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Vacuum Generator

vacuum-eremerator	Series Page
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Flow Switch (For high flow)	AP74B	······P.159

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Precautions

Check Valve

Series AP64

- Simple design with free of springs and poppets
- Reseals with minimal back pressure
- Low cracking pressure





Specifications

Ope	erating Parameters	AP64	
Gas Select compatible mat		Select compatible materials of construction for the gas	
Inlet pressu	ıre	Vacuum to 3500 psig (24.1 MPa)	
Cracking p	ressure *1)	3 psi (0.023 MPa) differential *2)	
Maximum b	ack pressure	3500 psig (24.1 MPa)	
Proof press	sure	4000 psig (27.6 MPa)	
Burst press	sure	10000 psig (69 MPa)	
Ambient an	d operating temperature	-10 to 71°C (No freezing)	
Cv 0.4 max		0.4 max	
Look rato	Inboard leakage	2 x 10 ⁻¹¹ Pa·m ³ /s	
Leak rate	Outboard leakage	2 x 10 ⁻¹¹ Pa·m ³ /s * ³)	
Surface fin	ish	Ra max 15 μin. (0.4 μm) Option: 10 μin. (0.25 μm), 5 μin. (0.13 μm)	
Connections Face seal, Tube weld		Face seal, Tube weld	
Internal volume 0.122 in.3 (2 cm3)		0.122 in. ³ (2 cm ³)	
Weight	0.02 kg *4)		

*1) Cracking pressure is a nominal value which may vary depending on the application and operating conditions.

*2) 6 psi (0.04 MPa) differential for CR seat.

*3) Tested with inlet pressure 500 psig (3.5 MPa).

*4) Weight, including individual boxed weight, may vary depending on connections or options.

Wetted Parts	S
Body	316L SS secondary remelt
Surface finish	Electropolish + Passivation
Seal	FKM (Option: CR)

Check Valve Series AP64



Dimensions

AP64



Connections A		4	В		С		
Inlet	Outlet	inch	(mm)	inch	(mm)	inch	(mm)
MV4	MV4	0.60	(157)	1.19	(30.2)	1.81	(46.0)
MV4	FV4	0.62	(15.7)	1 50	(00.1)	2.12	(53.8)
FV4	FV4	0.00	(00.0)	1.50	(38.1)	2.43	(61.7)
FV4	MV4	0.93	(23.0)	1.19	(30.2)	2.12	(53.8)
TW4	TW4	0.34	(8.6)	0.91	(23.1)	1.25	(31.8)
MV6	MV6						
MV6	FV6	1.83	(46.5)	2.40	(61.0)	4.23	(107.4)
FV6	MV6						
FV6	MV6						
TW6	TW6	0.34	(8.6)	0.91	(23.1)	1.25	(31.8)



Vacuum Generator



Specifications

		4.5-	4 8 7 4	
Operating	Parameters	AP/	AP70	
Gas (Inlet N2 port	t)	N2		
Gas (Vacuum por	rt)	Select compatible materials	s of construction for the gas	
N ₂ Inlet pressure		70 to 110 psig (0	.48 to 0.76 MPa)	
Vacuum port max	kimum pressure	3500 psig ((24.1 MPa)	
Proof pressure (V	/acuum)	5000 psig (34.5 MPa)		
Burst pressure		10000 psig (69 MPa)		
Maximum vacuur	n pressure	-26 in.Hg (-88 kPa) *1)		
Ambient and ope	ent and operating temperature -40 to 71°C		71°C	
	Inlet	Face seal, Tube weld	1/4 inch face seal (Male)	
Connections	Vent	Face seal, Tube weld	3/8 inch face seal (Male)	
Vacuum		Face seal, Tube weld		
Weight		0.11 kg * ²⁾	0.13 kg * ²⁾	

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*1) At inlet pressure 80 psig (0.55 MPa) and flow rate 60 slpm.

*2) Weight, including individual boxed weight, may vary depending on connections or options.

Wetted Parts	S
Body	316L SS

Vacuum Generator Series AP7 & 70



SMC

152

Vacuum Generator

Module

Series AP71

- Unique compact design by integrating vacuum generator, air operated valve and check valve
- Max. vacuum pressure: -26 in.Hg (-88 kPa)
- Integrate N.C. air operated valve
- Constant bleed option to maintain inert vent line





Specifications

Operating	g Parameters	AP71	
Gas (Inlet N2 port	t)	N2	
Gas (Vacuum)		Select compatible materials of construction for the gas	
N ₂ Inlet pressure		70 to 110 psig (0.48 to 0.76 MPa)	
Vacuum port max	kimum pressure	3500 psig (24.1 MPa)	
Proof pressure (V	/acuum)	5000 psig (34.5 MPa)	
Burst pressure (V	/acuum)	10000 psig (69 MPa)	
Maximum vacuur	n pressure	-26 in.Hg (-88 kPa) * ¹⁾	
Ambient and ope	rating temperature	-10 to 71°C	
Cracking pressur	re (Check valve)	3 psid (0.023 MPa)* ²⁾	
	Status	Normally closed (N.C.)	
Air operated	Actuation pressure	60 to 110 psig (0.4 to 0.76 MPa)	
Actuation port		M5 thread	
Inlet		1/4 inch face seal (Male)	
Connections	Vent	1/4, 3/8 inch face seal, 3/8 inch tube weld	
	Vacuum	1/4 inch face seal, Tube weld	
Weight		0.14 kg * ³⁾	

*1) At inlet pressure 80 psig (0.55 MPa) and flow rate 60 slpm.

*2) Cracking pressure is a nominal value which may vary depending on the application and operating conditions.

*3) Weight, including individual boxed weight, may vary depending on connections or options.

Option

Bleed

Bleed option provides constant low flow of N2 to maintain inert atmosphere in vent line.

Following 4 options are available:

Option	Bleed *	
CB005	1 to 2.5 slpm	
CB009	2 to 5 slpm	
CB013	5 to 8 slpm	
CB023	10 to 15 slpm	

* At 80 psig (0.55 MPa) N2 gas.

Wetted Parts	AP71
Body	316L SS
Poppet	303 SS
Piston	303 SS
Spring	302 SS
Check valve seat	FKM



Vacuum Generator Module Series AP71



Exhaust Characteristics



Flow Characteristics

1.64

0.96

(41.7)

(24.4)

MV6

FV6

TW6



Note) slpm, N₂: The volumetric flow rate under normal conditions $(0^{\circ}C, 1 \text{ atm})$ when N₂ gas is flowing.

Vacuum Generators

Flow Switches

Technical Data/ Glossary of Terms





Specifications

(Operating Parameters	AP72540	AP72550	AP72600	AP72625	AP72650		
Gas (Inlet	N ₂ port)		N2					
Gas (Vacu	um)		Select compatible	e materials of constr	uction for the gas			
N ₂ Inlet pro	essure		70 to 110 psig (0.48 to 0.76 MPa)					
Vacuum p	ort maximum pressure	3000 psig (20.7 MPa)						
Proof pres	sure (Vacuum)		5000 psig (34.5 MPa)					
Burst pres	sure	10000 psig (69 MPa)						
Maximum	vacuum pressure		-26 in.Hg (-88 kPa) *1)					
Ambient a	nd operating temperature		-10 to 71°C					
Cracking p	pressure (Check valve)		3 psid (0.023 MPa) *2)					
Look rato	Inboard leakage		2 x 10 ⁻¹¹ Pa·m³/s					
Leak Tale	Outboard leakage			2 x 10-10 Pa·m3/s *3)			
Across the	e seat leak			4 x 10 ⁻⁹ Pa·m ³ /s * ³)				
	Inlet		1/4 inch face seal					
Connectio	ns Vent		1/4, 3/8 inc	ch face seal, 3/8 incl	n tube weld			
	Vacuum		1/4 inch	face seal, 1/4 inch t	ube weld			
Weight				0.82 kg *4)				

*1) At inlet pressure 80 psig (0.55 MPa) and flow rate 60 slpm.

*2) Cracking pressure is a nominal value which may vary depending on the application and operating conditions.

*3) Tested with Helium gas inlet pressure 250 psig (1.7 MPa). 125 psig (0.9 MPa) for AP72540

*4) Weight, including individual boxed weight, may vary depending on connections or options.

Air operated type

Model	AP72540	AP72550	N
Status	Normally cl		
Actuation pressure	70 to 110 psig (0	K	
Actuation port connection	NPT 1/8 inch	10-32 UNF thread	
Actuation port location	Тор	Side	
155		Ø	SMC

Manually operated type

Model	AP72600	AP72625	AP72650
Knob	Multi turn round knob	1/4 turn lever knob	1/4 turn round knob with open/close indication window

Vacuum Generator Module Series AP72

Option

Bleed

Provides constant low flow of N2 to maintain inert atmosphere in vent line.

Following 3 options are available:

Option	Bleed *
CB009	2 to 5 slpm
CB013	5 to 8 slpm
CB023	10 to 15 slpm

* At 80 psig (0.55 MPa) N2 gas.

Dimensions



Top view

Madal	R			Н	Connections	
Model	inch	(mm)	inch	(mm)	(Inlet)	inch
AP72540	0.73	(18.5)	3.49	(88.6)	MV4	1 20
AP72550	0.69	(17.4)	3.28	(83.3)	FV4	1.39
AP72600	1.06	(26.9)	3.00	(67.1)		
AP72625	1.48	(37.6)	2.94	(74.7)		
AP72650	0.94	(23.9)	3.02	(76.7)		

Connections	В		Connections	С		
(Vent)	inch	(mm)	(Vacuum)	inch	(mm)	
MV4	0.11	(52.6)	MV4	1 20	(35.3)	
FV4	2.11	(55.0)	FV4	1.59		
MV6	0.65	(07.0)	TW4	1.06	(26.9)	
FV6	2.05	(07.3)				
TW6	2.05	(52.0)				

Exhaust Characteristics



Material

Material	S
Body	316L SS
Surface finish	Electropolish + Passivation
Diaphragm	Ni-Co alloy
Diaphragm valve seat	PCTFE (Option: Polyimide)
Check valve seat	FKM





Bottom view

Flow Characteristics



Note) slpm, N₂: The volumetric flow rate under normal conditions $(0^{\circ}C, 1 \text{ atm})$ when N₂ gas is flowing.

Technical Data/ Glossary of Terms

Precautions

Α

(mm)

(35.3)

Flow Switch



- 6 flow trip points available, from 2 to 100 slpm
- Body material: 316L SS secondary remelt
- High pressure Max. 3500 psig (24.1 MPa)
- Detect excess flow by N.C. or N.O. contact output with non-wetted reed switch tripped by float with encapsulated magnet (SPDT, 3 wire / 2 position)





Specifications

Oper	ating Parameters	AP74002	AP74005	AP74010	AP74025	AP74050	AP74100	
Gas	0		Select com	patible materials	of construction	for the gas		
Source pressur	e			Vacuum to 3500	psig (24.1 MPa)			
Flow trip refere	nce points *1) *2)	2 slpm	5 slpm	10 slpm	25 slpm	50 slpm	100 slpm	
Accuracy			±10% of	trip point or 0.5 s	lpm, whichever i	s greater		
Installation orie	entation		Inlet	port at the botto	m (Vertical withir	า 8°)		
Pressure drop	at trip point		0	.5 psi (0.0034 M	Pa) differential *	3)		
Proof pressure				5000 psig ((34.5 MPa)			
Burst pressure				10000 psig	g (69 MPa)			
Ambient and or	perating temperature			-23 to 80°C (No freezing)			
l eak rate	Inboard leakage			2 x 10 ⁻¹¹	Pa⋅m³/s			
	Outboard leakage	2 x 10 ⁻¹¹ Pa·m ³ /s ^{*4})						
Surface finish		Ra max 15 μin. (0.4 μm) Option: 10 μin. (0.25 μm)						
Connections		Face seal, Tube weld						
	Туре	SPDT (3 wire / 2 position)						
	Power	30 VDC (3 W max)						
Reed switch	Switching current	0.2 A max						
	Carrying current	0.5 A max						
	Initial contact resistance	0.1 Ω or less						
	Wire gauge			AWG24 (P	VC jacket)			
	Cable length			10 ft.	(3 m)			
Cable		Blue: common						
	Lead color			Brown: norr	nally closed			
		Black: normally open						
Internal volume				0.12 in ³ ((1.9 cm ³)			
Weight				0.11	kg *5)			

*1) Trip point varies slightly with temperature change, ±2% over the specified operating range.

*2) At N₂ gas 100 psig (0.69 MPa). To obtain the nominal trip point in process gases other than nitrogen or pressures other than 100 psig (0.69 MPa), please refer to the Precaution on Selection (P.160).

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*3) Pressure drop at trip point.

*4) Tested with Helium gas inlet pressure 500 psig (3.5 MPa).

*5) Weight, including individual boxed weight, may vary depending on connections or options.

Wetted Parts	S
Body	316L SS secondary remelt
Surface finish	Electropolish + Passivation
Float	316L SS

Flow Switch Series AP74



AP74



Conne	ections	Α		В		()	
Inlet	Outlet	inch	(mm)	inch	(mm)	inch	(mm)	
MV4	MV4	2.25	(57.2)	0.625	(15.9)	0.625	(15.9)	
FV4	FV4	3.99	(101.4)	1.495	(38.0)	1.495	(38.0)	
TW4	TW4	2.25	(57.2)				0.625	(15.9)
MV4	FV4	3.12	(79.3)	0.625	(15.9)	0) <u>1.495</u> 0) 0.625	(38.0)	
MV4	TW4	2.25	(57.2)					
FV4	MV4	0.10	(70.0)	1 405	(00.0)		(15.9)	
FV4	TW4	3.12	(79.3)	1.495	(38.0)			
TW4	MV4	2.25	(57.2)	0.605	(15.0)			
TW4	FV4	3.12	(79.3)	0.025	(15.9)	1.495	(38.0)	

Precautions



*2) Prepare a suitable mating fitting with a rated pressure.

Specifications

Oper	ating parameters	AP74B225	AP74B□350	AP74B□500	AP74B 950	AP74B 1100	AP74B 1650	AP74B2600
Gas		Select compatible materials of construction for the gas						
Source pre	ssure	١	acuum to 3500	psig (24.1 MPa)	Vacuum	to 3000 psig (20).7 MPa)
Flow trip re	eference points *1) *2)	225 slpm	350 slpm	500 slpm	950 slpm	1100 slpm	1650 slpm	2600 slpm
Accuracy				<u>+</u>	20% of trip poir	nt		
Proof pres	sure			500	00 psig (34.5 Ml	Pa)		
Burst pres	sure			10	000 psig (69 MF	Pa)		
Ambient and	d operating temperature	-23 to 80°C (No freezing)						
l oak rato	Inboard leakage			2	2 x 10 ⁻¹¹ Pa·m ³ /	S		
Leak Tale	Outboard leakage	2 x 10 ⁻¹¹ Pa·m ³ /s						
Surface finish R				Ra m	Ra max 10 μin. (0.25 μm)			
Connection	าร	1/2 inch face seal, Tube weld 3/4 inch face seal, Tube weld				e weld		
Pressure d	rop at trip point			0.5 psi (0.	0034 MPa) diffe	erential *3)		
	Туре			SPD	T, 3 wire / 2 pos	sition		
Read	Power			30	0 VDC (3 W ma	x)		
switch	Switching current				0.2 A max			
Switch	Carrying current	0.5 A max						
	Initial contact resistance				0.1 Ω max			
	Wire gauge			AV	VG24 (PVC jack	et)		
	Cable length				10 ft. (3 m)			
Cable					Blue: common			
	Lead color	Brown: normally closed						
		Black: normally open						
Weight					0.56 kg * ⁴⁾			

*1) Trip point varies slightly with temperature change, ±2% over the specified operating range.

*2) At № gas 100 psig (0.69 MPa). To obtain the nominal trip point in process gases other than nitrogen or pressures other than 100 psig (0.69 MPa), please refer to the Precautions on Selection (P.160).

*3) Pressure drop at trip point

*4) Weight, including individual boxed weight, may vary depending on connections or options.



Wetted Parts Material

Wetted Parts	S
Body	316L SS
Surface finish	Electropolish + Passivation
Float	316L SS
Metal gasket	Nickel 200

Dimensions





	A		В				^	
Connections			Horizontal		Vertical			
	inch	(mm)	inch	(mm)	inch	(mm)	inch	(mm)
MV8	0 E E	(00.2)	4.55	(115.6)	2.70	(68.6)	3.05	(77.5)
FV8	3.55	(90.2)						
TW8	2.59	(65.8)						
MV12	5 5 1	(140.0)	5.44	(138.2)	3.59	(91.2)		
FV12	5.51							
TW12	3.53	(89.7)						

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Nominal flow trip reference points are at 100 psig (0.69 MPa) of N₂ gas. In order to obtain the nominal trip point for operating pressure, other than 100 psig (0.69 MPa), and for gas, other than N₂, calculate the correction factors (Fp, Fg) with the following formula and then, multiply both factors.

1. Change in operating pressure

2. Change in gas type

 $Fg = \sqrt{\frac{28}{28}}$

MW: Molecular weight of the gas

$$Fp = \sqrt{\frac{OP}{114.7}}$$
$$Fp = \sqrt{\frac{OP_{MPa}}{0.79}}$$

OP: Operating pressure (abs) psia (*OP*_{MPa}: Operating pressure (abs) MPa abs)

E.g) Nominal trip point when gas type is hydrogen gas (molecular weight: 2) and operating pressure is 0.5 MPa:

1. Calculation of Fp

2. Calculation of Fg

$$Fp = \sqrt{\frac{(0.5+0.1)}{0.79}} = 0.871$$

$$Fg = \sqrt{\frac{28}{2}} = 3.742$$

When using the flow switch, whose nominal trip point is 10 slpm (AP74010S \Box), under these conditions, its nominal trip point will be 32.6 slpm (10 (slpm) x 0.871 x 3.742 = 32.6 (slpm)).

inch (mm)



Process Gas Equipment/Check Valve Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions and pages 166 and 167 and the Operation Manual for common precautions. http://www.smcworld.com

Selection

MWarning

1. Confirm the specifications.

This product is used in gas delivery systems to prevent reverse gas flow. This product can only supply gas from inlet to outlet side. When selecting the product, confirm the operating conditions, such as type of gas, operating pressure, flow rate, operating temperature etc., and use within the operating range specified in the catalog. The product may not be suitable for use with specific gases and applications/ environments. Check the compatibility of the product materials with the process gas. Confirm the catalog selection guide. Design the equipment and select the product by understanding the characteristics of gas.

Mounting

ACaution

1. Confirm the mounting direction of the product. An arrow is indicated on the product. The arrow points in the direction flow are allowed from the inlet side towards the outlet side.

Maintenance

Warning

1. AP64 check valves cannot be repaired.

AP Tech AP64 check valves are welded shut and internal problems usually cannot be repaired.

Operation

A Caution

1. Do not use the check valve as shutoff valve.

Do not rely on a check valve exclusively to absolutely prevent any reverse flow, especially when the pressure differential is small. For situations where it is known the downstream pressure will exceed the upstream pressure, use a diaphragm valve to positively shut off reverse flow.

Check Valves

Vacuum Generators

Flow Switches

Technical Data/ Glossary of Terms

Precautions



Process Gas Equipment/Vacuum Generator Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions and pages 166 and 167 and the Operation Manual for common precautions. http://www.smcworld.com

Selection

A Warning

1. Confirm the specifications.

This product is used in gas delivery systems to assist in purging of piping systems. When selecting the product, confirm the operating conditions, such as type of process gas being vented, nitrogen supply pressure and flow rate, vent line back pressure generated by the nitrogen supply flow rate, actuation pressure, operating temperature etc., and use within the operating range specified in the catalog. The product may not be suitable for use with specific gases and applications/ environments. Check the compatibility of the product materials with the process gas. Confirm the compatibility of the product with the process gas in the catalog selection guide. Design the equipment and select the product by understanding the characteristics of gas.

Mounting

ACaution

1. Confirm the mounting direction of the product.

Inlet port is labeled with "IN" mark and outlet port is labeled with "OUT" mark. Alternatively, the nitrogen flow direction may be indicated with an arrow instead of "IN" and "OUT" marks. Inlet and outlet ports run in line with each other. The vacuum port runs perpendicular to the inlet and outlet ports. The vacuum port may be labeled with "VAC" mark. Confirm the mounting direction and install at correct direction.

2. Connect actuation pressure to the valve actuator connection.

If an air operated valve is built in the product, connect actuation pressure to the valve actuator connection. Use nitrogen or clean dry air for actuation pressure.

Maintenance

Warning

1. If a product requires repair, contact SMC.

Operation

- A Warning
- 1. Supply nitrogen to the inlet port.
- 2. If an air operated valve is built in the product, use nitrogen or clean dry air for actuation pressure.
- 3. Apply nitrogen within the specified pressure range to the inlet port in order to generate a vacuum.

When applying nitrogen to the inlet port, vacuum will be generated. If a valve is built in the product, vacuum will be generated after applying nitrogen to the inlet port and opening the built-in valve. In the case of an air operated valve, it will open when applying actuation pressure to the actuation port. In the case of a manually operated valve, it will open when the handle is rotated counterclockwise until it completely stops.

4. Shut off nitrogen supply in order to shut off vacuum.

When shutting off nitrogen supply to the inlet port, vacuum will be shut off. If a valve is built in the product, vacuum will be shut off when closing the valve. In the case of an air operated valve, it will close when venting off actuation pressure. In the case of a manually operated valve, it will close when rotating the handle clockwise until it completely stops.

5. In the case the check valve is built in the product, back flow through the inlet port will be prevented when pressure on the vacuum or vent ports exceeds the inlet port pressure.

Check valve is used for preventing back flow through the inlet port when pressure on the vacuum or vent ports exceeds the inlet port pressure, regardless of whether the built-in valve is opened or closed, and regardless of whether or not the product has a constant bleed option. However, the check valve does not prevent back flow from the outlet port through the vacuum port.

6. If the product with built-in valve is selected with constant bleed option, when supplying nitrogen pressure to the inlet port, nitrogen will bleed through a small hole to the vacuum and vent ports even when the built-in valve is closed.

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Process Gas Equipment/Flow Switch Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions and pages 166 and 167 and the Operation Manual for common precautions. http://www.smcworld.com

Selection

MWarning

1. Confirm the specifications.

This product is used in gas delivery systems to signal an increase in flow above a trip point. When selecting the product, confirm the operating conditions, such as type of gas, operating pressure, flow rate, operating temperature, etc., and use within the operating range specified in the catalog. The product may not be suitable for use with specific gases and applications/environments. Check the compatibility of the product materials with the process gas. Confirm the catalog selection guide.

Design the equipment and select the product by understanding the characteristics of gas.

2. Confirm the flow trip reference point of the product.

Flow trip reference point is fixed. Select the product which meets the desired flow rate. Flow trip reference point, specified in the How To Order, is the trip point value with nitrogen at 0.69 MPa inlet pressure. When the products are used with other inlet pressures or gases, use the conversion formula to calculate the flow trip reference point for such application.

Mounting

Caution

1. Do not drop or bump the products.

When dropping, bumping, or applying excessive impacts to the products, it may damage inside of the product and cause malfunction.

2. Confirm the mounting direction of the products.

An arrow is indicated on the product. In the case of the AP74B Series, an arrow is indicated on the bypass line. The arrow points in the forward flow direction from inlet port to outlet port.

3. Install the products vertically with the inlet port on the bottom in order to supply gases from bottom to top.

In the case of the AP74 Series, install the product within 8 degrees of vertical in order to supply gas from bottom to top. In the case of the AP74B Series, install the product with its arrow indicated on the bypass line within 8 degrees of vertical in order to make its arrow direction upward.

Wiring

Warning

1. Avoid bending repeatedly or stretching the lead wires.

Lead wire may break when applying bending stress repeatedly or stretching force to the lead wires.

2. Do not wire in conjunction with power lines or high voltage lines.

Wire separately from power lines and high voltage lines and avoid wiring in the same conduit with these lines. Close proximity between power lines or high voltage lines and the product may result in malfunction due to electrical noise. Wiring

Warning

3. Confirm proper insulation of wiring.

Make sure that there is no insulation failure (contact with other circuits, insulation failure between terminal, etc.). Damage may occur due to excessive current applied to the product.

4. Connect wires properly. Use brown and blue wires for normally closed contact installation.

Use black and blue wires for normally open contact installation.

- 5. Do not connect wiring while product is energized.
- 6. Make sure to connect a load before energizing the product.

Energizing the product without connecting a load (load shortcircuit) can create excessive current and damage the switch.

7. Confirm operation of the product by supplying nitrogen after installation and wiring.

Confirm the product trips when supplying nitrogen above the flow trip reference point and that it resets when the flow is shut off.

Operating Environment

Warning

1. Do not use in an area, where a magnetic field is generated. It may cause malfunction.

Maintenance

\land Warning

1. AP Tech flow switches cannot be repaired. AP Tech flow switches are welded shut and internal problems

AP Tech flow switches are welded shut and internal problems usually cannot be repaired.

Operation

Warning

1. Initial pressurization of system lines can cause a temporary flow surge that trips the flow switch.

Confirm flow switch resets once system lines are filled with gas. If it does not reset after system lines are filled, stop supplying gas and check for leakage of the system.

