



CQ20 Pressure Switch

OUTLINE

This is a pressure switch which uses a Bourdon tube as the pressure sensing element. Movement of the Bourdon tube directly operates a microswitch and turns a circuit on or off. This switch is used in liquid level control, flow control, and the control of air pressure, water pressure, oil pressure, and the pressure of other kinds of liquids.

FEATURES

- Since it is a microswitch type, stable switching is obtained by snap action.
- Vibration resistance is superb, and it can be directly installed to equipment as an on-site type.

* When selecting a pressure switch, select the pressure range over which the gauge will demonstrate top performance in a working pressure range within 30 to 65% of full scale. Also check whether the wetted parts material is suitable for the gas or fluid to be measured.

SPECIFICATION 1

Fluid:

Gas or liquid (However, there shall be no freezing.)

Operating environment:

Places where there are no inflammable liquids or gases which may cause ignition or explosion under normal conditions

Type:

Stem, Panel mounted type

Connection:

G3/8B (PF), G1/2B (PF), R3/8 (PT), R1/2 (PT), 3/8NPT, 1/2NPT

Wetted parts materials:

General use

Bourdon tube SUS316

Socket CAC203

* Available up to 35MPa range.

Corrosion-proof use

Bourdon tube SUS316

Socket SCS14

Pressure range:

0~0.1→0~70 MPa

-0.1~0 MPa

* 20~100 kPa (receiver) also available.

Contact NKS for details.

Puncture pressure:

1.5 times the pressure range

Recommended pressure setting range:

15~90% of pressure range

Operating temperature:

-20~60 °C

Accuracy:

±1% max. P.

Setting accuracy:

±3% max. P.

Temperature coefficient:

0.05% max. P./°C

Dead band:

Fixed. 0.01~3.1 MPa or less
(Depends on the pressure range.)

Switch:

Microswitch

Number of contacts:

One contact

Setting system:

External adjustment type

(However, when the set value is specified, the setting adjustment screw is locked.)

Outlet for electric wire:

Gland JIS 10b

Case material & finish:

ADC12 · Black

Case construction:

IP42

Weight:

Approx. 1 kg

CQ20 Pressure Switch

SPECIFICATION 2

Pressure range and dead band:

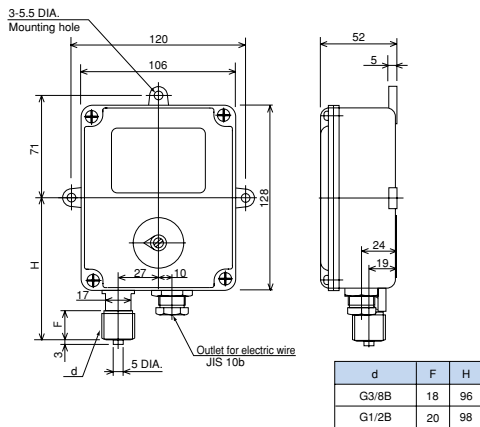
Pressure range MPa	Dead band MPa	Pressure range MPa	Dead band MPa
-0.1~0	0.01 or less	0~2.5	0.15 or less
		~3.5	0.14
0~0.1	0.01	~5	0.175
~0.2	0.016	~7	0.24
~0.3	0.024	~10	0.65
~0.4	0.024	~15	0.52
~0.6	0.039	~25	1.25
~1	0.06	~35	1.05
~1.5	0.068	~50	2.2
~2	0.08	~70	3.1

Electrical characteristics:

	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)				

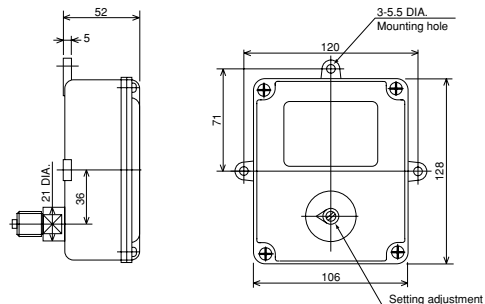
DIMENSIONS

Stem



Panel mounted type

d	F	H
G3/8B	18	32
G1/2B	20	34



REMARKS

1. As a sequencer input;

The contact resistance of the microswitch increases gradually as time passes.

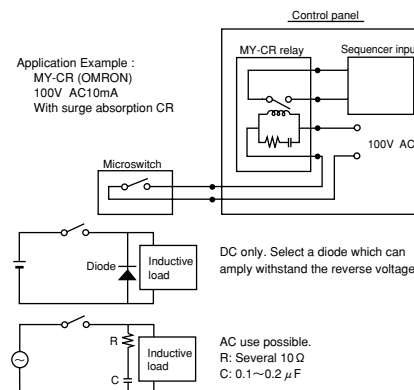
When used in an atmosphere, especially atmospheres containing Si, SiO₂ accumulates at the contact part as the switch is operated and the contact resistance increases in a short time. Therefore, use the gauge in a clean and well-ventilated atmosphere.

When the gauge is used as sequencer input for control use, input it through a 100V AC relay, because the contacts may be fail for these reasons.

2. Insertion of contact protection circuit

With an inductive load switching circuit, insert a protection circuit to protect the contacts.

When using a relay, select the type with a built-in contact protection circuit.



Model CQ20 Pressure Switch

Model number configuration

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

C Q 2 0	—	①	②	③	—	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	
Pressure switch									2			X	X	X	X	X		
Model		Selective spec.							Additional spec. (Option)									
① Type	3	Stem																
	7	Panel mounted type																
② Connection	3	G3/8B																
	4	G1/2B																
	G	R3/8																
	H	R1/2																
	L	3/8NPT																
	M	1/2NPT																
③ Wetted parts materials	1	Bourdon tube: SUS316 Socket: CAC203 Available up to 35MPa range																
	3	Bourdon tube: SUS316 Socket: SCS14																
(When ordering, please specify the range and units separately.)	④ Pressure range (MPa)	1	-0.1~0.1, 0.2, 0.3, 0.4, 0.6, 1, 1.5, 2															
		2	-0.1~0															
		3	20~100 kPa (Receiver)															
		4	0~0.1, 0.2, 0.3, 0.4															
		5	0~0.6, 1, 1.5, 2, 2.5, 3.5, 5, 7															
		6	0~10, 15, 25, 35															
		7	0~50, 70															
⑤ Contact	A	H: Upper limit type with 1 contact																
	B	L: Lower limit type with 1 contact																
⑥ Switch	0	Standard																
	1	Ultra high sensitivity type																
	3	Standard + gold plated																
	4	Ultra high sensitivity type + gold plated																
⑦ Outlet for electric wire	2	Gland JIS 10b																
⑧ Treatment	0	Nil																
	1	Use no oil																
	2	Use no water																
	3	Use no oil & water																
⑨ Other additional specifications	0	Nil																
	1	Required (Please specify the desired documents separately.) 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), traceability certificate, inspection certificate, standard inspection report, dial strength calculation, attended inspection																

Manufacturing range

- Accuracy: 1% max.P.
- Setting system: External adjustment type
- 20~100 kPa is also available.

○Setting dial includes the setting error. Therefore, for accurate adjustment, always compare with a master gauge and base pressure gauge and set.

Specify "X" if there is no specification item.



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