

CD31

Flameproof Type Differential Pressure Switch

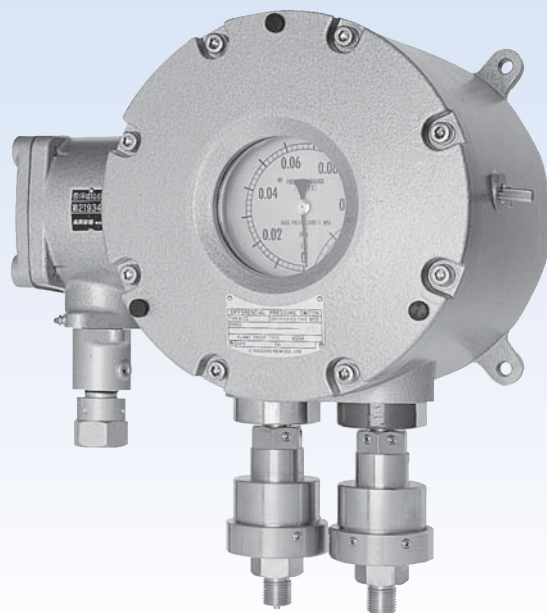
Overview

This flameproof pressure gauge with contacts is used for hazardous area where there is the consideration of pressure media or atmosphere igniting or exploding. It is especially applicable when pressure indication is necessary at the job site for pressure measurement, alarm, and control applications.

Features

- Pressure indication featured with switch actuation is suitable for on-site pressure control.
- Contacts setting adjustable by external adjustment knob.

*Reference pressure is the pressure to reference, or less fluctuating pressure side. Proof pressure against single port means the maximum working differential pressure.



Specifications 1

Type of protection:

Flameproof d2G4

Media:

Gas or liquid

Installation environment:

Hazardous area Refer to flameproof explanation for more information.

Connection:

G1/2B, R1/2, 1/2NPT

* For other connections, please contact us.

Wetted parts:

General use

Bellows C5212R

Socket C3604BD

Gasket NBR

Corrosion resistant

Bellows SUS316L

Socket SUS316

Gasket NBR, PTFE

Differential Pressure range:

0 to 0.03→0 to 0.4MPa

Reference pressure:

0 to 1MPa

Operating temperature range:

-5 to 40°C (no freezing)

Indication accuracy:

±2%F.S.

Setting accuracy:

±3%F.S.

Repeatability:

±1.5%F.S.

Deadband:

Fixed. 8% F.S. and less

Temperature coefficient:

±0.05%F.S./°C

Switch:

Micro switch

Number of contacts:

1 contact

Setting system:

Externally adjustable With setting dial

Method of leading external conductors and cable into a terminal box:

Conduit type, flameproof cable gland

Enclosure:

Outdoor use (IP54)

Case material • finish:

AC7A • Gray wrinkle paint

Manifold valve: (Option)

Three-way valve in combination with stop valve both for high and low pressure, and equalizing valve. It prevents from overpressure, reversed pressure during zero point monitoring, zero adjustment operation or when the process starts its operation.

Weight:

Approx. 21.5kg to Approx. 21.75kg

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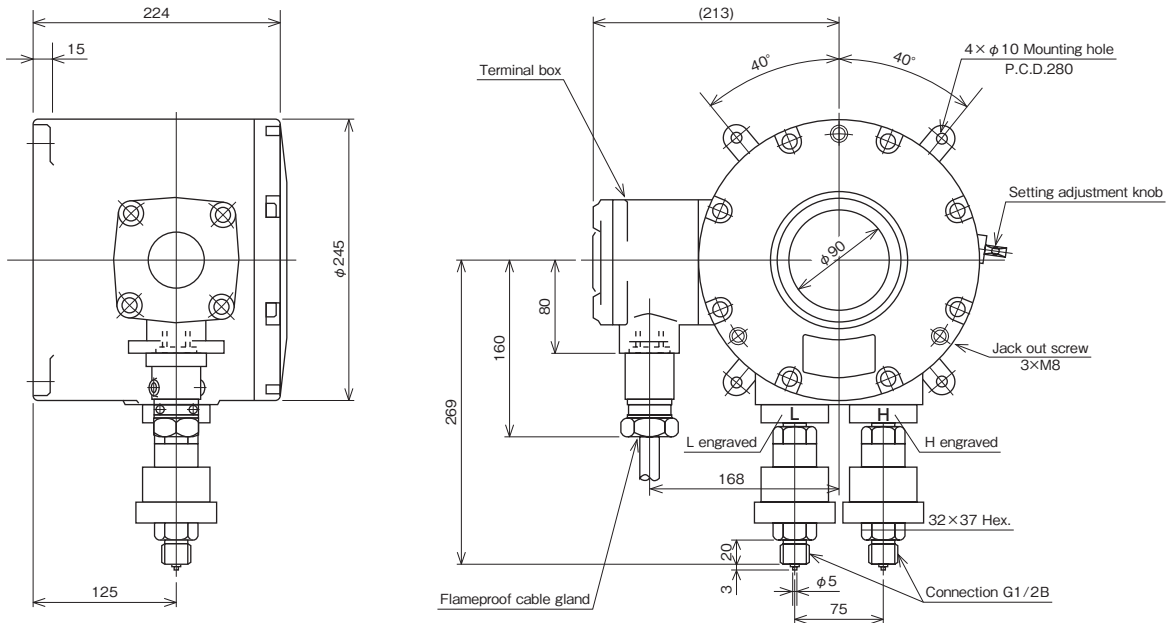
Specifications 2

Electrical characteristics:

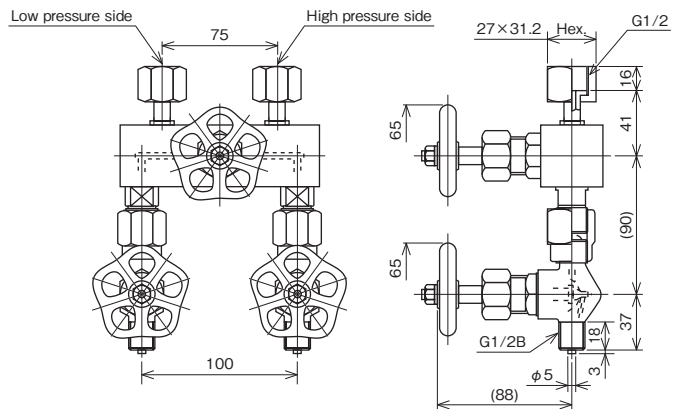
	Rating		Withstand voltage	Insulation resistance
	Resistance load	Inductive load		
125V AC	15A	15A	1500V AC Between terminals and case for 1 minute	500V DC 100M Ω or over Between terminals and case
250V AC	15A	15A		
125V DC	0.5A	0.05A		
30V DC	2A	1A		
• Inductive load: Power factor 0.4 or over (AC) Time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

Dimensions

Unit: mm



Manifold valve: (Option)



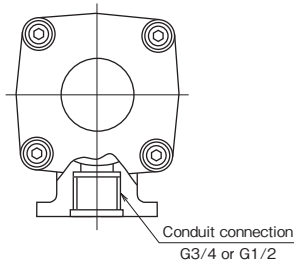
Type of contacts and wiring system

Type of contacts	Mark	Operation system and operation diagram	Connection terminal number	Setting pointer	Remarks
Upper limit type with one contact	H	* When pressure goes up and reaches at set point, switch operates and turn circuit ON. 	① - ②	Black pointer	ON · OFF switch action is reversed when ② · ③ is wired. (HR)
Lower limit type with one contact	L	* When pressure goes down and reaches at set point, switch operates and turn circuit ON. 	② - ③	Black pointer	ON · OFF switch action is reversed when ① · ② is wired. (LR)

The setting pressure scale of the product represents each of the "*" points above. Therefore, when using the upper limit type as a lower limit type and the lower limit type as an upper limit type, consider the switch actuating point difference caused by deadband.

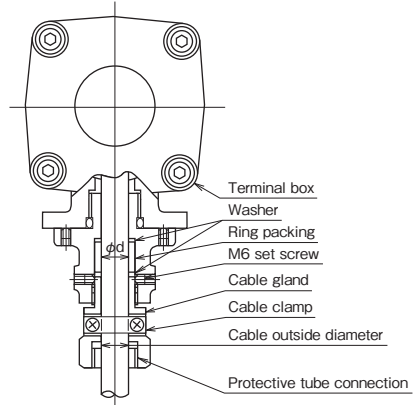
Method of leading external conductors and cable into a terminal box

(1) Conduit type



(2) Flameproof cable gland

Gasket inner diameter (d) ϕ	Outside diameter of applicable cable ϕ	Protective tube Connection
10.5	9.4	G1/2 G3/4
	9.9	
	10.1	
12	10.5	
	11.0	
	11.5	
14	11.9	G3/4 G1
	12.0	
	12.5	
	12.6	
15.5	13.1	
	13.5	
	13.6	
	14.5	
16.5	15.6	



Flameproof

Flameproof construction:

Flameproof 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 pressure switches manufactured under this policy are widely used in measurement, alarm, and pressure control in factories and business offices where inflammable gases or the vapor of inflammable liquids having a flash point of 40°C or less may exist.

Applicable range: d2G4

Flameproof construction: d

Explosion class: 2 (Minimum gap which permits flame propagation at a gap depth of 25mm is 0.4mm to 0.6mm)

Ignitability: G4 (Container with an ignition point of 135 to 200°C and its outside surface temperature rise limit is 70degs)

Hazardous areas: Zone 1 or Zone 2

Applicable industries: Petrochemical, chemical fiber, ethylene, ethanol, methanol, dielectric products manufacturing, liquefied gas, electric furnace, pharmaceuticals, paints, ammonium sulfate, soda, other measurement medium or industries in which there is the danger of explosion.

Classification of hazardous area:

Hazardous area	Description
Zone 0	Areas where a hazardous atmosphere is continuously present or present for a long period under ordinary circumstances
Zone 1	Areas where hazardous atmosphere is likely to occur under ordinary circumstances
Zone 2	Areas where hazardous atmosphere is likely to occur under abnormal circumstances

Type approval name and number

It is official approval number to represent that flameproof construction pressure switch conformed to flameproof standard. It is national official approval which is examined and authorized by technology institution of industrial safety.

Type approval name:

MSD

Type approval number:

CD31-□□1 T21111

CD31-□□3 T21934

