

# D4\_\_ Differential Pressure Switches



## Features

- Simple and robust differential pressure switch for harsh environment
- Piston type pressure switch covers low through high pressure ranges. Diaphragm material is can be selectable depending on customer's applications.
- Epoxy coating for preventing rust caused by salt damage
- Enclosure rating: NEMA4 (Equivalent to IP66) for standard
- CE marking

## Application

- Offshore oil drilling
- Chemical / Petrochemical plant
- Pulp / Paper mill plant
- Iron foundry
- Power plant
- Water filtration / Waste water treatment plant

## Option

Available in Hermetically Sealed Switch

- Reliability on switch action is improved by welded stainless structure for harsh environment.
- Applicable for The National Electrical Code Division II when hermetically sealed switch is specified.
- UL approved (Guide WSQ2, File E85076)



### Structure and function

Snap action switch approved by UL and CSA  
(When used under AC rating) improves reliability on switch.



Aluminum case with epoxy coating has an excellent environmental resistance. Enclosure meets NEMA4 (Equivalent to IP66).

Neoprene<sup>®</sup> gasket used for case-sealing

Indicates proof pressure and deadband

Easy switch operation point setting available just by rotating adjusting nut



### Specifications 1

Model	General process application	Switch type	Micro switch
Media	Gases and Fluids	Number of contacts	One contact or two contacts (Simultaneously operation)
Operating environment	Install in location where no gases or liquids may exist that have the potential to become flammable or ignitable under normal operating condition	Setting method	Internally adjustable
		Electrical wire outlet	Conduit type 3/4NPT female
Mounting type	Panel 2B pipe (37kPa and below)	Case material	Aluminum · Black Epoxy coating
Connection	1/4NPT female ※Consult us for other nonstandard connections.	Enclosure rating	NEMA4 (Equivalent to IP66)
Wetted parts material	Connection: Brass (7.5→37kPa: Carbon steel) Diaphragm: Buna N, Fluororubber	CE marking	Low voltage directive 2006/95/EC
Operating temperature	-5 to 60°C	Weight	Approx. 1.6kg
Accuracy	±1%max.P.		

### Specifications 2

**Differential pressure range and deadband • Reference pressure • Allowable differential pressure • proof pressure:**

**One contact Model No.D420 (General use)**

Differential pressure range *1	Diaphragm material					
	Buna N			Fluororubber		
	Deadband=Within 15%max.P.			Deadband=Within 15%max.P.		
	Reference pressure	Allowable differential pressure	Proof pressure	Reference pressure	Allowable differential pressure	Proof pressure
7.5kPa	37kPa	37kPa	148kPa	37kPa	37kPa	148kPa
15kPa						
25kPa						
37kPa						
100kPa	3.4MPa	3.4MPa	13.7MPa	3.4MPa	3.4MPa	13.7MPa
200kPa						
400kPa						
700kPa	6.9MPa	6.9MPa	27.5MPa	6.9MPa	6.9MPa	27.5MPa

**Two contacts Model No.D461 (General use)**

Differential pressure range *1	Diaphragm material					
	Buna N			Fluororubber		
	Deadband=Within 25%max.P.			Deadband=Within 25%max.P.		
	Reference pressure	Allowable differential pressure	Proof pressure	Reference pressure	Allowable differential pressure	Proof pressure
7.5kPa	37kPa	37kPa	148kPa	37kPa	37kPa	148kPa
15kPa						
25kPa						
37kPa						
100kPa	3.4MPa	3.4MPa	13.7MPa	3.4MPa	3.4MPa	13.7MPa
200kPa						
400kPa						
700kPa	6.9MPa	6.9MPa	27.5MPa	6.9MPa	6.9MPa	27.5MPa

\*1 Switch operating point can be set between 15% to 100% of rated pressure range (20% to 100% for two contacts) for upscale pressure, and 10% to 85% of rated pressure range (10% to 75% for two contacts) for downscale pressure. Consult us for application needed lower switch operating point than specified.

※ This pressure switch is deadband fixed type. Deadband varies depending on switch operation point.

※ Lower load contact type (Model No. D431, D470) and Hermetically sealed Switch have broader deadband than general type. Contact us for the specification.

### Dimensions:

Switch type	Rating			Withstand voltage	Insulation resistance
		Load resistance	Inductive load		
General type	125V AC	15A	15A	1500V AC Between terminal and case for 1 minute	500V DC 100MΩ and above Between each terminal and case
	250V AC	15A	15A		
	125V DC	0.5A	0.05A		
	250V DC	0.25A	0.03A		
Lower load contact (Gold contact)	125V AC	1A	1A		
	250V AC	1A	1A		
	125V DC	—	—		
	250V DC	—	—		

※ Contact for Hermetically Sealed Switch Type when required.

※ UL approval is applicable only when AC (Alternating current) rating is in use.

### Pressure sensing element table:

Diaphragm material	Differential pressure range	
	7.5kPa to 37kPa	100kPa to 700kPa
Buna N	●	
Fluororubber	●	
Stainless steel	—	
Monel®	—	



Differential pressure switch

### Model number configuration

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

Model

D 4 — X — 0 0 × × × × × × × ×

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

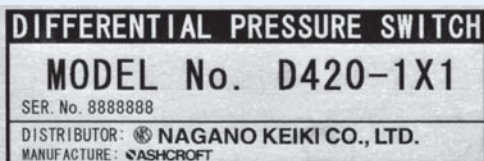
Model number		Product specifications		Additional specifications (Optional)		
Model	2	0	Number of contacts, Micro switch			
	3	1	One contact, General type (Standard)			
	6	1	One contact, Lower load contact (Gold contact)			
	7	0	Two contacts, General type			
① Mounting*1	1	Panel (Standard)				
	2	2B pipe installation (Differential pressure range 37kPa and below)				
② Connection*2	X	1/4NPT female (Standard)				
③ Wetted parts*3	1	Diaphragm: Buna N	Connection: Brass (7.5→37kPa: Carbon steel) (Standard)			
	2	Diaphragm: Fluororubber	Connection: Brass (7.5→37kPa: Carbon steel)			
	7	Diaphragm: Fluororubber	Connection: Brass (7.5→37kPa: Carbon steel) Use no oil			
④ Differential pressure range	3	7.5kPa				
	4	15kPa				
	5	25kPa				
	6	37kPa				
	7	100kPa				
	8	200kPa				
	9	400kPa				
A	700kPa					
⑤ Outlet for electric wire		0	3/4NPT (Standard)			
⑥ Enclosure rating		0	NEMA4 (Equivalent to IP66) (Standard)			
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				

Please specify differential pressure range and unit of measure along with corresponding ordering code.

- \* 1 2B pipe is only available for low pressure ranges.
- \* 2 Conversion joints (Option) to meet male connection are available. Contact us when required.
- \* 3 Diaphragm material: Not available for Buna N with use no oil treatment.
- \* Contact for Hermetically Sealed Switch Type when required.
- \* Not available for diaphragm seal type.

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

There is a label affixed on the body to identify the product is distributed by Nagano Keiki.



Differential pressure switch