



Mechanical pressure switch standard white series

# P4000-W Series

Wide pressure setting range covers 0.1 to 0.8 MPa.

● Port size: 1/4 to 1/2

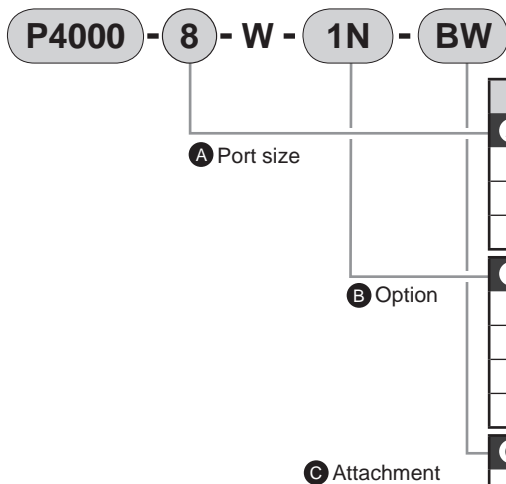
JIS symbol



## Specifications

Descriptions	P4000-8-W	P4000-10-W	P4000-15-W					
Working fluid	Compressed air							
Max. working pressure MPa	1.0							
Withstanding pressure MPa	1.5							
Pressure adjusting range MPa	0.1 to 0.8							
Fluid temperature °C	5 to 60							
Port size Rc	1/4	3/8	1/2					
Micro switch type	Z-15GD-B (OMRON)							
Contact configuration ab	1							
Hysteresis MPa	0.1 to 0.49, hysteresis within 0.049							
	0.5 to 0.8, hysteresis within 0.078							
Repeatability MPa	±0.02 of set pressure							
Allowable operation frequency cycle/min.	20							
Insulation resistance MΩ	100 and over (with 500 VDC megger)							
Product weight kg	0.5							
Mounting attitude	Install adjusting screw vertically							
<b>Micro switch rated</b>								
Load	No inductive load (A)		Inductive load (A)					
Circuit	Resistance load	Light load	Inductive load   Electric motor load					
Voltage	N.C	N.O	N.C	N.O	N.C	N.O	N.C	N.O
125 VAC	15	15	3.0	1.5	15	15	5.0	2.5
250 VAC	15	15	2.5	1.25	15	15	3.0	1.5
30 VDC	6.0	6.0	3.0	1.5	5.0	5.0	5.0	2.5

## How to order



Symbol	Descriptions
<b>① Port size</b>	
<b>8</b>	Rc1/4
<b>10</b>	Rc3/8
<b>15</b>	Rc1/2
<b>② Option</b>	
<b>Blank</b>	Without indicator light
<b>1N</b>	100 V/200 VAC with indicator light
<b>3N</b>	24 VDC with indicator light
<b>T</b>	Without pressure gauge
<b>③ Attachment (attached) Note 1, Note 3</b>	
<b>Blank</b>	Not attached
<b>A8W</b>	Rc1/4 piping adaptor set
<b>A10W</b>	Rc3/8 piping adaptor set
<b>A15W</b>	Rc1/2 piping adaptor set
<b>A20W</b>	Rc3/4 piping adaptor set
<b>BW</b>	C type bracket

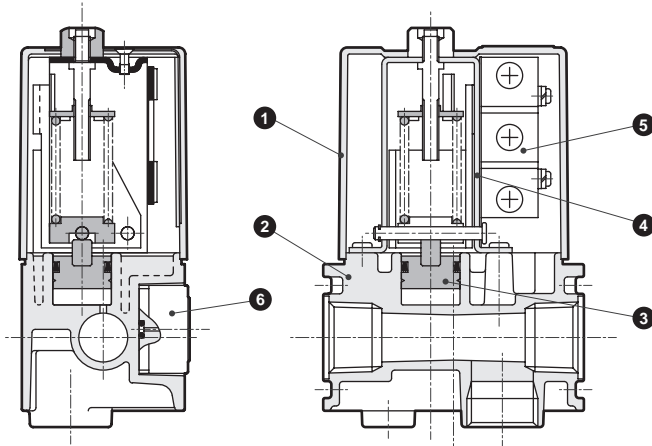
### ⚠ Note on model no. selection

Note 1:C type bracket and piping adaptor set can not be used together.

Note 2:Due to modular design, a gasket is attached.

Note 3:The joiner set is enclosed with the piping adaptor set.

## Internal structure and parts list



No.	Parts name	Material	No.
1	Cover	Resin	-
2	Body	Aluminum alloy die-casting	-
3	Piston assembly	Polyacetal resin, nitrile rubber	-
4	Frame	Steel	-
5	Micro switch	-	Z-15GD-B (OMRON)
6	Pressure gauge assembly	PBT resin, brass	G401-W

\* To wire, remove cover (1), and connect directly to the microswitch (5).  
 \* One gasket is enclosed.

## ⚠ Safety precautions

### ■ Design & Selection

#### ⚠ Caution

#### 1 Micro switch contact specifications

Closed circuit max. 30A    Open circuit max. 15A  
 Rush current should be measured beforehand.

### ■ Installation & Adjustment

#### ⚠ Caution

1 When wiring, loosen cover mounting screws, remove the cover, then wire to the microswitch inside.

#### 2 Wiring the sensor with light

- The light is connected to the microswitch's NC terminal and NO terminal. A fine current flows even when the load (relay, etc.) is not energized, so take care when selecting the load.  
 100 VAC 1.5mA    200 VAC 2.0mA    24 VDC 4.5mA
- To turn the light on at a level higher than the set pressure and off at a level less than the set pressure, wire to the microswitch COM terminal and NC terminal. Attach the Pressure Rise Light ON plate at a visible section on the cover.
- To turn the light on at a level less than the set pressure and off at a level higher than the set pressure, wire to the microswitch COM terminal and NO terminal. Attach the Pressure Rise Light OFF plate at a visible section of the cover.
- If there is a large amount of drainage, pipe so that the pressure adjustment screw is facing upward.

3 Due to a guard is resin, avoid use in the high ambient temperature.

4 Hold the body when piping or installing.

5 Use with air that has been passed through an air filter.

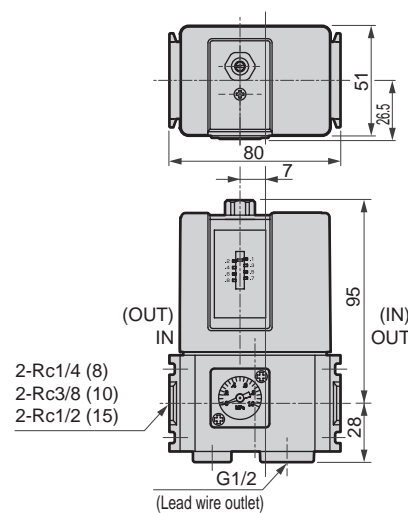
6 Use the pressure absorbing nipple (6556) to detect sudden changes in pressure such as when confirming air cylinder pressure.

7 Use the pressure absorbing nipple (6556) if pressure rise/lower pulsation is frequent. The product life could be shortened if the pressure absorbing nipple is not used.

8 Loosen the nut on the top of the cover, and adjust the pressure with the adjustment screw. The set pressure will rise when the screw is turned to the plus (+) side and will drop when turned to the minus (-) side. (Working tools: Wrench 13 mm, flat-tip screwdriver) Fix with the nut after setting.

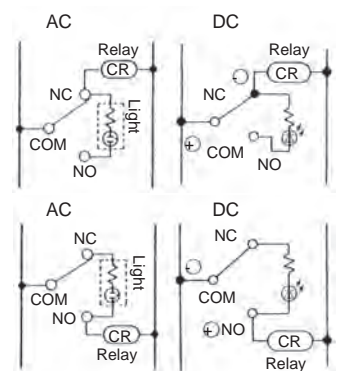
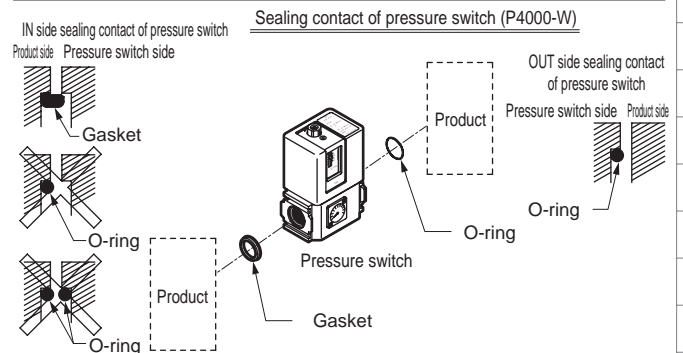
9 The scale plate is for reference. (Scale error within  $\pm 0.05$  MPa)

## Dimensions



Reduction rate 0.24.  
 (Photocopy at 141% four times to see actual dimensions.)

## How to assemble



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

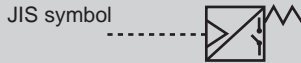
Standard series  
 F.R.L. unit

Refrigerating type dryer  
 Desiccant type dryer  
 High polymer membrane type dryer  
 Air filter  
 Auto. drain / others  
 F.R.L. (Module unit)  
 F.R.L. (Separate)  
 Compact F.R.  
 Precise regulator  
 F.R.L. (Related products)  
 Clean F.R.  
 Electro pneumatic regulator  
 Air booster  
 Speed control valve  
 Silencer  
 Check valve / others  
 Joint / tube  
 Vacuum filter  
 Vacuum regulator  
 Suction plate  
 Magnetic spring buffer  
 Mechanical pressure SW  
 Electronic pressure SW  
 Contact / close contact cont. SW  
 Air sensor  
 Pressure SW for coolant  
 Small flow sensor  
 Small flow controller  
 Flow sensor for air  
 Flow sensor for water  
 Total air system  
 Total air system (Gamma)  
 Ending



# Compact read switch type mechanical pressure switch standard white series P1100-W/P4100-W/P8100-W Series

Compatible with module connection to SELEX F.R.L.



## Specifications

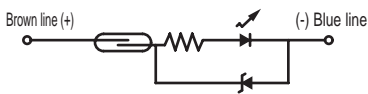
Descriptions	P*100-W
Working fluid	Compressed air
Max. working pressure MPa	1.0
Set pressure range MPa	0.1 to 0.6
Hysteresis MPa	0.08 or less
Repeatability MPa	±0.02 or less
Contact configuration	1a Note 1
Wiring	Lead wire (oil resistant vinyl cabtire code 2-conductor 0.2mm <sup>2</sup> )
Ambient temperature / fluid temperature	5 to 60°C
Protective structure Note 2	IP20 or equivalent

Note 1: The contact turns on if air pressure exceeding the scale setting pressure is applied.  
 Note 2: Note that when connecting an option joint into the atmospheric release port and extend the tube until water does not entrain, IP65 or equivalent is applied. This port can not be used outdoors.

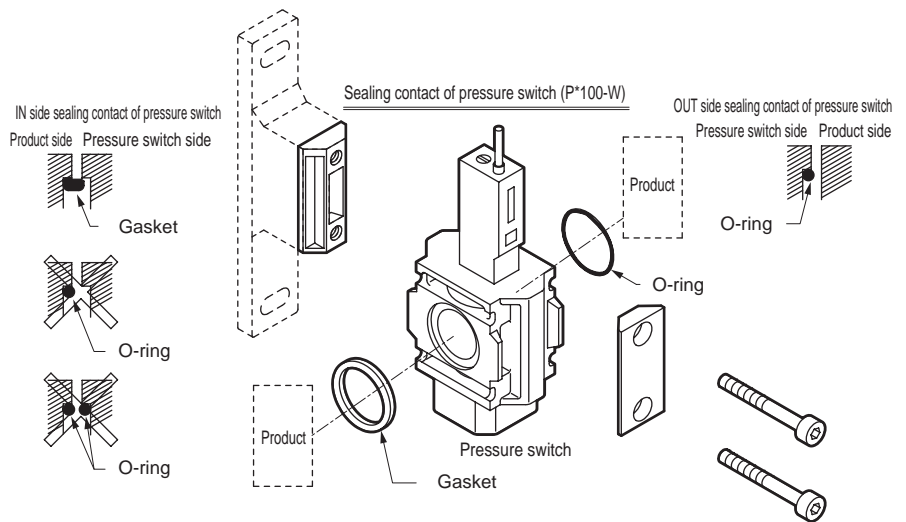
## Electric component section specifications

Load voltage	12/24 VDC	100 VAC
Load current	5 to 50mA	7 to 20mA
Internal voltage drop	3 V or less	
Light	LED (ON lighting)	
Maximum shock resistance	294m/S <sup>2</sup>	
Insulation resistance	20MΩ and over at 500 VDC megger	
Withstand voltage	No failure when 1000 VAC is applied for one minute	

## Internal circuit design



## How to assemble (P1100-W, P4100-W, P8100-W)



## How to order (modular design)



**A** Series

**B** Port size

**C** Branch direction

**D** Attachment

**E** Length of lead wire

**F** Option

### ⚠ Note on model no. selection

Note 1: This is used for intermediate connection of the module series so the module connection section is not threaded.

Note 2: A masking plug matching the port size is enclosed.

Note 3: When piping the isolated p\*100-W unit, use piping adaptor A\*00-W.  
(The horizontal direction port does not have threads.)

Symbol	Descriptions
<b>A Series</b>	
1100	1000-W Series modular design
4100	2500-W, 3000-W, 4000-W Series modular design
8100	6000-W, 8000-W Series modular design

B Port size		1100	4100	8100
6	Rc1/8	●		
8	Rc1/4	●	●	
10	Rc3/8		●	
15	Rc1/2		●	
20	Rc3/4			●
25	Rc1			●

C Branch direction Note 1		
Blank Note 2	L	R

D Attachment		1100	4100	8100
Blank	Joiner set, gasket	●	●	●
B11W	T type bracket, gasket	●		
B31W	T type bracket, gasket		●	
B41W	T type bracket, gasket		●	
B81W	T type bracket, gasket			●
4	Joint for atmospheric release port attached (M3 elbow)	●	●	●

E Length of lead wire	
Blank	1m
3	3m
5	5m

F Option	
Blank	None
P6	Copper and PTFE free specification (custom order)

Secondary battery compatible specifications (catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

P4100 - ..... - P4

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
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Mechanical pressure SW
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Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
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Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Standard series  
F.R.L. unit

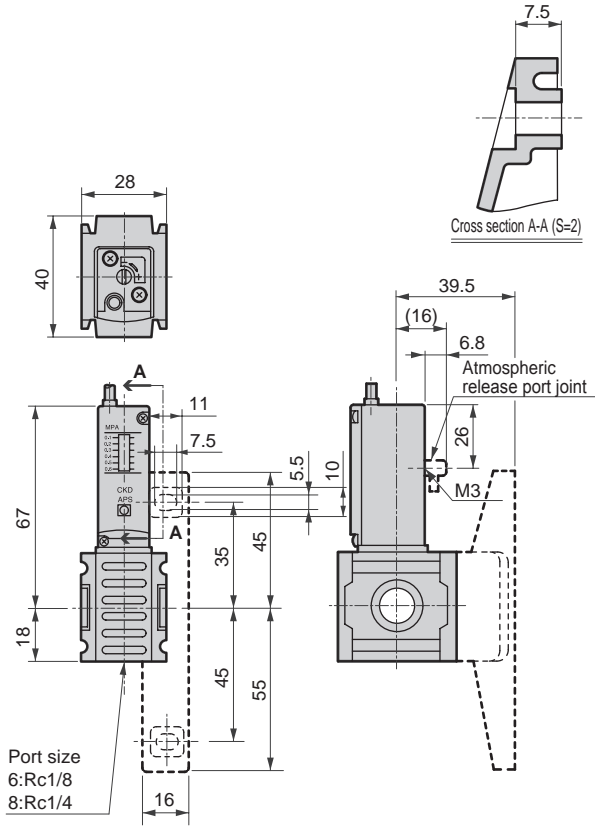
# P\*100-W Series

## Dimensions



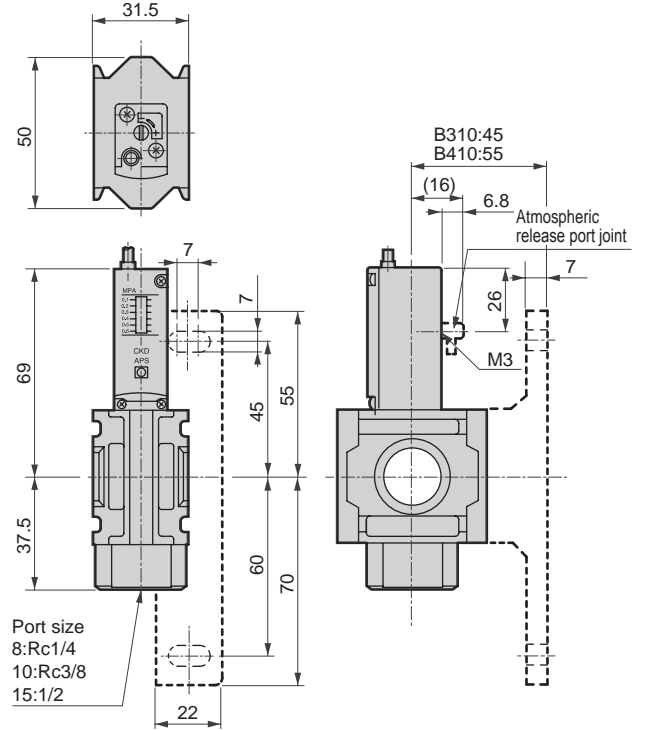
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

### ● P1100-W



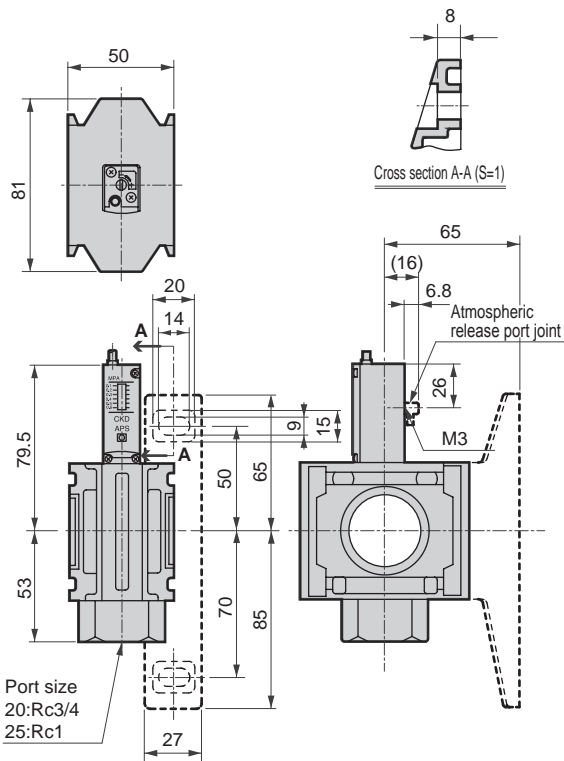
Weight 126g

### ● P4100-W



Weight 190g

### ● P8100-W



Weight 467g

### ⚠ Safety precautions

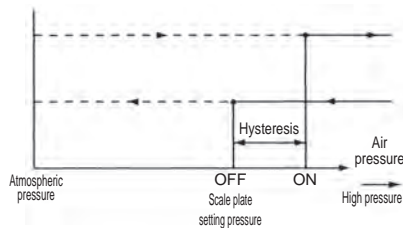
#### ■ Installation & Adjustment

#### ⚠ Caution

##### 1 Setting pressure

- Pressure displayed on the scale plate is used as the reference. When setting pressure, refer to the separate pressure gauge.
- Pressure displayed on the scale plate is the value when the contact is off. To set the scale plate to a value smaller than that from which hysteresis has been subtracted. Refer to the chart diagram below. If not set, operation may not take place at the set value. (Hysteresis refer to the pressure width from when the switch operates once with the set pressure to when the pressure drops and the switch turns off.)

Operation chart



##### 2 Installation

- Do not drop or bump the panel when handling it.
- Wire the lead so that the repeated bending strain and tensile strength are not applied to the wire. Failure to do so could lead to disconnection.
- Do not use this sensor near a strong magnetic field or large current (large magnet or spot water, etc.) because the sensor could malfunction.
- The pressure switch is equivalent to IP-20, but the installation direction is limited to upward vertical. If water enters the atmospheric release port for atmospheric pressure from below, pipe an M3 joint and extend with tubing to where water will not enter. Do not plug the introduction port for atmospheric pressure or else malfunctions could occur. This port can not be used outdoors.



##### 3

- Connecting the lead
  - (1) **Do not connect the lead directly to the power supply. Connect the load serially. Failure to do so could result in lamp blowing or contact melting.**
  - (2) When using for DC, connect the brown wire to the + side and the blue wire to the - side. The lamp will not light if wires are connected in reverse.
  - (3) When connected to the AC relay or PC input, if half wave rectification is done with these circuits, the switch lamp may not light. In this case, the lamp will light if the switch lead polarity is reversed.
- Contact capacity
 

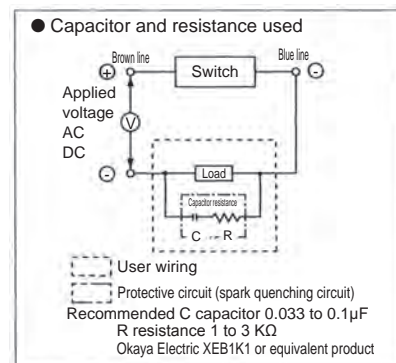
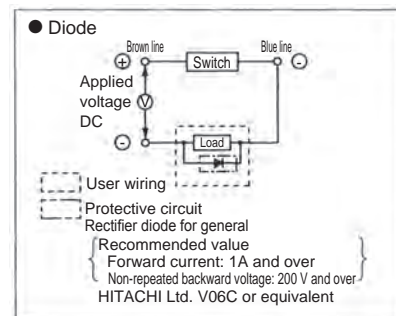
Do not exceed the specified load voltage and load current range.

Failure to observe this could result in problems such as lamp blowing and contact melting.

The lamp may not light if the current is less than the rated current value.

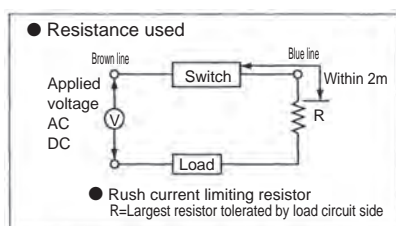
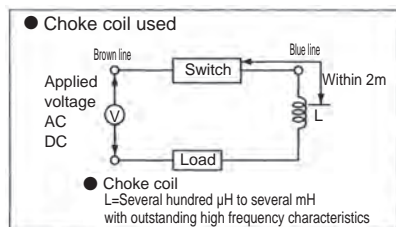
##### ● Contact protection

- (1) When using this sensor with a conductive load such as a relay, provide the contact protection circuit shown at right. The contact could melt if this protection circuit is not provided.



- (2) DC wiring exceeds 50m or AC wiring exceeds 10m, the wiring capacity will be attained. A rush current will occur, damaging the switch or shortening life.

Install a contact protection circuit if the wiring length is exceeded.



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
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F.R.L. (Separate)
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Precise regulator
F.R.L. (Related products)
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Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Standard series  
F.R.L. unit