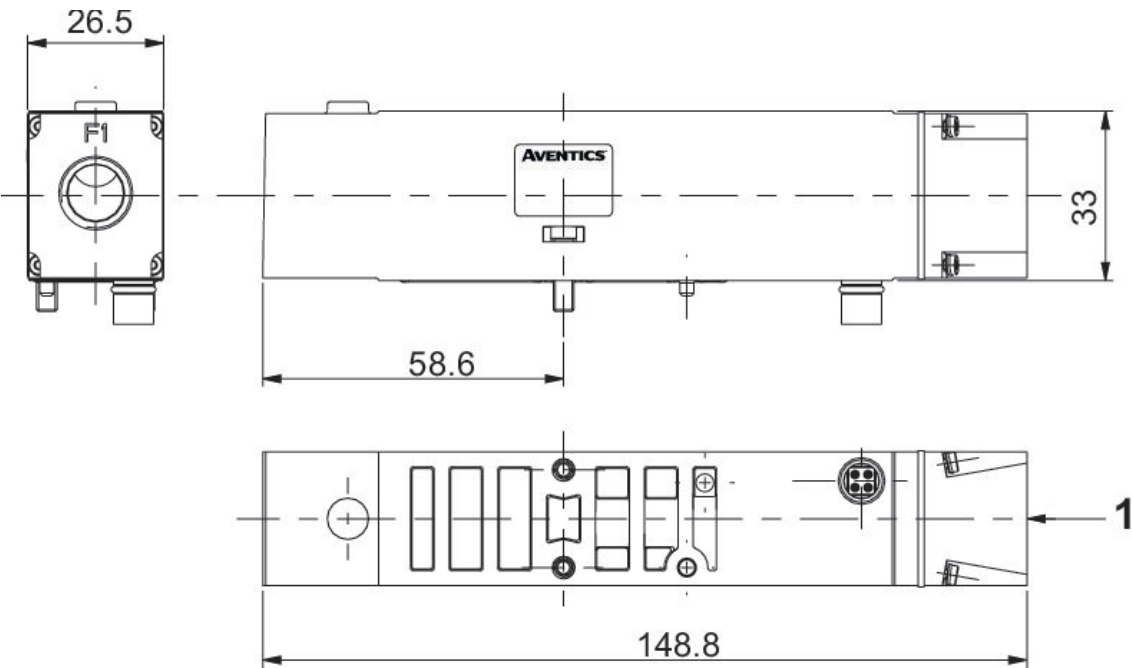
Part No.
240-179



Sandwich plate ISO 15407-2 for additional pressure supply, series 503



Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	8503AW428300004



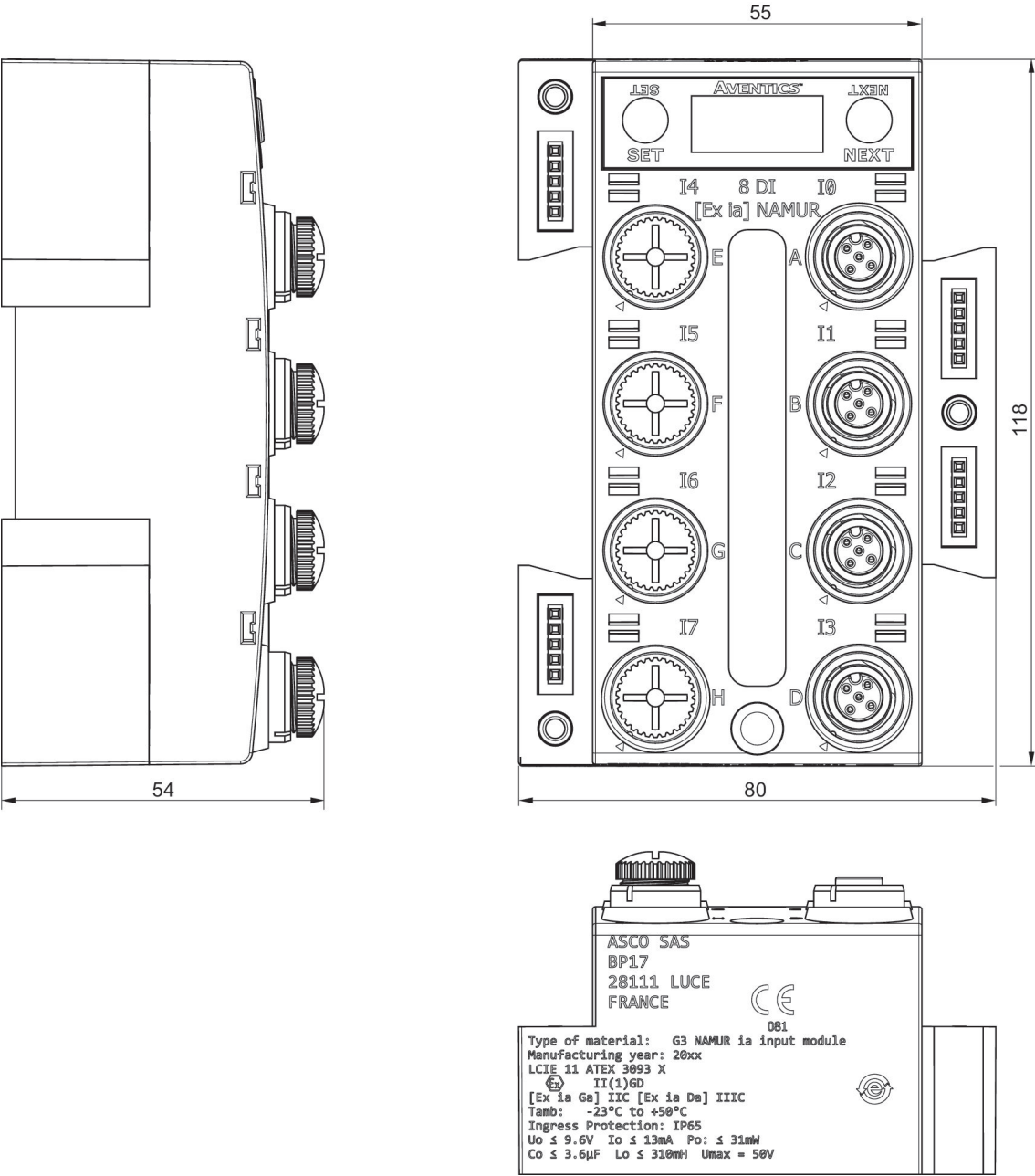
Digital inputs NAMUR, Series G3

ATEX



Number of poles	Number of inputs	I/O module version	E/A capable	Number of I/O connections	Part No.
4-pin	8	digital inputs NAMUR	connection with I/O	8 inputs	240-320

Dimensions



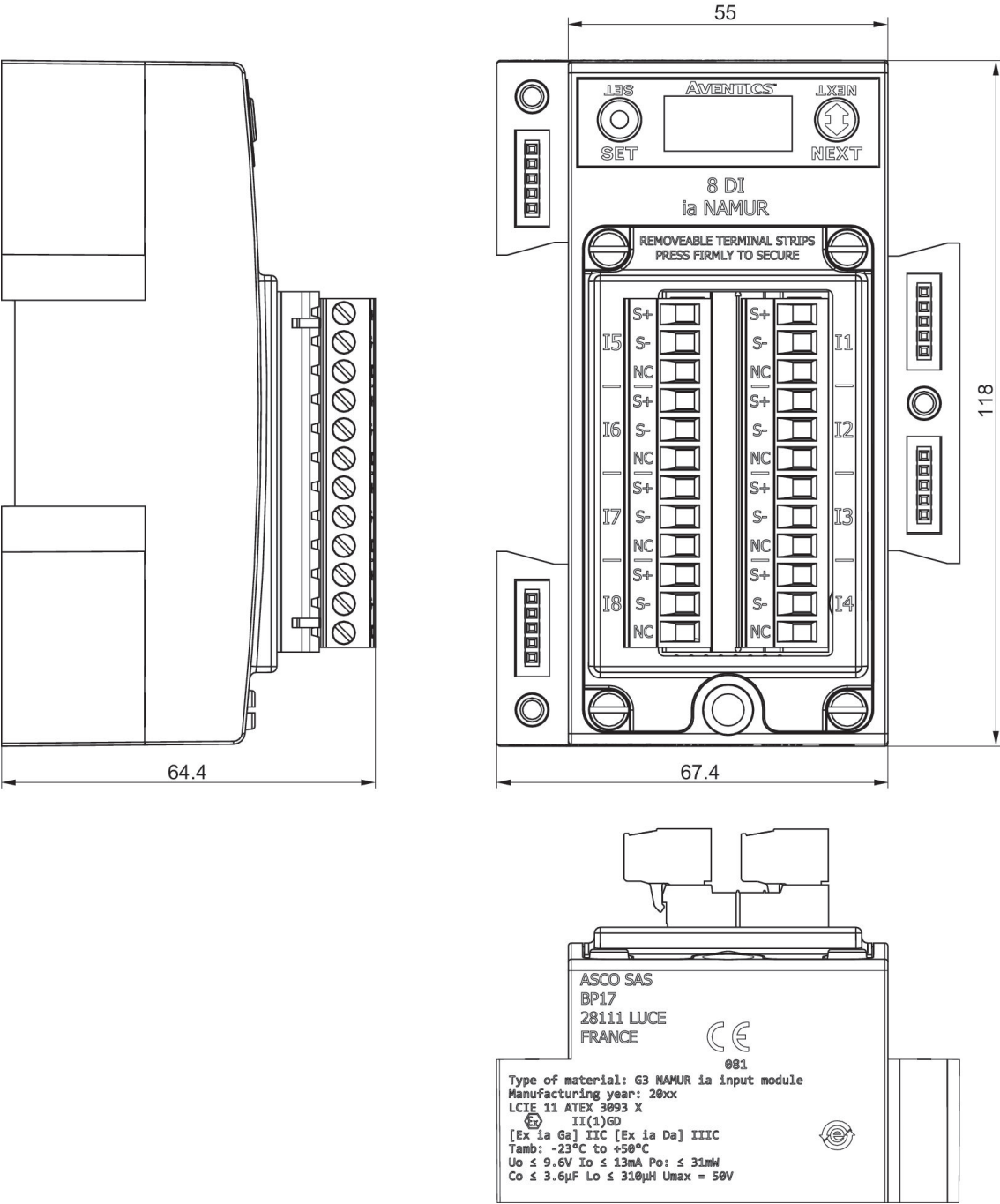
Digital inputs NAMUR, Series G3

ATEX



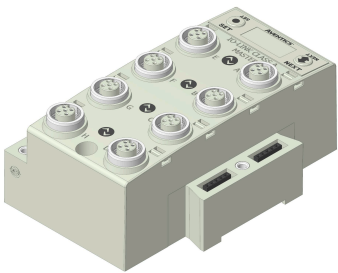
Number of inputs	I/O module version	E/A capable	Number of I/O connections	Operational voltage electronics	Part No.
8	digital inputs NAMUR	connection with I/O	8 inputs	24 V DC	240-322

Dimensions



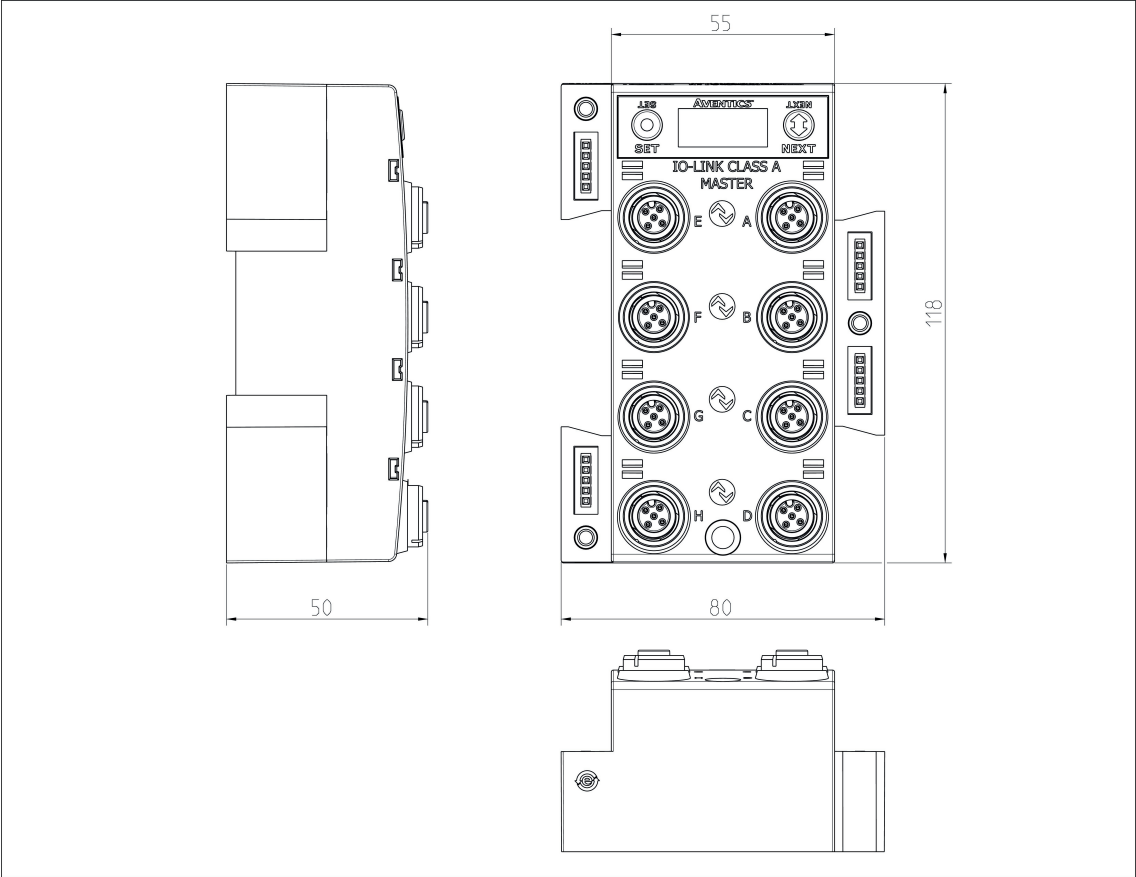
IO-Link Master, class A (8 ports), Series G3

M12



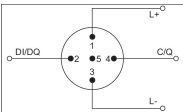
Number of poles	Number of inputs	Number of outputs	I/O module version	E/A capable	Number of I/O connections	Operational voltage electronics	Operational voltage electronics	Part No.
5-pin	8	8	IO-Link Master, class A (8 ports)	connection without I/O	8 inputs / 8 outputs	24 V DC	-10% / +10%	240-381

Dimensions



240-381

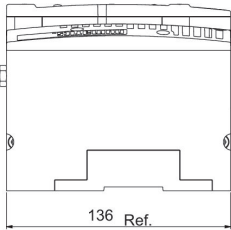
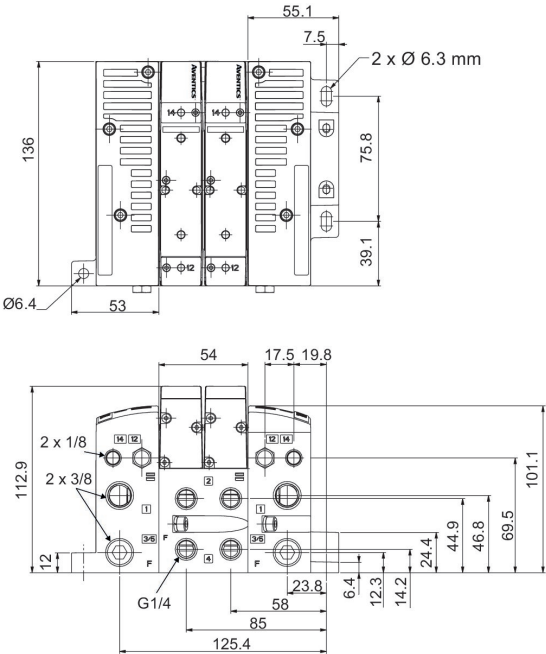
Pin assignments



End plate, series 503



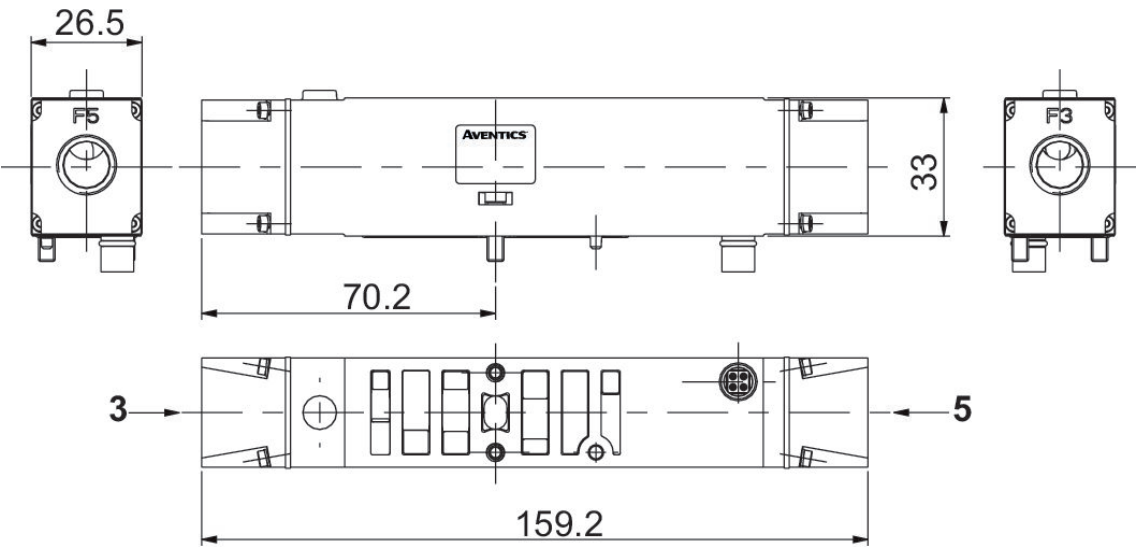
Scope of delivery	Part No.
Left and right end plate, sealing kit, mounting screws	8503AK428327001



Sandwich exhaust plate, series 503



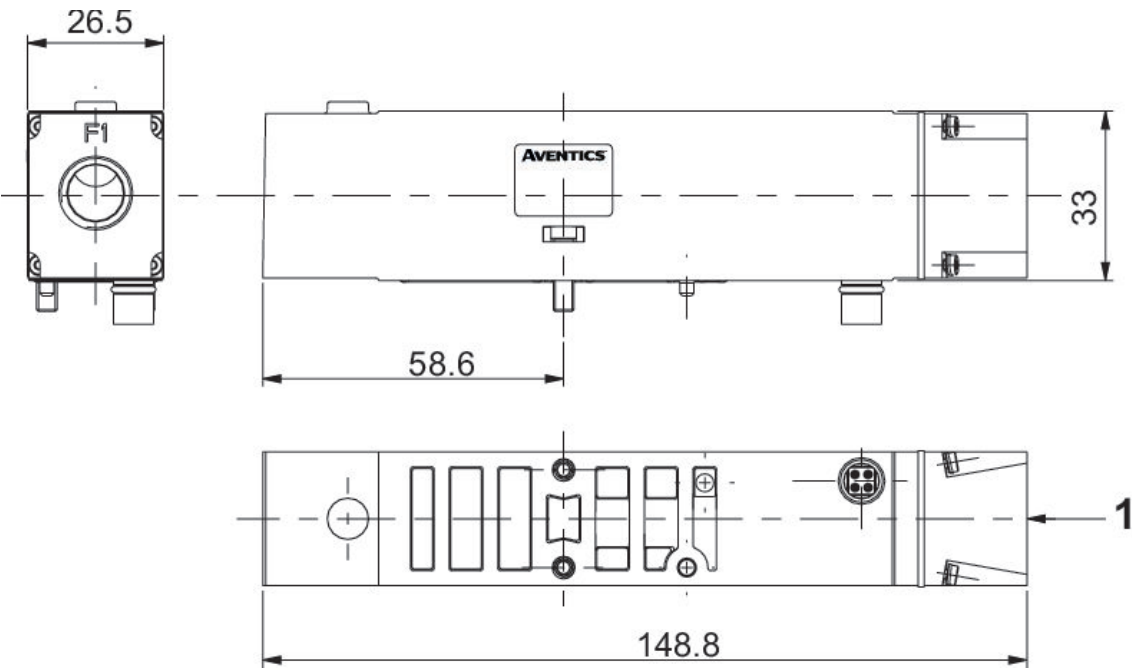
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	8503AX428300002



Sandwich plate ISO 15407-2 for additional pressure supply, series 503



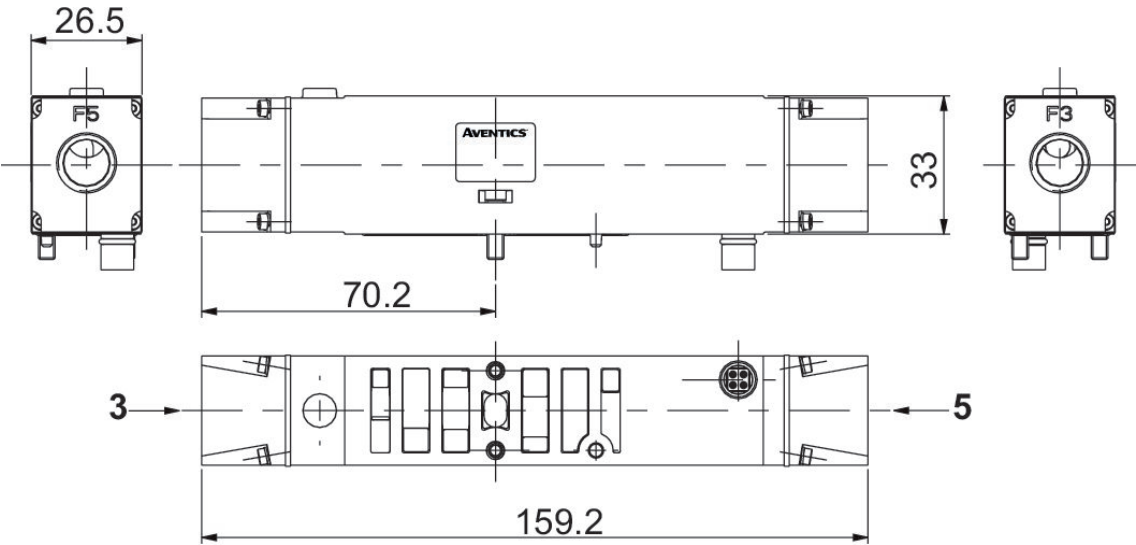
Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	8503AW428300003



Exhaust sandwich plate ISO 15407-2 for vertical stacking assembly, series 503



Scope of delivery	Part No.
Sandwich plate, sealing kit, mounting screws	8503AX428300001



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