

# CL14

## Differential Pressure Switch

### Overview

This differential pressure switch is designed for detecting air filter pressure drop used in an air-conditioning system and warning for filter clogging, etc. Applications include clean room/biobio clean room pressure monitoring.

- Filter clog monitoring
- Clean room pressure monitoring

### Features

- Easy adjustment of setpoint is possible by dial setting.
- Adopted high reliable and high capacity microswitch improve setting accuracy.
- Dust and splash protection (IP54)
- With its transparent cover, the setting point can be easily checked.



RoHS



### Specifications 1

#### Media:

Air or non-corrosive gas

#### Installation Environment:

Install in location where no gases or liquids may exist that have the potential to become flammable or ignitable under normal operating condition

#### Position Orientations:

Horizontal mounting, vertical mounting

#### Pressure Connection:

φ 5.5 Barb fitting (For tubing with φ 4 inner diameter vinyl tube )

#### Wetted parts:

Diaphragm: Silicon rubber  
Case: Polycarbonate, SUS304  
High pressure port: C3604BD  
Low pressure port: Polycarbonate  
Others: NBR, Epoxy resin

#### Differential pressure range:

20 to 200Pa→0.2 to 1kPa (200 to 1000Pa)

#### Proof pressure for enclosure (Pressure loaded two sides):

10kPa and below

#### Proof pressure for sensing element\* (Pressure loaded one side):

1.5kPa

\* Same proof pressure applied for negative pressure measurements (Vacuumed at L pressure side)

#### Operating temperature range:

-20 to 60°C (Non-freezing)

#### Operating humidity range:

85%RH and below

#### Operating altitude:

Less than 2000m

#### Setting accuracy:

Within ±5% max.P.

#### Repeatability:

Within ±5% max.P.

#### Deadband:

Fixed 0.05 to 0.2kPa and below (Depending on differential pressure range)

#### Switch:

Micro switch

Standard or Micro Load Type (Gold crossbar contact)

#### Number of contact:

One contact

#### Setting method:

External adjustment with dial lock function

#### Enclosure:

IP54

#### Case material:

Polycarbonate, SUS304

#### CE Compliance:

Applicable Directive:

2006/95/EC Low Voltage Directive

Applicable Standards:

IEC 61010-1:2010/EN 61010-1:2010

Over voltage category is II.

Pollution degree is 2.

\* Micro switch: Non-CE marked for Micro Load Type

#### Recommended electrical wire specifications:

Allowable voltage 250V and over,

Permissible current 5A and over,

Heat-resistant temperature of 75°C and over

#### Weight:

Approx. 110g

\*Proof pressure loaded two sides simultaneously, and proof pressure loaded one side that represents maximum allowable differential pressure are specified.

### Specifications 2

#### Deadband and setting range:

Differential pressure range	Deadband (Maximum)	Setting range	
		Upper limit type	Lower limit type
20 to 200Pa	50Pa and below	50 to 200Pa	20 to 150Pa
60 to 300Pa	70Pa and below	110 to 300Pa	60 to 230Pa
100 to 500Pa	100Pa and below	170 to 500Pa	100 to 400Pa
0.2 to 1kPa	0.2kPa and below	0.35 to 1kPa	0.2 to 0.8kPa

(At 20±5°C)

#### Electrical characteristics:

##### ① Switching capacity

	Standard		For low level load			Withstand voltage	Insulation resistance
	Resistance load	Inductive load	Resistance load	Inductive load	Minimum applicable load		
125V AC	3A	2A	0.1A	—	5V DC 1mA	1500V AC Between terminal and case 50/60Hz 1min.	500V DC 100MΩ over Between terminal and case
250V AC	3A	2A	—				
30V DC	3A	2A	0.1A				
125V DC	0.4A	0.05A	—				

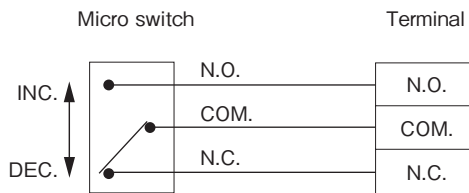
##### ② Rating compliant to safety standard (Micro switch: Available standard only)

	Resistance load
250V AC	3A
30V DC	3A

\* Electrical ratings have been changed after the change of micro switch since August 2017.

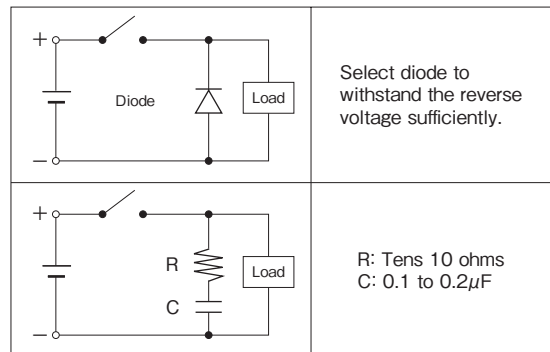
### Type of contact and wiring system

Type of contact	Marking	Diagram of setpoint operation
Upper limit type with one contact	H	Pressure switch is adjusted to actuate on rising differential pressure. Upscale pressure → OFF ON 0 SET max.
Lower limit type with one contact	L	Pressure switch is adjusted to actuate at setpoint on falling differential pressure. ← Pressure decrease ON OFF 0 SET max.



#### Insertion of protection circuit for contact:

Ensure the insertion of protective circuit for opening/closing inductive load. Built-in protective circuit should be selected when employing relay.



### Label

#### Standard



#### Micro Load Type

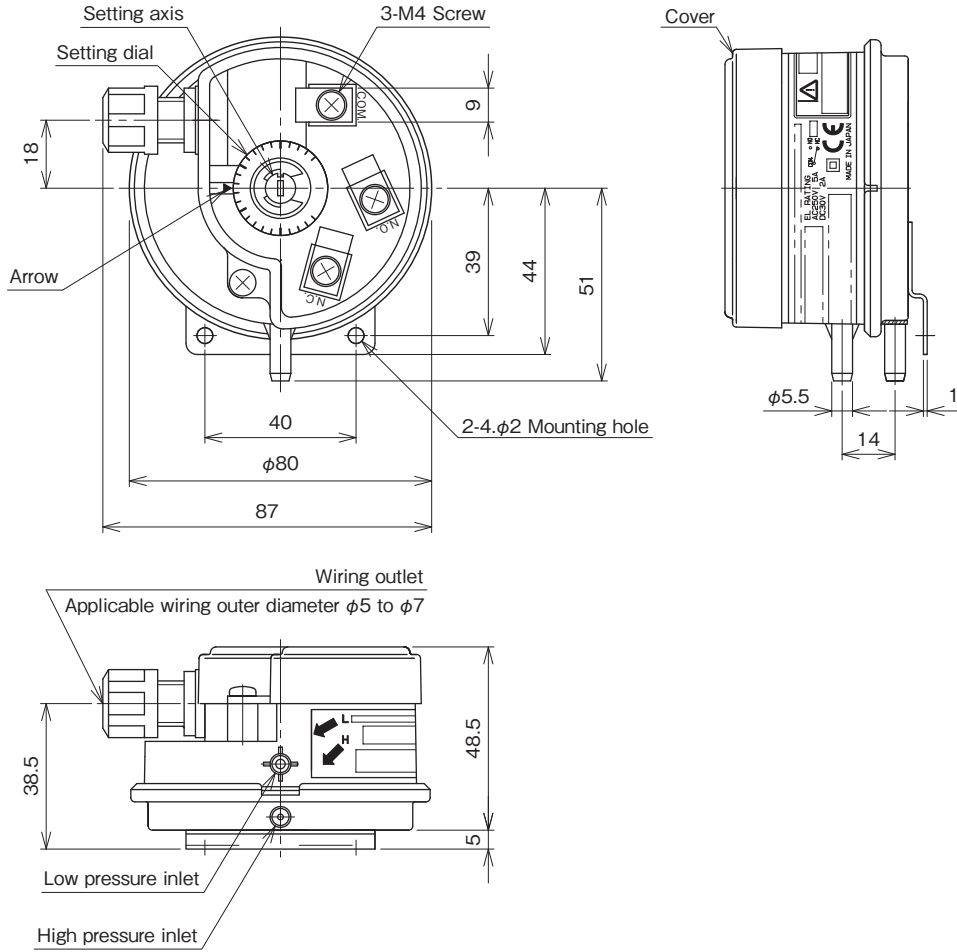


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## Differential Pressure Switch

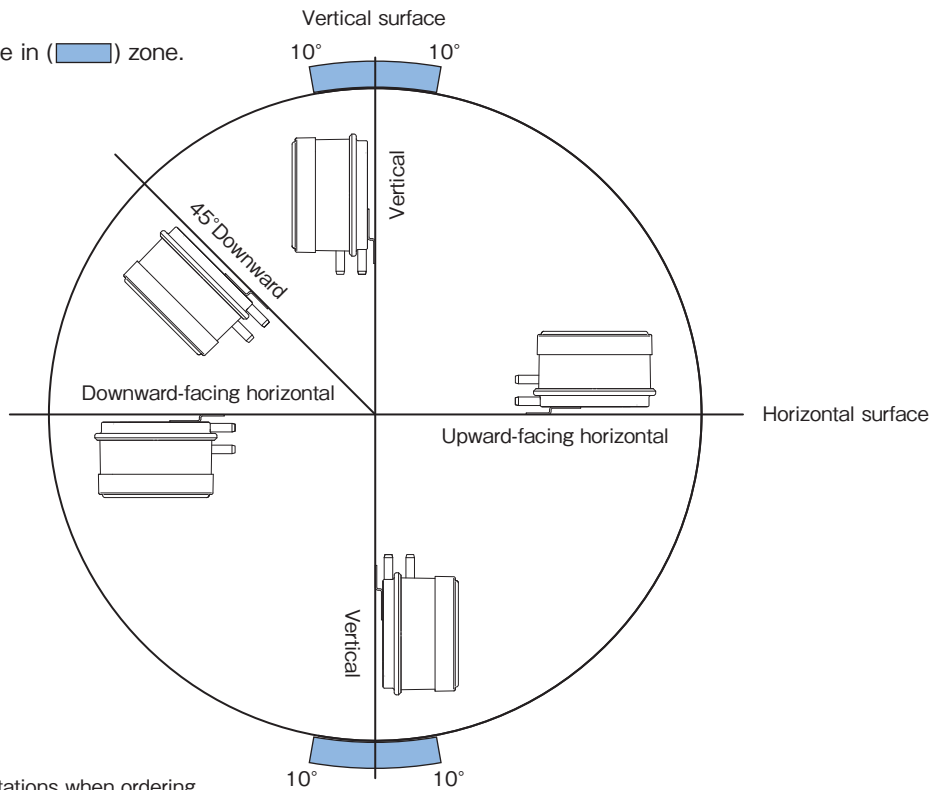
### Dimensions

Unit: mm



### Position Orientations

No need to specify tilt angle for use in ( ) zone.

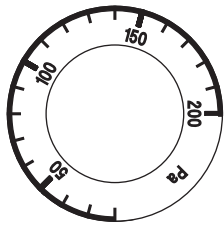


Consult factory for other position orientations when ordering.

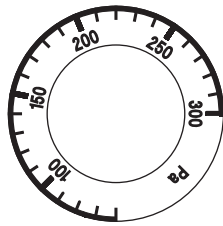
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## Differential Pressure Switch

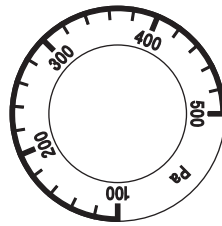
### Dial Scale



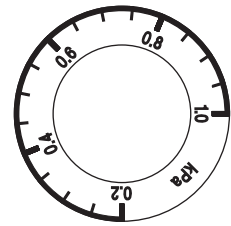
Differential pressure range	Minor graduation
20 to 200Pa	10Pa



Differential pressure range	Minor graduation
60 to 300Pa	10Pa



Differential pressure range	Minor graduation
100 to 500Pa	20Pa



Differential pressure range	Minor graduation
0.2 to 1kPa	0.05kPa

### Model number configuration

Please specify the model, each requiring specification and differential pressure range to order.

Model

**C L 1 4** — **2 9 1** — [ ] [ ] [ ] [X] [X] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Differential Pressure Switch      ①   ②   ③      ④   ⑤   ⑥   ⑦   ⑧   ⑨   ⑩   ⑪   ⑫   ⑬   ⑭   ⑮

Model number		Product specifications		Additional specifications (Optional)	
① Mounting	2	Screw mounting			
② Pressure Connection	9	φ 5.5 Barb fitting			
③ Wetted parts	1	Diaphragm: Silicone rubber Case: Polycarbonate High pressure inlet: C3604BD Low pressure inlet: Polycarbonate Other parts: NBR, Epoxy resin			
Please specify differential pressure range and unit of measure along with corresponding ordering code.	④ Differential pressure range	1	20 to 200Pa, 60 to 300Pa		
		2	100 to 500Pa, 0.2 to 1kPa (200 to 1000Pa)		
⑤ Switch Action	A	H: Upper limit type with one contact			
	B	L: Lower limit type with one contact			
⑥ Switch*	0	Standard (CE compliance)			
	K	Micro Load Type (Gold crossbar contact, CE non-compliant)			
⑨ Other additional spec.	0	Not required			
	1	Required (Documents available upon request) Accessories Two pitot tubes Polyvinyl chloride tube 2m			
⑮ Documents	0	Not required			
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Mill test report Calibration test report (One-part one sheet) Inspection / Traceability certificate Attending inspection			

\* For use under micro voltage and current, we recommend to use "Micro Load Type."

- Proof pressure for enclosure (Pressure loaded two sides): 10kPa and below
- Setting method: Externally adjustable
- Position Orientations: Horizontal mounting, vertical mounting  
Make sure to specify position orientation for to minimize position effects.

○As setting scale on dial includes setting error, ensure the use of master gauge and reference pressure gauge to maintain accurate setting.

\* Specify code "X" to refer N/A