



CL70 Differential Pressure Switch CD70 Explosion-Protected Construction Differential Pressure Switch

OUTLINE

This device is a bellows type differential pressure switch used principally for detecting draft pressure in thermal power plants, and is much smaller than conventional models.

FEATURES

- Compound range can handle inverse differential pressure.
- This pressure switch is appropriate for the application of low differential pressure and warning.
- Simple maintenance and operation from the front.
- Acid-proof coating prevents rusting from salt damage.

* When selecting a differential pressure switch, select it in such a way that the working pressure is within 30 to 65% of the differential pressure range. At the same time, please pay attention whether wetted parts materials are suitable for gas to be measured or not.

SPECIFICATION 1

Model:

CL70 General process use
CD70 Explosion-protected construction(Exd II B+H₂ T4)

Fluid:

Gas

Operating condition:

CL70

Under the normal condition, where there is no inflammable gas or liquid which cause the ignition or explosion.

CD70

Hazardous area The details refer to explanation column of explosion-protected construction.

Mounting:

Panel mounting or 2B pipe mounting (CL70 only)

Connection:

CL70 Rc 1/4 (PT female)

CD70 G1/2B (PF)

* For other connections, please contact us.

Gas contact part:

Bellows 316Lst.st.

Body CL70 SCS14

CD70 316st.st.

Socket (CD70) 316st.st.

Differential pressure range:

0 ~ 4 → 0 ~ 20kPa (0 ~ 400 → 0 ~ 2000mmH₂O)

-2 ~ +2 → -5 ~ +5kPa

(-200 ~ +200 → -500 ~ +500mmH₂O)

Base pressure:

500kPa (5kgf/cm²)

One side proof pressure:

4.8 ~ 24kPa (480 ~ 2400mmH₂O)

(Depending on differential pressure range)

Operating temperature:

CL70 -20 ~ 60°C

CD70 -5 ~ 40°C

Accuracy:

1.5%max.P.

Dead band:

Fixed 0.25 ~ 0.8kPa or less(25 ~ 80mmH₂O or less)

(Depending on differential pressure range)

Switch:

Micro switch

Number of contact:

One contact

Setting system:

Internal adjustment type

Outlet for electric wire:

CL70 Conduit type PF3/4 female

Gland JIS 20b

CD70 Flame-proof packing type

Case material-finishing:

CL70 Aluminium alloy die casting(ADC12)-

Blue & Gray Epoxy painted

CD70 Aluminium alloy casting(AC7A)-

Blue & Gray Epoxy painted

Construction:

IP65

Weight:

CL70 Approx. 6.5kgs

CD70 Approx. 14kgs

SPECIFICATION 2

Electric characteristics:

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

Differential pressure range and dead band-one side proof pressure:

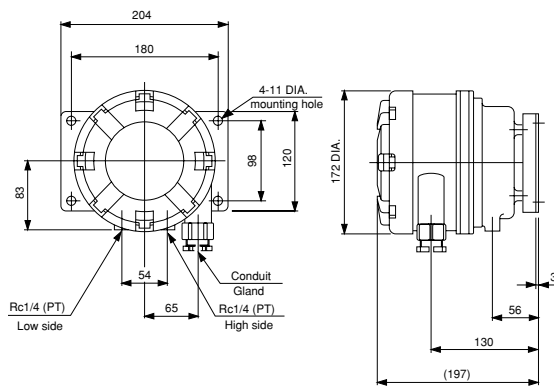
Differential pressure range kPa(kgf/cm ²)	Dead band kPa(mmH ₂ O)	One side proof pressure kPa(mmH ₂ O)
0~4 (0~400)	0.25 or less (25 or less)	4.8 (480)
0~5 (0~500)	0.3 or less (30 or less)	6 (600)
0~7 (0~700)	0.35 or less (35 or less)	8.4 (840)
0~10 (0~1000)	0.4 or less (40 or less)	12 (1200)
0~15 (0~1500)	0.6 or less (60 or less)	18 (1800)
0~20 (0~2000)	0.8 or less (0.8 or less)	24 (2400)
±2(±200)*	0.25 or less (25 or less)	2.4 (240)
±5(±500)*	0.4 or less (40 or less)	6 (600)

Differential pressure ranges marked with * can handle inverse differential pressure.

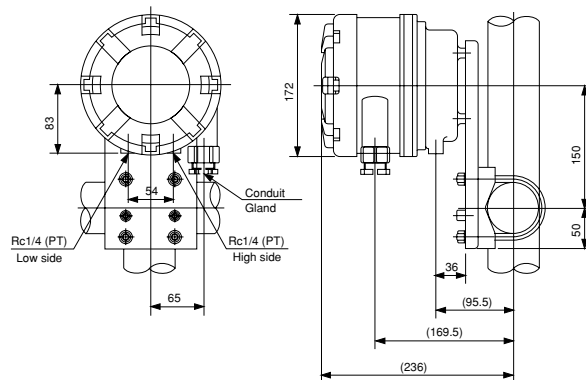
DIMENSIONS 1

CL70

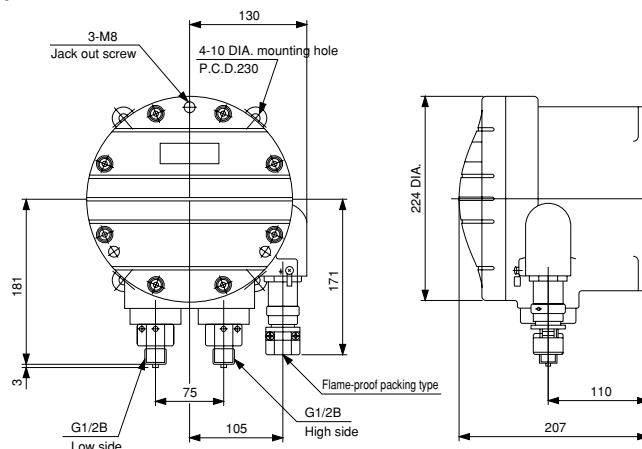
Panel mounting



2B pipe mounting



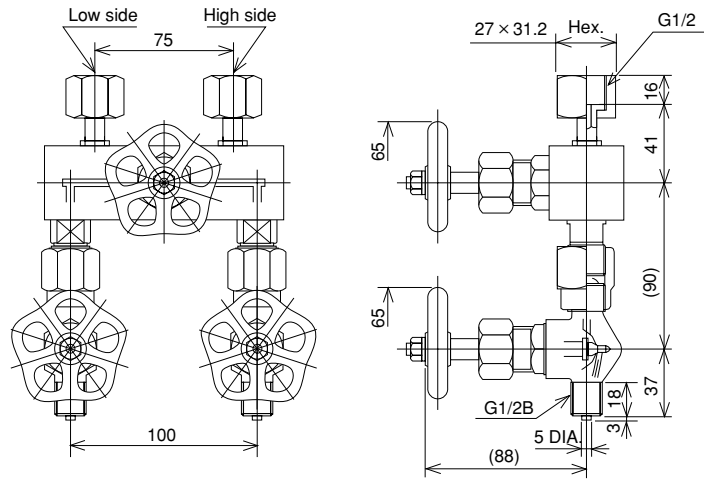
CD70



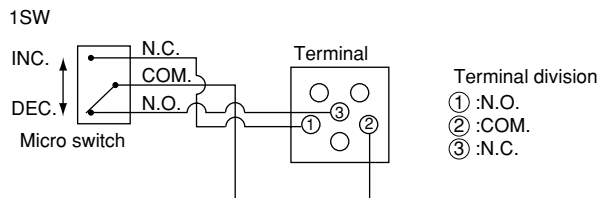
DIMENSIONS 2

Valve-manifold:(Option)

Three-way valve manifold which combined the stop valve for high and low pressure and strap valve. This valve manifold is suitable for checking zero point or zero adjustment during operation and also available to prevent excess differential pressure or reversal differential pressure.

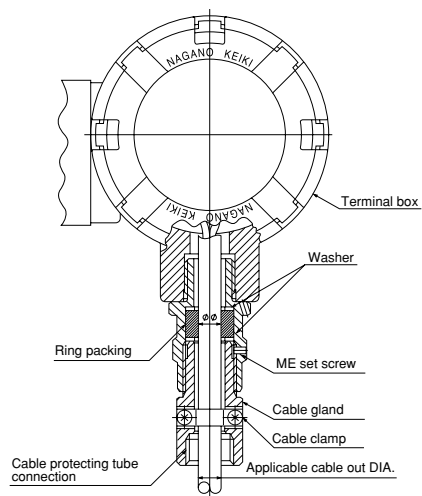


WIRING



OUTLET FOR ELECTRIC WIRE

Conduit connection	Packing inner DIA.(d)	Applicable cable Out DIA.	Protecting tube connection
PF1/2	8 DIA.~12 DIA. Available by 1mm step	7.0 DIA.~12.0 DIA. Available by 0.5mm step	PF1/2
PF3/4	13 DIA.~16 DIA. Available by 1mm step	12.0 DIA.~16.0 DIA. Available by 0.5mm step	PF3/4



EXPLOSION-PROTECTED CONSTRUCTION

Type approval for explosion-proof:(CD70)

It acquires a technical standard adjusted in international standard IEC by the ministry of Labor notification and the national authorization on the basis of new explosion proof guide.

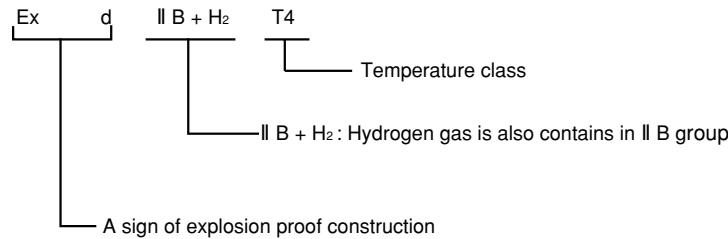
Type name	Type approval number
CD70	No. C12413

Explosion-protected construction:

Explosion protected-construction is a totally enclosed construction such that even if the explosive gas explodes inside the container, the container withstands the force of the explosion and there is no danger of ignition of external explosive gases.

As for our differential pressure switch produced based on this policy, use can have combustible gases or steam of combustibility liquid in pressure measurement at a place with existing fear in a factory, other business office.

Exd II + H₂ T4:



Group classification

A kind of explosion proof electrical instrument and apparatus is classed in group I and group II by a place to be used. CD70 belongs to group II, and comes under machinery using it in a factory except hazardous location of the mine or hazardous location of business office.

Applicable group and classification of gas or steam.

Classification of gas or steam	Applicable group		
	II A	II B	II C
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					
	T1	T2	T3	T4	T5	T6
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

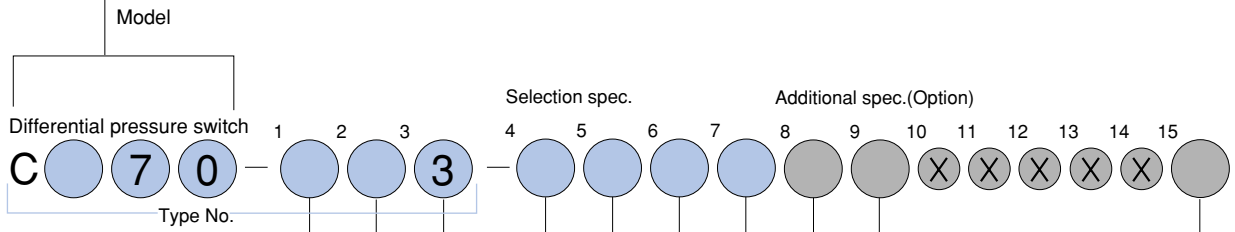
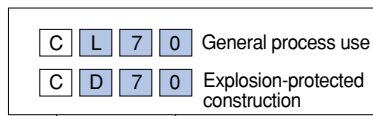
Example of applicable gas or steam.

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

Type No. constitution

Please specify Type No.,each specification and range when ordering.

Note:For this Model,there is no applicable item for the figures X,but please specify X when ordering.



1 Mounting type _____ In case of CL70

1	Panel mounting
2	2B pipe mounting

1 Mounting type _____ In case of CD70

2	Panel mounting, Flame-proof packing type
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2 Connection _____

4	G1/2B (CD70)
7	Rc1/4 (CL70)

* Other connections are also available.

3 Gas contact parts material _____

3	Body:SCS14 (CL70)/316st.st. (CD70) Bellows:316Lst.st. Socket:316st.st. (CD70)
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4 Differential pressure range (kPa) _____
(When ordering, please specify pressure range & unit.)

1	0 ~ 4
2	0 ~ 5
3	0 ~ 7
4	0 ~ 10
5	0 ~ 15
6	0 ~ 20
7	-2 ~ +2
8	-5 ~ +5

5 Type of contact _____

1	H : Upper limit type with one contact
2	L : Lower limit type with one contact

9 Other additional spec. _____

0	Nil
1	Please specify your requirement Valve-manifold (st.st.) Case finishing

8 Treatment _____

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

In case of CL70 7 Outlet for electric wire _____

3	Conduit PF3/4 female
7	Gland JIS 20b

In case of CD70 7 Outlet for electric wire _____

3	Packing inner DIA.11mm (PF1/2 female)
4	Packing inner DIA.12mm (PF1/2 female)
6	Packing inner DIA.14mm (PF3/4 female)
8	Packing inner DIA.16mm (PF3/4 female)

*Since the inside diameter of the packing can be manufactured in 1-mm step, please consult us for other cases.

6 Switch _____

0	Standard
1	Ultra high sensitivity switch
3	Standard + gold plated
4	Ultra high sensitivity switch +gold plated

15 Document _____

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report