

PRESSURE SENSOR

CZ-100P Resin Pressure Sensor



RoHS 指令対応

As one of quality control method for products made by extrusion molding is a method of unifying the resin extruding pressure. The resin sensor (CZ-100P) is used to detect the resin extruding pressure.

CZ-100P



Resin Pressure Sensor

RoHS Compliant

PG500



Resin Pressure Indicator

RoHS Compliant

HA930



Resin Pressure Controller

RoHS Compliant

PCT-300



Output Converter for Resin Pressure Sensor

RoHS Compliant

Features

CZ-100P

The CZ-100P pressure sensor is a push rod lead-type sensor and thus there is no concern of resin contamination, even if a diaphragm rupture occurs.

Resin Pressure Sensor

PG500

Easy-to-read large LED
100msec sampling cycle time
Optional communication (RS422A/RS-485), retransmission output, up to two alarms

Resin Pressure Indicator

HA930

Strain gauge input type
Ultra High Speed Sampling 0.025 sec
7 inputs and 5 outputs
Two Channels in One Controller

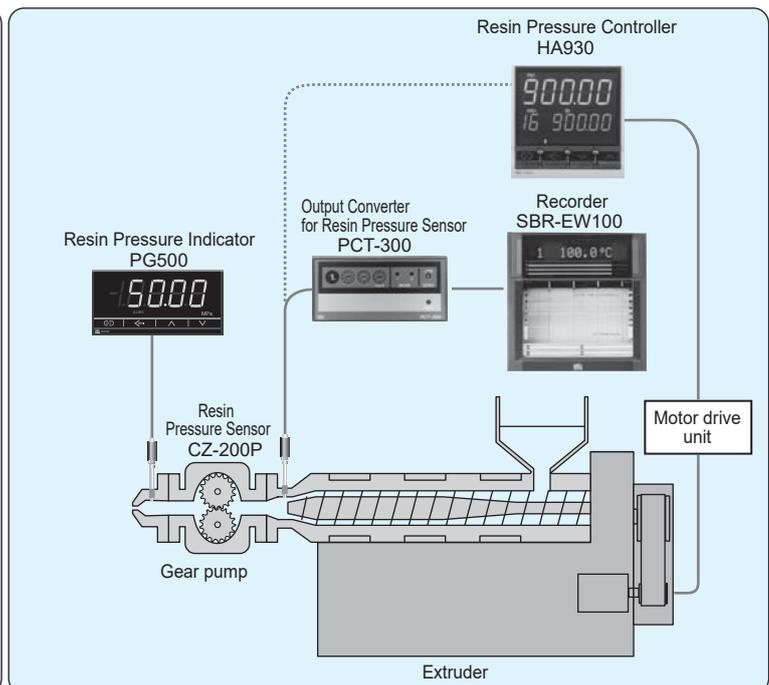
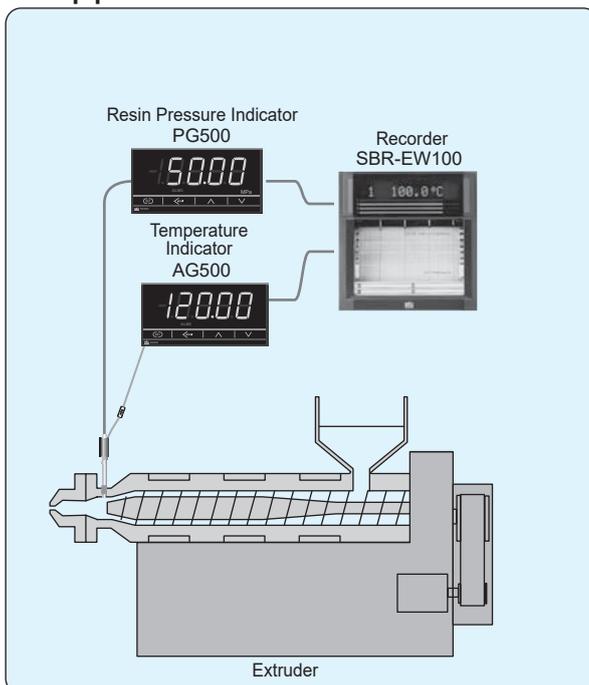
Resin Pressure Controller

PCT-300

Signal converter for CZ-100P
Up to four analog outputs
Linearization function

Output Converter for Resin Pressure Sensor

Applications

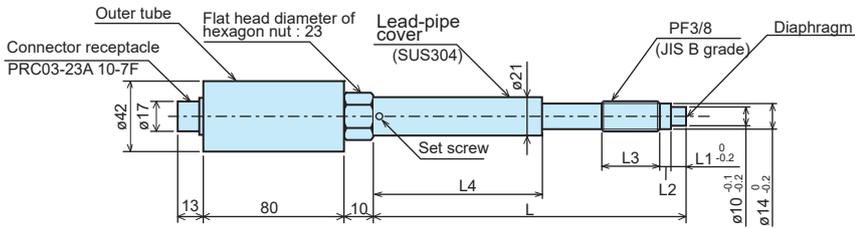


CZ-100P

Resin Pressure Sensor

External Dimensions and Mounting Hole

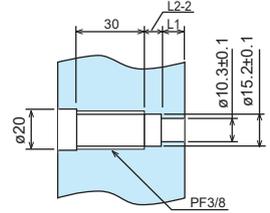
For fixed nut type **CZ-100P-HB** / **CZ-100P-HC** Measuring Range : 0 to 20, 0 to 35, 0 to 50, 0 to 70, 0 to 100MPa



Standard dimensions and weight

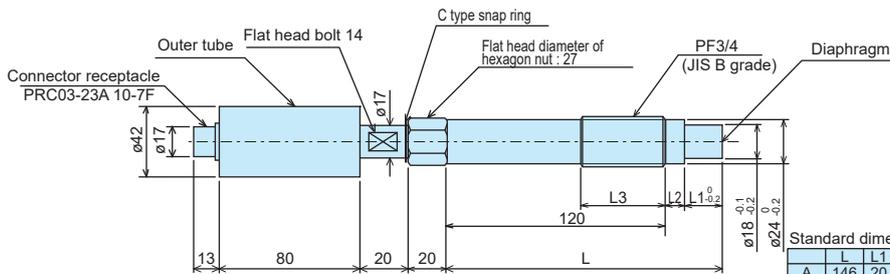
	L	L1	L2	L3	L4	Weight
HB	150	8	4	30	90	Approx.650g
HC	180	8	4	30	120	Approx.700g

Mounting hole (Unit : mm)



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

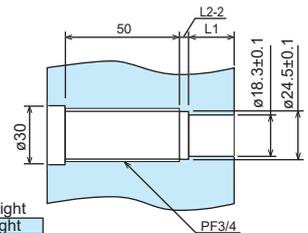
For loose nut type **CZ-100P-HL** / **CZ-100P-LL** Measuring Range : 0 to 20, 0 to 35, 0 to 50, 0 to 70, 0 to 100MPa
Measuring Range : 0 to 5, 0 to 10MPa



Standard dimensions and weight

	L	L1	L2	L3	Weight
A	146	20	6	45	Approx.0.9kg
B	195	20	55	45	Approx.1.0kg
C	250	20	110	45	Approx.1.2kg

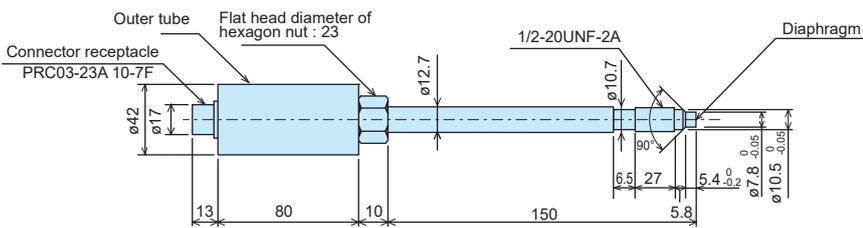
Mounting hole (Unit : mm)



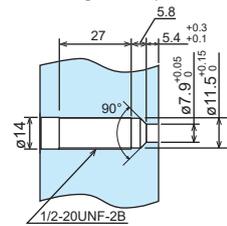
• Element finished to JIS B grade.
Install the sensor so that each screw is smoothly inserted.

For fixed nut type **CZ-100P-HZ** (YICZ100P24) Measuring Range : 0 to 20, 0 to 35, 0 to 50, 0 to 70, 0 to 100MPa

Order drawing No YICZ100P24

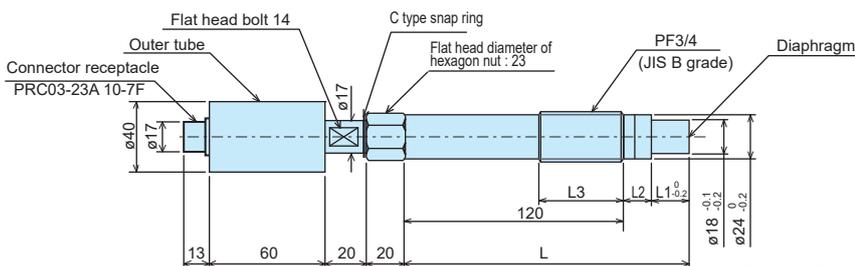


Mounting hole (Unit : mm)



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

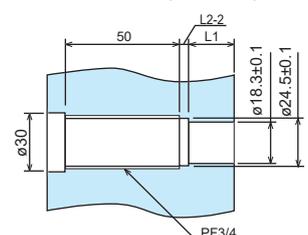
For loose nut type **CZ-100P-LLA** Low pressure type Measuring Range : 0 to 0.5, 0 to 1MPa



Standard dimensions and weight

	L	L1	L2	L3	Weight
LLA	146	20	6	45	Approx.0.9kg

Mounting hole (Unit : mm)



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

PCT-300

Output Converter for Resin Pressure Sensor



Green RoHS Compliant

Specifications

Input

Input type : RKC's resin pressure sensor GZ-200P (CZ-100P)
 Input range : a) Standard type : 0 to 19.99mV
 b) Safe explosion proof type : 0 to 11.6mV
 • Excepting zero point adjustment range
 Input impedance : More than 1MΩ
 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
 Accuracy : +0.1 to -0.4%
 Temperature drift : Less than 30ppm/°C

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

Setting range : a) Standard type : 10.00 to 19.99mV can be used as rating (10V etc.)
 b) Safe explosion proof type : 5.08 to 11.60mV can be used as rating (10V etc.)
 Setting accuracy : ±0.2%/°C of span
 Temperature drift : Less than ±100ppm/°C
 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 10kΩ)
 1 to 5V DC (Load resistance : More than 1kΩ)
 4 to 20mA DC (Load resistance : Less than 600Ω)
 Monitor voltage : 0 to 10V DC (Pin size of tester confirming: 2.0)

General Specifications

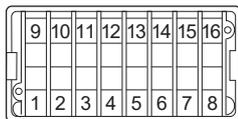
Linearity : ±0.01% of span
 Noise : 0.1%p-p of span (0.1 to 10Hz)
 Response : 10Hz/100Hz selectable (Factory shipment : 10Hz)
 Power supply : 90 to 264V AC (Including supply voltage variation)
 [Rating : 100 to 240V AC] (50/60Hz common use)
 Power consumption : 100 to 240V AC : Less than 7.5VA (at 100V)
 Less than 12.5VA (at 240V)

Insulation resistance : More than 100MΩ (500V DC) between input/output terminals and power terminals
 More than 100MΩ (500V DC) between input/output terminals and ground
 More than 100MΩ (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
 Weight : Approx 290g

Operating Environments

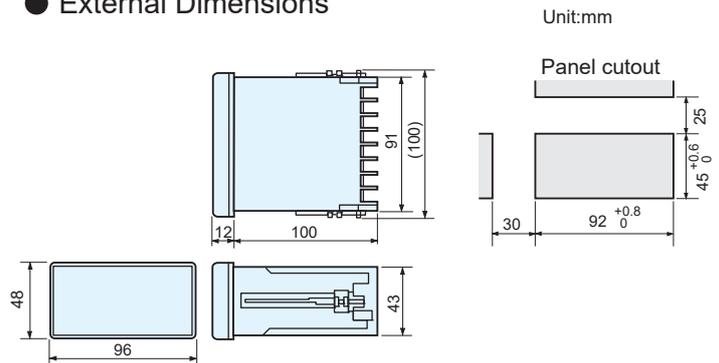
Ambient temperature : 0 to +50°C (32 to 122°F)
 Ambient humidity : 45 to 85% RH (Non condensing)
 Ambient atmosphere : Free from corrosive and flammable gas and dust.
 Free from external noise, vibration, shock, and exposure to direct sunlight.

Rear Terminals



No.	9	10	11	12	13	14	15	16
Contents				SHD EXC+ EXC- SIG+ SIG- (Red) (Brown) (Blue) (Black)				
	Analog output			Sensor input				
	* Color : Wire color of cable for pressure sensor							
No.	1	2	3	4	5	6	7	8
Contents								
	Power supply		Ground		Analog output			

External Dimensions



Model Code

Specifications	Model and Suffix Code			
	PCT-300			
Type	Standard type			
	Intrinsically safe explosion proof construction pass type	N	E	
Number of output	2 outputs (0 to 10V DC, 0 to 10mV DC)	2	3	4
	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)			N
	Linearization function			G
				L

Power supply voltage | 100 to 240V DC

HA930

Resin Pressure Digital Controller
 (Strain Gauge Input Type)



High-resolution inputs with a sampling cycle of 0.025 seconds and PID constants that can be set in increments of 0.01 seconds enable this controller to control process quantities that change rapidly. A strain gauge type pressure sensor can be directly connected.

Intrinsic Safety

Intrinsically Safe Explosion proof Construction Resin Pressure Meter (For Indoor, outdoor)

The qualification No. of the intrinsically safe explosion proof 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-100P 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

Construction	: 4 sides adhered strain gauge type wheatstone bridge
Rated Pressure	: Fixed Nut type 20MPa, 35MPa, 50MPa, 70MPa, 100MPa Loose Nut type (LL type) 5MPa, 10MPa Loose Nut type (HL type) 20MPa, 35MPa, 50MPa, 70MPa, 100MPa Loose Nut type (LLA type) 0.5MPa, 1MPa
Rated Output	: 1.0 to 1.8mV/V [At 150°C of diaphragm temperature] (LLA type 1MPa : 1.0 to 1.6mV/V, LLA type 0.5MPa : 0.5 to 0.8mV/V)
Bridge Impressed Voltage	: 10V DC (at PCT-300, CT-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) HASTELLOY C type Contact to RKC
Linearity	: SUS630 type (At At 150°C of diaphragm temperature) Within ±1% of full scale Within ±2% of full scale (Over 70 MPa) HASTELLOY C type Contact to RKC
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 ±0.2% of full scale (1MPa type) HASTELLOY C type Contact to RKC
Reproducibility	: Within ±0.2% of span • More than 480°C of 10, 20MPa : Within ±2% of full scale
Zero Balance	: ±0.6mV/V (Within ±40% of span)
Bridge Resistance	: 374Ω±5Ω (Input resistance), 350Ω±5Ω (Output resistance)

● Temperature characteristics

Maximum Temperature of the Diaphragm	: 400°C
Maximum Temperature of the Strain Gauge	: 150°C
Zero Point Temperature Effect	: SUS630 type ±0.2%/10°C ±0.4%/10°C (0.5MPa) HASTELLOY C type : Contact to RKC

* When the temperature at the bottom of outer tube (nut side) is more than 134°C, the temperature at the strain gauge exceed 150°C. If the temperature at the strain gauge exceed 150°C, the performance cannot be assured. Therefore, cover the heat source with a heat insulating material so that the above temperature does not exceed 150°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.

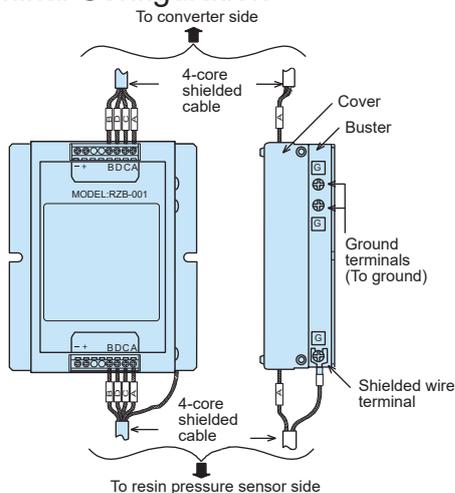
● Mechanical characteristics

Allowable Overload	: Within 120% of span (Within 500% of 1MPa type, Within 1000% of 0.5MPa type)
Marginal Overload	: Within 150% of span (Within 1000% of 1MPa type, Within 2000% of 0.5MPa type)
Recommended tightening torque	: Fixed nut type: 30 N·m (300 kgf·cm) Loose nut type: 60 N·m (600 kgf·cm)

● Safety Barrier Specifications

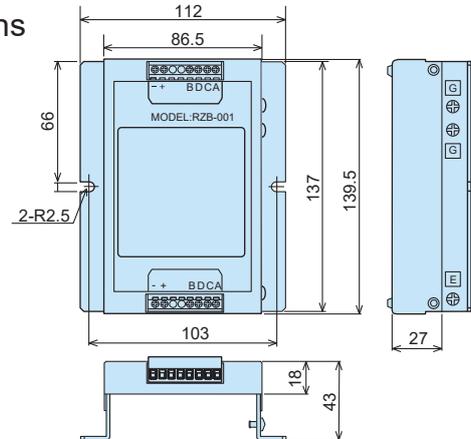
Explosion proof construction	: Intrinsically safe explosion proof construction (i2G3)
Use rated	: Power supply circuit 9V 50mA, Signal circuit 6V 50mA, Thermocouple circuit 6V 50mA
Rating for maintaining safety	: 250V AC, 50/60Hz, 250V DC : Wiring between the resin pressure sensor and safety barrier : 0.6 mH or less
Allowable inductance	: Wiring between the resin pressure sensor and safety barrier : 0.1μF or less
Allowable capacitance	: -10 to +40°C (14 to 104°F)
Ambient temperature	: 45 to 85% RH (Non condensing)
Ambient humidity	: Iron (Coating)
Cover	: Brass (Nickel plating)
Bus bar	: 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
Ground requirement	
Weight	

● Terminal Configuration

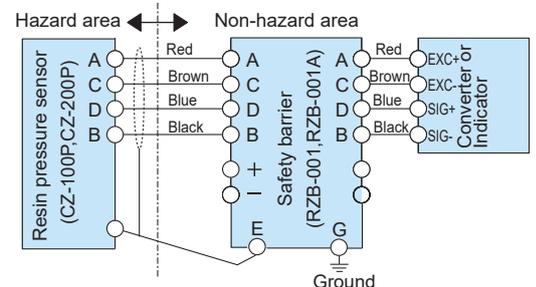


● External Dimensions

Unit:mm



● External Wiring



● Model Code

Specification	Model Code
Intrinsic Safety (For indoor)	RZB-001A1
Intrinsic Safety (For outdoor)	RZB-001A2

Specification	Model Code
Intrinsically safe circuit side (Hazard area) CZ-100P ↔ RZB-001 (5m)	W-AB-Y \square -PB-5000
Non-intrinsically safe circuit side (Non hazard area) RZB-001 ↔ AG500 (1m) or PCT-300(1m)	W-AB-N \square -BA-1000

* 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.

Model and Suffix Code

Specifications	Model and Suffix Code			
	CZ-100P - <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Screw type	Standard Type Fixed nut type PF3/8 Tip diameter : 10mm, Under nut : L=150mm PF3/8 Tip diameter : 10mm, Under nut : L=180mm 1/2-20UNF Tip diameter : 7.8mm, Under nut : L=150mm *1 Nonstandard size	HB		
	Loose nut type (0 to 20, 0 to 35, 0 to 50, 0 to 70, 0 to 100MPa) PF3/4 Tip diameter : 18mm, Under nut : L=146mm, L2=6mm Nonstandard size Loose nut type (0 to 5, 0 to 10MPa) PF3/4 Tip diameter : 18mm, Under nut : L=146mm, L2=6mm Nonstandard size	HL HLZ		
	Low pressure type (0 to 1MPa) Loose nut type (0 to 20, 0 to 35, 0 to 50, 0 to 70, 0 to 100MPa) PF3/4 Tip diameter : 18mm, Under nut : L=146mm, L2=6mm	LL LLZ		
Diaphragm material	SUS630 (Standard) Hastelloy C		S H	
Diaphragm surface treatment	Standard Ceramic kanigen plating			N K
Intrinsically safe	Non-intrinsic safety (Standard) Intrinsic safety (For indoor use) Intrinsic safety (For outdoor use)			No symbol G H

*1 Please specify Drawing No.YICZ100P24

• Please specify pressure range.

Pressure Range Code Table

Specifications	Range
Fixed nut type	0 to 20MPa, 0 to 35MPa, 0 to 50MPa, 0 to 70MPa, 0 to 100MPa
Loose nut type	CZ-100P-HL 0 to 20MPa, 0 to 35MPa, 0 to 50MPa, 0 to 70MPa, 0 to 100MPa
	CZ-100P-LL 0 to 5MPa, 0 to 10MPa
	CZ-100P-LLA 0 to 1MPa

Cable

· For cables with specifications other than those below, please contact RKC agent.

Specifications			
Standard Type	CZ-100P ←→ PG500 (Length : 5m) : Y-shaped terminal lugs (M3) PCT-300 (Length : 5m) : Y-shaped terminal lugs (M3)	Heat-resistant glass coated cable	W - AB - N <input type="checkbox"/> - PA - 5000
		Silicon coated cable	W - AB - N <input type="checkbox"/> - PA - 5000
	CZ-100P ←→ CT-300 (Length : 5m) : Plug	Heat-resistant glass coated cable	W - AB - N <input type="checkbox"/> - PP - 5000
		Silicon coated cable	W - AB - N <input type="checkbox"/> - PP - 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

 <ul style="list-style-type: none"> • 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. • 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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