

# Ceramic Capacitive Pressure Element



## Summary

Ceramic Capacitive Pressure Sensor uses ceramic as sensitive element to form capacitor structure and execute measurement without intermediary liquid. Compared with silicon resistance, it can be applied to all kinds of medium environment and maintain high accuracy in a wide temperature range (-40°C ~150°C).

## Background And Development Purpose

With rapid development of intellectualization, the demand for sensors is increasing in all industries. As one of the three main types of sensors, pressure sensor is widely used. Due to structure and material properties of silicon, it is difficult to ensure measurement accuracy and long-term reliability at high temperature and corrosive environment. However, ceramic capacitive pressure sensor can overcome the shortages and outperforms silicon or ceramic resistance at extreme environment.

## Features

- Ceramic capacitor structure
- Measurement without intermediary liquid
- Fast response time ( $\leq 10\text{ms}$ ), high measurement accuracy and long service life (more than 2 million pressure ranges)

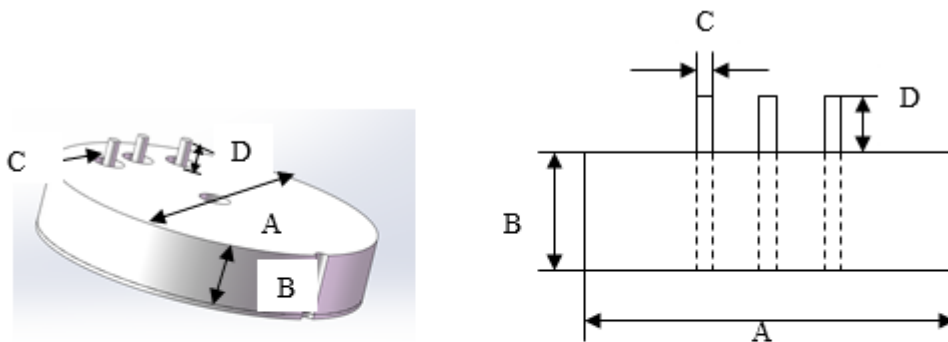
- High reliability
- Provide sensor technical support

## Application

- Automotive systems(Oil pressure, transmission pressure)
- Petrochemical(Air-conditioning pressure, pipeline pressure)
- Food and medical(Intake pressure, water pipe pressure)

## Shape And Dimensions

- Capacitive Ceramic Pressure Element



Series	A/(mm)	B/(mm)	C/(mm)	D/(mm)
CCP21D	20.95±0.10	4.31-5.00	0.65±0.05	1.20±0.25

## Part Number

- Capacitive Ceramic Pressure Element

CCP    21    D    G    005    E2  
 ①            ②            ③            ④            ⑤            ⑥

①

category	
CCP	Ceramic capacitive pressure sensitive element

②

Sensor size (mm)	
21	φ 21

③

Sensor Shape	
D	Circular

④

Pressure type	
G	Gauge

⑤

Range	
Example	Nominal Value
005	0.5MPa
010	1.0MPa
100	10MPa

⑥

Nonlinearity	
E1	±10%FS
E2	±8%FS
E3	±5%FS

## Electrical Characteristics

### Capacitive Ceramic Pressure Element

Model	Range /P (MPa)	Range /P (psi)	Proof Pressure (MPa)	Burst Pressure (MPa)	Thickness (mm)	Cm (pF)	Cr(pF)	Non-linearity (%)	Pressure Sensing diameter (mm)
CCP21DG005E2	0.5	72.5	>1	>1.5	4.31±0.05	20±10%	13±10%	±8%F.S	12.4
CCP21DG010E2	1	145	>2	>3	4.31±0.05	20±10%	13±10%	±8%F.S	12.4
CCP21DG020E2	2	290	>4	>6	4.45±0.05	20±10%	13±10%	±8%F.S	12.4
CCP21DG3R2E2	3.2	464	>5.88	>9.8	4.45±0.05	20±10%	13±10%	±8%F.S	12.0
CCP21DG040E2	4	580	>8	>12	4.45±0.05	15±10%	10±10%	±8%F.S	11.0
CCP21DG060E2	6	870	>10	>18	4.45±0.05	10±10%	7±10%	±8%F.S	10.0
CCP21DG080E2	8	1160	>14	>20	4.58±0.05	10±10%	7±10%	±8%F.S	10.0

## Production

- Mass production

## Characteristic Curve

