

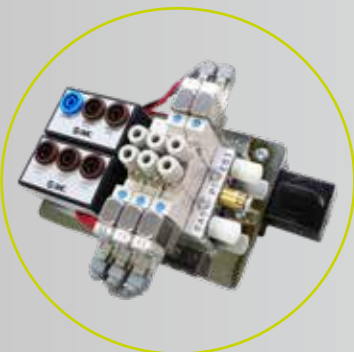
# PNEUTRAINER-400

Pneumatics - Electropneumatics

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

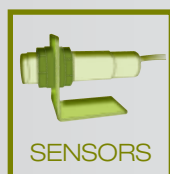
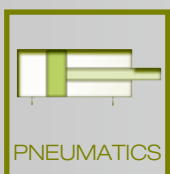


SMC industrial systems components  
on panel mounting plate

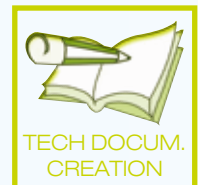


Implements and controls pneumatic  
and electro-pneumatic circuits

In the following TECHNOLOGIES...



Develop the SKILLS...





## ■ 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

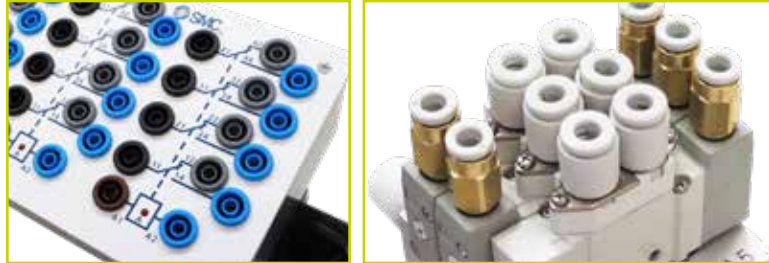


All the components used are industrial. Developed and manufactured by SMC and popular throughout the world, they meet the highest quality levels. The components are mounted on a base plate.

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.

### STANDARD KITIS

SAI4-2281	PNEU-401: Basic pneumatics kits
SAI4-2282	PNEU-402: Advanced pneumatics kits
SAI4-2283	PNEU-403: Basic electro-pneumatics kits
SAI4-2284	PNEU-404: Advanced electro-pneumatics kits
SAI4-2285	PNEU-405: Pneumatics- electro-pneumatics kits
SAI4-2286	PNEU-406: Proportional pneumatics kits

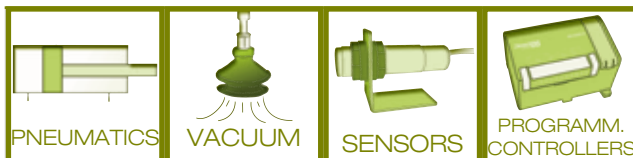




■ PNEUTRAINER-400 - With this system you could...

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

**TECHNOLOGIES**



SKILLS	TECHNOLOGIES			
	PNEUMATICS	VACUUM	SENSORS	PROGRAMM. CONTROLLERS
ANALYSIS	■	■	■	■
TROUBLESHOOT.	■	■	■	■
DESIGNING	■	■	■	■
TECH DOCUM. CREATION	■	■	■	■
INSTALLATION AND ASSEMBLY	■	■	■	■
TECH DOCUM. UNDERSTANDING	■	■	■	■
OPERATION	■	■	■	■
PROGRAMMING	■	■	■	■

**@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*



- 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.

## ■ PNEUTRAINER-400 - Extra equipment

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

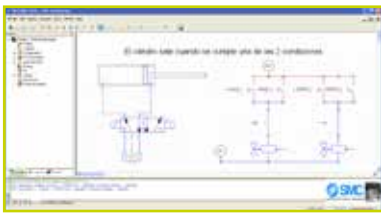
### ● VAC-400

The VAC-400 equipment is particularly designed to develop skills related to vacuum technology.

*\*See VAC-400 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.





## ■ PNEUTRAINER-400 - Standard kits

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

Ref.	Description	PNEU KITS					
		401	402	403	404	405	406
<b>Solenoid valves</b>							
SAI4-2050	3/2 NC single solenoid valve			1	1	1	
SAI4-2111	3/2 double solenoid valve				1		
SAI4-2053	5/2 double solenoid valve			3	3	3	
SAI4-2052	5/2 single solenoid valve			2	2	2	
SAI4-2054	5/3 closed-centre solenoid valve				1		
SAI4-2114	Block of 2 solenoid valves, 5/2 double + 1 single				1		
<b>Control modules</b>							
SAI4-2056	Power supply			1	1	1	1
SAI4-2035	ON/OFF switch				1		
SAI4-2034	Emergency stop knob (electrical)				1		
SAI4-2036	Set of electrical inputs (Button pad with 3 push-buttons)			1	1	1	
SAI4-2038	Set of 3 relays			1	2	1	
SAI4-2047	Indicators (pilots, buzzer)			1	1	1	
SAI4-2040	Set of 2 timer relays				1		
SAI4-2048	Electric counter				1		
SAI4-2049	Electrical distributor			1	1	1	
SAI4-2043	Reed auto switch			4	4	4	
SAI4-2128	Solid state auto switch				2		
SAI4-2044	Inductive detector				1		
SAI4-2046	Capacitive detector				1		
SAI4-2045	Photoelectric detector				1		
SAI4-2042	Electrical end of stroke			2	2	2	
<b>P/V - V/P converters</b>							
SAI4-2041	Electrical contact pressure switch			1	1	1	
SAI4-2095	Pressure switch, towards transistor				1		
SAI4-2098	Pressure gauge with electrical contact			1	1	1	
SAI4-2097	Programmable digital pressure switch. Analog / digital outputs				1		1
SAI4-2096	Vacuum pressure switch, towards transistor				1		
SAI4-2099	Programmable proportional electro-pneumatic transducer						1
SAI4-2104	Analog pressure sensor						1
SAI4-2105	Digital Pressure Display for analog sensor						1
<b>Accessories</b>							
SAI2057	Set of 20m of blue tubing and 20m of flexible 4 mm white tubing.	1	1	1	1	1	1
SAI2058	Set of 10 "T" fittings	1	1	1	1	1	1
SAI2059	Set of 5 plugs, 1/8"	1	1	1	1	1	1
SAI2060	Set of 10 x 4mm plastic plugs	1	1	1	1	1	1
SAI2132	Set of 10 "Y" fittings		1		1		
SAI4-2055	Set of connection cables			1	2	1	1
TK-3	Tube-cutter	1	1	1	1	1	1
SAI4-2076	Box with trays for basic pneumatics composition	1					
SAI4-2078	Box with trays for advanced pneumatics composition		1				
SAI4-2077	Box with trays for basic electro-pneumatics composition			1			
SAI4-2079	Box with trays for advanced electro-pneumatics composition				1		
SAI4-2062	Box with trays for pneumatic-electropneumatic composition					1	
SAI4-2602	Box with trays for proportional pneumatic composition						1
SAI2307	10 m. tube black. ø6mm	1	1	1	1	1	1
TG-1	TG-1 - Tube-extractor	1	1	1	1	1	1
<b>Didactic support</b>							
SAI2061	Set of manuals and documentation	1	1	1	1	1	1
SAI2070	CD-ROM, Pneumatic slides	1	1	1	1	1	1

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

SAI2068	Schematic clip device	SAI2028	Support bracket set
SAI2064	Vertical mounting panel for 2 work positions	SAI2088	Silent compressor 230VAC
SAI2074	Drawer unit for rolling table with lock	SAI2520	Silent compressor 110VAC
SAI2066	Drawer unit for rolling table without lock	SAI2080	Horizontal mounting panel
SAI2065	Rolling table with twin-post	SAI4-2089	Cable holder fitting







## ■ 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

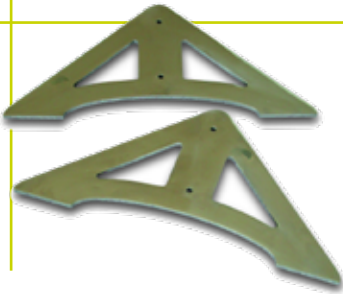
#### SAI2065 - Rolling table with twin-post



- 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

**SAI2028 - Support bracket set**



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

**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**



- 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.

**SAI2088 - Power supply 230VAC**

**SAI2520 - Power supply 110VAC**

**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.

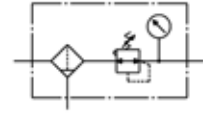


### Air preparation

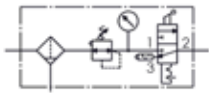


**SAI4-2090 - Air cleaning unit**

- 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**

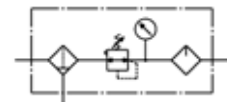


- Consisting of a filter, a regulator, and a 1 MPa pressure gauge.
- 5µm filtering.
- Includes a 3/2 discharge valve with silencer for connection and disconnection of the rest of the circuit.
- Option of vertical and horizontal positioning.

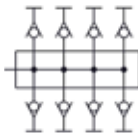


**SAI4-2001 - Air cleaning unit with lubricator**

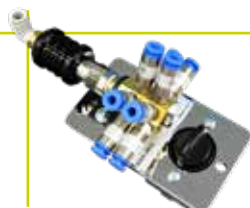
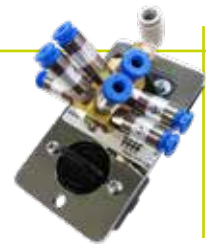
- Consisting of filter, regulator, lubricator and 1 MPa pressure gauge.
- 5µm filtering.
- Possibility of vertical and horizontal positioning.
- Input for a 6mm tube, output for a 4 mm tube.



**SAI4-2092 - Distribution block**

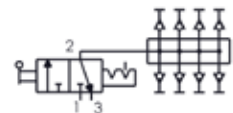


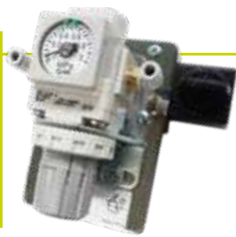
- Includes 8-outlet distribution block, one-touch fittings and non-return system.
- Direct coupling to the air cleaning unit.



**SAI4-2002 - Distribution block with 3/2 distribution valve**

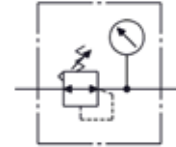
- 8-outlet distribution block, one-touch fittings and non-return system.
- Includes side discharge valve.
- Direct coupling to the maintenance unit.
- Input for a 6mm tube, output for a 4 mm tube.





### 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

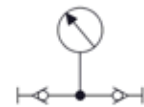


- With double-entry and double scale (0-1 MPa/ 0-140psi).



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

- With double entry and a double scale (0-0,2MPa/ 0-35psi).



### SAI4-2094 - Vacuum pressure gauge

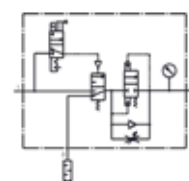


- Pressure range (-0,1 MPa - 0MPa).
- Double scale.



### SAI4-2032 - Soft start-up valve

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



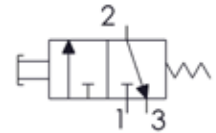


Manual - mechanical valves

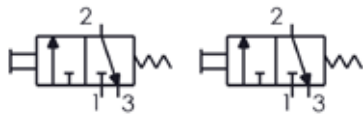


**SAI4-2015 - 3/2 NC valve, operated by push-button**

- Industrial grade push-button, normally in closed position, spring-return.



**SAI4-2017 - Double 3/2 NC valve, operated by a push-button**

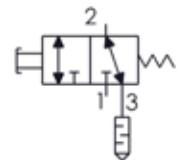


- Includes two 3/2 port industry grade push-buttons.  
- Red and black colour action.  
- Spring-return.

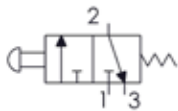


**SAI4-2018 - 3/2 NC/NO valve, operated by a push-button**

- 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**

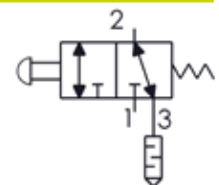


- Driven by approved emergency-type knob.  
- Spring-return.

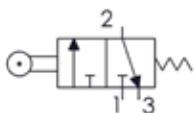


**SAI4-2108 - 3/2 NC/NO valve, operated by a knob**

- 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**

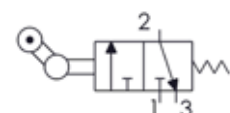


- Mechanical roller action.



**SAI4-2014 - FC 3/2 NC valve. Operated by one-way roller lever**

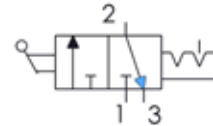
- One-way roller lever.





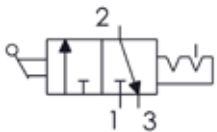
### SAI4-2016 - 3/2 NC switch-operated valve

- Includes 3/2 port valve with locking system.



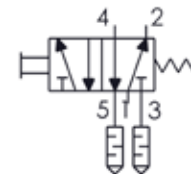
### SAI4-2022- 3/2 valve, operated by toggle lever

- 3/2 valve with lever and locking action.



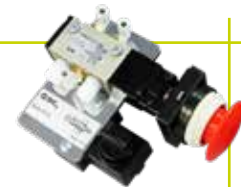
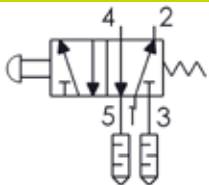
### SAI4-2109 - 5/2 push-button valve

- Flush push-button NC with spring-return.



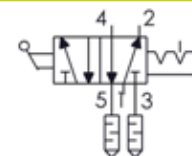
### SAI4-2110- 5/2 valve operated by mushroom push-button

- Activated by approved emergency knob.  
- Spring-return.



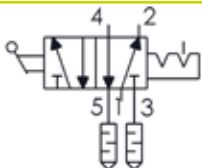
### SAI4-2021 - 5/2 valve with 2-position selector

- Power-assisted valve driven by a locking switch.



### SAI4-2067- 5/2 lever-operated valve

- Lever-operated.



### SAI4-2025 - 5/3 valve with selector

- 5/3 exhaust-centre type valve.



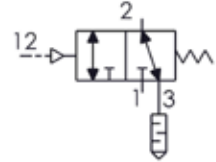


Air operated valves

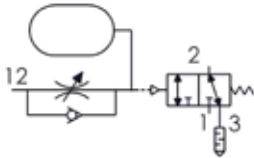


SAI4-2020 - 3/2 NC/NO, air operated single valve

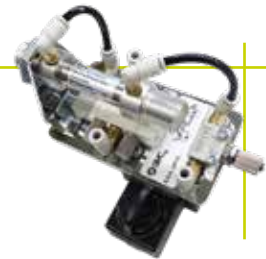
- Includes a 3/2 valve, which the user can convert from NO to NC, as required. Spring return.
- Manual over-ride.



SAI4-2010 - 3/2 NC convertible valve

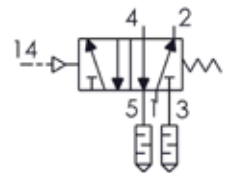


- Basic timer, convertible from NC to NO.
- Timing range, 0 to 5s.

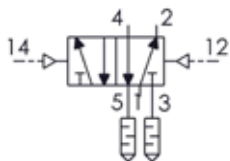


SAI4-2023 - Air operated 5/2 single valve

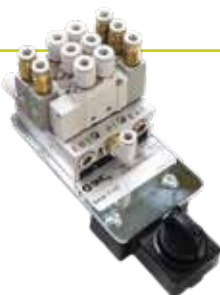
- Spring-return pneumatic pilot valve.
- Possibility of manual operation.



SAI4-2024 - Air operated 5/2 double valve

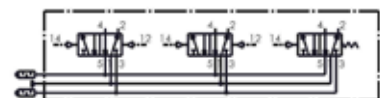


- Double piloting with memory function.
- Possibility of manual operation.



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.

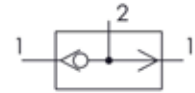


## Flow control equipment

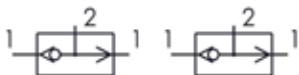
### SAI4-2007 - "OR" function



- Includes a single circuit selector with logic function "OR".



### SAI4-2124 - Double "OR" valve



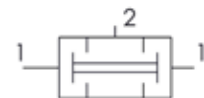
- Includes double circuit selector with logic function "OR".



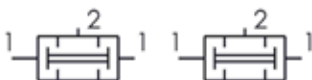
### SAI4-2006 - "AND" function



- Includes a single-simultaneous valve with a logic function "AND".



### SAI4-2125 - Double "AND" valve



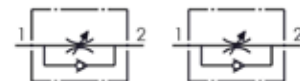
- Includes double simultaneous valve with logic function "AND".



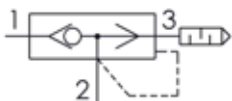
### SAI4-2031 - Single direction speed controller (double)



- Includes two single direction speed controllers, manually adjusted.



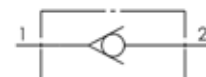
### SAI4-2033 - Quick exhaust valve



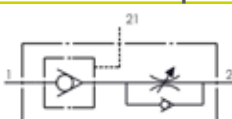
- Includes a free exhaust valve with silencer.



### 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.





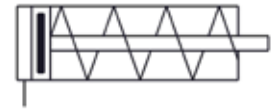


## Actuators

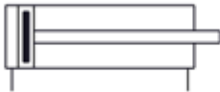
### SAI4-2027 - Single acting cylinder



- Rod normally retracted.
- Stainless steel construction Diameter 20mm. Stroke 50mm.
- Rubber cushion.



### SAI4-2026 - Double acting cylinder with rubber cushion



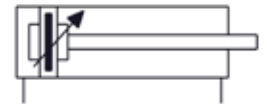
- Stainless steel construction. Exterior diameter 20mm. Stroke 100mm.
- Rubber cushion.
- Rail to house end-of-stroke auto switches.



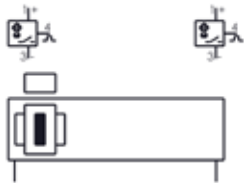
### SAI4-2071 - Double acting cylinder with adjustable air cushion



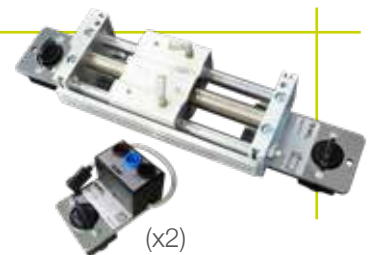
- Diameter 20mm. Stroke 100mm.
- Adjustable air cushion with built-in rail for magnetic detection.



### SAI4-2117 - Magnetically coupled rodless cylinder



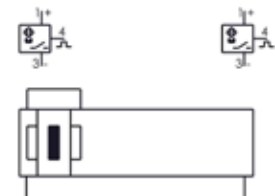
- Stainless steel construction. Exterior diameter 15mm. Stroke 100mm.
- Magnetic coupling with high holding force.
- Speed 50 to 400mm/s.
- Includes 2 solid state magnetic sensors.



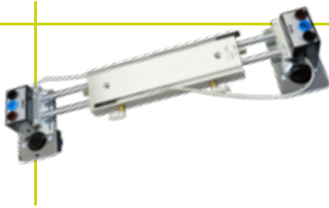
### SAI4-2118 - Mechanically coupled rodless cylinder



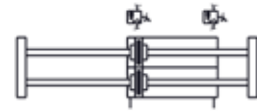
- Exterior diameter 16mm. Stroke 100mm. Mechanically driven.
- Speed 100 to 150mm/s.
- Option to mount detectors on either side of the casing.
- Includes 2 solid state, 3-wire sensors.



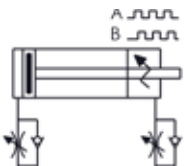
### SAI4-2119 - Dual rod cylinder



- 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



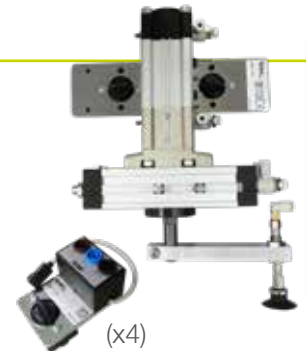
- Diameter 20mm. Stroke 50mm.
- Resolution: 0,1mm
- Measurement available for entire length of stroke.
- Direct connection to counter.
- Possibility of PLC connection.
- Incorporates two flow regulators.
- \* Counter not included SAI4-2121.



### SAI4-2122 - Linear / rotary actuator with vacuum pad



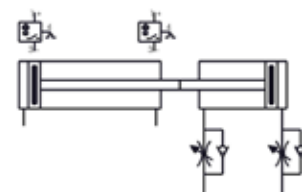
- Linear cylinder and rotating actuator combined with vacuum pad terminal.
- Linear and rotating movement, independent or simultaneous.
- Diameter 32mm, stroke 25mm.
- Angle of rotation: 180°.
- Incorporates 4 flow regulators.
- Includes 4 solid state magnetic sensors.



### 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.



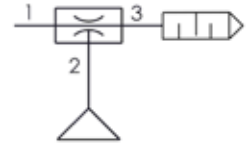


Pneumatics various

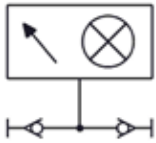


SAI4-2029 -Vacuum ejector with pad

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



SAI4-2003 - Pressure indicator (reed)



- Includes a red optical gauge with a display angle of 180°.
- \*SAI4-2207 - Pressure indicator (green)

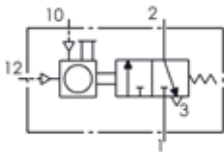


SAI4-2127 - Pressure vessel

- 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°

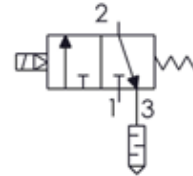
- The attachment system to the mounting panel allows a positional change to allow the user to work transversely instead of longitudinally, for case of cylinders and also ends of stroke.

## Solenoid valves

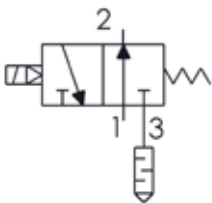
### SAI4-2050 - 3/2 NC single solenoid valve



- 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



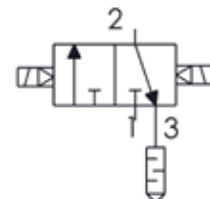
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Normally open.
- Power-assisted system.



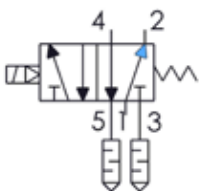
### SAI4-2111 - 3/2 double solenoid valve



- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.



### SAI4-2052 - 5/2 single solenoid valve



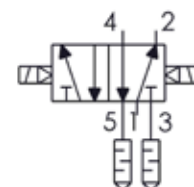
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.



### SAI4-2053 - 5/2 double solenoid valve



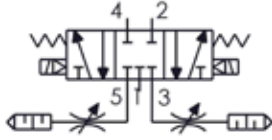
- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Power-assisted system.





### Solenoid valves

#### SAI4-2054 - 5/3 closed-centre solenoid valve



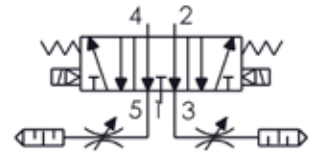
- Low consumption: 0,55W.
- LED display and surge absorber.
- 3 spring centring positions.
- Power-assisted system.
- Flow restrictors with silencer.



#### 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.



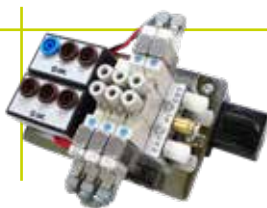
#### SAI4-2112 - 5/3 solenoid pressure valve



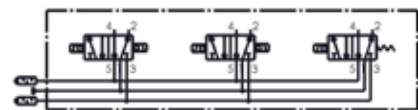
- Low consumption: 0,55W.
- LED display and surge absorber.
- Three positions with spring centring.
- Power-assisted system.
- Flow restrictors with silencer.



#### 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

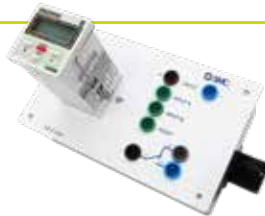
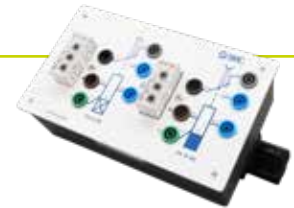


#### SAI4-2047 - Indicators (pilots, buzzer)

- 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.

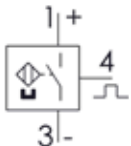


#### SAI4-2043 - Reed auto switch

- Operating voltage: 24V.
- Maximum current: 40mA.
- Includes LED display.



#### SAI4-2128 - Solid state auto switch

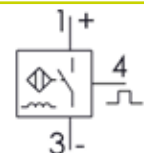


- Operating voltage: less than 28Vdc.
- Maximum current: 150mA.
- PNP output, open catch.
- Includes LED display.



#### SAI4-2044 - Inductive detector

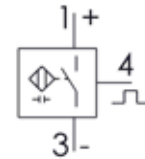
- Includes M18 inductive detector.
- Detection distance: 5mm.
- Operating voltage: 24V.
- Includes an LED indicating status and quick connection cables.



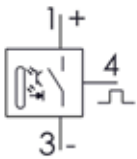


### SAI4-2046 - Capacitive detector

- Includes M18 capacitive detector.
- Detection distance: 8mm.
- Status display LED.
- Operating voltage: 24V.



### SAI4-2045 - Photoelectric detector

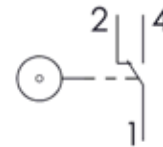


- Includes M18 reflection photoelectric detector.
- Detection distance: 600mm.
- Status display LED.
- Operating voltage: 24V.



### 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.



### Benchtop PLC module\*



#### 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.**



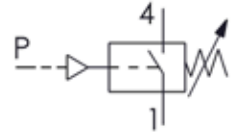


## P/V - V/P converters

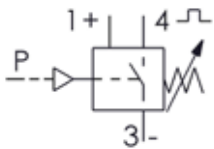


### SAI4-2041 - Electrical contact pressure switch

- Includes pneumatic-electrical converter.
- 0-0,8MPa adjustable, with pressure indicator display.



### SAI4-2095 - Pressure switch, towards transistor

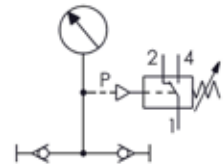


- PNP output with built-in LED display.
- Operating voltage: 12-24Vdc.

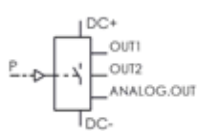


### SAI4-2098 - Pressure gauge with electrical contact

- 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

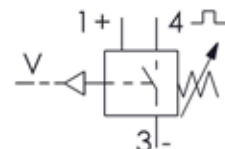


- Pressure indicator display of 3 1/2 digits.
- Operation indicator gauge.
- Adjustment of positive and vacuum pressure.
- Power supply between 12 and 24Vdc.
- Double PNP output in open catch, plus analog output.

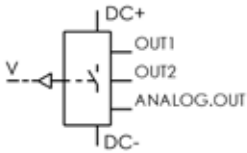


### SAI4-2096 - Vacuum pressure switch, towards transistor

- 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

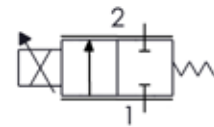


- Proportional transducers, adjustable pressure and programmable.
- 3-digit display gauge.
- Input code: 4-20mA.
- Analogic output signal: 1-5V.

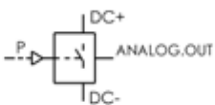
### SAI4-7566 - Proportional flow rate 2-way electro valve



- Flow adjustment in accordance with analog code.
- Integrated control amplifier-converter card. Direct control by 4 to 20 mA current.
- Operating differential pressure: 0-0.7 MPa.



### 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.

(x10)

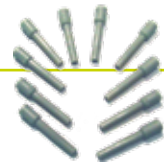


#### SAI2059 - Set of 5 plugs, 1/8"

- 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.



(x10)

#### 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.

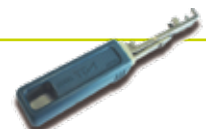


### Trays containing components

SAI4-2133 / SAI4-2134 / SAI4-2135

#### TG-1 - Tube-extractor

- Tool for an easy and quick extraction of the pipe (4 and 6mm).



### 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

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.

### 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.