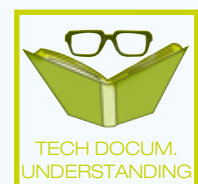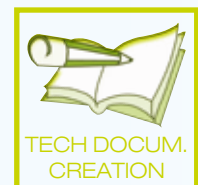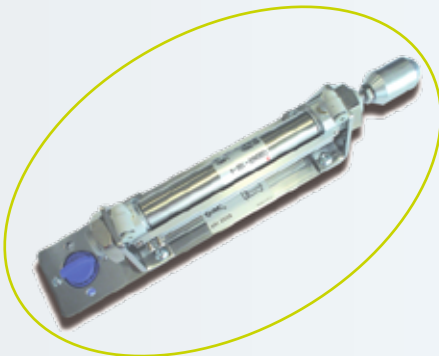# PNEUTRAINER-200

Pneumatics - Electro-pneumatics

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

Develop the SKILLS...

ANALYSIS

TROUBLESHOOTING

DESIGNING

TECH DOCUM.
CREATION

INSTALLATION
AND ASSEMBLY

TECH DOCUM.
UNDERSTANDING

OPERATION

PROGRAMMING

Implements and controls pneumatic and electro-pneumatic circuits
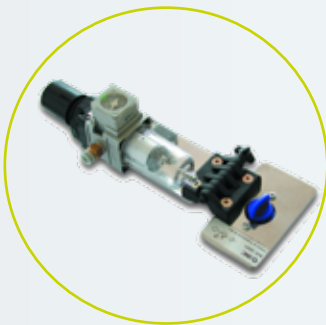
SMC industrial systems components on panel mounting plate

In the following TECHNOLOGIES...

PNEUMATICS

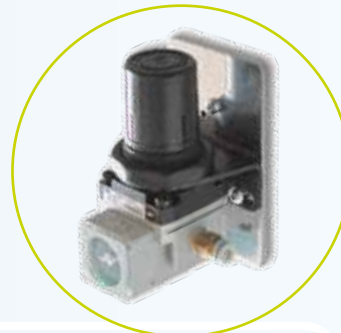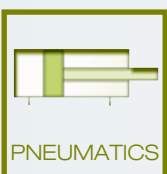VACUUM

SENSORS

PROGRAMM.
CONTROLLERS

● PNEUTRAINER-200 - Pneumatics - Electro-pneumatics

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

Its flexibility makes PNEUTRAINER-200 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 include fittings for quick connection for 4 mm tube. The electro-pneumatics have 2 mm test lead connections.

Storage

The standard kits include a storage system in EUROBOX containers with thermo-moulded 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-200 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 KITS	
SAI2281	PNEU-201: Basic pneumatics set
SAI2282	PNEU-202: Advanced pneumatics set
SAI2283	PNEU-203: Basic electro-pneumatics set
SAI2284	PNEU-204: Advanced electro-pneumatics set
SAI2285	PNEU-205: Pneumatics- electro-pneumatics set
SAI2286	PNEU-206: Proportional pneumatics set

SPECIFICATIONS
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TECHNICAL DESCRIPTIONS

PNEUTRAINER-200 - With this system you could...

PNEUTRAINER-200 comes up with different practical activities targeting skills in the technologies featuring in the table (below).

TECHNOLOGIES

SKILLS	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-200 with our eLEARNING-200 courses.

RELATED eLEARNING-200 COURSES

Principles of pneumatics (SMC-101)
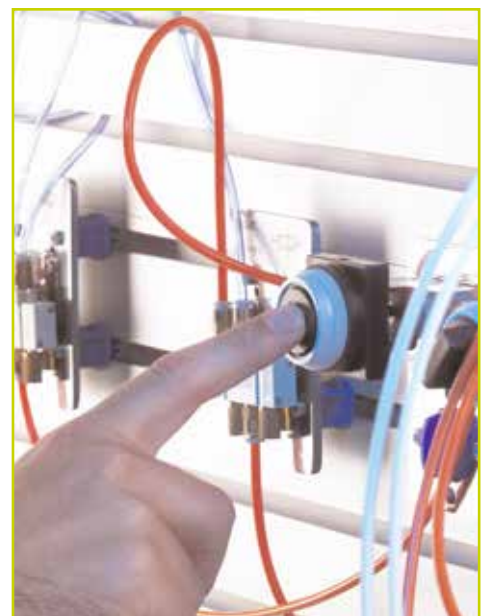
Introduction to electricity (SMC-102)

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-200 is suitable to develop skills in the specific technology.

▒ This shows that PNEUTRAINER-200 can help develop skills in the specific technology even though there are other more appropriate products in the range.

■ PNEUTRAINER-200 - Extra equipment

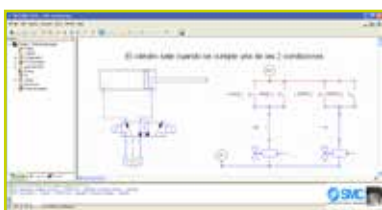There are other products in the range to complement PNEUTRAINER-200.

• VAC-200

The VAC-200 equipment is particularly designed to develop skills related to vacuum technology.

See VAC-200 chapter for more information.

• autoSlM-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-200 - Configuration

Getting the right PNEUTRAINER-200 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-200 - Standard kits

Ref.	Description	PNEU KITS					
		201	202	203	204	205	206
	Air preparation						
SAI2091	Air cleaning unit with 3/2 distribution valve	1	1	1	1	1	1
SAI2092	Distribution block	1	1	1	1	1	1
SAI2005	Pressure regulator with pressure gauge	1	1	1	1	1	1
SAI2004	1 MPa pressure gauge	1	2	1	1	1	
SAI2032	Soft start-up valve				1		
	Manual - mechanical valves						
SAI2015	3/2 NC valve, operated by push-button	2	2			2	
SAI2017	Double 3/2 NC valve, operated by a push-button		1				
SAI2018	3/2 NC/NO valve, operated by a push-button	1	1			1	
SAI2019	3/2 NC valve, operated by an emergency knob	1	1			1	
SAI2013.1	FC 3/2 NC valve, operated by roller lever	2	4			2	
SAI2014.1	FC 3/2 NC valve. Operated by one-way roller lever	1	1			1	
SAI2016	3/2 NC switch-operated double valve	1	1			1	
SAI2109	5/2 valve driven by push-button		1				
SAI2021	5/2 valve with 2-position selector	1	1			1	
SAI2025	5/3 valve with selector		1				
	Air operated valves						
SAI2020	3/2 NC/NO, air operated single valve	1	1			1	
SAI2010	3/2 NC convertible valve	1	1			1	
SAI2023	Air operated 5/2 single valve	1	1			1	
SAI2024	Air operated 5/2 double valve	3	3			3	
SAI2107	Block of 2 x 5/2 double valves + 1 x 5/2 single valve		1				
	Flow control equipment						
SAI2007	"OR" function	1	1			1	
SAI2124	Double "OR" valve	1	1			1	
SAI2006	"AND" function	1	1			1	
SAI2125	Double "AND" valve		1				
SAI2031	Single direction speed controller (double)	2	2	2	2	2	
SAI2033	Quick exhaust valve	1	1			1	
SAI2008	Check valve		1				
SAI2126	Speed controller with controlled check valve		2		2		
SAI2030	Two-direction speed controller for single acting cylinder		1				
	Actuators						
SAI2027	Single acting cylinder	1	1	1	1	1	
SAI2026	Double acting cylinder with rubber cushion	2	2	2	2	2	
SAI2071	Double acting cylinder with adjustable air cushion		1				
SAI2118	Mechanically coupled rodless cylinder		1				
SAI2123	Cylinder with load		1		1		
SAI2120	Stroke reading cylinder						1
	Pneumatics various						
SAI2029	Vacuum ejector with pad		1		1		
SAI2003	Pressure indicator (reed)		1				
SAI2127	Pressure vessel		1				1
SAI2121	Pulse counter for reading cylinder						1
SAI2012	Pneumatic counter		1				

Ref.	Description	PNEU KITS					
		201	202	203	204	205	206
Solenoid valves							
SAI2050	3/2 NC single solenoid valve			1	1	1	
SAI2111	3/2 double solenoid valve				1		
SAI2053	5/2 double solenoid valve			3	3	3	
SAI2052	5/2 single solenoid valve			2	2	2	
SAI2054	5/3 closed-centre solenoid valve				1		
SAI2114	Block of 2 solenoid valves, 5/2 double + 1 single				1		
Control modules							
SAI2056	Power supply			1	1	1	1
SAI2035	ON/OFF switch				1		
SAI2034	Emergency stop knob (electrical)				1		
SAI2036	Set of electrical inputs (Button pad with 3 push-buttons)			1	1	1	
SAI2038	Set of 3 relays			1	2	1	
SAI2047	Indicators (pilots, buzzer)			1	1	1	
SAI2040	Set of 2 timer relays				1		
SAI2048	Electric counter				1		
SAI2049	Electrical distributor			1	1	1	
SAI2043	Reed auto switch			4	4	4	
SAI2128	Solid state auto switch				2		
SAI2044	Inductive detector				1		
SAI2046	Capacitive detector				1		
SAI2045	Photoelectric detector				1		
SAI2042	Electrical end of stroke			2	2	2	
P/V - V/P converters							
SAI2041	Electrical contact pressure switch			1	1	1	
SAI2095	Pressure switch, towards transistor				1		
SAI2098	Pressure gauge with electrical contact			1	1	1	
SAI2097	Programmable digital pressure switch. Analog / digital outputs				1		1
SAI2096	Vacuum pressure switch, towards transistor				1		
SAI2099	Programmable proportional electro-pneumatic transducer						1
SAI2104	Analog pressure sensor						1
SAI2105	Digital Pressure Display for analog sensor						1
Accessories							
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		
SAI2055	Set of connection cables			1	1	1	1
TK-3	Tube-cutter	1	1	1	1	1	1
SAI2076	Box with trays for basic pneumatics composition	1					
SAI2078	Box with trays for advanced pneumatics composition		1				
SAI2077	Box with trays for basic electro-pneumatics composition			1			
SAI2079	Box with trays for advanced electro-pneumatics composition				1		
SAI2062	Box with trays for pneumatic-electropneumatic composition					1	
SAI2602	Box with trays for proportional pneumatic composition						1
SAI2307	10 m. tube black. ø6mm	1	1	1	1	1	1
TG-1	Tube-extractor	1	1	1	1	1	1
Didactic supports							
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 posts	SAI2088	Silent compressor
SAI2074	Drawer unit for rolling table with lock	SAI2080	Horizontal mounting panel
SAI2066	Drawer unit for rolling table without lock	SAI2089	Cable holder fitting
SAI2065	Rolling table with twin-post		

SPECIFICATIONS DOWNLOAD www.smctraining.com TECHNICAL DESCRIPTIONS

PNEUTRAINER-200 - Customized sets

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 panels solutions 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 positions

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 - Rolling table with twin-post

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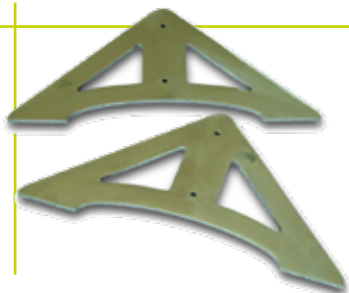
With non-slip legs, allowing the user to convert the horizontal mounting panel into a vertical panel.

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.

SAI2088 - Silent compressor

- Model ICO-P50
- Two-phase power supply: 230V.
- 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.

SAI2089 - Cable holder fitting

This supports orderly storage of connection cables.

Air preparation

SAI2090 - 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.
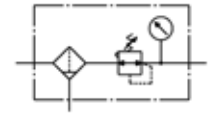
SAI2091 - Air cleaning unit with 3/2 distribution valve
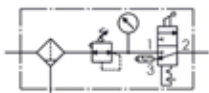
- Consisting of a filter, a regulator, and a 1 MPa pressure gauge.
- 5µm filtering.
- Includes a 3/2 discharge valve with silencer for connection and disconnection of the rest of the circuit.
- Option of vertical and horizontal positioning.
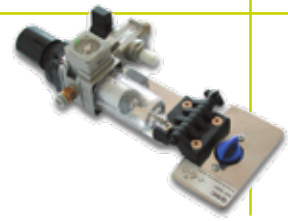
SAI2001 - Air cleaning unit with lubricator
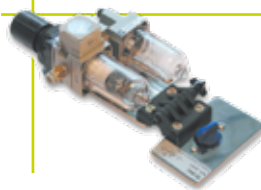
- Consisting of filter, regulator, lubricator and 1 MPa pressure gauge.
- 5µm filtering.
- Possibility of vertical and horizontal positioning.
- Input for a 6mm tube, output for a 4 mm tube.
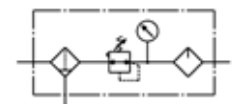
SAI2092 - Distribution block
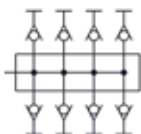
- Includes 8-outlet distribution block, one-touch fittings and non-return system.
- Direct coupling to the air cleaning unit.
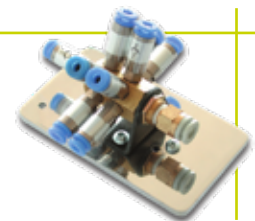
SAI2002 -Distribution block with 3/2 distribution valve

- 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.
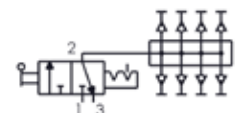
SAI2005 - Pressure regulator with pressure gauge

- Operating pressure 0-0,1 MPa.
- Includes double-scale pressure gauge (Mpa and psi).
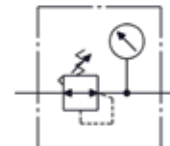
SAI2004 - 1 MPa pressure gauge

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

SAI2093 - 0,25MPa pressure gauge
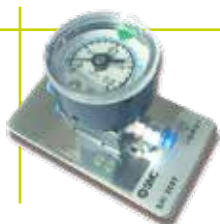
- With double entry and a double scale (0-0,25MPa/ 0-35psi).

SAI2094 - Vacuum pressure gauge

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

SAI2032 - Soft start-up valve

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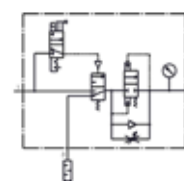
Manual - mechanical valves

SAI2015 - 3/2 NC valve, operated by push-button

- Industrial grade push-button, normally in closed position, spring-return.
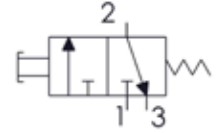
SAI2017 - Double 3/2 NC valve, operated by a push-button
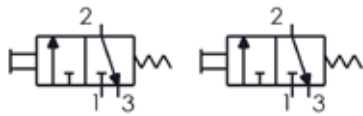
- Includes two 3/2 port industry grade push-buttons.
- Red and black colour action.
- Spring-return.
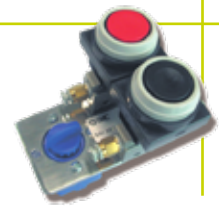
SAI2018 - 3/2 NC/NO valve, operated by a push-button

- Includes a 3/2 port valve, which the user can convert from normally-open to normally-closed, as required.
- Spring return.
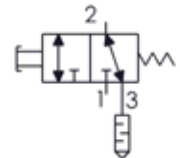
SAI2019 - 3/2 NC valve, operated by an emergency knob
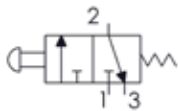
- Driven by approved emergency-type knob.
- Spring-return.

SAI2108 - 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.
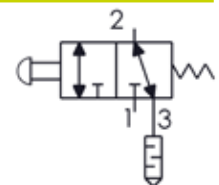
SAI2013.1 - 3/2 NC valve, operated by roller lever
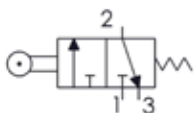
- Mechanical roller action.

SAI2014.1 - 3/2 NC valve. Operated by one-way roller lever

- One-way roller lever.
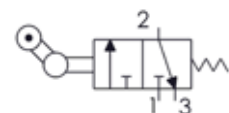
SAI2016 - 3/2 NC switch-operated double valve

- Includes 3/2 port valve with locking system.
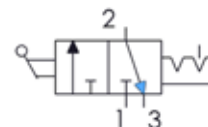
SAI2022- 3/2 valve, operated by toggle lever
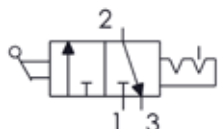
- 3/2 valve with lever and locking action.
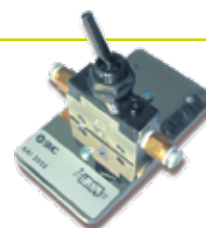
SAI2109 - 5/2 push-button valve

- Flush push-button NC with spring-return.
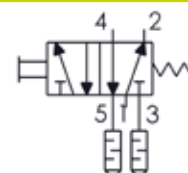
SAI2110- 5/2 valve operated by mushroom push-button
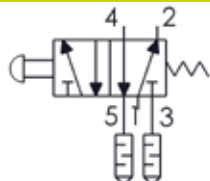
- Activated by approved emergency knob.
- Spring-return.

SAI2021 - 5/2 valve with 2-position selector

- Power-assisted valve driven by a locking switch.
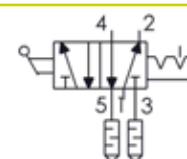
SAI2067- 5/2 lever-operated valve
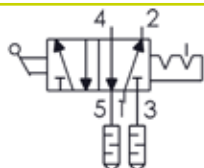
- Lever-operated.

SAI2025 - 5/3 valve with selector

- 5/3 exhaust-centre type valve.

Air operated valves

SAI2020 - 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.
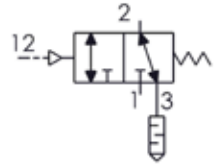
SAI2010 - 3/2 NC convertible valve
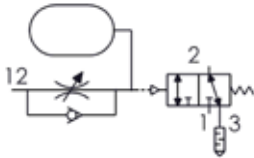
- Basic timer, convertible from NC to NO.
- Timing range, 0 to 5s.
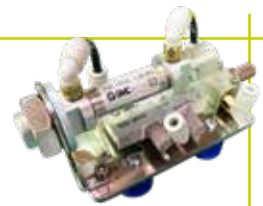
SAI2023 - Air operated 5/2 single valve

- Spring-return pneumatic pilot valve.
- Possibility of manual operation.
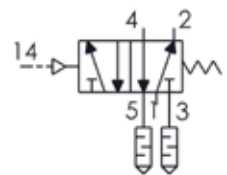
SAI2024 - Air operated 5/2 double valve
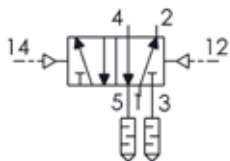
- Double piloting with memory function.
- Possibility of manual operation.

SAI2107 - 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.
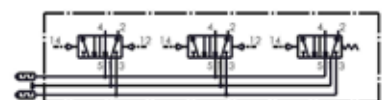
Flow control equipment

SAI2007 - "OR" function
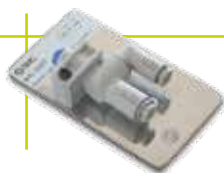
- Includes a single circuit selector with logic function "OR".
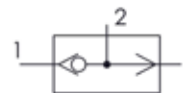
SAI2124 - Double "OR" valve
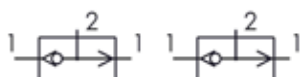
- Includes double circuit selector with logic function "OR".

SAI2006 - "AND" function
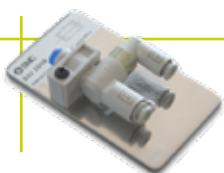
- Includes a single-simultaneous valve with a logic function "AND".
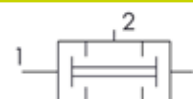
SAI2125 - Double "AND" valve
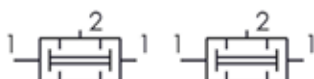
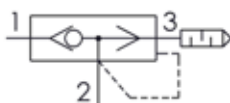- Includes double simultaneous valve with logic function "AND".

SAI2031 - Single direction speed controller (double)

- Includes two single direction speed controllers, manually adjusted.
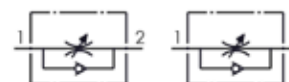
SAI2033 - Quick exhaust valve

- Includes a free exhaust valve with silencer.

SAI2008 - Check valve
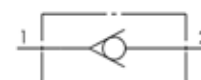
SAI2126 - Speed controller with controlled check valve
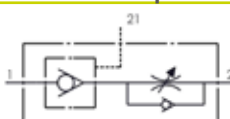
- Integrated controlled non-return valve and speed controller.
- Allows temporary intermediate lock-out and control of speed.

SAI2030 - Two-direction speed controller for single acting cylinder

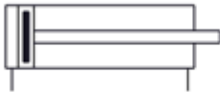- Includes two-direction speed controller for single acting cylinders.

Actuators

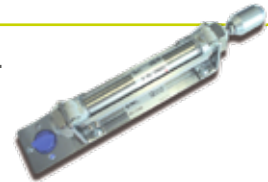### SAI2027 - Single acting cylinder

- Rod normally retracted.
- Stainless steel construction Diameter 20mm. Stroke 50mm.
- Rubber cushion.
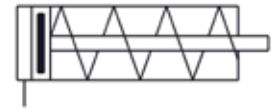
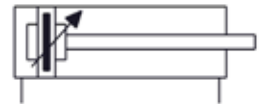### SAI2026 - Double acting cylinder with rubber cushion

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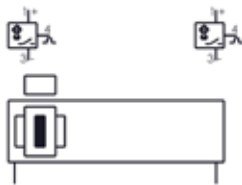- Rubber cushion.
- Rail to house end-of-stroke auto switches.

### SAI2071 - Double acting cylinder with adjustable air cushion

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

### SAI2117 - 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 (SAI2128; D-F7PL).
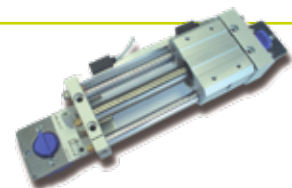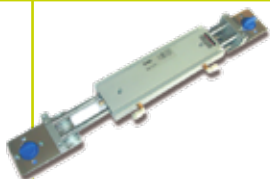
### SAI2118 - Mechanically coupled rodless cylinder
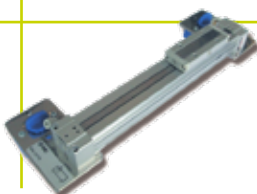
- Exterior diameter 16mm. Stroke 100mm. Mechanically-driven.
- Speed 100 to 150mm/s.
- Option to mount detectors on either side of the casing.
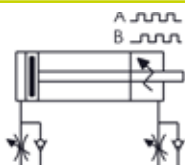- Includes 2 solid state, 3-wire D-M9PL sensors.
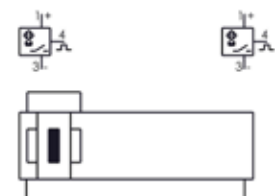
SAI2119 - Dual rod cylinder

- Stroke: 100mm.
- Rod with 4 support points on friction bushing.
- Speed 50 to 500mm/s.
- Rubber cushion.
- Includes 2 solid state magnetic sensors (D-Y7PL).
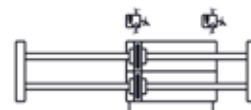
SAI2120 - Stroke reading cylinder

- 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 SAI2121.*
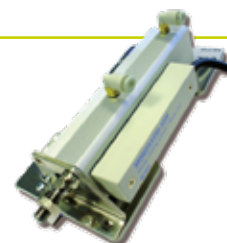
## SAI2122 - Linear / rotary actuator with vacuum pad

- 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 (SAI2128; D-F7PL).
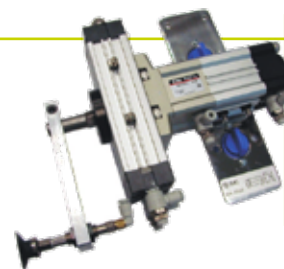
SAI2123 - Cylinder with load

- Two cylinders, one actuator and another as a load.
- Bore 16 and 20mm, stroke 50mm.
- Using flow regulators the load applied can be varied.
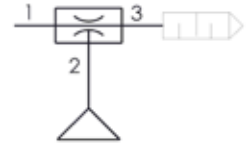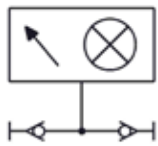- Includes two reed type magnetic sensors (D-C73L).
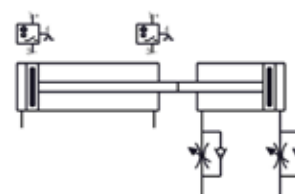
Pneumatics various

SAI2029 - Vacuum ejector with pad

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

SAI2003 - Pressure indicator (reed)

- IIncludes a red optical gauge with a display angle of 180º.
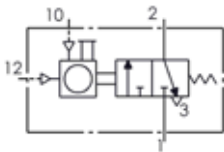
SAI2207 - Pressure indicator (green)
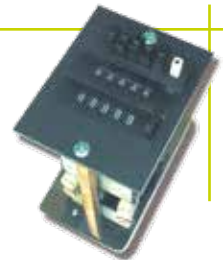
SAI2127 - Pressure vessel
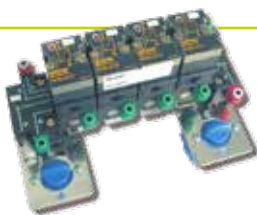
- Pneumatic capacity: 10,2ml.

SAI2012 - Pneumatic counter

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

SAI2011 - Pneumatic sequence controller

- Pneumatic sequence controller module, in four stages, including the "AND" / "OR" functions required.

SAI2121 - 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 90º**

- The attachment system to the mounting panel allows a positional change to allow the user to work transverselly instead of longitudinally, for case of cylinders and also ends of stroke.
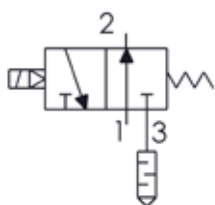
Solenoid valves
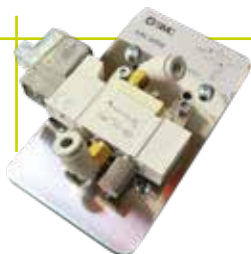
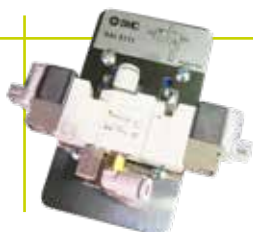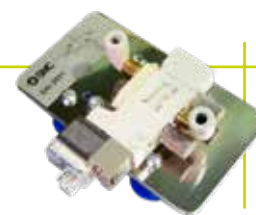### SAI2050 - 3/2 NC single solenoid valve

- Low consumption: 0,55W.
- LED display and surge absorber.
- Spring and air reset.
- Normally closed.
- Power-assisted system.
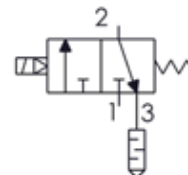
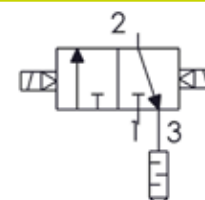### SAI2051 - 3/2 NO single solenoid valve

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

SAI2111 - 3/2 double solenoid valve

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

SAI2052 - 5/2 single solenoid valve

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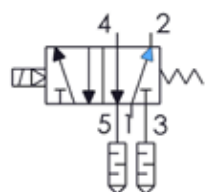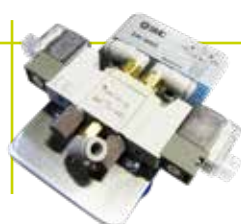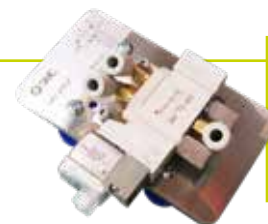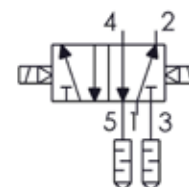- Spring and air reset.
- Power-assisted system.
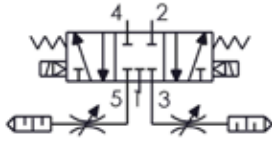

SAI2053 - 5/2 double solenoid valve

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

Solenoid valves

SAI2054 - 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.
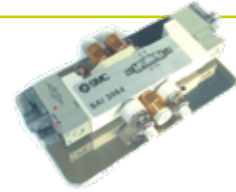
SAI2113 - 5/3 solenoid valve, exhaust centres

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

SAI2112 - 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.

SAI2114 - 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.
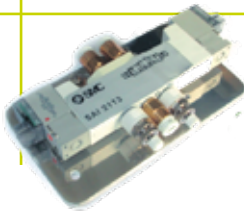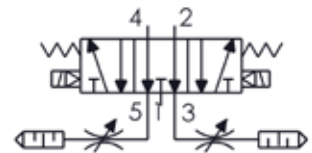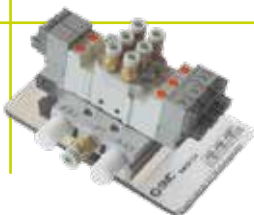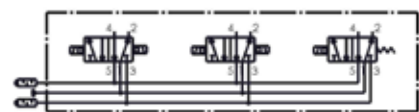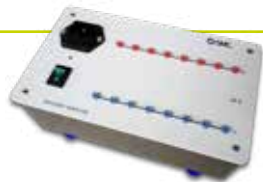- 3-solenoid valve assembly on multiple base plate.

Control modules

SAI2056 - Power supply

- Input voltage: 220V / 110V.
- Output: 24V / 2,5A.
- Protection against short circuits.
- Input switch and LED display.
- Supply cable included.

SAI2035 - ON/OFF switch

- 2mm terminals for use with test connectors.
- Includes latching pushbutton.
- Two independent contacts, NO and NC.

SAI2034 - Emergency stop knob (electrical)

- 2 mm terminals for use with test connectors.
- Includes double contact, NO and NC.

SAI2036 - Set of electrical inputs (Button pad with 3 push-buttons)

- 2 mm. terminals for use with test connectors.
- Two push-buttons and a latching push-button.
- Independent light indicator.
- Two push-button switch contacts.

SAI2038 - Set of 3 relays

- Includes three relays with 24V coil and 4 switchable contacts.
- Relay-active LED.
- 2mm terminals for use with snap connection cables.

SAI2037 - Relay, 4 switched contacts

- Includes relay with 24V coil and 4 switched contacts.
- LED display of active relay.

SAI2039 - Timed relay closure

- Includes disconnection timer relay.
- LED display showing timer status.
- Time programmable between 0,1s and 1h.
- 2mm terminal for snap connection cabling.

Control modules

SAI2047 - Indicators (pilots, buzzer)

- Includes 8 pilot lights and a buzzer.
- Supplementary sockets for power distribution.
- 2mm sockets for test connection cables.

SAI2040 - 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.

SAI2048 - Electric counter

- Includes inputs for counting and discounting.
- Power supply: 24V.
- Electromechanical preselection.
- Manual or electrical reset.
- Switch contact.
- 2mm sockets for test connection cables.

SAI2049 - Electrical distributor

- It has 5 blocks of 10x10mm. Interconnected sockets.
- This allows the user to carry out simple interconnections for complex circuits on different parts of the panel.
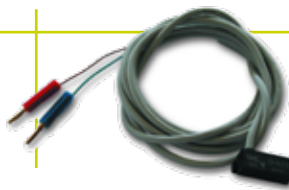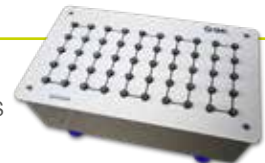
SAI2043 - Reed auto switch

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

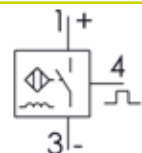### SAI2128 - Solid state auto switch
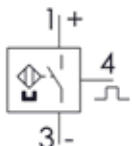
- Operating voltage: less than 28Vdc.
- Maximum current: 150mA.
- PNP output, open catch.
- Includes LED display.
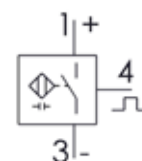
SAI2044 - Inductive detector

- Includes M18 inductive detector.
- Detection distance: 5mm.
- Operating voltage: 24V.
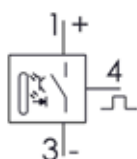- Includes an LED indicating status and quick connection cables.
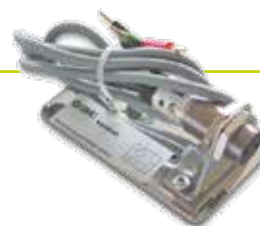
SAI2046 - Capacitive detector

- Includes M18 capacitive detector.
- Detection distance: 8mm.
- Status display LED.
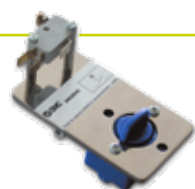- Operating voltage: 24V.
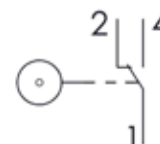
SAI2045 - Photoelectric detector

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

SAI2042 - Electrical end of stroke

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

SAI2129 - Alpha2 microPLC for panel*

- Alpha2 microPLC, model AL2-14MR-D (8 inputs/6 relay outputs).
- Includes manual for programming software and instructions, and also a memory module and computer connection cable.
- Power supply: 24Vdc.
Enquire about other PLCs

SAI2143 - 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.
- Power supply: 100-240V.
- Built-in power cable.

SAI2130 - Interface module, inputs / outputs for panel

- Allows adaptation of signals from the universal PLC trainer, for work to be carried out with the electro pneumatic panel.
- Input via SUB-D connector and output via 2mm nuts.
- Includes attachment features for mounting panel.

SAI2131 - Input/output simulation module for panel

- Includes electromechanical switches for simulation of inputs and LED displays for simulation of outputs.
- Connection by SUB-D connector or nuts.
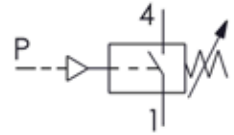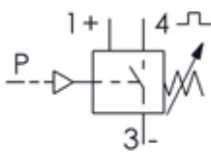- Totally compatible with PLC trainer and with PNEUTRAINER-200.

P/V - V/P converters

SAI2041 - Electrical contact pressure switch

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

SAI2095 - Pressure switch, towards transistor

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

SAI2098 - Pressure gauge with electrical contact
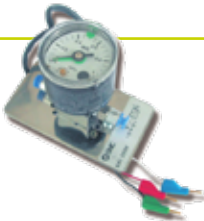
- Pressure switch function included in a pressure gauge.
- Pressure range: 0 to 0,1 MPa.
- Ideal for checking in-line pressure.
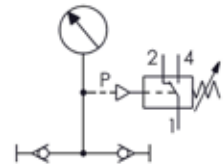
SAI2097 - Programmable digital pressure switch. Analog / digital outputs
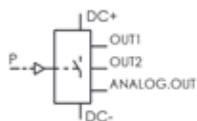
- Pressure indicator display of 3 1/2 digits.
- Operation indicator gauge.
- Adjustment of positive and vacuum pressure.
- Power supply between 12 and 24Vdc.
- Double PNP output in open catch, plus analog output.

SAI2096 - Vacuum pressure switch, towards transistor

- Pressure range adjustment -0,1 to 0 MPa.
- PNP output
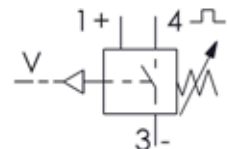
SAI2072 - Programmable digital vacuum pressure switch. Analog / digital outputs

- Operating voltage: 24V.
- Consumption: 45mA.
- Pressure range: -1 to 0,1 MPa.
- Three numerical digits.
- PNP output with snap connection cables.

SAI2099 - Programmable proportional electro-pneumatic transducer

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

SAI2100 - Proportional pressure valve

- Pressure adjustment in accordance with analog code.
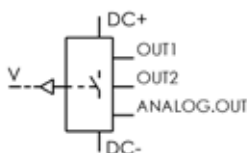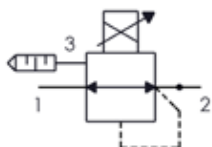- Connectable to control amplification card.
- Operating pressure; 0,05-0,65 MPa.

SAI2101 - Proportional flow rate valve

- Pressure adjustment in accordance with analog code.
- Connectable to control amplification card.
- Operating pressure; 0-0,1MPa.
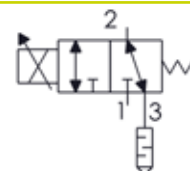
SAI2102 - Amplifier card for proportional valve

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

SAI2103 - 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.

SAI2104 - Analog pressure sensor

- Pressure range: 0 to 1 MPa.
- Supply voltage: 12 to 24Vdc.
- Output: 1 to 5Vdc.

SAI2105 - 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.

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.

SAI2132 - Set of 10 "Y" fittings

- Set of 10 one-touch fittings for 4mm tubes.

(x10)

TK-3 - Tube-cutter

- Tool for clean cuts, perpendicular to the length of the tube.

SAI2055 - Set of connection cables

- Includes 50xo2mm one-touch connection cables, with different colours and lengths.

Boxes containing components

SAI2076 for PNEU-201
SAI2078 for PNEU-202
SAI2077 for PNEU-203
SAI2079 for PNEU-204
SAI2062 for PNEU-205
SAI2602 for PNEU-206

- Boxes in EUROBOX format allow orderly storage of components.
- Includes moulded polystyrene trays with identification labels for housing of components to ease their identification and control.
- Allows extension of additional trays and boxes.

Trays containing components

SAI2133 / SAI2134 / SAI2135

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.

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.