# **CZ-200P**

**Resin Pressure Sensor** 







# Push Rod Pressure Sensor with Built-in Temperature Sensor



# **PG500**

Resin Pressure Indicator

( € <sub>6</sub>**91**° <sub>18</sub> ⊗









The CZ-200P pressure sensor is a push rod lead-type sensor and thus there is no concern of resin contamination, even if a diaphragm rupture occurs.



A "Inconel", "SPRON" diaphragm with a maximum operating temperature of 550°C and excellent corrosion resistance on the level of Hastelloy C has been added to our lineup. Suitable for pressure measurement of high-function resins (high-temperature melted resins) such as polymer resins.

\* 450°C when using a J-type thermocouple temperature sensor.



A built-in thermocouple temperature sensor type is available as an option. Temperature and resin pressure can be measured using a single mounting hole. The temperature measurement contact is located 2 mm from the diaphragm surface, enabling measurement of a temperature closer to the actual resin temperature. (Thermocouple K/J, Class:2)



The three-layer structure of the lead unit and an optional lead-pipe cover reduce indication fluctuations due to external heat and tightening. In addition, when combined with an indicator with built-in linearization and a converter, high-accuracy pressure measurement to a maximum accuracy of 0.5% FS is possible. (Linearization is an option.)

\* Standard 1.0% FS becomes 0.5% FS. Standard 2.0% FS becomes 1.0% FS.

\* When placing your order, specify the special indicator with linearization support together with the converter. (Except HASTELLOY C or More than 70MPa.)

Resin Pressure Control

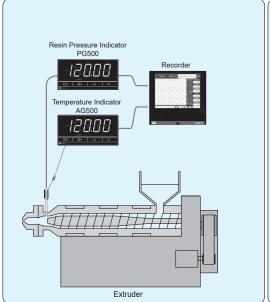
Monitoring and control of resin pressure is performed using a Pressure Sensor (CZ-200P), Pressure Sensor Indicator (PG500), Pressure Sensor Converter (PCT-300), Digital Indicator(AG500), and High Speed Sampling Controller (GZ900/400). (The application below shows an example of this combination.)

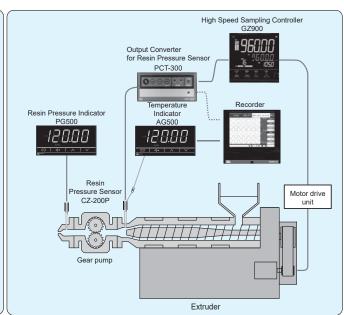
#### GZ900/400





Applications





- Inconel is a registered trademark of Special Metals Corporation.
- SPRON is a registered trademark of Seiko Instruments Inc.
- · Company names and product names used in this manual are the trademarks or registered trademarks of the respective companies.





Max.550°C

#### A Inconel diaphragm A SPRON diaphragm

## ■Name of Parts (CZ-200P-H type)

#### Diaphragm Pressure port of CZ-200P resin pressure sensor. In addition to the SUS630, high-temperature corrosion resistant Inconel, SPRON is available, as well as Hastelloy C and ceramic kanigen plating.

#### Thermocouple connector The connector is made of the same material as the thermocouple wires.

## Diaphragm material and surface treatment SUS630 (Standard)

High-strength stainless steel is used standard.

A maximum operating temperature of 550°C has been achieved.

#### **SPRON**

A maximum operating temperature of 550°C has been achieved.

Attains the same corrosion resistance as Hastelloy C.

#### **Hastelloy C**

Ideal when using corrosive resin.

#### Ceramic kanigen plating

Plating that increases abrasion resistance. \* Cannot be used on Inconel and SPRON

#### Outer tube

The outer tube has a completely sealed double-layer structure that minimizes the effects of external temperature changes.

#### Connector

Connector for the converter. A water-proof connector type and water-proof direct-connection cable type are also available.

#### Specifications

#### Standard Specifications

	Construction	4 sides adhered strain gauge type wheatstone bridge					
	Rated Pressure	See Pressure range code					
	Rated Output *1	1.0 to 1.8mV/V [ At 150°C of diaphragm temperature]  •SPRON, Inconel type: At 250°C					
	Bridge Impressed Voltage	10V DC (at PCT-300) 7.7V DC (at PG500,REX-PG410)					
	Accuracy	SUS630 type (At At 150°C of diaphragm temperature) Within ±1% of full scale Within ±2% of full scale (Over 70 MPa) Inconel, SPRON type: Within ±1% of full scale More than 480°C of 10,20MPa:Within ±2% of full scale HASTELLOY C type Please contact RKC agent					
Specifications	Linearity	SUS630 type (At At 150°C of diaphragm temperature) Within ±1% of full scale Within ±2% of full scale (Over 70 MPa) Inconel, SPRON type: Within ±1% of full scale More than 480°C of 10,20MPa:Within ±2% of full scale HASTELLOY C type Please contact RKC agent					
	Hysteresis	SUS630 type Within ±0.5% of full scale Within ±1% of full scale (Over 50 MPa) Within ±2% of full scale (Over 70 MPa) Within ±2% of full scale (1MPa type) Inconel, SPRON type: Within ±1.0% of full scale More than 480°C of 10,20MPa:Within ±2.0% of full scale HASTELLOY C type Please contact RKC agent					
	Reproducibility	Within ±0.2% of span • SPRON, Inconel type: More than 480°C of 10,20MPa:Within ±0.4% of full scale					
	Zero Balance	±0.6mV/V (Within ±40% of span					
	Bridge Resistance	$350\Omega\pm5\Omega$ (Input resistance), $350\Omega\pm5\Omega$ (Output resistance)					

	Maximum Temperature of the Diaphragm	400 C (Incomer, SERON type : 330 C)
ics	Maximum Temperature of the Strain Gauge	200°C *2
Temperature characteristics	Zero Point Temperature Effect • To the temperature of the diaphragm	±0.2%/10°C of span ±0.3%/10°C of span(10MPa, 150MPa) • Inconel type : ±0.3%/10°C • SPRON type : 0.1±0.2%/10°C • HASTELLOY C type : Please contact RKC agent
Temperat	Output Temperature Effect	Output temperature effect is an equal value as zero point. • Inconel type : ±0.3%/10°C • SPRON type : 0.15±0.2%/10°C
	Effect of Wind  • Without lead pipe cover	Within ±1% of full scale (at wind of 4m/sec)
SS	Allowable Overload	Within 120% of span (Within 500% of 1MPa type, Within 1000% of 0.5MPa type)
ışti.	Marginal Overload	Within 150% of span (Within 1000% of 1MPa type, Within 2000% of 0.5MPa type)
gal	Lead pipe cover material	SUS630
Mechanic characte	Recommended tightening torque	Fixed nut type: 30 N•m (300 kgf•cm), Loose nut type: 60 N•m (600 kg•cm)
	Output effect of tightening torque	Within ±0.2% of full scale (at recommended tightening torque) • M14, PF1/4, 1/2-UNF screw type : ±1%

\*1 The output of each sensor becomes a specific value within the range of 1.0 to 1.8 mV/V.
\*2 When the temperature at the bottom of outer tube (nut side) is more than 180°C,
the temperature at the strain gauge exceed 200°C.
If the temperature at the strain gauge exceed 200°C, the performance cannot be
assured. Therefore, cover the heat source with a heat insulating material so that
the above temperature does not exceed 200°C.

une above temperature does not exceed 200°C.
The temperature at the strain gauge can be expected not to rise when:
•the long type of sensor is used or
•the sensor is installed a slant or transversely.
If any of the above measures can be taken, take it.

#### Optional Specifications

perature asurement section	Sensor type	Thermocouple : K or J ( Ungrounded junction, Class 2 )
	Sensor type Temperature detection position	Internally 2mm from a diaphragm 550°C (Thermocouple K), 450°C(Thermocouple J) Approx. 90 sec (room temperature to 100°C, 98 % response) Appropx. 100mm (Standard)
	Maximum Temperature	550°C (Thermocouple K), 450°C(Thermocouple J)
	Response time	Approx. 90 sec (room temperature to 100°C, 98 % response)
Terr	Cable length	Appropx. 100mm (Standard)

### Pressure Range#

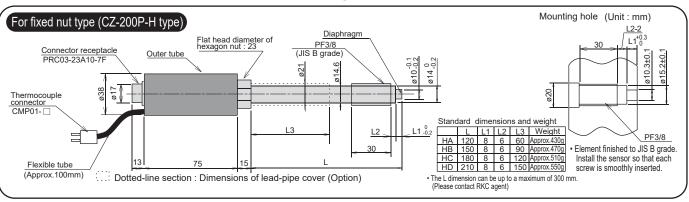
Nut type	Range
Fixed Nut type *1	0 to 10MPa, 0 to 20MPa, 0 to 35MPa, 0 to 50MPa, 0 to 70MPa, 0 to 100MPa, 0 to 150MPa
Loose Nut type *2	0 to 1MPa, 0 to 2MPa 0 to 3MPa, 0 to 5MPa, 0 to 10MPa, 0 to 20MPa, 0 to 35MPa, 0 to 50MPa, 0 to 70MPa, 0 to 100MPa

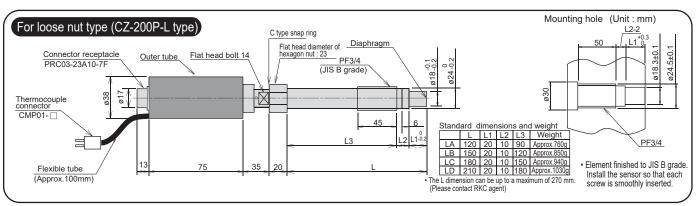
<sup>#</sup> kgf/cm2 type is available. Please contact RKC agent.
The maximum pressure range for Hastelloy C diaphragms is 100MPa.
The maximum pressure range for Inconel and SPRON diaphragms is 50MPa.
Inconel diaphragms with 70MPa and 100MPa are custom-made products. Please contact RKC agent.
Loose nut type 0.5MPa (D05P) and fixed nut type 5MPa (005P) can be custom-made. Please contact RKC agent.
(Rated output of 0.5 to 0.9mV/V requires a dedicated amplifier and has different specifications.)
The minimum pressure range for Hastelloy C, SPRON and Inconel diaphragms is 10MPa.

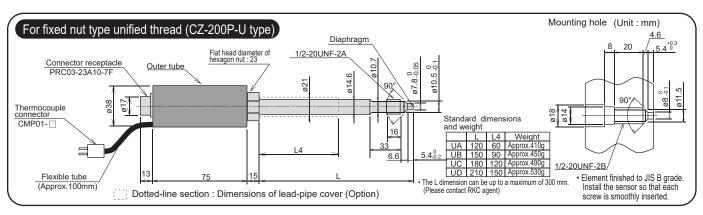




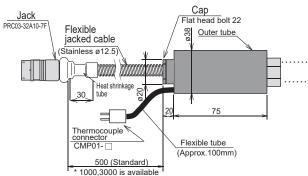
# External Dimensions and Mounting Hole







• When the diaphragm material is Inconel and SPRON , the cable type is direct connection.



- · Mounting hole dimensions are the same as on the standard product.
- Unit dimensions are the same as the dimensions of the standard product; however, the lead unit (L) dimension 120 mm (Inconel, SPRON) is not possible.
- The fixed-nut type is only available with a lead-pipe cover.

#### Reference : Screw dimension tolerances

Class Screw type	PF1/4,PF3/8	PF1/2,PF3/4	M14 x 1.5, M16 x 1.5	1/2-20UNF
JIS B grade (Class 2, 2B) Inner diameter tolerances of female screw	0 to +0.445	0 to +0.541	0 to +0.300	0 to +0.278
JIS B grade (Class 2, 2B) Effective diameter tolerances of female screw	0 to +0.250	0 to +0.284	0 to +0.150	0 to +0.141



#### Resin Pressure Indicator



( € :**\$1**3 (8)

#### Specifications

#### Input

Gain setting

Input type

: Strain gauge type pressure sensor
a) Pressure sensor gain setting range: 0.500 to 1.999mV/V
-6.0mV to 15.9mV (Including zero point adjustment range)
b) Pressure sensor gain setting range: 1.000 to 1.999mV/V
-9.8mV to 25.9mV (Including zero point adjustment range)
c) Pressure sensor gain setting range: 2.000 to 2.999mV/V
-12.3mV to 32.6mV (Including zero point adjustment range)
d) Pressure sensor gain setting range: 3.000 to 4.000mV/V
-16.1mV to 42.5mV (Including zero point adjustment range)
a) Gain setting decimal point position:
Three decimal place, Four decimal place
b) Setting range: 0.500 to 4.000mV/V (Three decimal place)
5.500 to 4.000mV/V (Three decimal place)
40.0 to 100.0% (Functions when a resistance for sensitivity adjustment built-in pressure sensor is used)
Wore than 1MΩ
Up-scale/Down-scale (Selectable)
7.7V DC±3% (Within 30mA DC)
5.0.1 sec

Shunt resistance output value: Input impedance Input break action Sensor power supply Sampling time Input adjustment

a) Zero point adjustment
1.Manual setting: -Input span to +Input span
2.Auto-zero function: -5.0 to +5.0mV (Input conversion)

b) Ratio setting
 1. Manual setting (Gain adjustment setting): 0.500 to 1.500
 2. Automatic calibration function
 Auto calibration is used to automatically set the PV ratio so that the

measured value (PV) will be the pressure of the shunt resistance output

(Functions when a resistance for sensitivity adjustment built-in pressure sensor is used)

c) Linearize :

c) Linearize:
Use to correct the non-linear nature of pressure sensor CZ-100P/CZ-200P.
Select the linearizing type symbol engraved on the rated nameplate attached to the CZ-100P or CZ-200P housing.
d) Digital filter: 0.0 to 100.0 sec (OFF when 0 is set.)

#### Performance

Input accuracy : ±0.1% of Input span

: a) Input span : ±0.006% of Input span/°C b) Sensor power supply : ±0.013% of Output span/°C Influence of ambient temperature

#### Display

: 5-digits (The most significant digit : -1 or 1) Display digit

#### Hold function

Peak hold Bottom hold

Highest measured value is held

Lowest measured value is held

The held values can be reset manually, by external contact signal or by communication after the confirmation by the operator.

Data is not backed up when the instrument power supply is off.

#### Digital input (Contact input)

Number of inputs Input method

3 points (DI1 and DI2) Non-voltage contact input (OPEN :  $500 k\Omega$  or more, CLOSE :  $10\Omega$  or less) DI1 : Auto-zero DI2: Hold reset, DI3 : Alarm interlock reset Function

#### Alarm (Optional)

Number of alarms Alarm type Alarm output

Up to 4 points
Process High, Process low (Available for hold function)
Relay output, Form A contact, 250V AC 0.5A (resistive load)
a) Energized/de-energized action is configurable.
b) Delay timer: 0.0 to 600.0 sec)
c) Interlock (latch) function is configurable. Other functions

#### Communication (Optional)

Communication method : RS-485 (2-wire), RS-422A (4-wire)
a) ANSI X3.28 sub-category 2.5A4 (RKC standard)
b) MODBUS-RTU

Maximum connection

#### Analog Retransmission Output (Optional)

: 0 to 1V DC, 0 to 5V DC, 1 to 5V DC, 0 to 10V DC Load resistance : More than  $1k\Omega$ Output signal

Output impedance : Less than 0.1Ω to 10mV DC, 0 to 100mV DC Load resistance : More than  $20k\Omega$ ) Output impedance : Less than  $10\Omega$ 4 to 20mA DC, 0 to 20mA DC

. ¬ τω ΔυτίτΑ DC, U to ZUMA DC Load resistance : Less than 600Ω Output impedance : More than 1MΩ : Measured value (PV) : ±0.1% of span : More than 12 bits Output type Output accuracy

#### **General Specifications**

Output resolution

Waterproof/Dustproof NEMA4X, IP66

Waterproof/Dustproof protection only effective from

Supply voltage

the front in panel mounted installation. a) 90 to 264V AC (50/60Hz, Selectable) Rating: 100 to 240V AC b) 21.6 to 26.4V AC ±10% (50/60Hz, Selectable)

Power consumption

b) 21.6 to 26.4V AC ±10% (50/60HZ, Selectable)
Rating : 24V AC C
c) 21.6 to 26.4V DC
Rating : 24V DC
a) 100 to 240V AC : Less than 10VA (at 240VAC)
b) 24V AC : Less than 7.0VA
c) 24V DC : Less than 210mA

Rush current

Memory backup

Insulation resistance

c) 24V DC: Less than 210mA:
Less than 12A
Backed up by non-volatile memory (FRAM)

• Data retaining period : Approx. 10 years

• Number of writing : Approx. 10,000,000,000 times.
(Depending on storage and operating conditions.)

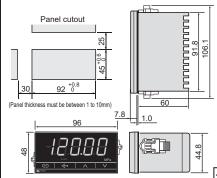
i More than 20MΩ (500V DC) between measured terminals and ground More than 20MΩ (500V DC) between power terminals and ground in 1500V AC for one minute between power terminals and ground 1500V AC for one minute between powe Dielectric voltage

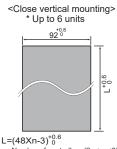
Approx. 200g -10 to +50°C (14 to 122°F) 5 to 95% RH (Non condensing) Weight Ambient temperature Ambient humidity

Ambient atmosphere Free from corrosive and flammable gas and dust.

Free from external noise, vibration, shock, and exposure to direct sunlight.

#### External Dimensions Unit: mm





n : Number of controllers (2=<n=<6)

Waterproof/dustproof is not available for close horizontal mounting.

#### Model and Suffix Code

		Model and Suffix Code		Hardware coding only Quick start code							
No.	Specifications			2	3	4	(5)	6	7	8	9 1
		PG500		;	k 🔲 ·	-0-			· 🗌		
1	Input type	Standard type Intrinsic safety type Standard type (Loose Nut: 0.0 to 0.5MPa,Fixed Nut: 0 to 5MPa) Intrinsic safety type (Loose Nut: 0.0 to 0.5MPa,Fixed Nut: 0 to 5MPa) For 3.33mV/V output type	A B C D								
2	Power supply	100 to 240V AC 24V AC/DC		4							
3	Alarm	Not supplied Number of alarm output (Specify 1 to 4)			Z						
4	Analog output	Not supplied See Analog Output Signal Code Table, Code : 1 to 8)				N					
(5)	Communication	Not supplied RS-422A RS-485					N 4 5				
6	Initial setting	No quick start code (Default setting) Specify quick start code						N 1			
7	Alarm 1	See Alarm Code Table									
8	Alarm 2	See Alarm Code Table								Ш,	_ :_
9	Alarm 3	See Alarm Code Table									_زــ
10	Alarm 4	See Alarm Code Table									

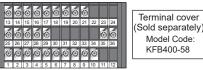
#### Analog Output Signal Code Table

Analog Output Olynai Oode						
1	0 - 10mV DC	I	7	0 - 20mA		
2	0 - 100mV DC	П	8	4 - 20mA		
3	0 - 1V DC	١.				
4	0 - 5V DC					
5	0 - 10V DC					
6	1 - 5V DC					

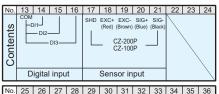
#### Alarm Code Table

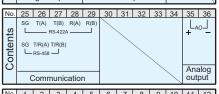
	Triaini Codo Idbio					
N	No alarm					
Н	Process High					
J	Process Low					
K	Process High with Alarm Hold					
L	Process Low with Alarm Hold					

#### Rear Terminals



Use a solderless terminal for screw size M3X6





No.	1	2	3	4	5	6	7	8	9	10	11	12
Contents	24' +	40V AC V AC V DC	l I	ALM2 NO	elay c	COM AL N	ALM4 NO	ut		CAL-		\
	Pow	er		Α	larm	outp	ut		Calibi	ration t		\





#### RoHS Compliant

#### Specifications

#### Input

Input type Input range RKC's resin pressure sensor CZ-200P (CZ-100P) a)Standard type : 0 to 19.99mV  $\,$ 

b)Safe explosion proof type: 0 to 11.6mV
• Excepting zero point adjustment range

More than  $1M\Omega$ 

Input impedance Input break action

: Up scale(The sensor power supply break is the same)

#### Sensor Power Supply

Applied voltage

: a) Standard type : 10V DC b) Safe explosion proof type : 8.2V DC : +0.1 to -0.4%

Accuracy : Less than 30ppm/°C Temperature drift

#### Zero point

Adjustment range

: a) Standard type : ±7mV (Input conversion) b) Safe explosion proof type : ±6mV (Input conversion)

Temperature drift : ±0.02%/°C of span

#### Gain

: a) Standard type : 10.00 to 19.99mV can be used as rating (10V etc.) Setting range

b) Safe explosion proof type : 5.08 to 11.60mV can be used

as rating (10V etc.)

: ±0.2%/°C of span : Less than ±100ppm/°C Setting accuracy

Temperature drift

Optional function Gain selector switch (Selection 1x/2x)

#### Output

Output signal : 0 to 10V DC (Load resistance : More than 2kΩ)

0 to 10mV DC (Load resistance : More than 10k $\Omega$ ) 1 to 5V DC (Load resistance : More than 1k $\Omega$ )

4 to 20mA DC (Load resistance : Less than 600Q)

Monitor voltage : 0 to 10V DC (Pin size of tester confirming: 2.0)

#### General Specifications

Linearity : ±0.01% of span

0.1%p-p of span (0.1 to 10Hz) 10Hz/100Hz selectable (Factory shipment : 10Hz) Response Power supply : 90 to 264V AC (Including supply voltage variation)
[Rating : 100 to 240V AC] (50/60Hz common use)
Power consumption : 100 to 240V AC : Less than 7.5VA (at 100V)

Less than 12.5VA (at 240V)

Insulation resistance : More than  $100M\Omega$  (500V DC) between input/output terminals and power terminals

More than 100M $\Omega$  (500V DC) between input/output terminals and ground More than 100M $\Omega$  (500V DC) between power terminals and ground

Dielectric voltage 2300V AC for one minute between input/output terminals and power terminals 2300V AC for one minute between input/output terminals and ground

2300V AC for one minute between power terminals and ground

: Approx 290g

Weight

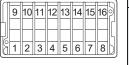
#### **Operating Environments**

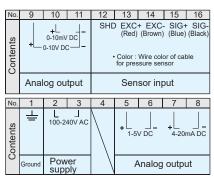
Ambient temperature: 0 to +50°C (32 to 122°F)
Ambient humidity : 45 to 85% RH (Non condensing)

Ambient atmosphere: Free from corrosive and flammable gas and dust.
Free from external noise, vibration, shock, and exposure

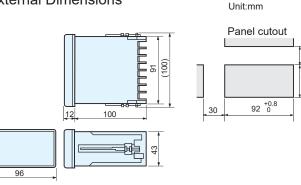
to direct sunlight.

#### Rear Terminals





#### External Dimensions



#### Model Code

• Woder Gode						
0	Model and Suffix Code					
Specifications	PCT-300					
Туре	Standard type Intrinsically safe explosion proof construction pass type    N   E					
Number of output	0 + + (0 + 40)/D0 0 + 400 1/D0)					
Option	Not supplied Gain change switch ( x1 or x2) Linearization function	N G L				

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Power supply voltage 100 to 240V DC



High-resolution inputs with a sampling cycle of 0.01 seconds and PID constants that can be set in increments of 0.01 seconds enable this controller to control process quantities that change rapidly.

Used as a set with Output Converter for Resin Pressure Sensor PCT-300



#### Intrinsically Safe Explosionproof Construction Resin Pressure Meter (For Indoor, outdoor)

The qualification No. of the intrinsically safe explosionproof construction resin pressure meter obtained from the ministry of Labor, Japan, is T55821 (For indoor use) T56658 (For outdoor use). The explosion class and ignition group of the objective gases and steam are i2G3. The qualified consists of the pressure sensor CZ-200P and safety barrier (RZB-001), but the output converter is not subject to qualification testing as a general sending/receiving instrument For indoor use, the standard connector or the waterproof connector can be selected. For outdoor use, the waterproof connector must be used.

#### Sensor Specifications

#### Standard Specifications

	Construction	4 sides adhered strain gauge type wheatstone bridge
	Rated Pressure	See Pressure range code
	Rated Output *1	1.0 to 1.8mV/V [ At 150°C of diaphragm temperature]  •SPRON, Inconel type: At 250°C
	Bridge Impressed Voltage	10V DC (at PCT-300) 7.7V DC (at PG500,REX-PG410)
	Accuracy	SUS630 type ( At At 150°C of diaphragm temperature) Within ±1% of full scale Within ±2% of full scale (Over 70 MPa ) Inconel, SPRON type: Within ±1% of full scale More than 480°C of 10,20MPa :Within ±2% of full scale HASTELLOY C type Please contact RKC agent
Specifications	Linearity	SUS630 type ( At At 150°C of diaphragm temperature) Within ±1% of full scale Within ±2% of full scale (Over 70 MPa ) Inconel, SPRON type: Within ±1% of full scale More than 480°C of 10,20MPa:Within ±2% of full scale HASTELLOY C type Please contact RKC agent
	Hysteresis	SUS630 type Within ±0.5% of full scale Within ±1% of full scale (Over 50 MPa) Within ±2% of full scale (Over 70 MPa) Within ±2% of full scale (1MPa type) Inconel, SPRON type: Within ±1.0% of full scale More than 480°C of 10,20MPa:Within ±2.0% of full scale HASTELLOY C type Please contact RKC agent
	Reproducibility	Within ±0.2% of span • Inconel, SPRON type: More than 480°C of 10,20MPa :Within ±0.4% of full scale
	Zero Balance	±0.6mV/V (Within ±40% of span
	Bridge Resistance	$350\Omega \pm 5\Omega$ (Input resistance), $350\Omega \pm 5\Omega$ (Output resistance)

	Maximum Temperature of the Diaphragm	400°C (Inconel, SPRON type: 550°C)				
S	Maximum Temperature of the Strain Gauge	200°C *2				
Temperature characteristics	Zero Point Temperature Effect • To the temperature of the diaphragm	±0.2%/10°C of span ±0.3%/10°C of span(10MPa, 150MPa) • Inconel type : ±0.3%/10°C • SPRON type : 0.1±0.2%/10°C • HASTELLOY C type : Please contact RKC agent				
Temperat	Output Temperature Effect	Output temperature effect is an equal value as zero point. • Inconel type : ±0.3%/10°C • SPRON type : 0.15±0.2%/10°C				
	Effect of Wind  • Without lead pipe cover	Within ±1% of full scale (at wind of 4m/sec)				
SS	Allowable Overload	Within 120% of span (Within 500% of 1MPa type, Within 1000% of 0.5MPa type)				
cal	Marginal Overload	Within 150% of span (Within 1000% of 1MPa type, Within 2000% of 0.5MPa type)				
ani	Lead pipe cover material	SUS630				
Mech	Marginal Overload Lead pipe cover material Recommended tightening torque	Fixed nut type: 30 N•m (300 kgf•cm), Loose nut type: 60 N•m (600 kg•cm)				
	Output effect of tightening torque	Within ±0.2% of full scale (at recommended tightening torque) • M14, PF1/4, 1/2-UNF screw type : ±1%				
+4 TI	*4.Th					

\*1 The output of each sensor becomes a specific value within the range of 1.0 to 1.8 mV/V.

\*2 When the temperature at the bottom of outer tube (nut side) is more than 180°C, the temperature at the strain gauge exceed 200°C.

If the temperature at the strain gauge exceed 200°C, the performance cannot be assured. Therefore, cover the heat source with a heat insulating material so that the above temperature does not exceed 200°C.

The temperature at the strain gauge can be expected not to rise when:

\*the long type of sensor is used or

\*the sensor is installed a slant or transversely.

If any of the above measures can be taken, take it.

External

Unit:mm

**Dimensions** 

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Optional Specifications (For indoor type only)

ioi	Sensor type	Thermocouple: K or J (Ungrounded junction, Class 2)
perature asurement sect	Temperature detection position	Thermocouple: K or J (Ungrounded junction, Class 2) Internally 2mm from a diaphragm 550°C (Thermocouple K), 450°C(Thermocouple J) Approx. 90 sec (room temperature to 100°C, 98 % response) Appropx. 100mm (Standard)
	Maximum Temperature	550°C (Thermocouple K), 450°C(Thermocouple J)
	Response time	Approx. 90 sec (room temperature to 100°C, 98 % response)
me me	Cable length	Appropx. 100mm (Standard)

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### Safety Barrier Specifications

Explosionproof construction Use rated

: Intrinsically safe explosionproof construction (i2G3)
: Power supply circuit 9V 50mA,
Signal circuit 6V 50mA,
Thermocouple circuit 6V 50mA
: 250V AC,50/60Hz,250V DC
: Wiring between the resin pressure sensor and safety

Rating for maintaining safety Allowable inductance

willing between the resin pressure sensor and safety barrier: 0.6 mH or less
Wiring between the resin pressure sensor and safety barrier: 0.1µF or less
-10 to +40°C (14 to 104°F)
45 to 85% RH (Non condensing) Allowable capacitance

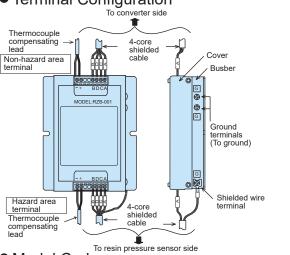
Ambient temperature Ambient humidity Cover

Busbar Ground requirement

45 to 85% RH (Non condensing)
Iron (Coating)
Brass (Nickel plating)
Ground this safety barrier so that its grounding
resistance will be less than the grounding reference
resistance value of shunt diode type safety barriers
(e.g. less than 1Ω) conforming to each national standard.
(Requirements)

Approx. 850g

#### Terminal Configuration



Model Code Specification Model Code Intrinsic Safety (For indoor) RZB-001A1 Intrinsic Safety (Built-in thermocouple circuit, For indoor) Intrinsic Safety (For outdoor) RZB-001A2

	E
• External Wiring	Hazard area  Non-hazard area  Red  Red  A  Blue  Black  B B  B B  B B  B B  B B  B B  B B  B

Specification		Model Code
Connection cable	Intrinsically safe circuit side (Hazard area) CZ-200P   RZB-001 (5m)	W-AB-YG-PB-5000
Connection capie	Non-intrinsically safe circuit side (Non hazard area) RZB-001 ← PG500,AG500 (1m) or PCT-300(1m)	W-AB-NV-DA-1000

<sup>•</sup> This product has passed the qualification test of intrinsically safe explosion proof when combined with our resin pressure sensor (CZ-100P/CZ-200P). Always combine and use this product with our resin pressure sensor.

Specifications Model and Suffix Code *2		
Ореспісацопа	CZ-200P - □ □-□ □ □-□□□ *□ □ □	- 🗆 🗆 🗆 00
Screw type	Fixed nut type PF3/8 Tip diameter: 10mm Loose nut type PF3/4 Tip diameter: 18mm Fixed nut type 1/2-20UNF Tip diameter: 7.8mm *5 U Fixed nut type PF1/2 Tip diameter: 10mm Fixed nut type PF1/4 Tip diameter: 7.8mm *5 V Fixed nut type M14X1.5 Tip diameter: 10mm *5 W	
Load-pipe length	Under nut : L=120mm • Not available for SPRON and Inconel type Under nut : L=150mm Under nut : L=180mm Under nut : L=210mm D	
Diaphragm material	SUS630 (Standard) Hastelloy C Inconel *5 SPRON Only PF3/8, PF1/2, PF3/4 threads and pressure ranges of 10, 20, 35, 50MPa are available for production. For other threads and pressure ranges, please consult the distributor.	
Diaphragm	Standard	
surface treatment Intrinsically safe	Ceramic kanigen plating • Not available for Inconel and SPRON type K  Non-intrinsic safety (Standard) Intrinsic safety (For indoor use) Intrinsic safety (For outdoor use) • Not available for built-in sensor type	
Pressure range	See Pressure Range Code Table	ļ.
Linearization function *1	Not supplied For PG500 For PCT-300 □ − □ L (PCT-300 should have linearization function)  T	 
Lead-pipe cover *3	Not supplied • Not available for Inconel and SPRON and fixed nut type With lead-pipe cover	
Cable connection connector *4	Standard connector type • Not available for Inconel and SPRON type  Waterproof, connector type, equivalent to IP67 (Not available for built-in sensor type or Inconel and SPRON type)  waterproof, direct connection type, equivalent to IP67  N P Q	1
Temperature sensor	Not supplied K type thermocouple (Not available for waterproof connector) J type thermocouple (Not available for waterproof connector)	N   K   J
Thermocouple lead length	Standard 100mm (Possible to specify by each 100mm. Maximum 2.5m.)	□□00

- \*1 : Linearization function is not available for pressure range of 0 70MPa or more, hastelloy C diaphragm .
- \*2 : The model code after " \* " is not necessary if there is no option specified after " \* ".
- \*3 : For a fixed nut type with a Inconel and SPRON diaphragm, the lead-pipe cover is always included.
- \*4 : For SUS630 and Hastelloy C diaphragms, they come with silicone-coated cables. The standard cable length is 3m, but 0.5m or 1m is available. For Inconel and SPRON diaphragms, they come with flexible tube-coated cables. The standard cable length is 0.5m, but 1m or 3m is available.
- \*5 : For Inconel diaphragms, 1/2-20UNF threads, PF1/4 threads, and M14×1.5 threads are custom-made products. Please contact RKC agent.

#### Pressure Range Code Table # ( ): Range code

Specifications	Range
Fixed nut type	0 to 10MPa (010P), 0 to 20MPa (020P), 0 to 35MPa (035P), 0 to 50MPa (050P), 0 to 70MPa (070P), 0 to 100MPa (100P), 0 to 150MPa (150P)*1
Loose nut type	0 to 1MPa (001P), 0 to 2MPa (002P), 0 to 3MPa(003P), 0 to 5MPa (005P), 0 to 10MPa (010P), 0 to 20MPa (020P), 0 to 35MPa (035P), 0 to 50MPa (050P),
Loose nut type	0 to 70MPa (070P), 0 to 100MPa (100P)

- # The maximum pressure range for Hastelloy C diaphragms is 100MPa. The maximum pressure range for Inconel diaphragms is 50MPa.
  - Inconel diaphragms with 70MPa and 100MPa are custom-made products. Please contact RKC agent.
  - Loose nut type 0.5MPa (D05P) and fixed nut type 5MPa (005P) can be custom-made. Please contact RKC agent.
  - (Rated output of 0.5 to 0.9mV/V requires a dedicated amplifier and has different specifications.)
  - The minimum pressure range for Hastelloy C and Inconel diaphragms is 10MPa.

#### Cable for Thermocouple

Specifications		Model Code	
Compensation wire	CZ-200P ← Temperature controller/Indicator (Length : 5m)	h : 5m) Type K	W-BL-K2EXA-TMA-Y3-5000
(Stainless steel shielded cable)	CZ-200F \	Type J	W-BL-J2EXA-TMA-Y3-5000

#### Cable for Pressure For cables with specifications other than those below, please Please consult with RKC

Specifications		Model Code
Standard Type	CZ-200P PG500 or PCT-300 (Length : 5m) : Y-shaped terminal lugs (M3)	W-AB-N□-PA-5000

The letter in the \_\_ indicates the cable coating type. Select from the three types below.

G: Heat-resistant glass coated cable, V: Vinyl coated cable, S: Silicon coated cable



- Before operating this product, read the instruction manual carefully to avoid incorrect operation.
- This product is intended for use with industrial machines, test and measuring equipment. It is not designed for use with medical equipment.
- equipment. It is not designed for use with medical equipment.

   If it is possible that an accident may occur as a result of the failure of the product or some other abnormality, an appropriate independent protection device must be installed.

Caution for the export trade
All transactions must comply with laws, regulations, and treaties.
Caution for imitated products

As products imitating our product now appear on the market, be careful that you don't purchase these imitated products. We will not warrant such products nor bear the responsibility for any damage and/or accident caused by their use.



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