

# CZ-200P REX-PG410 PCT-300



Resin pressure sensor : CZ-200P



Resin pressure indicator : REX-PG410



Output converter : PCT-300

## General Description

RKC's resin pressure measuring system is suitable for monitoring and control of resin pressure for extruders.

The combination of resin pressure sensor (CZ-200P), the resin pressure indicator (REX-PG410), the output converter (PCT-300) and process controller (REX-G9) contributes to the improvement of productivity and quality of products.

The CZ-200P has new features such as built-in thermocouple while retaining high reliability of CZ-100P. The features of CZ200P includes: a wide selection of screw type, UNF, PF and M14/16 type screws, Low pressure type (0 to 0.5MPa, 0 to 1MPa), built-in thermocouple.

A push-rod method is used in CZ-200P. There is no risk of contamination in case of accident, so CZ-200P suits food processing application.

## Features

### Resin Pressure Sensor CZ-200P

- ☆ The total loop accuracy of 0.5%  
(combination with RKC converter)
- ☆ High reliability and stability
- ☆ Wide selection of the range from 1MPa to 150MPa
- ☆ Various screw types, UNF, PF and M14/16
- ☆ Optional built-in thermocouple

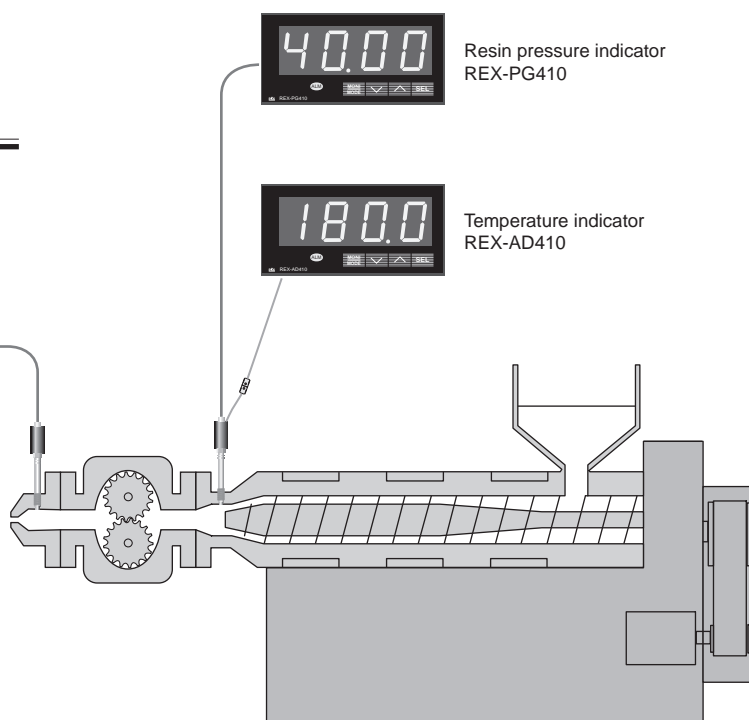
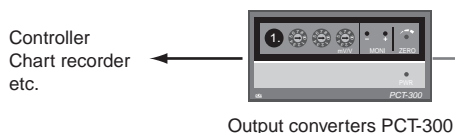


### Resin Pressure Indicator REX-PG410

- ☆ Easy-to-read large LED (20mm high)
- ☆ Peak and bottom hold function (Memorization of the maximum and minimum measured value)
- ☆ 100msec sampling cycle time
- ☆ Optional communication (RS422A/RS-485), retransmission output, up to two alarms

### Output Converter PCT-300

- ☆ Signal converter for CZ-200P
- ☆ Up to four analog outputs
- ☆ Linearization function



## Specifications

### Resin Pressure Sensor CZ-200P

#### Construction

4 sides adhered strain gauge type wheatstone bridge

#### Rated pressure

General specification: 0 to 10, 0 to 20, 0 to 35, 0 to 50, 0 to 70 MPa  
0 to 100 MPa  
High pressure type : 0 to 150 MPa (CZ-200P-H type only)  
Low pressure type : 0 to 1, 0 to 5 MPa (CZ-200P-L type only)

Rated output : 1.4mV/V  $\pm$  28%

Bridge impressed voltage : 7 V DC

Accuracy : Within  $\pm$ 1% of full scale  
Within  $\pm$ 2% of full scale (Over 100 MPa)  
• At 150°C of diaphragm temperature.  
(CZ-200P-HK type is 250°C.)

Allowable maximum temperature of the diaphragm : 400°C

Allowable maximum temperature of the strain gauge : 150°C

#### Zero point temperature effect

$\pm$ 0.2%/10°C (To the temperature of the diaphragm) of full scale  
 $\pm$ 0.3%/10°C (To the temperature of the diaphragm) of full scale  
• Only for over 100MPa or CZ-200P-H type with the range of 0 to 10 MPa.

#### Output temperature effect

Output temperature effect is an equal value as zero point temperature effect.

Allowable overload : Within 120% of rated pressure  
Within 500% of rated pressure (1MPa type)

Marginal overload : Within 150% of rated pressure  
Within 1000% of rated pressure (1MPa type)

#### Temperature sensor function

Sensor type : Thermocouple : K or J ( Ungrounded junction )  
Cable length : 100mm (Standard, Maximum length 1 m )  
Temperature detection position : Internally 2mm from a diaphragm

### Resin Pressure Indicator REX-PG410

#### Input

RKC's resin pressure sensor CZ-200P (CZ-100P)

Sampling time : 0.1 sec.

#### Performance

Measuring accuracy :  $\pm$  (0.1% of full scale + 1 digit)

#### < Standard function >

##### Contact input

Number of input : 2 points, Non-voltage contact input  
Function : Reset of auto-zero and hold

##### Hold function

Peak hold : Holds maximum pressure value  
Bottom hold : Holds minimum pressure value  
The held value is initialized by the power-off or reset operation.

#### < Optional function >

##### Analog output

Number of point : 1 point (PV value)  
Output signal : 0 to 5V DC, 1 to 5V DC, 0 to 10V DC, 0 to 10mV DC  
4 to 20mA DC, 0 to 20mA DC  
Load resistance : More than 1k $\Omega$  for voltage output  
Less than 600 $\Omega$  for current output  
Output accuracy :  $\pm$  0.3% of span

##### Alarm output

Number of point : 2 points  
Alarm action : High or low alarm (Available for hold function)  
Output : Relay output, Form A contact, 250V AC 1A  
(resistive load)

##### Digital communications

Communication method : RS-422A (4-wire), RS-485 (2-wire)  
Communication speed : 1200, 2400, 4800, 9600, 19200 BPS  
Bit format  
Start bit : 1  
Data bit : 7 or 8  
Parity bit : Without, Odd or Even  
Stop bit : 1 or 2  
Communication code : ASCII(JIS) 7-bit code

#### < General Specifications >

External Dimensions (W x H x D)  
96 x 48 x 100mm

#### Supply voltage

- 90 to 264V AC (Including supply voltage variation)  
[Rating : 100 to 240V AC] (50/60Hz common use)
- 21.6 to 26.4V AC (Including supply voltage variation)  
[Rating : 24V AC] (50/60Hz common use)
- 21.6 to 26.4V DC (Ripple rate 10% p-p or less)  
[Rating : 24V DC]

#### Power consumption

Less than 12VA (100 to 240V AC)  
Less than 7.5VA (24V AC)  
Less than 200mA (24V DC)

#### Operating environments

0 to 50°C [32 to 122°F] , 45 to 85% RH

#### Net weight

Approx. 300g

### Output Converter PCT-300

#### Input

RKC's resin pressure sensor CZ-200P (CZ-100P)

#### Gain setting

Setting range : 10.00 to 19.99 mV/V  
Setting accuracy : Within  $\pm$ 0.2% of full scale

#### Output

Number of points : Up to 4 points (standard : 2 points)

#### Output signal

No.1 output : 0 to 10V DC (Load resistance : More than 2k $\Omega$ )  
No.2 output : 0 to 10mV DC (Load resistance : More than 10k $\Omega$ )  
No.3 output : 1 to 5V DC (Load resistance : More than 1k $\Omega$ )  
No.4 output : 4 to 20mA DC (Load resistance : Less than 600 $\Omega$ )

#### < General Specifications >

External Dimensions (W x H x D)  
96 x 48 x 100mm

#### Supply voltage

90 to 264V AC (Including supply voltage variation)  
[Rating : 24V DC]

#### Power consumption

Less than 10VA (100 to 240V AC)

#### Operating environments

0 to 50°C [32 to 122°F] , 45 to 85% RH

#### Net weight

Approx. 290g

## Model and Suffix Code

### ■ CZ-200P

Specifications	Model and Suffix Code									
Model	CZ-200P - □ □ □ □ □ N - □ □ □ □ □ □ □ □ 0100									
Screw type	Fixed nut type PF3/8	Tip diameter : 10mm	H							
	Loose nut type PF3/4	Tip diameter : 18mm	L							
	Fixed nut type 1/2-20UNF	Tip diameter : 7.8mm	U							
Load-pipe length	Fixed nut type Under nut : L= 120mm		A							
	Fixed nut type Under nut : L= 150mm		B							
	Fixed nut type Under nut : L= 180mm		C							
	Fixed nut type Under nut : L= 210mm		D							
Diaphragm material	SUS630 (Standard)		S							
	Hastelloy C		H							
Diaphragm surface treatment	SUS630 (Standard)		N							
	Ceramic kanigen plating		K							
Intrinsically safe	Non-intrinsic safety (Standard)					N				
Pressure range	See pressure range code table below									
Linearization function	Not supplied									
	For REX-PG410 (Available for PG410 with S/N 98A □□□□□ or later.) For PCT-300□-□L (PCT-300 should have linearization function)									
Lead-pipe cover	Not supplied									
	With lead-pipe cover									
Waterproof function	Not supplied									
	Waterproof, connector type, equivalent to IP67 (Not available for built-in sensor type) Waterproof, direct connection type, equivalent to IP67 (Not available for built-in sensor type)									
Temperature sensor	Not supplied									
	K type thermocouple J type thermocouple									
Thermocouple lead length	Standard 100mm (Possible to specify by each 100mm. Maximum 1m.)									
										0100

- When a thermocouple is not supplied, the lead length is not necessary to be specified.
- The model code after "\*" is not necessary if there is no option specified after "\*".

### Pressure range code table

Code	Specifications
001P	0 - 1 MPa
005P	0 - 5 MPa
010P	0 - 10 MPa
020P	0 - 20 MPa
035P	0 - 35 MPa
050P	0 - 50 MPa
070P	0 - 70 MPa
100P	0 - 100 MPa
150P	0 - 150 MPa

- For pressure range of 0 - 5MPa or less, only the loose nut type (L type) is available.
- For pressure range of 0 - 150MPa, only the fixed nut type (H type) is available.
- For pressure range of 0 - 0.5MPa with loose nut and the range of 0 - 5MPa with fixed nut, please contact RKC agent.
- kgf/cm<sup>2</sup> type is available. Please contact RKC agent.

### Cable for pressure

Specifications	Model and Suffix Code
Heat-resistant glass coated cable : Standard 5 m	W - AB - NG - PA - 5000
Vinyl coated cable : Standard 5 m	W - AB - NV - PA - 5000
Silicon coated cable : Standard 5 m	W - AB - NS - PA - 5000

### Cable for thermocouple

Specifications	Model and Suffix Code
For type K thermocouple : Standard 5 m	W - BL - KA - DA - 005000
For type J thermocouple : Standard 5 m	W - BL - JA - DA - 005000

### ■ REX-PG410

Specifications	Model and Suffix Code									
Model	REX-PG410 A □ * □ □ □ □ □ □ □ □									
Input type	Standard type	A								
Power supply	100 to 240V AC	4								
	24V AC/DC	3								
Alarm 1	No alarm					N				
	See alarm code table					□				
Alarm 2	No alarm					N				
	See alarm code table					□				
Analog output	Not supplied					N				
	See analog output code table					□				
Communications	Not supplied								N	
	RS-422A (4-wire)								4	
	RS-485 (2-wire)								5	

### Alarm code table

Code	Specifications
H	Process high alarm
J	Process low alarm
K	Process high alarm with hold
L	Process low alarm with hold

### Analog output code table

Code	Specifications
1	0 - 10mV DC
4	0 - 5V DC
5	0 - 10V DC
6	1 - 5V DC
7	0 - 20mA DC
8	4 - 20mA DC

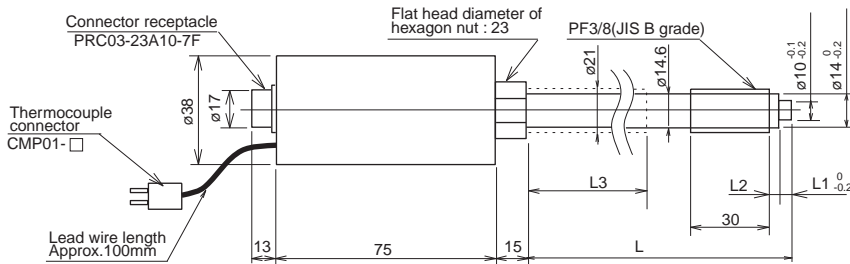
### ■ PCT-300

Specifications	Model and Suffix Code									
Model	PCT-300 N - □ □ □ □ □ □ □ □									
Type	Standard type									
Number of output	2 outputs (0 to 10V DC, 0 to 100mV DC)									
	3 outputs (0 to 10V DC, 0 to 100mV DC, 1 to 5V DC)									
	4 outputs (0 to 10V DC, 0 to 100mV DC, 1 to 5V DC, 4 to 20mA DC)									
Option	Not supplied									
	Gain change switch ( x1 or x2) Linearization function									
										No symbol G L

## External Dimensions

(Unit : mm)

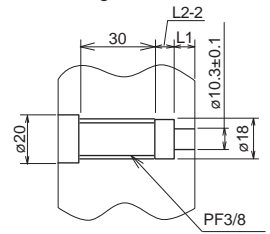
### ■ For fixed nut type (CZ-200P-H type)



⋯ Dotted-line section : Dimensions of lead-pipe cover (Option)

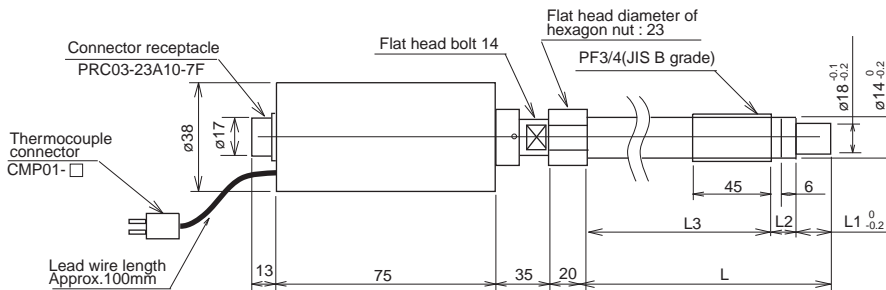
Standard dimensions				
	L	L1	L2	L3
HA	120	8	6	60
HB	150	8	6	90
HC	180	8	6	120
HD	210	8	6	150

Mounting hold



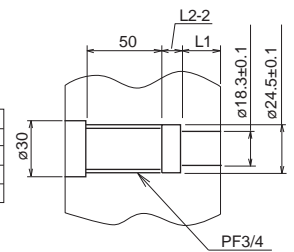
- Element finished to JIS B grade. Install the sensor so that each screw is smoothly inserted.

### ■ For loose nut type (CZ-200P-L type)



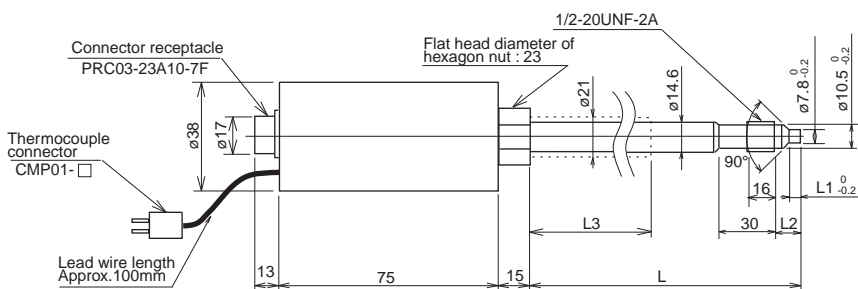
Standard dimensions				
	L	L1	L2	L3
LA	120	20	10	90
LB	150	20	10	120
LC	180	20	10	150
LD	210	20	10	180

Mounting hold



- Element finished to JIS B grade. Install the sensor so that each screw is smoothly inserted.

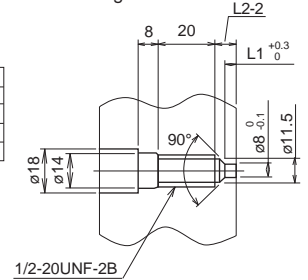
### ■ For fixed nut type unified thread (CZ-200P-U type)



⋯ Dotted-line section : Dimensions of lead-pipe cover (Option)

Standard dimensions				
	L	L1	L2	L3
UA	120	5.4	12	60
UB	150	5.4	12	90
UC	180	5.4	12	120
UD	210	5.4	12	150

Mounting hold



- Install the sensor so that each screw is smoothly inserted.