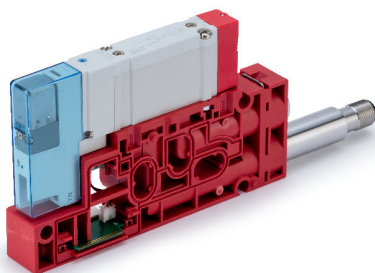
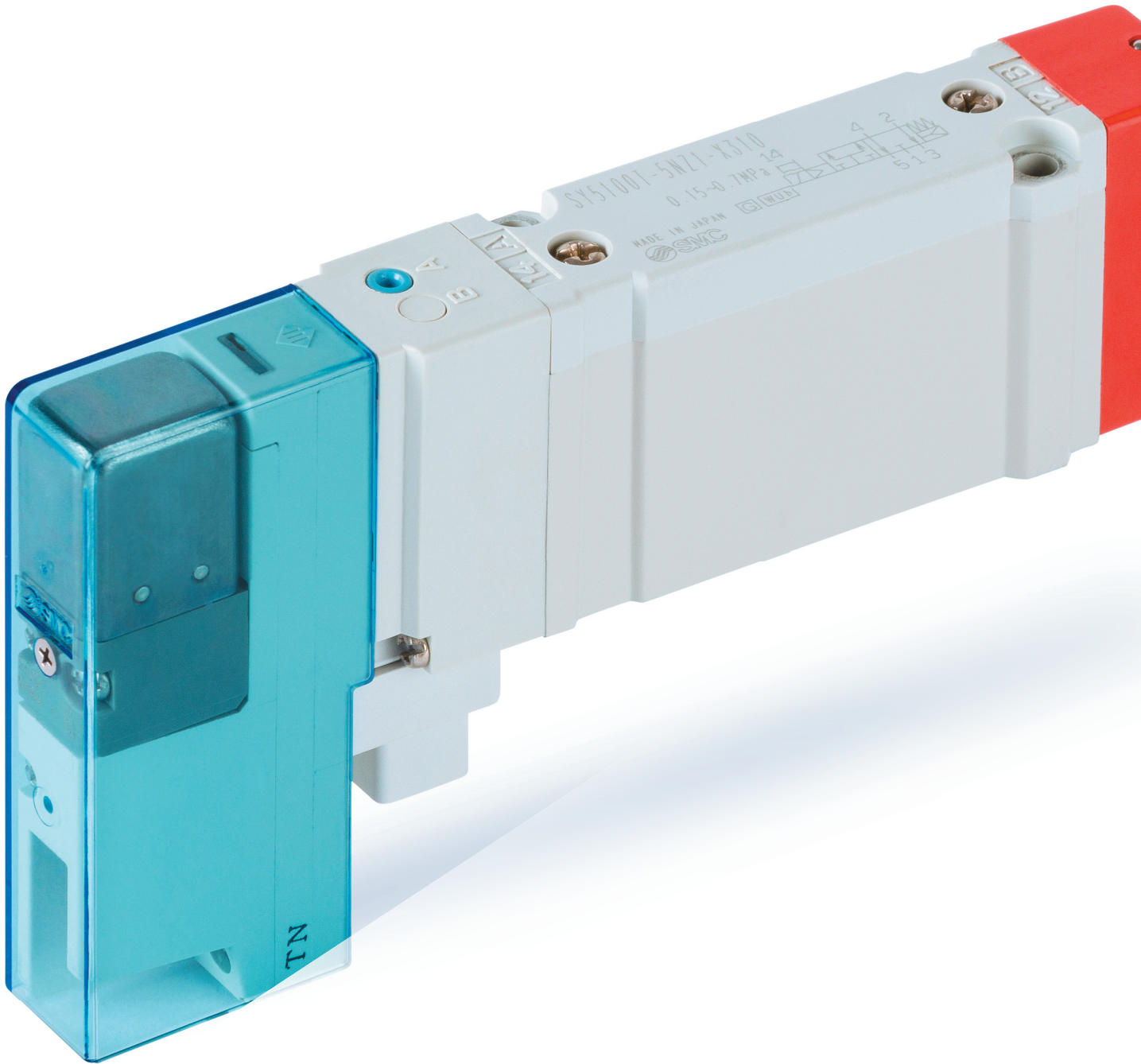




Expertise – Passion – Automation



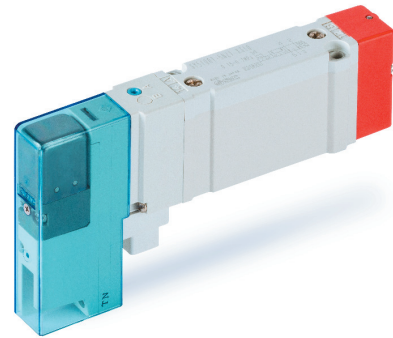
Your safety in our focus

Safety-related products
Pilot air control valve
with pressure detection option
SY-X310 Series

Pilot air control valve with pressure detection option

SY-X310 Series

- ▶ We focus on machinery safety as a key part of our product development strategy. This version will help satisfy your machine safety system requirements.



Main features

▶ A pilot air supply control valve with the option for pressure detection - the concept

The valve is used to control the pilot air supply to externally piloted valves on the manifold. A pressure switch can be used to monitor the pilot pressure in the manifold. This indirect monitoring provides a medium level of diagnostic coverage.

▶ Validated according to ISO 13849-2

This product is capable of meeting the relevant basic and well-tried safety principles.

Please download our reliability data for the details.

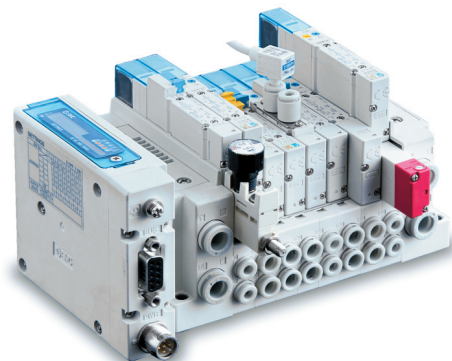
▶ SISTEMA library is available

SY safety-related valves data are additionally integrated into the SISTEMA software tool.

Download the library file from our website and be ready to build your safety function.

▶ SY series valves

Benefit from the high versatility this series gives you and create your own configuration, tailored to your needs.



Applications

Controlling the pilot air supply to externally piloted manifold mounted valves.

To confirm the removal of pilot air, a suitable pressure detection switch is available from a third party supplier.

Note: SMC takes no responsibility and accepts no liability for the use of third party products.

How to order

Base mounted SY5100 - NZ1 - - X310

Top ported SY5130 - NZ1 - - - X310

① ② ③ ④ ⑤

① Coil type

—	Standard
T	With power saving circuit (continuous duty type)

② Rated voltage

5	24 VDC
6	12 VDC

③ A, B port size

O1	1/8"
C4	One touch fittings for Ø 4 tube
C6	One touch fittings for Ø 6 tube
C8	One touch fittings for Ø 8 tube

④ Thread type

—	Rc
F	G
N	NPT
T	NPTF

⑤ Type of mounting screw

—	Round head combination screw
K	Round head combination screw (falling-out-prevention type)
H	Hexagon socket head cap screw (falling-out-prevention type)

Note) Refer to the reliability data for the latest "How to order".

Best selling part numbers

Part number
SY5100T-5NZ1-X310

Note) For more information please check www.smc.eu

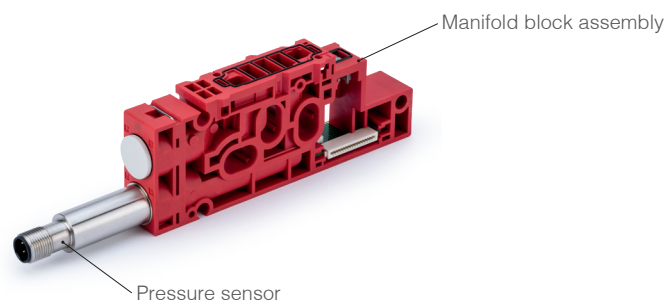
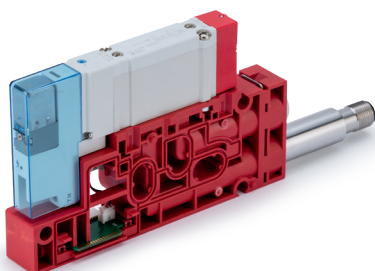
Plug-in base

Part number	Manifold series
SY50M-2-14SA-C0	SY5000
SY70M-2-19DA-C0	SY7000

Note) This special base is required.

Pressure detection for SY-X310

Part number	Valve series
F08-2000-M12-M	SY5000
F08-7000-M12-M	SY7000



Valve specifications

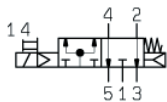
Valve type		5-port solenoid valve
Valve type		Air
Internal pilot operating pressure range [MPa]	2-position single	0.15 to 0.7
Ambient and fluid temperature [°C]		-10 to 50 (No freezing)
Manual override		Non-locking push type
Max. operating frequency [Hz]	SY5000 2-position single	5
Min. operating frequency		1 cycle every 30 days
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance ¹⁾ [m/s ²] (EN 60068)		150/30
Enclosure		IEC60529 standard IP67
Coil rated voltage [VDC]		24 and 12
Allowable voltage fluctuation [V]		Standard type { 24 VDC: -7 % to +10 % 12 VDC: -4 % to +10 % T type { 24 VDC: -8 % to +10 % 12 VDC: -6 % to +10 %
Power consumption [W]		Standard 0.4 With power saving circuit 0.1 ²⁾ [Inrush 0.4, Holding 0.1]
Surge voltage suppressor		Diode (Varistor for non-polar type)
Indicator light		LED
Pilot exhaust type		Main/pilot valve common exhaust
Filtration		5 µm filtration or smaller

1) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every time in each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energised and de-energised states in the axial direction and at right angles to the main valve and armature. (Values at the initial period)

2) For technical data which are not shown in this document, please see the instruction manual or the standard catalogue at www.smc.eu.

Symbol



Manifold flow characteristics ^{1) 2)}

Plug-in metal base

Series	Piping option	Port size		Valve flow-rate characteristics					
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→E)		
				C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾	C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾
SY5000	Side ported	1/4	C8	2.6	0.28	653	2.6	0.14	603
	Bottom ported	1/4	C8	2.7	0.35	709	2.8	0.20	671

Resin base

Series	Piping option	Port size		Valve flow-rate characteristics					
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→E)		
				C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾	C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾
SY5000	Side ported	C10	C8	3.3	0.30	839	3.6	0.17	848
	Bottom ported	C10	C8	3.3	0.29	834	4.2	0.26	1042

1) The value is for manifold base with 5 stations and individually operated 2-position type.

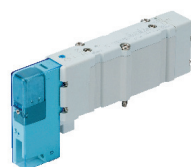
2) These values are applicable to rubber seal type valves.

3) These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

Note

For confirmation of detailed specifications and dimensions, refer to product drawings, instruction manual, reliability data and catalogue at www.smc.eu.

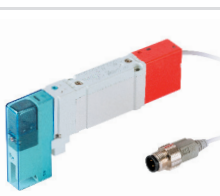
Other related SY products



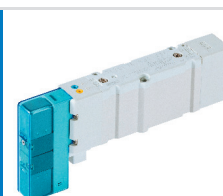
5 port solenoid valve with spring return spool
SY-X350 Series



5 port solenoid valve with spool position detection
SY-X30 Series



Pilot air control valve with spool detection
SY-X31 Series



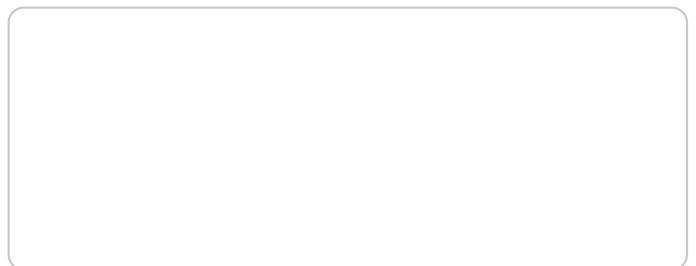
5 port solenoid valve with detent
SY-X25 Series



Expertise – Passion – Automation

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