

CL21

Differential Pressure Switch



Outline

This is a differential pressure switch which sends an on and off electric signal in accordance with differential pressure mainly for the application of liquid level warning in a closed tank and the clogging check in a pipe line strainer. A microswitch with extensive application and high reliability is applied to the contact.

Features

- This differential pressure switch is extensively applied to general industrial machinery including the differential pressure control in a power station, etc.
- The exterior appearance is compact.
- The construction is simple.

Range of recommended pressure setting
Pressure setting range varies by pressure range, please refer to the specifications.

* When selecting pressure switches, Please select a pressure range with normal operation pressure within 30 to 65% of full span to get full performance. Also check whether wetted parts material could be used for gases or liquids to be measured.

* **Useing This Differential Pressure Switch**

It the pressure larger than differential pressure is applied to the one pressure switch will be damaged. So, careful attention is required. Especially at the time of starting and finishing, this type of phenomena can occur. Therefore, a bypass cock or a bypass valve is recommended.

* The base pressure refers to the pressure to be used as the basis out of pressures at two points, or a pressure with smaller fluctuation. One-side pressure tight means the maximum differential pressure.

Specifications 1

Item	Description
Fluid	Gas or Liquid
Operating environment	Places where there are no inflammable liquids or gases which may cause ignition or explosion under normal conditions.
Connection	G3/8B
Wetted parts material	General use: Body; C3771BE, Bellows; C5212R Corrosion-proof use: Body; SUS316, Bellows; SUS316L
Differential pressure range	0.02 to 0.1 → 0.3 to 1.5 MPa
Base pressure	0 to 1 MPa * It may become use inability when accompanied by negative pressure.
Operating temperature	-5 to 40 °C (No freezing)
Setting accuracy	Within $\pm 3\%$ max.P.
Repeatability	Within $\pm 1.5\%$ max.P.
Temperature coefficient	$\pm 0.05\%$ max.P./°C
Dead band	Fixed, 0.03 to 0.15MPa or less (Depends on range)
Switch	Micro switch
Quantity of switch	1 Contact
Setting system	External adjustment type
Outlet for electric wire	Gland JIS20b
Case material, finishing	AC7A, Black
Case structure	Drip-proof type (IP32)
Weight	Approx. 1.0 kg

Specifications 2

Differential pressure switch & dead band, one side proofpressure:

Differential pressure switch MPa	Range of recommended setting MPa		Dead band MPa	One side proofpressure MPa
	Upper limit type	Lower limit type		
0.02~0.1	0.05~0.09	0.02~0.06	0.03 or less	0.12 or less
0.05~0.25	0.1~0.225	0.05~0.175	0.05 or less	0.3 or less
0.1~0.4	0.14~0.36	0.1~0.32	0.04 or less	0.48 or less
0.2~1	0.3~0.9	0.2~0.8	0.1 or less	1.2 or less
0.3~1.5	0.45~1.35	0.3~1.2	0.15 or less	1.8 or less

Electric characteristics:

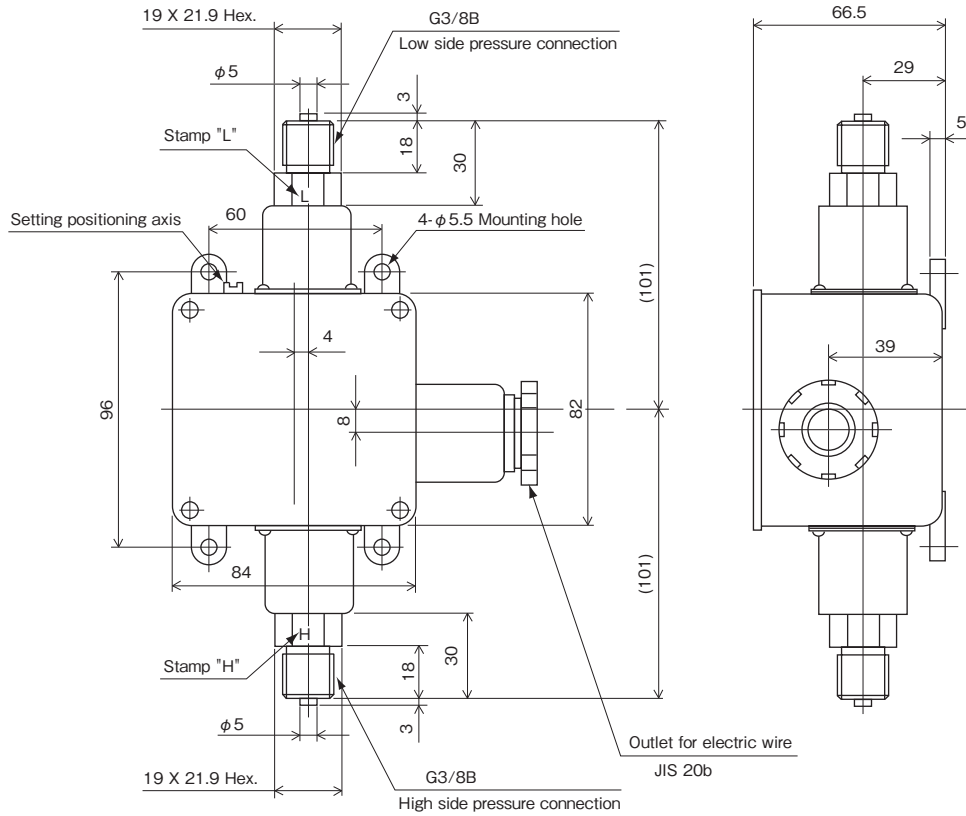
	Rating		Withstand voltage	Insulation resistance
	Load resistance	Inductive load		
125V AC	10 A	6 A	1500V AC Between terminal and case 1 minute	500V DC 100MΩ or over Between terminal and case
250V AC	10 A	6 A		
30V DC	5 A	3 A		
125V DC	0.5 A	0.1 A		

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Differential Pressure Switch

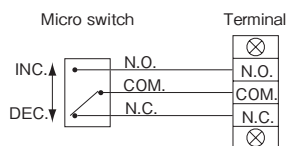
Dimensions

Unit: mm



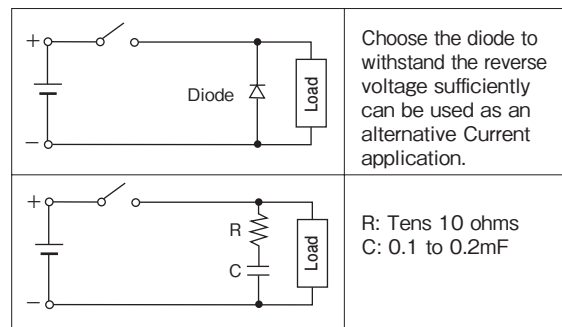
Type of contact and wiring system

Type of contact	Mark	A figure of operation system and operation
Upper limit type with one contact	H	<p>When differential pressure rises to a set value, switch work to turn a circuit ON.</p> <p>Pressure high</p> <p>OFF → ON</p> <p>0 SET max.</p>
Lower limit type with one contact	L	<p>When differential pressure decreases to a set value, contact points work to turn a circuit ON.</p> <p>Pressure down</p> <p>ON → OFF</p> <p>0 SET max.</p>



Installation of protection circuit for contact:

In the inductive load open and close circuit, install the protection circuit to protect the contact. When you use the relay, choose the built-in protection circuit for the contact.



Model number configuration

For ordering, please specify the model number, each specs and the range.

Model		<table border="1" style="width:100%; text-align:center;"> <tr> <td style="width:10%;">C</td><td style="width:10%;">L</td><td style="width:10%;">2</td><td style="width:10%;">1</td> <td style="width:10%; border-left: 1px solid black;">1</td><td style="width:10%; border-left: 1px solid black;">3</td><td style="width:10%; border-left: 1px solid black;"></td> <td style="width:10%; border-left: 1px solid black;">0</td><td style="width:10%; border-left: 1px solid black;">7</td><td style="width:10%; border-left: 1px solid black;"></td><td style="width:10%; border-left: 1px solid black;"></td><td style="width:10%; border-left: 1px solid black;">×</td><td style="width:10%; border-left: 1px solid black;">×</td><td style="width:10%; border-left: 1px solid black;">×</td><td style="width:10%; border-left: 1px solid black;">×</td><td style="width:10%; border-left: 1px solid black;">×</td><td style="width:10%; border-left: 1px solid black;"></td> </tr> <tr> <td colspan="4">Differential Pressure Switch</td> <td>①</td><td>②</td><td>③</td><td>④</td><td>⑤</td><td>⑥</td><td>⑦</td><td>⑧</td><td>⑨</td><td>⑩</td><td>⑪</td><td>⑫</td><td>⑬</td><td>⑭</td><td>⑮</td> </tr> </table>															C	L	2	1	1	3		0	7			×	×	×	×	×		Differential Pressure Switch				①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮
C	L	2	1	1	3		0	7			×	×	×	×	×																																					
Differential Pressure Switch				①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮																																		
Model number		Selective spec.		Additional spec. (Option)																																																
① Mounting	1	Surface mounting																																																		
② Connection	3	G3/8B																																																		
③ Wetted parts material	1	Bellows: C5212R, Body : C3771BE																																																		
	3	Bellows: SUS316L, Body : SUS316																																																		
④ Differential pressure range (MPa)	1	0.02~0.1																																																		
	2	0.05~0.25																																																		
	3	0.1~0.4																																																		
	4	0.2~1																																																		
	5	0.3~1.5																																																		
⑤ Type of contacts	A	H: Upper limit type with one contact																																																		
	B	L: Lower limit type with one contact																																																		
		Others																																																		
⑥ Switch	0	Standard																																																		
		Others																																																		
⑦ Outlet for electric wire	7	Gland JIS 20b																																																		
		Others																																																		
⑧ Treatment	0	Nil																																																		
	1	Use no oil																																																		
	2	Use no water																																																		
	3	Use no oil & water																																																		
⑨ Additional specifications	0	Nil																																																		
	1	Coating specification																																																		
⑮ Documents	0	Nil																																																		
	1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection																																																		

Please specify the differential pressure range and units separately besides selection of range code.

[Range of production]
 • Base pressure: 1MPa
 • Setting system: External adjustment type
 [Caution] Negative pressure is not acceptable

※Specify "X" if there is no specification item.