

# 64-station Compatible Manifold Plug-in Compact 5-Port Solenoid Valve

Valve stations/Number of outputs: For 4 to 64 stations<sup>\*1</sup>/128 points

\*1 Stations are only available in multiples of 4.

### Compatible protocols: EtherNet/IP EtherCAT > O IO-Link

(RoHS)

110 mm shorter

10 % reduction

### Space saving Reduced number of SI units

# Reduced wiring and wiring work

### Installation space: Reduced by up to 110 mm

#### Approx. 960 mm (64 stations)



8 lines

4 lines

# JSY3000-L Series

sets

# JSY3000-L Series Type 10 Plug-in Connector Connecting Base

#### **Manifold Specifications**

Wiring		Serial wiring EX260 for 64-station compatible manifold	
Manifold type		Plug-in connector connecting base (64-station compatible manifold)	
SUP/EXH port type		Common SUP/EXH (Common for the 3/5 port)	
Valve stations		4 to 64 stations	
Applicable connector		—	
Internal wiring		Negative common	
	1(P), 3/5(E) port	Ø 10 One-touch fitting	
Port size	4(A), 2(B) port	Ø 4 One-touch fitting, Ø 6 One-touch fitting, Ø 8 One-touch fitting	
Enclosure (Based on IEC 60529)		IP67	

#### Formula for 64-station Compatible Manifold Weight\*1

nt\*1 (Unit: g)

W = 47 x n1 + 473 + 138 x n2

n1: Valve stations\*2

n2: Number of intermediate SUP/EXH blocks

\*2 Stations are only available in multiples of 4 , from 4 stations to 64 stations.

\*1 Weight: "W" is the value for the internal pilot specification, the max. fitting size, and the manifold only. The valve weight is not included. To obtain the weight with valves mounted, add the valve weight given in the **Web catalogue on https://www.smc.eu** for the appropriate number of stations.

#### **Manifold Flow Rate Characteristics**

Model	Port size		Valve flow rate characteristics					
	1, 3/5 4, 2		$1 \rightarrow 4/2 \ (P \rightarrow A/B)$		$4/2 \rightarrow 3/5 (A/B \rightarrow E)$			
	(P, E) (A, E	(A, B)	C [dm <sup>3</sup> /(s·bar)]	b	Q [l/min(ANR)]*1	C [dm <sup>3</sup> /(s·bar)]	b	Q [l/min(ANR)]*1
JJ5SY3-L10 (Side ported)	C10	C8	2.23	0.30	567	2.77	0.27	691

\* Calculation of effective area "S" and sonic conductance "C": S = 5.0 x C

\* Values measured in accordance with ISO 6358:1989, JIS B 8390:2000

\*1 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.

# **≜**Caution

#### Securing the DIN Rail Mounting Type Manifold

 When mounting the manifold to a DIN rail using bolts, be sure that the bottom surface of the DIN rail is in contact with the manifold installation surface (in a horizontal state), then secure both ends of the DIN rail with the bolts. However, for other mounting methods or for side facing or upside down orientations, use the formula below to calculate the number of bolts to use at even intervals along the DIN rail.

#### Formula: Number of bolts = (Manifold stations + 5) / 5

(Round up to the nearest whole number)

Example) For 28 stations, secure in 7 locations as a guide.

2. When using the manifold with a DIN rail in an environment where any vibration or impact is applied to it, the DIN rail itself may break. In particular, if the installation surface vibrates when mounting the manifold on the wall, or if a load is directly applied to the manifold, the DIN rail may break, causing the manifold to drop. When any vibration, impact, or load will be applied to the manifold, be sure to use a direct mounting manifold.

#### Type 10 Side Ported

# 64-station Compatible Manifold Plug-in Connector Connecting Base Ex260 JSY3000-L Series (ELA RoHS)

**Internal Pilot** 

How to Order Manifolds

Only the dedicated SI unit can be mounted on the 64-station compatible manifold.



#### **3** SI unit

3

Symbol	Protocol	Connector	
<b>0</b> *1	Without SI unit		
F	PROFINET	M12	
E	EtherNet/IP™	M12	
D	EtherCAT	M8	
К	IO-Link	M12	

JSY3000

\*1 Not compatible with the DIN rail mounting type

#### 4 Manifold polarity

N Negative common

#### **5** Valve stations

10

Symbol	Stations	Note
04	4 stations	
08	8 stations	
:	÷	Double wiring* <sup>2</sup>
60	60 stations	
64	64 stations	

Side ported

\*2 Double wiring: 2-position single, 2-position double, 3-position, and 4-position valves can be used on all manifold stations. The use of a single solenoid will result in an unused control signal. This also includes the number of blanking

plates.

 For stations, only multiples of 4, from 4 stations to 64 stations, can be selected.
 The 4 boards inside the manifold are integrated.

# 8 Number of intermediate SUP/EXH blocks, mounting position

Symbol	Quantity	Mounting position
0	0	_
1	1	Specify the mounting position
÷	:	on the manifold specifications
6	6	sheet.

\* A block can be installed for every 4 valve stations, but as a guideline, it is recommended that one be installed for every 8 to 12 stations.

#### 9 4(A), 2(B) port size (Metric/One-touch fitting)

Symbol	A, B port	P, E port
C4	Straight Ø 4	
C6	Straight Ø 6	
C8	Straight Ø 8	
<b>CM</b> *3	Straight port, mixed sizes	

\*3 Indicate the sizes on the manifold specification sheet for "CM."

Order (For details, refer to the Web catalogue.)			
Specification			
External pilot			
(SUP/EXH	block and Intermediate SUP/EXH block		

#### 6 Manifold 1 (P) on both ends, 3/5(E) port exit position

	<u>, , i</u>		
U		U side (4 to 8 stations)	
D		D side (4 to 8 stations)	
В	В	oth sides (4 to 64 stations)	

#### SUP/EXH block, Intermediate SUP/EXH block

_	Internal pilot	
S	Internal pilot, Built-in silencer	
R	External pilot	

- The 3/5(E) port is plugged for the built-in silencer type.
   Do not allow the air outlet to come into direct
- Do not allow the air outlet to come into direct contact with water, etc.
- The external pilot specification should be ordered as Made to Order.
   For details, refer to the Web catalogue on https://www.smc.eu.

#### Mounting

Symbol	Mounting	
_	Direct mounting	
<b>D</b> *4	DIN rail mounting (With DIN rail)	
<b>D0</b> *5	DIN rail mounting (Without DIN rail)	

- \*4 Option "D" with DIN rail mounting is not compatible with the product without an SI unit.
- \*5 Order the DIN rail separately, referring to dimension L3.
- (Refer to the Web catalogue on https:// www.smc.eu for DIN rail product numbers and lengths.)
- \* Refer to page 1 for details on securing the DIN rail mounting type manifold.

For details on the EX 2 6 0 Integrated Type (For Output) Serial Transmission System, refer to the Web catalogue on https://www.smc.eu and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 5. Please download the Operation Manual via the SMC website: https://www.smc.eu



# JSY3000-L Series

#### How to Order Manifold Assembly

#### Example (JJ5SY3-L10SFN-D)



JJ5SY3-L10SFN-32B1-C8...1 set (32-station manifold base part no.) \* JSY3100-5U ......2 sets (2-position single part no.) 

The asterisk denotes the symbol for the assembly. Prefix it to the part numbers of the valve, etc.

For the valve arrangement, the valve closest to the D side is considered the 1st station.

Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

Use the manifold specifications sheet to specify the mounting position of the intermediate SUP/EXH blocks.

\* Stations are only available in multiples of 4.

**Internal Pilot** 

#### How to Order Valves (With mounting screw)

**JSY3000** Series JSY 3 0 Π 2 Base mounted

Series JSY3000 3

**3** Pilot valve exhaust method 0

Pilot valve individual exhaust

#### Coil specifications

Symbol	Coil specifications	
—	Standard	
т	With power saving circuit (Continuous duty type)	

Be careful of the energising time when the power-saving circuit is selected.



Type of actuation				
1	2-position	Single		
2		Double		
3	3-position	Closed center		
4		Exhaust center		
5		Pressure center		
Α	4-position dual 3-port	N.C./N.C.		
В		N.O./N.O.		
С		N.C./N.O.		

#### 6 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
U			Non-polar
NZ	•	•	Polar Negative common

- \* Only "NZ" type is available with a power saving circuit.
- When the non-polar common specification type is selected, take measures to prevent surge voltage. For details, refer to the Web catalogue on https://www.smc.eu.

Web catalogue.) Specification

vlade to

Order

External pilot

Refer to the Web catalogue on https://

www.smc.eu for valve specifications.

Made to Order

(For details, refer to the

	al overrid	e
-: Non-locking push type		D: Push-turn locking slotted type
E: Push-turn	- ( <b>1</b>	



When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to the Web catalogue on https://www. smc.eu for base gasket and mounting screw part numbers.

### **A** Caution

If the product is to be continuously energized, please be sure to select the power-saving circuit (continuous duty type) specification.

Refer to the "With power-saving circuit" section in the "Specific Product Precautions" of the plug-in type JSY series Web catalogue on https://www.smc.eu for details.





# 64-station Compatible Manifold Pugein Connector Connecting Base JSY3000-L Series



#### I · Dimensions When the intermediate SUP/EXH block count is " $n^2 = 0$ "\*1

L1	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
L1	129.8	175.8	221.8	267.8	313.8	359.8	405.8	451.8	497.8	543.8	589.8	635.8	681.8	727.8	773.8	819.8
L2	89.1	135.1	181.1	227.1	273.1	319.1	365.1	411.1	457.1	503.1	549.1	595.1	641.1	687.1	733.1	779.1
L3	160.5	210.5	248	298	348	385.5	435.5	485.5	523	573	623	660.5	710.5	760.5	798	848
L4	150	200	237.5	287.5	337.5	375	425	475	512.5	562.5	612.5	650	700	750	787.5	837.5
L5	16	18	14	16	18	13	15	17	13	15	17	13	15	17	13	15

\*1 When the number of intermediate SUP/EXH blocks is "n 2 = 1 to 6," calculate the respective dimensions using the various dimension calculation formulas above.

# *EX260 Series* SI Unit



How to Order SI Units

# EX260-MPN1

#### Communication protocol •

Symbol	Protocol	Output	Communication connector	Power supply connector	Manifold symbol	Applicable manifold
PN1	PROFINET		M12	M12	F	
EN1	EtherNet/IP™	For the 64-station	M12	M12	E	JSY3000-L
EC1	EtherCAT	compatible manifold	M8	M8	D	(64 stations specification)
IL1	IO-Link		м	12	K	

#### Specifications

#### **Common Specifications for All SI Units**

Power supply	Power supply voltage	24 VDC +20 %, -15 %
for control	Internal current consumption	100 mA or less*1
Damar armulu	Power supply voltage	24 VDC +20 %, -15 %
for output*2	Max. supply current	3 A
ior output	Voltage drop to valve supply	Max. 1.2 V (at 24 VDC)
	Enclosure (Based on IEC 60529)	IP67
Fastingarantel	Operating temperature range	-10 to +50°C
Environmental	Operating humidity range	35 to 85 % RH (No condensation)
resistance	Withstand voltage	500 VAC for 1 min between external terminals and FE
	Insulation resistance	500 VDC, 10 $M\Omega$ or more between external terminals and FE
Standards		CE/UKCA marking
Weight		200 g

\*1 150 mA or less for the EX260-MPN1

\*2 This is the SI unit power supply voltage. Supply power according to the type of solenoid valve used.

#### SI Unit Specifications by Model

Model		EX260-MPN1
Applicable	Protocol	PROFINET*1
system	Configuration file*2	GSD file
Applicable functions		MRP function, MRPD function, Fast Startup function, Shared Device function, System Redundancy S2 function, PROFlenergy function, Conformance Class C, NET Load Class II
Commu	nication speed	100 Mbps
Communicat	ion connector specification	M12
	Number of outputs	Max. 128 outputs
Output	Load	Solenoid valve with surge voltage suppressor, 24 VDC, 0.4 W or less (SMC)
	Mounting screw	Hexagon socket head cap screw M3 x 30 (2 pcs.)
Accessories	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)

Model		EX260-MEC1
Applicable	Protocol	EtherCAT*1
system	Configuration file*2	ESI file
Applica	ble functions	CoE, FoE, DC synchronous
Commu	nication speed	100 Mbps
Communicat	ion connector specification	M8
	Number of outputs	Max. 128 outputs
Output	Load	Solenoid valve with surge voltage suppressor, 24 VDC, 0.4 W or less (SMC)
	Mounting screw	Hexagon socket head cap screw M3 x 30 (2 pcs.)
Accessories	Seal cap (for M8 connector socket)	EX9-AWES (2 pc.)

	Model	EX260-MEN1
Applicable	Protocol	EtherNet/IP™
system	Configuration file*2	EDS file
Applica	ble functions	Quickconnect, DLR, Web server
Commu	nication speed	100 Mbps
Communicat	ion connector specification	M12
	Number of outputs	Max. 128 outputs
Output	Load	Solenoid valve with surge voltage suppressor, 24 VDC, 0.4 W or less (SMC)
	Mounting screw	Hexagon socket head cap screw M3 x 30 (2 pcs.)
Accessories	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)

Model		EX260-MIL1
Applicable	Protocol	IO-Link
system	Configuration file*2	IODD file
Applicable functions		ISDU, Data Storage
Communication speed		COM3 (230.4 kbps)
Communication connector specification		M12
	Number of outputs	Max. 128 outputs
Output	Load	Solenoid valve with surge voltage suppressor, 24 VDC, 0.4 W or less (SMC)
Accessories Mounting screw		Hexagon socket head cap screw M3 x 30 (2 pcs.)

\*1 Use a CAT5 or higher communication cable for EtherCAT, Ethernet/IP™, and PROFINET.

\*2 The configuration file can be downloaded from the SMC website: https:// www.smc.eu

# SI Unit **EX260** Series

#### Dimensions

M12 communication connector type

 For PROFINET







# M8 communication connector type









# M8 communication/Power supply connector type For IO-Link







# EX260 Series

#### **Parts Description**



For EtherNet/IP™



ED		_

	Part no.	EX260-MEN1
	Protocol	EtherNet/IP™
/	Communication connector (M12) BUS OUT	4 pins, socket, D code
/	Communication connector (M12) BUS IN	4 pins, socket, D code
-	Ground terminal	M3
_	Power connector (M12) PWR	4 pins, plug, A code

МЗ



Part no.	EX260-MEC1
Protocol	EtherCAT
Communication connector (M8) Port1	4 pins, socket, A code
Communication connector (M8) Port2	4 pins, socket, A code
Ground terminal	M3
Power connector (M8) PWR IN	4 pins, plug, A code
Power connector (M8) PWR OUT	4 pins, socket, A code

For IO-Link



	Part no.	EX260-MIL1
	Protocol	IO-Link
	Communication/Power connector (M12)*1	5 pins, plug, A code
_	Ground terminal	M3

\*1 The communication line, control/sensor power supply line, and the valve power supply line are connected using the same cable.

# SI Unit **EX260** Series

#### **LED Indicator**



#### Accessories

For details, refer to the Web catalogue on https://www.smc.eu (EX260 series).

\* SMC does not provide cables for the EtherCAT compatible type (M8 connector). Order a cable from another cable manufacturer.



(B

Caution Tightening torque for mounting screw M2: 0.16 N·m (JSY3000)

#### Blanking plate

[With two mounting screws]

Used when valve additions are expected or for maintenance



#### Individual SUP spacer

[With a connector gasket, a base gasket, and two mounting screws] When the same manifold is to be used for different pressures, an individual SUP spacer assembly can be used to act as a supply port for different pressures.



#### Individual EXH spacer

[With a connector gasket, a base gasket, and two mounting screws] When valve exhaust affects other stations due to the circuit configuration, this spacer can be used for individual valve exhaust.



#### JSY 3 1M - 26P - 1A Series JSY3000 3



-		
Symbol	P, E port	JSY3000
C6	Ø 6 One-touch fitting	•

Series

**JSY3000** 

#### SUP/EXH blocking disk

#### [SUP blocking disk]

Inserting an SUP blocking disk in the pressure supply passage of a manifold valve can allow for the use of 2 different pressures (high and low) in 1 manifold.

#### [EXH blocking disk]

Inserting an EXH blocking disk in the exhaust passage of a manifold valve can separate the exhaust from the valve so it does not affect the other valves. It can also be used in positive pressure and vacuum pressure mixed manifolds. (2 pieces are required to block both the EA and EB sides of the EXH.)

#### Labels for blocking disks

These labels can be used to indicate and confirm where on the manifold the SUP/EXH blocking disk assemblies were inserted. (3 labels of each)



Series

JSY3000



SHP

#### Caution

The manifold base cannot be disassembled by the customer. Specify the mounting location of the intermediate SUP/EXH block assembly on the manifold specification sheet.

SUP

blocking disk label

3/5

3/5



SUP blocking disk

JSY31M-40P-1A

EXH blocking disk

JSY31M-40P-2A

#### ■ Intermediate SUP/EXH block assembly

Part no.

SJ3000-155-1A

#### **JSY31M – 125P – 1A** -C10Mounting Direct mounting D0 DIN rail mounting (Without DIN rail) Pilot, Silencer type Pilot type P, E port size (One-touch fitting) Built-in **JSY3000** Symbol External Symbol P, E port silencer Internal (Made to Order) C10 Ø 10 One-touch fitting S R • Intermediate SUP/EXH block assembly Cover (Silencer cover, Port block)



#### Intermediate SUP/EXH block assembly accessories and the number of accessories

Accessories	Quantity
Tie-rod for additional stations	3 pcs.
A-  Manifold block gasket	1 pc.

\* Gasket is mounted.

#### Clamp bracket

Series	Part no.
JSY3000	SY30M-15-1A

#### Caution

The manifold base cannot be disassembled by the customer. Specify the mounting location of the intermediate SUP/EXH block assembly on the manifold specification sheet.



# JSY3000-L Series



#### Dimensions

# Blanking plate

#### JSY3000 series

#### ■ Individual SUP/EXH spacer

#### **JSY3000** series









■ Trademark EtherCAT<sup>®</sup> is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

**SMC** 

$\wedge$	Safety In	nstructions	These safety instructions damage. These instructi	s are intended to prevent hazardous situations and/or equipment ons indicate the level of potential hazard with the labels of
			"Caution," "Warning" of followed in addition to In	or " <b>Danger</b> ." They are all important notes for safety and must be aternational Standards (ISO/IEC) <sup>1)</sup> , and other safety regulations.
Â	Danger:	<b>Danger</b> indicates a hazard wit which, if not avoided, will result injury.	th a high level of risk       1) ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.         It in death or serious       ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.	
Ŵ	Warning:	<b>Warning</b> indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.		IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements) ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
Ŵ	Caution:	<b>Caution</b> indicates a hazard wi which, if not avoided, could re injury.	th a low level of risk sult in minor or moderate	etc.

#### ▲ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications. Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

#### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
  - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
  - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
  - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
  - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
  - Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

Caution
We develop, design, and manufacture our products to be

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Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

#### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

#### Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. <sup>2)</sup> Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

#### **Compliance Requirements**

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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