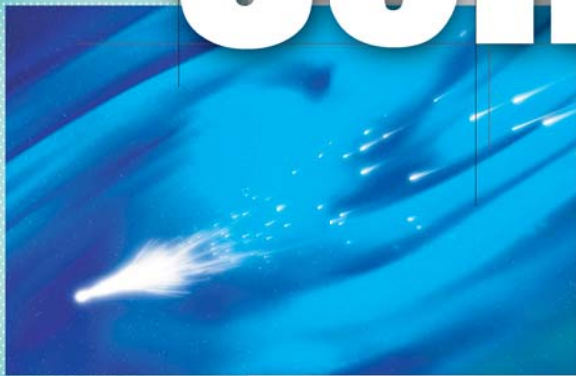


Pressure Sensors



MKT-TAISEI Co.,Ltd.



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/ Double Diaphragm Semiconductor Pressure Sensor (Pressure Transmitter)	



Pressure Sensor Application

Micro-Pressure Range	Gas pressure control, washing machine water level control, filter clogging detection.
Low-Pressure Range	FA equipment such as vacuum cleaner clogging detectors, electronic blood pressure meter, weather forecast equipment, altimeter, water pressure detector, water depth measurement device, vehicle engine controller, compressor pressure controller, vacuum absorber and non-contact switches.
Low-Pressure Range	Vehicle suspension, vehicle break controller, air conditioner refrigerant pressure controllers and hydraulic controllers for building and construction equipment.



CAUTION

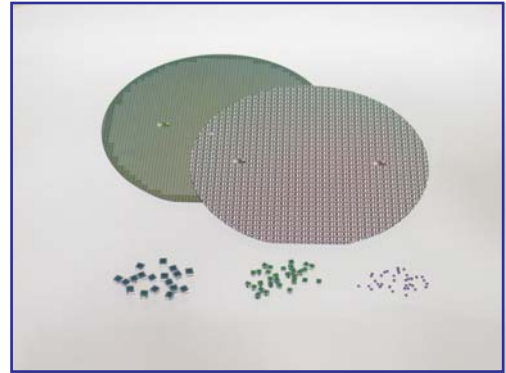
- 1) Use within the specified conditions. No warranty is made over specified conditions of use.
- 2) Avoid measuring corrosive pressure medium or in catalysis, unless otherwise, it would be the cause of defects.
- 3) Avoid measuring pressure medium in high temperature, unless otherwise, it would be the cause of defects.
- 4) Avoid measuring flammable pressure medium, unless otherwise, it would be the cause of explosion or fire.
- 5) Avoid disassembling, taking off a part or changing it.



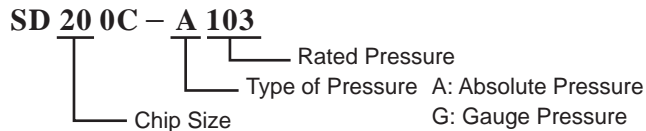
Semiconductor Pressure Sensor Chip / SD Series

FEATURES

- Corresponds to customization from design to mass production.
- Small chip size. (1 mm ~ 3 mm)
- Two model types are available. (absolute pressure and gauge pressure)
- Wide pressure specification. (10k ~ 50M Pa or 0.1 ~ 500 kg/cm²)
- Low cost, high accuracy, high reliability, high breaking pressure resistance.

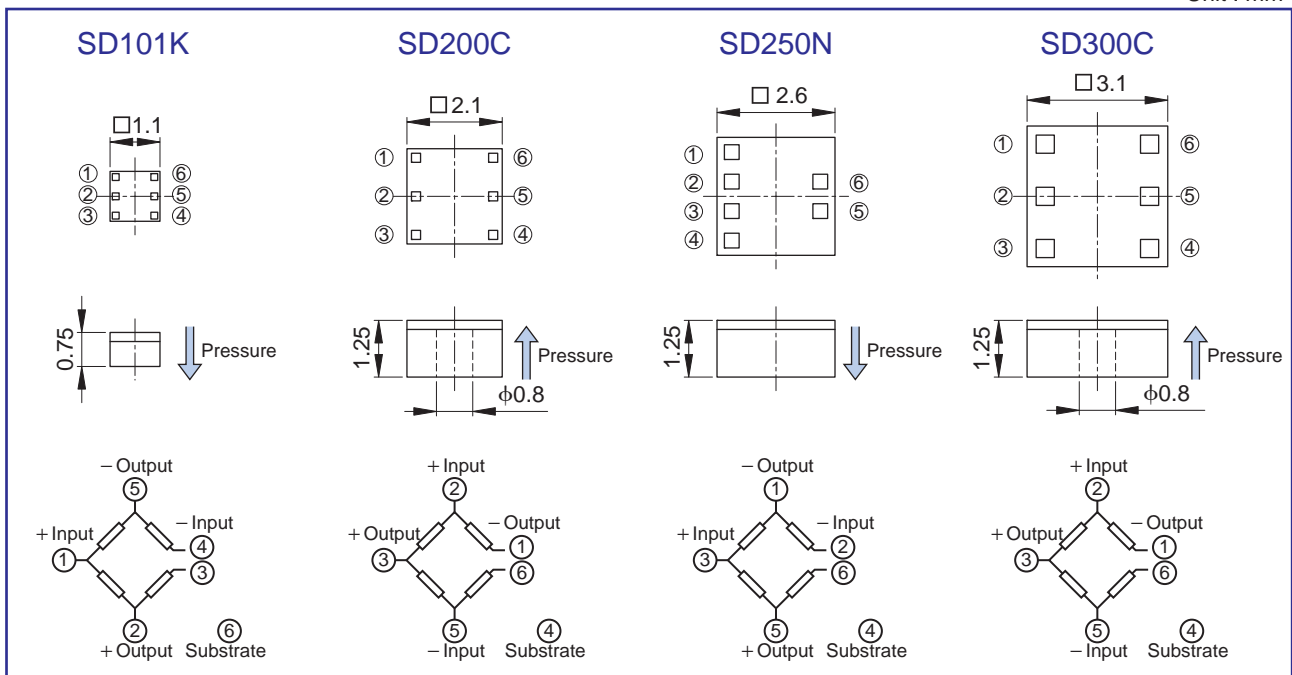


MODEL



EXTERNAL DIMENSIONS AND TERMINAL ARRANGEMENT

Unit : mm



SPECIFICATIONS

Model No.	SD101K-A		SD200C-A (G)			SD250N-A					SD300C-G						
	103	353	102	202	502	103	153	103	303	503	104	204	354	504	101	201	501
Rated Pressure [Pa]	1M	3.5M	100k	200k	500k	1M	1.5M	1M	3M	5M	10M	20M	35M	50M	10k	20k	50k
Pressure Type	Absolute		Absolute (Gauge)										Gauge				
Maximum Overload Pressure	Rated Pressure X 3																
Temperature Range [°C]	-20 ~ 100		-20 ~ 100			-20 ~ 100					-20 ~ 100						
Excitation Current [mA]	1.0		1.0			1.0					1.5			1.0			
Bridge Resistance [kΩ]	4 ± 1		5 ± 1			4.5 ± 1					5 ± 1						
Offset Voltage [mV]	0 ± 25		0 ± 25			0 ± 25					0 ± 30			0 ± 25			
Output Span Voltage [mV]	60 ~ 140		60 ~ 140			50 ~ 80					60 ~ 140						
Linearity [%FS]	± 0.3		± 0.3			± 0.3					± 0.5			± 1.5	± 0.3		
Offset Voltage Temperature Characteristics * 1 [%FS/°C]	± 0.1		± 0.1			± 0.1					± 0.5			± 0.5	± 0.1		
Span Voltage Temperature Characteristics * 1 [%FS/°C]	± 0.05		± 0.05			± 0.05					± 0.2			± 0.2	± 0.05		
Chip Size [mm]	1.1 ^{+0.2} _{-0.1}		2.1 ^{+0.2} _{-0.1}			2.6 ^{+0.2} _{-0.1}					3.1 ^{+0.2} _{-0.1}						
Chip Height [mm]	0.75 ± 0.2		1.25 ± 0.2			1.25 ± 0.2					1.25 ± 0.2						
Stand Hole Diameter (Gauge Pressure) [mm]	-		0.8 ± 0.1			-					0.8 ± 0.1						

NOTE *1 The temperature range is 0 to 60°C. If there is no specification, the temperature range is 25 ± 5°C. These specifications are examples. Please contact us for other specifications.

⚠ Specifications of products are subject to change without notice.

e-sd-p01-09



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Semiconductor Pressure Sensor / SP Series

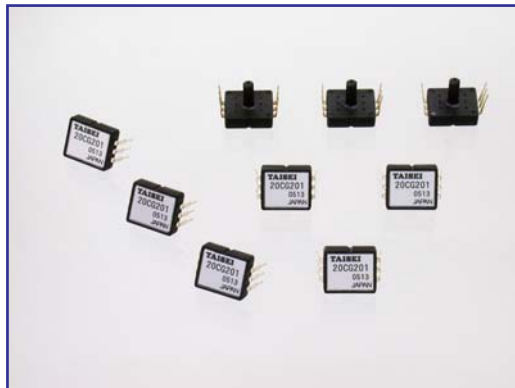
FEATURES

The SP series is an inexpensive plastic package type (DIP type).
 · These units correspond to regular equipment, measurement equipment, home electronic equipment, medical equipment and others.

MODEL

SP20C - G 102 U

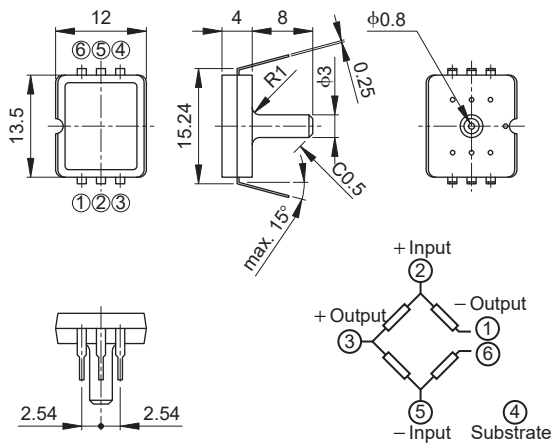
Terminal Direction
 Rated Pressure
 Type of Pressure G : Gauge



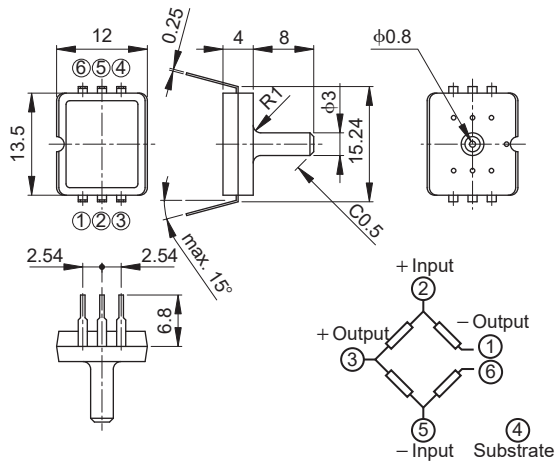
EXTERNAL DIMENSIONS AND TERMINAL ARRANGEMENT

Unit : mm

SP20C - G□□□



SP20C - G□□□□



SPECIFICATIONS

Model No.	SP20C - G						
	101	201	501	102	202	502	103
Rated Pressure [kPa]	± 10	± 20	± 50	± 100	- 100 ~ 200	- 100 ~ 500	- 100 ~ 1000
Pressure Type	Gauge						
Temperature range [°C]	- 20 ~ 100						
Pressure Medium	Non-Corrosive Gases						
Excitation Current [mA]	1.5			1.0			
Maximum Overload Pressure	Rated Pressure X3						X 1.5
Output Span Voltage [mV]	60 ~ 140						
Brige Resistance [k Ω]	5 ± 1						
Offset Voltage [mV]	0 ± 25			0 ± 20			
Offset Voltage Temperature Characteristics *1 [%FS/°C]	± 0.5			± 0.1			
Span Voltage Temperature Characteristics *1 [%FS/°C]	± 0.2			± 0.05			
Linearity [%FS]	± 1.5			± 0.3			

NOTE *1 The temperature range is 0 to 60°C. If there is no specification, the temperature range is 25 ± 5°C.
 These specifications are examples. Please contact us for other specifications.

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e-sp-p01-10



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Semiconductor Pressure Sensor / SM Series

FEATURES

The SM series are high precision and high durability metal can package type (TO-5 CAN equivalent package).

MODEL

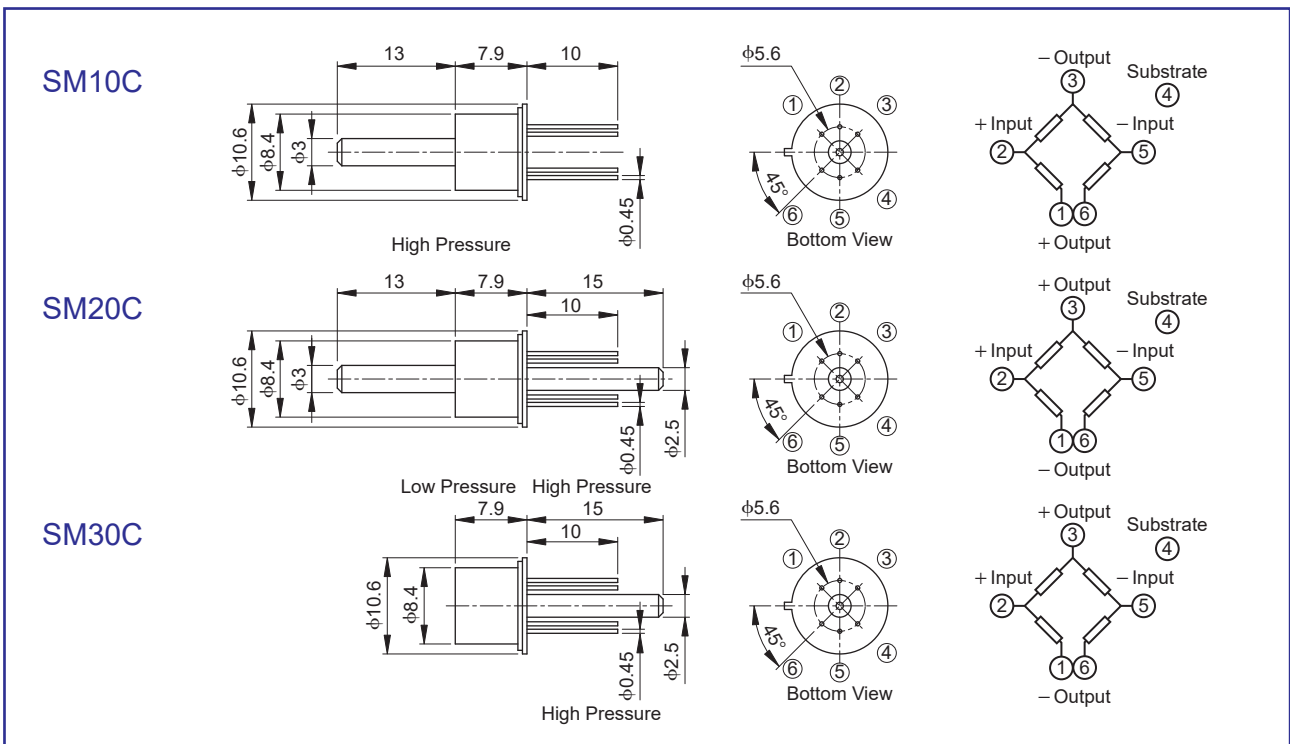
SM20C - G 102

└── Rated Pressure
 └── Type of Pressure A : Absolute Pressure
 G : Gauge Pressure



EXTERNAL DIMENSIONS AND TERMINAL ARRANGEMENT

Unit : mm



SPECIFICATIONS

Model No.	SM10C SM20C SM30C - A (G)							
	101	201	501	102	202	502	103	
Rated Pressure [kPa]	± 10	± 20	± 50	± 100	- 100 ~ 200	- 100 ~ 500	- 100 ~ 1000	
Pressure Type	Absolute, Gauge							
Temperature Range [°C]	- 20 ~ 100							
Pressure Medium	Non-Corrosive Gases							
Excitation Current [mA]	1.5			1.0				
Maximum Overload Pressure	Rated Pressure X 3							
Output Span Voltage [mV]	60 ~ 140							
Bridge Resistance [k Ω]	5 ± 1							
Offset Voltage [mV]	0 ± 25				0 ± 20			
Offset Voltage Temperature Characteristics *1 [%FS/°C]	± 0.5				± 0.1			
Span Voltage Temperature Characteristics *1 [%FS/°C]	± 0.2				± 0.05			
Linearity [%FS]	± 1.5				± 0.3			

NOTE *1 The temperature range is 0 to 60°C. If there is no specification, the temperature range is 25 ± 5°C. These specifications are examples. Please contact us for other specifications.

⚠ Specifications of products are subject to change without notice.

e-sm-p01-11



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Pressure Sensor Module / CQ Series

FEATURES

- High Accuracy
- Good long term reliability
- Temperature compensated

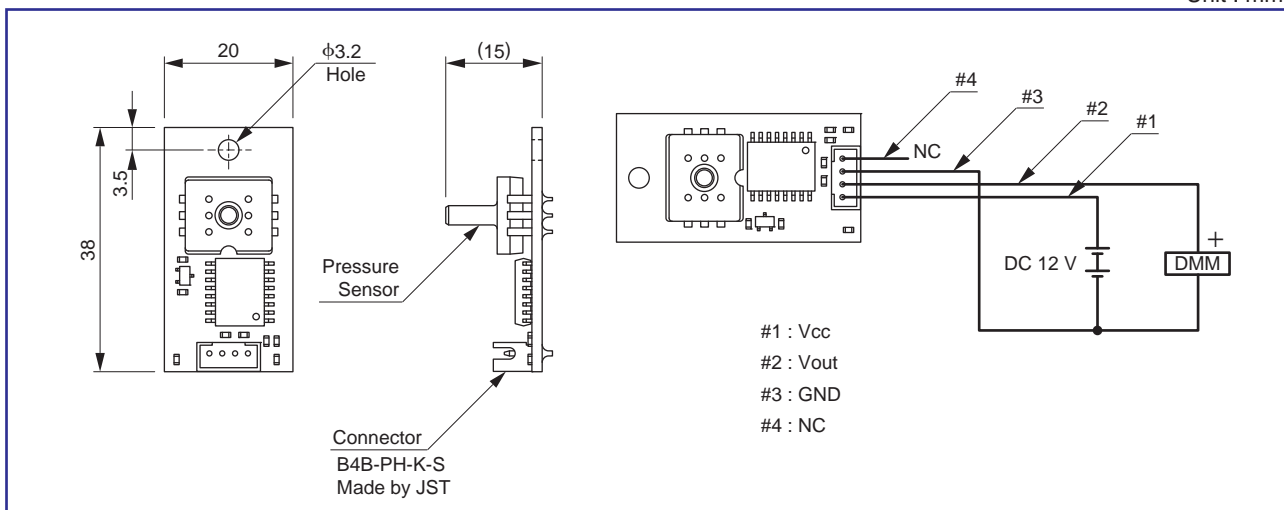
MODEL

CQ30A - G 102
 └──────────┬──────────
 Rated Pressure



EXTERNAL DIMENSIONS AND TERMINAL ARRANGEMENT

Unit : mm



ABSOLUTE MAXIMUM RATINGS

Maximum Over Load Pressure	Rated Pressure × 1.5
Supply Voltage	DC - 0.7 ~ + 18 V
Output Source Current	6 mA
Storage Temperature	- 20 ~ + 85 °C

SPECIFICATIONS

Model No.	CQ30A - G						
	101	201	501	102	202	502	103
Rated Pressure	10 kPa	20 kPa	50 kPa	100 kPa	200 kPa	500 kPa	1 MPa
Pressure Type	Gauge Pressure						
Operating Temperature Range	0 ~ 65 °C						
Pressure Medium	Non-corrosive gases and/or air						
Supply Voltage	DC 6 ~ 16 V or [DC 5.0 V]						
Output Voltage	1 ~ 5 V or 0 ~ 5 V or [0.5 ~ 4.5 V]						
Load Resistance	100 kΩ min.						
Total Accuracy	± 3 %FS			± 1.5 %FS			

- 1) Please specify power supply voltage and output voltage when ordering.
- 2) Comply with custom design except the above specifications. Please consult us if required.

⚠ Specifications of products are subject to change without notice.

e-cq-p01-06



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Metallic Thin Film Pressure Sensors (Pressure Transmitters) / TFP12 Series

FEATURES

High Accuracy and High Liability by the combination of Metal Diaphragm and Metallic Thin Film Gauge.

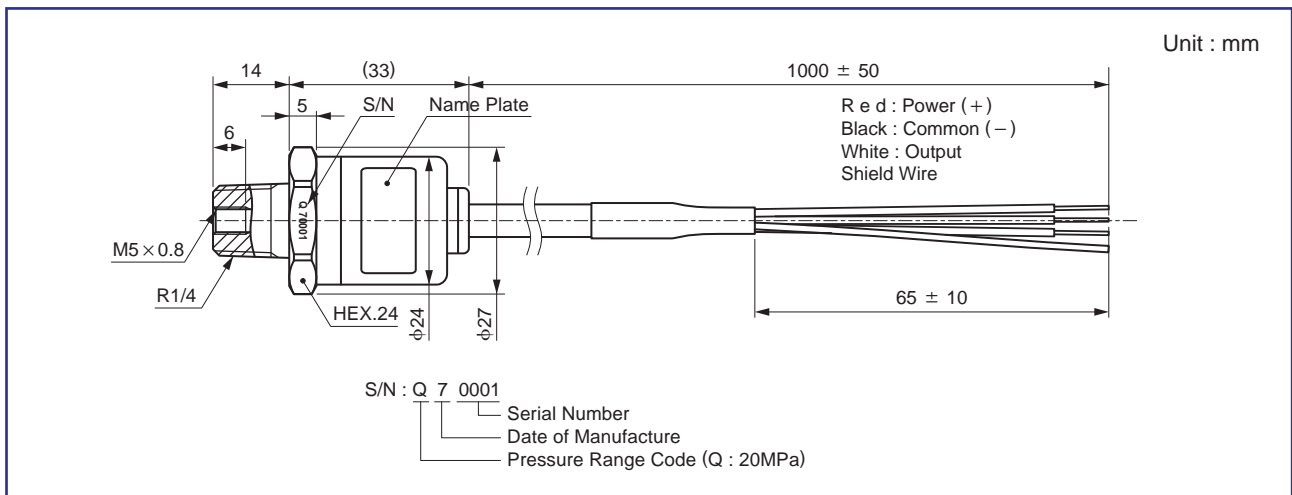
- Medium and high pressure transmitters with stainless steel diaphragm.
- Comply with a wide range of pressure media like Oil, Water, Gas which dose not spoil stainless steel.
- Comply with wide operating temperature range.
- Built-in amplifier.
- Economical, Low cost.



MODEL

TFP12 – □□□□ – □□□□
 Voltage Output Electric Structural
 Specification Specification

EXTERNAL DIMENSIONS



SPECIFICATIONS

Model No.	TFP12 – □□□□						
	E	G	J	L	N	Q	R
Pressure Range	0~0.5 MPa	0~1 MPa	0~2 MPa	0~5 MPa	0~10 MPa	0~20 MPa	0~35 MPa
Pressure Type	Gauge Pressure						
Pressure Medium	Non-corrosive gases or liquids compatible with SUS630 or SUS304						
Operating Temperature Range	-20 °C~80 °C						
Maximum Over Load Pressure	Rated Pressure X 1.5						
Power Source / Rated Output	Power Source: Vs= 12~24 V DC / Rated Output: 1~5 V Power Source: Vs=5.0 V DC / Rated Output: 0.5~4.5 V						
Load Resistance	More than 10 kΩ						
Response Time	Less than 3 msec						
Total Accuracy	Less than ± 3 %FS						
Linearity *1	Less than ± 0.3 %FS			Less than ± 0.25 %FS			
Hysteresis *1	Less than ± 0.2 %FS						
Temperature Characteristic *1	Less than ± 0.03 %FS / °C						
Withstand Voltage	100V AC 1 min						
Protection	Correspondence IP67						
Connection	R1/4, other specication consult.						
Structure	Shield Cable Type , other specication consult.						
Cable	1,000 ± 50 mm , Specify cable length.						
Weight	Approx. 100 g						
Environmental Performance (25 ± 5 °C)	Shock Proof	490 m/s ² (X,Y,Z direction)					
	Vibration Proof	19.6 m/s ² (Oscillating Frequency:10~150 Hz, Total Sweep Time:75 min. , Sweep Times :10 times Each X,Y,Z direction)					

*1 : Reference Value. It provides for accuracy by "Total Accuracy".



MODEL NUMBER CONFIGURATION

TFP12 – ① ② ③ ④ – ⑤ ⑥ ⑦ ⑧

Voltage Output
Built-in Amplifier
Pressure Sensors (Pressure Transmitters)

① Pressure Range [MPa]	E	0~0.5
	G	0~1
	J	0~2
	L	0~5
	N	0~10
	Q	0~20
	R	0~35
	② Power Source	1
2		12~24 VDC
③ Rated Output	4	0.5~4.5 V (ratiometric)
	6	1~5 V
④ Accuracy	3	Total Accuracy Less than $\pm 3\%FS$ (– 20~80 °C)
⑤ Connection	1	R1/4
⑥ Wetted Parts Material *2	2	Diaphragm:HASTELLOY C276 , Fitting:SUS316L
	6	Diaphragm:SUS630 , Fitting:SUS304
⑦ Cable Type	1	Cable Type Length:1m
	F	Specify your requirement.
⑧ Additional Spec.	0	Nil
	F	Specify your requirement.

*2 : "2" is less than pressure range 1 MPa, "6" is more than pressure range 2 MPa.



Double Diaphragm Semiconductor Pressure Sensors (Pressure Transmitters) / TCP10 Series

FEATURES

High Accuracy and High Liability by the combination of Metal Diaphragm and Semiconductor Pressure Sensor.

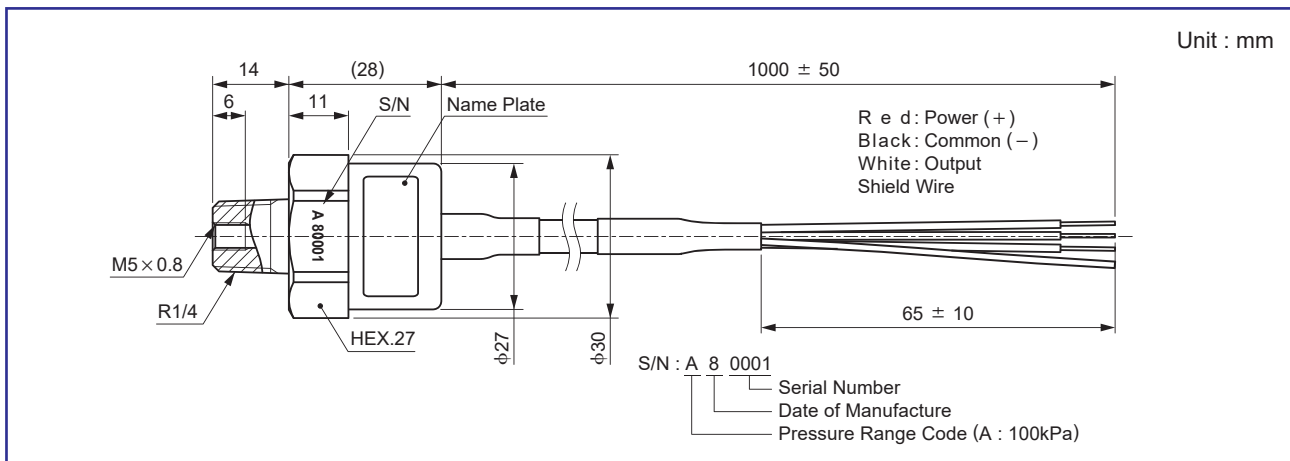
- Low and Medium Pressure Transmitters with stainless steel duplex diaphragm.
- High accuracy and excellent durability supported by wide pressure range available from very low pressure.
- Comply with a wide range of pressure media like Oil, Water, Gas which dose not spoil stainless steel.
- Built-in amplifier, Output signal: 1~5 VDC.
- Economical, Low cost.



MODEL

TCP10 – □□□□ – □□□□
 Voltage Output Electric Structural
 Specification Specification

EXTERNAL DIMENSIONS



SPECIFICATIONS

Model No.	TCP10 – □□□□						
	2	5	A	B	E	V	W
Pressure Range	0~20 kPa	0~50 kPa	0~100 kPa	0~200 kPa	0~500 kPa	-100~0 kPa	-100~100 kPa
Pressure Type	Gauge						
Pressure Medium	Non-corrosive gases or liquids compatible with SUS316						
Operating Temperature Range	-10 °C ~ 60 °C						
Maximum Over Load Pressure	Rated Pressure X 5						
Power Source / Rated Output	Power Source:Vs = 12~24 V DC / Rated Output:1~5 V						
Load Resistance	More than 10 kΩ						
Response Time	Less than 3 msec						
Total Accuracy	Less than ± 3 %FS						
Linearity *1	Less than ± 1.5 %FS			Less than ± 0.3 %FS			
Hysteresis *1	Less than ± 0.2 %FS						
Temperature Characteristic *1	Less than ± 0.03 %FS/°C						
Withstand Voltage	500V AC 1min						
Connection	R1/4, other specification consult.						
Structure	Shield Cable Type, other specification consult.						
Cable	1,000 ± 50 mm, Specify cable length.						
Weight	Approx. 150 g						
Environmental Performance (25 ± 5 °C)	Shock Proof	490 m/s ² (X,Y,Z direction)					
	Vibration Proof	19.6 m/s ² (Oscillating Frequency:10~150 Hz, Total Sweep Time:75 min. , Sweep Times:10 times Each X,Y,Z direction)					

*1 : Reference Value. It provides for accuracy by "Total Accuracy".



MODEL NUMBER CONFIGURATION



Voltage Output
Built-in Amplifier
Pressure Sensors (Pressure Transmitters)

① Pressure Range [kPa]	2	0~20
	5	0~50
	A	0~100
	B	0~200
	E	0~500
	V	- 100~0
	W	- 100~ + 100
	② Power Source	2
③ Rated Output	6	1~5 V
④ Accuracy	3	Total Accuracy Less than $\pm 3\%FS$ (- 10~60 °C)
⑤ Connection	1	R1/4
⑥ Wetted Parts Material	3	Diaphragm:SUS316L Fitting:SUS316L
⑦ Cable Type	1	Cable Type Length:1m
	F	Specify your requirement.
⑧ Additional Spec.	0	Nil
	F	Specify your requirement.



Specifications of products are subject to change without notice.

e-tcp10-p02-03



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