

Autonics

Explosion Proof Pressure Switches

KCD-30/32 SERIES

INSTRUCTION MANUAL

Thank you for choosing our Autonics product.  
Please read the following safety considerations before use.

Safety Considerations

- ※Please observe all safety considerations for safe and proper product operation to avoid hazards.
- ※⚠ symbol represents caution due to special circumstances in which hazards may occur.
- ⚠ Warning

Failure to follow these instructions may result in serious injury or death.
- ⚠ Caution

Failure to follow these instructions may result in personal injury or product damage.

Warning

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)  
Failure to follow this instruction may result in personal injury, fire or economic loss.
- Do not use the unit in the place where high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**  
Failure to follow this instruction may result in explosion or fire.
- The explosion-proof standard of this unit is Ex d IIC T5, protection structure of this unit is IP65.**
- Do not open during power supply.**  
Failure to follow this instruction may result in explosion or fire.
- Install and use a extra protective device in the location with rapid changes, vibration or pulsation of the pressure.**

Caution

- Use the unit within the rated specifications.**  
Failure to follow this instruction may result in fire or product damage.
- Keep metal chip, dust, and wire residue from flowing into the unit.**  
Failure to follow this instruction may result in fire or product damage.
- Check the polarity of the contact before wiring the unit.**  
Failure to follow this instruction may result in explosion or fire.
- This product is designed to detect the pressure of noncorrosive fluid. Do not use for corrosive fluid.**  
Failure to follow this instruction may result in product damage.
- Install it in a clean, ambient temperature range of -20 to 60°C, and where there is no danger of natural disasters such as lightning.**
- Use a dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow this instruction may result in fire or electric shock.
- Calibrate at least once a year for precision maintenance and safety management.**
- Install a dedicated instrument for special applications such as food, hygiene.**

Model

KCD-30

A

04

A

0

Option

0

None

Pressure port

B

R1/2 (PT)

Bottom plate, connecting part material

04

SUS 304 (Standard)

Pressure range

A

Refer to pressure range table

Contact

KCD-30

1×SPDT

Contact

KCD-32

2×SPDT

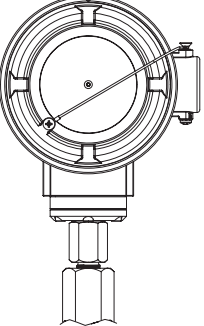
※ The above specifications are subject to change and some models may be discontinued without notice.  
※ Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

Specification

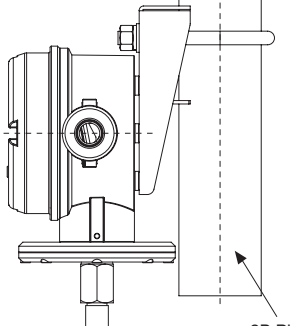
Series	KCD-30	KCD-32
Display	No display	
Accuracy	±1% of F.S.(+20℃), (±0.5% of F.S./10℃)	
Dead band	±5% of F.S.	±10% of F.S. (Pressure range 2.5k to 10kPa : ±20% of F.S.)
Rated contact specification*1	125VAC(Max. 15A), 250VAC(Max. 15A), 480VAC(Max. 15A)	
Frequency	50/60Hz	
Dielectric strength	2000V	
Insulation resistance	Max. 100MΩ	
Contact	1×SPDT	2×SPDT
Manufacturable pressure range	2kPa to 5MPa	2.5kPa to 2MPa
Rated pressure range	Static pressure: under 75%, Variable pressure: under 60%	
Max. pressure range	120% F.S.	
Ambient temperature	-20 to 60℃(storage: -20 to 60℃), Fluid temperature: Max. 80℃	
Explosion proof*2	Ex d IIC T5(-20℃≤Tas60℃)	
Protection structure	IP65	
Mate-rial	Housing	ALDC 12(coating)
	Cover	ALDC 12(coating)
	Diaphragm	SUS 316L
	Diaphragm sealing	Polytetrafluoroethylene
	Bottom plate	SUS 304(Standard), SUS 316(Option)
	Connecting part	SUS 304(Standard), SUS 316(Option)
	Bracket (Option)	SUS 304
Connecting screw	G1/2 (Standard)	
Weight	Approx. 2.45kg	Approx. 2.75kg

※ 1. Contact us to check the specification for DC voltage and DPDT.  
※ 2. The explosion class specification is acquired and managed by KONICS.  
※ Environment resistance is rated at no freezing or condensation.

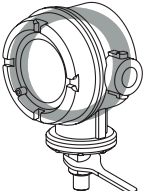
Installation



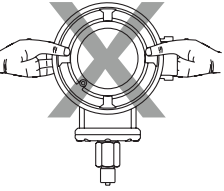
<Mounting directly>



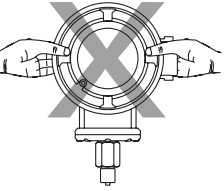
<Mounting on bracket>



•Cautions during installation



Use spanner to connect pressure port



Do not turn forcedly with holding the body. This can cause damage.

Pressure range table

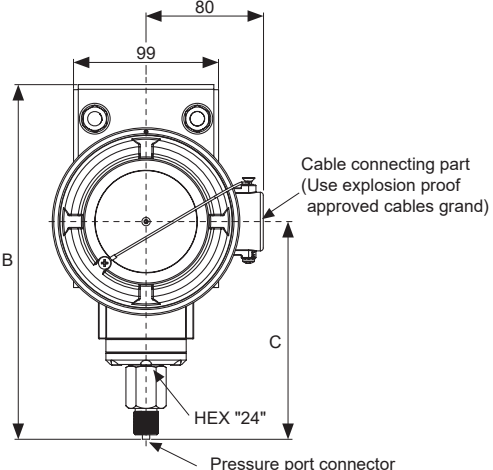
•KCD-30(1×SPDT)				•KCD-32(2×SPDT)			
Code	Range	Code	Range	Code	Range	Code	Range
1	2k to 10kPa	A	60k to 0.3MPa	1	2.5k to 10kPa	A	75k to 0.3MPa
2	4k to 20kPa	B	80k to 0.4MPa	2	5k to 20kPa	B	0.1M to 0.4MPa
3	6k to 30kPa	C	0.12M to 0.6MPa	3	7.5k to 30kPa	C	0.15M to 0.6MPa
4	8k to 40kPa	D	0.2M to 1MPa	4	10k to 40kPa	D	0.25M to 1MPa
5	10k to 50kPa	E	0.3M to 1.5MPa	5	12.5k to 50kPa	E	0.375M to 1.5MPa
6	12k to 60kPa	F	0.4M to 2MPa	6	15k to 60kPa	F	0.5M to 2MPa
7	16k to 80kPa	G	0.7M to 3.5MPa	7	20k to 80kPa	Z	Custom order option
8	20k to 0.1MPa	H	1M to 5MPa	8	25k to 0.1MPa		
9	40k to 0.2MPa	Z	Custom order option	9	50k to 0.2MPa		

※ Do not set maximum or minimum value.

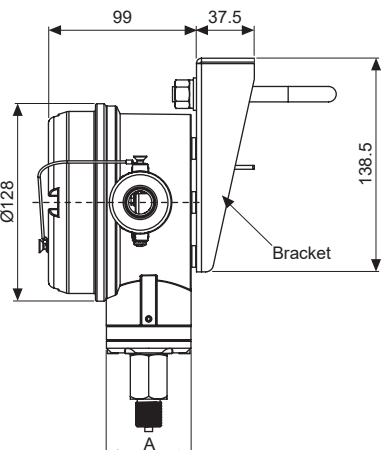
Dimension

•Front

(Unit: mm)



•Side



※ The above dimensions are based on G3/8 pressure port model.

Series	Pressure range	A	B	C
KCD-30	2kPa to 80kPa	Ø99.5	242	148.5
	20kPa to 5MPa	Ø55	242	148.5
KCD-32	2.5kPa to 80kPa	Ø120	245.5	152
	25kPa to 0.6MPa	Ø100	245.5	152
	0.25MPa to 2MPa	Ø80	245.5	152

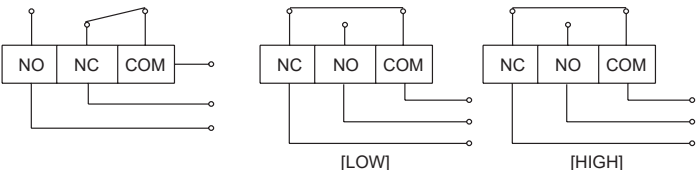
Connection example

•KCD-30(1×SPDT)

•KCD-32(2×SPDT)

•1P

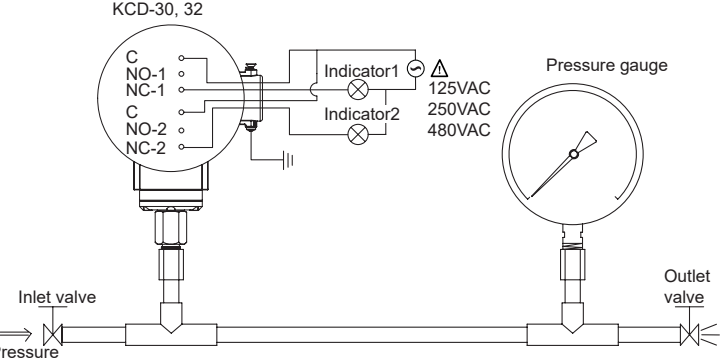
•2P



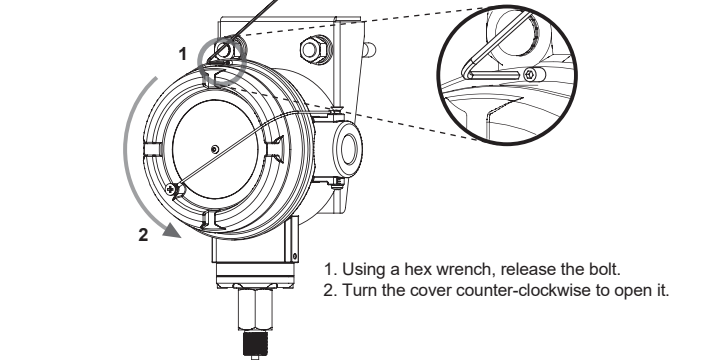
Error

Error	Cause	Troubleshooting
Pressure set value change	Deformation of sensing part due to fatigue and the over pressure	Adjust or replace the sensing part.
	Change of elasticity by corrosion	Select a suitable material for using fluid.
	Loosening the sealing part	Adjust or replace the sealing part.
Inaccurate repeatability	Freezing(condensation) of a bubble or gas	Drain or fix the line.
	Loosening the sealing part	Adjust or replace the sealing part.
	Blocked connection	Check and clean the line.
Slow response	Partially blocked route valve	Open the valve.
	When using viscous fluid	Use suitable fluid or calibrate the switch.
Operation failure	Blocked valve	Open the valve.
	Damaged contact	Replace the contact part.
	Bad electrical connection	Tighten the electrical connection part.
	Electrical disconnection	Check the status of electrical connection.
Chattering	Shock and excessive vibration	Fix the status of mounting.

Examples of use



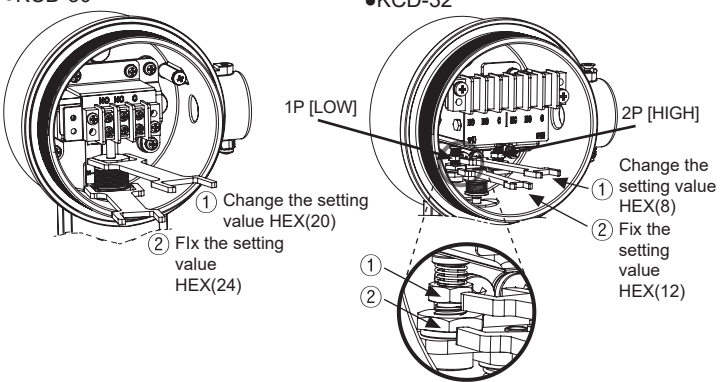
Cover separation method



Pressure setting method

•KCD-30

•KCD-32



Turn ② counter-clockwise to change the setting value by using HEX(24) spanner. Turn ① clockwise to increase the setting value, counter-clockwise to decrease it by using HEX(20) spanner. Turn ② clockwise to fix the setting value.

Turn ② counter-clockwise to change the setting value by using HEX(12) spanner. Turn ① clockwise to increase the setting value, counter-clockwise to decrease it by using HEX(8) spanner. Turn ② clockwise to fix the setting value.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
  - Use verified explosion-proof cable gland or sealing fitting. (explosion proof standard: over Ex d IIC T5, IP rating: over IP65 protection structure).
  - Use dedicated external terminal for earth. For connecting earth, use a spring washer and earth cable which is over 4mm².
  - This unit may be used in the following environments.
    - ① Indoor / Outdoor (in the environment condition rated in 'Specifications')
    - ② Altitude max. 2,000 m
    - ③ Pollution Degree 2
    - ④ Installation Category II
- ※ The explosion-proof unit is certified and the same specifications which is reported to Korea Gas Safety Corporation.  
(This unit is manufactured following by the announcement 2013-54 of Ministry of Employment and Labor of Korea.)