

Outline of ATEX directive

Since 1st July 2003, equipment used in potentially explosive atmospheres within the EU is required to comply with the ATEX directive.

ATEX, New Approach directives and CE marking

Directive 2014/34/EU, known as ATEX directive, is one of the directives based on the New Approach towards technical harmonization and standardization.

The New Approach is a new regulatory technique and strategy laid down by the European Council Resolution of 1985, in order to allow free movement of goods within the EU market and to prevent barriers to trade.

Products in compliance with all provisions of applicable directives (such as Directive 2014/34/EU for ATEX) must bear the CE marking. This is an indication that the products comply with the requirements of applicable directives and have been subjected to the conformity assessment procedure provided for in these directives.

ATEX definitions

Potentially explosive atmospheres are atmospheres likely to become explosive due to local and operational conditions.

The ATEX Directive regards "explosive atmospheres" as a mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture. (Quotation from Directive 2014/34/EU Article 1(4))

Certified equipment is designed to prevent the generation of ignition sources such as: Electric sparks, arcs and flashes, electrostatic discharges, electromagnetic waves, ionizing radiation, hot surfaces, flames and hot gases, mechanically generated sparks, optical radiation, chemical flame initiation, compression.

Zone Classification

Potentially explosive environments are classified by the Safety and Protection of Workers Directive 1999/92/EC. These are:

- 0, 1, 2 for gas explosive atmospheres
- · 20, 21, 22 for dust explosive atmospheres

Zone 2 Category 3 Zone 0 Category 1

New elements at a glance

Previous legislation covered the most obvious sources of ignition generated by electrical devices.

The ATEX directive and the corresponding harmonized standards have extended the applicability of legislation to non-electrical products as well.

Pneumatic equipment used in potentially explosive atmospheres must, therefore, be assessed in line with the new directive.

The ATEX directive defines categories of equipment and protective systems, which can be used in the corresponding zones as per the following table.

Zo	ne	Equipment	Presence of the explosive
Gas	Dust	category	atmosphere
0	20	1	Continuously or for long periods >1000 hours/year
1	21	2	Occasionally 10~1000 hours/year
2	22	3	Rarely or for short periods <10 hours/year

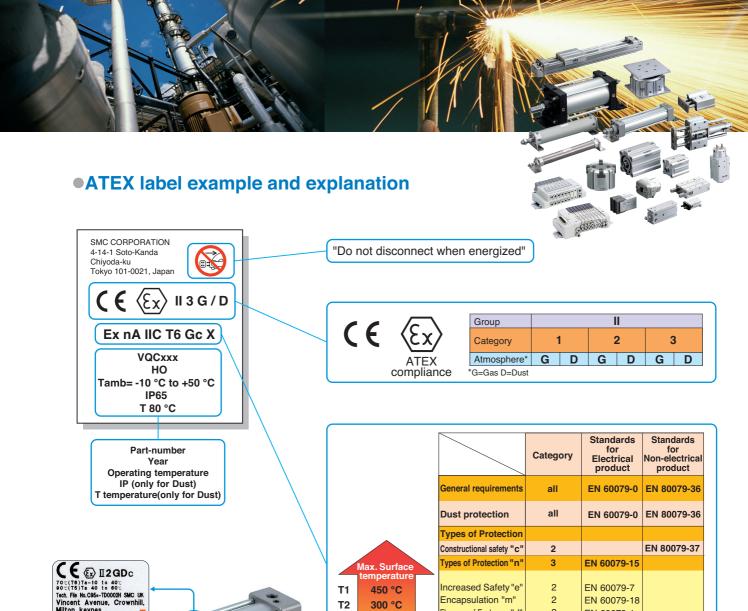


INDEX

<Note for ordering ATEX compliant products>

Some items may not be compliant with the ATEX Directive. For details, refer to How to Order. For Self Declaration of Conformity, refer to our sales representative.

For Sell Declaration of Conformity, refer to ou	·				
	List of ATEX compliant products	C	atego	rv	
Pneumatic - And Andreas		1	2	3	Page no.
Solenoid Valve	5 Port Solenoid Valve: 52-SY5000/7000/9000		•		1
a declected La	5 Port Solenoid Valve: 50-VFE3000/5000-X60			•	21
80 00 10 10 10 00 00	3 Port Solenoid Valve: 50-VPE500/700-X60		•		29
	5 Port Solenoid Valve: 56-VQC1000/2000/4000				34
Serial Transmission System	Fieldbus System for outputs: 56-EX260				49
- Certai Transmission System	Fieldbus System: 56-EX600			•	50
Air Cylinder	Air Cylinder: 55-C76				54
	ISO Cylinder: 55-C85				56 58
	ISO Cylinder: 55-C95 (Bore sizes: 160, 200, 250) ISO Cylinder: 55-C96				60
	ISO Cylinder: 55-CP96				68
	IISO Cylinder: 55-C55		•		78
	ISO Cylinder: 55-JCM		•		80
	Air Cylinder: 55-CG1		•		81
	Stainless steal Cylinder: 55-CG5-S		•		84
	Air Cylinder: 55-CS1				85
	Compact Cylinder: 55-CQ2 Dual Rod Cylinder: 55-CXS				87 92
	Mechanically Jointed Rodless Cylinder/Basic Type: 55-MY1B				94
	Mechanically Jointed Rodless Cylinder/Slide Bearing Guide Type: 55-MY1M				95
	Mechanically Jointed Rodless Cylinder/Linear Guide Type: 55-MY1H				96
Anda Codlab					
Auto Switch	Solid State Switch				98
	Reed Switch			•	109
■Rotary Actuator	Rotary Actuator: 55-CRB1		•		118
-	Rotary Actuator: 56-CRB1			•	118
	Rotary Actuator: 55-CRB2-Z		•		120
	Rotary Actuator: 56-CRB2-Z			•	120
	Rotary Actuator/Free Mount Type: 55-CRBU2-Z Rotary Actuator/Free Mount Type: 56-CRBU2-Z				122 122
• •	Compact Rotary Actuator: 55-CRQ2				124
	Compact Rotary Actuator: 56-CRQ2			•	125
	•				
Poostor Pogulator	Poorter Populator: 56 VPA				106
■Booster Regulator	Booster Regulator: 56-VBA				126
Pressure Switch	2-Colour Display Digital Pressure Switch: 56-ISE70/75 (H)			•	128
	Pressure Switch, Reed Switch Type: 56-IS10			•	130
■2 Port Valve for Fluid Control	Steam Valve: 56-VND			•	131
Process Valve	Air Operated Chemical Valve/Threaded Type: 55-LVA				132
- 1 100000 Valvo	Process Pumps/Automatically Operated Type (Internal switching type)				132
€ No. (May - 04 - 1)	- Air Operated Type (External Switching Type): 55-PA3000/5000				139
and the state of t	- Air Operated Type (External Switching Type): 56-PA3000/5000			•	140
	Proumatia Proumatia Positionary EE IDE000/E100				1.41
■Instrumentation Equipment	Pneumatic-Pneumatic Positioner: 55-IP5000/5100 Pneumatic-Pneumatic Positioner: 56-IP5000/5100				141 141
	Electro-Pneumatic Positioner: 1P8000-X14/IP8100-X14				143
	Smart Positioner: 52-IP8001/52-IP8101	•			147
S S S S S S S S S S S S S S S S S S S	Cylinder Positioner: 56-IP200				151



ТЗ **T4** T5 Т6



		Category	Standards for Electrical product	Standards for Non-electrical product
	General requirements	all	EN 60079-0	EN 80079-36
	Dust protection	all	EN 60079-0	EN 80079-36
	Types of Protection			
	Constructional safety "c"	2		EN 80079-37
ax. Surface	Types of Protection "n"	3	EN 60079-15	
450 °C 300 °C 200 °C 135 °C 100 °C 85 °C	Increased Safety "e" Encapsulation "m" Flameproof Enclosure "d" Oil Immersion "o" Pressurized "p" Powder Filling "q" Intrinsically Safety "ia" Intrinsically Safety "ib"	2 2 2 2 2 2 1 2	EN 60079-7 EN 60079-18 EN 60079-1 EN 60079-6 EN 60079-2 EN 60079-5 EN 60079-11	EN 13463-3 EN 13463-7

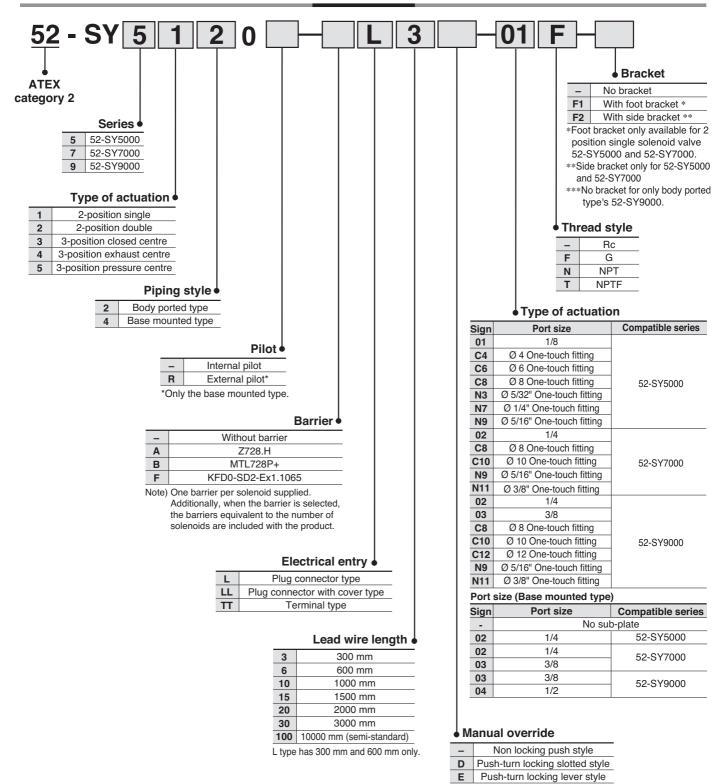
X=means that special conditions for use are in the installation manual e.g. protect products against impact

$\langle \xi_{\rm X} \rangle$

ATEX Compliant

5 Port Solenoid Valve **Series 52-SY**

How to Order



Specifications

Series			52-SY5000	52-SY7000	52-SY9000	
Ambient and fluid	Tempera	ature class T6	-10 to 4	5 °C (No f	reezing)	
temperature	Tempera	ature class T4, T5	-10 to 5	-10 to 50 °C (No freezing)		
Coil temperate	ure rise	40 °C	or less (at	rated)		
Barrier input volt	age (non	hazardous area)	24 V DC (System rated voltage) at 1.1 W			
Solenoid valve inp	ut voltage	(hazardous area)	12 V DC at 0.52 W			
Intrinsically sa	afe		ia			
Gas group	Gas group			IIC		
Electrical entry	L type	Plug connector	r IP30 (LL type : IP40)			
	T type	terminal box	IP65			

Note 1) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test were performed one time each in the axial and right angle directions of the main valve and armature, in both energized and de-energized states (Valve in the initial stage) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. The test was performed for both energized and de-energized states in the axial and right angle directions of the main valve and armature (valve in the initial stage).

Standard SY manifolds Types 20, 41, 42 are used for 52-SY valves

Safety Instructions

- 1) This product is not suitable for Zone 0. The suitable zones are Zones 1 and 2.
- 2) SMC-TAS and TAU Series, antistatic tubing, is available if required.
- 3) The solenoid valve has polarity (+ -). Confirm the correct polarity by referring to the colour of the lead wires. If the polarity is reversed, the barrier maybe damaged.
- 4) Confirm that the solenoid input voltage at the lead wires is DC 10.8 V (min).
- 5) The product must be connected to a certified barrier or certified intrinsically safe circuit with the follow maximum Values:

Ui= 28V

li= 225mA (resistively limited)

Pi= 1W

Ci= 0 nF

Li= 0 mH

Note) The valve is not connected to barrier when supplied.

Response time

Configuration	Response time (ms) (0.5 MPa)						
Comiguration	52-SY5000	52-SY7000	52-SY9000				
2-position single	26 or less	38 or less	50 or less				
2-position double	22 or less	30 or less	50 or less				
3-position	38 or less	56 or less	70 or less				

Note 1) According to dynamic performance test JIS B8375-1981.

Note 2) Response time when barriers were combined with a valve.

System A: Valve + Z728.H

B: Valve + MTL728P+

F: Valve + KFD0-SD2-Ex1.1065

Manifold specifications for 20 type

Model		SS5Y5-20 SS5Y7-20				
Applicable	valve	52-SY5*20	52-SY7*20			
Manifold st	yle	Single base	/ B mounting			
1 (SUP)/ 3/5	(EXH)	Common SUP	Common EXH			
Valve statio	ns	2 to 20 (1)				
4/2 (A/B) Lo	cation	Valve				
Port size	1,3,5 (P,EA,EB) Port	1/4				
	4,2 (A,B) Port	1/8 C4 (One-touch fittings for Ø 4 mm) C6 (One-touch fittings for Ø 6 mm) C8 (One-touch fittings for Ø 8 mm)	1/4 C8 (One-touch fittings for Ø 8 mm) C10 (One-touch fittings for Ø 10 mm)			
Manifold base w	eight W (g) n: Station	W=36n+64	W=43n+64			

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both side

Note 2) 52-SY9*20 valve are not available with manifold as standard

Manifold specifications for 20 type

	Port	size	Flow characteristics							
Model	1.5.3	4,2	1 > 4/2 (P>A/B)			4/2 > 5/3 (A/B > EA/EB)				
	(P,EA,EB)	,	c[dm ³ /(s.bar)]	b	Cv	Q [Vmin (ANR)]	c[dm ³ /(s.bar)]	b	Cv	Q [Vmin (ANR)]
SS5Y5-20	1/4	C8	1.9	0.28	0.48	477	2.2	0.20	0.53	527
SS5Y7-20	1/4	C10	3.6	0.31	0.93	921	3.6	0.27	0.88	898

Note 1) Values for 5 stations manifold with a 2 position single type valve. Note 2) These valves 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.

Manifold specifications for 41 and 42 type

Model		SS5Y5-41	SS5Y5-42	SS5Y7-42		
Applicable	valve	52-S'	52-SY5*40 52-S			
Manifold st	yle	Sing	Single base/ B mounting			
1 (SUP)/ 3/5	(EXH)	Commo	n SUP/ Comm	on EXH		
Valve statio	ons	2 to 20 (1)				
4/2 (A/B)	Location		Base			
Porting spec.	Direction		Side			
Port size	1,3,5 (P,EA,EB) Port	1/	4	1/4		
	4,2 (A,B) Port		1/4 C6 (One-touch fittings for Ø 6 mm) C8 (One-touch fittings for Ø 8 mm)	1/4 C10 (One-touch fittings for Ø 10 mm)		
Manifold base w	eight W (g) n: Station	W=61n+101	W=79n+127	W=100n+151		

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both side.

Note 2) 52-SY9*40 valve are not available with manifold as standard. Please contact SMC if you require it: Note 3) 52-SY series are not available with resin type manifold (23 type, 20P type and 45 type).

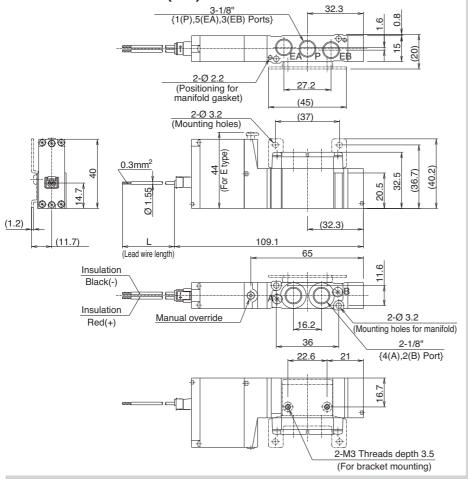
Manifold specifications for 41 and 42 type

	Port s	size	Flow characteristics							
Model	1,5,3	4,2	1 >	1 > 4/2 (P>A/B)			4/2 > 5/3	3 (A/E	3 > E	A/EB)
	(P,EA,EB)	(A,B)	c[dm ³ /(s.bar)]	b	Cv	Q [l/min (ANR)]	c[dm ³ /(s.bar)]	b	Cv	Q [Vmin (ANR)]
SS5Y5-41	1/4	C8	1.8	0.23	0.44	439	1.9	0.16	0.45	445
SS5Y5-42	1/4	C8	1.9	0.20	0.46	455	1.9	0.12	0.43	436
SS5Y7-42	1/4	C10	3.0	0.25	0.75	740	3.0	0.12	0.66	688

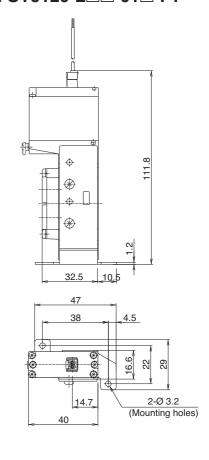
Note 1) Values for 5 stations manifold with a 2 position single type valve.

Note 2) These valves 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.

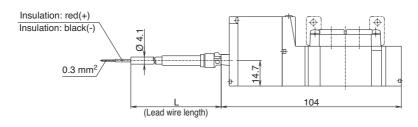
Body ported type
Dimensions/Series 52-SY5000
2-position single
Plug connector type (L)
52-SY5120-L□□-01□(-F2)



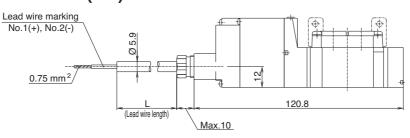
In case with foot bracket 52-SY5120-L□□-01□-F1



Plug connector with cover type (LL) 52-SY5120-LL□□-01□(-F2)



Terminal type (TT) 52-SY5120-TT□□-01□(-F2)

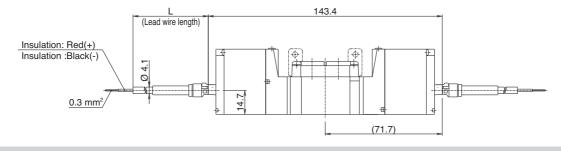




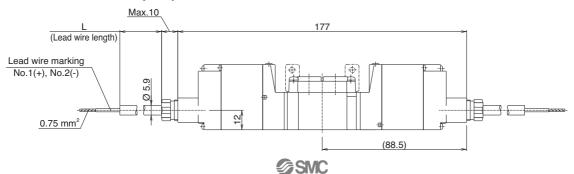
Dimensions

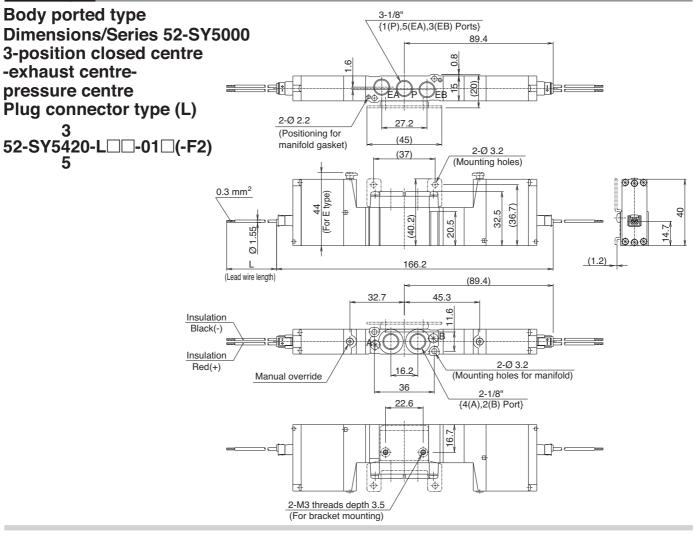
Body ported type Dimensions/Series 52-SY5000 (76.8)3-1/8" 2-position double {1(P),5(EA),3(EB) Ports} 0.8 Plug connector type (L) 52-SY5220-L□□-01□(-F2) 2-Ø 2.2 (Positioning for manifold gasket) (45)2-Ø 3.2 (Mounting holes) **80** 44 E type) 0.3 mm² 32.5 20.5 (40.2) For 14.7 Ø 1.55 800 (1.2) 153.6 (Lead wire length) (11.7)65.4 11.6 Insulation Black(-) Insulation Manual override 2-Ø 3.2 Red(+) 16.2 (Mounting holes for manifold) 36 2-1/8" {4(A),2(B) Port} 22.6 16.7 2-M3 Threads depth 3.5 (For bracket mounting)

Plug connector with cover type (LL) 52-SY5220-LL□□-01□(-F2)



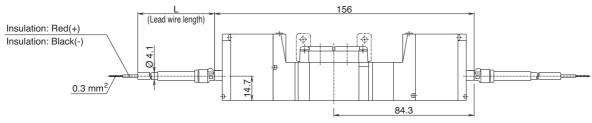
Terminal type (TT) 52-SY5220-TT□□-01□(-F2)

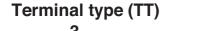


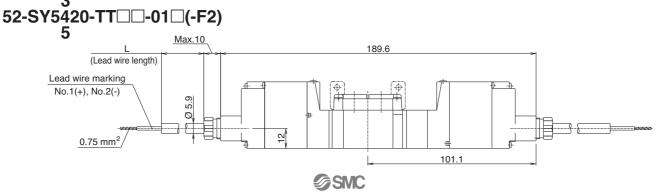


Plug connector with cover type (LL)



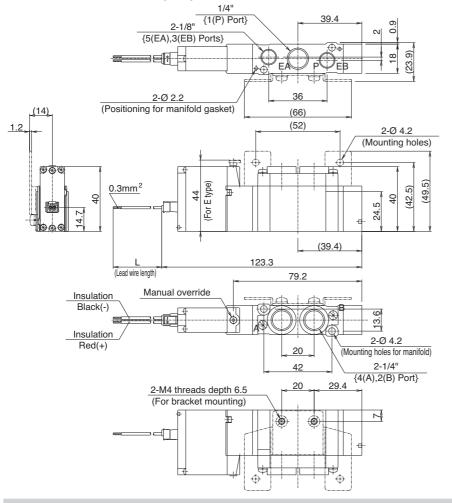




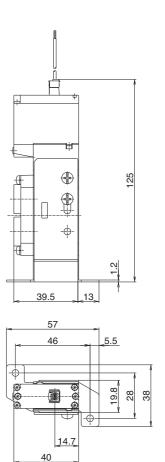


Dimensions

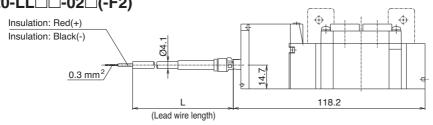
Body ported type Dimensions/Series 52-SY7000 2-position single Plug connector type (L) 52-SY7120-L□□-02□(-F2)



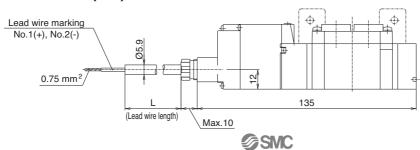
In case with foot bracket 52-SY7120-L□□-02□-(F1)



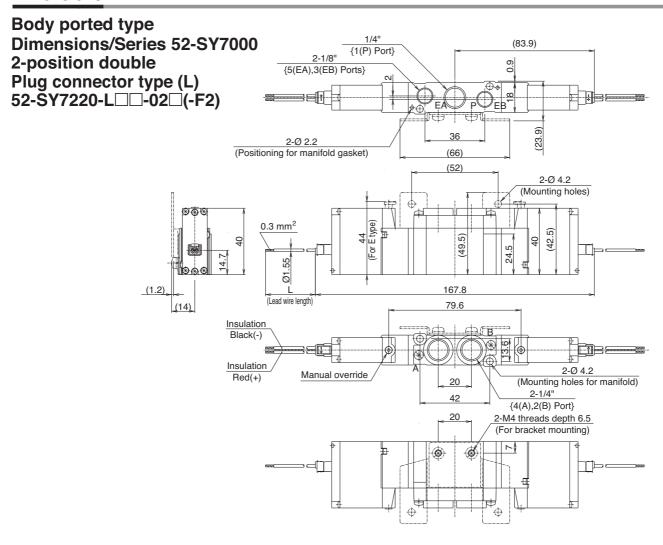
Plug connector with cover type (LL) 52-SY7120-LL□□-02□(-F2)



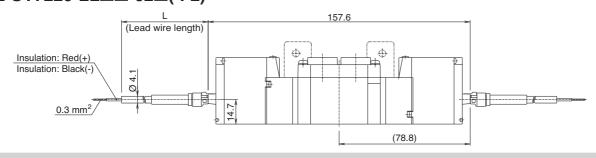
Terminal type (TT) 52-SY7120-TT□□-02□(-F2)



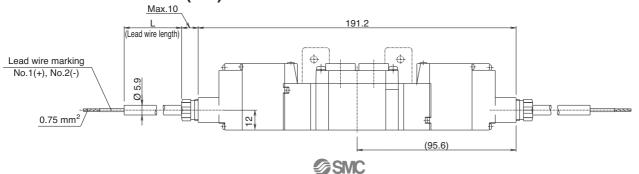
6



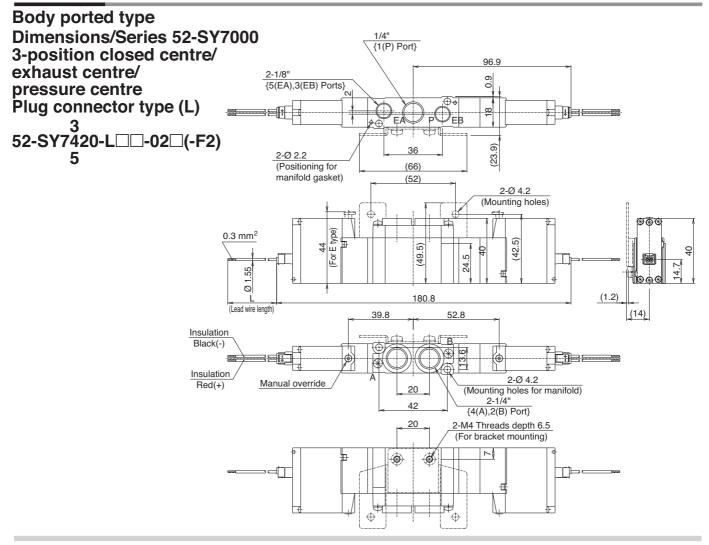
Plug connector with cover type (LL) 52-SY7220-LL□□-02□(-F2)



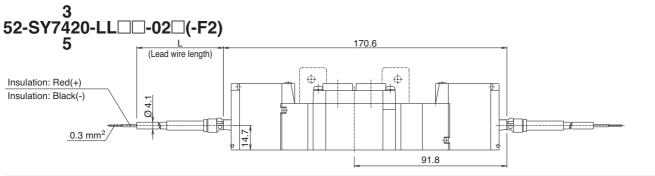
Terminal type (TT) 52-SY7220-TT□□-02□(-F2)



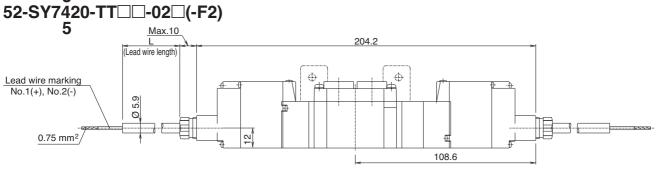
Dimensions



Plug connector with cover type (LL)



Terminal type (TT)



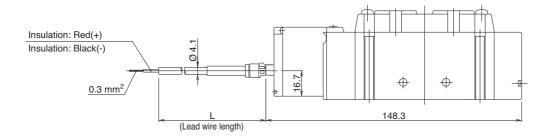


{4(A),2(B) Port}

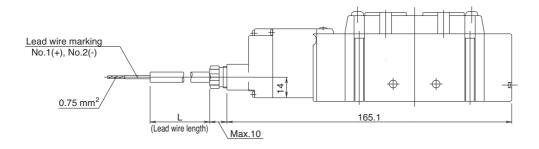
Dimensions

Body ported type Dimensions/Series 52-SY9000 2-position single Plug connector type (L) 3-1/4" 56.3 {1(P),3(EB),5(EA) Ports} 52-SY9120-L□□-02□ $\overline{\Phi}$ 23 3EB 49.8 0.3 mm² (For E type) ιö 46 51 Ø 1.55 9 2-Ø 4.4 24.9 43.85 (12)(Mounting holes) 153.4 (Lead wire length) 109.3 56.3 6.5 Insulation Black(-) 18.4 Manual override Insulation Red(+) 33.6 3-Ø 3.2 (Mounting holes of manifold) 64.2 2-1/4",3/8"

Plug connector with cover type (LL) 52-SY9120-LL \square - $^{02}_{03}\square$



Terminal (TT) 52-SY9120-TT□□-⁰²₀₃□

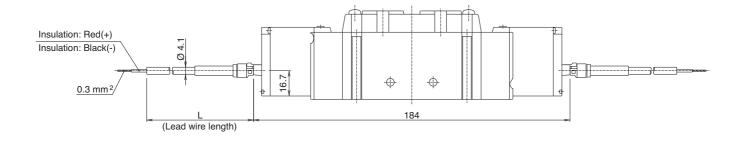


Dimensions

Body ported type
Dimensions/Series 52-SY90

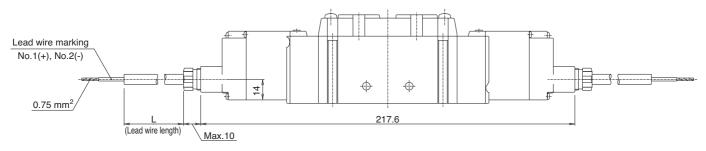
Dimensions/Series 52-SY9000 2-position double 97.1 Plug connector type (L) 3-1/4" {1(P),3(EB),5(EA) Ports} 0.5 52-SY9220-L□□-02□ 8 3EB 49.8 0.5 0.3 mm^2 46 (For E type) 51.5 36.6 Ø 1.55 9 2-Ø 4.4 24.9 (12) (Mounting holes) 194.2 (Lead wire length) 6.5 Insulation 18.4 Black(-) • ® Manual override Insulation 3-Ø 3.2 Red(+) 33.6 (Mounting holes for manifold) 64.2

Plug connector with cover type (LL) 52-SY9220-LL \square - $^{02}_{03}\square$



2-1/4",3/8" {4(A),2(B) Port}

Terminal type (TT) 52-SY9220-TT□□-⁰²₀₃□

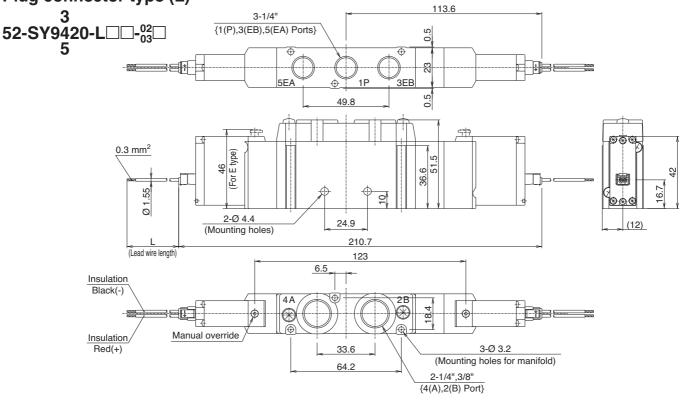


Body ported type

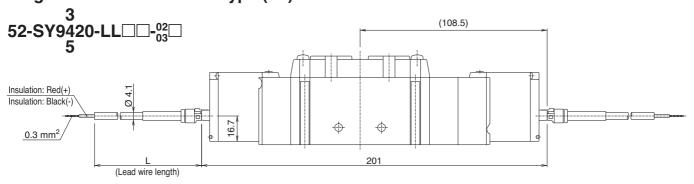
Dimensions/Series 52-SY9000

3-position closed centre/exhaust centre/pressure centre

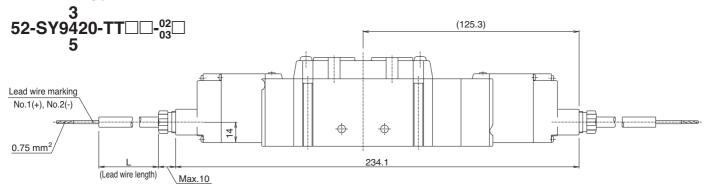
Plug connector type (L)



Plug connector with cover type (LL)



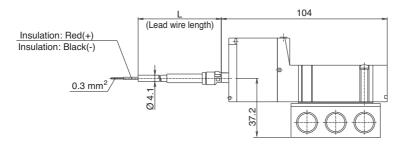
Terminal type (TT)

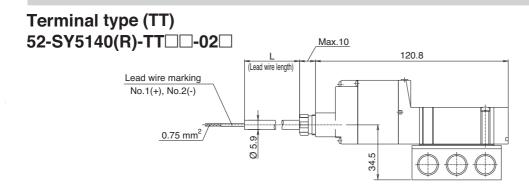


Dimensions

Base mounted type **Dimensions/Series 52-SY5000** 2-position single Plug connector type (L) (For E type) (Lead wire length) 52-SY5140(R)-L□□-02□ 0.3 mm² 55 66.5 0 9.5 18 _ 18 5-1/4" (Piping ports) 2-Ø 4.3 60.3 37.2 (Mounting holes) 8.3 M5 x 0.8 15.5 15.5 Manual override (External pilot port) Insulation Α Black(-) 7, (PA В 35 \oplus Insulation EΑ Р EΒ Red(+) 4.3 56 M5 x 0.8 65 62.5 (Pilot EXH. port) 109.1 <For external pilot type>

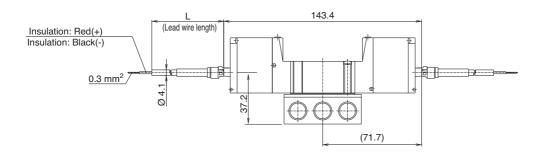
Plug connector with cover type (LL) 52-SY5140(R)-LL□□-02□



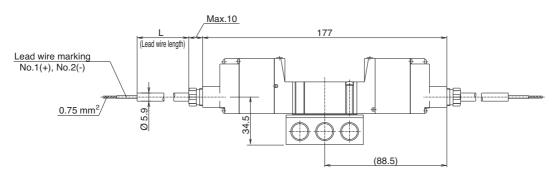


Base mounted type **Dimensions/Series 52-SY5000** 2-position double Plug connector type (L) E type) (Lead wire length) 52-SY5240(R)-L□□-02□ 66.5 (For 1.55 $0.3 \text{mm}^{2}/$ _18_ ₂18₂ 2-Ø 4.3 37.2 _ 28 5-1/4" (Mounting holes) (Piping ports) M5 x 0.8 15.5 48 15.5 Manual override (External pilot port) Insulation 17.5 В Black(-) ₩A B♠ Р₿ Insulation EΑ ĒΒ Red(+) _17 56 M5 x 0.8 62.5 65.4 (Pilot EXH. port) <For external pilot type> 153.6 18 ╨⊨

Plug connector with cover type (LL) 52-SY5240(R)-LL□□-02□



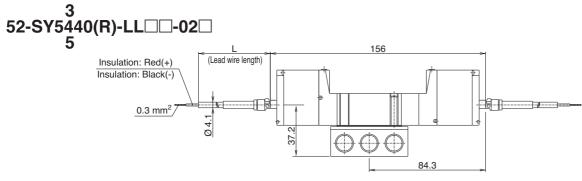
Terminal type (TT) 52-SY5240(R)-TT□□-02□

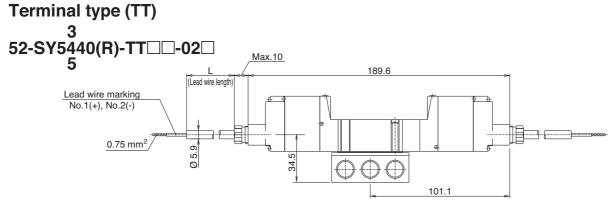


Dimensions

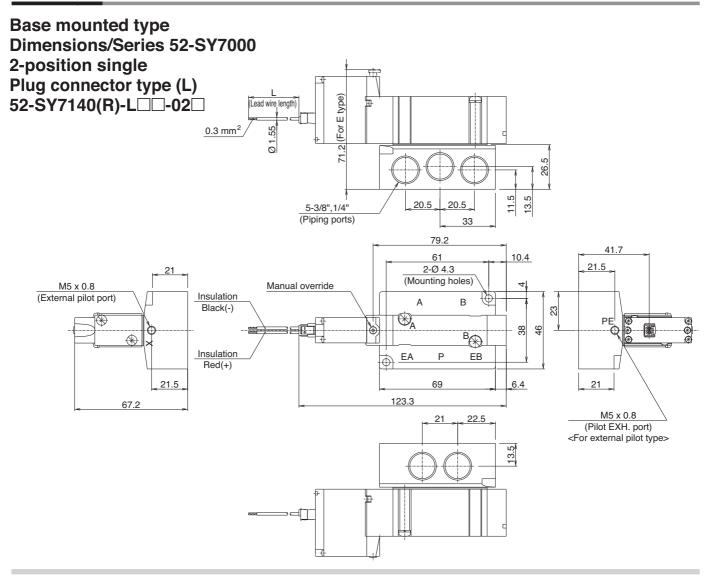
Base mounted type **Dimensions/Series 52-SY5000** 3-position closed centre/exhaust centre/ 18 pressure centre Plug connector type (L) 52-SY5440(R)-L□□-02□ 2-Ø 4.3 37.2 (Mounting holes) M5 x 0.8 15.5 15.5 48 (External pilot port) Manual override Insulation 17.5 Black(-) В **⊕**A B EΑ Ρ ΕB Insulation Red(+) 17 56 .17 M5 x 0.8 62.5 78 44.1 (Pilot EXH. port) <For external pilot type> 166.2 (Lead wire length) (For E type) The 0.3 mm²/ Ø 1.55 99.2 18 18 5-1/4" (Piping ports) 89.4

Plug connector with cover type (LL)

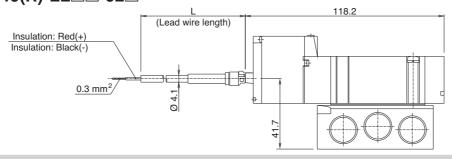


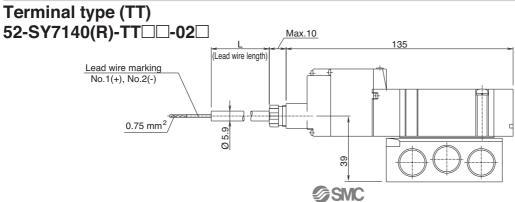


SMC



Plug connector with cover type (LL) 52-SY7140(R)-LL□□-02□



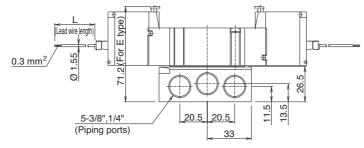


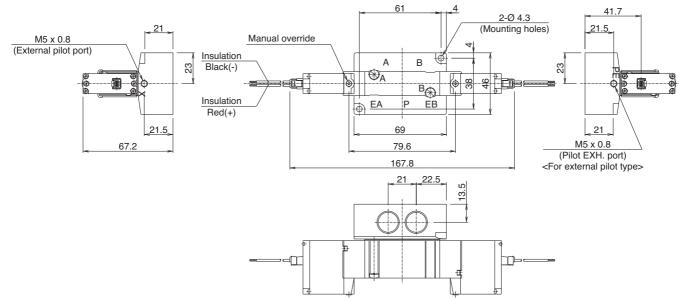
Dimensions

Base mounted type
Dimensions/Series 52-SY7000
2-position double

Plug connector type (L)

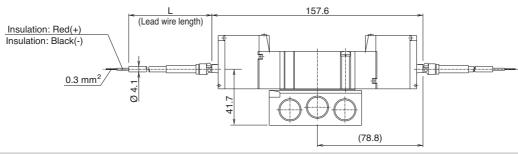
52-SY7240(R)-L□□-⁰²₀₃□



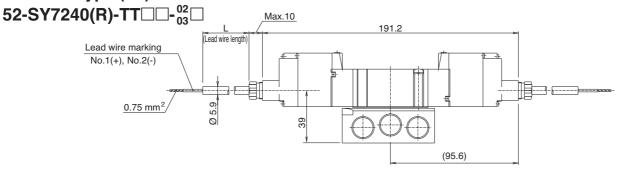


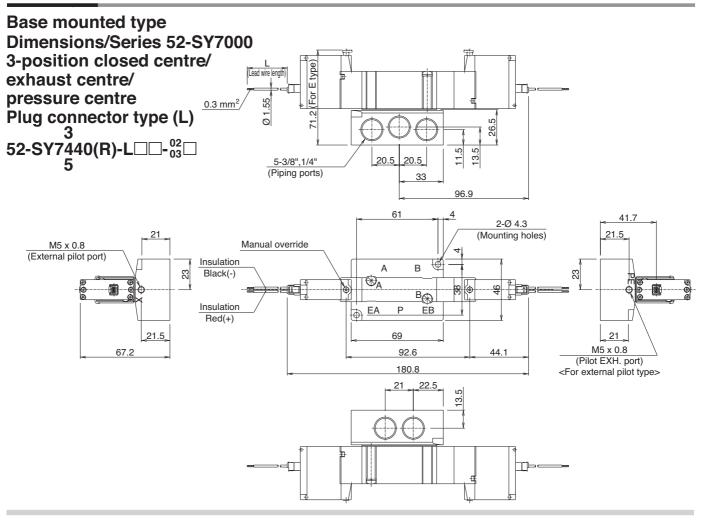
Plug connector with cover type (LL)

52-SY7240(R)-LL□□-⁰²₀₃□

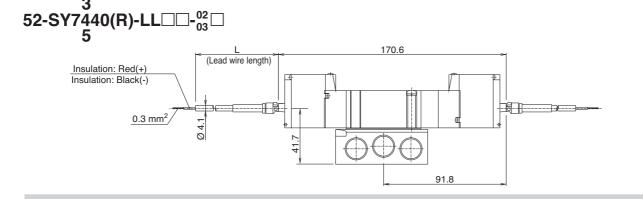


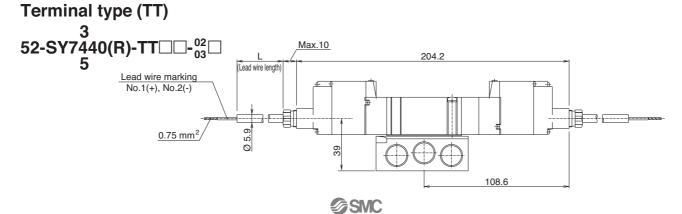
Terminal type (TT)



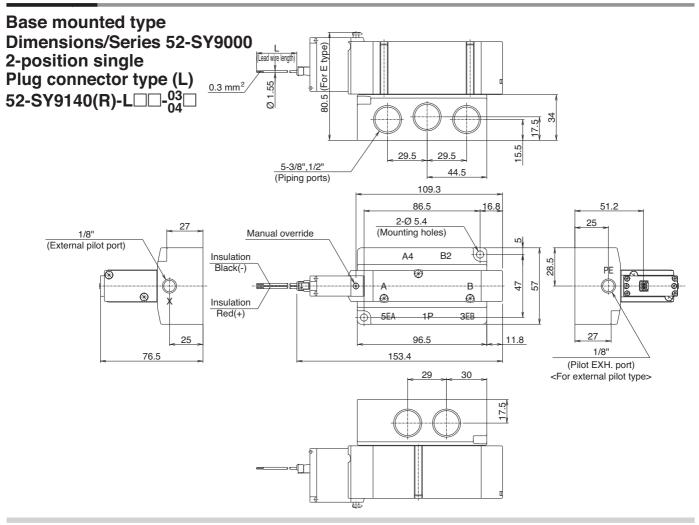


Plug connector with cover type (LL)

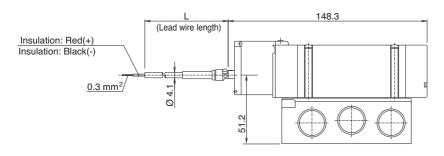


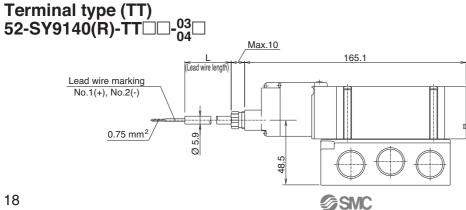


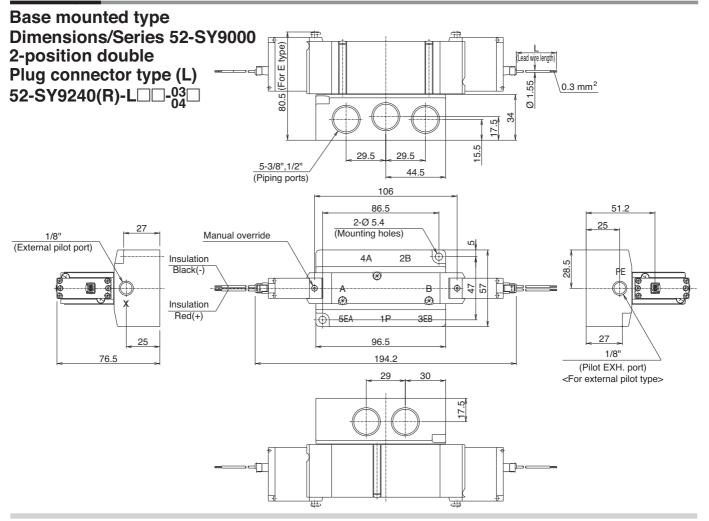
Dimensions



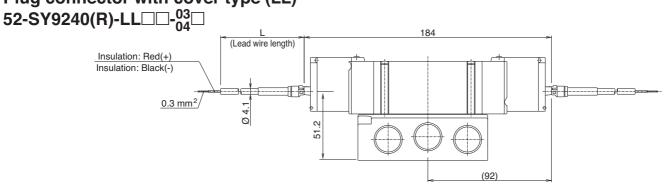
Plug connector with cover type (LL) 52-SY9140(R)-LL□□-03□

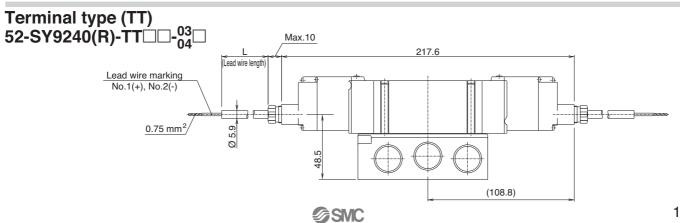




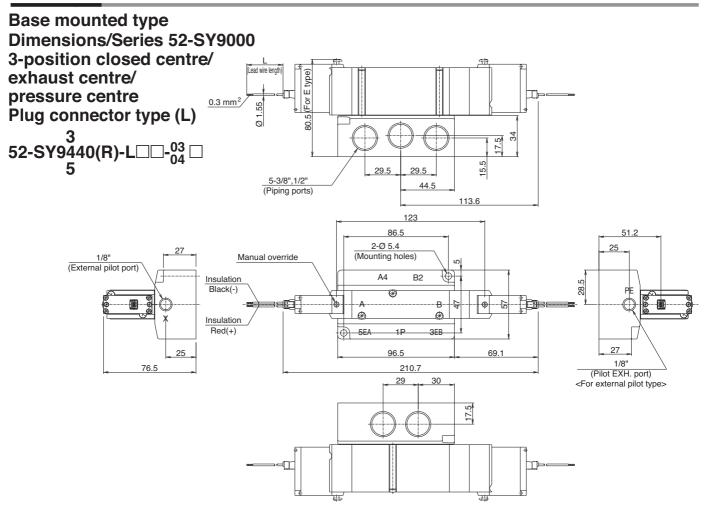


Plug connector with cover type (LL)

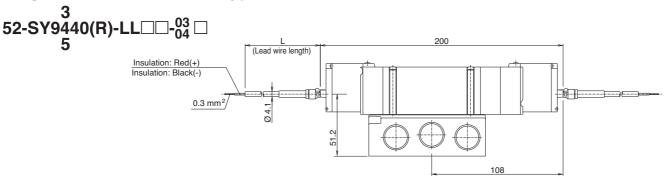


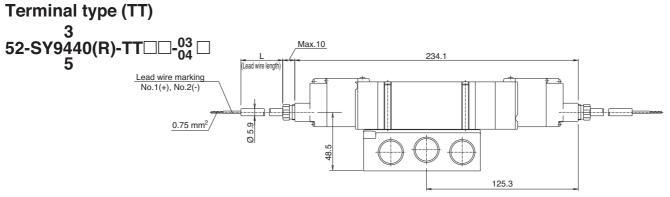


Dimensions



Plug connector with cover type (LL)





SMC

ATEX Compliant

Pilot Operated 5-Port Solenoid Valve 50-VFE3000-X60 Series 50-VFE5000-X60 Series ← €

⟨£x⟩

II 2G Ex db IIC T5 Gb Ta:-10°C TO +50°C
II 2G Ex db IIC T6 Gb Ta:-10°C TO +40°C
II 2D Ex tb IIIC T100°C Db Ta:-10°C TO +50°C
II 2D Ex tb IIIC T85°C Db Ta:-10°C TO +50°C
IP6X

[Certification no.: KEMA09ATEX0024X]

Specifications

Series		50-VFE3000-X60	50-VFE5000-X60	
Fluid		Air		
Operating	2-position single/3-position	0.15 to 0	.9 MPa	
pressure range	2-position double	0.1 to 0.	9 MPa	
Ambient and flui	d temperatures	T5: -10 °C to 50 °C	T6: -10 °C to 40 °C	
Response time	2-position single/double	45 ms or less*1	45 ms or less*1	
nesponse ume	3-position	60 ms or less*1	70 ms or less*1	
Max. operating	2-position single/double	1 Hz	1 Hz	
frequency	3-position	1 Hz	1 Hz	
Lubrication		Not required		
Manual override		Non-locking push type, Push-turn locking type D		
Mounting orienta	ation	Unrestricted		
Pilot valve exha	ust method	Individual exhaust,	Individual exhaust	
oa.vo oxiia		Main/Pilot valve common exhaust	Pilot common exhaust	

^{*1} Based on dynamic performance test, JIS B 8419: 2010. (0.5 MPa, at rated voltage.)

Solenoid Specifications

External wiring connection			Flameproof threaded-joint metal conduit		
Coil roted valtage	AC (5% Hz)		100, 200, 12, 24, 48, 110, 220, 240 V		
Coil rated voltage	DC		24, 6, 12, 48, 110 V		
Allowable voltage fluct	Allowable voltage fluctuation		-15 % to +10 % of rated voltage		
Annavant names	AC St	Starting	9.1 VA (50 Hz) 7.8 VA (60 Hz)		
Apparent power	AC	Holding	6.2 VA (50 Hz) 4.6 VA (60 Hz)		
Power consumption	DC		3.5 W (Coil rated voltage: 6, 12, 24 V)*2		
Coil Insulation type			Class B		

^{*2} The other voltage: 4 W

Option

Description	Part no.	Applicable
Dracket (Mith mounting cover)	VF3000-16-1A	50-VFE3□3□
Bracket (With mounting screw)	VF5000-7-1A	50-VFE5□20

Pilot Air Exhaust Port (PE Port)

There is a pilot air exhaust port (PE port) at the bottom of all pilot valves, excluding the common exhaust type.

Please refrain from blocking this port as failure to do so may result in valve malfunction. In addition, if there is a possibility that the hazard classification will change due to the exhaust air, be sure to connect piping to this port and exhaust it to a safe location.

Explosion Proof Precautions

- The zones of this valve are as follows. Gas: Zone 1 or 2 Dust: Zone 21 or 22
- 2) The external ground cable has a 4 to 6.64 mm² conductor cross section, so be sure to protect it from bending or excessive force.
- 3) When using a cable gland, be sure to use a product with ATEX certification.
- 4) Be sure to implement measures to prevent static electricity from charging the non-metal parts on the external surface of the valve.
- 5) As air is also exhausted from the valve PE port (pilot valve exhaust passage), be sure to confirm whether this will affect the ambient environment before use.
- Be sure to either use antistatic fittings or to implement static electricity prevention measures.

Option

•	Port	size	Flow rate characteristics*3								
V-l d-1*4	Type of actuation		1 4 0	5, 3 (R1, R2)	1 –	→ 4/2 (P → A		4/2 →	*5 Weight		
Valve model*4			1, 4, 2 (P, A, B)		C [dm³/(s/bar)]	b	Cv	C [dm³/(s/bar)]	b	Cv	kg
	2-position	Single			3.0	0.38	0.78	2.8	0.30	0.67	0.85
	2-position	Double			3.0	0.38	0.78	2.8	0.30	0.67	1.58
50-VFE3□30-01-X60		Closed center	1/8		2.4	0.31	0.64	1.8	0.37	0.46	1.67
	3-position	Exhaust center			2.6	0.37	0.70	3.0 [2.5]	0.32 [0.28]	0.76 [0.62]	
		Pressure center			3.0 [1.4]	0.42 [0.44]	0.83 [0.39]	2.4	0.27	0.59	
	2-position	Single		1/8	4.0	0.36	1.0	3.1	0.32	0.75	0.85
		Double	1/4		4.0	0.36	1.0	3.1	0.32	0.75	1.58
50-VFE3□30-02-X60	3-position	Closed center			2.4	0.45	0.68	1.9	0.37	0.47	1.67
		Exhaust center			3.0	0.42	0.82	3.1 [2.7]	0.36 [0.29]	0.79 [0.66]	
		Pressure center			5.5 [1.4]	0.37 [0.50]	1.4 [0.40]	2.6	0.32	0.64	
	2-position	Single	1/4		7.1	0.46	1.9	7.7	0.51	2.2	1.01
	2-position	Double			7.1	0.46	1.9	7.7	0.51	2.2	1.7
50-VFE5□20-02-X60	3-position	Closed center			6.7	0.46	1.8	6.6	0.41	1.8	
		Exhaust center			7.1	0.42	1.9	8.0 [7.4]	0.45 [0.47]	2.2 [2.1]	
		Pressure center			6.8 [2.7]	0.51 [0.50]	2.0 [0.78]	5.7	0.37	1.4	
	2-position	Single			8.8	0.44	2.4	10.0	0.49	2.9	1.01
		Double			8.8	0.44	2.4	10.0	0.49	2.9	1.7
50-VFE5□20-03-X60		Closed center	3/	/8	7.5	0.43	2.0	7.5	0.38	1.9	
	3-position	Exhaust center			8.3	0.40	2.2	10.0 [8.7]	0.48 [0.46]	3.0 [2.4]	1.84
		Pressure center			9.2 [3.0]	0.50 [0.49]	2.6 [0.85]	6.1	0.35	1.6	

^{*3 []:} denotes the normal position

^{*} As the product is body ported, it can be connected to a manifold base as is.



^{*4} For the main/pilot valve common exhaust type, select 50-VFE3 33.

^{*5} Weight for the flameproof threaded-joint metal conduit type

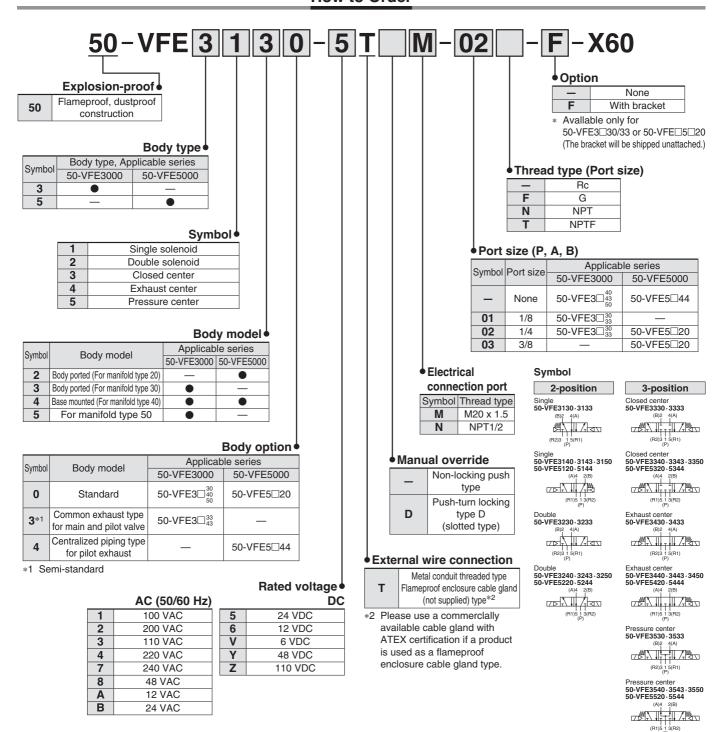
50-VFE3000/5000-X60 Series

Manifold

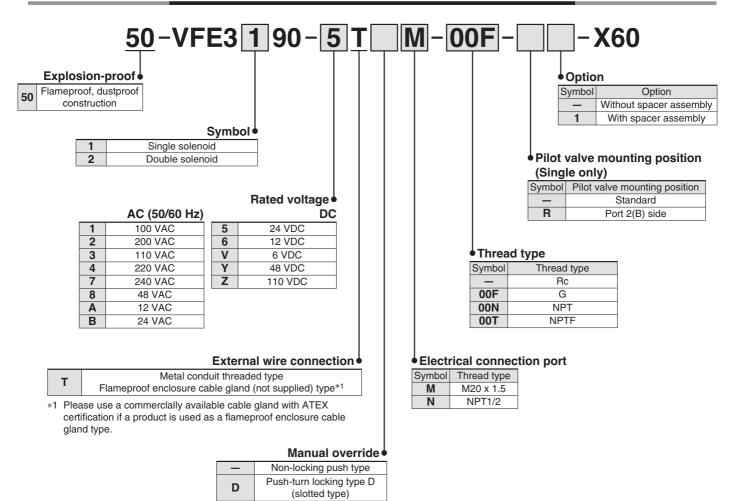
Model	Manifold type								
Model	Ту	ре	EXH type	A/B(CYL) port piping					
50-VFE3II30-IIII-01-X60		Type 30	Common	Valve					
50-VFE3II40-IIII-X60	B mount	Type 40	Common	Base					
50-VFE3III50-IIIII-X60		Type 50	Individual	Base					
50-VFE3-90X60	NAMUR Interface	Type 90	Individual	Base					
50-VFE5□20-□□- ⁰² -X60		Type 20	Common	Valve					
30-VFE3=20-==-03-X00	B mount	Type 21	Common	Valve					
50-VFE5II44-IIII-X60		Type 40	Common	Base					

^{*} Select 50-VFE3□33 or 50-VFE3□43 for the main/pilot valve common exhaust type.

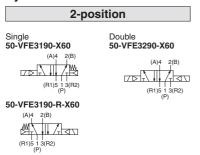
How to Order



NAMUR Interface 5-Port Solenoid Valve How to Order



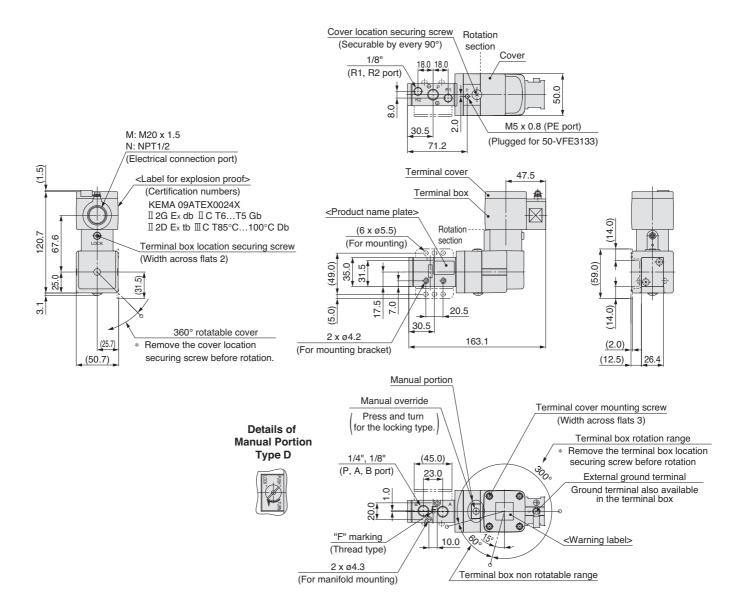
Symbol

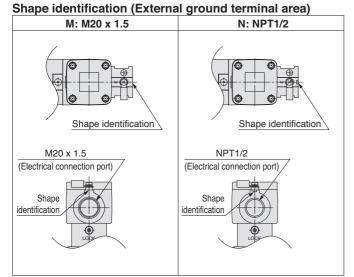


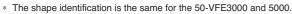
50-VFE3000/5000-X60 Series

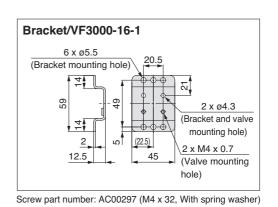
50-VFE3000 Body Ported/2-Position Single

Metal conduit threaded type/50-VFE3130-□T(M, N)-□□(-F)-X60





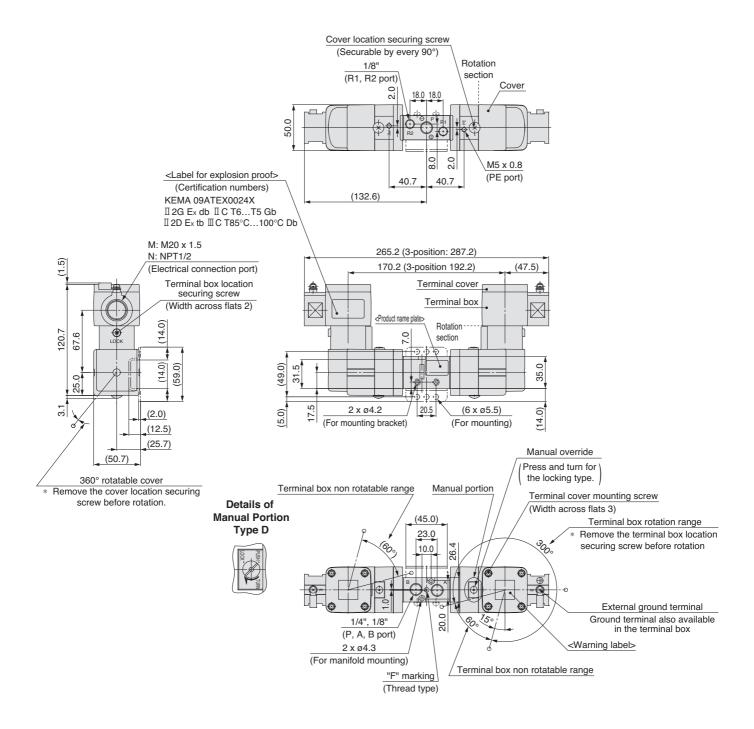






50-VFE3000 Body Ported/2-Pposition Double, 3-Position Closed Center, Exhaust Center, Pressure Center

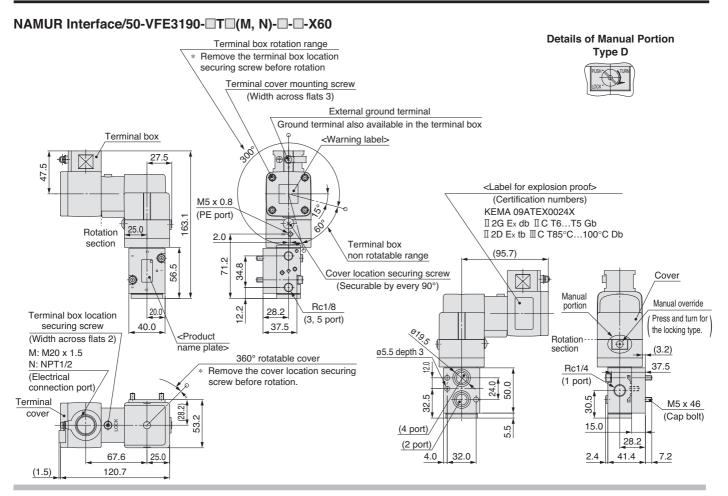
Metal conduit threaded type/50-VFE3□30-□T(M, N)-□□(-F)-X60

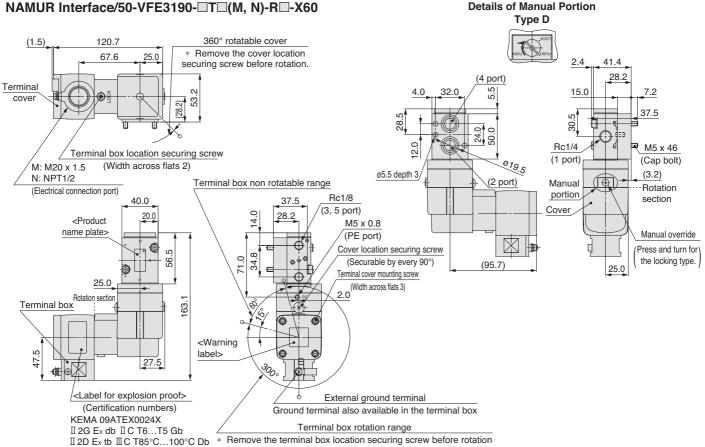




50-VFE3000/5000-X60 Series

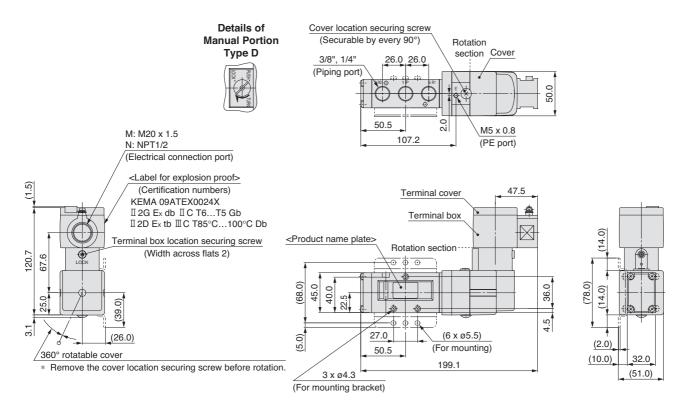
50-VFE3000 Body Ported/2-Pposition Double, 3-Position Closed Center, Exhaust Center, Pressure Center

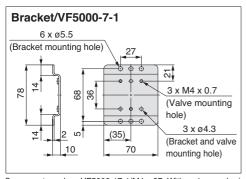




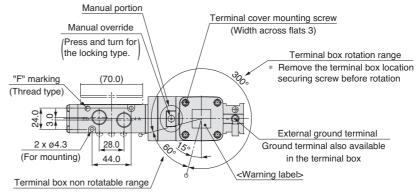
50-VFE5000 Body Ported/2-Position Single

Metal conduit threaded type/50-VFE5120-□T(M, N)-□□(-F)-X60





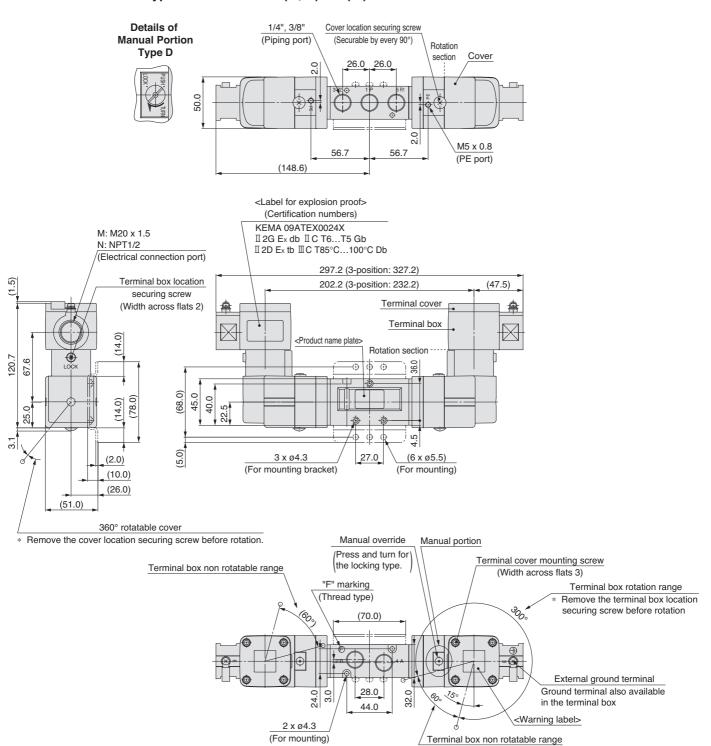
Screw part number: VF5000-17-1(M4 x 37, With spring washer)



50-VFE3000/5000-X60 Series

50-VFE5000 Body Ported/2-Pposition Double, 3-Position Closed Center, Exhaust Center, Pressure Center

Metal conduit threaded type/50-VFE5□2□-□T(M, N)-□□(-F)-X60



ATEX Compliant

Pilot Operated 3-Port Solenoid Valve (\$50-VPE500/700-X60 Series



II 2G Ex db IIC T5 Gb Ta:-10°C TO +50°C
II 2G Ex db IIC T6 Gb Ta:-10°C TO +40°C
II 2D Ex tb IIIC T100°C Db Ta:-10°C TO +50°C
II 2D Ex tb IIIC T85°C Db Ta:-10°C TO +50°C
IP6X

[Certification no. KEMA09ATEX0024X]

Specifications

Fluid	Air							
Type of actuation	N.C. or N.O. (Convertible)							
Pilot type	Internal pilot	External pilot						
vie Les inexases	0.2 to 0.8 MPa	Supply pressure	–101.2 kPa to 0.8 MPa					
Operating pressure range	0.2 to 0.0 Wil a	External pilot pressure	0.2 to 0.8 MPa					
Ambient and fluid temperatures	T5: -10 °C to 50 °C T6: -10 °C to 40 °C							
Response time	45 ms or less (at 0.5 MPa)*1							
Max. operating frequency	1 Hz Not required							
Lubrication								
Manual override	Non-locking push type							
Mariual override	Push-turn locking type D							
Mounting orientation	Unrestricted							

^{*1} Based on dynamic performance test, JIS B 8419: 2010. (0.5 MPa, at rated voltage.)

Solenoid Specifications

on AC (%		Flameproof threaded-joint metal conduit					
AC (%	V						
AC (5% Hz)		100, 200, 12, 24, 48, 110, 220, 240 V					
DC		24, 6, 12, 48, 110 V					
Allowable voltage fluctuation		-15 % to +10 % of rated voltage					
Coil Insulation type		Class B					
40	Starting	9.1 VA (50 Hz) 7.8 VA (60 Hz)					
AC	Holding	6.2 VA (50 Hz) 4.6 VA (60 Hz)					
ower consumption DC		3.5 W (Coil rated voltage: 6, 12, 24 V)*2					
_ a	AC	AC Starting Holding					

^{*2} The other voltage: 4 W

Option

Description	Part no.	Applicable			
Bracket (With mounting screw)	VP500-27-3A	50-VPE542			
bracket (With mounting Screw)	VP700-27-2A	50-VPE742			

Pilot Air Exhaust Port (PE Port)

There is a pilot air exhaust port (PE port) at the bottom of all pilot valves, excluding the common exhaust type.

Please refrain from blocking this port as failure to do so may result in valve malfunction.

In addition, if there is a possibility that the hazard classification will change due to the exhaust air, be sure to connect piping to this port and exhaust it to a safe location.

Explosion Proof Precautions

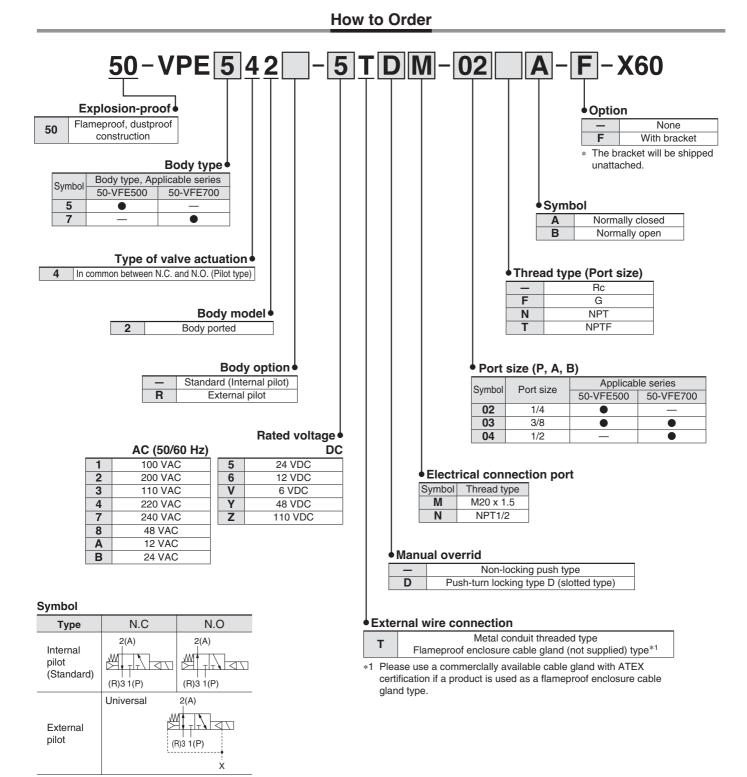
- The zones of this valve are as follows. Gas: Zone 1 or 2 Dust: Zone 21 or 22
- 2) The external ground cable has a 4 to 6.64 mm² conductor cross section, so be sure to protect it from bending or excessive force.
- When using a cable gland, be sure to use a product with ATEX certification.
- Be sure to implement measures to prevent static electricity from charging the non-metal parts on the external surface of the valve.
- 5) As air is also exhausted from the valve PE port (pilot valve exhaust passage), be sure to confirm whether this will affect the ambient environment before use.
- Be sure to either use antistatic fittings or to implement static electricity prevention measures.

Flow Rate Characteristics

Piping	Model	Port size	Flow rate characteristics											*3	
			$1 \rightarrow 2 \ (P \rightarrow A)$		$2 \rightarrow 3 \ (A \rightarrow R)$			$3 \rightarrow 2 (R \rightarrow A)$			$2 \rightarrow 1 \ (A \rightarrow P)$			Weight kg	
			C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	9
Body ported	50-VPE542-□□- ⁰² -X60	1/4	6.6	0.35	1.6	7.4	0.41	2.0	6.9	0.34	1.7	7.5	0.42	2.0	1.0
	30-VF L342	3/8	9.1	0.42	2.4	9	0.43	2.4	8.8	0.36	2.2	9.3	0.43	2.5	
	50-VPE742-□□- ⁰³ -X60	3/8	12	0.29	2.9	12	0.36	3.1	12	0.31	3.1	13	0.36	3.4	1.28
	50-VPE/42-LL- ₀₄ -X00	1/2	15	0.23	3.8	14	0.25	3.8	15	0.22	3.7	16	0.29	4	

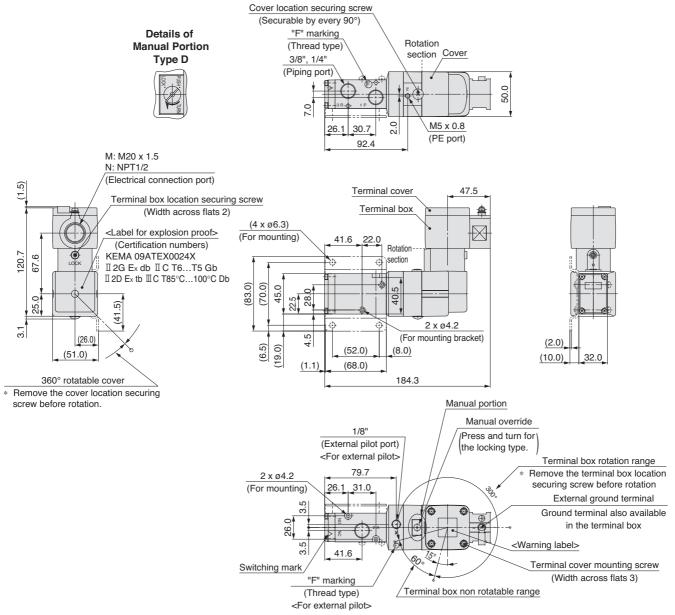
^{*3} Weight for the flameproof threaded-joint metal conduit type

50-VPE500/700-X60 Series

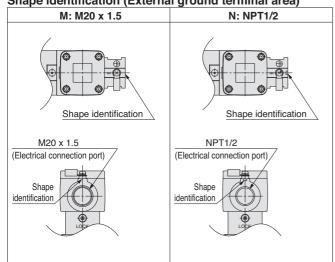


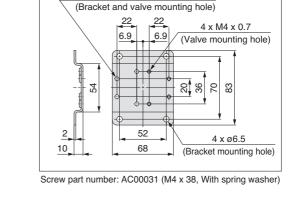
Body Ported/50-VPE500

Metal conduit threaded type/50-VPE542(R)-□T(M, N)-□□(-F)-X60



Shape identification (External ground terminal area)





4 x ø4.5

Bracket/VP500-27-3

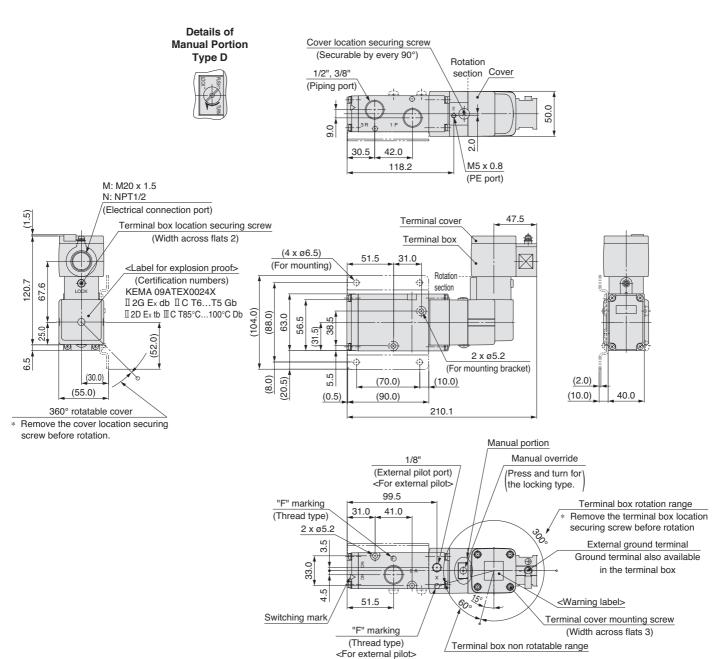
^{*} The shape identification is the same for the 50-VPE500 and 700.

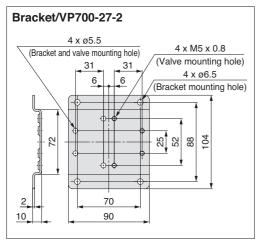


50-VPE500/700-X60 Series

Body Ported/50-VPE700

Metal conduit threaded type/50-VPE742(R)-□T(M, N)-□□(-F)-X60





Screw part number: AA00115 (M5 x 48, With spring washer)



Specific Product Precautions

Precautions on 50-VPE500/50-VPE700

Piping

If the P port size of this valve is excessively reduced, a malfunction may occur due to the resulting pressure drop. We recommend using a size 10 or larger (fitting inner diameter) for the 50-VPE542 and a size 12 or larger (fitting inner diameter) for the 50-VPE742, with a piping length of 3 m or less. In addition, when the P port size is reduced, please use an external pilot type valve.

Special Applications

It can't be used in special applications such as using as a non-leakage valve.

External Pilot

Use external pilot type in the following cases:

- For vacuum or for low pressure 0.2 MPa or less
- When having P port downsized in diameter
- When using A port as the atmospheric releasing port, e.g. air blower

Change of Actuation

It is possible to switch this valve between normally closed (N.C.) and normally open (N.O.).

Body ported





When changing the actuation from normally closed type to normally open type, remove the body from the sub-plate and reset the "▼" mark on the body corresponding to the "NO" mark on the sub-plate as shown in the above.

Refer to the following table for piping.

Port Actuation	Р	Α	R
N.C	Inlet	Outlet	Exhaust side
N.O	Exhaust side	Outlet	Inlet

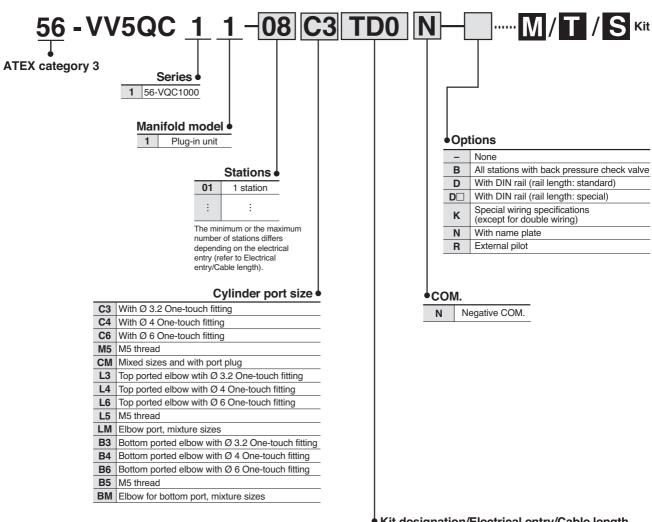
ATEX Compliant

5-Port Solenoid Valve Series 56-VQC1000

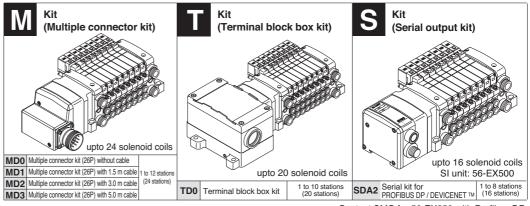


Manifold with M- or T- kit
II 3G Ex nA II B T5 Gc X
II 3D Ex tc III C T85 °C Dc X IP67
- 10 °C ≤ Ta ≤ +50 °C
Special condition X "Protect from Impact"

How to Order Manifolds



Kit designation/Electrical entry/Cable length



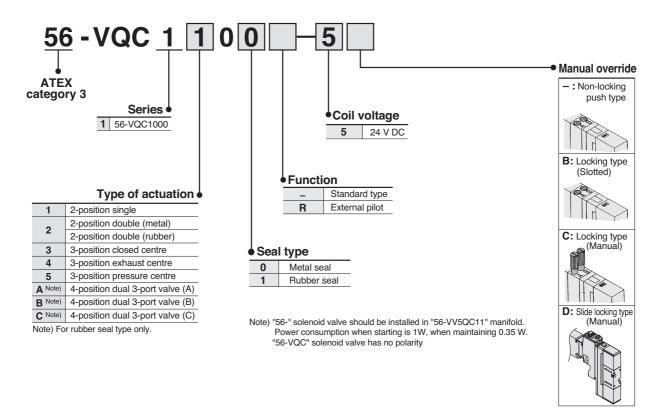
Contact SMC for 56-EX250 with Profibus DP

The maximum number of stations displayed in parentheses is applied to the special wiring specifications. (Option "-K")
The maximum number of stations is determined by the total number of solenoids. (Single solenoid type: 1 point, Double solenoid type: 2 points)
Make sure that the total number of solenoids does not exceed the maximum number of stations. Additionally, when combining with option parts,
make sure that the maximum number of stations is not exceeded.

All other specifications are the same as the standard products Series VQC For details, refer to **the WEB catalogue**.



How to Order Valves



Specifications for 56-VQC 1000/2000 and 4000

	Va	alve Configuration	on	Metal seal	Rubber seal
	FI	uid		Air/Inc	ert gas
	000	Max. operating	pressure	0.7	MPa
	56-VQC1000/2000		Single	0.1 MPa	0.15 MPa
	5	Min. operating	Double	0.1	MPa
w	ğ	pressure	3-position	0.1 MPa	0.2 MPa
Valve specifications	26-		4-position	-	0.15 MPa
ficat	8	Max. operating p	ressure	1.0	MPa
Seci	6-VQC4000	Min. operating	Single	0.15 MPa	0.2 MPa
e st	Ş	pressure	Double	0.15	MPa
Valv	56		3-position	0.15 MPa	0.2 MPa
	Pr	oof pressure		1.5	MPa
	FI	uid temperature		-10 to 50) °C Note 1)
	Lι	ubrication		Not re	quired
	Ma	anual override		Push type/Locking type (tool required)/Lo	ocking type Note 2)/Slide locking type Note 2)
	lm	pact resistance/Vibra	ation resistance	150/30 m	n/s² Note 3)
	Er	nclosure		Dust proof (con	nforms to IP67)
us	Ra	ated coil voltage		24 \	/ DC
ical	Al	lowable voltage	fluctuation	10 % of ra	ted voltage
ectr	Co	oil insulation typ	е	Equivalen	t to B type
Electrical specifications	Po (C	ower consumption Furrent) Note4)	on 24 V DC	1 W (42 mA) for inrush / 0	0.35 W (15 mA) for holding

Note 1)Use dry air to prevent condensation at low temperatures.

Note 2)Only for 56-VQC1000/2000.

Note 3) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the

axial and right angle directions of the main valve and armature, for both energised and de-energised states.

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energised and de-energised states.

Note 4) The power-saving unit is included in the manifold.

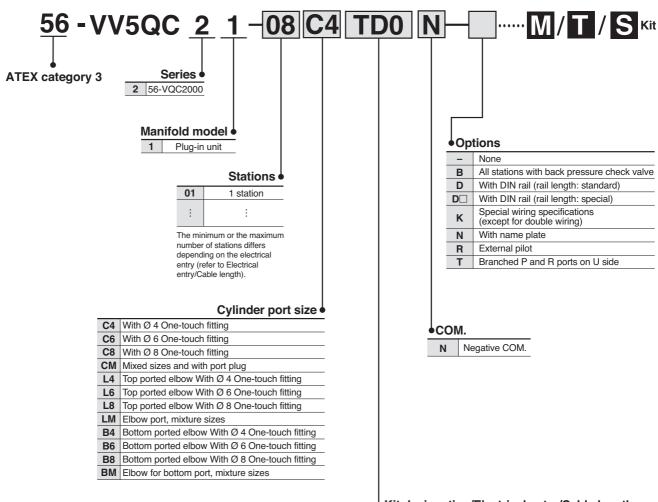


5-Port Solenoid Valve Series 56-VQC2000

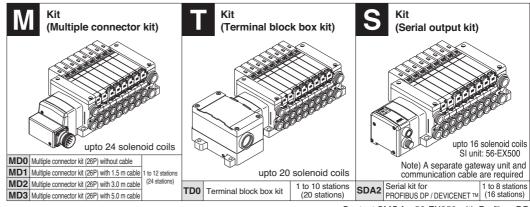


Manifold with M- or T- kit II 3G Ex nA II B T5 Gc X II 3D Ex tc III C T85 °C Dc X IP67 - 10 °C \leq Ta \leq +50 °C Special condition X "Protect from Impact"

How to Order Manifolds



♦ Kit designation/Electrical entry/Cable length



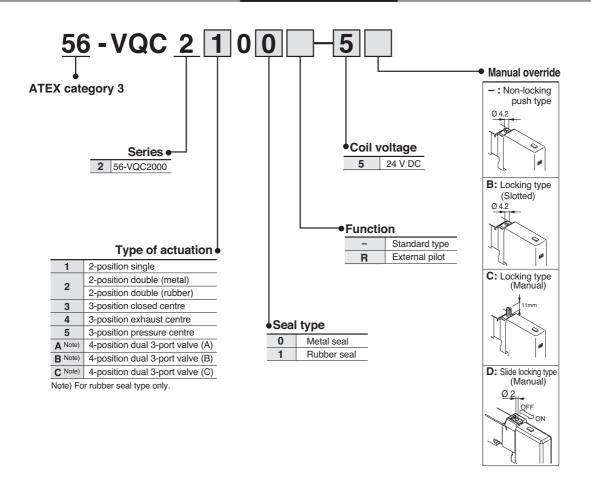
Contact SMC for 56-EX250 with Profibus DP

The maximum number of stations displayed in parentheses is applied to the special wiring specifications. (Option "-K") The maximum number of stations is determined by the total number of solenoids. (Single solenoid type: 1 point, Double solenoid type: 2 points) Make sure that the total number of solenoids does not exceed the maximum number of stations. Additionally, when combining with option parts, make sure that the maximum number of stations is not exceeded.

All other specifications are the same as the standard products Series VQC For details, refer to **the WEB catalogue**.



How to Order Valves



Note) "56-" solenoid valve should be installed in "56-VV5QC21" manifold. Power consumption when starting is 1W, when maintaining 0.35 W. "56-VQC" solenoid valve has no polarity



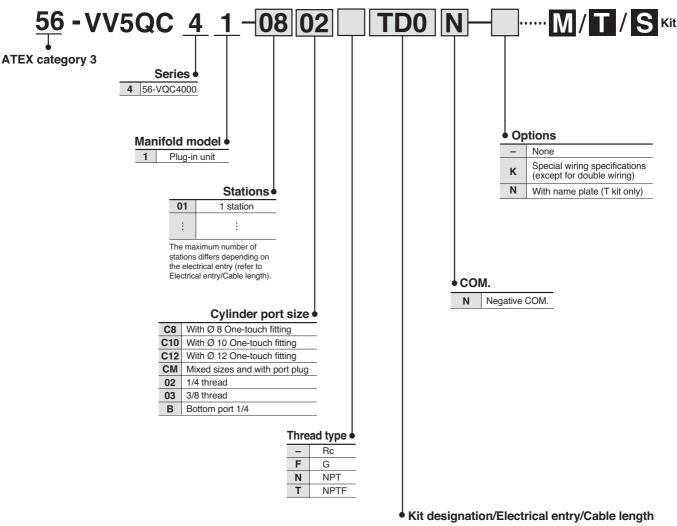


5-Port Solenoid Valve Series 56-VQC4000



Manifold with M- or T- kit
II 3G Ex nA II B T5 Gc X
II 3D Ex tc III C T85 °C Dc X IP67
- 10 °C ≤ Ta ≤ +50 °C
Special condition X "Protect from Impact"

How to Order Manifolds



Kit (Multiple connector kit)

Kit (Multiple connector kit)

Kit (Terminal block box kit)

Kit (Serial output kit)

Kit (Serial output kit)

Kit (Serial output kit)

Light of the solenoid coils of th

Contact SMC for 56-EX250 with Profibus DP

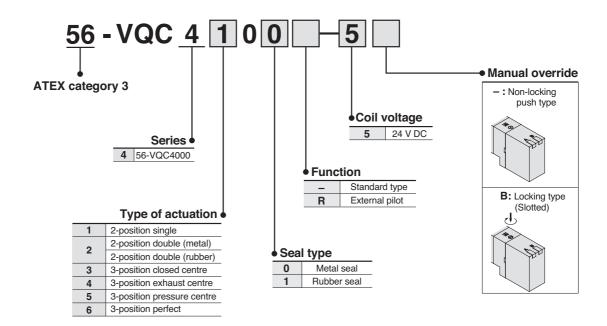
The maximum number of stations displayed in parentheses is applied to the special wiring specifications. (Option "-K")
The maximum number of stations is determined by the total number of solenoids. (Single solenoid type: 1 point, Double solenoid type: 2 points)

The maximum number of stations is determined by the total number of solenoids. (Single solenoid type: 1 point, Double solenoid type: 2 points) Make sure that the total number of solenoids does not exceed the maximum number of stations. Additionally, when combining with option parts, make sure that the maximum number of stations is not exceeded.

All other specifications are the same as the standard products Series VQC. For details, refer to **the WEB catalogue**.



How to Order Valves



Note) "56-" solenoid valve should be installed in "56-VV5QC41" manifold. Power consumption when starting is 1W, when maintaining 0.35 W. "56-VQC" solenoid valve has no polarity.

Options for 56-VQC

Name	56-VQC1000	56-VQC2000	56-VQC4000
110.1110	56-VQC1000	56-VQC2000	56-VQC4000
Blanking plate assembly	VVQ1000-10A-1	VVQ2000-10A-1	VVQ4000-10A-1
Individual SUP spacer	VVQ1000-P-1-C6	VVQ2000-P-1-C8	VVQ4000-P-1-□□
Individual EXH spacer	VVQ1000-R-1-C6	VVQ2000-R-1-C8	VVQ4000-R-1-□□
SUP block plate	VVQ1000-16A	VVQ2000-16A	VVQ4000-16A
EXH block plate	_	VVQ2000-19A	VVQ4000-16A
EXH block base assembly	VVQC1000-19A-□-□□	_	_
Back pressure check valve	VVQ1000-18A	VVQ2000-18A	_
Port plug	VVQ0000-58A	VVQ1000-58A	_
Dual flow fitting assembly	VVQ1000-52A-C8	VVQ2000-52A-C10	_
Elbow fitting assembly	VVQ1000-F-L-□	VVQ2000-F-L-□	_
Port plug	VVQ0000-58A	VVQ1000-58A	_
Blanking plug	KQ2P-□□	KQ2P-□□	KQ2P-□□
DIN rail mounting bracket	VVQ1000-57A(-S)	VVQ2000-57A(-S)	_
Name plate	VVQ1000-N-□	VVQ2000-N-□	_

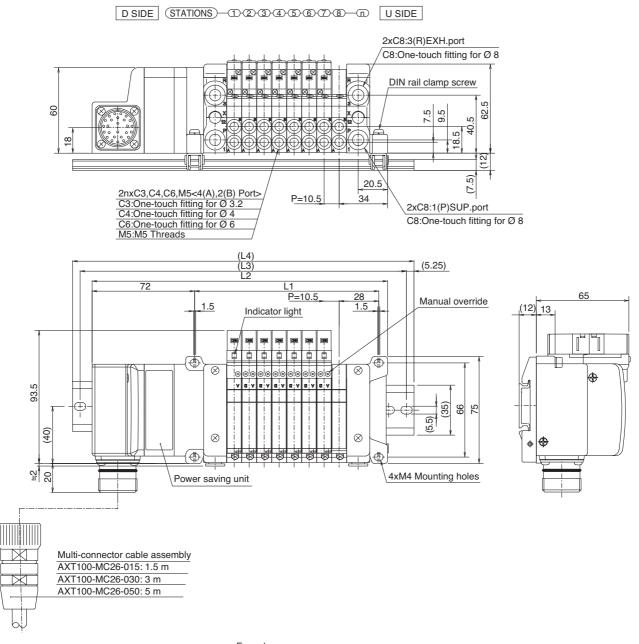
Notes) ☐: Please refer to standard catalogues for details.

Do not use options other than specified in this table. Only these standard parts without "56-" prefix can be used.





56-VV5QC11



Formulas

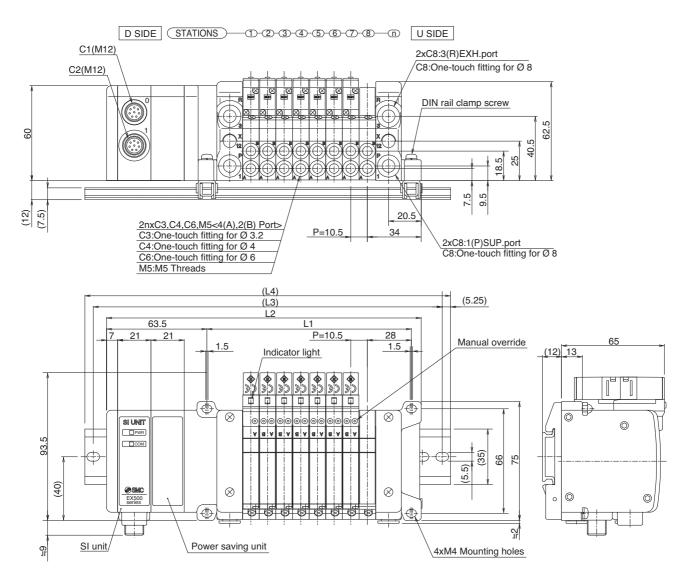
L1 = 10.5n + 45

L2 = 10.5n + 123 (1 power saving unit for 1 to 12 solenoids)

L2 = 10.5n + 144 (2 power saving units for 13 to 24 solenoids) n: Stations (Max. 24 single wire stations)

											(-	_ poo		9			00.00.	u0,		(- 5		
Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2	133.5	144	154.5	165	175.5	186	196.5	207	217.5	228	238.5	249	280.5	291	301.5	312	322.5	333	343.5	354	364.5	375	385.5	396
L3	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	300	312.5	325	337.5	350	362.5	375	375	387.5	400	412.5	425
L4	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	310.5	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5

56-VV5QC11 SDA2 Kit (Serial Transmission Kit: 56-EX500)



Formulas

L1 = 10.5n + 45

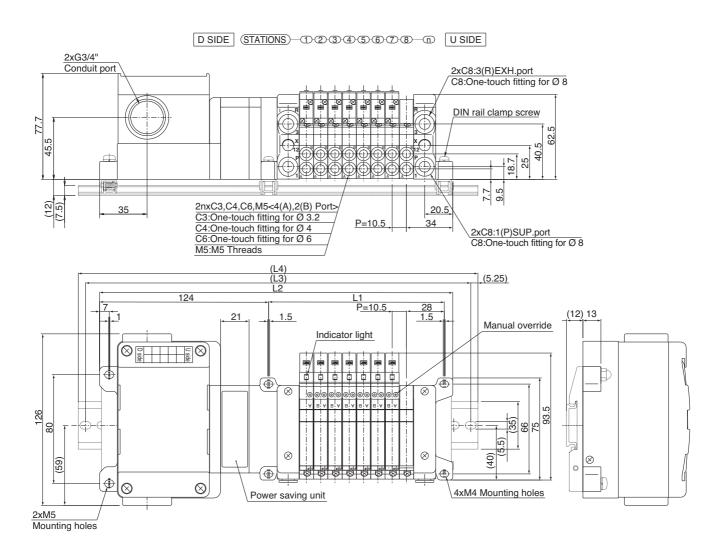
L2 = 10.5n + 114.5 (1 power saving unit for 1 to 12 solenoids) L2 = 10.5n + 135.5 (2 power saving units for 13 to 16 solenoids) n: Stations (Max. 16 single wire stations)

						LZ - 10.0	JII + 100.0	(Z powe	i saviriy u	11113 101 13	10 10 3016	ilolus) i	i. Stations	(IVIAX. 10	Sirigie wire	; stations)
Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213
L2	125	135.5	146	156.5	167	177.5	188	198.5	230	240.5	251	261.5	272	282.5	293	303.5
L3	150	162.5	175	187.5	187.5	200	212.5	225	250	262.5	275	287.5	300	312.5	312.5	325
L4	160.5	173	185.5	198	198	210.5	223	235.5	260.5	273	285.5	298	310.5	323	323	335.5

SMC

41

56-VV5QC11



Formulas

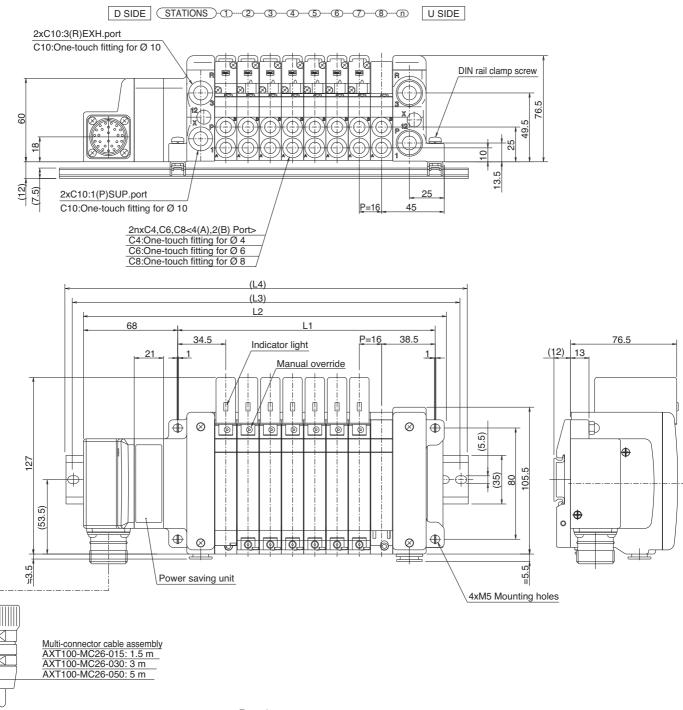
L1 = 10.5n + 45

L2 = 10.5n + 175.5 (1 power saving unit for 1 to 12 solenoids)

L2 = 10.5n + 196.5 (2 power saving units for 13 to 20 solenoids) n: Stations (Max. 20 single wire stations)

Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255
L2	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	333	343.5	354	364.5	375	385.5	396	406.5
L3	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5	325	362.5	375	375	387.5	400	412.5	425	437.5
L4	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	373	385.5	385.5	398	410.5	423	435.5	448

56-VV5QC21



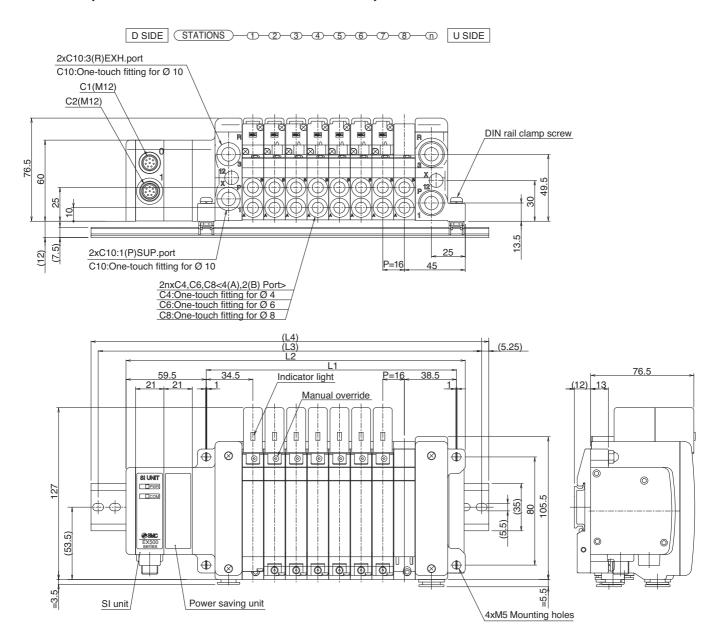
Formulas

L1 = 16n + 57

L2 = 16n + 131.5 (1 power saving unit for 1 to 12 solenoids) L2 = 16n + 152.5 (2 power saving units for 13 to 24 solenoids) n: Stations (Max. 24 single wire stations)

L1 313 | 329 361 377 147.5 | 163.5 | 179.5 | 195.5 | 211.5 | 227.5 | 243.5 | 259.5 | 275.5 | 291.5 | 307.5 | 323.5 | 360.5 | 376.5 | 392.5 | 408.5 | 424.5 | 440.5 | 456.5 | 472.5 | 488.5 | 504.5 | 520.5 | 536.5 | L3 237.5 250 275 | 287.5 | 300 | 312.5 | 337.5 | 350 | 387.5 | 400 | 412.5 | 437.5 | 450 | 462.5 | 487.5 | 500 | 512.5 | 525 550 562.5 248 | 260.5 | 285.5 | 298 | 310.5 | 323 | 348 | 360.5 | 398 | 410.5 | 423 | 448 | 460.5 | 473 498 510.5 523 535.5 560.5 573 L4

56-VV5QC21 SDA2 Kit (Serial Transmission Kit: 56-EX500)



Formulas

L1 = 16n + 57

L2 = 16n + 123 (1 power saving unit for 1 to 12 solenoids) L2 = 16n + 144 (2 power saving units for 13 to 16 solenoids) n: Stations (Max. 16 single wire stations)

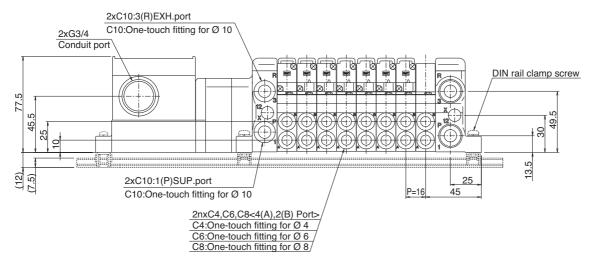
L n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313
L2	139	155	171	187	203	219	235	251	267	283	299	315	352	368	384	400
L3	162.5	175	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	375	387.5	412.5	425
L4	173	185.5	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	385.5	398	423	435.5

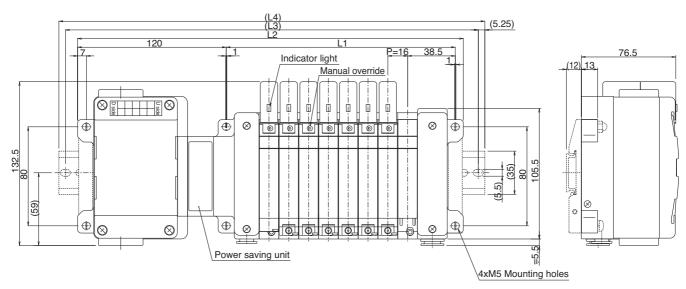
^{*} With signal cut block, L4 is obtained by adding approximately 30 mm to L2.



56-VV5QC21







Formulas

L1 = 16n + 45

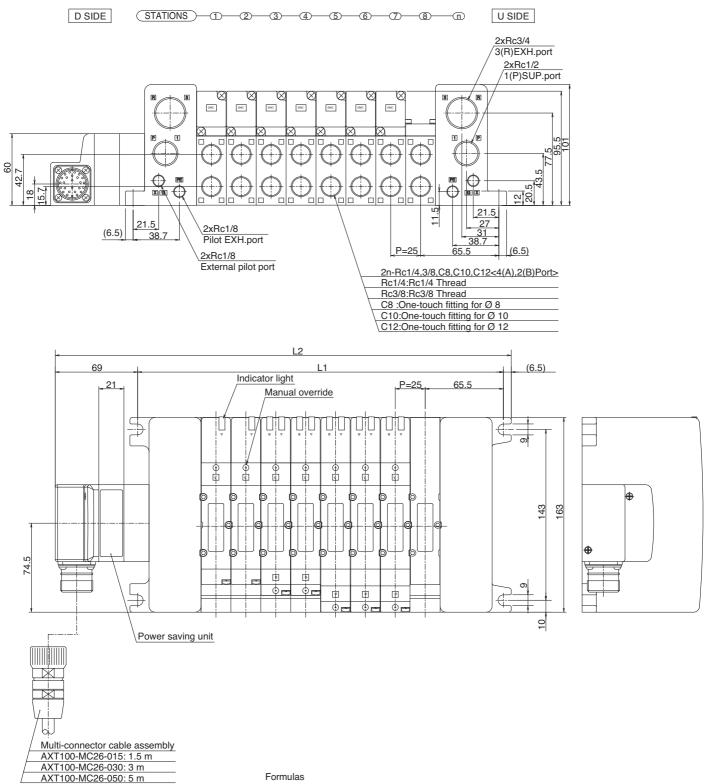
L2 = 16n + 184 (1 power saving unit for 1 to 12 solenoids)

L2 = 16n + 205 (2 power saving units for 13 to 20 solenoids) n: Stations (Max. 20 single wire stations)

Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377
L2	200	216	232	248	264	280	296	312	328	344	360	376	413	429	445	461	477	493	509	525
L3	225	237.5	262.5	275	287.5	300	325	337.5	350	375	387.5	400	437.5	450	475	487.5	500	512.5	537.5	550
L4	235.5	248	273	285.5	298	310.5	335.5	348	360.5	385.5	398	410.5	448	460.5	485.5	498	510.5	523	548	560.5

56-VQC4000 Kit (Multiple Connector Kit)

56-VV5QC41



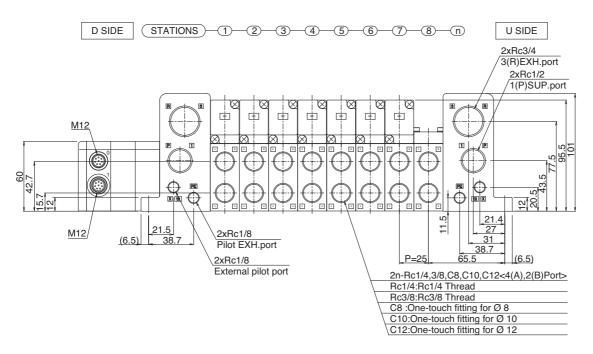
L1 = 25n + 106

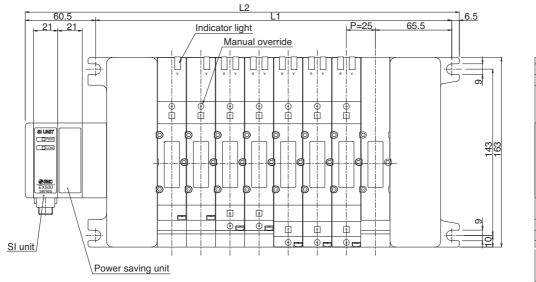
L2 = 25n + 181.5 (1 power saving unit for 1 to 12 solenoids)

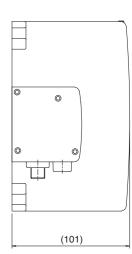
L2 = 25n + 202.5 (2 power saving units for 13 to 16 solenoids) n: Stations (Max. 16 single wire stations)

L_n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	206.5	231.5	256.5	281.5	306.5	331.5	356.5	381.5	406.5	431.5	456.5	481.5	527.5	552.5	577.5	602.5

56-VV5QC41 SDA2 Kit (Serial Transmission Kit: 56-EX500)







Formulas L1 = 25n + 106

L2 = 25n + 173 (1 power saving unit for 1 to 12 solenoids)

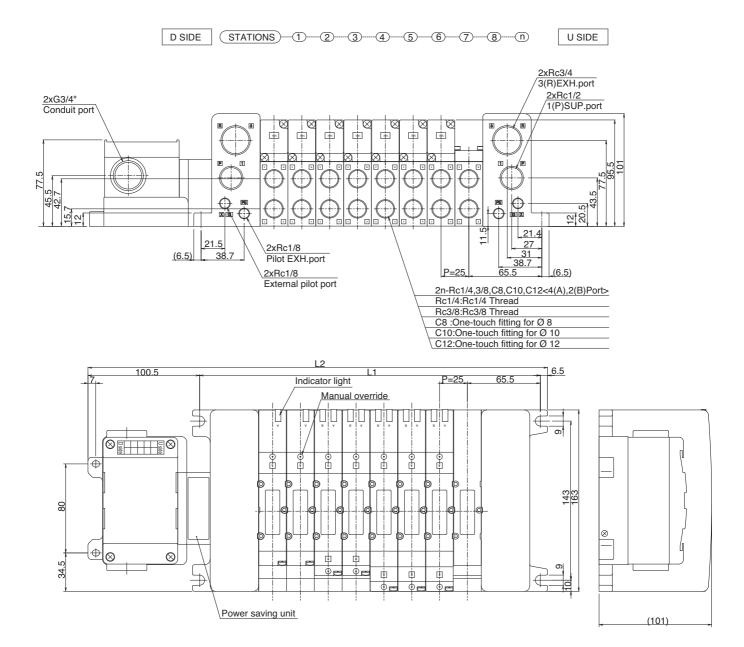
12 = 25n + 194 (2 power saving units for 13 to 16 solenoids) n: Stations (Max. 16 single wire stations)

						L2 = 2	2311 + 194	(2 power	Saving ui	1115 101 13	io to solei	ioius)	ii. Otations	(IVIAX. 10	single wire	; stations)
Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	198	223	248	273	298	323	348	373	398	423	448	473	519	544	569	594

47



56-VV5QC41



Formulas

L1 = 25n + 106

L2 = 25n + 213 (1 power saving unit for 1 to 12 solenoids)

L2 = 25n + 234 (2 power saving units for 13 to 16 solenoids) n: Stations (Max. 16 single wire stations)

Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	238	263	288	313	338	363	388	413	438	463	488	513	559	584	609	634

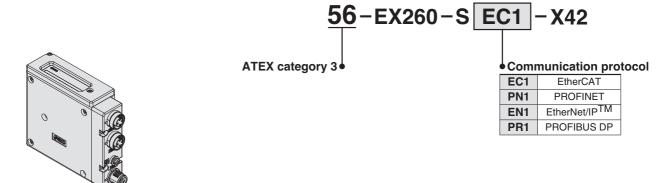


ATEX Compliant

For Output

56-EX260 Series (€

How to Order





(56-EX260-SEC1-X42)

 $\langle Ex \rangle$ II 3G Ex ec IIC T4 Gc -10° C \leq Ta \leq 50°C II 3D Ex tc IIIC T69°C Dc IP67

(56-EX260-SEN1-X42)

(56-EX260-SPN1-X42)

II 3G Ex ec IIC T4 Gc −10°C ≤ Ta ≤ 50°C
II 3D Ex tc IIIC T61°C Dc IP67

(56-EX260-SPR1-X42)

Specifications

	Model	56-EX260-SEC1-X42	56-EX260-SPN1-X42	56-EX260-SEN1-X42	56-EX260-SPR1-X42
	Protocol	EtherCAT*2	PROFINET*2	EtherNet/IP TM *2	PROFIBUS DP
Applicable system	Version*1	Conformance Test Record V.1.1	PROFINET Specification Version 2.2	Volume1 (Edition3.17) Volume2 (Edition1.18)	DP-VO
	Configuration file*3	XML file	GSD file	EDS file	GSD file
I/O occupation	area (Inputs/Outputs)		0/3	32	
Communication	n speed	100 N	lbps* ²	10 M/100 Mbps*2	(9.6/19.2/45.45/93.75/187.5/500 Kbps), (1.5/3/6/12 Mbps)
Power supply	Power supply voltage		21.6 to 2	6.4 VDC	
for control	Internal current consumption		100 mA	or less	
Valve power supply	Power supply voltage		22.8 to 2	6.4 VDC	
	n connector specification		M	<u>: </u>	
Terminating res	sistor switch		None (Not	required)	
	Output type		Source/PNP (Ne	<u> </u>	
	Number of outputs		32 p	oints	
Output specifications	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)		rge voltage suppressor V or less (SMC)
	Supplied voltage		24 \	/DC	
	Supplied current		Max.	2.0 A	
	Enclosure		IP	67	
Environmental	Operating temperature range		−10 to	50°C	
resistance	Operating humidity range		35 to 85%RH (N		
10010141100	Withstand voltage		500 VAC for 1 minute betw		<u> </u>
	Insulation resistance	10 MΩ or more (500 VDC measured via me	gohmmeter) between termi	inals and housing
Weight			26) g	
	Accessories		2 p	CS.	
Accessories	Seal cap (for M12 connector socket)		EX9-AW	TS (1 pc.)	

^{*1} Please note that the version is subject to change.

^{*3} Each file can be downloaded from the SMC website, http://www.smc.eu



^{*2} Use a CAT5 or higher communication cable.

Ex Fiel Sor

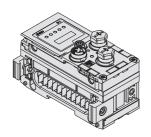
ATEX Compliant

Fieldbus System Series 56-EX600

How to Order

SI Unit

56-EX600-SEN1-X10



		Protocol
S	ymbol	Description
P	R1A	PROFIBUS DP
E	EN1	FtherNet/IP™

(€ ⟨Ex⟩ | II 3D | Ex to IIIC T4 Gc X -10 °C ≤ Ta ≤ 50 °C | Ex to IIIC T82 °C Dc X IP67

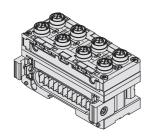
(56-EX600-SPR1A-X10)

(€ (Ex) II 3D Ex nA IIC T4 Gc X -10 °C ≤ Ta ≤ 50 °C II 3D Ex tc IIIC T77 °C Dc X IP67

(56-EX600-SEN1-X10)

Digital Input Unit

56-EX600-DXPD-X10



Input type

Symbol	Description	
Р	PNP	
N	NPN	

Symbol	Number of inputs	Open circuit detection	Connector
С	8 inputs	No	M8 connector (3 pins) 8 pcs.
D	16 inputs	No	M12 connector (5 pins) 8 pcs.

(€ ⟨Ex⟩ | I 3G Ex nA IIC T4 Gc X -10 °C ≤ Ta ≤ 50 °C | II 3D Ex tc | IIC T82 °C Dc X | IP67

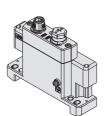
((() II 3G Ex nA IIC T4 Gc X -10 °C ≤ Ta ≤ 50 °C Ex tc IIIC T86 °C Dc X IP67

(56-EX600-DX□D-X10)

(56-EX600-DXDC-X10)

End Plate

56-EX600-ED 2-\(\bigcup - \text{X10}\)



Power connector

Symbol	Connector	
2	M12 (5 pins)	

• Mounting method

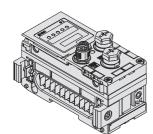
Symbol	Description
_	Without DIN rail mounting bracket
2	With DIN rail mounting bracket



SI Unit Specifications

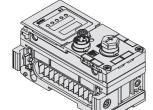
All Units Common Specifications

onmen	Operating temperature range	−10 to 50 °C
	Storage temperature range	−20 to 60 °C
	Operating humidity range	35 to 85 % RH (No dew condensation)
	Withstand voltage	500 V AC for 1 minute between external terminals and FE
ш	Insulation resistance	500 V DC, 10 MΩ or more between external terminals and FE



SI Unit

Model		56-EX600-SPR1A-X10			
Protocol		PROFIBUS DP (DP-V0)			
aţi	Device type	PROFIBUS DP Slave			
je.	Communication speed	9.6/19.2/45.45/93.75/187.5/500 kbps 1.5/3/6/12 Mbps			
'n	Configuration file	GSD file			
Communication	Occupation area (Number of inputs/outputs)	Max. (512 inputs/512 outputs)			
Terminating resistor		Internally implemented			
Internal current consumption (Power supply for Control/Input)		80 mA or less			
	Output type	Source/PNP (Negative common)			
_	Number of outputs	32 outputs (8/16/24/32 outputs selectable)			
Output	Load	Solenoid valve with surge voltage suppressor 24 V DC, 1.5 W or less (SMC)			
Ĕ	Power supply	24 V DC, 2 A			
_	Fail safe	HOLD/CLEAR/Forced power ON			
	Protection	Short-circuit protection			
Enclosure		IP67 (Manifold assembly)			
Weight		300 g			



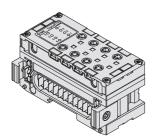
SI Unit

21	Unit		
Model		56-EX600-SEN1-X10	
	Number of communication ports	1 port	
	Protocol	EtherNet/IP™ (Conformance version: Composite 6)	
	Communication speed	10/100 Mbps	
u	Communication method	Full duplex/Half duplex	
aţi	Configuration file	EDS file	
Communication	Occupation area (Number of inputs/outputs)	Max. (512 inputs/512 outputs)	
Com	IP address setting range	SI Unit switch settings: 192.168.0 or 1.1 to 254 Through DHCP server: Optional address	
		Vendor ID: 7 (SMC Corporation)	
	Device information	Device type: 12 (Communication Adapter)	
		Product code: 126	
Internal current consumption (Power supply for Control/Input)		120 mA or less	
	Output type	Source/PNP (Negative common)	
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
Output	Load	Solenoid valve with surge voltage suppressor 24 V DC, 1.5 W or less (SMC)	
õ	Power supply	24 V DC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Er	closure	IP67 (Manifold assembly)	
W	eight	300 g	

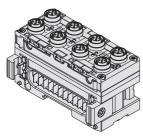


Series EX600

Digital Unit Specifications



56-EX600-DX□C-X10



56-EX600-DX□D-X10

Digital Input Unit

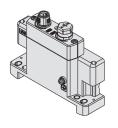
	Model	56-EX600-DXPC-X10	56-EX600-DXNC-X10	56-EX600-DXPD-X10	56-EX600-DXND-X10
	Input type	PNP	NPN	PNP	NPN
	Input connector	M8 (3-pin) socket Note 2)		M12 (5-pin) socket Note 1)	
	Number of inputs	8 inputs (1 input/Connector)		16 inputs (2 inputs/Connector)	
	Supplied voltage		24 V DC		
Input	Max. supplied current		onnector Unit	0.5 A/Connector 2 A/Unit	
ᆵ	Protection	Short-circuit protection			
	Input current (at 24 V DC)	9 mA or less			
	ON voltage	17 V or more (At NPN input, between the pin for input terminal (At PNP input, between the pin for input terminal and si			
	OFF voltage	5 V or less (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)			
Current consumption		55 mA or less 70 mA or less		or less	
Enclosure		IP67 (Manifold assembly)			
Weight		27	5 g	34	0 g

Note 1) M12 (4-pin) connector can be connected.

Note 2) When connecting the M8 plug connector, the tightening torque must be 0.2 N·m ±10 %. If tightened with an excessive tightening torque, this may cause the connector thread of the Unit to break.

Fieldbus System *Series EX600*

End Plate Specifications



56-EX600-ED2-□-X10

End Plate

Model	56-EX600-ED2-□-X10	
Power connector	M12 (5-pin) plug	
Power supply (for Control/Input) Power supply (for Output)	24 V DC ±10 %, Class 2, 2 A	
Power supply (for Output)	24 V DC +10/-5 %, Class 2, 2 A	
Enclosure	IP67 (Manifold assembly)	
Weight	170 g	

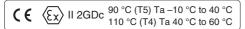




ATEX Compliant

Air cylinder/ Double acting Series 55-C76

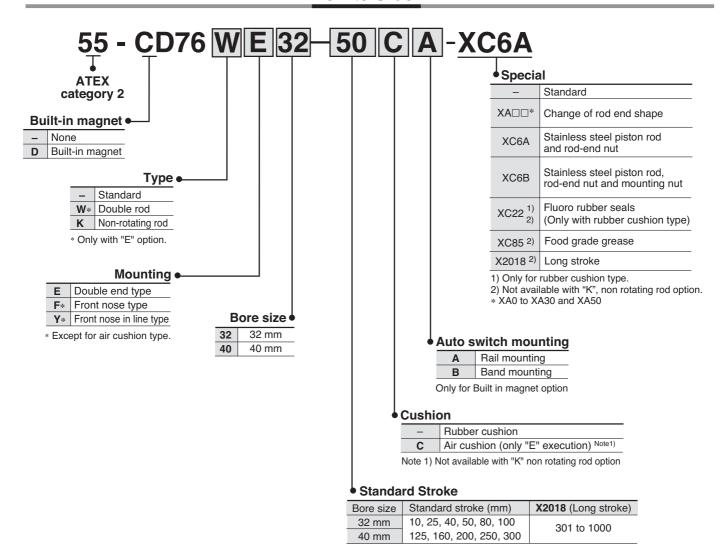
Ø 32, Ø 40



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Refer to page 86 for applicable auto switches.

Mounting Bracket Part No.

mounting Bracket Fait No.				
Bore size (mm) Mounting bracket		32	40	
	Flange, Foot (1pc.)	C76F32A	C76F40A	
Mounting bracket	Flange, Foot (2 pcs. with mounting nut 1 pc.)	C76F32B	C76F40B	
	Trunnion	C76T32	C76T40	
	Clevis	C76C32	C76C40	
Accessories	Single knuckle joint	KJ10DA	KJ12DA	
	Double knuckle joint	GKM10-20A	GKM12-24A	
	Floating joint	JA25-10-150	JA40-12-	

175

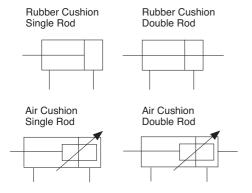


ATEX Compliant Air Cylinder Series 55-C76



Symbol

Standard: Double Action



Non-rotating rod: Double Acting/Single Rod



Specifications

Bore size	Ø 32	Ø 40
Action	Double acting	
Fluid	Air	
Proof pressure	1.5 N	<i>М</i> Ра
Max. operating pressure	1.0 M	<i>М</i> Ра
Min. operating pressure	rating pressure 0.05 MPa	
Ambient and fluid temperature	-10 to 60 °C (No freezing)	
Lubrication	Not required (Non-lube)	
Operating piston speed	piston speed 50 to 1000 mm/s	
Allowable stroke tolerance	0/+	1.4
Non rotating accuracy	± 0.5°	
Port size	G 1/8	G 1/4
Cushion	Rubber cushion, Air cushion	
Mounting	Double end, Front nose, Front nose in line	

Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Simple Specials -XA (Change of rod end shape) as detailed for the equivalent standard Non-Atex range of C76 series



ATEX Compliant

ISO Cylinder/Double Acting Series 55-C85

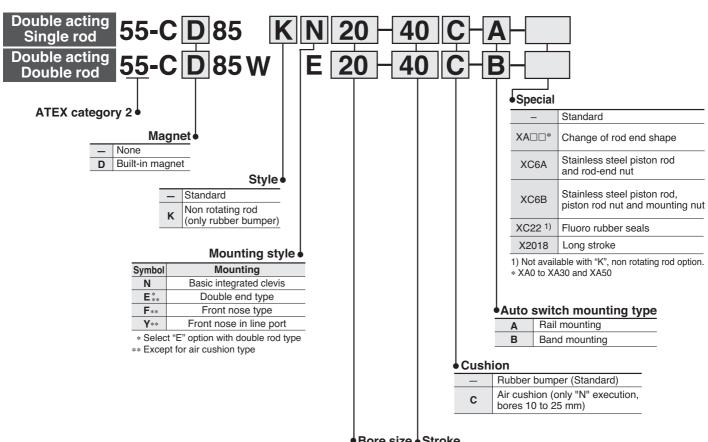
Ø 8, Ø 10, Ø 12, Ø 16, Ø 20, Ø 25



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Mounting Bracket Part No.

mounting Diagnost : art ito:							
Bore (mm) Bracket	8	10	12	16	20	25	
Foot (1 pc.)	C85I	_10A	C85I	C85L16A		C85L25A	
Foot (2 pcs. with mounting nut 1 pc.)	C85L10B		C85L16B		C85L25B		
Flange	C85F10		C85F16		C85F25		
Trunnion	C85T10		C85T16		C85T25		
Clevis	C85C10		C85C16		C85	C25	
Single knuckle joint	KJ4D		KJ6D		KJ8D	KJ10D	
Double knuckle joint	GKM4-8		GKM6-10		GKM8-16	GKM10-20	
Floating joint	JA10-4-070		JA15-	6-100	JA20 -8-125	JA30 -10-125	

Note) Please order mounting brackets separately.

Doi e Size	bore size • Stroke						
Bore size	Bore size Standard stroke		X2018 (Long stroke)				
(mm)	(mm)**	Standard	Non-rotating	Double rod			
Ø 8*	10, 25, 40, 50, 80, 100	200	100	400			
Ø 10	10, 20, 40, 00, 00, 100	400	100	100			
Ø 12	10, 25, 40, 50, 80, 100,	400	200	200			
Ø 16	125, 160, 200		200	200			
Ø 20	10, 25, 40, 50, 80, 100,	1000	1000	500			
Ø 25	125, 160, 200, 250, 300	1000	1000	300			

- * Not available with air cushion.
- ** Other strokes available on request.



ATEX Compliant ISO Cylinder Series 55-C85



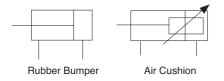
Rubber Bumper/Single Rod



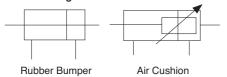
Air Cushion/Single Rod

Symbol

Double Acting/Single Rod



Double Acting/Double Rod



Non-rotating rod: Double Acting/Single Rod



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

Bore size (m	m)	8	10	12	16	20	25
Piston rod di	a. (mm)	4	4	6	6	8	10
Piston rod th	read	M4 X 0.7	M4 X 0.7	M6 X 1	M6 X 1	M8 X 1.25	M10 X 1.25
Ports		M5 M5 M5 G 1/8 G				G 1/8	
Action		Double acting					
Fluid				А	ir		
Proof pressu	re	1.5 MPa					
Max. operation	ng pressure	1.0 MPa					
Min. operatin	g pressure	0.1 MPa 0.08 MPa 0.05 MPa					
Ambient and temperature	fluid	-10 to 60 °C (no freezing)					
Cushion		Rubber bumper, Air cushion (Except for Ø 8)					
Lubrication				Not required	d (Non lube)		
Piston speed	l	50 to 75	0 mm/s Rub	ber bumpe	r, 50 to 100	0 mm/s Air	cushion
Allowable kinetic	Rubber bumper	0.02 J 0.03 J 0.04 J 0.09 J 0.27 J				0.4 J	
energy	Air cushion		0.17 J	0.19 J	0.4 J	0.66 J	0.97 J
Non-rotating	n-rotating accuracy ±1° 30' ±1° 30' ±1° ±1° ±0° 42			±0° 42'	±0° 42'		
Stroke tolerance (mm)			+1	/ 0		+1.4	1/0



ATEX Compliant

ISO Cylinder/Double Acting, Single Rod Series 55-C95

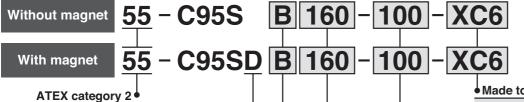
Ø 160, Ø 200, Ø 250



(€ ⟨Ex⟩ II 2GDc

95 °C (T5) Ta -10 °C to 40 °C 115 °C (T4) Ta 40 °C to 60 °C

How to Order



Built-in magnet for auto switch

	Mounting ←
В	Basic/without bracket
L	Axial foot
F	Rod side flange
G	Head side flange
С	Single clevis
D	Double clevis
Т	Centre trunnion

²⁰⁰ 200 mm **250** 250 mm

Bore size **160** 160 mm

• Made to Order				
_	Standard			
XA□□	Change of rod end shape. XA0 to XA30 and XA50			
XC6	Stainless steel piston rod and rod-end nut			
XC14□*	Change of trunnion bracket mounting position (Rod side)			

^{*} Simple specials part no. except for XC14A or B.

Specifications

Bore size (mm)	Ø 160	Ø 200	Ø 250		
Action	Double Acting, Single Rod				
Fluid	Air				
Proof pressure	1.5 MPa				
Max. operating pressure	1.0 MPa				
Min. operating pressure	0.05 MPa				
Ambient and fluid temperature	-10 to 60 °C (No freezing)				
Lubrication	Not required (Non-lube)				
Piston speed	50 to 500 mm/s				
Observation to Leave to a	Up to 250: ^{+1.0} ₀ , 251 to 1000: ^{+1.4} ₀ , 1001 to 1500: ⁺				
Stroke tolerance	1501 to 2	2000: ^{+2.2} , 2001 to 2	2400: ^{+2.6}		
Cushion	Both ends (Air cushion)				
Port size	G 3/4 G 3/4 G 1				
Mounting	Basic, Axial foot, Rod side flange, Head side flange, Single clevis, Double clevis, Centre trunnion				

Mounting Bracket, Mounting Accessories

Description	Bore size	Ø 160	Ø 200	Ø 250	
L	Foot	L5160	L5200	L5250	
F, G	Flange	F5160	F5200	F5250	
С	Single clevis	C5160	C5200	C5250	
D	Double clevis	D5160	D5200	D5250	
GKM	Rod clevis (2)	GKM35-54		GKM40-84	
KJ	Piston rod (3) ball joint	KJ36D		KJ42D	

Note 1) Accessories for each mounting bracket are as follows.

Foot, Flange, Single clevis: Mounting bolts Double clevis: Mounting bolts, Clevis pin

Note 2) GKM according to ISO 8140 (Except GKM35-54)

Note 3) KJ according to ISO 8139

Cylinder stroke **Maximum Stroke**

Bore size (mm)	Standard	XC6	XC14
160	2000	1600	2000
200	2000	1600	2000
250	2400	1500	2400

^{*} Please consult with SMC for longer strokes.

All other specifications are the same as the standard products Series C95.



Symbol Double acting/ Single rod



Non rotating rod: Double acting/ Single rod



^{*} G, C and D options are not available with double rod



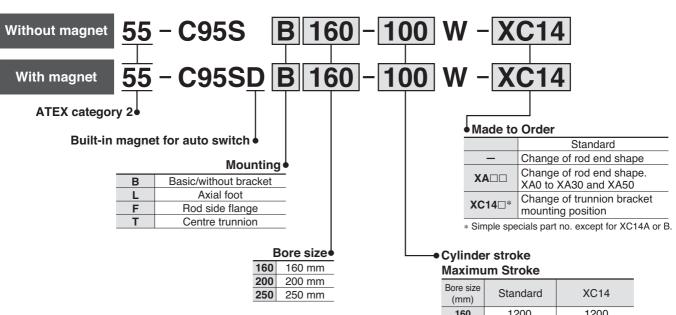
ATEX Compliant

ISO Cylinder/Double Acting, Double Rod Series 55-C95W

Ø 160, Ø 200, Ø 250



How to Order



Specifications

Bore size (mm)	Ø 160 Ø 200 Ø 250				
Action	Double Acting, Double Rod				
Fluid	Air				
Proof pressure	1.5 MPa				
Max. operating pressure	1.0 MPa				
Min. operating pressure	0.05 MPa				
Ambient and fluid temperature	-10 to 60 °C (No freezing)				
Lubrication	Not required (Non-lube)				
Piston speed	50 to 500 mm/s				
Otrolos tolores	Up to 250: $^{+1.0}_{0}$, 251 to 1000: $^{+1.4}_{0}$, 1001 to 1500: $^{+1.8}_{0}$				
Stroke tolerance	1501 to 2000: +2.2, 2001 to 2400: +2.6				
Cushion	Both ends (Air cushion)				
Port size	G 3/4 G 3/4 G 1				
Mounting	Basic, Axial foot, Rod side flange, Centre trunnion				

Bore size (mm)	Standard	XC14
160	1200	1200
200	1200	1200
250	1200	1200

^{*} Please consult with SMC for longer strokes.

All other specifications are the same as the standard products Series C95W.

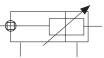
Refer to page 86 for applicable auto switches.

Symbol Double acting/

Double rod



Non rotating rod: Double acting/ Double rod





ATEX Compliant ISO Cylinder Standard: Double Acting Series 55-C96/55-C96W

Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

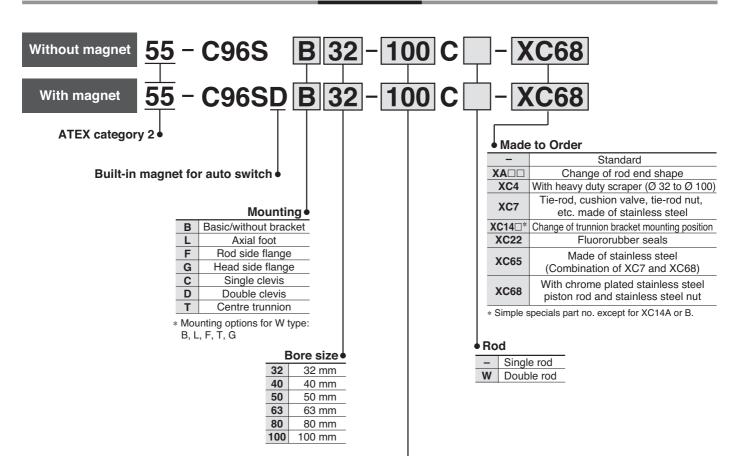
({ {Ex} II 2GDc 85 °C (T5) Ta -20 °C to 40 °C 85 °C (T5) Ta -10 °C to 40 °C

(Without magnet)

(Built-in magnet) 105 °C (T4) Ta 40 °C to 60 °C | 105 °C (T4) Ta 40 °C to 60 °C

For the Ø 125, refer to the next page

How to Order



Cvlinder stroke (mm)

		٠,٠		
Bore size (mm)	Standard stroke (mm)	Standard max. stroke Note)		XC68 Max. stroke
32	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1000		1000
40	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1900		1700
50	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1900		1700
63	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1900	1000	1700
80	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1900		1700
100	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1900		1700

Intermediate strokes are available.

All other specifications (dimensions, drawings, etc) are the same as the non ATEX type.

^{*} Please consult with SMC for longer strokes.



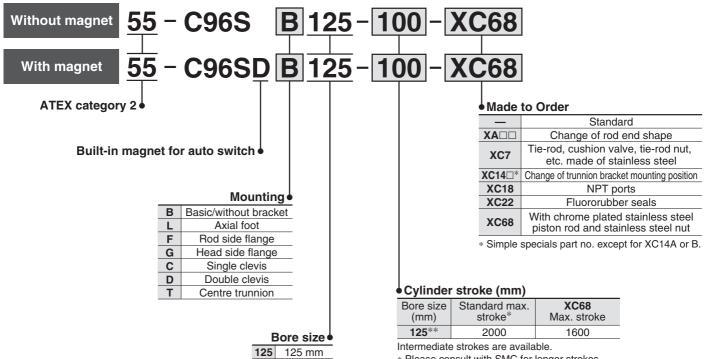
ATEX Compliant ISO Cylinder Standard: Double Acting, Single Rod Series 55-C96

Ø 125

Without magnet Built-in magnet (€ ⟨Ex⟩ II 2GDc 85 °C (T5) Ta –20 °C to 40 °C 85 °C (T5) Ta -10 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C | 105 °C (T4) Ta 40 °C to 60 °C

For the Ø 32, Ø 40, Ø 50, Ø 63. Ø 80. and Ø 100. refer to page 50.

How to Order



- * Please consult with SMC for longer strokes.
- ** Ø 125 are produced upon receipt of order.

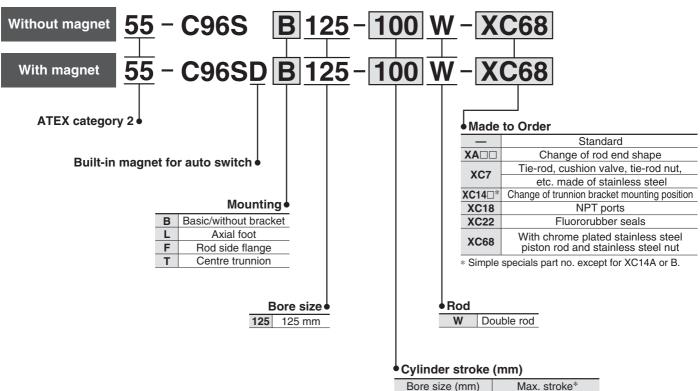
All other specifications (dimensions, drawings, etc) are the same as the non ATEX type.

ATEX Compliant ISO Cylinder Standard: Double Acting, Double Rod Series 55-C96W

Ø 125

Without magnet (€ ⟨Ex⟩ II 2GDc 85 °C (T5) Ta −20 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C Built-in magnet 85 °C (T5) Ta -10 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C For the Ø 32. Ø 40. Ø 50. \emptyset 63, \emptyset 80, and \emptyset 100, refer to page 50.

How to Order



Bore size (mm)	Max. stroke*	
125**	1000	

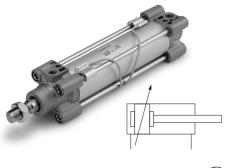
Intermediate strokes are available.

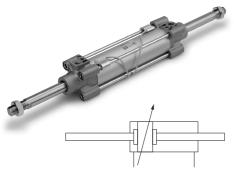
All other specifications (dimensions, drawings, etc) are the same as the non ATEX type.

^{*} Please consult with SMC for longer strokes. ** Ø 125 are produced upon receipt of order.

ISO Cylinder: Standard Double Acting, Single/Double Rod Series C96/C96W

Specifications





Bore size (mm)	32	40	50	63	80	100	125
Action	Double acting						
Fluid	Air						
Proof pressure	1.5 MPa						
Max. operating pressure	1.0 MPa						
Min. operating pressure	0.05 MPa						
Ambient and fluid temperature	Without auto switch: –20 to 70 °C* With auto switch: –10 to 60 °C*						
Lubrication	Not required (Non-lube)						
Operating piston speed	50 to 1000 mm/s 50 to 700 m				50 to 700 mm/s		
Allowable stroke tolerance	Up to 250 st: +1.0 251 to 1000 st: +1.4 1001 to 1500 st: +1.8 1501 to 2000 st: +2.2						
Cushion	Both ends (Air cushion)						
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
Mounting	Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion						
No fronzina	1						

^{*} No freezing

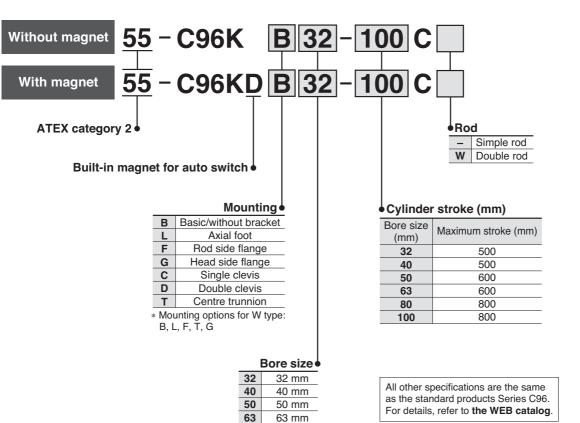


ATEX Compliant ISO Cylinder Non-rotating type: Double Acting Series 55-C96K/55-C96KW

Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



How to Order



80

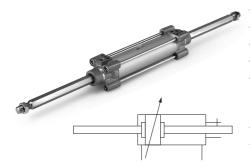
80 mm

100 100 mm

ISO Cylinder: Non-rotating Rod Type Double Acting, Single/Double Rod Series C96K/C96KW

Specifications





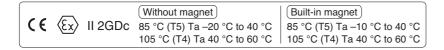
Bore size (mm)	32	40	50	63	80	100	
Action	Double acting						
Fluid	Air						
Proof pressure	1.5 MPa						
Max. operating pressure	1.0 MPa						
Min. operating pressure	0.05 MPa						
Ambient and fluid temperature	Without auto switch: -20 to 70 °C* With auto switch: -10 to 60 °C*						
Lubrication	Not required (Non-lube)						
Operating piston speed	50 to 1000 mm/s						
Allowable stroke tolerance	Up to 250 st: +1.0, 251 to 1000 st: +1.4						
Cushion	Both ends (Air cushion)						
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	
Mounting	Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion						
Non-rotating accuracy	±0	.5°	±0.5°		±0.3°		
Allowable rotating torque Nm max.	0.25	0.45	0.64 0.7		79		

^{*} No freezing

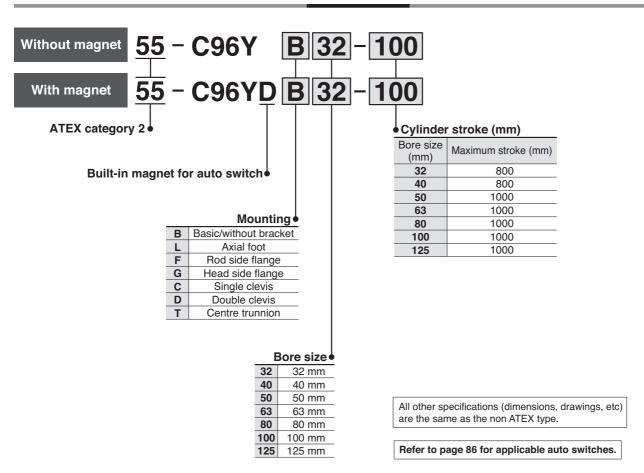


ATEX Compliant ISO Cylinder Smooth Cylinder/Double Acting, Single Rod Series 55-C96Y

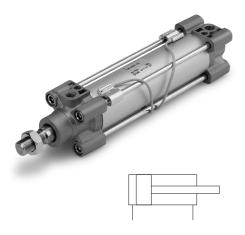
Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100, Ø 125



How to Order



Specifications



Bore size (mm)	32	40	50	63	80	100	125	
Action	Double acting							
Fluid	Air							
Proof pressure	1.05 MPa							
Max. operating pressure	0.7 MPa							
Min. operating pressure	0.02 MPa			0.01 MPa				
Ambient and fluid	Without auto switch: -10 to 70 °C*							
temperature	With auto switch: -10 to 60 °C*							
Lubrication	Not required (Non-lube)							
Operating piston speed	5 to 500 mm/s							
Allowable stroke tolerance	Up to 250 st: +1.0, 251 to 1000 st: +1.4							
Cushion	Non							
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2	
	Basic, Axial foot, Rod end flange,							
Mounting	Head end flange, Single clevis, Double clevis,							
		Centre trunnion						
Allowable air leak	0.5 l/min (ANR)							
NI - for to	1			-				

^{*} No freezing



ATEX Compliant ISO Cylinder Standard: Double Acting, Single Rod Series 55-CP96

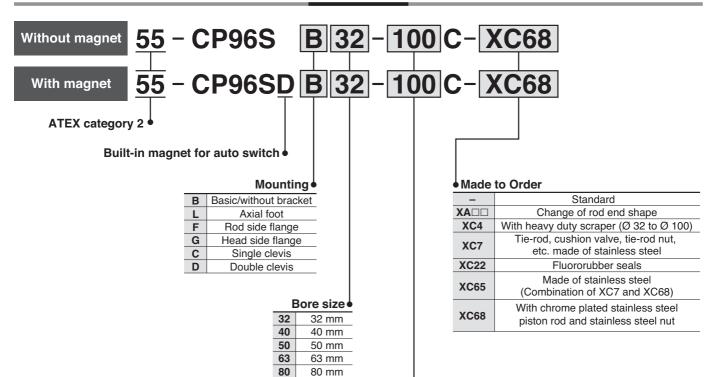
Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

(Without magnet) (€ ⟨Ex⟩ II 2GDc 85 °C (T5) Ta −20 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C

(Built-in magnet) 85 °C (T5) Ta -10 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C

For the Ø 125, refer to the next page

How to Order



Cylinder stroke (mm)

100 mm

100

	Cymraer carone (mm)					
Bore size (mm)	Standard stroke (mm)	Max. stroke*	XC68 Max. stroke			
32	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	2000	1800			
40	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	2000	1700			
50	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	2000	1700			
63	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	2000	1700			
80	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	2000	1700			
100	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	2000	1700			

Intermediate strokes are available.

All other specifications are the same as the standard products Series CP96. For details, refer to the WEB catalogue.



^{*} Please consult with SMC for longer strokes.



ATEX Compliant ISO Cylinder Standard: Double Acting, Single Rod Series 55-CP96

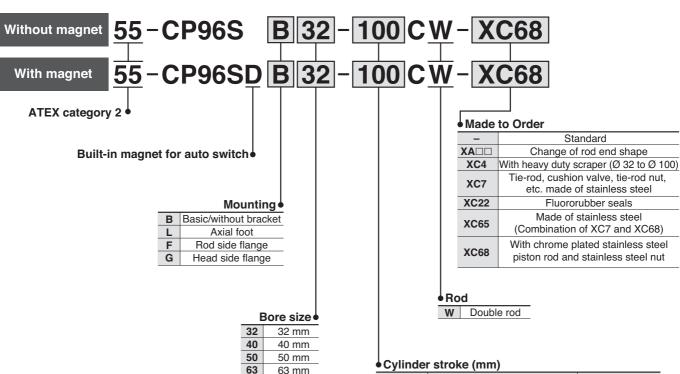
Ø 125

Without magnet ((Ex) II 2GDc 85 °C (T5) Ta -20 °C to 40 °C

Built-in magnet 85 °C (T5) Ta -10 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C | 105 °C (T4) Ta 40 °C to 60 °C

For the Ø 125, refer to the next page

How to Order



80

100

80 mm

100 mm

All other specifications are the same as the standard products Series CP96W. For details, refer to the WEB catalogue.

Refer to page 86 for applicable auto switches.

Bore size (mm)	Standard stroke (mm)	Max. stroke for standard type and XC68*
32	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1000
40	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1000
50	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1000
63	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1000
80	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1000
100	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1000

Intermediate strokes are available.

^{*} Please consult with SMC for longer strokes.

Series CP96



Specifications

Bore size (mm)	32	40	50	63	80	100	125	
Action				Double	e acting			
Fluid		Air						
Proof pressure		1.5 MPa						
Max. operating pressure		1.0 MPa						
Min. operating pressure		0.05 MPa						
Ambient and fluid temperature		Without auto switch: -20 to 70 °C* With auto switch: -10 to 60 °C*						
Lubrication		Not required (Non-lube)						
Operating piston speed			50 to 10	00 mm/s			50 to 700 mm/s	
Allowable stroke tolerance	Up to 25	o st: +1.0, 2	51 to 100	0 st: +1.4, 1	001 to 15	600 st: +1.8	, 1501 to 2000 st: +2.2	
Cushion			В	oth ends	(Air cushi	on)		
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2	
Mounting	Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion					clevis,		

^{*} No freezing



ATEX Compliant ISO Cylinder Standard: Double Acting, Double Rod Series 55-CP96W

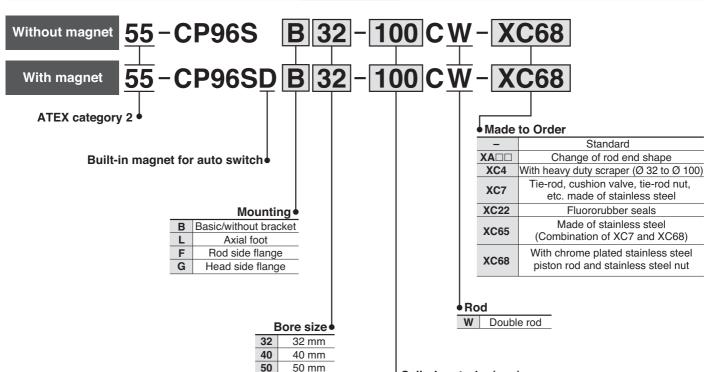
Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

Without magnet **(€** ⟨Ex⟩ II 2GDc 85 °C (T5) Ta −20 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C | 105 °C (T4) Ta 40 °C to 60 °C

(Built-in magnet) 85 °C (T5) Ta -10 °C to 40 °C

For the Ø 125, refer to the next page

How to Order



63 mm

80 mm 100 mm

80

All other specifications are the same as the standard products Series CP96W. For details, refer to the WEB catalogue.

Refer to page 86 for applicable auto switches.

Cylinder stroke (mm)

• Cyllilaei	Stroke (IIIIII)	
Bore size (mm)	Standard stroke (mm)	Max. stroke for standard type and XC68 *
32	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1000
40	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500	1000
50	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1000
63	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600	1000
80	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1000
100	25, 50, 80, 100, 125, 160, 200 250, 320, 400, 500, 600, 700, 800	1000

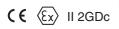
Intermediate strokes are available.

^{*} Please consult with SMC for longer strokes.



ATEX Compliant ISO Cylinder Standard: Double Acting, Double Rod Series 55-CP96W

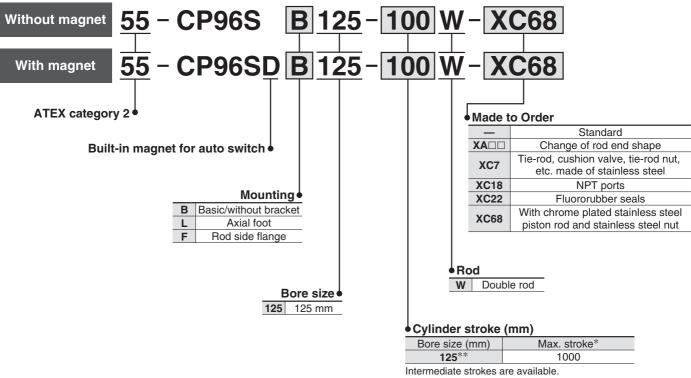
Ø 125



(Without magnet) **(€** ⟨Ex⟩ II 2GDc 85 °C (T5) Ta −20 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C

(Built-in magnet) 85 °C (T5) Ta -10 °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C For the Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, and Ø 100, refer to page 61.

How to Order

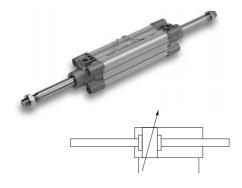


^{*} Please consult with SMC for longer strokes.

All other specifications are the same as the standard products Series CP96W. For details, refer to the WEB catalogue.

^{**} Ø 125 are produced upon receipt of order.

ISO Cylinder: Standard Double Acting, Double Rod Series CP96W



Specifications

Bore size (mm)	32	40	50	63	80	100	125
Action				Doubl	e acting		
Fluid				,	۹ir		
Proof pressure				1.5	MPa		
Max. operating pressure				1.0	MPa		
Min. operating pressure		0.05 MPa					
Ambient and fluid temperature		Without auto switch: –20 to 70 °C* With auto switch: –10 to 60 °C*					
Lubrication		Not required (Non-lube)					
Operating piston speed			50 to 10	00 mm/s			50 to 700 mm/s
Allowable stroke tolerance	Up to 25	0 st: +1.0, 2	251 to 100	0 st: +1.4, 1	1001 to 15	500 st: +1.8	, 1501 to 2000 st: +2.2
Cushion			В	oth ends	(Air cushi	ion)	
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
Mounting	Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion				clevis,		

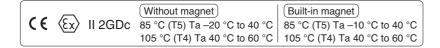
^{*} No freezing



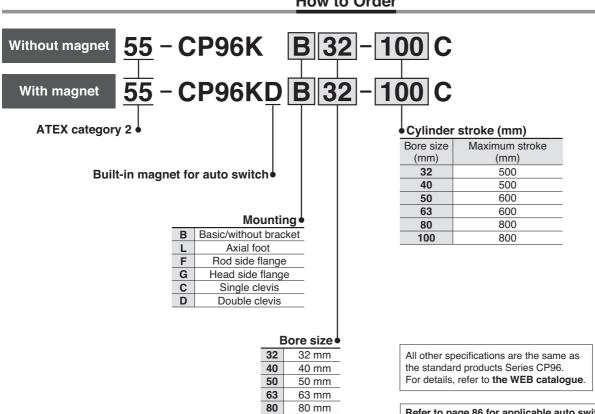
ATEX Compliant ISO Cylinder

Non-rotating Type: Double Acting, Single Rod Series 55-CP96K

Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



How to Order



100

100 mm

ISO Cylinder: Non-rotating Rod Type Double Acting, Single Rod Series CP96K



Specifications

D ()		40		20	20	400	
Bore size (mm)	32	32 40 50 63 80 100					
Action			Double	acting			
Fluid			Α	ir			
Proof pressure			1.5 [MРа			
Max. operating pressure			1.0 l	MРа			
Min. operating pressure			0.05	MPa			
Ambient and fluid temperature		Without auto switch: -20 to 70 °C* With auto switch: -10 to 60 °C*					
Lubrication		Not required (Non-lube)					
Operating piston speed		50 to 1000 mm/s					
Allowable stroke tolerance		Up to	250 st: +1.0, 25	51 to 1000 st:	+1.4		
Cushion			Both ends (Air cushion)			
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	
Mounting		Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion					
Non-rotating accuracy	±0	.5°	±0	.5°	±0	.3°	
Allowable rotating torque Nm max.	0.25	0.45	0.	64	0.	79	

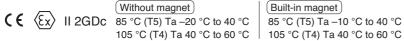
^{*} No freezing



ATEX Compliant ISO Cylinder

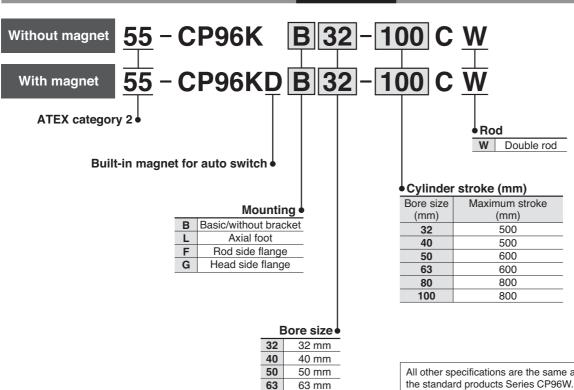
Non-rotating Type: Double Acting, Double Rod Series 55-CP96KW

Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



Built-in magnet 85 °C (T5) Ta -10 °C to 40 °C

How to Order



80

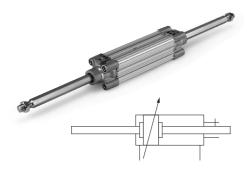
100

80 mm

100 mm

All other specifications are the same as the standard products Series CP96W. For details, refer to the WEB catalogue.

ISO Cylinder: Non-rotating Rod Type Double Acting, Double Rod Series CP96KW



Specifications

Bore size (mm)	32	40	50	63	80	100		
Action		Double acting						
Fluid			Α	ir				
Proof pressure			1.5 N	ИРа				
Max. operating pressure			1.0 M	ИРа				
Min. operating pressure			0.05	MPa				
Ambient and fluid temperature		Without auto switch: -20 to 70 °C* With auto switch: -10 to 60 °C*						
Lubrication		Not required (Non-lube)						
Operating piston speed		50 to 1000 mm/s						
Allowable stroke tolerance		Up to 2	250 st: +1.0, 25	1 to 1000 st:	+1.4 0			
Cushion			Both ends (A	Air cushion)				
Port size	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2		
Mounting	Basic, Axial foot, Rod end flange, Head end flange, Single clevis, Double clevis, Centre trunnion							
Non-rotating accuracy	±0	.5°	±0.5°		±0.3°			
Allowable rotating torque Nm max.	0.25	0.45	0.0	64	0.79			

^{*} No freezing



$\langle \xi \chi \rangle$

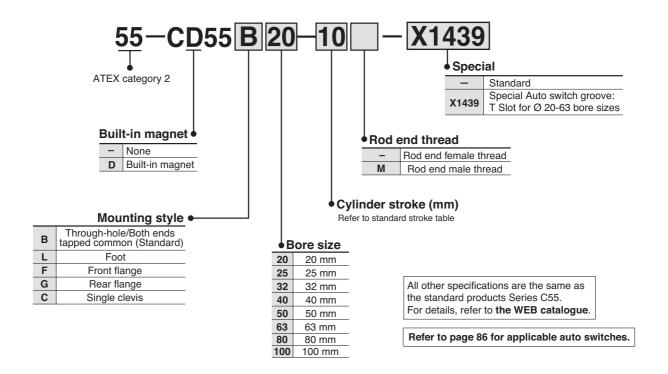
ATEX Compliant

ISO Standards/Compact Cylinder Series 55-C55

Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



How to Order



ATEX Compliant Compact Cylinder Series 55-C55



Symbol Double Acting/Single Rod



Specifications

Bore size (mm)	20	25	32	40	50	63	80	100
Туре		Pneumatic (Non-lube)						
Action			Doub	le acting	g, Single	e rod		
Fluid				Ai	r			
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.05 MPa 0.03 MPa				MPa			
Ambient and fluid temperature	−10 to 60 °C (No freezing)							
Cushion	Rubber bumper on both end							
Stroke length tolerance	+1.0 mm 0							
Mounting	Through-hole/Both ends tapped common							
Piston speed			50 to	500 mi	m/s		50 to 30	00 mm/s

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Intermediate strokes
20 to 63	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80, 100, 125, 150	6 ~149
80 to 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80, 100, 125	6 ~124

Mounting Bracket Part No.

Bore size (mm)	Foot	Flange	Single clevis
20	C55-L020	C55-F020	C55-C020
25	C55-L025	C55-F025	C55-C025
32	C55-L032	C55-F032	C55-C032
40	C55-L040	C55-F040	C55-C040
50	C55-L050	C55-F050	C55-C050
63	C55-L063	C55-F063	C55-C063
80	C55-L080	C55-F080	C55-C080
100	C55-L100	C55-F100	C55-C100

- Order two foot brackets per cylinder.
- Parts belonging to each bracket are as follows.
 Foot, Flange, Single clevis/Body mounting bolt

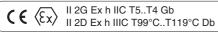
Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.



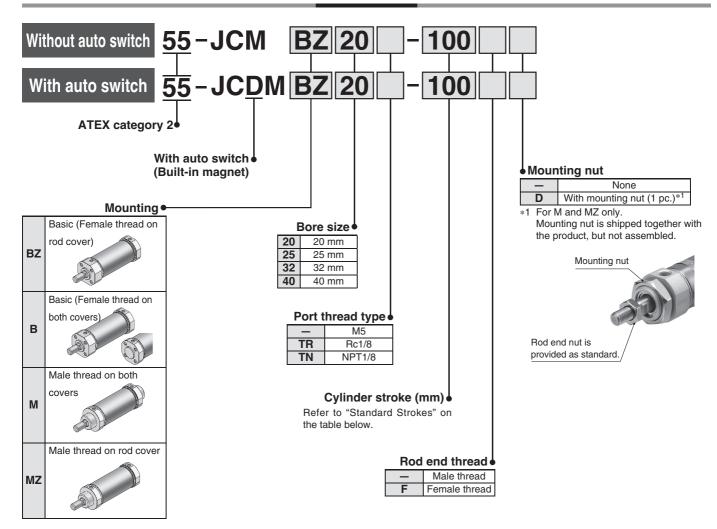


Air Cylinder/Double acting, Single rod Series 55-JCM

Ø 20, Ø 25, Ø 32, Ø 40







Standard Strokes

Bore size (mm)	Standard stroke (mm) Note)
20	
25	25, 50, 75, 100, 125, 150, 200, 250, 300
32	25, 50, 75, 100, 125, 150, 200, 250, 500
40	

Note) Intermediate strokes not listed above are produced upon receipt of order. The minimum stroke is 25 mm.

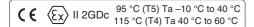
All other specifications are the same as the standard products Series JCM. For details, refer to the **WEB catalogue**.





Air Cylinder/Standard/Double Acting Series 55-CG1

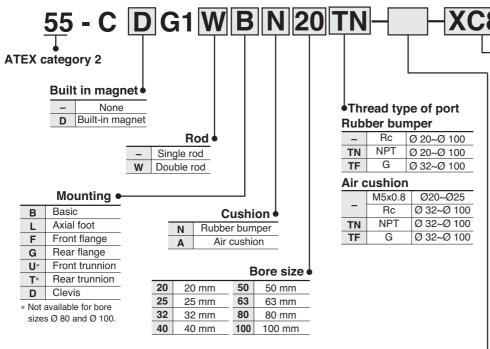
Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Made to Order					
_	Standard				
XC85	Food grade grease				
	Dual stroke cylinder/Double rod				
XC11 Note 1) 2)	Dual stroke cylinders/Single rod				

Note 1) Not available for Ø 80-100. "How to Order" for XC10, and XC11 are different from the above. Refer to the catalogue on smc.es

Note 2) Not available for rubber cushion type. Note 3) XC10 and XC11 are not applicable to XC85.

Culindon	otroko	/ \	١.
Cylinder	Stroke	(111111)	, ,

_			
В	ore size (mm)	Standard stroke ⁽¹⁾ (mm)	Long stroke ⁽²⁾ (mm)
	20	25, 50, 75, 100, 125, 150, 200	201 to 350
	25		301 to 400
	32		301 to 450
	40	25, 50, 75, 100, 125, 150, 200,	301 to 800
	50/63	250, 300	301 to 1200
	80		301 to 1400
	100		301 to 1500

Note 1) Other intermediate strokes can be manufactured upon receipt of order. Spacers are not used for the intermediate strokes.

Note 2) Long stroke applies to the axial foot and the front flange style. If other mounting brackets are used or the length exceeds the stroke limit, the stroke should be determined based on the stroke selection table in the technical data.

All other specifications are the same as the standard products Series CG1. For details, refer to **the WEB catalogue**.

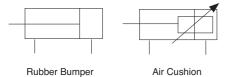


Series 55-CG1

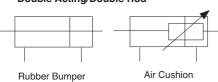
Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Symbol

Double Acting/Single Rod



Double Acting/Double Rod



Specifications

Bore size (mm)	20	25	32	40	50	63	80	100			
Action			Dou	ble actin	g/Single	rod					
Lubrication				Non-	lube						
Fluid				Α	ir						
Proof pressure				1.5	MPa						
Max. operating pressure				1.0	MPa						
Min. operating pressure	0.05 MPa										
Ambient and fluid temperature	e -10 to +60 °C (No freezing)										
Piston speed			50 to 1	1000 mm	n/s		50 to 70	00 mm/s			
Stroke tolerance	L	Jp to 100	00 ^{+1.4} mı	m, Up to	1200 +1	.8 mm		00 ^{+1.4} ₀ mm 00 ^{+1.8} ₀ mm			
Cushion			Rubb	er bump	er/Air cu	shion					
Mounting*	Basic, Axial foot, Front flange, Rear flange, Front trunnior Rear trunnion, Clevis (Used for changing the port location by 90 degrees.)										

^{*} Front/Rear trunnion styles are not available for bore sizes \varnothing 80 and \varnothing 100.

Accessories

M	ounting	Basic	Axial foot	Front flange	Rear flange	Front trunnion	Rear trunnion	Clevis
Standard	Rod end nut	•	•	•	•	•	•	•
Standard	Clevis pin	_	_	_	_	_	_	•
	Single knuckle joint	•	•	•	•	•	•	•
Option	Double knuckle joint ** (With pins)	•	•	•	•	•	•	•
	Pivot bracket	_	_	_	_	•*	•*	•
	Rod boot	•	•	•	•	•	•	•

^{*} Pivot bracket is not available for bore sizes Ø 80 and Ø 100.

Mounting Bracket Part No.

Mounting brookst		Bore size (mm)												
Mounting bracket	20	25	32	40	50	63	80	100						
Axial foot*	CG-L020	CG-L025	CG-L032	CG-L040	CG-L050	CG-L063	CG-L080	CG-L100						
Flange	CG-F020	CG-F025	CG-F032	CG-F040	CG-F050	CG-F063	CG-F080	CG-F100						
Trunnion	CG-T020	CG-T025	CG-T032	CG-T040	CG-T050	CG-T063	_	_						
Clevis**	CG-D020	CG-D025	CG-D032	CG-D040	CG-D050	CG-D063	CG-D080	CG-D100						
Pivot bracket	CG-020-24A	CG-025-24A	CG-032-24A	CG-040-24A	CG-050-24A	CG-063-24A	CG-080-24A	CG-100-24A						

^{*} Order two foot brackets per cylinder.

^{**} Pins and snap rings for double knuckle joint are included, not mounted.

^{**} Clevis pins, snap rings and mounting bolts are attached for the clevis.
*** Mounting bolts are attached for the foot type and the flange type.

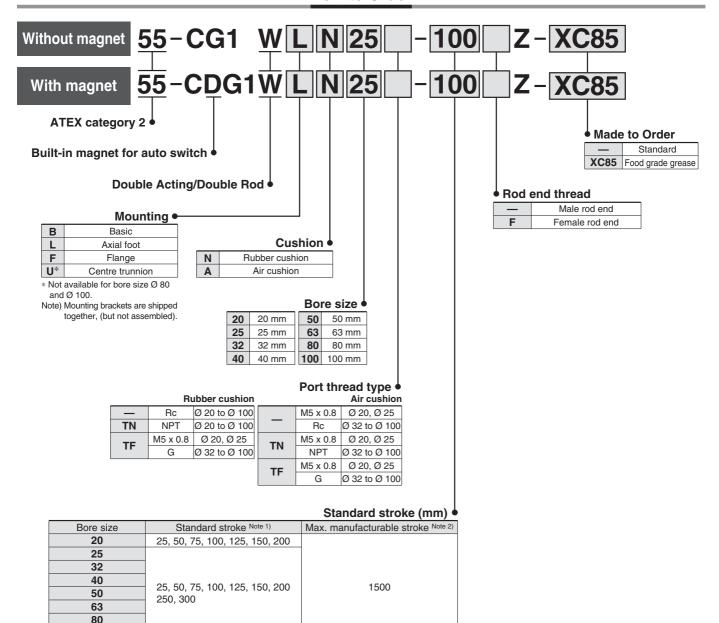


Air Cylinder/Standard type: Double acting, Double rod

Series 55-CG1W © 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

II 2G Ex h IIC T5..T4 Gb
II 2D Ex h IIIC T94°C..T114°C Db

How to Order



Note 1) Intermediate strokes not listed above are produced upon receipt of order.

The manufacturing of intermediate strokes in 1 mm increments is possible. (Spacers are

not used.)

Note 2) Applicable strokes should be confirmed according to the usage. For details, refer to the "Air Cylinders Model Selection" on front matter pages of the Best Pneumatics No. 2 or the **Web Catalogue**.

All other specifications are the same as the standard products Series CG1W.



ATEX Compliant Stainless Steel Cylin Series 55-

TN

TF

NPT

Ø 20 to Ø 100

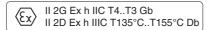
Ø 32 to Ø 100

M5 x 0.8 Ø 20, Ø 25

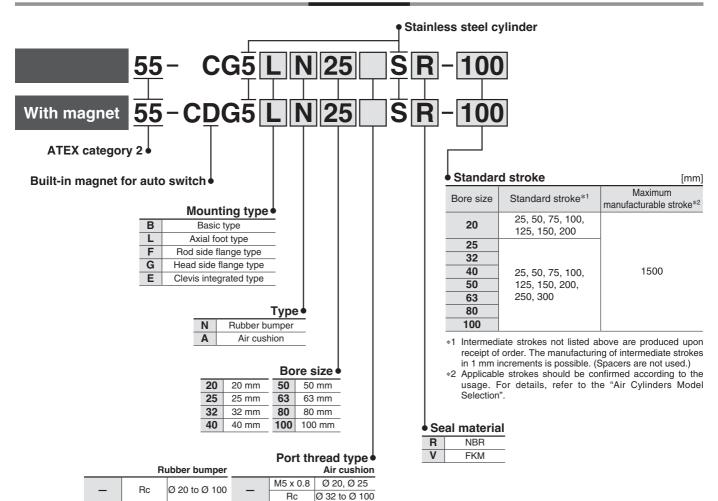
TN

Stainless Steel Cylinder/Standard Type: Double Acting, Single Rod **Series 55-CG5-S**

Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



How to Order



M5 x 0.8 Ø 20, Ø 25

M5 x 0.8 Ø 20, Ø 25

Ø 32 to Ø 100

Ø 32 to Ø 100

NPT

All other specifications are the same as the standard products Series CG5. For details refer to the WEB catalogue.





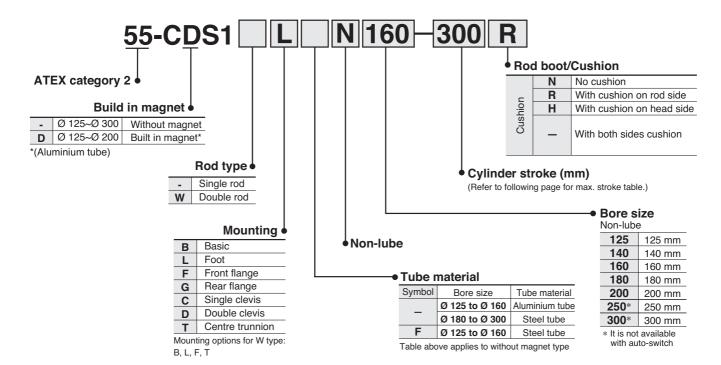
Air Cylinder/Standard/Double Acting Series 55-CS1

Non-lube: Ø 125, Ø 140, Ø 160, Ø 180, Ø 200, Ø 250, Ø 300



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22. If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Mounting Bracket Part No.

Bore size (mm)	125	140	160	180	200	250	300
Foot*	CS1-L12	CS1-L14	CS1-L16	CS1-L18	CS1-L20	CS1-L25	CS1-L30
Flange	CS1-F12	CS1-F14	CS1-F16	CS1-F18	CS1-F20	CS1-F25	CS1-F30
Single clevis	CS1-C12	CS1-C14	CS1-C16	CS1-C18	CS1-C20	CS1-C25	CS1-C30
Double clevis**	CS1-D12	CS1-D14	CS1-D16	CS1-D18	CS1-D20	CS1-D25	CS1-D30

^{*} Order 2 foot brackets for one cylinder.

All other specifications are the same as the standard products Series CS1/CS1W. For details, refer to **the WEB catalogue**

^{**} When ordering the double clevis, the clevis pin and the cotter pin (2 pcs.) are attached.

Series 55-CS1



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

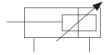
Specifications

Style	Non-lube
Fluid	Air (Non-lube)
Proof pressure 1)	1.57 MPa
Max. operating pressure 1)	0.97 MPa
Min. operating pressure	0.05 MPa
Piston speed	50 to 500 mm/s
Cushion	None, air cushion
Ambient and fluid temperature	0 to 60 °C (No freezing)
Stroke length tolerance (mm)	250 or less: +1.0, 251 to 1,000: +1.4, 1,001 to 1,500: +1.8 0 1501 to 2000: +2.2 0
Mounting	Basic, Foot, Front flange, Rear flange, Single clevis, Double clevis, Centre trunnion

Note 1) For the CDS1 diameter 180 and 200 the Proof pressure is 1.2 MPa and the Max. operating pressure is 0.7 MPa.

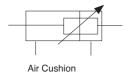
Symbol

Double Acting/Single Rod



Air Cushion

Double Acting/Double Rod



Accessories

Mo	ounting	Basic	Foot	Front flange	Rear flange	Single clevis	Double clevis	Centre trunnion
Standard	Clevis pin, Cotter pin	-	-	-	-	-	•	-
	Rod end nut	•	•	•	•	•	•	•
Accesson	Single knuckle joint	•	•	•	•	•	•	•
Accessory	Double knuckle joint (Knuckle pin, Cotter pin)	•	•	•	•	•	•	•

(mm)

Max. Stroke		Without magnet		With r	nagnet	
Tube material	Aluminium alloy	Carbon s	Aluminium alloy			
Mounting bracket Bore	Basic Rear flange Single clevis Double clevis Centre trunnion Foot Front flange	Basic Rear flange Single clevis Double clevis	Foot Front flange	B, G, C, D, T	L, F*	
125	1000 or less	1000 or less	1600 or less	1000 or less	1400 or less	
140	1000 or less	1000 or less	1600 or less	1000 or less	1400 or less	
160	1200 or less	1200 or less	1600 or less	1200 or less	1400 or less	
180	_	1200 or less	2000 or less	1200 or less	1500 or less	
200	_	1200 or less	2000 or less	998 or less	998 or less	
250	_	1200 or less	2400 or less	-	-	
300	_	1200 or less	2400 or less	-	-	

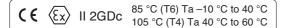
 $[\]ast$ For double Rod Type (W), max. stroke for L and F options is the same as B and T options.





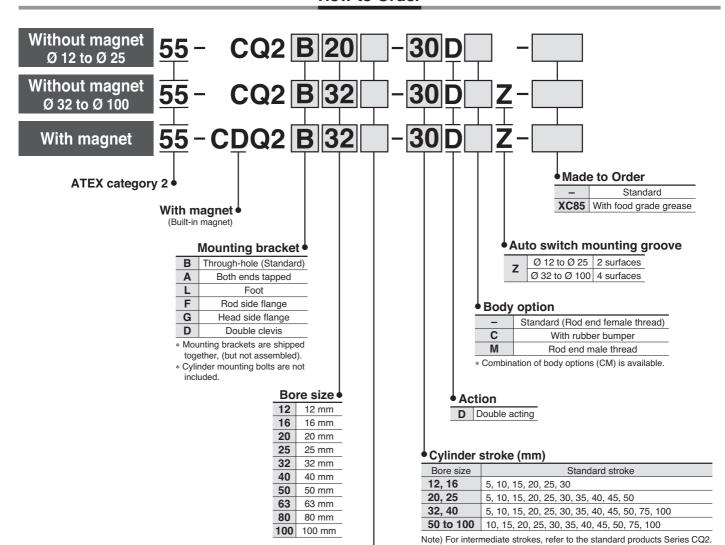
Compact Cylinder/Standard: Double Acting, Single Rod Series 55-CQ2

Ø 12, Ø 16, Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22. If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Port thread type

	M thread	Ø 12 to Ø 25
_	Rc	Ø 32 to Ø 100
TF	G	0 32 10 0 100

 $[\]ast$ For cylinders without magnet, M threads are compatible only with Ø 32-5 mm stroke.

All other specifications are the same as the standard products Series CQ2. For details, refer to **the WEB catalogue**.



Compact Cylinder/Standard: Double Acting, Double Rod Series 55-CQ2W

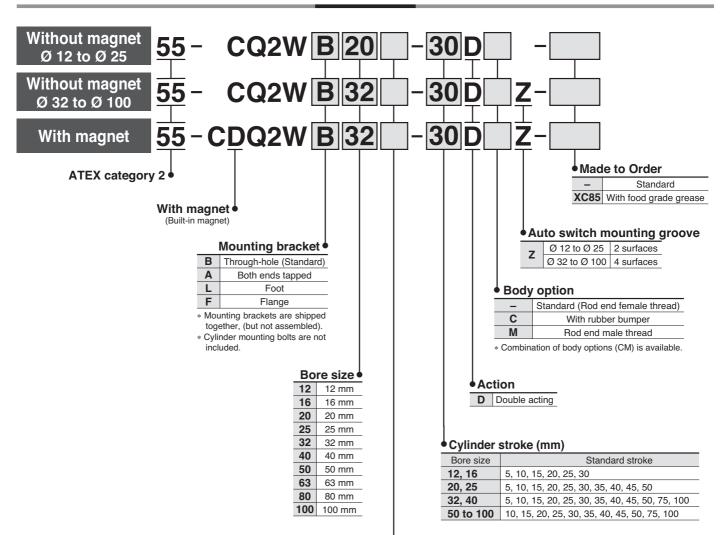
Ø 12, Ø 16, Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

(\xi (Ex**)** II 2GDc 85 °C (T6) Ta $^{-10}$ °C to 40 °C 105 °C (T4) Ta 40 °C to 60 °C

Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Port thread type

	M thread	Ø 12 to Ø 25
_	Rc	Ø 32 to Ø 100
TF	G	0 32 10 0 100

 $[\]ast$ For cylinders without magnet, M threads are compatible only with Ø 32-5 mm stroke.

All other specifications are the same as the standard products Series CQ2. For details, refer to **the WEB catalogue**.

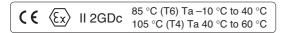
Refer to page 86 for applicable auto switches.

88



Compact Cylinder/Long stroke: Double Acting, Single Rod **Series 55-CQ2**

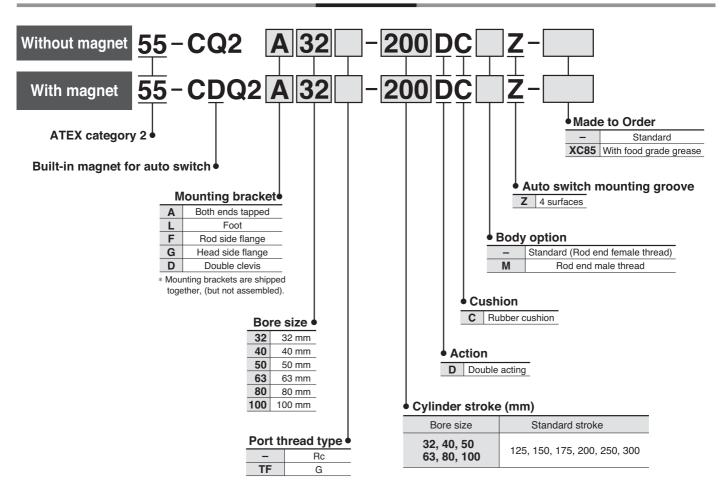
Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order

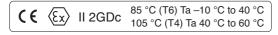


All other specifications are the same as the standard products Series CQ2. For details, refer to **the WEB catalogue**.



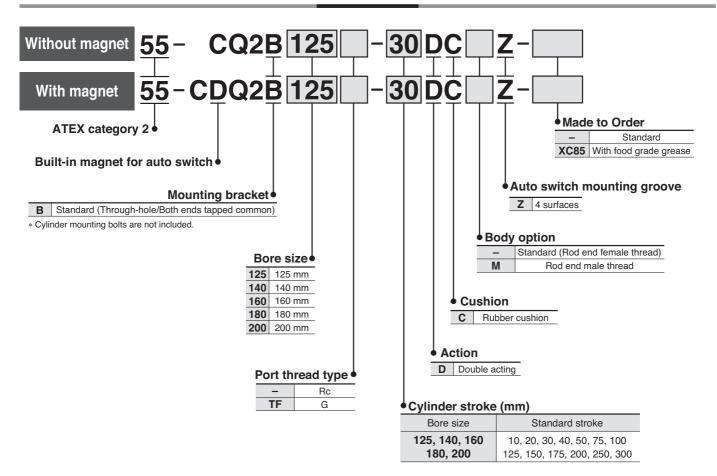
Compact Cylinder/Large Bore Size: Double Acting, Single Rod **Series 55-CQ2**

Ø 125, Ø 140, Ø 160, Ø 180, Ø 200



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22. If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



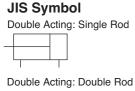
All other specifications are the same as the standard products Series CQ2. For details, refer to **the WEB catalogue**.

Style

	Bore siz	ze (mm)	12	16	20	25	32	40	50	63	80	100	125	140	160	180	200
	Mounting	Through-hole (Standard)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	iviouriting	Both ends tapped	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Built-in ma	agnet		•	•	•	•	•	•	•	•	•	•	•	•	•	
Pneumatic	Piping	Screw-in style	M5	M5	M5	M5	M5 G 1/8	G 1/8	G 1/4	G 1/4	G 3/8	G 1/2	G 1/2				
	Rod end r	male thread	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	With rubb	er bumper	•	•	•	•	•	•	•	•	•	•	•(2)	•(2)	•(2)	•(2)	•(2)

Note 1) Among those without an auto switch, only the 5mm stroke uses M5 piping. Note 2) Rubber bumper is standard for bore sizes over Ø 125.







Specifications

Bore size (mm)	12	16	20	25	32	40	50	63	80	100	125	140	160	180	200
Style						F	'neuma	tic (No	n-lube))					
Fluid		Air													
Proof pressure		1.5 MPa 1.05 MPa													
Max. operating pressure		1.0 MPa 0.7 MI											MPa		
Min. operating pressure	0.07	7 МРа						0.0	05 MPa	a					
Ambient and fluid temperature	With	auto sv	vitch: –	10 °C 1	to 60 °(C (No f	reezing) / With	nout au	to swit	ch: –10	0°C to	70 °C	(No fre	ezing)
Cushion				No	ne, rub	ber bu	mper					Rub	ber bu	mper	
Rod end thread						Ma	e threa	d, Ferr	ale thr	ead					
Tolerance of stroke length (mm)	+1.0 0 +1.4 0														
Mounting	Through-hole, Both end tapped, Foot, Front flange, Rear flange, Double clevis Through-hole both end									end tap	oped				
Piston speed						50	to 500	mm/s						20 to 4	00 mm/s

Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.



Dual Rod Cylinder Series 55-CXS/55-CXSW

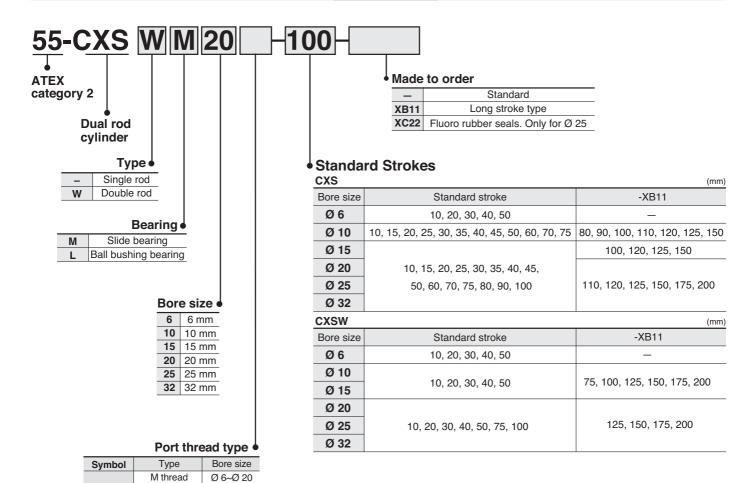
Ø 6, Ø 10, Ø 15, Ø 20, Ø 25, Ø 32



Note 1) This cylinder can be used in zones 1 and 21 and in zones 2 and 22.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zones 2 and 22 and not in zones 1 and 21.

How to Order



Rc Ø 25~Ø 32

G Ø 25~Ø 32

All other specifications are the same as the standard products Series CXS. For details, refer to **the WEB catalogue**.

Refer to page 86 for applicable auto switches.

TF



ATEX Compliant Dual Rod Cylinder Series 55-CXS/55-CXSW



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

CXS Specifications

Bore size (mm)	6	10	15	20	25	32			
Fluid	Air (Non-lube)								
Min. operating pressure	0.15 MPa	0.1 [МРа	0.05 MPa					
Max. operating pressure	0.7 MPa								
Proof pressure	1.05 MPa								
Ambient and fluid temperature	-10 to 60 °C (No freezing)								
Piston speed	30 to 300 mm/s	30 to 800 mm/s		30 to 700 mm/s		600 n/s			
Piping port	M5 X 0.8 G 1/8, R 1/8								
Stroke adjustable range	0 to -5 mm to the standard stroke								
Bearing	Slide b	earing, Ba	ll bushing	bearing (S	Same dime	nsions)			
Cushion			Rubber	bumper					



CXSW Specifications

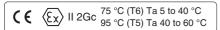
Bore size (mm)	6	10	15	20	25	32		
Fluid			Air (No	n-lube)				
Min. operating pressure	0.15 MPa 0.1 MPa							
Max. operating pressure	0.7 MPa							
Proof pressure	1.05 MPa							
Ambient and fluid temperature	-10 to 60 °C (No freezing)							
Piston speed	50 to 500 mm/s							
Piping port	M5 X 0.8 G 1/8, R				R 1/8			
Stroke adjustable range	0 to -10 mm (Extension side: 5 mm, Retraction side: 5 mm)							
Bearing	Slide bearing, Ball bearing (Same dimensions)							
Cushion	Rubber bumper							





Mechanically Jointed Rodless Cylinder Series 55-MY1B

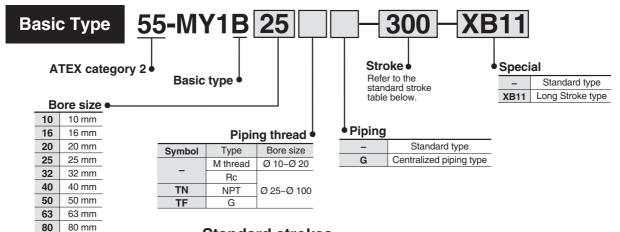
Basic Type/Ø 10, Ø 16, Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63, Ø 80, Ø 100



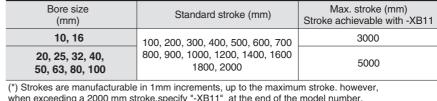
Note 1) This cylinder can be used in zones 1 and 2.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zone 2 and not in zone 1.

How to Order



Standard strokes



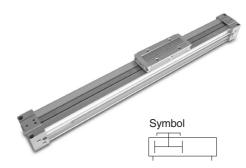
(*) Strokes are manufacturable in 1mm increments, up to the maximum stroke. however, when exceeding a 2000 mm stroke, specify "-XB11" at the end of the model number. With strokes of 49 mm or less, the air cushion capacity may decrease and it may not be possible to mount multiple auto switches.

Specifications

	Bore size (mm)	10	16	20	25	32	40	50	63	80	100
Flui	d	Air									
Acti	on					Double	e acting				
Oper	ating pressure range	0.2 to 0.8MPa				0.1 to (0.8 MPa				
Prod	of pressure	1.2 MPa									
Ambie	ent and fluid temperature	5 to 60 °C									
Cus	hion	Rubber bumper Air cushion									
Lub	ricaton	Non-lube									
Stro	ke length tolerance	1000 or le 1001 to 3			2	2700 or	less ^{+1.8} ,	2701 to	701 to 5000 ^{+2.8}		
Port size	Front/Side ports	M	0.X U.O ' ' ' ' ' ' ' ' ' '						NPT, 1/2		
Ope	rating piston speed	100 to 500 mm/s		100 to 1000 mm/s							

All other specifications are the same as the standard products Series MY1B. For details, refer to **the WEB catalogue**.

Refer to page 86 for applicable auto switches.



100 100 mm

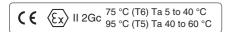
Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.





Mechanically Jointed Rodless Cylinder Series 55-MY1M

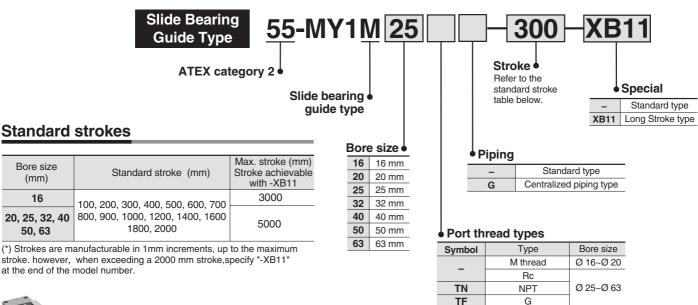
Slide Bearing Type/Ø 16, Ø 20, Ø 25, Ø 32, Ø 40, Ø 50, Ø 63



Note 1) This cylinder can be used in zones 1 and 2.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zone 2 and not in zone 1.

How to Order





Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Standard strokes

Bore size (mm)		16	20	25	32	40	50	63		
Fluid	1	Air								
Actio	on	Double acting								
Opera	ating pressure range	0.15 to 0.8 MPa								
Proof pressure 1.2 MPa										
Ambie	ent and fluid temperature	5 to 60 °C								
Cush	nion	Air cushion								
Lubri	ication	Non-lube								
Strok	ce length tolerance	1000 or less ⁺ $\frac{1.8}{0.00}$ 2700 or less ⁺ $\frac{1.8}{0.00}$, 2701 to 5000 ⁺ $\frac{2.8}{0.00}$								
Port size	Front/Side ports	M5 x 0.8		Rc, N	NPT, 1/8	Rc, NPT, G 1/4		NPT, 3/8		
Opera	ating piston speed	100 to 1000 mm/s								

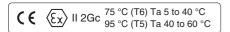
All other specifications are the same as the standard products Series MY1M. For details, refer to ${\it the WEB \ catalogue.}$





Mechanically Jointed Rodless Cylinder Series 55-MY1H

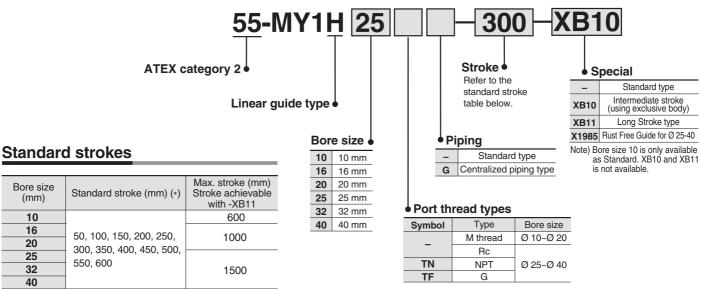
Linear Guide Type/Ø 10, Ø 16, Ø 20, Ø 25, Ø 32, Ø 40



Note 1) This cylinder can be used in zones 1 and 2.

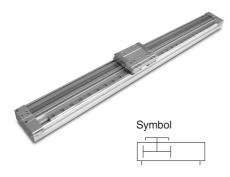
If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zone 2 and not in zone 1.

How to Order



(*) Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, add "-XB10" to the end of the part number for nonstandard strokes from 51 to 599. Also when exceeding a 600 mm stroke specify "-XB11" at the end of the model number (except for Ø 10). Ø 10 can only be manufactured up to 600mm stroke.

Specifications



Note) All other specifications
(dimensions, drawings, etc.)
are the same as the non ATEX type.

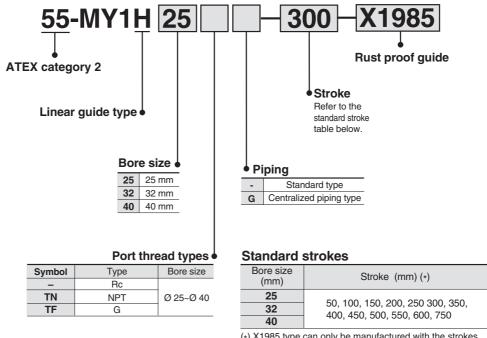
	Bore size (mm)	10	16	20	25	32	40			
Flui	d	Air								
Acti	ion		Double acting							
Oper	rating pressure range	0.2 to 0.8 MPa		0.1 to	0.8 MPa					
Pro	of pressure	1.2 MPa								
Ambi	ient and fluid temperature	5 to 60 °C								
Cus	hion	Rubber bumper Air cushion								
Lub	rication	Non-lube								
Stro	ke length tolerance	+1.8 (mm)								
Port size	Front/Side ports	M5 x 0.8			Rc, N G	NPT, 1/8	Rc, NPT, G 1/4			
Оре	erating piston speed	100 to 500 mm/s	100 to 1000 mm/s							

All other specifications are the same as the standard products Series MY1H. For details, refer to **the WEB catalogue**



Mechanically jointed Rodless Cylinder Series 55-MY1H

How to Order



(*) X1985 type can only be manufactured with the strokes listed in table.

ATEX Compliant Auto Switch Applicable Cylinder List

55- C76	55- C85	55- C95	55- C96	55- CP96	55- C55	55- CG1										55- CRQ2
•	Note 1)		•	•	•	(20 to 63)		•	•	(Except 50)	•	•	(50 to 100)	•	•	•
•	Note 2)		•	•	•	(20 to 63)		•	•	(Except 50)	•	•	(50 to 100)	•	•	•
•	Note 1)		•	•	•	(20 to 63)		•	•	(Except 50)	•	•	(50 to 100)	•	•	•
•	Note 2)		•	•	•	(20 to 63)		•	•	(Except 50)	•	•	(50 to 100)	•	•	•
•																
•																
•																
		(160 to 250)														
		(160 to 200)														
		(160 to 200)														
													(50 to 100)	(20 to 40)	(20 to 40)	
														(10, 15)	(10, 15)	
														(10, 15)	(10, 15)	
•	Note 3)					(20 to 63)										
•	Note 4)															
•	Note 4)															
		(160 to 250)	•	•												
•	(16 to 25)		•	•	•	(20 to 63)	(125 to 200)	•	•	(10 to 20)	(16, 20)	•				•
•	Note 5)		•	•	•	(20 to 63)	(125 to 200)	•	•	(10 to 20)	(16, 20)	•				•
														(10, 15)	(10, 15)	
		(160 to 200)														
													(50 to 100)	(20 to 40)	(20 to 40)	
	•	C76 C85 Note 1) Note 2) Note 2) Note 2) Note 3) Note 3) Note 4)	C76 C85 C95 Note 1) Note 2) Note 2) Note 2) (160 to 250) (160 to 200) (160 to 200)	C76 C85 C95 C96 Note 1) Note 2) Note 2) Note 2) (160 to 250) Note 3) Note 4) Note 4) Note 5) Note 5) Note 5)	C76	C76 C85 C95 C96 CP96 C55 Note 1 Note 2) Note 2) Note 2) (160 10 250) (160 10 200) (160 10 200) Note 3) Note 4) Note 5) (16 to 25)	C76 C85 C95 C96 CP96 C55 CG1 Note 1 </td <td>C76 C85 C95 C96 CP96 C55 CG1 CS1 Note 1 Note 2 </td> <td>C76 C85 C95 C96 CP96 C55 CG1 CS1 CQ2(Z) Note 2 1 4 4 4 20 to 63 1 4 Note 2 1 4 4 4 20 to 63 1 4 Note 2 1 4 4 4 4 20 to 63 1 4 Note 3 1 4<!--</td--><td>C76 C85 C95 C96 CP96 C55 CG1 CS1 CQ2(Z) CXS/W Note 1 Note 2 </td><td>CASE CSS CPSS CPSS CCSI CCSI CXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX</td><td>CORD COSS COSS COSS COSS COSS COSS COSS MY1M MY1M Note 1 1000 1 1000 2 1 1 2<td>C76 C85 C95 C96 CP96 CP96 C35 CG1 CG2 CX2V NY 18 NY1M NY1M NY1H Note 1</td><td> C76</td><td> Case Case </td><td>C76 C85 C95 C96 C96 C96 C97 C31 C31 C32 C32 </td></td></td>	C76 C85 C95 C96 CP96 C55 CG1 CS1 Note 1 Note 2	C76 C85 C95 C96 CP96 C55 CG1 CS1 CQ2(Z) Note 2 1 4 4 4 20 to 63 1 4 Note 2 1 4 4 4 20 to 63 1 4 Note 2 1 4 4 4 4 20 to 63 1 4 Note 3 1 4 </td <td>C76 C85 C95 C96 CP96 C55 CG1 CS1 CQ2(Z) CXS/W Note 1 Note 2 </td> <td>CASE CSS CPSS CPSS CCSI CCSI CXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX</td> <td>CORD COSS COSS COSS COSS COSS COSS COSS MY1M MY1M Note 1 1000 1 1000 2 1 1 2<td>C76 C85 C95 C96 CP96 CP96 C35 CG1 CG2 CX2V NY 18 NY1M NY1M NY1H Note 1</td><td> C76</td><td> Case Case </td><td>C76 C85 C95 C96 C96 C96 C97 C31 C31 C32 C32 </td></td>	C76 C85 C95 C96 CP96 C55 CG1 CS1 CQ2(Z) CXS/W Note 1 Note 2	CASE CSS CPSS CPSS CCSI CCSI CXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	CORD COSS COSS COSS COSS COSS COSS COSS MY1M MY1M Note 1 1000 1 1000 2 1 1 2 <td>C76 C85 C95 C96 CP96 CP96 C35 CG1 CG2 CX2V NY 18 NY1M NY1M NY1H Note 1</td> <td> C76</td> <td> Case Case </td> <td>C76 C85 C95 C96 C96 C96 C97 C31 C31 C32 C32 </td>	C76 C85 C95 C96 CP96 CP96 C35 CG1 CG2 CX2V NY 18 NY1M NY1M NY1H Note 1	C76	Case Case	C76 C85 C95 C96 C96 C96 C97 C31 C31 C32 C32

^{():} Cylinder size



Note 1) 55-C85 Band mounting all sizes, and Rail mounting for 8 to 16 only.

Note 2) 55-C85 Band mounting only.

Note 4) 55-C85 Rail mounting only. Note 4) 55-C85 Rail mounting only.

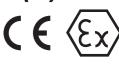
Note 5) 55-C85 Rail mounting only, for 16 to 25 only.



$\langle E_{X} \rangle$

ATEX Compliant Solid-state Switch / Direct Mounting

D-M9N(V)-588·D-M9P(V)-588·D-M9B(V)-588

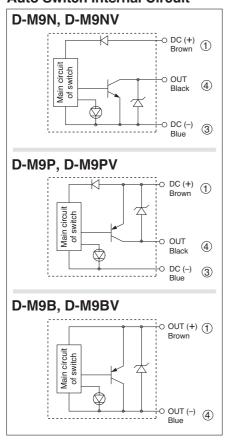


Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Auto Switch Internal Circuit



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□/D-M9□\	D-M9□/D-M9□V (With indicator light)										
Auto switch part no.	D-M9N	D-M9NV	D-M9B	D-M9BV							
Electrical entry direction	In-line	Perpendicular	In-line	In-line	Perpendicular						
Wiring type		3-w	2-v	vire							
Output type	N	PN	-	_							
Applicable load		IC circuit, I	24 VDC relay, PLC								
Power supply voltage	5,	12, 24 V DC (_								
Current consumption		10 mA	or less		_						
Load voltage	28 V D0	C or less	-	_	24 VDC (10 to 28 V DC)						
Load current		40 mA	or less		2.5 to 40 mA						
Internal voltage drop	0.8 V or l	ess at 10 mA	4 V or less								
Leakage current		100 μ A or les	0.8 mA or less								
Indicator light		Red L	ED illuminate	es when turne	ed ON.						
This 4 0 4		and and the land	1.1	0 100							

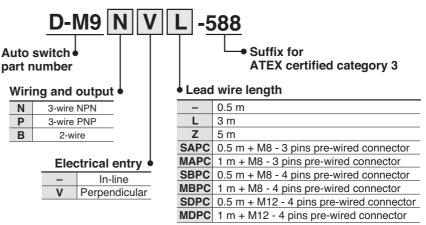
[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto	switch model	D-M9N□	D-M9N□ D-M9P□				
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)					
Insulator	Number of cores	3 cores (Brown	2 cores (Brown/Blue)				
	Outside diameter [mm]						
Conductor	Cross section [mm ²]		0.15				
Conductor	Strand diameter [mm]						
Minimum bending radius [mm] (Reference)		20					

How to Order

Standard Model Number

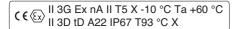


Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④



ATEX Compliant 2-Colour Solid State Switch: Direct Mounting Series D-M9NW(V)/D-M9PW(V)/D-M9BW(V)-588

 $(\xi \langle \xi_X \rangle)$ Ro



Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

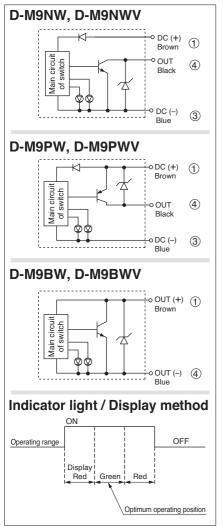
Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W/D-M9□WV (With 2 colour indicator light)									
Auto switch part no.	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV			
Electrical entry direction	In-line	Perpendicular	In-line	In-line	Perpendicular				
Wiring type	3-wire 2-wire								
Output type	N	PN	-	_					
Applicable load		IC circuit, I	24 V DC relay, PLC						
Power supply voltage	5, 12, 24 V DC (4.5 to 28 V)					_			
Current consumption		10 mA	_						
Load voltage	28 V D	C or less	-	_	24 V DC (10 to 28 V DC)				
Load current		40 mA	or less		2.5 to 40 mA				
Internal voltage drop	0.8 V or l	ess at 10 mA	(2 V or less	at 40 mA)	4 V c	r less			
Leakage current		100 μA or les)	0.8 mA or less					
Indicator light		Operating position Red LED illuminates. Optimum operating position Green LED illuminates.							

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

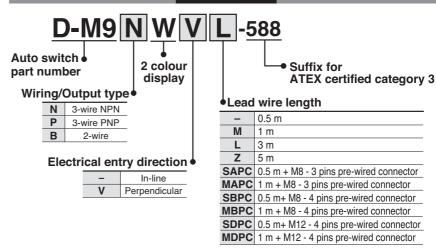
Auto Switch Internal Circuit



Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW□	D-M9PW□	D-M9BW□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brown/Blue)		
IIISUIAIOI	Outside diameter [mm]	Ø 0.9		
Conductor	Conductor Cross section [mm²] 0.15			
Conductor	Strand diameter [mm]	Ø 0.05		
Minimum bending radius [mm] (Reference)			20	

How to Order



Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④



$\langle \xi \chi \rangle$

ATEX Compliant Solid State Switch/Band Mounting

D-H7A2-588





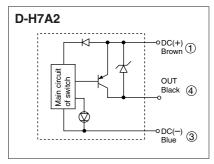
II 3G Ex nA II T5 X -10 $^{\circ}$ C \leq Ta \leq +60 $^{\circ}$ C II 3D Ex tD A22 IP67 T93 $^{\circ}$ C X

Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Internal Circuit



Specifications

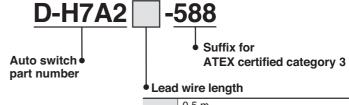
	PLC: Programmable Logic Controller			
D-H7 (With indicator light)				
Auto switch model number	D-H7A2			
Wiring	3 wire			
Output	PNP			
Application	IC circuit/Relay/PLC			
Power voltage	5/12/24 V DC (4.5 to 28 V DC)			
Current consumption	10 mA or less			
Load current	80 mA or less			
Internal voltage drop	0.8 V or less			
Current leakage	100 μA or less at 24 V DC			
Indicator light	Red LED illuminates when turned ON.			

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-H7A2
Sheath	Outside diameter [mm]	Ø 3.4
Inquistor	Number of cores	3 cores (Brown/Blue/Black)
Insulator	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm²]	0.2
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius [mm] (Reference)		21

How to order



_	0.5 m
L	3 m
Z	5 m
SAPC	0.5 m + M8 - 3 pins pre-wired connector
MAPC	1 m + M8 - 3 pins pre-wired connector
SBPC	0.5 m+ M8 - 4 pins pre-wired connector
MBPC	1 m + M8 - 4 pins pre-wired connector
SDPC	0.5 m + M12 - 4 pins pre-wired connector
MDPC	1 m + M12 - 4 pins pre-wired connector

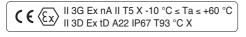
ormotor operations			
Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④



ATEX Compliant Solid State Switch/Rail Mounting

D-F7P(V)-588



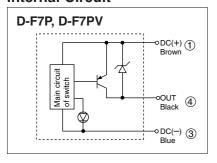


Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Internal Circuit



Specifications

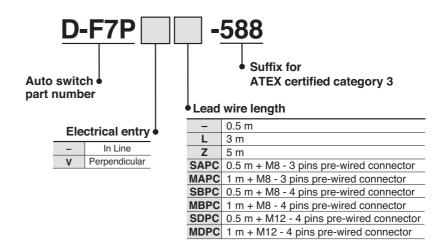
D-F7P, D-F7PV (With indicator light)				
Auto switch model number	D-F7P D-F7PV			
Electrical entry	In-line	Perpendicular		
Wiring	3 \	vire		
Output	PI	NP		
Application	IC circuit/Relay/PLC			
Power voltage	5/12/24 V DC (4.5 to 28 V DC)			
Current consumption	10 mA or less			
Load current	80 mA or less			
Internal voltage drop	0.8 V or less			
Current leakage	100 μA or less at 24 V DC			
Indicator light	Red LED illuminates when turned ON			

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7P□
Sheath	Outside diameter [mm]	Ø 3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
insulator	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm ²]	0.2
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius [mm] (Reference)		21

How to order



Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④







ATEX Compliant Solid State Switch/Tie-rod Mounting

D-F5P-588





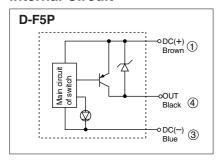
II 3G Ex nA II T5 X -10 °C ≤ Ta ≤ +60 °C II 3D Ex tD A22 IP67 T93°C X

Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Internal Circuit



Specifications

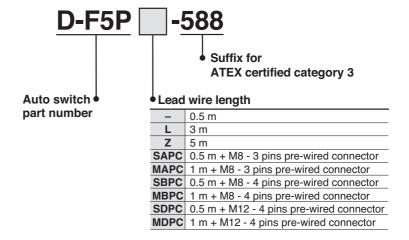
	PLC: Programmable Logic Controller		
D-F5P (With indicator light)			
Auto switch model number	D-F5P		
Wiring	3 wire		
Output	PNP		
Application	IC circuit/Relay/PLC		
Power voltage	5/12/24 V DC (4.5 to 28 V DC)		
Current consumption	10 mA or less		
Load current	80 mA or less		
Internal voltage drop	0.8 V or less		
Current leakage	100 μA or less at 24 V DC		
Indicator light	Red LED illuminates when turned ON		

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F5P
Sheath	Outside diameter [mm]	Ø 4
Inquistor	Number of cores	3 cores (Brown/Blue/Black)
Insulator	Outside diameter [mm]	Ø 1.22
Conductor	Cross section [mm²]	0.3
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius [mm] (Reference)		24

How to order



Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④





ATEX Compliant Solid State Switch/Direct Mounting

D-Y7P(V)-588







Grommet

Specifications

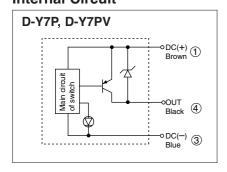
PLC: Programmable Logic Controller

D-Y7P/D-Y7PV (With indicator light)					
Auto switch model number	D-Y7P	D-Y7PV			
Electrical entry	In-line	Perpendicular			
Wiring	3 wire				
Output	PNP				
Application	IC circuit/Relay/PLC				
Power voltage	5/12/24 V DC (4.5 to 28 V DC)				
Current consumption	10 mA or less				
Load current	80 mA or less				
Internal voltage drop	0.8 V or less				
Current leakage	100 μA or less at 24 V DC				
Indicator light	Red LED illuminates when turned ON				
• This setement 0 tune	autopuitab oon only be used in zones	0 and 00			

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

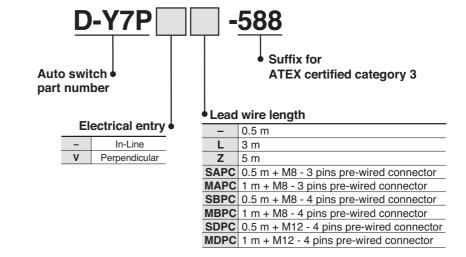
Internal Circuit



Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7P□	
Sheath	Outside diameter [mm]	Ø 3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	Ø 1.0	
Conductor	Cross section [mm²]	0.15	
	Strand diameter [mm]	Ø 0.05	
Minimum bending radius [mm] (Reference)		21	

How to order



•				
Connector type	M8-3 pins	M8-4 pins	M12-4 pins	
Pin arrangement	1 4	3 4	② ① ③ ④	







ATEX Compliant Solid State Switch / Direct Mounting

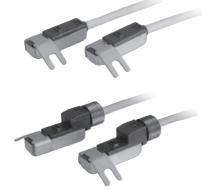
D-S7P-588





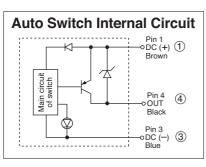


Grommet/Connector Electrical entry: In-line



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

D-S7P2 D-S7P1 Left-hand mounting Right-hand mounting



Specifications

PLC: Programmable Logic Controller

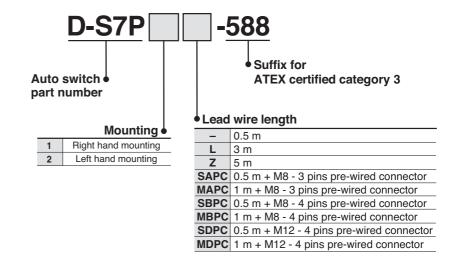
D-S7P1/D-S7P2 (With indicator light)		
Auto switch model number	D-S7P1 D-S7P2	
Electrical entry	In-Line	Perpendicular
Wiring	3 w	ire
Output	PN	IP
Application	IC circuit/Relay/PLC	
Power voltage	5/12/24 V DC (4.5 to 28 V DC)	
Current consumption	10 mA or less	
Load current	40 mA or less	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)	
Current leakage	100 μA or less at 24 V DC	
Indicator light	Red LED illuminates when turned ON	

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7P□
Sheath	Outside diameter [mm]	Ø 3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm²]	0.2
	Strand diameter [mm]	Ø 0.08
Minimum bending radius [mm] (Reference)		21

How to order



Connector Specifications

Connector Specifications			
Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④



ATEX Compliant Solid State Switch/Direct Mounting

D-S9P-588

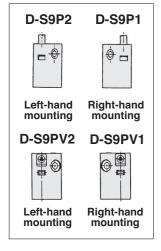




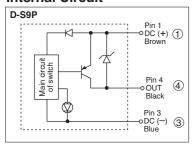
Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.



Internal Circuit



Specifications

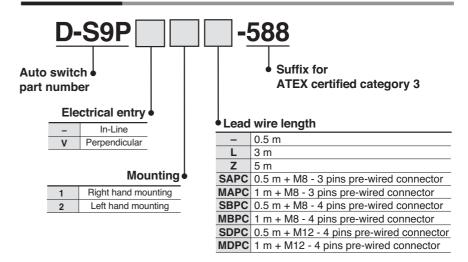
		PLC: Programmable Logic Controller	
D-S9P/D-S9PV (With indicator light)			
Auto switch model number	D-S9P1, D-S9P2 D-S9PV1, D-S9PV2		
Electrical entry	In-Line	Perpendicular	
Wiring	3 w	ire	
Output	PNP		
Application	IC circuit/Relay/PLC		
Power voltage	5/12/24 V DC (4.5 to 28 V DC)		
Current consumption	10 mA or less		
Load current	40 mA or less		
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)		
Current leakage	100 μA or less at 24 V DC		
Indicator light	Red LED illuminates when turned ON		

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7P□
Sheath	Outside diameter [mm]	Ø 3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm²]	0.2
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius [mm] (Reference)		21

How to order



Connector Specifications

Connector opcomentations			
Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④







ATEX Compliant Solid-state Switch / Direct Mounting

D-F6P-588



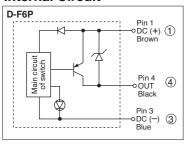
(€ (Ex) | II 3G Ex nA | II T5 X -10 °C ≤ Ta ≤ +60 °C | II 3D Ex tD | A22 | IP67 T93 °C X

Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Internal Circuit



Specifications

PLC:	Programmable	Logic	Controlle

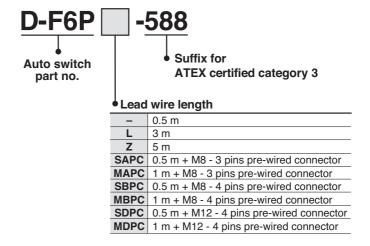
D-F6P (With indicator light)		
Auto switch part no.	D-F6P	
Electrical entry direction	In-line	
Wiring type	3-wire	
Output type	PNP	
Applicable load	IC circuit, relay, and PLC	
Power supply voltage	5, 12, 24 V DC (4.5 to 28 V)	
Current consumption	10 mA or less	
Load current	40 mA or less	
Internal voltage drop	0.8 V or less	
Leakage current	100 μA or less at 24 V DC	
Indicator light	Red LED illuminates when turned ON.	

[•] This category 3 type autoswitch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F6P
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	Ø 0.9
Conductor	Cross section [mm ²]	0.15
	Strand diameter [mm]	Ø 0.05
Minimum bending radius [mm] (Reference)		20

How to order



Connector Specifications

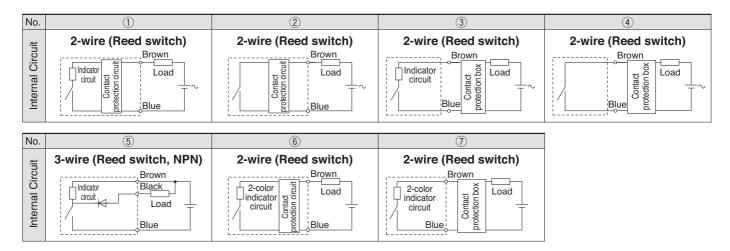
Connector type	M8-3 pins	M8-4 pins	M12-4 pins
Pin arrangement	1 4	3 4	② ① ③ ④





Prior to Use Auto Switch/Internal Circuit

Reed Auto Switch



Contact Protection Box: CD-P12

<Applicable switch models>

D-A73/A8, D-A73H/A80H, D-C73/C8, D-E73A/E80A, D-Z73/Z8, $\,9\Box A,$ and D-A9/A9 $\Box V$ type

The auto switches above do not have a built-in contact protection circuit. A contact protection box is not required for solid state auto switches due to their construction.

- 1) Where the operation load is an inductive load.
- Where the wiring length to load is greater than 5 m. Therefore, use a contact protection box with the switch for any of the above cases:

The contact life may be shortened (due to permanent energizing conditions.) Even for the built-in contact protection circuit type (D-A54), use the contact protection box when the wiring length to load is very long (over 30 m) and PLC (Programmable Logic Controller) with a large inrush current is used.

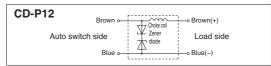
Contact Protection Box Specifications

Part no.	CD-P12
Load voltage	24 VDC
Max. load current	50 mA

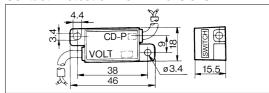


* Lead wire length — Auto switch connection side 0.5 m Load connection side 0.5 m

Contact Protection Box Internal Circuit



Contact Protection Box/Dimensions



Contact Protection Box Connection

To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 meter.



ATEX Compliant Reed Switch/Band Mounting

D-C73/D-C80-588





((Ex) | II 3G EX NA II 19 A 10 C 2 | 1 | 3D Ex tD A22 | P67 T93 °C X II 3G Ex nA II T5 X -10 $^{\circ}$ C \leq Ta \leq +60 $^{\circ}$ C

Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

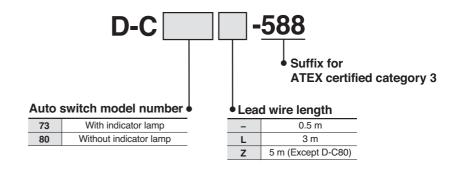
	PLC: Programmable Logic Controller	
D-C7 (With indicator light)		
Auto switch model number	D-C73	
Applicable load	Relay/PLC	
Load voltage	24 V DC	
Max. load current and range	5 to 40 mA	
Internal Circuit *	3	
Contact protection circuit	None	
Internal voltage drop	2.4 V or less	
Indicator light	Red LED illuminates when turned ON	
D. OO AMBIEL . I. L. P I P.	LIV	

maioator ngm	ned LED litarilinates when turned ON	
D-C8 (Without indicator light)		
Auto switch model number	D-C80	
Applicable load	Relay/PLC/IC circuit	
Load voltage	24 V AC or less	48 V AC DC
Max. load current	50 mA	40 mA
Internal Circuit *	4	
Contact protection circuit	None	
Internal resistance	1 Ω or less (Including 3 m lead wire)	

^{*} For internal circuit, refer to the Internal Circuit No. on page 96.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-C73/D-C80
Sheath	Outside diameter [mm]	Ø 3.4
Insulator	Number of cores	2 cores (Brown, Blue)
Outside diameter [mm]		Ø 1.1
Conductor	Cross section [mm²]	0.2
[mm]	Strand diameter [mm]	Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		21



[•] This category 3 type auto switch can only be used in zones 2 and 22.



$\langle \xi \chi \rangle$

ATEX Compliant Reed Switch/Rail Mounting

D-A73(H)/D-A80(H)-588



Specifications



Grommet Electrical entry: Perpendicular





Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

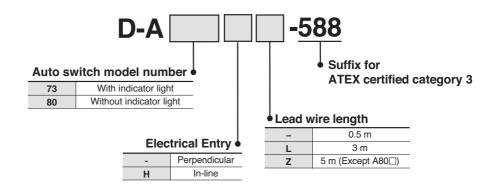
	PLG: Programmable Logic Controller	
D-A73, D-A73H (With indicator light)		
Auto switch model number	D-A73/D-A73H	
Applicable load	Relay/PLC	
Load voltage	24 V DC	
Load current range	5 to 40 mA	
Internal Circuit *	3	
Contact protection circuit	None	
Internal voltage drop	2.4 V or less	
Indicator light	Red LED illuminates when turned ON	

D-A80, D-A80H (Without indicator light)		
Auto switch model number	D-A80/D-A80H	
Applicable load	Relay/IC circuit/PLC	
Load voltage	24 V AC or less	48 V AC DC
Max. load current	50 mA 40 mA	
Internal Circuit *	4	
Contact protection circuit	None	
Internal resistance	1 Ω or less (Including 3 m lead wire)	

- * For internal circuit, refer to the Internal Circuit No. on page 96.
- This category 3 type auto switch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-A73/D-A73H/D-A80/D-A80H
Sheath	Outside diameter [mm]	Ø 3.4
Insulator	Number of cores	2 cores (Brown, Blue)
irisulator	Outside diameter [mm]	Ø 1.1
Canduatan	Cross section [mm²]	0.2
Conductor Strand diameter [mm]		Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		21





ATEX Compliant Reed Switch/Tie-rod Mounting

D-A54/D-A67-588







Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

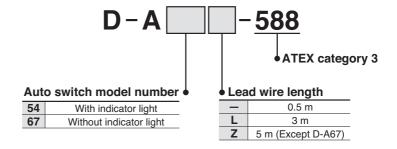
	PLC: Programmable Logic Controller	
D-A54 (With indicator light)		
Auto switch model number	D-A54	
Applicable load	Relay/PLC	
Load voltage	24 V DC	
Max. load current and range	5 to 50 mA	
Internal Circuit *	①	
Contact protection circuit	Built-in	
Internal voltage drop	2.4 V or less (up to 20 mA) / 3.5 V or less (up to 50 mA)	
Indicator light	Red LED illuminates when turned ON	

D-A67 (Without indicator light)		
Auto switch model number	D-A67	
Applicable load	PLC/IC circuit	
Load voltage	MAX. 24 V DC	
Max. load current and range	30 mA	
Internal Circuit *	4	
Contact protection circuit	None	
Internal resistance	1 Ω or less (Including 3 m lead wire)	

^{*} For internal circuit, refer to the Internal Circuit No. on page 96.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-A54/D-A67
Sheath	Outside diameter [mm]	Ø 4
Insulator	Number of cores	2 cores (Brown, Blue)
insulator	Outside diameter [mm]	Ø 1.22
Canduatan	Cross section [mm²]	0.3
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		24



[•] This category 3 type auto switch can only be used in zones 2 and 22.



$\langle E_{\rm X} \rangle$

ATEX Compliant Reed Switch/Direct Mounting

D-A90(V)/D-A93(V)-588

(((



Specifications

	F	PLC: Programmable Logic Controller	
D-A90, D-A90V (Without indicator light)			
Auto switch model number	D-A90/D-A90V		
Applicable load	IC circuit/Relay/PLC		
Load voltage	24 V AC or less	48 V AC or less	
Max. load current	50 mA	40 mA	
Internal Circuit *	4		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including 3 m lead wire)		
D-A93 D-A93V (With indicator light)			

	(
D-A93, D-A93V (With indicator light)		
Auto switch model number	D-A93/D-A93V	
Applicable load	Relay/PLC	
Load voltage	24 V DC	
Max. load current and load current range	5 to 40 mA	
Internal Circuit *	3	
Contact protection circuit	None	
Internal voltage drop	D-A 93 —— 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A 93V —— 2.7 V or less	
Indicator light	Red LED illuminates when turned ON	

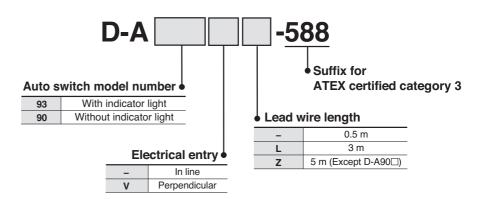
* For internal circuit, refer to the Internal Circuit No. on page 96.

Grommet

Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-A90 (V)/D-A93 (V)
Sheath	Outside diameter [mm]	Ø 2.7
Insulator	Number of cores	2 cores (Brown, Blue)
insulator	Outside diameter [mm]	Ø 0.96
Conductor	Cross section [mm ²]	0.18
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		17



[•] This category 3 type auto switch can only be used in zones 2 and 22.



ATEX Compliant Reed Switch/Direct Mounting

D-90A/D-93A-588



Specifications



Grommet
Lead wire: Heavy-duty cord



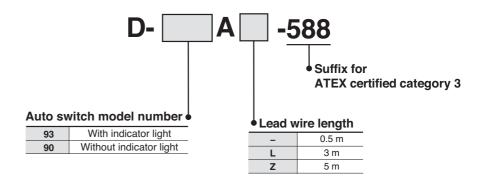
Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

PLC: Programmable Logic Controlle					
D-90A (Without indicator light)					
Auto switch model number	D-90A				
Applicable load	Relay/IC circuit/PLC				
Load voltage	24 V AC DC				
Max. load current	50 mA				
Internal Circuit *	4				
Internal resistance	1 Ω or less (Including 3 m lead wire)				
D-93A (With indicator light)					
Auto switch model number	D-93A				
Applicable load	Relay/PLC				
Load voltage	24 V DC				
Load current range	5 to 40 mA				
Internal Circuit *	3				
Internal voltage drop	2.4V or less				
Indicator light	Red LED illuminates when turned ON				

^{*} For internal circuit, refer to the Internal Circuit No. on page 96.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-90A/D-93A		
Sheath	Outside diameter [mm]	Ø 3.4		
Insulator	Number of cores	2 cores (Brown, Blue)		
insulator	Outside diameter [mm]	Ø 1.1		
Conductor	Cross section [mm ²]	0.2		
Conductor	Strand diameter [mm]	Ø 0.08		
Minimum bending radius of lead wire [mm] (Reference)		21		



[•] This category 3 type auto switch can only be used in zones 2 and 22.

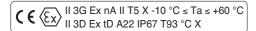


$\langle E_{\rm X} \rangle$

ATEX Compliant Reed Switch/Direct Mounting

D-Z73/D-Z80-588





Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

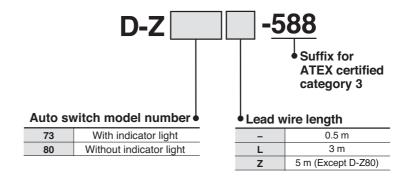
PLC: Programmable Log				
D-Z73 (With indicator light)				
Auto switch model number	D-Z73			
Applicable load	Relay/PLC			
Load voltage	24 V DC			
Max. load current and range	5 to 40 mA			
Internal Circuit *	3			
Contact protection circuit	None			
Internal voltage drop	2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA)			
Indicator light	Red LED illuminates when turned ON			

D-Z80 (Without indicator light)					
Auto switch model number	D-Z80				
Applicable load	Relay/PLC/IC circuit				
Load voltage	24 V AC Or less 48 V AC				
Max. load current	50 mA 40 mA				
Internal Circuit *	4				
Contact protection circuit	None				
Internal resistance	1 Ω or less (Including 3 m lead wire)				

- * For internal circuit, refer to the Internal Circuit No. on page 96.
- This category 3 type auto switch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-Z73/D-Z80
Sheath	Outside diameter [mm]	Ø 2.7
Insulator Number of cores		2 cores (Brown, Blue)
IIISulatoi	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm ²]	0.18
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		17





ATEX Compliant Reed Switch/Direct Mounting

D-E73A/D-E80A-588



40 mA

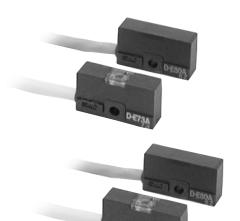
(4)

None

1 Ω or less (Including 3 m lead wire)



Grommet



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

	PLC: Programmable Logic Controller				
D-E73A (With indicator light)					
Auto switch model number	D-E	73A			
Applicable load	Relay	r/PLC			
Load voltage	24 \	' DC			
Max. load current and range	5 to 4	0 mA			
Internal Circuit *	3				
Contact protection circuit	None				
Internal voltage drop	2.4 V or less				
Indicator light	Red LED illuminates when turned ON				
D-E80A (Without indicator light)					
Auto switch model number	D-E80A				
Applicable load	Relay/PLC/IC circuit				
Load voltage	24 V AC or less 48 V AC DC				

50 mA

- * For internal circuit, refer to the Internal Circuit No. on page 96.
- This category 3 type auto switch can only be used in zones 2 and 22.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-E73A/D-E80A		
Sheath	Outside diameter [mm]	Ø 3.4		
Inquilator	Number of cores	2 cores (Brown, Blue)		
Insulator	Outside diameter [mm]	Ø 1.1		
Conductor	Cross section [mm ²]	0.2		
Conductor	Strand diameter [mm]	Ø 0.08		
Minimum bending radius of lead wire [mm] (Reference)		21		

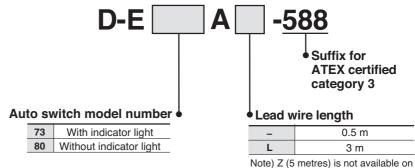
How to order

Max. load current

Internal Circuit *

Internal resistance

Contact protection circuit

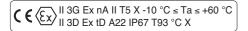






ATEX Compliant Reed Switch/Direct Mounting

D-R73/D-R80-588



Specifications



PLC: Programmable Logic Controller

D-R73□ (With indicator light)				
Auto switch model number	D-R731/D-R732			
Applicable load	Relay/PLC			
Load voltage	24 V DC			
Load current range	5 to 40 mA			
Internal Circuit *	3			
Internal voltage drop	2.4 V or less			
Indicator light	Red LED illuminates when turned ON			

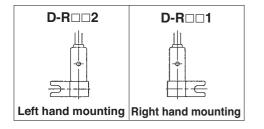
D-R80□ (Without indicator light)				
Auto switch model number	D-R801/D-R802			
Applicable load	Relay/IC circuit/PLC			
Load voltage	24 V AC DC			
Max. load current	50 mA			
Internal Circuit *	4			
Internal resistance	1 Ω or less (Including 3 m lead wire)			

- * For internal circuit, refer to the Internal Circuit No. on page 96.
- This category 3 type auto switch can only be used in zones 2 and 22.

Grommet Electrical entry: In-line



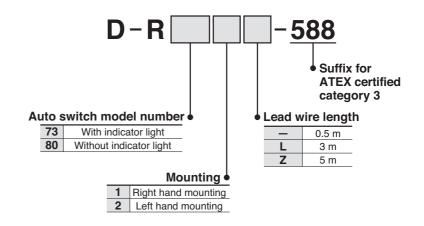
Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.



Oilproof Heavy-duty Lead Wire Specifications

Auto switch type		D-R73□/D-R80□
Sheath Outside diameter [mm]		Ø 3.4
Insulator Number of cores		2 cores (Brown, Blue)
Ilisulatoi	Outside diameter [mm]	Ø 1.1
Conductor	Cross section [mm²]	0.2
Conductor	Strand diameter [mm]	Ø 0.08
Minimum bending radius of lead wire [mm] (Reference)		21

How to order



116

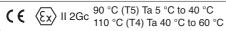




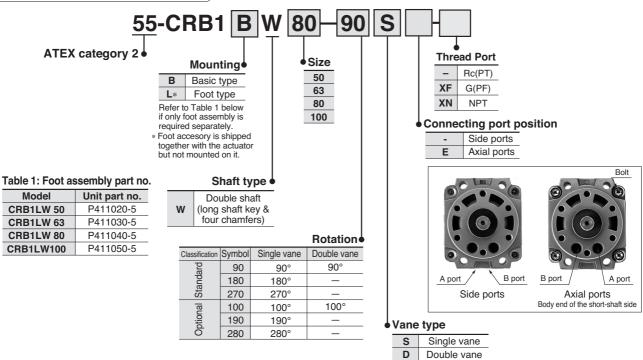
Rotary Actuator: Vane Type Series 55-CRB1/56-CRB1

Sizes: 50, 63, 80, 100

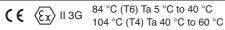
How to Order



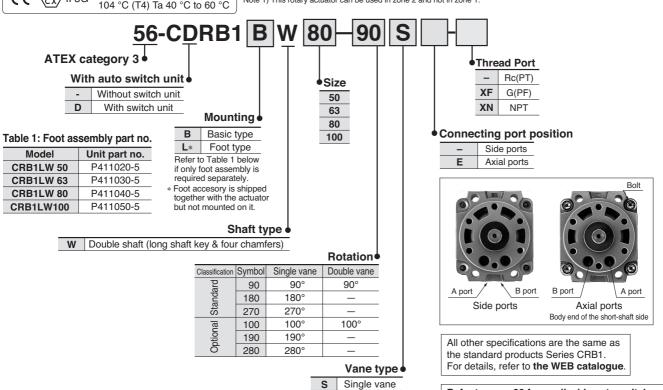
Note 1) This rotary actuator can be used in zones 1 and 2.



How to Order



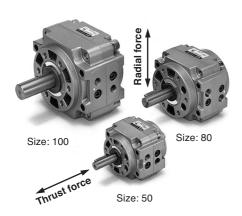
Note 1) This rotary actuator can be used in zone 2 and not in zone 1.



Double vane

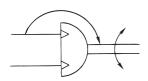
Refer to page 86 for applicable auto switches.

Rotary actuator Vane Type Series 55-CRB1/56-CRB1



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

JIS symbol



Specifications

Mode	el (Size)	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	CRB1BW50	CRB1BW63	CRB1BW80	CRB1BW100	
Vane	Vane type Single vane (S)			Double vane (D)						
Rotat	Standard	90° ⁺⁴ , 180° ⁺⁴ , 270° ⁺⁴				90)° +4			
notat	Optional	1	100°+4 ₀ , 19	0°+4, 280°	0+4		100° ⁺⁴ 0			
Fluid					Air (no	n-lube)				
Proof	pressure [MPa)				1.5	MPa				
Ambie and flu	nt iid temperature				5 to 6	30 °C				
Max.	operating ure [MPa]				1.0	MPa				
	operating sure [MPa]	0.15 MPa								
	d regulation e (sec/90)				0.1	to 1				
Allow	rable kinetic jy [J]	0.082	0.12	0.398	0.6	0.112	0.16	0.54	0.811	
Shaft	Allowable radial load [N]	245	390	490	588	245	390	490	588	
load	Allowable thrust load [N]	196	340	490	539	196	340	490	539	
Beari	ng type				Ball b	earing				
Port p	t position Side ports or axial ports									
Size	Side ports	Rc, NP	Rc, NPT, G 1/8 Rc, NPT, G 1/4			Rc, NPT, G 1/8 Rc, NPT, G 1/4			T, G 1/4	
3126	Axial ports	Rc, NP	Rc, NPT, G 1/8 Rc, NPT, G 1/4			Rc, NPT, G 1/8 Rc, NPT, G 1/4				
Mounting Basic, Foot										

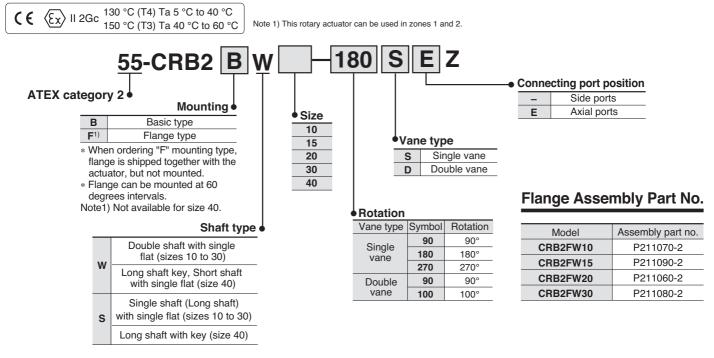




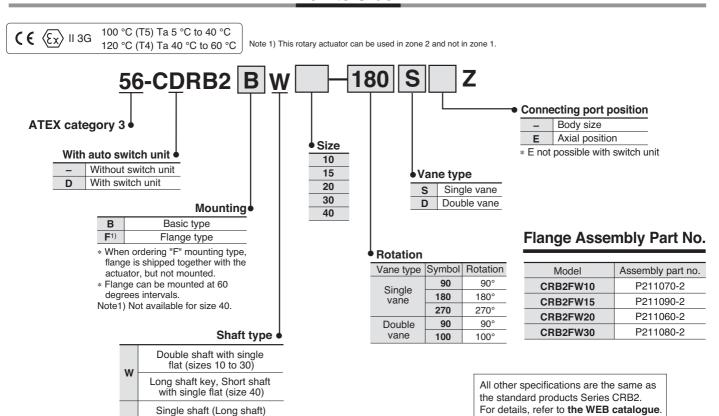
Rotary Actuator: Vane Type Series 55-CRB2/56-CRB2

Sizes: 10, 15, 20, 30, 40

How to Order



How to Order



 Cannot be selected when mounting an auto switch

with single flat (sizes 10 to 30)

Long shaft with key (size 40)



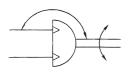
Refer to page 86 for applicable auto switches.

Rotary actuator Vane Type Series 55-CRB2/56-CRB2



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

JIS symbol



Single Vane Specifications

	(01)		🗆 -		🗆 -				
Model	(Size)	CRB2BV	V10-∐S	CRB2BV	V15-∐S	CRB2BW20-□S	CRB2BW30-∟S	CRB2BW40-∟S	
Vane t	type	Single vane							
Rotati	on	90°, 180°	270°	90°, 180°	270°		90°, 180°, 270)°	
Fluid						Air (non-lube)			
Proof	pressure [MPa]			1.0	05		1	.5	
Ambien	t and fluid temperature					5 to 60 °C			
Max. op	erating pressure [MPa]			0.	.7		1	.0	
Min. op	erating pressure [MPa]	0.	2			0.	15		
Speed re	gulation range (sec/90) Note 2)	0.03 to 0.3 0.04 to 0.3 0.0						0.07 to 0.5	
Allowa	able kinetic y [J]	0.00015		0.001		0.003	0.02	0.04	
Shaft	Allowable radial load [N]	1:	5	1:	5	25	30	60	
load	Allowable thrust load [N]	1	0	10		20	25	40	
Bearin	g type					Ball bearing			
Port po	osition				Side	ports or axial	ports		
Cina	Side ports	M5	МЗ	M5	МЗ		M5		
Size	Axial ports		N	13			M5		
Shaft	type		ouble	shaft (v	vith sin	gle flat on both	shafts)	Double shaft (Long shaft key & single flat)	
Mount	ing					Basic, Flange		Basic	

Double Vane Specifications

Mode	I (Size)	CRB2BW10-□D	CRB2BW15-□D	CRB2BW20-□D	CRB2BW30-□D	CRB2BW40-□D			
Vane	type	Double vane							
Rotati	on	90°, 100°							
Fluid		Air (non-lube)							
Proof	pressure [MPa]		1.05		1.	.5			
Ambien	t and fluid temperature			5 to 60 °C					
Мах. ор	erating pressure [MPa]		0.7	1.	.0				
Min. op	erating pressure [MPa]	0.2	0.15						
Speed reg	gulation range (sec/90) Note 2)		0.03 to 0.3	0.04 to 0.3	0.07 to 0.5				
Allowa	ble kinetic energy [J]	0.0003	0.0012	0.0033	0.02	0.04			
Shaft	Allowable radial load [N]	15	15	25	30	60			
load	Allowable thrust load [N]	10	10	20	25	40			
Bearin	g type			Ball bearing					
Port po	osition		Side	ports or axial	ports				
Port size	e (Side ports, Axial ports)	N	13	M5					
Shaft t	type	Double shaft (double shaft with single flat on both shafts)							
Mount	ing			Basic, Flange		Basic			

The following notes apply to both Single and Double Vane Specification tables above.
 Note 2) Make sure to operate within the speed regulation range.
 Exceeding the maximum speed (0.3 sec/90) can cause the unit to stick or not operate.

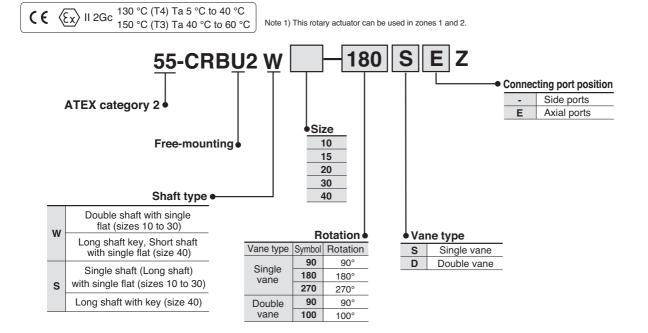




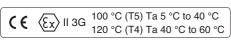
Rotary Actuator: Free-Mounting Type Series 55-CRBU2/56-CRBU2

Sizes: 10, 15, 20, 30, 40

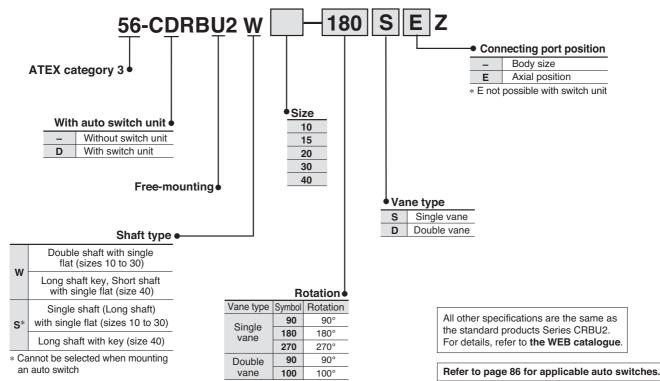
How to Order



How to Order



Note 1) This rotary actuator can be used in zone 2 and not in zone 1.

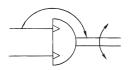


Rotary Actuator Free-Mounting Type Series 55-CRBU2/56-CRBU2



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

JIS symbol



Single Vane Specifications

Model	(Size)		CRBU2W10-□S	CRBU2W15-□S	CRBU2W20-□S	CRBU2W30-□S	CRBU2W40-□S			
Rotatio	on		90°, 180°, 270°							
Fluid			Air (non-lube)							
Proof	pressure [MPa]		1.05		1	.5			
Ambien	t and fluid te	emperature			5 to 60 °C					
Мах. ор	erating pres	sure [MPa]		0.7		1	.0			
Min. operating pressure [MPa]			0.2		0.	15				
Speed reg	ulation range (s	sec/90) Note 1)		0.03 to 0.3						
	Allowable kinetic energy [J]		0.00015	0.001	0.003	0.02	0.04			
Shaft	Allowable ra	dial load [N]	1	5	25	30	60			
load	Allowable th	rust load [N]	1	0	20	25	40			
Bearin	g type				Ball bearing		_			
Port po	sition			Side	ports or axial	ports				
Port si	Side	ports			M5					
FUILS		ports	M	3	M5					
Shaft t	уре		Double shaft (Double shaft v	vith single flat o	n both shafts)	Double shaft (Long shaft key & Single flat)			

Double Vane Specifications

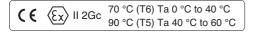
Model	(Sizo)		CDBHOW10 D	CDBHOW15 DD	CRBU2W20-□D	CDBH3W30 □D	CDB110W40 DD		
Rotati	, ,		CRBUZW10-LD	CRBUZW13-LD	90°. 100°	CRDUZW3U-LD	CRBUZW40-LD		
	OII								
Fluid					Air (non-lube)				
Proof	pressu	ıre [MPa]		1.05		1.	.5		
Ambien	nt and flo	uid temperature			5 to 60 °C				
Max. operating pressure [MPa]				0.7		1	.0		
Min. operating pressure [MPa]			0.2	0.15					
Speed reg	gulation ra	nge (sec/90) Note 1)	0.03 to 0.3			0.04 to 0.3	0.07 to 0.5		
Allowa	ble kin	etic energy [J]	0.0003	0.0012	0.0033	0.02	0.04		
Shaft	Allowal	ole radial load [N]	1	5	25	30	60		
load	Allowal	ole thrust load [N]	10		20	25	40		
Bearin	ig type				Ball bearing				
Port p	ositior	1	Side ports or axial ports						
Port s	izo	Side ports			M5				
FULLS	120	Axial ports	N	13 M5					
Shaft t	type	•	Double shaft ((Double shaft v	vith single flat o	on both shafts)	Double shaft (Long shaft key & Single flat)		

^{*} The following notes apply to both Single and Double Vane Specification tables above. Note 1) Make sure to operate within the speed regulation range. Exceeding the maximum speeds can cause the unit to stick or not operate.





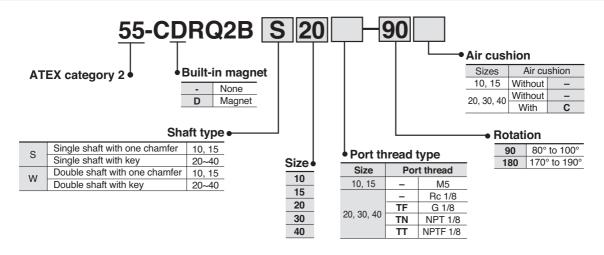
Compact Rotary Actuator: Rack-and-Pinion Type Series 55-CRQ2



Note 1) This cylinder can be used in zones 1 and 2.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zone 2 and not in zone 1.

How to Order



Specifications



Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Size 15 40 Air (non-lube) 0.7 MPa 1 MPa Maximum operating pressure Minimum operating pressure 0.15 MPa 0.1 MPa 0 to 60 °C (with no freezing) Ambient and fluid temperature Non attached, Air cushion Rubber bumper Angle adjustment Rotation end ±5° 80° to 100°, 170° to 190° $M5 \times 0.8$ Rc, G, NPT, NPTF 1/8 Output Nm at 0.5 MPa 0.3 1.8 3.1 5.3

Allowable Kinetic Energy and Rotation Time Adjustment Range

		Stable operational rotation time			
Size	Allow	able kinetic enerç	Cushion angle	adjustment range	
	Without cushion	Rubber bumper	With air cushion *	Cushion angle	Rotation time (\$/90°)
10	-	0.25 x 10 ⁻³	_	_	0.2 to 0.7
15	1	0.39 x 10 ⁻³	_	_	0.2 to 0.7
20	0.025	_	0.12	40°	0.2 to 1
30	0.048	_	0.25	40°	0.2 to 1
40	0.081	_	0.40	40°	0.2 to 1

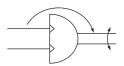
^{*)} Allowable kinetic energy with cushion

Maximum energy absorption with optimal adjustment of cushion needle

All other specifications are the same as the standard products Series CRQ2. For details, refer to **the WEB catalogue**.

Refer to page 86 for applicable auto switches.

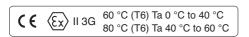
JIS symbol







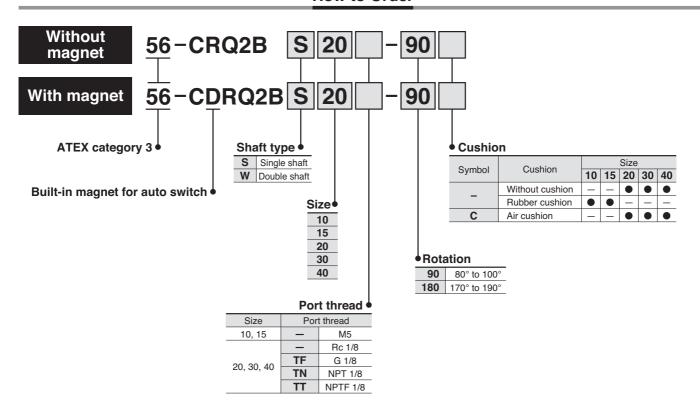
Compact Rotary Actuator: Rack-and-Pinion Type Series 56-CRQ2



Note 1) This cylinder can be used in zones 1 and 2.

If the cylinder is used with SMC category 3 type auto switch, then the cylinder can only be used in zone 2 and not in zone 1.

How to Order



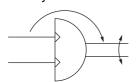


Note) All other specifications (dimensions, drawings, etc.) are the same as the non ATEX type.

Specifications

Size	10	15	20	30	40			
Fluid	Air (non-lube)							
Maximum operating pressure	0.7 MPa 1 MPa							
Minimum operating pressure	0.15	MPa	0.1 MPa					
Ambient and fluid temperature	0 to 60 °C (with no freezing)							
Cushion	Rubber	bumper	Non a	attached, Air cushion				
Angle adjustment		R	totation end ±	5°				
Rotation	80° to 100°, 170° to 190°							
Port size	M5 x	x 0.8	Rc,	G, NPT, NPTF	1/8			
Output Nm at 0.5 MPa	0.3	0.75	1.8 3.1 5.3					

JIS symbol



All other specifications are the same as the standard products Series CRQ2. For details, refer to **the WEB catalogue**.

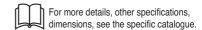
Refer to page 86 for applicable auto switches.



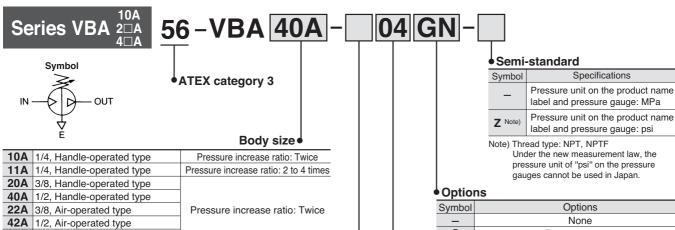
ATEX Compliant Booster Regu

Booster Regulator Series 56-VBA10A to 43A





How to Order





43A 1/2, Max. operating pressure 1.6 Mpa



Symbol	Thread type					
_	Rc					
F	G					
N	NPT					
Т	NPTF					

Thread type Note)

Note) Thread types apply to the IN, OUT, and EXH ports of the VBA10A and to the IN, OUT, EXH, and gauge ports of the VBA2□A and VBA4□A. The gauge ports of the VBA10A are Rc thread type regardless of the thread type indication.

9000							
Symbol	Options						
_	None						
G	Pressure gauge						
N	Silencer						
S	High-noise reduction silencer Note)						
GN	Pressure gauge, Silencer						
GS	Pressure gauge, High-noise reduction silencer Note)						
LN	Elbow silencer Note)						
LS	Elbow high-noise reduction silencer Note)						
GLN	Pressure gauge, Elbow silencer Note)						
GLS	Pressure gauge, Elbow high-noise reduction silencer Note)						

Note) Refer to "Combination of Thread Type and Options."

Port size

Symbol	Port size	Applicable series					
02	1/4	VBA10A					
03	3/8	VBA2□A					
04	1/2	VBA4□A					









Combination of Thread Type and Options

- тренечения принежения принежения принежения принежения принежения принежения принежения принежения принежения													
Body size	Thread		Options									Semi-standard	
body Size	type	_	G	N	S	GN	GS	LN	LS	GLN	GLS	_	-Z
	_				•							•	_
10A	F		•		•	•		•			•	•	_
11A	N	•	•	•	_	•	_	•	_	•	_	•	•
	Т				_	•	_		_		_	•	
	_				•							•	_
20A	F				•	•						•	_
22A	N				•							•	
	Т				•	•			-			•	
40A	_	•	•									•	_
40A 42A	F				•	•				/		•	_
42A 43A	N	•	•									•	•
43A	Т				•	•						•	

All other specifications are the same as the standard products Series VBA. For details, refer to **the WEB catalogue**.

Standard Specifications

Model	VBA10A-02	VBA20A-03	VBA40A-04	VBA22A-03	VBA42A-04	VBA43A-04	VBA1111-02			
Fluid		Compressed air								
Pressure increase ratio			Tw	rice			2 to 4 times			
Pressure adjustment mechanism	Handle-opera	ted with relief me	echanism Note 1)	Air-op	erated		ated with relief ism Note 1)			
Max. flow rate Note 2) [I/min (ANR)]	230	1000	1900	1000	1900	1600	70			
Set pressure range [MPa]	0.2 to 2.0	0.2 t	o 1.0	0.2 to 1.0 0.2 to 1.6						
Supply pressure range [MPa]		0.1 to 1.0								
Proof pressure [MPa]	3	1	1.5 1.5 2.4				3			
Port size (IN/OUT/EXH: 3 locations) [Rc]	1/4	3/8	1/2	3/8	1/2	1/2	1/4			
Pressure gauge port size (IN/OUT: 2 locations) [Rc]	1/8	1/8	1/8	1/8	1/8	1/8	1/16			
Ambient and fluid temperature [°C]			2	to 50 (No freezin	ng)					
Installation	Horizontal									
Lubrication				Grease (Non-lube	e)					
Weight [kg]	0.84	3.9	8.6	3.9	8.6	8.6	0.98			

Note 1) If the OUT pressure is higher than the set pressure by the handle, excessive pressure is exhausted from the back of the handle.

Options/Part No.

Pressure Gauge, Silencer (When thread type is Rc or G.)

Mo	odel	VBA10A-02	VBA20A-03	VBA40A-04	VBA22A-03	VBA42A-04	VBA43A-04	VBA1111-02
Description	_	VBA10A-F02	VBA20A-F03	VBA40A-F04	VBA22A-F03	VBA42A-F04	VBA43A-F04	EVBA1111-F02
Pressure gauge	G	G27-20-01	G36-10-01		KT-VBA22A-7	G36-10-01	G27-20-01	G27-20-01
Silencer	N	AN200-02	AN300-03	AN400-04	AN300-03	AN400-04	AN400-04	AN200-02
High-noise reduction silencer	S	ANA1-02	ANA1-03	ANA1-04	ANA1-03	ANA1-04	ANA1-04	ANA1-02

Note 1) In the case of option GN, two pressure gauges and one silencer are included as accessories.

Pressure Gauge, Silencer (When thread type is NPT or NPTF.)

Mod	lel	VBA10A-N02*	VBA20A-N03*	VBA40A-N04*	VBA22A-N03 *	VBA42A-N04*	VBA43A-N04*	VBA1111-N02*
		VBA10A-T02*	VBA20A-T03*	VBA40A-T04*	VBA22A-T03*	VBA42A-T04*	VBA43A-T04*	NVBA1111-T02*
Description		*: when " -Z "	*: when "-Z" *: when "-Z"		*: when " -Z "			
Pressure gauge *: no symbol Note 5)		G27-20-01	G36-1	0-N01	KT-VBA22A-7N	G36-10-N01	G27-20-N01	G27-20-01
Pressure gauge *: when "-Z" Note 4)	G	G27-P20-01	G36-P	10-N01	KT-VBA22A-8N	G36-P10-N01	G27-P20-N01	G27-P20-01
Silencer	Ν	AN200-N02	AN300-N03	AN400-N04	AN300-N03	AN400-N04	AN400-N04	AN200-N02
High-noise reduction silencer	S	_	ANA1-N03	ANA1-N04	ANA1-N03	ANA1-N04	ANA1-N04	_

Note 1) In the case of option GN, two pressure gauges and one silencer are included as accessories.

Note 2) Flow rate at IN= OUT= 0.5 MPa. The pressure varies depending on the operating conditions.

Note 2) KT-VBA22A-7 is a pressure gauge with fittings. (Please order two units when using with IN and OUT.)

Note 3) Pressure unit of pressure gauge: MPa.

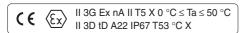
Note 2) KT-VBA22A-7N, KT-VBA22A-8N are pressure gauges with fittings. (Please order two units when using with IN and OUT.)

Note 3) Under the new measurement law, the pressure unit of "psi" on the pressure gauges cannot be used in Japan.

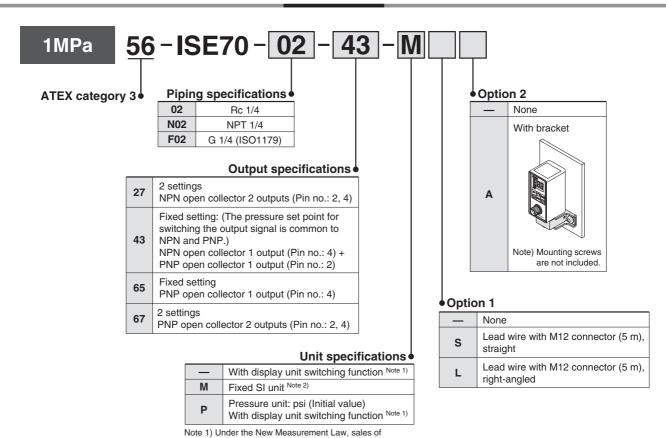
Note 4) Pressure unit of pressure gauge: psi

Note 5) Pressure unit of pressure gauge: MPa.

Digital Pressure Switch for Air Series 56-ISE70



How to Order



Specifications

Model	56-ISE70
Rated pressure range	0 to 1 MPa
Pressure display range/Set pressure range	-0.1 to 1 MPa
Withstand pressure	1.5 MPa
Pressure display resolution/Minimum unit setting	0.01 MPa
Applicable fluid	Air, Non-corrosive gas, Non-flammable gas
Power supply voltage	12 to 24 VDC ± 10 %, Ripple (p-p) 10 % or less (with power supply polarity protection)
Current consumption	55 mA or less (at no load)

switches with the unit switching function are not allowed for use in Japan. (Initial value: MPa)

Follow the instructions given below when handling the pressure switch.

- \bullet Operating temperature range is 0 to 50 $^{\circ}\text{C}$
- Do not expose the pressure switch to heat radiation from a heat source located nearby. It can cause malfunction.

Note 2) Fixed unit: Mpa

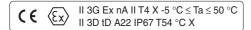
- Do not expose the pressure switch/connector/cable to vibration and impact. Otherwise it can cause damage or malfunction.
- Protect the product from direct sunlight or UV light using a suitable protective cover.
- Do not disconnect the M12 connector while energized.
- Use only an ATEX approved M12 connector.
- For cleaning this product, use a clean and damp cloth, to prevent the buildup of an electrostatic charge.
- Ground properly to prevent the buildup of an electrostatic charge.

All other specifications are the same as the standard products Series ISE70. For details, refer to **the WEB catalog** or Best Pneumatics No. 6.

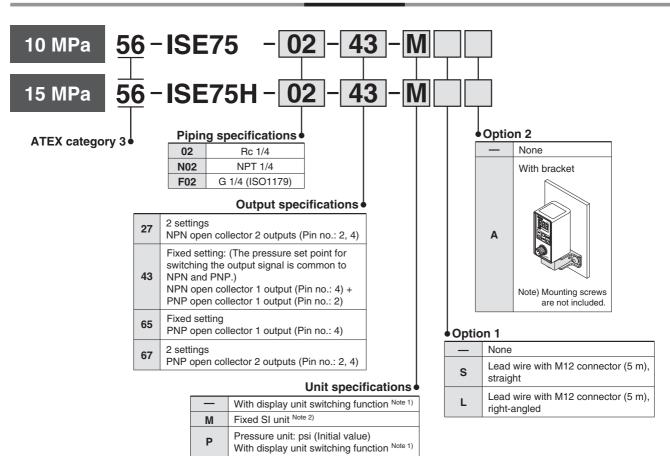




Digital Pressure Switch for General Fluids Series 56-ISE75/75H



How to Order



Note 1) Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan. (Initial value: MPa)
Note 2) Fixed unit: Mpa

Specifications

Model	56-ISE75	56-ISE75H					
Rated pressure range	0 to 10 MPa	0 to 15 MPa					
Pressure display range/Set pressure range	0.4 to 10 MPa	0.5 to 15 MPa					
Withstand pressure	30 MPa	45 MPa					
Pressure display resolution/Minimum unit setting	0.1 MPa						
Applicable fluid	Fluid or gas that will not corrode	SUS304, SUS430 and SUS630					
Power supply voltage	12 to 24 VDC ± 10 %, Ripple (p-p) 10 % or	less (with power supply polarity protection)					
Current consumption	55 mA or less (at no load)						

Follow the instructions given below when handling the pressure switch.

- Operating temperature range is 5 to 50 °C
- Do not expose the pressure switch to heat radiation from a heat source located nearby. It can cause malfunction.
- Do not expose the pressure switch/connector/cable to vibration and impact. Otherwise it can cause damage or malfunction.
- Protect the product from direct sunlight or UV light using a suitable protective cover.
- Do not disconnect the M12 connector while energized.
- Use only an ATEX approved M12 connector.
- For cleaning this product, use a clean and damp cloth, to prevent the buildup of an electrostatic charge.
- Ground properly to prevent the buildup of an electrostatic charge.

All other specifications are the same as the standard products Series ISE75/ISE75H. For details, refer to **the WEB catalog** or Best Pneumatics No. 6.







Pressure Switch: Reed Switch Type Series 56-IS10





For details about certified products conforming to international standards, visit us at www.smcworld.com.

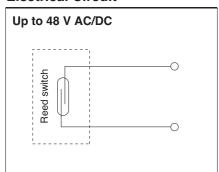
Long service life: 5 million cycles



Specifications

Model	56-IS10-01
Fluid	Air
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Regulating pressure range (at OFF point)	0.1 to 0.4 / 0.1 to 0.6 MPa (semi-standard)
Hysteresis	0.08 MPa or less
Error of scale	± 0.05 MPa or less
Repeatability	± 0.05 MPa or less
Contacts	1a
Wiring specifications	Grommet, Lead wire length 0.5 m (Standard), Option: 3 m, 5 m
Enclosure	Equivalent to IP40
Ambient and fluid temperature	−5 to 60 °C (No freezing)
Port size	R 1/8
Weight	62 g

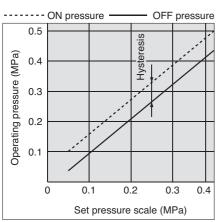
Electrical Circuit



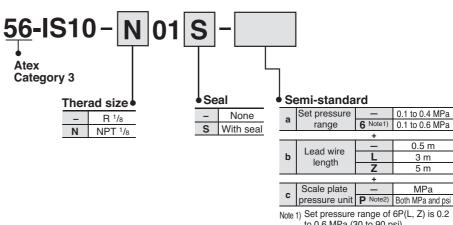
Switch Characteristics

Max. contact capacity	AC 2 VA, 2 W DC				
Voltage	≤ 24 VAC/DC or less	48 VAC/DC			
Max. operating current	50 mA	40 mA			

Operating Pressure Range



How to Order



to 0.6 MPa (30 to 90 psi).

Note 2) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

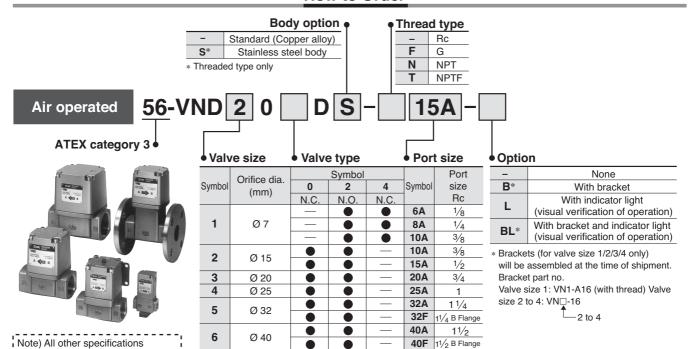


$\langle \xi \chi \rangle$

ATEX Compliant 2 Port Steam Valve Series 56-VND



How to Order



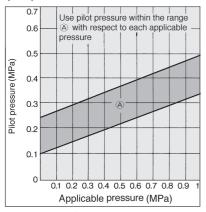
JIS Symbol

(dimensions, drawings, etc.)

are the same as the non ATEX type.

olo Cyllibol					
Valve type	N.C.	N.O.			
Valve size	Normally closed	Normally open			
56-VND1	12 (P1) 1 (A) (B)	10 (P2) 1 (A) (B)			
56-VND 4 5 6 7	12 (P1) 2 (A) (B)	10 (P2) 1 2 (B)			

 $\label{eq:Graph} \begin{tabular}{ll} Graph \begin{tabular}{ll} Operating pressure-Pilot pressure \\ (N.O.) \end{tabular}$



Model

Ø 50

7

Model	Port	size	Orifice dia.	Flow characteristics	Moss (kg)	
Model	Rc	Flange Note)	Ø (mm)	Av x 10 ⁻⁶ m ²	Mass (kg)	
56-VND10□D-6A	1/8	-		26		
56-VND10□D-8A	1/4	_	7	28	0.3	
56-VND10□D-10A	3/8 -			31		
56-VND20□D-10A	78	_	15	120	0.6	
56-VND20□D-15A	1/2	-	15	130	0.6	
56-VND30□D-20A	3/4	-	20	240	0.9	
56-VND40□D-25A	1	_	25	380	1.4	
56-VND50□D-32A	11/4	-	32	440	2.3	
56-VND50□D-32F	-	32	32	440	5.5	
56-VND60□D-40A	11/2	_	40	920	3.6	
56-VND60□D-40F	_	40	40	920	7.2	
56-VND70□D-50A	2	_	50	1500	5.7	
56-VND70□D-50F	_	50	50	1500	10.8	

2

50F 2B Flange

50A

Note) The companion flange is JIS B 2210 10K (standard) or its equivalent.

Valve Specifications

Fluid (Main piping)			Steam					
Fluid temperature			-5 to 180 °C Note 1)					
Ambient temperature			−5 to 60 °C Note 1)					
Proof pressure			1.5 MPa					
Operating pressure range			0 to 0.97 MPa					
		N.C.	0.3 to 0.7 MPa					
External	Pressure	N.O.	0.1 + 0.25 x (Operating pressure) to 0.25 + 0.25 x (Operating pressure) MPa Refer to below "Graph (1)".					
pilot air	Lubricatio	n	Not required					
	Temperatu	ıre	-5 °C to 60 °C					
ATEX Category Seal material			(€ ∰ II 3G TX -5 °C ≤ Ta ≤ 60 °C PTFE					

Note 1) No freezing





High Purity Chemical Valve Series 55-LVA

55-LVA10 and 55-LVA12
II 2G c IIB T6 X Ta 0 °C to +50 °C
II 2G c IIB TXX Ta 0 °C to +60 °C
Special condition X "Protect from impact"

55-LVA2□, 55-LVA3□, 55-LVA4□, 55-LVA5□,
55-LVA6□ and 55-LVA200

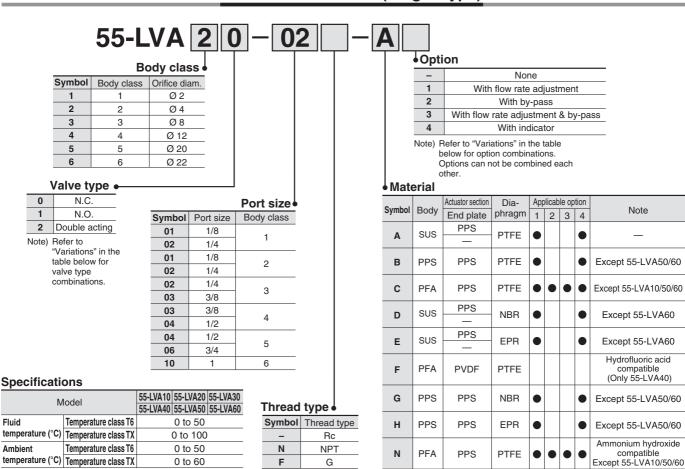
II 2GD c IIB 80 °C T6 X Ta 0 °C to +50 °C

II 2GD c IIB TXX Ta 0 °C to +60 °C

Special condition X "Protect from impact"

Note) The manifold type is not available with ATEX certification

How to Order Valves (Single Type)



Variations

		el 55-LVA10		55-L	VA20	55-L	VA30	55-L	VA40	55-L	VA50	55-LVA60	
Ro	Body			12	Ø	4	Ø	8	Ø	12	Ø	20	Ø 22
	dy material Note 1) Stainless	Port size steel (SUS316)	1/8	1/4	1/8	1/4	1/4	3/8	3/8	1/2	1/2	3/4	1
		steel (SUS316)	0	0	0	0	0	0	0	0	0	0	0
		DDs.	0	0		0		0		0			
Туре	Symbol	type PFA	_	_	_	0	_	0	_	0	_	_	_
Basic type	,PA ,PB ,PA	N.C.	0	0	0	0	0	0	0	0	0	0	0
	B A B A B H A	N.O.	_	_	0	0	0	0	0	0	0	0	0
	N.C. N.O. Double acting	Double acting	0	0	0	0	0	0	0	0	0	0	0
With flow rate adjustment	,PA ,PA	N.C.	_	_	0	0	0	0	0	0	0	0	0
	BHHA BHHA :PB N.C. Double acting	Double acting	_	-	0	0	0	0	0	0	0	0	0
With by-pass Body material	;PA ;PA ⊟ ⊟	N.C.	_	_	_	_	-	0	-	0	-	0	_
Body material Only PFA	B A B A PB	Double acting	_	_	_	_	_	0	-	0	_	0	_
With flow rate adjustment &	PA PA PA PA PA PA PA PA PA PA PA P	N.C.	_	_	-	_	_	0	-	0	_	0	_
by-pass Body material Only PFA	N.C. Double acting	Double acting	_	_	_	_	_	0	-	0	-	0	_
With indicator	PA B H A S N.C.	N.C.	_	_	0	0	0	0	0	0	0	0	0

Note) Refer to the "Material" table for the applicable optional body materials.



High Purity Chemical Valve Series 55-LVA

Standard Specifications



Basic type



With flow rate adjustment

Model		55-LVA10	55-LVA20	55-LVA30	55-LVA40	55-LVA50	55-LVA60			
Orifice diamet	er	Ø2	Ø 4	Ø8	Ø 12	Ø 20	Ø 22			
Port size		1/8, 1/4	1/8, 1/4	1/4, 3/8	3/8, 1/2	1/2, 3/4	1			
Flow	Av x 10 ⁻⁶ m ²	1.7	8.4	40.8	79.2	144	192			
characteristics	Cv	0.07	0.35	1.7	3.3	6	8			
Withstand pres	ssure [MPa]			-	1					
Operating pres	ssure [MPa]		0 to	0.5		0 to	0.4			
Back pressure	N.C./N.O. Note 2)	0.15 or less		0.3 or less	i	0.2 or less				
[MPa]	Double acting	0.3 or less		i	0.3 or less					
Valve leakage	[cm ³ /min]	0 (with water pressure)								
Pilot air press	ure [MPa]	0.3 to 0.5								
Pilot port size		M5 X 0.8 Rc 1/8, NPT 1/8, G 1/8								
Fluid	Temperature class T6	0 to 50								
temperature [°C]	Temperature class TX	0 to 100 Note 1)								
Ambient	Temperature class T6	0 to 50								
temperature [°C]	Temperature class TX			0 to	0 to 60					
	Stainless steel (SUS)	0.12	0.18	0.44	0.86	1.67	1.96			
Weight [kg]	PPS	0.05	0.08	0.18	0.18 0.32					
	PFA	_	0.09	0.20	0.35	_	_			

Note 1) 0 to 60 $^{\circ}\text{C}$ when the diaphragm is NBR or EPR.

Note 2) The N.O. type is not available for 55-LVA10. Note 3) Contact SMC if the valve will be used with vacuum and B \rightarrow A flow.

Piping

△ Caution

1. Avoid using metal fittings with a resin body (taper threads).

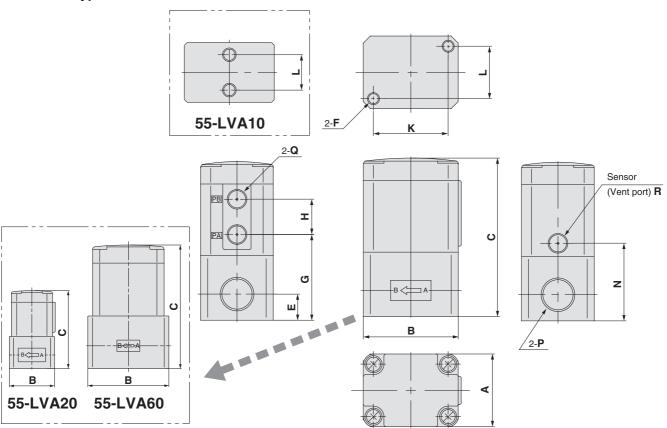
This can cause damage to the valve body.

Series 55-LVA

Dimensions

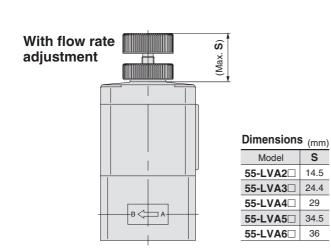


Basic type

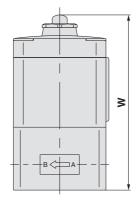


S

Model



With indicator



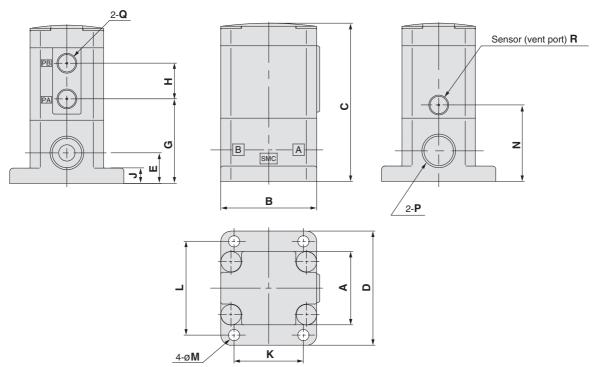
Dimension	ns (mm)
Model	W
55-LVA20	63.7
55-LVA30	89.1
55-LVA40	109.9
55-LVA50	140.5
55-LVA60	147.8

Dimensio	ns												(mm)
Model	Α	В	С	Е	F	G	Н	K	L	N	Р	Q	R
55-LVA1□	20	33	49.5	10	M5 X 0.8 X 4	27.5	11	_	13	27.5	Rc 1/8, 1/4 NPT 1/8, 1/4	M5 X 0.8	Ø 4.2
55-LVA2□	30	33	57	10	M X 0.8 X 5	31	13	22	22	26	G 1/8, 1/4	NIS X U.8	M3 x 0.5
55-LVA3□	36	47	78.6	13	M6 X 1.0 X 8	42.5	17.5	37	26	38.5	Rc 1/4, 3/8 NPT 1/4, 3/8 G 1/4, 3/8		
55-LVA4□	46	60	95.4	16	M8 X 1.25 X 10	54.5	18	47.5	33.5	47.5	Rc 3/8, 1/2 NPT 3/8, 1/2 G 3/8, 1/2	Rc 1/8	Rc 1/8
55-LVA5□	58	75	122.5	19	M8 X 1.25 X 10	61.5	27.5	60	43	55.5	Rc 1/2, 3/4 NPT 1/2, 3/4 G 1/2, 3/4	NPT 1/8 G 1/8	NPT 1/8 G 1/8
55-LVA6□	58	85	129.8	24	M8 X 1.25 X 10	69	27.5	60	43	62.8	Rc 1 NPT 1 G1		

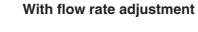
Dimensions

Body material: PPS

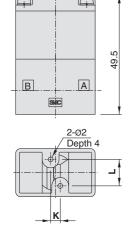
Basic type

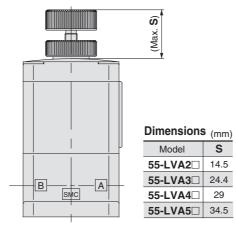


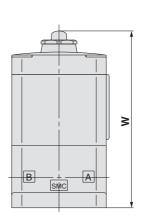
55-LVA10



With indicator







Dimensions (mm)									
Model	W								
55-LVA20	64.2								
55-LVA30	88.1								
55-LVA40	110.4								
55-LVA50	147								

11	ım	en	CI	\sim	nc	è
\boldsymbol{L}			I O I	u	112	

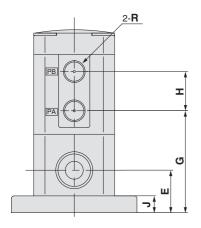
Dimensio	ns															(mm)
Model	Α	В	С	D	Е	G	Н	J	K	L	M	N	0	Р	Q	R
55-LVA1□	20	33	49.5	_	10	27.5	11	_	4	11	_	27.5	_	Rc 1/8, 1/4 NPT 1/8, 1/4 G 1/8,1/4	M5 X 0.8	Ø 4.2
55-LVA20	30	36	54.7	44	11	32	_	4	20	37	3.5	27	14.8	Rc 1/4 NPT 1/4	Rc 1/8 NPT 1/8 G 1/8	Ø 2.4
55-LVA2 1/2	30	36	57.5	44	11	31.5	13	4	20	37	3.5	26.5	_	G 1/4	M5 X 0.8	M3 X 0.5
55-LVA3□	36	47	77.6	56	15	41.5	17.5	7.5	34	46	5.5	37.5	_	Rc 3/8 NPT 3/8 G 3/8		
55-LVA4□	46	60	95.9	68	22	55	18	8	42	57	5.5	48	_	Rc 1/2 NPT 1/2 G 1/2	Rc 1/8 NPT 1/8 G 1/8	Rc 1/8 NPT 1/8 G 1/8
55-LVA5□	58	75	129	84	26	68	27.5	8	56	71	6.5	62	_	Rc 3/4 NPT 3/4 G 3/4		

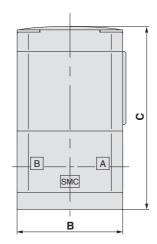
Series 55-LVA

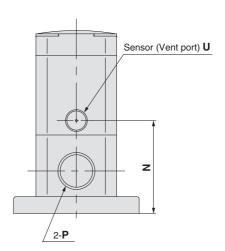
Dimensions

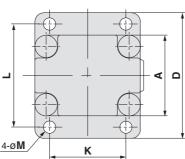
Body material: PFA

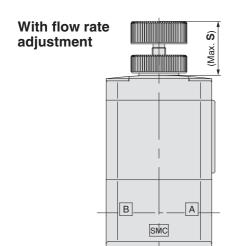
Basic type





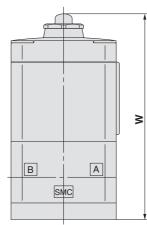






Dimensions (mm) Model S 55-LVA2□ 14.5 55-LVA3□ 24.4 55-LVA4□ 29

With indicator



Dimensions (mm									
Model	W								
55-LVA20	67.7								
55-LVA30	92.1								
55-LVA40	110.4								

Dimensions

United States (mm)																
Model	Α	В	С	D	Е	G	Н	J	K	L	M	N	Р	Q	R	U
55-LVA2□	30	36	61	44	14.5	35	13	4	20	37	3.5	30	Rc 1/4 NPT 1/4 G 1/4	_	M5 X 0.8	M3 X 0.5
55-LVA3□	36	47	81.5	56	19	45.5	17.5	7.5	34	46	5.5	41.5	Rc 3/8 NPT 3/8 G 3/8	_	Rc 1/8	Rc 1/8
55-LVA4□	46	60	95.9	68	22	55	18	8	42	57	5.5	48	Rc 1/2 NPT 1/2 G 1/2	_	NPT 1/8 G 1/8	NPT 1/8 G 1/8



Air Operated Type Series 55-LVA

55-LVA10 and 55-LVA12
II 2G c IIB T6 X Ta 0 °C to +50 °C
II 2G c IIB TXX Ta 0 °C to +60 °C
Special condition X "Protect from impact"

55-LVA2 \square , 55-LVA3 \square , 55-LVA4 \square , 55-LVA5 \square , 55-LVA6 \square and 55-LVA200 II 2GD c IIB 80 °C T6 X Ta 0 °C to +50 °C II 2GD c IIB TXX Ta 0 °C to +60 °C Special condition X "Protect from impact"

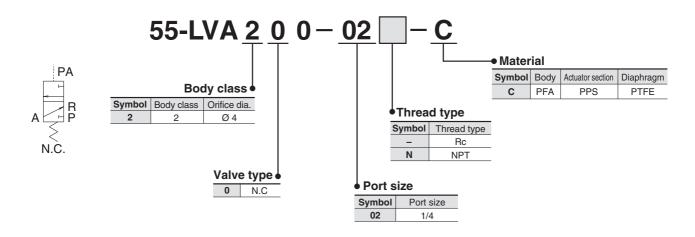
Note) The manifold type is not available with ATEX certification



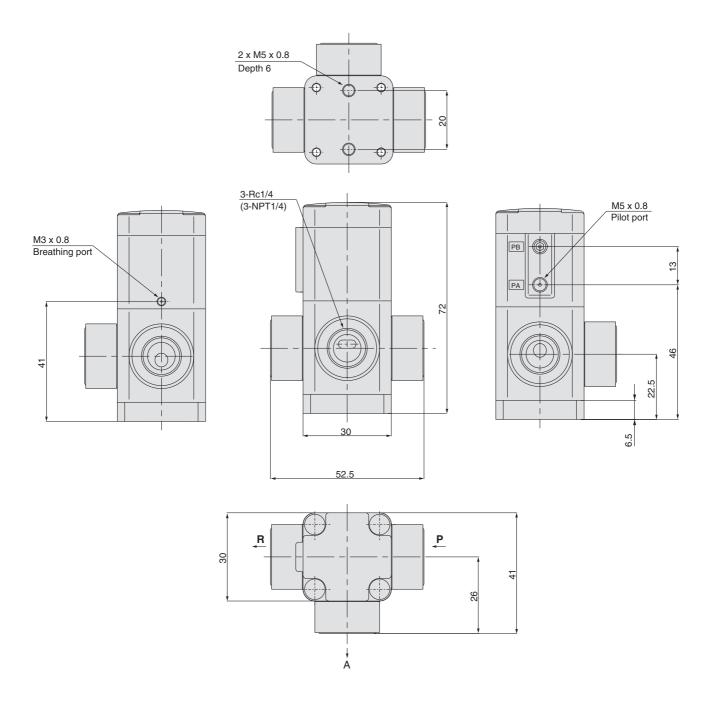
Standard Specifications

Model		55-LVA200				
Orifice diameter		Ø 4				
Port size		1/4				
Flow	Av x 10 ⁻⁶ m ²	7.2				
characteristics	Cv	0.3				
Withstand press	ure [MPa]	1				
Operating press	ure [MPa]	0 to 0.5				
Valve leakage [c	m³/min]	0 (with water pressure)				
Pilot air pressure	e [MPa]	0.4 to 0.5				
Pilot port size		M5 X 0.8				
Max. operating for	requency [Hz]	1.0				
Fluid	Temperature class T6	0 to +50				
temperature [°C]	Temperature class TX	0 to +100				
Ambient	Temperature class T6	0 to +50				
temperature [°C]	Temperature class TX	0 to +60				
Weight [kg]		0.162				

How to Order Valve



Dimensions





Process Pump. Automatically operated type Air operated type

Series 56-PA3000/5000

Automatically operated type (internal switching type)
Air operated type (external switching type)

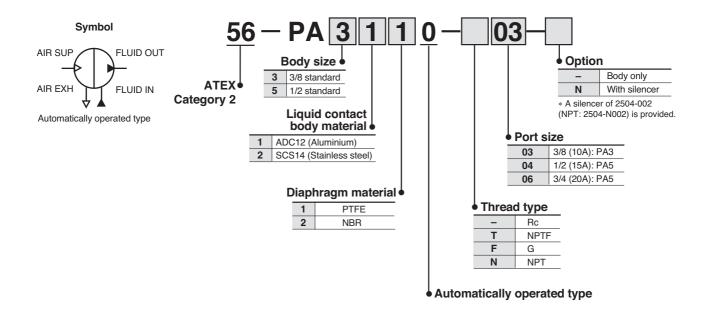
(€ ⟨£x⟩

For 55-PA3 \square 0: II 2 GD c T6 Ta 0 °C to +60 °C For 55-PA3 \square 3: II 2 GD c T5 Ta 0 °C to +60 °C For 55-PA5 \square 1: II 2 GD c T6 Ta 0 °C to +60 °C For 55-PA5 \square 3: II 2 GD c T6 Ta 0 °C to +60 °C

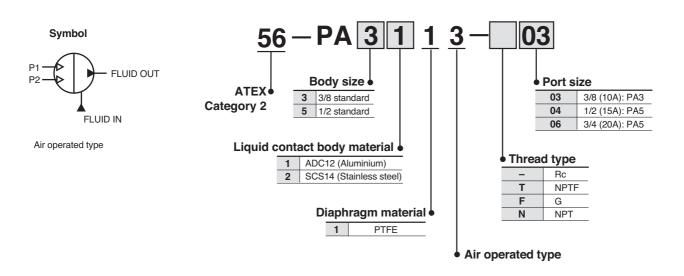
For more details, other specifications, dimensions, see the specific catalogue.

How to Order

Automatically operated type (internal switching type)



Air operated type (external switching type)



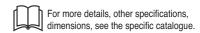


Process Pump. Automatically operated type Air operated type

Series 56-PA3000/5000

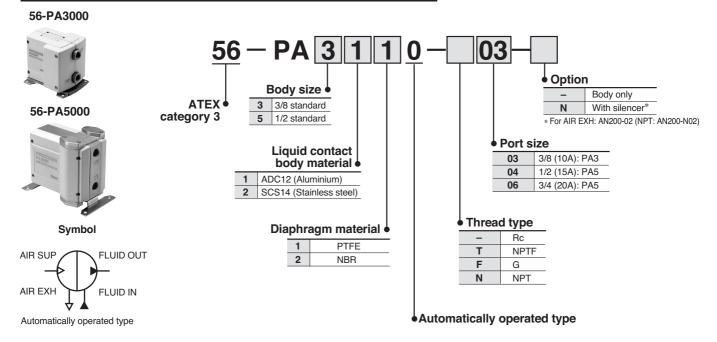
Automatically operated type (internal switching type)
Air operated type (external switching type)



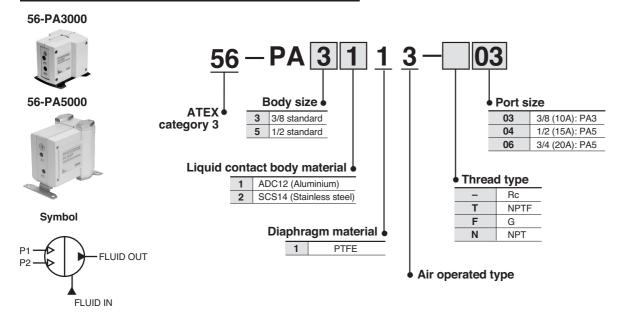


How to Order

Automatically operated type (internal switching type)



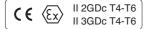
Air operated type (external switching type)

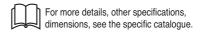


Air operated type

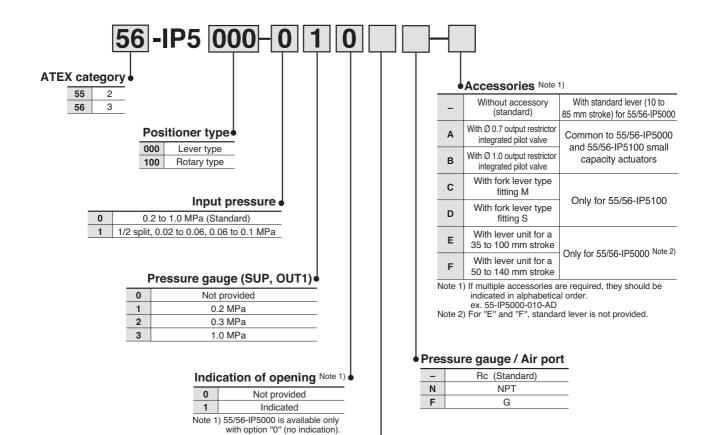


Pneumatic-Pneumatic Positioner Series 55/56-IP5000 (Lever type) Series 55/56-IP5100 (Rotary type)





How to Order



Ambient temperature

_	-20 to 80 °C (Standard)
Т	High temperature -5 to 100 °C
L	Low temperature -30 to 60 °C

Note) Please refer to table below

Series 55-/56-IP5000/5100

Specifications

	Ambient temperature range			
Classification	Low temp. model 55-IP5□00-□□□L-□	Standard model 55-IP5□00-□□□-□	High temp. model 55-IP5□00-□□□T□-□	
II 2GD c T4	_	-	-5 °C to 100 °C	
II 2GD c T5	_	20 °C to 80 °C -5 °C to 8		
II 2GD c T6	-30 °C to 60 °C	-20 °C to 60 °C	-5 °C to 60 °C	

	Ambient temperature range					
Classification	Low temp. model 56-IP5□00-□□□L-□	Standard model 56-IP5□00-□□□-□	High temp. model 56-IP5□00-□□□T□-□			
II 3GD c T4	_	_	-5 °C to 100 °C			
II 3GD c T5	_	-20 °C to 80 °C	-5 °C to 80 °C			
II 3GD c T6	-30 °C to 60 °C	-20 °C to 60 °C	-5 °C to 60 °C			

Туре	55/56-IP5000		55/56-	-IP5100
lta.m	Lever type lever feedback Rotary type cam feed		cam feedback	
Item	Single action	Double action	Single action	Double action
Supply pressure		0.14~0	.7 MPa	
Input pressure		0.02~0	.1 MPa	
Standard stroke	10~8	5mm	60-	~100
Sensitivity	Within 0.1 % F.S.		Within 0.5 % F.S	b
Linearity	Within ±1 % F.S.		Within ±2 % F.S	
Hysteresis	Within 0.75 % F.S.	. Within 1 % F.S.		
Repeatability		Within 0.	5 % F.S.	
Output flow rate	80 l/n	nin (ANR) or mo	ore (SUP.=0.14 N	(IPa)
	200 l	200 I/min (ANR) or more (SUP.=0.4 MPa)		
Air consumption	With	hin 5 I/min (ANR) (SUP.=0.14 MPa)		
	With	nin 11 l/min (AN	R) (SUP.=0.4 MF	Pa)
Ambient and using fluid			Standard model)	
Temperature	-30 °C~60 °		-5 °C~100 °C (H	igh Temp.)
Thermal coefficient		Within 0.1	% F.S./C	
Air connection port	Rc 1/4 (Standard)			
Material	Aluminium diecast, Stainless steel, Brass, Nitrile rubber			itrile rubber
Mass	Approx	. 1.4 kg Approx. 1.2 kg		
Size	118 x 102 >	(86 (Body)	118 x 92 x	77.5 (Body)

Note) Standard air temperature: 20, Absolute pressure: 101.3 kPa. Relative humidity: 65 %



Electro-Pneumatic Positioner Series IP8000 (Lever type) Series IP8100 (Rotary type)

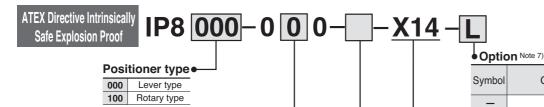


For more details, other specifications, dimensions, see the specific catalogue.

Applicable model

IP8000-X14 | IP8100-X14

How to Order



Pressure gauge (SUP, OUT1)

0	Not provided
1	0.2 MPa (R 1/8)
2	0.3 MPa (R 1/8)
3	1.0 MPa (R 1/8)



Rotary type **IP8100**

With internal position indicator

Option

Low temperature (-40 to 60 °C)

ATEX directive compliance and connection ATEX directive category 2

With blue cable gland

W

Intrinsically safe explosion-proof equipment Air connection port: 1/4 NPT Conduit connection port: M20 x 1.5

• Accessories Note 1)

X14

Symbol	Ai	Applicable model				
Syn	Accessories	IP8000-X14	IP8100-X14			
_	Without accessory					
Α	With Ø 0.7 output restrictor integrated pilot valve Note 2)					
В	With Ø 1.0 output restrictor integrated pilot valve Note 2)					
С	With fork lever type fitting M Note 3)	_				
D	With fork lever type fitting S Note 4)	_				
Е	With lever unit for a 35 to 100 mm stroke Note 5)		_			
F	With lever unit for a 50 to 140 mm stroke Note 5)		_			
G	With compensation spring (A) Note 6)	•	•			
Н	With external scale plate	_				
Note 1) If multiple accessories are required, they should be indicated in						

Note 1) If multiple accessories are required, they should be indicated in alphabetical order. ex. IP8100-010-AG

Note 2) "A" is applied to approx 90 cm³-capacity actuator. "B" is applied to approx 180 cm3-capacity actuator.

Note 3) Fork lever-type fitting MX (Connection thread: M6 x 1) for IP8100-0□0-□-X14.

Note 4) Fork lever-type fitting SX (Connection thread: M6 x 1) for IP8100-0□0-□-X14.

Note 5) Standard lever is not attached.

Note 6) It is to be used together with "A" or "B" when tending to overshoot by the use of "A" or "B". It is mounted to the body as a replacement of the standard compensation spring.

Note 7) Combination of "L" and "W" is not available

Specifications

IP8000

	Туре	IP8000		IP8	100
		Lever type le	ver feedback	Rotary type cam feedback	
Item		Single acting	Double acting	Single acting	Double acting
Input current		4	to 20 mA DC (standard) Note	1)
Input resistan	се		235 ohms (4 t	o 20 mA DC)	
Supply air pre	ssure		0.14 to 0).7 MPa	
Standard stro	ke	10 to 85 mm (Deflect	ction angle 10 to 30)	60 to 1	00 Note 2)
Sensitivity		Within 0.1 % F.S.	Wit	thin 0.5 % F.S.	
Linearity		Within ±1 % F.S.	Wi	thin ±2 % F.S.	
Hysteresis		Within 0.75 % F.S.	W	ithin 1 % F.S.	
Repeatability			Within ±0.	5 % F.S.	
Coefficient of temp	perature	Within 0.1 % F.S. / C			
Output flow ra	ite	80 I/min (ANR) or more (SUP = 0.14 MPa) Note 3)			Pa) Note 3)
Air consumpti	ion	Within 5	I/min (ANR) or	less (SUP = 0.	14 MPa)
Ambient fluid		Standard type: -20 to 80 °C (T5) / -20 to 60 °C (T6)			60 °C (T6)
temperature		Low to	emperature typ	e: –40 to 60 °C	(T6)
Explosion	•	Intrinsic safety type of explosion protection			
protected ($\langle x3 \rangle$	(C € 0344 ⟨EX) II 2G Ex ib IIc T5/T6)			
construction		Approval no. KEMA 03 ATEX1119			19
Air connection	n port		1/4 NPT fer	male screw	
Electrical wiring cor	nection		M20 :	x 1.5	
Material		Aluminum diecast body			
Weight		Approx. 2.4 kg			
Classification degree of prot		JISF8	JISF8007, IP65 (conforms to IEC 60529)		0529)
Parameters		Ui ≤ 28 V, Ii ≤ 125 mA, Pi ≤ 1.2 W, Ci ≤ 0nF, Li ≤ 0mH			F, Li ≤ 0mH

Note 1) 1/2 Split range is possible with the standard type (by adjusting the span).

Note 2) The stroke is adjustable in 0 to 60 °C and 0 to 100 °C

Note 3) Standard air (JIS B0120): temp. 20 °C, absolute press. 760 mm Hg, ratio humidity 65 %.

All other specifications are the same as the standard products Series IP8 ...

For details, refer to the WEB catalogue.



Series IP8000/8100

Accessory / Option

Pilot valve with output restriction (IP8000, 8100 type)

In general, mounting on a small-size actuator may cause hunting. For prevention, a pilot valve with a built-in output restriction is available. The restriction is removable.

(Ambient temperature: Standard)

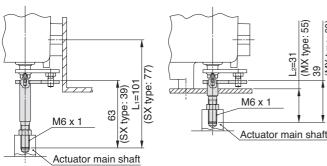
Actuator Capacity	Orifice size	Part number	Pilot unit part number
90 cm ³	Ø 0.7	P36801080	P565010-18
180 cm ³	Ø 1	P36801081	P565010-19

Fork lever joints (IP8100 type)

Two types of the fork lever joints are available dependent upon different mounting dimensions.

This is recommended because it can absorb off-centering, compared with direct mounting type.

Part name	Part number
Fork lever assembly MX	P368010-36
Fork lever assembly SX	P368010-37



(3) Cover seal

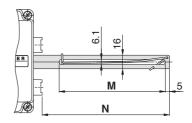
Side mounting with the fork lever assembly MX

Rear mounting with the fork lever assembly SX

External feedback lever (IP8000 type)

Different feedback levers are available dependent upon valve strokes. Consult with SMC in case of 10 mm or less stroke.

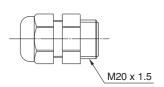
Stroke	Unit number	Size M	Size N
10 to 85 mm (standard)	P368010-20	125	150
35 to 100 mm (Accessory "E")	P368010-21	110	195
50 to 140 mm (Accessory "F")	P368010-22	110	275



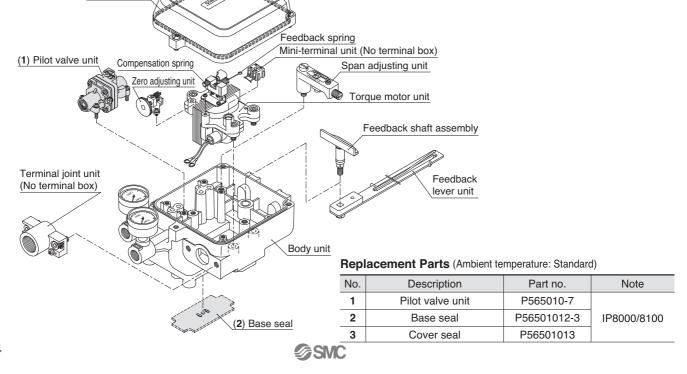
Cable gland (for -X14)

Cable gland

Description	Part number	Suited cable outer diameter
Cable gland	07-9534-1M2B	Ø 6 to Ø 12



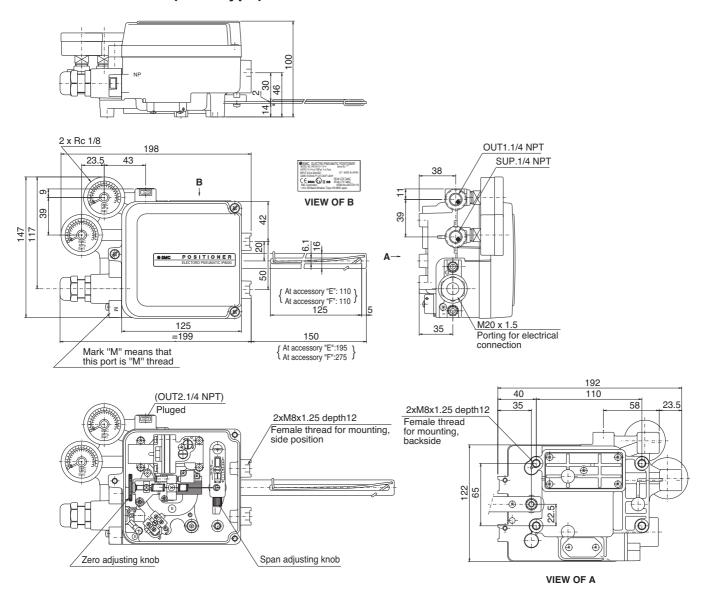
Exploded View



Body cover unit

Dimensions / IP8000

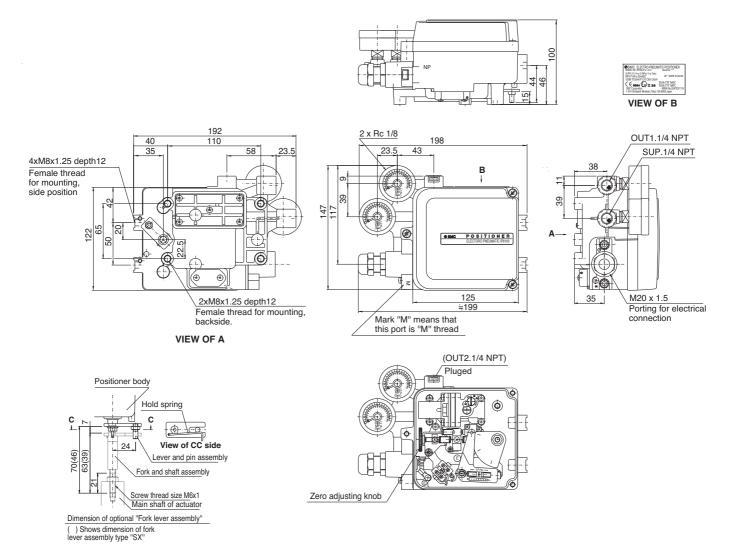
IP8000-0□**0-**□**-**X14 (lever type)



Series IP8000 / 8100

Dimensions / IP8100

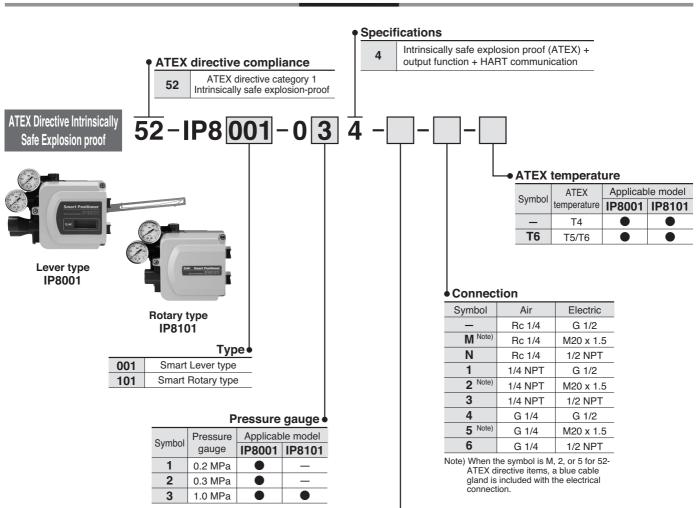
IP8100-0□**0-**□**-**X14 (rotary type)





Smart Positioner (Lever type / Rotary type) Series 52-IP8001/8101

How to Order



Accessories Note 1)

	Ao	00000110		
Cumbal	Aggagarias	Applicable model		
Symbol	ymbol Accessories		IP8101	
_	None (Standard)		•	
С	Fork lever-type fitting M	_	•	
D	Fork lever-type fitting S	_	•	
E	For stroke 35 to 100 mm with lever unit Note 2)		_	
F	For stroke 50 to 140 mm with lever unit Note 2)		_	
Н	With external scale plate	_	•	
W	Body with LCD window		•	

Note 1) If two or more accessories are required, the part numbers should be given in alphabetical order. (ex. 52-IP8101-034-CH)

Note 2) Standard lever is not attached.

All other specifications are the same as the standard products Series IP8□. For details, refer to **the WEB catalogue**.



Series 52-IP8001/8101

Specifications Note 1)

Туре	IP8001	IP8101	
7,60	Smart P	ositioner	
	Lever type	Rotary type	
Item	Single action /	Double action	
Input current	4 to 20 mA DC (\$	Standard) Note 2)	
Min. operating current	3.85 mA D	OC or more	
Intra-terminal voltage	12 V DC (equivalent to 600 Ω input resistance, at 20 mA DC)		
Max. supplied power	1 W (Imax: 100 mA DC, Vmax: 28 V DC)		
Supply air pressure	0.14 to 0.7 MPa	0.3 to 0.7 MPa	
Standard stroke	10 to 85 mm (Allowable deflection angle 10 to 30°)	60 to 100°	
Sensitivity Note 3)	Within 0	2 % F.S.	
Linearity Note 3)	Within ±	1 % F.S.	
Hysteresis Note 3)	Within 0.5 % F.S.		
Repeatability Note 3)	Within ±0.5 % F.S.		
Coefficient of temperature	Within 0.05 % F.S./C		
Supply pressure fluctuation	_ ^	ote 4)	
Output flow Note 5)	80 l/min (ANR) or more (SUP = 0.14 MPa)	200 l/min (ANR) or more (SUP = 0.4 MPa)	
Air consumption Note 5)	2 I/min (ANR) or less (SUP = 0.14 MPa) 4 I/min (ANR) or less (SUP = 0.4 MPa)	11 I/min (ANR) or less (SUP = 0.4 MPa)	
Ambient and fluid temperature	-20 °C to 80 °C (T4/T5) -20 °C to 60 °C (T6)		
Explosion proof construction Note 6)	ATEX intrinsically safe explosion-proof construction (II 1G Ex ia IIC T4/T5/T6)		
ATEX intrinsically safe explosion-proof parameter (current circuit)	f Ui ≤ 28 V, li ≤ 100 mA, Pi ≤ 0.7 W, Ci ≤ 12.5 nF, Li ≤ 1.5 mH		
Enclosure Protection Rating	JISF8007, IP65 (conforms to IEC Pub.60529)		
Communication method Note 6)	HART transmission		
Air connection port Note 7)	Rc 1/4 female thread, NPT 1/4 female thread, G 1/4 female thread		
Electrical connection port Note 7)	G 1/2 female thread, M20 x 1.5 female thread, NPT 1/2 female thread		
Material/coating	Aluminum diecast body/baking finish with denatured epoxy resin		
Weight	2.6 kg		

Note 1) Specification values are given at normal temperature (20 °C).

Optional Specifications

	Туре	52-IP8□01-0□4	
Item		Smart Positioner	
	Wiring	2-wire	
Anglesus	Output signal	4 to 20 mA DC	
Analogue output	Power supply voltage	10 to 28 V DC	
o a span	Load resistance	0 to 750 Ω	
	Accuracy	±0.5 % F.S. or less Note 1)	
	Wiring	2-wire	
	Applicable standards	DIN19234/NAMUR Standard	
	Power supply voltage	5 to 28 V DC	
Alarm output 1, 2	Load resistance	(Constant current output)	
output 1, 2	Alarm ON	≥2.1 mA DC	
	Alarm OFF (Leakage current)	≤1.2 mA DC	
	Response time	50 msec or less	

Note 1) Indicates analogue output accuracy with respect to LCD display position value (P value).



Note 2) 1/2 Split range (Standard)

Note 3) Characteristics relating to accuracy differ depending on combination with other constituent loop equipment, such as positioners and actuators.

Note 4) While there is no output changes due to pressure fluctuations, when the pressure supply setting is changed following calibration, once again adjust balance current and perform calibration.

Note 5) (ANR) indicates JIS B0120 standard air.

Note 6) Model selection required for explosion proof construction and HART transmission.

Note 7) Thread type can be specified by model selection.

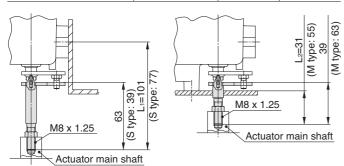
Electro-Pneumatic Positioner Smart Positioner Series 52-IP8001/8101

Accessory / Option

Fork lever-type fittings (8101)

2 types of rotary type IP8101 fork lever-type fittings, that differ by installation dimensions dependent on bracket installation method, and 2 types of installation portion thread sizes, are available. When installing on the side surface, using fork lever assembly M provides interchangeability with the installation dimensions of SMC IP610 positioner. When installing on the rear surface, using fork lever assembly S also provides interchangeability with the installation dimensions of SMC IP610 positioner.

Part name	Unit number	Installation portion thread size	Model selection accessory
Fork lever assembly M	P368010-24	M8 x 1.25	С
Fork lever assembly S	P368010-25	IVIO X 1.23	D



Side mounting with the fork lever assembly M

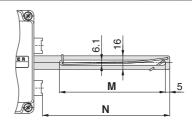
Rear mounting with the fork lever assembly S

External feedback lever (IP8001)

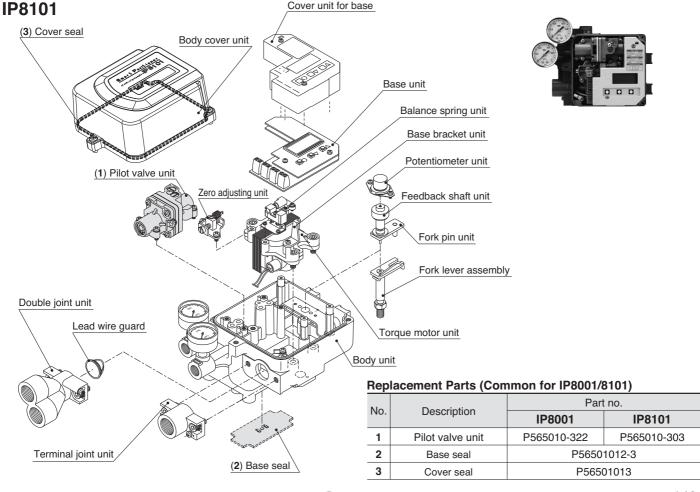
Different feedback levers are available dependent upon valve strokes. Order according to the valve stroke.

Feedback lever types

Stroke	Unit number	Cizo M	Cizo N	Model selection
Stroke	IP8001	Size M Size N	SIZE IN	accessory
10 to 85 mm	P565010-323	125	150	Standard accessory
35 to 100 mm	P565010-324	110	195	E
50 to 140 mm	P565010-325	110	275	F
6 to 12 mm	P565010-329	75	75	Available as special order



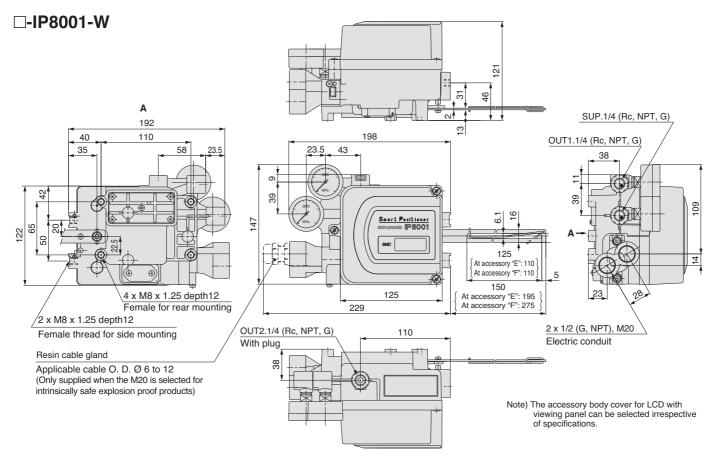
Exploded View



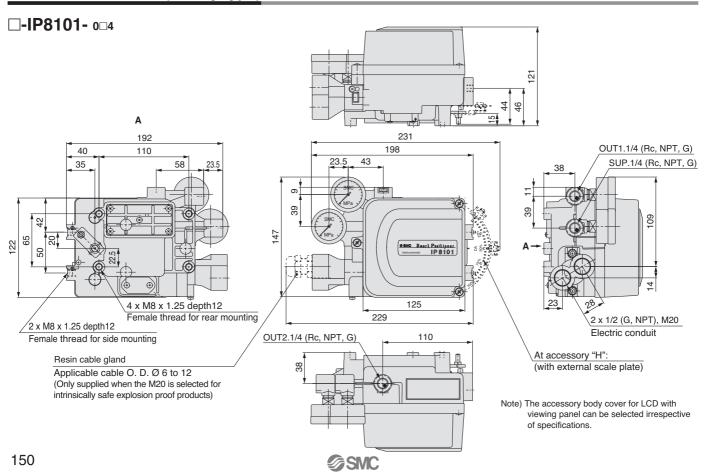
Cover unit for base

Series 52-IP8001/8101

Dimensions / IP8001 (Lever type)



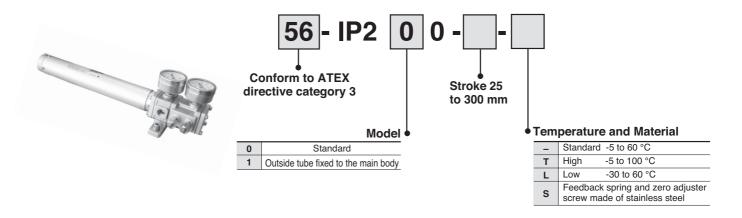
Dimensions / IP8101 (Rotary type)



Pneumatic Cylinder Positioner Series 56-IP200/56-IP210



How to Order



Specifications

	Ambient temperature range			
Classification	Low temp. model 56-IP20□-□-L□-□	Standard model 56-IP20□-□-□-□	High temp. model 56-IP20□-□-T□-□	
II 3GD c T5	_	_	-5 °C to 100 °C	
II 3GD c T5	_	_	-5 °C to 80 °C	
II 3GD c T6	-30 °C to 60 °C	-5 °C to 60 °C	-5 °C to 60 °C	

Supply pressure	0.3 ~ 0.7 MPa	
Signal pressure	0.02 ~ 0.1 MPa	
Port size	Rc 1/4 (standard)	
Pressure gauge port type	Rc 1/8	
Linearity	Less than +/- 2 % F.S.	
Hysteresis	Less than 1 % F.S.	
Repeatability	Less than 1 % F.S.	
Sensitivity	Less than 0.5 % F.S.	
Air consumption	18 l/min (ANR) or less (at 0.5 MPa supply)	
Max. air flow	200 l/min (ANR) or less (at 0.5 MPa supply)	
Applicable cylinder [mm]	50 ~ 300 bore sizes / 25 ~ 300 mm stroke	
	-5 °C ~ 60 °C (Standard)	
Operating temperature	-30 °C ~ 60 °C (Low Temperature)	
	-5 °C \sim 100 °C (High Temperature)	

Note) Standard air temperature: 20, Absolute pressure: 101.3 kPa. Relative humidity: 65 %

All other specifications are the same as the standard products Series IP200. For details, refer to **the WEB catalogue**.





Common Precautions

Be sure to read before handing.

Selection

△Warning

1. Confirm specifications.

Products represented in this catalogue are designed for use in compressed air applications only (including vacuum), unless otherwise indicated. Do not use the products outside of their designed parameters. Contact SMC when using the product with fluids other than compressed air (including vacuum).

Installation

△Warning

 Do not install unless the safety instructions have been read and understood.

Keep this catalogue on file for future reference.

2. Maintenance

When installing the product, allow for maintenance access.

3. Tightening torque

When installing the product, follow the torque specification.

Piping

⚠ Caution

1. Before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Sealant tape

When installing piping or a fitting into a port, make sure that the sealant material does not clog the pressure port. Leave the first 1.5 to 2 thread turns exposed at the end of the pipe/fitting when using sealant tape.

Air Supply

∆Warning

1. Operation fluid

Consult with SMC when using the product in applications which use fluids other than compressed air (including vacuum).

Regarding products for general fluids, consult with SMC regarding applicable fluids.

2. Large amount of drainage.

Compressed air containing larger mount of drainage can cause malfunction of pneumatic equipment.

Please installation of an air dryer and mist separator (Drain Catch) before air filter.

3. Drain

If condensation in the air filter is not emptied on a regular basis, condensation that flows to the outlet side can cause a malfunction. If it is difficult to check and remove, installation of a filter with an auto-drain function is recommended. Refer to Best Pneumatics for details on compressed air quality.

4. Use clean air

Do not use compressed air which includes chemicals, synthetic oils containing organic solvents, salt, or corrosive gases, etc., as this can cause damage or malfunction.

Environment

Marning

- Do not use in an environment where the product is directly exposed to corrosive gases, chemicals, sea water, water or steam.
- 2. In locations which receive direct sunlight, provide a protective cover, etc.
- Do not operate in locations where vibration or impact occurs.
- Do not use in locations where radiated heat will be received from nearby heat sources.
- 5. Avoid striking the product with a metallic object.
- 6. Avoid using this product in a non-explosive environment which can become explosive due to air leakage.

Maintenance

△Warning

1. Maintenance procedures are outlined in the operation manual.

Failure to follow proper procedures can result in product malfunction and or lead to damage to the equipment or machine.

2. Maintenance

If handled improperly, compressed air can be dangerous. Assembly, handling and repair of pneumatic systems should only be performed by qualified personnel.

3. Drain

Remove condensation from the filter bowl on a regular basis.

4. Shut down before maintenance

Before attempting any kind of maintenance confirm that the supply pressure is shut off and all residual air pressure is released from the system to be worked on.

5. Start-up after maintenance

Apply operating pressure and power to the equipment, then check for proper operation and possible air leaks. If operation is abnormal, verify product set-up parameters.

6. Do not make any modification to the product.

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) 1), and other safety regulations.

Danger indicates a hazard with a high level of risk ♠ Danger: which, if not avoided, will result in death or serious

Warning indicates a hazard with a medium level of risk Marning:

which, if not avoided, could result in death or serious

Caution indicates a hazard with a low level of risk

which, if not avoided, could result in minor or moderate

1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components. ISO 4413: Hydraulic fluid power - General rules and safety

requirements for systems and their components. 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.

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

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.
- 4. 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.
 - 3. 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.

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered.

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. 2) 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

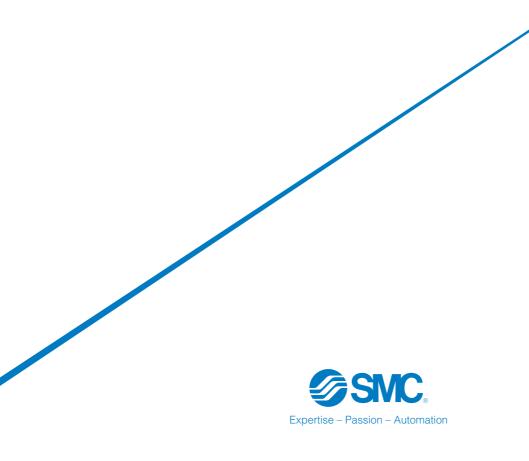
Compliance Requirements

- 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.
- 2. 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









SMC Corporation

Akihabara UDX 15F, 4-14-1

Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249

Fax: 03-5298-5362

www.smc.eu

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smcpneumatics.be	info@smcpneumatics.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smcdk.com	smc@smcdk.com
Estonia	+372 6510370	www.smcpneumatics.ee	smc@smcpneumatics.ee
Finland	+358 207513513	www.smc.fi	smcfi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	info@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcpneumatics.ie	sales@smcpneumatics.ie
Italy	+39 0292711	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smclv.lv	info@smclv.lv

Lituania	+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	+31 (0)205318888	www.smcpneumatics.nl	info@smcpneumatics.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 226166570	www.smc.eu	postpt@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 902184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031200	www.smc.nu	post@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
UK	+44 (0)845 121 5122	www.smcpneumatics.co.uk	sales@smcpneumatics.co.uk