Classic applications include the automotive industry and mechanical engineering

Our ISO-standardized valve solutions have long been important pneumatic components in the automotive industry and mechanical engineering in general. They ensure reliability, speed, and efficiency – excellent reasons for them to also be used in the wood, printing, and paper industry as well as heavy industry.
All functions, all options – the 581 valve system according to ISO 5599-1 for universal applications

Available any time across the globe, function specific, can be combined according to same installation standards. Over 30 years of practical experience included. With these features, our standard valves have a very unique application area in addition to the variety of valve solutions designed for specific applications.

Modular for a wide variety of applications

The modular structure of the versatile range offers every option for a valve solution optimized for a specific task. Solutions based on the 581 series can be extended at any time and can even be adapted to changing application conditions. They help reduce excess in parts thanks to standardized interfaces and simplify storage.

- All functions and sizes tailored to your requirements
- Comprehensive range for simple system integration
- Extremely flexible thanks to modular design
- High reliability thanks to robust technology

The 581 series modular kit consists of multiple base plates, different basic valves, and custom electrical or pneumatic control and leaves nothing to be desired when it comes to ISO standard 5599-1. Everything is possible, with ATEX, protection class IP 65, as CNOMO versions, combined with logic modules, soft-start valve, valve functions 5/2, 5/3, 2x 3/2 in different variants in a pressure range from –0.95 to 16 bars, with fast, precise switching times from 13ms and a long service life of up to 20 million cycles (B10 value according to DIN EN ISO 19973). Complicated? For us, ISO is easy!
Standardized perfection in four sizes, with four connection types

Modularity with every option
You would be hard-pressed to find an application with standardized valves that the 581 series concept couldn’t cover with its optimal components and pneumatic solutions. The range features flows from 1,100 to 6,000 l/min as well as a comprehensive selection of electrical connection options and accessories. Thanks to a consistently modular design, the valves and valve systems can be configured to specific tasks. This also includes standardized connection technology for use covering current requirements via electrical connectors with form A, B, or C or simple electrical connection with central M12 plug as well as the matching equipment, such as integral exhaust air throttling or adjustable pilot air.

Perfection in four sizes
With four sizes and four pilot variants, the 581 series covers the entire performance range of pneumatic valves. No matter whether mounted to a single base plate or in a valve system, controlled electrically or pneumatically. Top quality and sophisticated in every detail. Available worldwide. On top of that, online support in design, configuration, and order processing from our proven Engineering Tools.

As valves on single base plates or in a valve system
- Modular system
- Robust design, slider in socket
- Plastic housing for sizes 1 and 2
- Metal housing for sizes 1 to 4
- Same basic valve for electrical and pneumatic control
- Functions: 5/2 and 5/3 directional valves, size 1 – 4; 2 x 3/2 directional valves, size 1

Size 1
1,400 l/min

Size 2
2,700 l/min

Size 3
4,800 l/min

Size 4
6,000 l/min
Overview – electrical controls

### Electrical control – 15 mm
- Low power consumption
- Low space requirements
- Integrating wiring in valve systems

### Electrical control – 22 mm
- Different operating voltages
- Available for all sizes (1 - 4)

### Electrical control – 30 mm
- CNOMO version
- 16 bar version
- Different manual overrides
- Available for all sizes (1 - 4)

### Electrical control – M12x1
- Central connection for double solenoid valves
- Very low power consumption

---

<table>
<thead>
<tr>
<th>Pilot valve</th>
<th>15 mm</th>
<th>22 mm</th>
<th>30 mm</th>
<th>M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available for sizes</td>
<td>ISO 1 - 2</td>
<td>ISO 1 - 4</td>
<td>ISO 1 - 4</td>
<td>ISO 3</td>
</tr>
<tr>
<td>Electrical interface</td>
<td>Form C, 3-pin, with cable, M8 snap</td>
<td>Form B, industry, 3-pin</td>
<td>Form A, 3-pin</td>
<td>M12x1, 3-pin</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>24 V DC</td>
<td>12, 24, 48 V DC</td>
<td>24 V DC</td>
<td>24 V DC</td>
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<tr>
<td></td>
<td>24, 110, 230 V AC</td>
<td>42, 230 V AC</td>
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<td></td>
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<tr>
<td>Voltage tolerance</td>
<td>+/- 10%</td>
<td>+/- 10%</td>
<td>+/- 10%</td>
<td>+/- 10%</td>
</tr>
<tr>
<td>Power consumption</td>
<td>2 – 2.2 W</td>
<td>5 – 10 W</td>
<td>2 – 15 W</td>
<td>0.35 W</td>
</tr>
<tr>
<td>Manual override</td>
<td>Pressing, without detent</td>
<td>Turning, with detent</td>
<td>None, pressing, with detent, without detent</td>
<td>Turning, with detent, without detent</td>
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<tr>
<td></td>
<td>ISO 3 - 4: AL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10°C / +50°C</td>
<td>-15°C / +50°C</td>
<td>-15°C / +50°C</td>
<td>-10°C / +60°C</td>
</tr>
<tr>
<td>ATEX</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
<td>-</td>
</tr>
</tbody>
</table>
**Control and pilot valves**
- Pneumatic control via base plate
- Electrical control
  - 15 mm pilot valve: 24 V DC, form C or cable M8x1
  - 22 mm pilot valve: different voltages, form B, industry
  - 30 mm pilot valve: different voltages, CNOMO interface, ATEX
  - M12 pilot valve: 24 V DC, 0.35 W, central M12 plug
- Valve pilot air: internal/external, can be changed later using rotatable seal

**Basic valves**
- ISO 1 – 4, 5/2 direction valves, double solenoid
- ISO 1 – 4, 5/2 directional valves, with spring return
- ISO 1 – 4, 5/3 direction valves, with pressurized/exhausted or closed center
- ISO 1 – 4, 5/2 directional valves with differential piston (air spring)
- ISO 1 – 4, 5/2 direction valves, double solenoid (manually operated)
- ISO 1, 2 x 3/2 directional valves
- ISO 1: Soft-start valves
- Throttle insert for valves

**Base plates**
- TYPE F ISO 1 – 4, thread connections on the bottom (VDMA)
- TYPE C ISO 1 – 3, thread connections on bottom and side
- TYPE K ISO 1 – 3, thread connections on bottom
- TYPE G ISO 1 – 2, thread connections on bottom or side
- TYPE H ISO 1, thread connections on bottom or side
- Single subbases ISO 1 – 4, thread connections on bottom or side (optionally according to VDMA)
Pilot valves
22 mm

Rotatable seal for valve pilot control, internal or external

Basic valves with differential piston

Basic valve with manual actuation (5/2, double solenoid)

Soft-start valves
ISO 1 – 2

Throttle insert for valves

Type K
ISO 1 – 3, thread connections on the bottom

Type G
ISO 1 – 2, thread connections on the bottom or side

Type H
ISO 1, thread connections on the bottom or side

ISO 1 – 4, single subbases, thread connections on bottom or side (optionally according to VDMA)
The 581 valve series is prepared for every situation

- **Integrated throttles**
The integrated throttles can also be retrofitted and cut costs and the space required for an intermediate throttle plate.

- **Logic modules**
Small fully integrated pneumatic controls are possible with 551 series logic modules in conjunction with 581 valves without extra tubing.

- **Fieldbus connection**
With the universal AES IO system, valves according to 5599-1 can also be easily connected to fieldbus systems with all relevant protocols.

- **Logic modules**
Small fully integrated pneumatic controls are possible with 551 series logic modules in conjunction with 581 valves without extra tubing.

- **Single subbase**
In addition to the base plate systems, single subbases are available with thread connections on the side or bottom.

- **Pressure regulators**
Pressure regulator valves can be easily integrated into the valve system and do not require external tubing. Variants for controlled channels: 1, 2, 4 as well as 2 and 4.

- **Pressure zones**
Pressure zone integration can be realized with blanking pieces in the supply channels. The compressed air supply can be configured individually using supply plates and a direct supply option in the base plates.

- **Maintenance plate**
The hot swap maintenance plate allows you to exchange individual valves without switching off the compressed air supply to the entire valve system.

- **Throttle plate**
Throttle plates can be mounted directly on the base plate and offer the advantage that the throttle settings are maintained even when a valve is exchanged.
Example configuration: 581 valve system, ISO 5599-1, base plate type F (VDMA)

**Electrical control**
- Form C - 15 mm
- M8, 3-pin (with cable) - 15 mm
- Form A, industry - 22 mm
- Form A - 30 mm
- M12x1, central connection

**End plates**
- Side connections 1, 3, 5
- Size 1: G 3/8"
- Size 2: G 1/2"
- Size 3: G 1/4"
- Size 4: G 3/4"

**Base plates**
- Type F: VDMA
- Additional versions:
  - Type C: central pilot air
  - Type H: custom/central pilot air
  - Type G: all connections on bottom, 2 and 4 on side
  - Type K: all connections on bottom

**Pneumatic control**
- Same basic valve as for electrical control, can be changed later by replacing cover

**Manual override**
- without detent
- with detent
- none
- robust metal version

**Frame size**
- Very compact design

**Base plate assembly**
- Simple connection for assembly in-house

**Base plates**
- Connections 2, 4 on bottom
- Size 1: G 1/4"
- Size 2: G 3/8"
- Size 3: G 1/2"
- Size 4: G 3/4"

**Pilot air**
- internal, external
- can be changed later by rotating the seal

**Transition plates**
- ISO 1 to 2
- ISO 1 to 3
- ISO 2 to 3

**Separate pressure zones**
- in channels via partition plates
Our expertise is your benefit

In the ever more complex world of industry, it’s not enough to just offer components, which is why AVENTICS never loses track of the big picture. Customer-specific pneumatics, the Internet of Things, machine safety, technology trends. This allows us to create future-proof solutions that consider both current and future requirements in automation technology.

Standardized pneumatic solutions – several steps ahead of the pack
Practical experience and a profound understanding of service make all the difference. Customer-oriented in all respects – from initial consultation to after-sales, for both technical and financial questions. Pneumatic solutions from AVENTICS are tailored to your specific requirements taking into consideration current trends such as intelligent pneumatics or machine safety in automation technology. As a result, you not only receive an optimal product solution, but can also be sure that you are getting state-of-the-art consultation.

- Customer-specific solutions
- Smart products for the Internet of Things
- Machine Safety
- Engineering tools

For us, optimal collaboration also means continuously outperforming ourselves through interaction. Being innovative together to arrive at tailor-made pneumatic solutions more quickly than our competition. This allows us to ensure your technological lead. Utilize our product and industry experience for your application!

Configured and delivered as ready-to-assemble systems
All 581 series valves and valve systems can be provided fully pre-mounted and tested as ready-to-assemble units. This includes electrical connections, which enables immediate installation and commissioning without requiring additional services. Pre-mounted at the factory, the units not only cut costs and time, but also ensure reliable installation. This prevents wiring and assembly errors, allowing the system to be commissioned without any issues.

You can configure your application right down to the last detail with the free Engineering Tools.
In dialog with our customers and partners

Based on proven expertise and a first-class product portfolio
We are constantly in dialog with our customers and are always a competent contact for both technical and economic questions. The know-how contained in our comprehensive pneumatics product range gives us a solid foundation for our work.

- Cylinders and accessories
- Valves and valve systems
- Air supply management
- Gripper and vacuum technology

Around-the-clock information
The AVENTICS Internet portal is available day or night. Our online catalog provides you with information about our entire product range including all technical details, as well as our sophisticated Engineering Tools.

Online catalog
The fastest point of entry is via our online catalog. Here you can start your search directly by entering a part number or keyword.

CAD
Your desired object can be issued here directly as a CAD file in various formats, as a PDF file, or for further configuration in your software.

Configurators
The configurator can be reached by clicking the selected product. After selecting your product, you can begin to adapt it to your own specifications.

Calculation programs
Here you can specify the dimensions or durability of your components with a wide variety of calculation options. We also provide an air consumption calculator as a special feature.

Circuit diagram software
With the D&C Scheme Editor, you can quickly and easily create circuit diagrams that are based on your component layout and linked to your catalog selection.

eShop
The eShop is our online shop that answers your price requests and monitors the whole order process up to delivery.

Cross Reference Tool
This tool shows our customers the right alternatives to competitor products from within the AVENTICS catalog.

CylinderFinder
The CylinderFinder facilitates selection of the suitable cylinder from all available variants and versions.

Extranet
The Extranet establishes a direct connection between AVENTICS and our customers and speeds up communication. It also contains a great deal of valuable information.

www.engineering-tools.com
Your contact:

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.