

# Vacuum Switch Diaphragm Style

# ZSM1-115/121



## Specifications

Model	ZSM1-115	ZSM1-121
Switch specifications	Solid state	Contact (Reed switch)
Fluid	Air, Inert gases	
Max. pressure	0.5MPa	
Operating pressure range	-27 to -80kPa	
Hysteresis	Max. 15kPa	Max. 20kPa
Repeatability	±10% or less	
Ambient and fluid temperature	-5 to 60° C (No freezing)	
Power supply	10 to 26V DC	100V AC
Indicator light	ON: When output is ON.	
Lead wire	3	2
Port size	R(PT) 1/8	
Weight	65g	

## Electrical Specifications

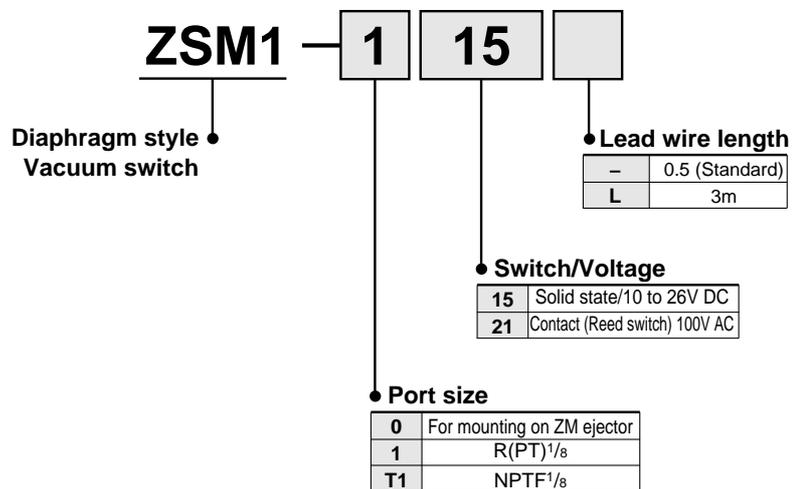
### ZSM1-115

Power supply	10 to 26V DC
Output (Open collector)	30V, Max. 100mA
Current consumption	16mA or less (24V DC)

### ZSM1-121

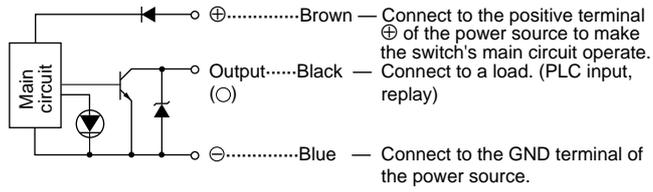
Power supply	100V AC
Operating current range	5 to 20mA

## How to Order

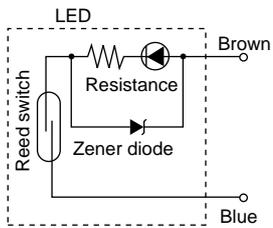


## Circuit

### ZSM1-115

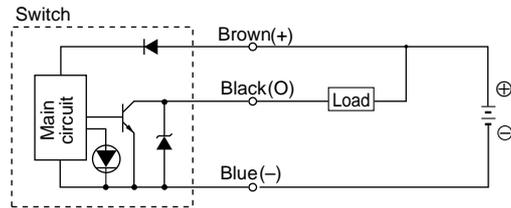


### ZSM1-121

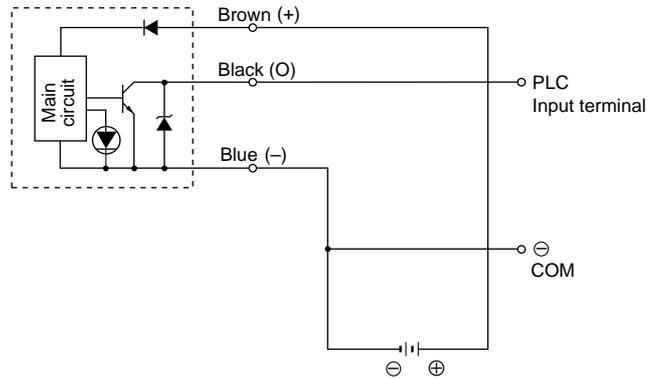


## Wiring

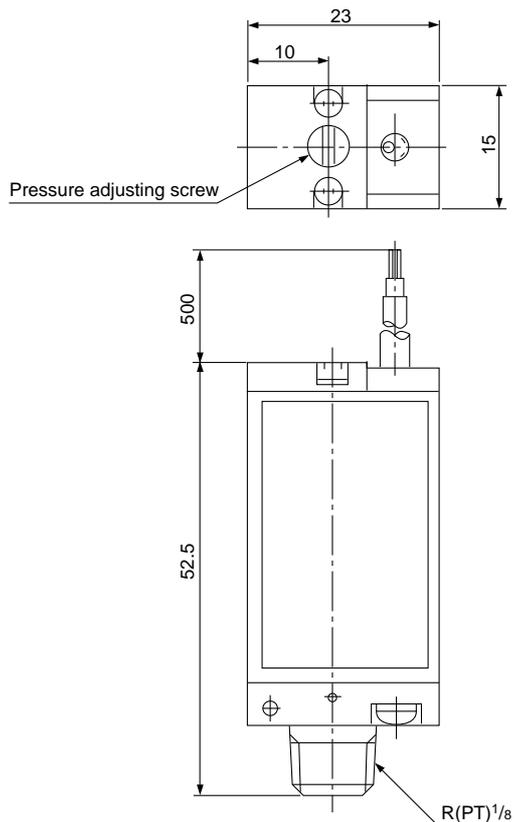
### ZSM1-115



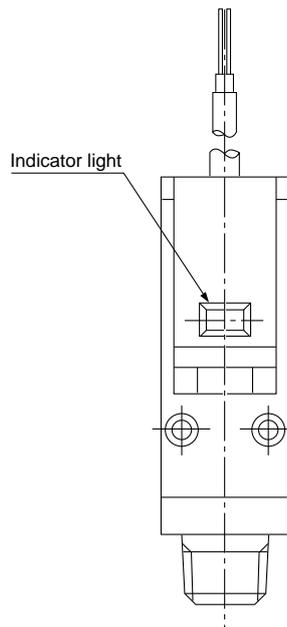
### Connection example with PLC In case of common terminal is "⊖" negative



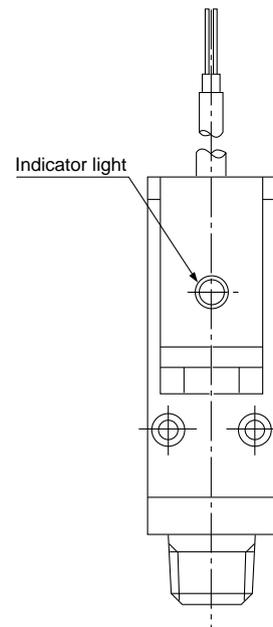
## Dimensions



### ZSM1-115



### ZSM1-121



PSE

ZSE4  
ISE4

ZSE5  
ISE5

ZSE6  
ISE6

ZSE3  
ISE3

GS

PS

ISA

ZSE1  
ISE1

ZSE2  
ISE2

ZSP

IS□

ZSM

PF□

IF□

## ⚠ Precautions

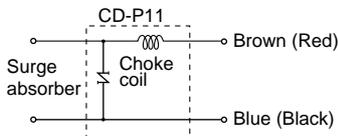
Be sure to read before handling. Refer to p.0-26 and 0-27 for Safety Instructions and common precautions on the products mentioned in this catalog, and refer to p.3.0-7 to 3.0-9 for precautions on every series.

### Wiring

#### ⚠ Warning

- ① Do not apply excessive pulling force on the lead wire.
- ② **Wiring of ZSM1-121**  
Switches may be connected in series, voltage drop will be increased by the LED's internal resistance (2V drop per each).  
Use switches within the specified range of min. operating voltage.
- ③ Diaphragm switches have no built-in contact protection circuits.  
Use switches with contact protection box (Part No. CD-P11) in case of inductive loads or 5m or more lead wire length.

#### ④ Internal circuit of contact protection box



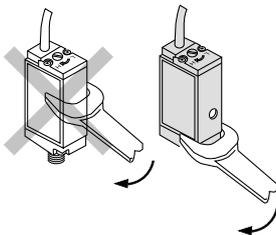
#### ⑤ How to connect contact protection box

Connect the lead wires from the body and the contact protective box side indicated "SWITCH". Lead wire should be as short as possible, within 1m.

### Installation/Piping

#### ⚠ Caution

- ① When piping switch by hand, hold body. Electrical wire must not be subjected to excessive force.
- ② Do not drop nor apply excessive force.
- ③ Tighten switch by applying the wrench on the fitting part.
- ④ Mounting is possible in either horizontal or vertical orientations.



### Air Supply

#### ⚠ Warning

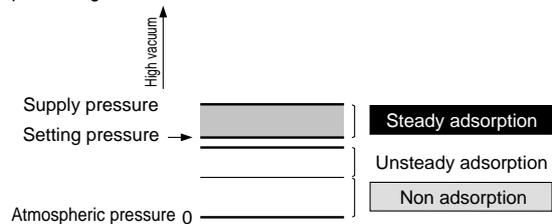
- ① Avoid absorbing the water-contained workpieces.  
It may cause the malfunction or damage.

### Calibration Procedure

#### ⚠ Caution

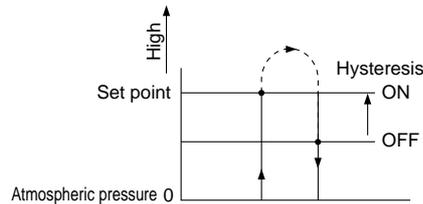
##### ① Setting of vacuum pressure

Set the possible minimum pressure for adsorption in case of the use for adsorption confirmation. If setting the pressure lower than that, switch becomes ON in case that adsorption is not completely done. If setting the pressure higher than that, switch does not become ON though absorbing workpieces in good matter.

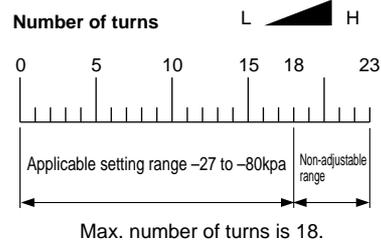


##### ② Hysteresis

Hysteresis is the pressure difference between the ON pressure and the OFF pressure of the output signal. The set pressure is the pressure selected to switch from OFF to ON condition.



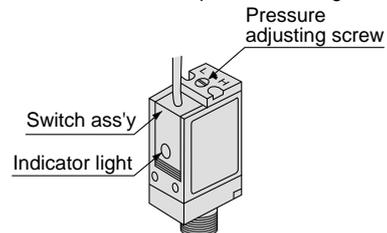
##### ③ Number of turns of pressure adjusting screw



#### ⚠ Caution

##### ① How to set vacuum pressure

The pressure setting trimmer is used to set the on-pressure. Clockwise rotation increases the on-pressure setting.



### Environment

#### ⚠ Warning

- ① Avoid using switch in a magnetic environment. It may cause the malfunction.
- ② Do not use in an environment where water or oil splashing may be required to avoid the malfunction or damage of switch caused by corrosion of electric circuit.