CS76 Pressure Switch
CD76 Explosion-proof Construction Pressure Switch





Outline

This device is suitable for controlling pnaumatic pressure, hydraulic pressure and various other fluid pressures such as liquid level control and flow control. This is a low setting, high-pressure withstanding type and reliable switch.

Features

- **With the application of a Bellebille spring, this pressure switch demonstrates excellent vibration resistance and durability. (Double Snap Action Mechanism)**
- **This pressure switch is appropriate for the application of high pressure resistance and low pressure setting.**
- **Acid-proof coating prevents rusting from salt damage.**

Range of recommended pressure setting
(CS76 and CD76 commonness)
Upper limit type: (Lowest pressure range+Dead band)～100%max.P.
Lower limit type: Lowest pressure range～(100%max.P.－Dead band)

Directions

The diaphragm sticks when the measurement body is a high viscosity fluid, and the malfunction might be generated. Please substitute it for the fluid of a low viscosity with the tank siphon etc. for the high viscosity fluid. A special specification goods for the high viscosity fluid are prepared and consult, please.

Specifications 1

Item	Description
Model	CS76: General process use CD76: Explosion-proof construction (Exd ⅡB+H_2 T4)
Fluid	Gas or Liquid (No freezing)
Operating environment	CS76: Places where there are no inflammable liquids or gases which may cause ignition or explosion under normal conditions. CD76: Hazardous area (Refer to the explanation column of the explosion-proof construction for details.)
Mounting	CS76: Panel mounting CD76: Panel mounting, 2B pipe mounting
Connection	G3/8B, G1/2B, Rc1/4, Rc1/2, 1/4NPTFemale Please contact us about connection without the description.
Wetted parts material	Diaphragm: SUS316 Flange, socket: SUS316 O-ring: NBR
Pressure range	0.01 to 0.1 → 0.08 to 0.8 MPa
Operating maximum pressure	10 to 35 MPa (Depends on pressure range)
Operating temperature	CS76: -20 to 60 ℃ CD76: -5 to 40 ℃
Accuracy	±1%max.P.
Temperature cofficient	0.05%max.P./℃
Dead band	Specification 2 references.
Switch	Micro switch
Quantity of switch	One contact (Standard, direct current use) or two contact (Setting dual circuit)
Setting system	Internal adjustment type
Outlet for electric wire	CS76: Conduit G3/4 CD76: Proofpressure gasket
Case material, finishing	CS76: Aluminium alloy die casting (ADC12), Blue & Gray Epoxy painted CD76: Aluminium alloy casting (AC7A), Blue & Gray Epoxy painted
Case structure	IP65
Terminal box (Option)	Although the wire used to have to be removed from the terminal plate and the tester terminal pressed against it when measuring contact resistance, with the provision of a check terminal, simply remove the screws on the terminal plate and insert the terminals of the tester. This ensures stability when measuring and eliminates the trouble of removing the wire from the terminal plate. CS76 only
Operation lamp (Option)	The on/off state of the pressure switch and the operating state of the microswitch can also be confirmed at a glance. (It is possible at the time of the simultaneous operation of CS76 standard. Are not possible for direct current.) * Terminal box and operation lamp cannot be installed together.
Weight	CS76: Approx. 5 kg CD76: Approx. 8 kg

Specifications 2

Electrical characteristics:

Switch	Rating			Withstand voltage	Insulation resistance
		Load resistance	Inductive load		
1 contact standard	125V AC	20 A	20 A	2000V AC Between terminals and case for 1 minute	500V DC 100MΩ or over Between terminals and case
	250V AC	20 A	20 A		
	125V DC	0.5 A	0.05 A		
	250V DC	0.25 A	0.03 A		
1 contact direct current	125V AC	10 A	6 A		
	250V AC	3 A	1.5 A		
	125V DC	10 A	6 A		
	250V DC	3 A	1.5 A		
2 contacts simultaneous operation	125V AC	10 A	6 A		
	250V AC	10 A	4 A		
	125V DC	0.5 A	0.05 A		
	250V DC	0.25 A	0.03 A		
・Inductive load: Power factor 0.4 or over (AC) Time constant 7ms or less (DC) ※1 contact standard: For general purpose, those ratings increased DC.					

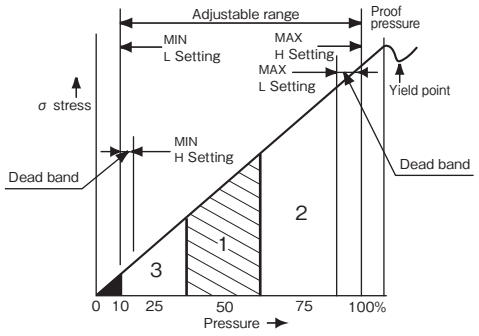
Pressure range, dead band and Max. operating pressure:

Pressure range MPa	Dead band MPa (Adjustable range)	Max. operating pressure MPa
0.01～0.1	0.01～0.02	10
0.02～0.2	0.02～0.04	10
0.04～0.4	0.04～0.08	30
0.08～0.8	0.08～0.16	35

How to choose pressure
- Set value is steady, accurately: 30%max.P. or over
- Longevity is good: 65%max.P. or less
- Accuracy, Longevity is good [Ideal]:
  About 30 to 65% of the adjustable ranges

In the right figure
Range 1: Selection of both accuracy and longevity
Range 2: Selection of valuing accuracy
Range 3: Selection of valuing longevity

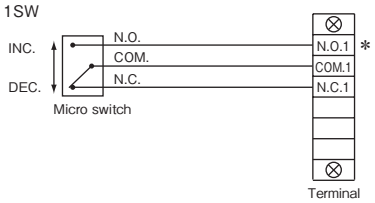
Range of recommended pressure adjustment
(CS76 and CD76 commonness)
Upper limit type: (Lowest pressure range+Dead band)～100%max.P.
Lower limit type: Lowest pressure range～(100%max.P.−Dead band)



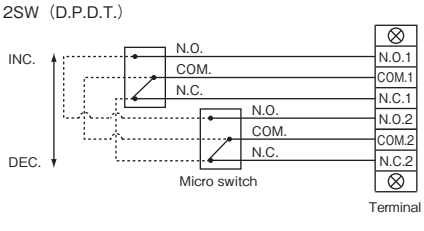
Wiring

CS76

1SW

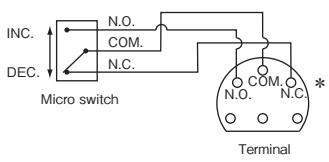


2SW (D.P.D.T.)

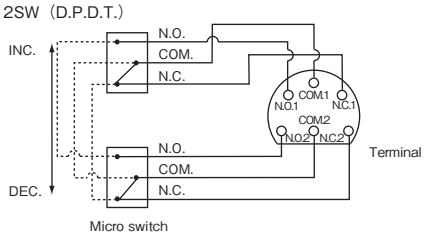


CD76

1SW



2SW (D.P.D.T.)



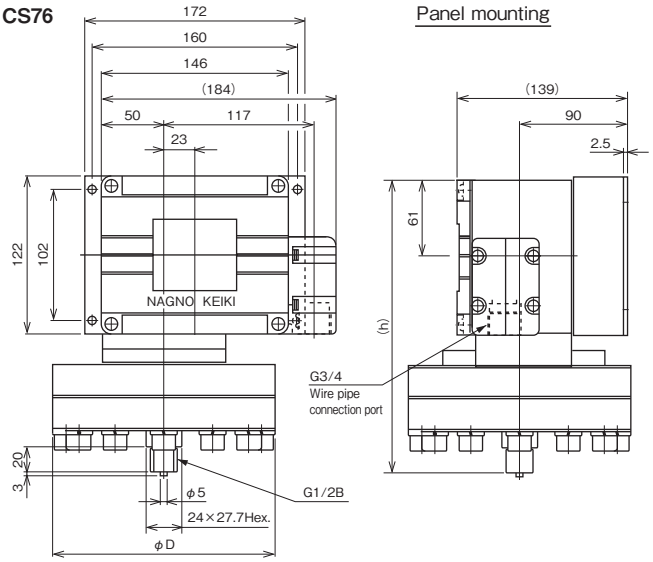
*Please connect the (+) polarity with common terminal COM1 for S.P.D.T. specification for 1 point of contact direct current.

Dimensions

Unit: mm

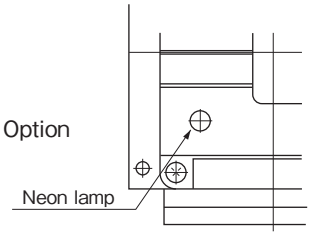
CS76

Panel mounting



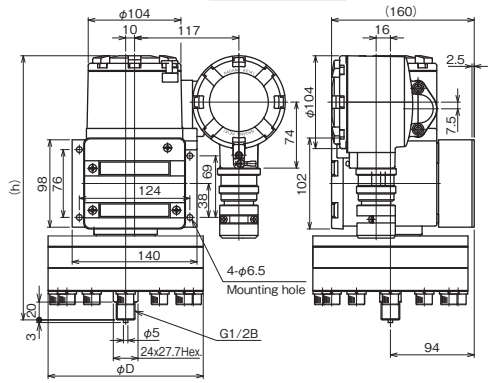
Range	Operating pressure	D	h
0.01～0.1MPa	-0.1～10MPa	174	228
0.02～0.2MPa	-0.1～10MPa	156	225
0.04～0.4MPa	-0.1～30MPa	128	226
0.08～0.8MPa	-0.1～35MPa	118	224

Option

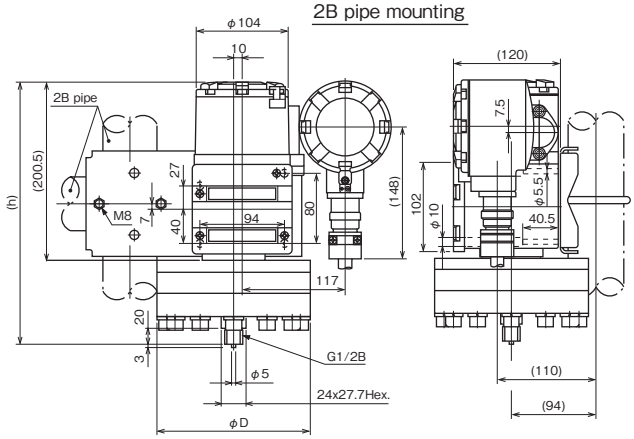


CD76

Panel mounting



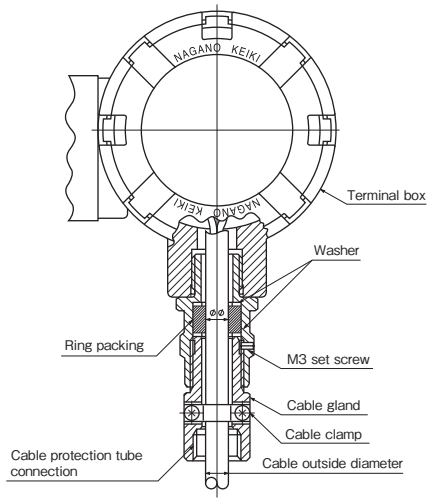
2B pipe mounting



Range	Operating pressure	D	h
0.01～0.1MPa	-0.1～10MPa	174	296
0.02～0.2MPa	-0.1～10MPa	156	294
0.04～0.4MPa	-0.1～30MPa	128	299
0.08～0.8MPa	-0.1～35MPa	118	297

CD76 Outlet for electric wire

Conduit connection	Gasket inside diameter(d) DIA.	Applicable cable outside diameter DIA.	Protection tube connection
G1/2	φ8～φ12 (Available in 1DIA. steps)	φ7.0～φ12.0	G1/2
G3/4	φ13～φ16 (Available in 1DIA. steps)	φ12.0～φ16.0	G3/4
G 1	φ17～φ20 (Available in 1DIA. steps)	φ16.0～φ20.0	G 1



Explosion-proof

Explosion-proof type approval: (CD76)

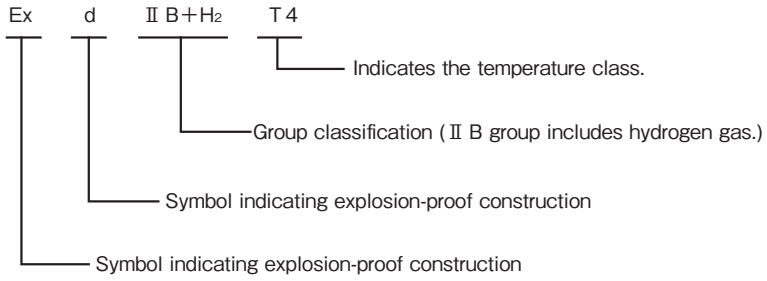
Approval is obtained in conformity with technical standards matched to IEC international standards by the Ministry of Labor Notification and new explosion-proof policy.

Model	Type approval number
CD75	No. TC14337

Explosion-proof construction:

Explosion-proof construction is a totally-enclosed construction such that even if an explosive gas explodes inside the container, the container will withstand the force of the explosion and there is no danger of ignition by external explosive gases. Our differential pressure switches manufactured under this policy are used in pressure measurements where inflammable gas or the inflammable gas vapors may exist in factories and business offices.

About Exd ⅡB+H_2 T4:



Group classification

Explosion-proof electrical equipment are classified into Group Ⅰ and Group Ⅱ by the place where they are used. The CD76 belong to Group Ⅱ, and come under equipment used in hazardous areas of factories and business offices, except hazardous areas in mines.

Applicable group and classification of gas or steam

Classification of gas or steam	Applicable group		
A	ⅡA	ⅡB	ⅡC
B	—	ⅡB	ⅡC
C	—	—	ⅡC

Ignition point of gas or steam which T4 can apply

Ignition point of gas or steam	Applicable temperature class					
Higher than 450℃	T1	T2	T3	T4	T5	T6
Higher than 300℃	—	T2	T3	T4	T5	T6
Higher than 200℃	—	—	T3	T4	T5	T6
Higher than 135℃	—	—	—	T4	T5	T6
Higher than 100℃	—	—	—	—	T5	T6
Higher than 85℃	—	—	—	—	—	T6

Example of applicable gas or steam

Temperature class / Group	T1	T2	T3	T4	T5	T6
ⅡA	Acetone Ammonia Carbon monoxide Ethane Acetic acid Ethyl acetate Toulene Propane Benzene Methanol Methane	Ethanol 1-butanol Butane	Hexane	Acetaldehyde		
ⅡB		Ethylene Ethylene oxide		Ethyl methyl ether		
ⅡC	Hydrogen	Acetylene			Carbon bisulfide	Nitric acid ethyl

Model number configuration

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

Model

C S 7 6	—	1			—				3			×	×	×	×	×	
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	Panel mounting

② Connection

3	G3/8B
4	G1/2B
7	Rc1/4
9	Rc1/2
	Others

③ Switch

0	1 contact standard (S.P.D.T.)
1	1 contact direct current (S.P.D.T.)
2	2 contacts simultaneous operation (D.P.D.T.)

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

④ Pressure range (MPa)

	Pressure range	Operating maximum pressure
1	0.01～0.1	10
2	0.02～0.2	10
3	0.04～0.4	30
4	0.08～0.8	35

⑤ Type of contacts / quantity of switch

A	H: Upper limit type with 1 contact
B	L: Lower limit type with 1 contact
D	2H: simultaneous operation Upper limit type with 2 contacts
E	2L: simultaneous operation Lower limit type with 2 contacts
	Others

⑥ Switch

0	Standard
3	Standard + gold plated (Not possible for direct current)
	Others

⑦ Outlet for electric wire

3	Conduit type G3/4

⑧ Treatment

0	Nil
1	Use no oil
2	Use no water
3	Use no oil & water

⑨ Additional specifications

0	Nil
1	Required (Please specify the desired documents separately.) ・Check terminal stand ・Operation lamp with LED (24V DC) ・Operation lamp with neon lamp (110V AC) ・Operation lamp with neon lamp (220V AC) ・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

Range of recommended pressure setting
Upper limit type: (Lowest pressure range+Dead band)～100%max.P.
Lower limit type: Lowest pressure range～(100%max.P.－Dead band)

Manufacturing range
・It becomes other model number with check terminal and operation lamp.
・For models with operation lamp, use gold plated switches.
・Terminal box and operation lamp cannot be installed together.

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

Model number configuration

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

Model

C	D	7	6	—	①	②	③	—	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮
Explosion-proof Construction Pressure Switch															×	×	×	×	×	

Model number | Selective spec. | Additional spec. (Option)

① Mounting

2	Panel mounting
4	2B pipe mounting

② Connection

3	G3/8B
4	G1/2B
7	Rc1/4
9	Rc1/2
X	1/4NPT female
	Others

③ Switch

0	1 contact standard (S.P.D.T.)
1	1 contact direct current (S.P.D.T.)
2	2 contacts simultaneous operation (D.P.D.T.)

④ Pressure range (MPa)

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

	Pressure range	Operating maximum pressure
1	0.01～0.1	10
2	0.02～0.2	10
3	0.04～0.4	30
4	0.08～0.8	35

⑤ Type of contacts / quantity of switch

A	H: Upper limit type with 1 contact
B	L: Lower limit type with 1 contact
D	2H: simultaneous operation Upper limit type with 2 contacts
E	2L: simultaneous operation Lower limit type with 2 contacts
	Others

⑥ Switch

0	Standard
3	Standard + gold plated (Not possible for direct current)
	Others

⑦ Outlet for electric wire

イ	G1/2 x Gasket inside 8mm
ウ	G1/2 x Gasket inside 9mm
エ	G1/2 x Gasket inside 10mm
オ	G1/2 x Gasket inside 11mm
カ	G1/2 x Gasket inside 12mm
ケ	G3/4 x Gasket inside 13mm
コ	G3/4 x Gasket inside 14mm
サ	G3/4 x Gasket inside 15mm
シ	G3/4 x Gasket inside 16mm
タ	G1 x Gasket inside 17mm
チ	G1 x Gasket inside 18mm
ツ	G1 x Gasket inside 19mm
テ	G1 x Gasket inside 20mm

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

Range of recommended pressure setting
Upper limit type: (Lowest pressure range+Dead band)～100%max.P.
Lower limit type: Lowest pressure range～(100%max.P.－Dead band)

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