

# B4\_\_ Pressure Switches



## Features

- Simple and robust 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	Accuracy	±1%max.P.
Media	Gases and Fluids	Switch type	Micro switch
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	Number of contacts	One contact or two contacts (Simultaneously operation)
Mounting type	Panel, 2B pipe	Setting method	Internally adjustable
Connection	1/4NPT female ※Consult us for other nonstandard connections.	Electrical wire outlet	Conduit type 3/4NPT female
Wetted parts material	Socket: Stainless steel*1 (2.5→37kPa: Carbon steel) Diaphragm*2: Buna N, Fluororubber Stainless steel (Equivalent to JIS SUS316), Monel <sup>®</sup>	Case material	Aluminum·Black Epoxy coating
Operating temperature	-5 to 60°C	Enclosure rating	NEMA4 (Equivalent to IP66)
		CE marking	Low voltage directive 2006/95/EC
		Weight	Approx. 1.2kg

\*1 ASTM A276-04, Equivalent to JIS SUS316

\*2 Refer to [Pressure sensing element table] for its material.

### Specifications 2

#### Pressure range and deadband • proof pressure:

One contact Model No. B420 (General use)

Pressure range *1	Diaphragm material														
	Buna N		Fluororubber		Stainless steel		Monel®								
	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)							
-100kPa	10	1.7	10	1.7	10	—	10	—							
2.5kPa		0.13		0.13		—		—	—	—					
7.5kPa															
15kPa															
25kPa															
37kPa															
100kPa											3.4	3.4	3.4	3.4	3.4
200kPa															
400kPa															
700kPa															
1.4MPa															
2.8MPa	16.5	16.5	16.5	16.5	16.5										
4.2MPa															
7MPa						82.7	82.7	82.7	82.7	82.7					

Two contacts Model No. B461 (General use)

Pressure range *1	Diaphragm material														
	Buna N		Fluororubber		Stainless steel		Monel®								
	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)	Deadband (Within %max.P.)	Proof pressure (MPa)							
-100kPa	20	1.7	20	1.7	20	—	20	—							
2.5kPa		0.13		0.13		—		—	—	—					
7.5kPa															
15kPa															
25kPa															
37kPa															
100kPa											3.4	3.4	3.4	3.4	3.4
200kPa															
400kPa															
700kPa															
1.4MPa															
2.8MPa	16.5	16.5	16.5	16.5	16.5										
4.2MPa															
7MPa						82.7	82.7	82.7	82.7	82.7					

\*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 80% 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. B431, 470) 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	Pressure range		
	-100kPa	2.5kPa to 37kPa	100kPa to 7MPa
Buna N	●	●	●
Fluororubber	●	●	●
Stainless steel	—	—	●
Monel®	—	—	●



Pressure switch

### Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

**B 4** — **X** — **0 0 X X X X X X X X**

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

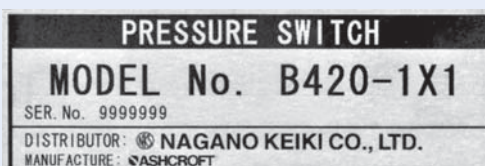
Model number		Product specifications		Additional specifications (Optional)	
Model	2	0	Number of contacts, Micro switch		
	3	1	One contact, General type (Standard)		
	6	1	One contact, Lower load contact (Gold contact)		
	7	0	Two contacts, General type		
	7	0	Two contacts, Lower load contact (Gold contact)		
① Mounting	1	Panel (Standard)			
	2	2B pipe installation			
② Connection*1	X	1/4NPT female (Standard)			
③ Wetted parts*2	1	Diaphragm: Buna N	Connection: Stainless steel (2.5→37kPa: Carbon steel) (Standard)		
	2	Diaphragm: Fluororubber	Connection: Stainless steel (2.5→37kPa: Carbon steel)		
	3	Diaphragm: Stainless steel*3	Connection: Stainless steel		
	4	Diaphragm: Monel®*3	Connection: Stainless steel		
	6	Diaphragm: Fluororubber	Connection: Stainless steel (2.5→37kPa: Carbon steel) Use no oil		
	7	Diaphragm: Stainless steel*3	Connection: Stainless steel Use no oil		
	8	Diaphragm: Monel®*3	Connection: Stainless steel Use no oil		
	④ Pressure range	1	-100kPa	Not available for diaphragm made of stainless steel and Monel®	
2		2.5kPa			
3		7.5kPa			
4		15kPa			
5		25kPa			
6		37kPa			
7		100kPa			
8		200kPa			
9		400kPa			
A		700kPa			
B		1.4MPa			
C		2.8MPa			
D		4.2MPa			
E	7MPa				
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 pressure range and unit of measure along with corresponding ordering code.

- \*1 Conversion joints (Option) to meet male connection are available. Contact us when required.  
(1/2NPT male connection is available without conversion joint only if pressure range is 7MPa).
- \*2 Diaphragm material: Not available for Buna N with use no oil treatment.
- \*3 Only available for 100kPa to 7MPa.
- ※ 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.



Pressure switch