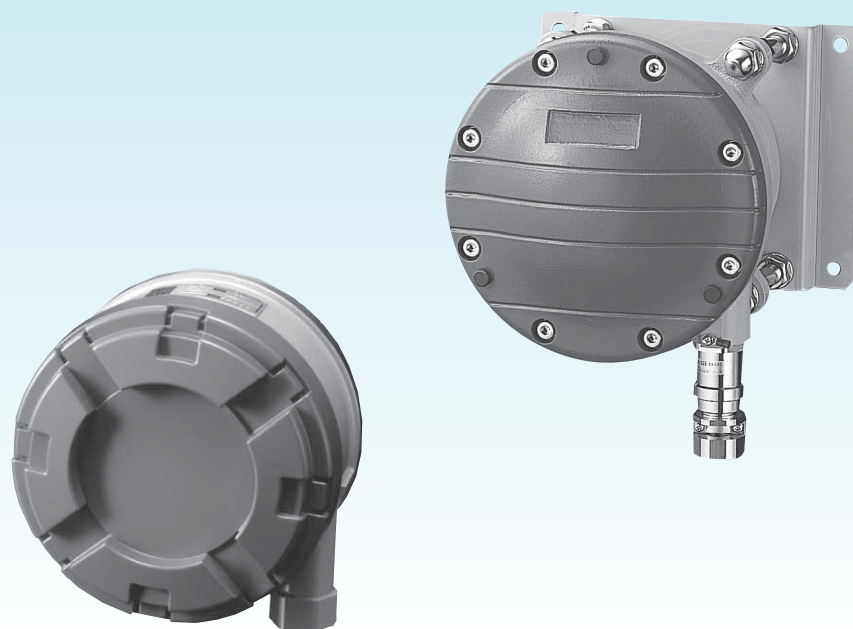


CL70 Differential Pressure Switch ***CD70 Explosion-proof Construction*** ***Differential Pressure Switch***



Outline

These are bellows type differential pressure switches used primarily for detecting the draft pressure in thermal power plants, and are much smaller than conventional models.

Features

- Compound range can handle inverse differential pressure.
- Suitable for low differential pressure and warning use.
- Since they can be operation from the front, maintenance is simple.
- Acid-proof coating prevents rusting of the coated surface by salt damage.

Range of recommended pressure setting

Upper limit type: (10%max.P.+Dead band)~90%max.P.
Lower limit type: 10%max.P.~ (90%max.P.-Dead band)
Zero center range: %max.P. → %F.S.

* When selecting differential pressure switches, Please select a differential 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 to be measured.

CL70 · CD70

Differential Pressure Switch / Explosion-proof Construction Differential Pressure Switch

Specifications 1

Item	Description
Model	CL70: General process use CD70: Explosion-proof construction (Exd II B+H ₂ T4)
Fluid	Gas
Operating environment	CL70: Places where there are no inflammable liquids or gases which may cause ignition or explosion under normal conditions. CD70: Hazardous area (Refer to the explanation column of the explosion-proof construction for details.)
Mounting	Panel mounting or 2B pipe mounting (CL70 only)
Connection	Rc1/4 Please contact us about connection without the description.
Wetted parts material	Bellows: SUS316L Gasket: PTFE Body: SCS14
Differential pressure range	0 to 4 → 0 to 20 kPa 2 to 0 to 2 → 5 to 0 to 5 kPa
Base pressure	500 kPa
One side proofpressure	4.8 to 24 kPa (Depends on differential pressure range)
Operating temperature	CL70: -20 to 60 °C CD70: -5 to 40 °C
Accuracy	±1.5%max.P. (*range: ±1.5%F.S.)
Dead band	Fixed. 0.25 to 0.8 kPa or less (Depends on differential pressure range)
Switch	Micro switch
Quantity of switch	One contact
Setting system	Internal adjustment type
Outlet for electric wire	CL70: Conduit type G3/4 Gland JIS 20b CD70: Proofpressure gasket
Case material, finishing	CL70: ADC12·Blue & Gray Epoxy painted CD70: AC7A·Blue & Gray Epoxy painted
Case structure	IP65
Weight	CL70: Approx. 6.5 kg CD70: Approx. 17.5 kg

Specifications 2

Electrical characteristics: (Standard specification)

	Rating		Withstand voltage	Insulation resistance
	Resistance load	Inductive load		
125V AC	15 A	15 A	1500V AC Between terminals and case for 1 minute	500V DC 100MΩ or over Between terminals and case
250V AC	15 A	15 A		
30V DC	2 A	1 A		
125V DC	0.5 A	0.05 A		
· Inductive load: Power factor 0.4 or over (AC) Time constant 7ms or less (DC)				

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Differential Pressure Switch / Explosion-proof Construction Differential Pressure Switch

Specifications 2

Differential pressure range, dead band and one side proofpressure:

Differential pressure range kPa	Dead band kPa	One side proofpressure kPa
0~4	0.25 or less	4.8
0~5	0.3 or less	6
0~7	0.35 or less	8.4
0~10	0.4 or less	12
0~15	0.6 or less	18
0~20	0.8 or less	24
2~0~2*	0.25 or less	2.4
5~0~5*	0.4 or less	6

The range of the* mark can correspond to reverse-differential pressure.

Range of recommended differential pressure setting

Upper limit type: (10%max.P.+Dead band)~90%max.P.

Lower limit type: 10%max.P.~(90%max.P.-Dead band)

The range of the* mark: %max.P. → %F.S.

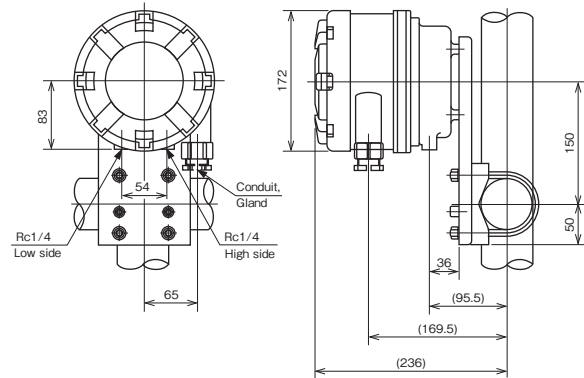
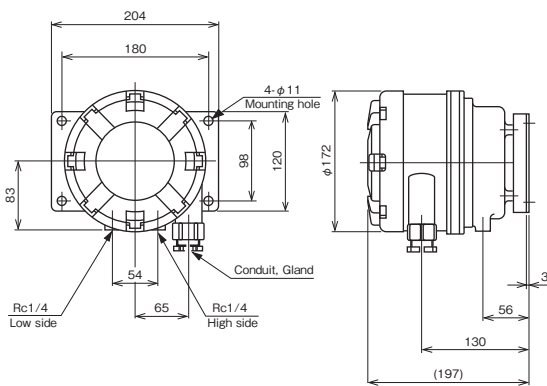
Dimensions 1

Unit: mm

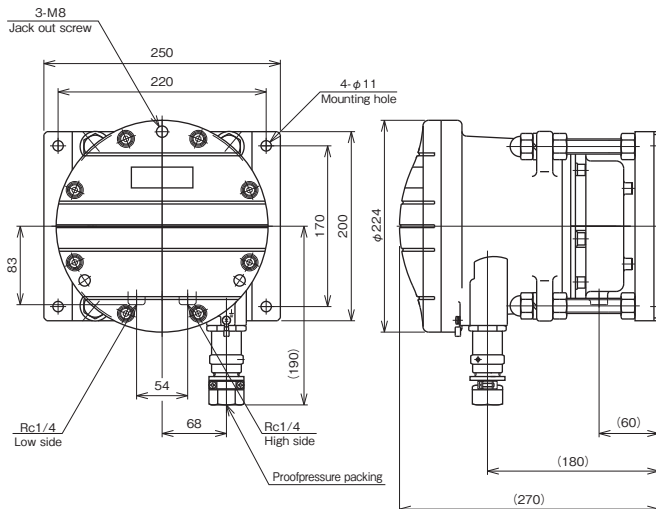
CL70

Panel mounting

2B pipe mounting



CD70



CL70 · CD70

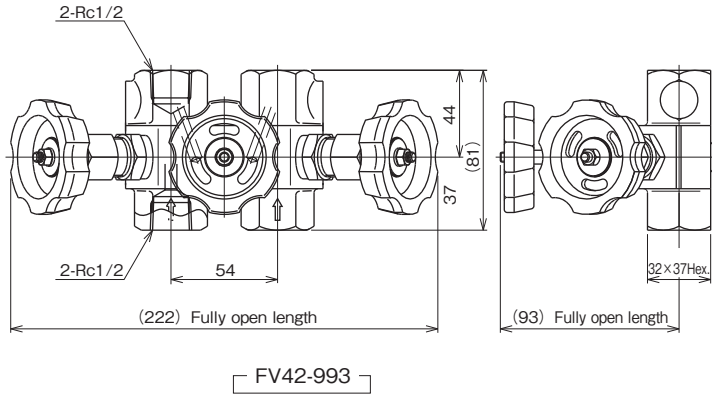
Differential Pressure Switch / Explosion-proof Construction Differential Pressure Switch

Dimensions 2

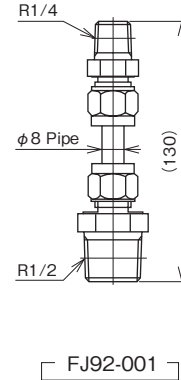
Unit: mm

Valve manifold: (Option)

Three-way valve manifold incorporating high pressure and low pressure stop valves and an equal pressure valve. It can be used to check the zero point during operation and to prevent excess differential pressure and reverse differential pressure during zero adjustment and at the start (stop) of operation.

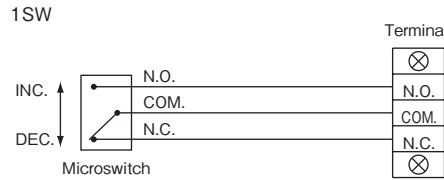


Manifold connection: (Option)



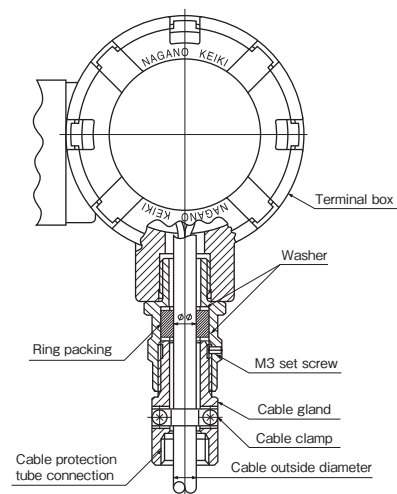
* Differential pressure gauge and valve manifold connection requires two FJ92-001.

Wiring



Outlet for electric wire

Conduit connection	Gasket inside diameter(d) DIA.	Applicable cable outside diameter DIA.	Protection tube connection
G1/2	φ 8 ~ φ 12 (Available in 1DIA. steps)	φ 7.0 ~ φ 12.0 (Available in 0.5DIA. steps)	G1/2
G3/4	φ 12 ~ φ 16 (Available in 1DIA. steps)	φ 11.0 ~ φ 16.0 (Available in 0.5DIA. steps)	G3/4



Explosion-proof

Explosion-proof type approval: (CD70)

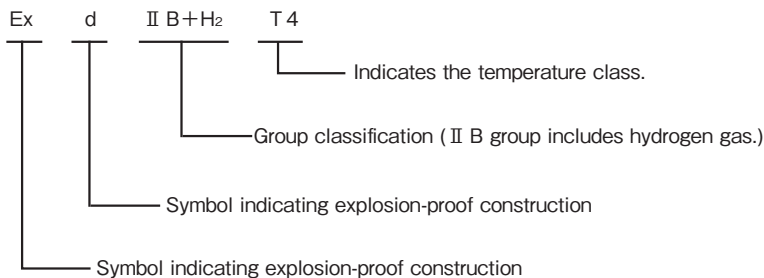
Approval is obtained in conformity with technical standards matched to IEC international standards by the Ministry of Labor Notification and new explosion-proof policy.

Model	Type approval number
CD70	No. TC14639

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 II B+H₂ T4:



Group classification

Explosion-proof electrical equipment are classified into Group I and Group II by the place where they are used. The CD70 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	II A	II B	II C
B	—	II B	II C
C	—	—	II C

Ignition point of gas or steam which T4 can apply

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

Example of applicable gas or steam

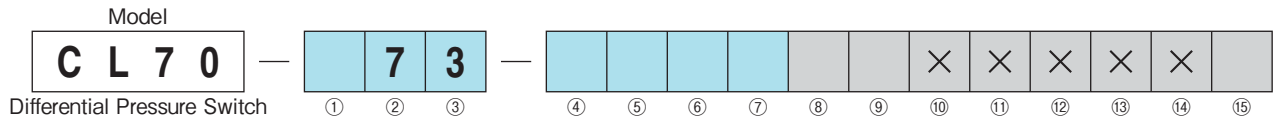
Temperature class / Group	T1	T2	T3	T4	T5	T6
II A	Acetone Ammonia Carbon monoxide Ethane Acetic acid Ethyl acetate Toulene Propane Benzene Methanol Methane	Ethanol 1-butanol Butane	Hexane	Acetaldehyde		
II B		Ethylene Ethylene oxide		Ethyl methyl ether		
II C	Hydrogen	Acetylene			Carbon bisulfide	Nitric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

CL70·CD70

Differential Pressure Switch / Explosion-proof Construction Differential Pressure Switch

Model number configuration

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



Model number		Selective spec.	Additional spec. (Option)
① Mounting type	1 2	Panel mounting 2B pipe mounting	
② Connection	7	Rc1/4 Others	
③ Wetted parts materials	3	Body: SCS14 Bellows: SUS316L Gasket: PTFE	
Please specify the differential pressure range and units separately besides selection of range code.	④ Differential pressure range (kPa)	1	0~4
		2	0~5
		3	0~7
		4	0~10
		5	0~15
		6	0~20
		7	2~0~2*
		8	5~0~5*
⑤ Type of contacts / quantity of switch	A	H: Upper limit type with 1 contact	
	B	L: Lower limit type with 1 contact	
		Others	
⑥ Switch	0	Standard type	
	1	Ultra high sensitivity type	
	3	Standard + gold plated	
	4	Ultra high sensitivity type + gold plated	
		Others	
⑦ Outlet for electric wire	3	Conduit type G3/4	
	7	Gland JIS 20b	
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.) · Coating specification · Valve manifold (Another order) FV42-993 (Rc1/2)	
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: (10%max.P.+Dead band)~90%max.P.
 Lower limit type: 10%max.P.~(90%max.P.-Dead band)
 The range of the* mark: %max.P. → %F.S.

Manufacturing range
 ·Base pressure: 500kPa

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

CL70・CD70

Differential Pressure Switch / Explosion-proof Construction Differential Pressure Switch

Model number configuration

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

Model

C D 7 0 — **2 7 3** — [] [] [] [] [] [] [] [] [] [] [] [] [] []

Explosion-proof Construction Differential Pressure Switch

Model number: []

Selective spec. Additional spec. (Option)

① Mounting type	2	Panel mounting
② Connection	7	Rc1/4 Others
③ Wetted parts materials	3	Body: SCS14 Bellows: SUS316L Gasket: PTFE
④ Differential pressure range (kPa)	1	0~4
	2	0~5
	3	0~7
	4	0~10
	5	0~15
	6	0~20
	7	2~0~2*
	8	5~0~5*
⑤ Type of contacts / quantity of switch	A	H: Upper limit type with 1 contact
	B	L: Lower limit type with 1 contact
		Others
⑥ Switch	0	Standard type
	1	Ultra high sensitivity type
	3	Standard + gold plated
	4	Ultra high sensitivity type + gold plated
		Others
⑦ Outlet for electric wire	オ	Gasket inside dia. φ 11 (G1/2)
	カ	Gasket inside dia. φ 12 (G1/2)
	コ	Gasket inside dia. φ 14 (G3/4)
	シ	Gasket inside dia. φ 16 (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.) · Coating specification · Valve manifold (Another order) FV42-993 (Rc1/2)
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.

※Gasket inside diameter can be manufactured in 1mm steps. For other sizes, contact NKS.

Range of recommended pressure setting
 Upper limit type: (10%max.P.+Dead band)~90%max.P.
 Lower limit type: 10%max.P.~(90%max.P.-Dead band)
 The range of the* mark: %max.P. → %F.S.

Manufacturing range
 · Base pressure: 500kPa

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