PNEUTRAINER-400
Pneumatics - Electropneumatics

End-to-end solution for training in pneumatics and electro-pneumatics

SMC industrial systems components on panel mounting plate

Implements and controls pneumatic and electro-pneumatic circuits

In the following TECHNOLOGIES...

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Develop the SKILLS...

- Analysis
- Troubleshooting
- Designing
- Technical Documentation Creation
- Installation and Assembly
- Technical Documentation Understanding
- Operation
- Programming
PNEUTRAINER-400 - Pneumatics - Electropneumatics

A fully modular and flexible system designed for the development of professional skills related to pneumatics and electro-pneumatics.

Its flexibility makes PNEUTRAINER-400 equipment adaptable to all types of user requirements and needs. It also makes a staggered investment over time possible.

Assembly panels

Based on an anodized extruded aluminium structure, these assembly panels offer various options. From the basic horizontal panel to the mobile table, we offer solutions adapted to all user requirements.

The rolling table includes a panel which enables users to work on both sides at the same time. It also includes a support shelf for component drawers and the pneumatic compressor.

All the options provide a perfect basis to carry out a range of practical activities.

Industrial materials

All the components used are industrial. Developed and manufactured by SMC and popular throughout the world, they meet the highest quality levels. The components are mounted on a base plate.

In order to be identified correctly they have a label with a corresponding reference as well as standardized symbols.
Connections

The pneumatic components incorporate instant connectors for 4 mm pipes. The electropneumatic components have 4 mm instant connecting safety cables.

Storage

The standard kits include a storage system in EUROBOX containers with trays which allow perfect identification and storage whilst occupying minimum space.

These boxes and trays can also be purchased for the storage of customized kits.

Kits

PNEUTRAINER-400 has 6 standard sets of components defined for training demands at different educational levels. Also, the user can configure personalised kits to meet their needs or to complement a previous purchase.

<table>
<thead>
<tr>
<th>STANDARD KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI4-2281 PNEU-401: Basic pneumatics kits</td>
</tr>
<tr>
<td>SAI4-2282 PNEU-402: Advanced pneumatics kits</td>
</tr>
<tr>
<td>SAI4-2283 PNEU-403: Basic electro-pneumatics kits</td>
</tr>
<tr>
<td>SAI4-2284 PNEU-404: Advanced electro-pneumatics kits</td>
</tr>
<tr>
<td>SAI4-2285 PNEU-405: Pneumatics-electro-pneumatics kits</td>
</tr>
<tr>
<td>SAI4-2286 PNEU-406: Proportional pneumatics kits</td>
</tr>
</tbody>
</table>
PNEUTRAINER-400 - With this system you could...

PNEUTRAINER-400 comes up with different practical activities targeting skills in the technologies featuring in the table (below).

- This shows how the PNEUTRAINER-400 is suitable to develop skills in the specific technology.
- This shows that PNEUTRAINER-400 can help develop skills in the specific technology even though there are other more appropriate products in the range.

@ eLEARNING-200

Find out more about the theory behind the technologies developed in PNEUTRAINER-400 with our eLEARNING-200 courses.

**RELATED eLEARNING-200 COURSES**

- Principles of pneumatics (SMC-101)
- Introduction to electricity (SMC-102)
- DC electricity (SMC-103)
- AC electricity (SMC-104)
- Solid state (SMC-105)
- Sensors technology (SMC-108)

*See eLEARNING-200 chapter for more information*
PNEUTRAINER-400 - Extra equipment

There are other products in the range to complement PNEUTRAINER-400.

- VAC-200
  The VAC-200 equipment is particularly designed to develop skills related to vacuum technology.
  *See VAC-200 chapter for more information.

- autoSIM-200
  autoSIM-200 is software that can design and simulate pneumatic, electro-pneumatic, hydraulic circuits, etc. It is also used for programming them plus monitoring and control of pre-defined 2D and 3D models.
  *See autoSIM-200 chapter for more information.

PNEUTRAINER-400 - Complete laboratory

Discover our proposal for laboratories and the best combination of the PNEUTRAINER-400 and other accessories in the chapter “Product packs”.

PNEUTRAINER-400 - Configuration

Getting the right PNEUTRAINER-400 configuration is as easy as:

- Steps to follow

1.- Select the panel and the necessary extras.
2.- Select the chosen standard set or a personalised configuration.
3.- For a personalised configuration, select the references required.
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>401 402 403 404 405 406</td>
</tr>
<tr>
<td><strong>Air preparation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2091</td>
<td>Air cleaning unit with 3/2 distribution valve</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI4-2092</td>
<td>Distribution block</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI4-2005</td>
<td>Pressure regulator with pressure gauge</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI4-2004</td>
<td>1 MPa pressure gauge</td>
<td>1 2 1 1 1 1</td>
</tr>
<tr>
<td>SAI4-2032</td>
<td>Soft start-up valve</td>
<td></td>
</tr>
<tr>
<td><strong>Manual - mechanical valves</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2015</td>
<td>3/2 NC valve, operated by push-button</td>
<td>2 2 2</td>
</tr>
<tr>
<td>SAI4-2017</td>
<td>Double 3/2 NC valve, operated by a push-button</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2018</td>
<td>3/2 NC/NO valve, operated by a push-button</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2019</td>
<td>3/2 NC valve, operated by an emergency knob</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2013</td>
<td>3/2 NC valve, operated by roller lever</td>
<td>2 4 2</td>
</tr>
<tr>
<td>SAI4-2014</td>
<td>FC 3/2 NC valve. Operated by one-way roller lever</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2016</td>
<td>3/2 NC switch-operated double valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2109</td>
<td>5/2 push-button valve</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2021</td>
<td>5/2 valve with 2-position selector</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2025</td>
<td>5/3 valve with selector</td>
<td>1</td>
</tr>
<tr>
<td><strong>Air operated valves</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2020</td>
<td>3/2 NC/NO, air operated single valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2010</td>
<td>3/2 NC convertible valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2023</td>
<td>Air operated 5/2 single valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2024</td>
<td>Air operated 5/2 double valve</td>
<td>3 3 3</td>
</tr>
<tr>
<td>SAI4-2107</td>
<td>Block of 2 x 5/2 double valves + 1 x 5/2 single valve</td>
<td>1</td>
</tr>
<tr>
<td><strong>Flow control equipment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2007</td>
<td>&quot;OR&quot; function</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI4-2124</td>
<td>Double &quot;OR&quot; valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2006</td>
<td>&quot;AND&quot; function</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI4-2125</td>
<td>Double &quot;AND&quot; valve</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2031</td>
<td>Single direction speed controller (double)</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>SAI4-2033</td>
<td>Quick exhaust valve</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2008</td>
<td>Check valve</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2126</td>
<td>Speed controller with controlled check valve</td>
<td>2 2</td>
</tr>
<tr>
<td>SAI4-2030</td>
<td>Two-direction speed controller for single acting cylinder</td>
<td>1</td>
</tr>
<tr>
<td><strong>Actuators</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2027</td>
<td>Single acting cylinder</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>SAI4-2026</td>
<td>Double acting cylinder with rubber cushion</td>
<td>2 2 2 2 2</td>
</tr>
<tr>
<td>SAI4-2071</td>
<td>Double acting cylinder with adjustable air cushion</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2118</td>
<td>Mechanically coupled rodless cylinder</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2123</td>
<td>Cylinder with load</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2120</td>
<td>Stroke reading cylinder</td>
<td>1</td>
</tr>
<tr>
<td><strong>Pneumatics various</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAI4-2029</td>
<td>Vacuum ejector with pad</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI4-2003</td>
<td>Pressure indicator (reed)</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2127</td>
<td>Pressure vessel</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2121</td>
<td>Pulse counter for reading cylinder</td>
<td>1</td>
</tr>
<tr>
<td>SAI4-2012</td>
<td>Pneumatic counter</td>
<td>1</td>
</tr>
</tbody>
</table>
# PNEU KITS

## Ref. Description

### Solenoid valves

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2050</td>
<td>3/2 NC single solenoid valve</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2111</td>
<td>3/2 double solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2053</td>
<td>5/2 double solenoid valve</td>
<td>3 3 3</td>
</tr>
<tr>
<td>SAI-2052</td>
<td>5/2 single solenoid valve</td>
<td>2 2 2</td>
</tr>
<tr>
<td>SAI-2054</td>
<td>5/3 closed-centre solenoid valve</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2114</td>
<td>Block of 2 solenoid valves, 5/2 double + 1 single</td>
<td>1</td>
</tr>
</tbody>
</table>

### Control modules

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2056</td>
<td>Power supply</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>SAI-2035</td>
<td>ON/OFF switch</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2034</td>
<td>Emergency stop knob (electrical)</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2036</td>
<td>Set of electrical inputs (Button pad with 3 push-buttons)</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2038</td>
<td>Set of 3 relays</td>
<td>1 2 1</td>
</tr>
<tr>
<td>SAI-2047</td>
<td>Indicators (pilots, buzzer)</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2040</td>
<td>Set of 2 timer relays</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2048</td>
<td>Electric counter</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2049</td>
<td>Electrical distributor</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2043</td>
<td>Reed auto switch</td>
<td>4 4 4</td>
</tr>
<tr>
<td>SAI-2128</td>
<td>Solid state auto switch</td>
<td>2</td>
</tr>
<tr>
<td>SAI-2044</td>
<td>Inductive detector</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2046</td>
<td>Capacitive detector</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2045</td>
<td>Photoelectric detector</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2042</td>
<td>Electrical end of stroke</td>
<td>2 2 2</td>
</tr>
</tbody>
</table>

### P/V - V/P converters

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2041</td>
<td>Electrical contact pressure switch</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2095</td>
<td>Pressure switch, towards transistor</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2098</td>
<td>Pressure gauge with electrical contact</td>
<td>1 1 1</td>
</tr>
<tr>
<td>SAI-2097</td>
<td>Programmable digital pressure switch. Analog / digital outputs</td>
<td>1 1</td>
</tr>
<tr>
<td>SAI-2096</td>
<td>Vacuum pressure switch, towards transistor</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2099</td>
<td>Programmable proportional electro-pneumatic transducer</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2104</td>
<td>Analog pressure sensor</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2105</td>
<td>Digital Pressure Display for analog sensor</td>
<td>1</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2057</td>
<td>Set of 20m of blue tubing and 20m of flexible 4 mm white tubing.</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2058</td>
<td>Set of 10 &quot;T&quot; fittings</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2059</td>
<td>Set of 5 plugs, 1/8&quot;</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2060</td>
<td>Set of 10 x 4mm plastic plugs</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2132</td>
<td>Set of 10 &quot;Y&quot; fittings</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2055</td>
<td>Set of connection cables</td>
<td>1 2 1 1</td>
</tr>
<tr>
<td>TK-3</td>
<td>Tube-cutter</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2076</td>
<td>Box with trays for basic pneumatics composition</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2078</td>
<td>Box with trays for advanced pneumatics composition</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2079</td>
<td>Box with trays for advanced electro-pneumatics composition</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2082</td>
<td>Box with trays for pneumatic-electropneumatic composition</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2602</td>
<td>Box with trays for proportional pneumatic composition</td>
<td>1</td>
</tr>
<tr>
<td>SAI-2307</td>
<td>10 m. tube black, ø6mm</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>TG-1</td>
<td>TG-1 - Tube-extractor</td>
<td>1 1 1 1 1 1</td>
</tr>
</tbody>
</table>

### Didactic support

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>PNEU KITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2061</td>
<td>Set of manuals and documentation</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>SAI-2070</td>
<td>CD-ROM, Pneumatic slides</td>
<td>1 1 1 1 1 1</td>
</tr>
</tbody>
</table>

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⚠️ **DON’T FORGET TO ADD AN ASSEMBLY PANEL AND EXTRAS**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAI-2068</td>
<td>Schematic clip device</td>
</tr>
<tr>
<td>SAI-2064</td>
<td>Vertical mounting panel for 2 work positions</td>
</tr>
<tr>
<td>SAI-2074</td>
<td>Drawer unit for rolling table with lock</td>
</tr>
<tr>
<td>SAI-2066</td>
<td>Drawer unit for rolling table without lock</td>
</tr>
<tr>
<td>SAI-2065</td>
<td>Rolling table with twin-post</td>
</tr>
</tbody>
</table>
PNEUTRAINER-400 - Customized compositions

All the available pneumatic and electro-pneumatic components are described below, ordered by category.

Assembly panels and accessories

Based on an anodized extruded aluminium structure, we can offer a number of solutions for panels to carry out the practical activities proposed for the various configurations.

- Option A - Horizontal mounting panel
  
  **SAI2080 - Horizontal mounting panel**
  
  External dimensions: 700x560x25mm*. It is supported on non-slip legs. Can be converted into a vertical panel using a support bracket set (see accessories).
  
  *Other dimensions available on request.

- Option B - Vertical mounting panel for 2 work posts
  
  **SAI2064 - Vertical mounting panel for 2 work positions**
  
  External dimensions: 1150x760x410mm*. Allows work to be carried out on both sides, optimizing investment and space.
  
  *Other dimensions available on request.

- Option C - Double sided rolling table
  
  **SAI2065 - Rolling table with twin-post**
  
  - The entire rolling frame system may be disassembled for transportation.
  - The vertical panel means you can work on both sides.
  - Panel dimensions: 1150x760x25mm
  - It has a laminated top for horizontal work, 1200x800mm.
  - The lower section features a 1200x600mm metal shelf supporting the component storage drawers, the silent compressor, etc.
  - 4 high-load wheel support, 2 with brake and 2 without.
  - Total dimensions: 1200x800x1700mm.
• Accessories

With non-slip legs, allowing the user to convert the horizontal mounting panel into a vertical panel.

SAI2028 - Support bracket set

Storage drawer blocks for rolling table

SAI2066 - without lock
SAI2074 - with lock

- Compact 4-drawer block with slide guides to house the component trays.
- External dimensions: 500x725x650mm.

Silent compressor

SAI2088 - Power supply 230VAC
SAI2520 - Power supply 110VAC

- Model ICO-P50
- Two-phase power supply.
- Flow rate: 50l/min.
- Maximum pressure: 0,8MPa
- Low noise level: 40dB
- Reservoir: 9 l.
- Weight: 21kg.
*Other models available on request.

SAI2068 - Schematic clip device

Allows schematics to be attached in DIN-A4 format on the panel.

SAI4-2089 - Cable holder fitting

This supports orderly storage of connection cables.
Air preparation

SAI4-2090 - Air cleaning unit
- Consisting of a filter, a regulator, and a 1 MPa pressure gauge.
- 5µm filtering.
- Possibility of vertical and horizontal positioning.
- Input and output prepared for 6mm tube.

SAI4-2091 - Air cleaning unit with 3/2 distribution valve
- Consisting of a filter, a regulator, and a 1 MPa pressure gauge.
- 5µm filtering.
- Includes a 3/2 discharge valve with silencer for connection and disconnection of the rest of the circuit.
- Option of vertical and horizontal positioning.

SAI4-2001 - Air cleaning unit with lubricator
- Consisting of filter, regulator, lubricator and 1 MPa pressure gauge.
- 5µm filtering.
- Possibility of vertical and horizontal positioning.
- Input for a 6mm tube, output for a 4 mm tube.

SAI4-2092 - Distribution block
- Includes 8-outlet distribution block, one-touch fittings and non-return system.
- Direct coupling to the air cleaning unit.

SAI4-2002 - Distribution block with 3/2 distribution valve
- 8-outlet distribution block, one-touch fittings and non-return system.
- Includes slide discharge valve.
- Direct coupling to the maintenance unit.
- Input for a 6mm tube, output for a 4 mm tube.
**SAI4-2005 - Pressure regulator with pressure gauge**

- Operating pressure 0-1 MPa.
- Includes double-scale pressure gauge (Mpa and psi).

**SAI4-2004 - 1 MPa pressure gauge**

- With double-entry and double scale (0-1 MPa/0-140 psi).

**SAI4-2093 - 0,2MPa pressure gauge**

- With double entry and a double scale (0-0.2 MPa/0-35 psi).

**SAI4-2094 - Vacuum pressure gauge**

- Pressure range (-0.1 MPa - 0 MPa).
- Double scale.

**SAI4-2032 - Soft start-up valve**

- Includes a valve which allows pressure to be implemented gradually.
Manual - mechanical valves

**SAI4-2015 - 3/2 NC valve, operated by push-button**
- Industrial grade push-button, normally in closed position, spring-return.

**SAI4-2017 - Double 3/2 NC valve, operated by a push-button**
- Includes two 3/2 port industry grade push-buttons.
- Red and black colour action.
- Spring-return.

**SAI4-2018 - 3/2 NC/NO valve, operated by a push-button**
- Includes a 3/2 port valve, which the user can convert from normally-open to normally-closed, as required.
- Spring-return.

**SAI4-2019 - 3/2 NC valve, operated by an emergency knob**
- Driven by approved emergency-type knob.
- Spring-return.

**SAI4-2108 - 3/2 NC/NO valve, operated by a knob**
- Includes a 3/2 port valve, which the user can convert from normally-open to normally-closed, as required.
- Approved emergency knob with spring-return action.

**SAI4-2013 - 3/2 NC valve, operated by roller lever**
- Mechanical roller action.

**SAI4-2014 - FC 3/2 NC valve. Operated by one-way roller lever**
- One-way roller lever.
SAI4-2016 - 3/2 NC switch-operated double valve
- Includes 3/2 port valve with locking system.

SAI4-2022 - 3/2 valve, operated by toggle lever
- 3/2 valve with lever and locking action.

SAI4-2067 - 5/2 lever-operated valve
- Lever-operated.

SAI4-2109 - 5/2 push-button valve
- Flush push-button NC with spring-return.

SAI4-2110 - 5/2 valve operated by mushroom push-button
- Activated by approved emergency knob.
- Spring-return.

SAI4-2021 - 5/2 valve with 2-position selector
- Power-assisted valve driven by a locking switch.

SAI4-2025 - 5/3 valve with selector
- 5/3 exhaust-centre type valve.
Air operated valves

**SAI4-2020 - 3/2 NC/NO, air operated single valve**
- Includes a 3/2 valve, which the user can convert from NO to NC, as required. Spring return.
- Manual over-ride.

**SAI4-2010 - 3/2 NC convertible valve**
- Basic timer, convertible from NC to NO.
- Timing range, 0 to 5s.

**SAI4-2023 - Air operated 5/2 single valve**
- Spring-return pneumatic pilot valve.
- Possibility of manual operation.

**SAI4-2024 - Air operated 5/2 double valve**
- Double piloting with memory function.
- Possibility of manual operation.

**SAI4-2107 - Block of 2 x 5/2 double valves + 1 x 5/2 single valve**
- Three valves mounted on a stainless steel plate with a system for attachment to the panel and ISO symbols.
- Possibility of manual operation.
Flow control equipment

SAI4-2007 - “OR” function
- Includes a single circuit selector with logic function “OR”.

SAI4-2124 - Double “OR” valve
- Includes double circuit selector with logic function “OR”.

SAI4-2006 - “AND” function
- Includes a single-simultaneous valve with a logic function “AND”.

SAI4-2125 - Double “AND” valve
- Includes double simultaneous valve with logic function “AND”.

SAI4-2031 - Single direction speed controller (double)
- Includes two single direction speed controllers, manually adjusted.

SAI4-2033 - Quick exhaust valve
- Includes a free exhaust valve with silencer.

SAI4-2008 - Check valve

SAI4-2126 - Speed controller with controlled check valve
- Integrated controlled non-return valve and speed controller.
- Allows temporary intermediate lock-out and control of speed.

SAI4-2030 - Two-direction speed controller for single acting cylinder
- Includes two-direction speed controller for single acting cylinders.
Actuators

SAI4-2027 - Single acting cylinder
- Rod normally retracted.
- Stainless steel construction. Diameter 20mm. Stroke 50mm.
- Rubber cushion.

SAI4-2026 - Double acting cylinder with rubber cushion
- Stainless steel construction. Exterior diameter 20mm. Stroke 100mm.
- Rubber cushion.
- Rail to house end-of-stroke auto switches.

SAI4-2071 - Double acting cylinder with adjustable air cushion
- Diameter 20mm. Stroke 100mm.
- Adjustable air cushion with built-in rail for magnetic detection.

SAI4-2117 - Magnetically coupled rodless cylinder
- Stainless steel construction. Exterior diameter 15mm. Stroke 100mm.
- Magnetic coupling with high holding force.
- Speed 50 to 400mm/s.
- Includes 2 solid state magnetic sensors.

SAI4-2118 - Mechanically coupled rodless cylinder
- Exterior diameter 16mm. Stroke 100mm. Mechanically-driven.
- Speed 100 to 150mm/s.
- Option to mount detectors on either side of the casing.
- Includes 2 solid state, 3-wire sensors.
SAI4-2119 - Dual rod cylinder
- Stroke: 100mm.
- Rod with 4 support points on friction bushing.
- Speed 50 to 500mm/s.
- Rubber cushion.
- Includes 2 solid state magnetic sensors.

SAI4-2120 - Stroke reading cylinder
- Diameter 20mm. Stroke 50mm.
- Resolution: 0.1mm
- Measurement available for entire length of stroke.
- Direct connection to counter.
- Possibility of PLC connection.
- Incorporates two flow regulators.
* Counter not included SAI4-2121.

SAI4-2122 - Linear / rotary actuator with vacuum pad
- Linear cylinder and rotating actuator combined with vacuum pad terminal.
- Linear and rotating movement, independent or simultaneous.
- Diameter 32mm, stroke 25mm.
- Angle of rotation: 180º.
- Incorporates 4 flow regulators.
- Includes 4 solid state magnetic sensors.

SAI4-2123 - Cylinder with load
- Two cylinders, one actuator and another as a load.
- Bore 16 and 20mm, stroke 50mm.
- Using flow regulators the load applied can be varied.
- Includes two reed type magnetic sensors.
Pneumatic units

SAI4-2029 - Vacuum ejector with pad
- The unit has a vacuum ejector with pad, ø32mm
- Built-in silencer.

Includes a red optical gauge with a display angle of 180º.
*SAI4-2029 - Pressure indicator (green)

SAI4-2003 - Pressure indicator (reed)

SAI4-2127 - Pressure vessel
- Pneumatic capacity: 10,2ml.

SAI4-2012 - Pneumatic counter
- Pneumatic counter with preselection and reset facility.
- Automatic or manual preselection.
- Pneumatic signal once the amount of pulses selected has been reached.

SAI4-2011 - Pneumatic sequence controller
- Pneumatic sequence controller module, in four stages, including the “AND” / “OR” functions required.

SAI4-2121 - Pulse counter for reading cylinder
- Counter with 3 preselection points.
- 5-digit LCD with rear lighting.
- Power supply 24Vdc.
- PNP control output, open collector.
- Maximum count speed: 20KHz.

OPTION TO MOUNT AT 90°
- The attachment system to the mounting panel allows a positional change to allow the user to work transversely instead of longitudinally, for case of cylinders and also ends of stroke.
Solenoid valves

SAI4-2050 - 3/2 NC single solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Normally closed.
- Power-assisted system.

SAI4-2051 - 3/2 NO single solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Normally open.
- Power-assisted system.

SAI4-2111 - 3/2 double solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.

SAI4-2052 - 5/2 single solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.

SAI4-2053 - 5/2 double solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.
PNEUTRAINER-400

Solenoid valves

SAI4-2054 - 5/3 closed-centre solenoid valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- 3 spring centring positions.
- Power-assisted system.
- Flow restrictors with silencer.

SAI4-2113 - 5/3 solenoid valve, exhaust centres
- Low consumption: 0,55W.
- LED display and surge absorber.
- Three positions with spring centring.
- Power-assisted system.
- Flow restrictors with silencer.

SAI4-2112 - 5/3 solenoid pressure valve
- Low consumption: 0,55W.
- LED display and surge absorber.
- Three positions with spring centring.
- Power-assisted system.
- Flow restrictors with silencer.

SAI4-2114 - Block of 2 solenoid valves, 5/2 double + 1 single
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.
- 3-solenoid valve assembly on multiple base plate.
Control modules

**SAI4-2056 - Power supply**
- Input voltage: 100÷240VAC
- Output: 24VDC / 2,5A.
- Protection against short circuits.
- Input switch and LED display.
- Supply cable included.

**SAI4-2035 - ON/OFF switch**
- 4 mm safety terminals for use with quick connection wiring.
- Includes latching pushbutton.
- Two independent contacts, NO and NC.

**SAI4-2034 - Emergency stop knob (electrical)**
- 4 mm safety terminals for use with quick connection wiring.
- Includes double contact, NO and NC.

**SAI4-2036 - Set of electrical inputs (Button pad with 3 push-buttons)**
- 4 mm safety terminals for use with quick connection wiring.
- Two push-buttons and a latching push-button.
- Independent light indicator.
- Two push-button switch contacts.

**SAI4-2038 - Set of 3 relays**
- Includes three relays with 24V coil and 4 switchable contacts.
- Relay-active LED.
- 4 mm safety terminals for use with quick connection wiring.

**SAI4-2037 - Relay, 3 switched contacts**
- Includes relay with 24V coil and 4 switched contacts.
- LED display of active relay.

**SAI4-2039 - Timed relay closure**
- Includes disconnection timer relay.
- LED display showing timer status.
- Time programmable between 0,1s and 1h.
- 4 mm safety terminals for quick connection wiring.
Control modules

SAI4-2047 - Indicators (pilots, buzzer)
- Includes 8 pilot lights and a buzzer.
- Supplementary sockets for power distribution.
- 4 mm safety female sockets for quick connection wiring.

SAI4-2040 - Set of 2 timer relays
- Includes two timer relays, one for connection and the other for disconnection.
- 24V coil, with switch contact.
- LED display of timer status.
- Time programmable between 0.1s and 1h.

SAI4-2048 - Electric counter
- Includes inputs for counting and discounting.
- Power supply: 24V.
- Electromechanical preselection.
- Manual or electrical reset.
- Switch contact.
- It has 4 mm safety female sockets for quick connection wiring.

SAI4-2049 - Electrical distributor
- It has 4 blocks of 4 safety female sockets of 4 mm, interconnected together.
- This allows the user to carry out simple interconnections for complex circuits on different parts of the panel.

SAI4-2043 - Reed auto switch
- Operating voltage: 24V.
- Maximum current: 40mA.
- Includes LED display.

SAI4-2044 - Inductive detector
- Includes M18 inductive detector.
- Detection distance: 5mm.
- Operating voltage: 24V.
- Includes an LED indicating status and quick connection cables.
SAI4-2046 - Capacitive detector
- Includes M18 capacitive detector.
- Detection distance: 8mm.
- Status display LED.
- Operating voltage: 24V.

SAI4-2045 - Photoelectric detector
- Includes M18 reflection photoelectric detector.
- Detection distance: 600mm.
- Status display LED.
- Operating voltage: 24V.

SAI4-2042 - Electrical end of stroke
- Includes roller-driven end of stroke with switchable electric contact.

SAI2143-14 - MicroPLC
- Module for table mounting or panel, including the Alpha2 AL2-24MR-D controller (15 inputs and 9 outputs to relay).
- Includes simulation of analog / digital inputs.
- Includes 24Vdc power supply.
- Programming software and instructions manual.
- Includes LED output activation indicator.
- Power supply: 100-240Vac.
- Built-in power cable.

SAI9367 - Benchtop Siemens PLC module
- Benchtop module or for panel which includes a Siemens S7-1200 (1212C CPU) PLC with 8 digital inputs, 6 digital outputs to relay and 2 analogue inputs.

SAI9121 - Benchtop Allen Bradley PLC module
- Benchtop module or for panel which includes an Allen Bradley Micrologix 1100 PLC with 10 digital inputs, 6 digital outputs to relay and 2 analogue inputs.

- All the inputs and outputs are accessible by female quick connection sockets for cables with 4 mm safety terminals.
- Includes simulation of analogue and digital inputs by potentiometers and switches.
- Includes LED output activation indicator.
- Includes 24Vdc power supply.
- Power supply: 100-240Vac.

* Programming tools not included. See section “Programming tools”.
* Consult for other PLC brands.
P/V - V/P converters

SAI4-2041 - Electrical contact pressure switch
- Includes pneumatic-electrical converter.
- 0-0.8MPa adjustable, with pressure indicator display.

SAI4-2095 - Pressure switch, towards transistor
- PNP output with built-in LED display.
- Operating voltage: 12-24Vdc.

SAI4-2098 - Pressure gauge with electrical contact
- Pressure switch function included in a pressure gauge.
- Pressure range: 0 to 1 MPa.
- Ideal for checking in-line pressure.

SAI4-2097 - Programmable digital pressure switch. Analog / digital outputs
- Pressure indicator display of 3 1/2 digits.
- Operation indicator gauge.
- Adjustment of positive and vacuum pressure.
- Power supply between 12 and 24Vdc.
- Double PNP output in open catch, plus analog output.

SAI4-2096 - Vacuum pressure switch, towards transistor
- Pressure range adjustment -0.1 to 0 MPa.
- PNP output

SAI4-2072 - Programmable digital vacuum pressure switch. Analog / digital outputs
- Operating voltage: 24V.
- Consumption: 45mA.
- Pressure range: -1 to 0.1 MPa.
- Three numerical digits.
- PNP output with snap connection cables.
SAI4-2099 - Programmable proportional electro-pneumatic transducer
- Proportional traslations, adjustable pressure and programmable.
- 3-digit display gauge.
- Input code: 4-20mA.
- Analogic output signal: 1-5V.

SAI4-2100 - Proportional pressure valve
- Pressure adjustment in accordance with analog code.
- Connectable to control amplification card.
- Operating pressure: 0-1 MPa.

SAI4-2101 - Proportional flow rate valve
- Pressure adjustment in accordance with analog code.
- Connectable to control amplification card.
- Operating pressure: 0-0.1 MPa.

SAI4-2102 - Amplifier card for proportional valve
- Adjustment of ZERO and GAIN on the proportional valve.
- Allows control of proportional valves by analog code, 0 to 5Vdc.
- Power supply 24Vdc.

SAI4-2103 - Amplification card with PID regulator
- Adjustment of ZERO and GAIN for the proportional valve.
- Allows control of proportional valves by an analog signal, 0 to 5Vdc.
- Power supply 24Vdc.
- Includes anomaly-detection system and feed-back circuit for sensor.

SAI4-2104 - Analog pressure sensor
- Pressure range: 0 to 1 MPa.
- Supply voltage: 12 to 24Vdc.
- Output: 1 to 5Vdc.

SAI4-2105 - Digital Pressure Display for analog sensor
- Digital display of pressure for 7 types of units, 3-digit display.
- Display of absolute pressure.
- Programming of cut-off pressure.
- Supply voltage: 12 to 24Vdc.
- Number of outlets: 2 channels x 2 outlets.
Accessories

SAI2057 - Set of 20m of blue tubing and 20m of flexible 4 mm white tubing
- Polyurethane tube, exterior diameter 4mm, two-tone colour, for connections on pneumatic circuits.
  * SAI2307 - 10m black piping with outer diameter of 6 mm.

SAI2058 - Set of 10 “T” fittings
- Set of 10 one-touch fittings for 4mm tubes.

SAI2059 - Set of 5 plugs, 1/8”
- Includes a 5-plug set for pressure outputs of 1/8”.

SAI2060 - Set of 10 x 4mm plastic plugs
- Tool for plugging pressure outlets in 4mm tube.

SAI2132 - Set of 10 “Y” fittings
- Set of 10 one-touch fittings for 4mm tubes.

TK-3 - Tube-cutter
- Tool for clean cuts, perpendicular to the length of the tube.

SAI4-2055 - Set of connection cables
- Includes 30 safety quick connecting cable of 4 mm in different colours and lengths:
  • 50 cm cables: brown (x6), blue (x6) and black (x3).
  • 10 cm cables: brown (x6), blue (x6) and black (x3).

Boxes containing components
SAI4-2076 for PNEU-401
SAI4-2078 for PNEU-402
SAI4-2077 for PNEU-403
SAI4-2079 for PNEU-404
SAI4-2062 for PNEU-405
SAI4-2602 for PNEU-406
- Boxes in Eurobox format allow orderly storage of components.
  - Includes printed trays with the references and locations for the components. Incorporates component anchoring system that facilitates their distribution and control.
  - Allows extension of additional trays and boxes.

Trays containing components
SAI4-2133 / SAI4-2134 / SAI4-2135

TG-1 - Tube-extractor
- Tool for an easy and quick extraction of the pipe (4 and 6mm).
Didactic support

SMC INTERNATIONAL TRAINING bases the design of its products on the model involving “Development of Competence”, and so, in addition to its hardware resources, our company offers a series of teachware supplements for comprehensive training in these disciplines, in order to attain the skills described.

Set of electric connector adaptors

- **SAI2819** - Set of 30 adaptors from 2 to 4 mm.
- **SAI2820** - Set of 30 adaptors from 4 to 2 mm.
  - Each set includes 30 adaptors for electrical connectors in different colours: red (x12), blue (x12) and black (x6).

Didactic support

**SAI2061** - Set of manuals and documentation

- It includes:
  * Unit specifications.
  * Operations manual.
  * Technical dossiers for all components.
  * Student dossiers with pneumatic electropneumatic activities proposed.
  * Teacher’s dossiers with solutions for the activities provided for the student.

**SAI2070** - CD-ROM, Pneumatic slides

- Includes a set of slides in “Power Point” format organised into chapters, which can be used to support the teacher.

**SAI2273** - Pneumatic overheads file

- Contains acetate transparencies with diagrams, calculation table, etc., and also sectional pneumatic components.

**SAI2137** - CD-ROM for computer-assisted teaching of Pneumatics / Electropneumatics and PLC

- Self-teaching CD-ROM courses.
  * Available in English.