

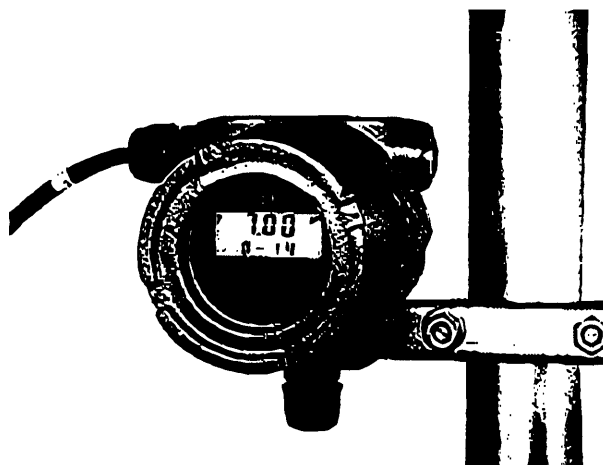
## CP SERIES 2-WIRE TYPE PH ANALYZER/TRANSMITTER Model: PCP-20T/SPCP-20T

### FEATURES

- Rigid aluminium enclosure and free angle mounting.
- Simple operation offers free measurement range setting, auto-calibration and self-diagnostics for electrode, using built-in microprocessor.
- Front operation and front wiring access.
- Intrinsically safe with IEC (Ex) approval (Model SPCP-20T). Certification No. C12661~C 12664.

### STANDARD SPECIFICATIONS

<b>Product Name</b>	: pH Analyzer/Transmitter.
<b>Model</b>	: PCP-20T (general purpose). SPCP-20T (intrinsically safe).
<b>Measurement Object</b>	: pH value of solution.
<b>Measurement Method</b>	: Glass electrode.
<b>Measurement Display Range</b>	: pH; 0~14pH mV; -600~+600mV Temp.; 0~100°C (display only).
<b>Indication</b>	: LCD digital indication.
<b>Transmission Output</b>	: 2-wire system, 4~20mA DC, isolated.
<b>Max. Load Resistance</b>	: PCP-20T; 50 x (power supply voltage) - 450(Ω) 750Ω with 24V DC power supply. SPCP-20T; 50 x (power supply voltage) - 860(Ω) 340Ω with 24V DC power supply.
<b>Output Range</b>	: 0~14pH.
<b>Power Supply</b>	: PCP-20T; 24V DC operational within 9~30V DC, depending on load resistance. SPCP-20T; 24V DC operational within 7.2~27V DC, depending on load resistance.
<b>Power Consumption</b>	: 0.6VA.
<b>Repeatability</b>	: Within ±0.02pH (by equivalent input).
<b>Linearity (Display)</b>	: Within ±0.03pH (by equivalent input).
<b>Linearity (Output)</b>	: Within ±0.5%FS for span width greater than 5pH. : Within ±0.6%FS for span width less than 5pH (by equivalent input).
<b>Calibration</b>	: One-touch calibration with stability check.
<b>Temp. Compensation Range</b>	: 0~100°C
<b>Ambient Temperature</b>	: -20~55°C
<b>Ambient Humidity</b>	: 99% RH or less.
<b>Enclosure</b>	: IP 65.
<b>Mounting</b>	: 50A (2 inches, 60.5mm O.D) pipe mount or wall mount.
<b>Cable Entry</b>	: NPT 1/2", 3 ports
<b>Material</b>	: Main body...Aluminium alloy casting. Window... Glass.



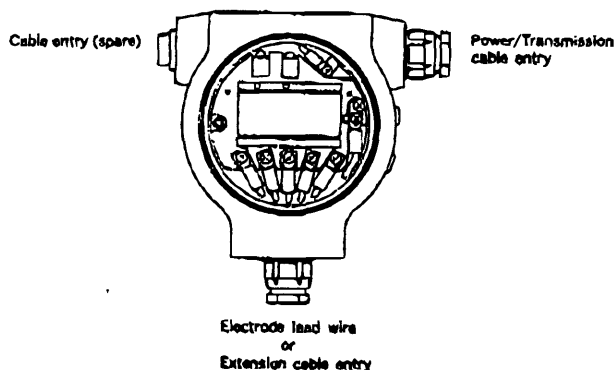
<b>Colour</b>	: Blue.
<b>Weight</b>	: Approx. 2kg.
<b>Options</b>	: Sunshade is available for protection from direct sunlight (for 2" pipe mount installation).

### KEY FUNCTIONS

- **pH value shift**  
Measured pH value can be offset by ± 1pH from actual pH measured value if necessary.
- **Manual temperature compensation**  
Manual temperature compensation can be carried out by additional variable resistor for transmitters combined with pH electrodes that do not have a temperature sensor.  
Compensation range is 0~100°C.
- **Temperature compensation for sample pH value**  
Temperature compensation for temperature coefficient of sample solutions such as pure water or boiler feed water.  
Compensation setting range ...± 0.100pH /°C.
- **Self diagnostics function**  
Output signal can be shifted to upper or lower limit under the following alarm conditions:  
Cracked or broken glass membrane.  
Cut or shorted temperature sensor or lead.  
Hardware failure.  
Data error.
- **Measure / Maintenance mode selection**  
When under maintenance mode, the display indicates measured sample pH value and the output is held at a pre-determined value, dummy value or actual measured value (user selectable).

**Note**

When junction box is applied to extend the electrode lead wire, extension cable (Model EC-10) is recommended. Electrode lead wire and extension cable should be run separately from noise sources such as power lines.



**OPTIONAL ACCESSORIES**

Power units and combined meter-relay/power units are available from DKK-TOA. To be specified when placing order.

- 1) Power Unit**
- Model : PA-24
  - Output Voltage Rating : 24V DC  $\pm$  1V
  - Output Current Rating : 2~22mA (not suitable for parallel connection of two instruments).
  - Power Requirements : Specify one of the following: 100V, 110V, 115V, 120V, 200V or 220V AC  $\pm$  10% 50 / 60Hz.
  - Ambient Temperature : -5~55°C.
  - Construction : Indoor use, plug in type.
  - Weight : Approx. 300g.
- \* 4~20mA DC output signal is available from the terminal block.

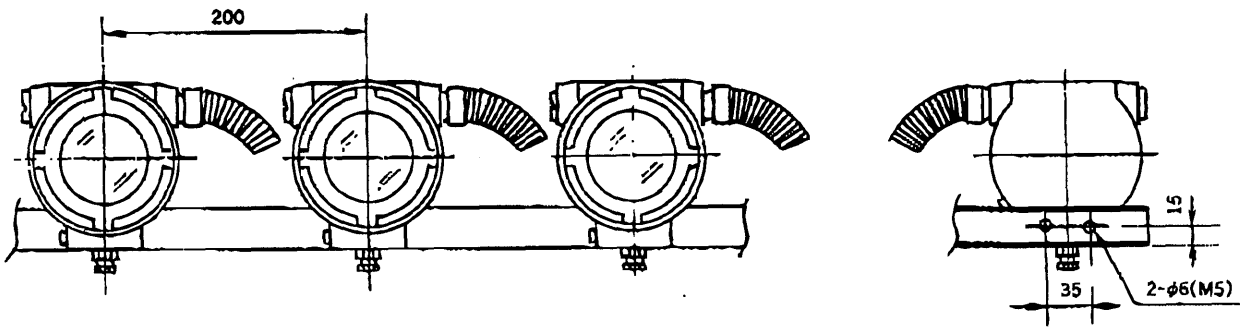
**2) Bar Graph Meter-relay with 24V Power Supply**

- Model : BMR-24
- Output Voltage : 24V DC  $\pm$  1V.
- Alarms : Four contacts; High-high, High, Low and Low-low limits.  
Contact rating... 1.25V, 0.5A.
- Scale : 0~14pH, 70 linear scales.
- Scale Length : 100mm.
- Indication Element : Red colour LED, 101 dots.
- Power Requirements : 85~264V AC, 50 / 60Hz.
- Power Consumption : Approx. 5VA
- Ambient Conditions : 0~45°C, 40~80%RH.
- Weight : Approx. 450g.

Notes on wiring diagram - see page 3.

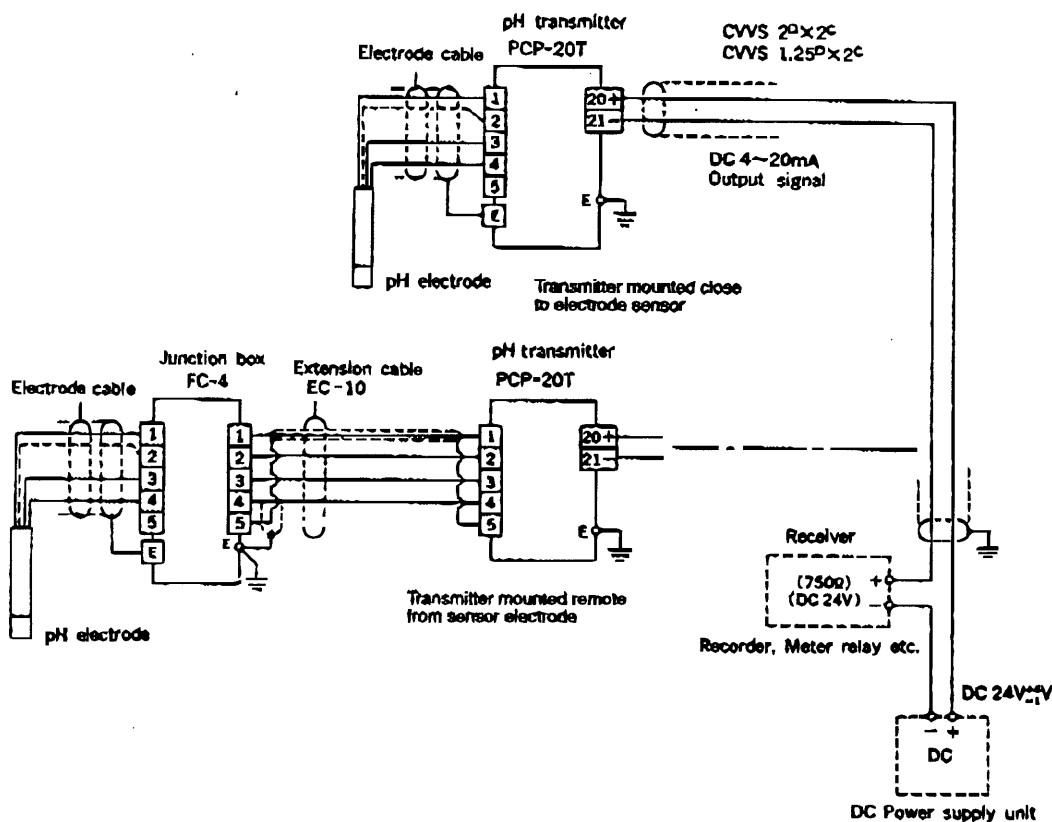
- \*1. pH Electrode without temperature sensor does not have lead wires No. 3 and No. 4.
- \*2. Cable inductance: Less than 0.5mH  
Cable capacitance: Less than 0.05 $\mu$ F  
CVVS: 2<sup>2</sup> x 2C Max. 360m  
1.25<sup>3</sup> x 2C Max. 430m  
CEES: 2<sup>2</sup> x 2C Max. 660m  
1.25<sup>3</sup> x 2C Max. 660m.
- \*3. Do not use other zener barriers except those specified.
- \*4. Transmission Signal: 4~20mA DC  
Load resistance less than 340 $\Omega$   
(including cable lead wire resistance).
- \*5. DC 24V +3 -1.
- \*6. Zener barrier grounding terminal should be grounded independently and grounding resistance should be less than 10  $\Omega$ .

**INSTALLATION**

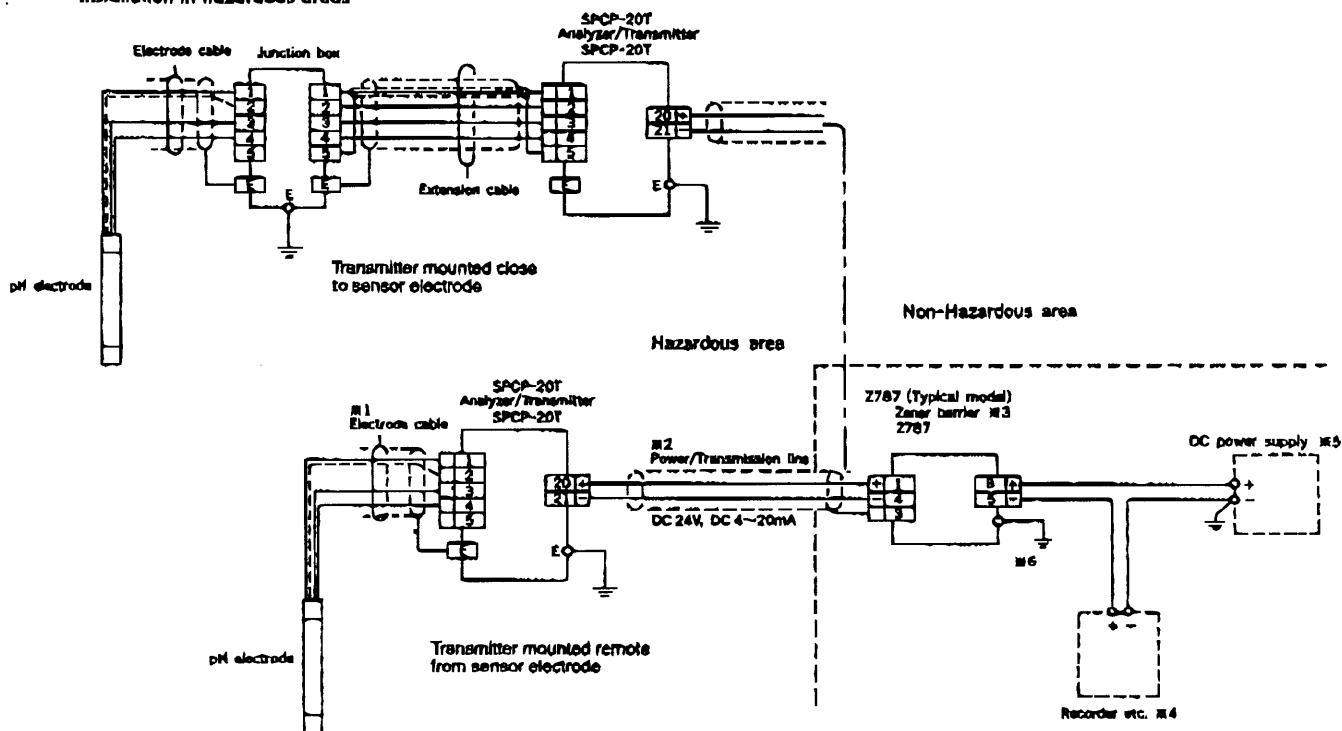


**WIRING DIAGRAM**

• Installation in non-hazardous area



• Installation in hazardous areas

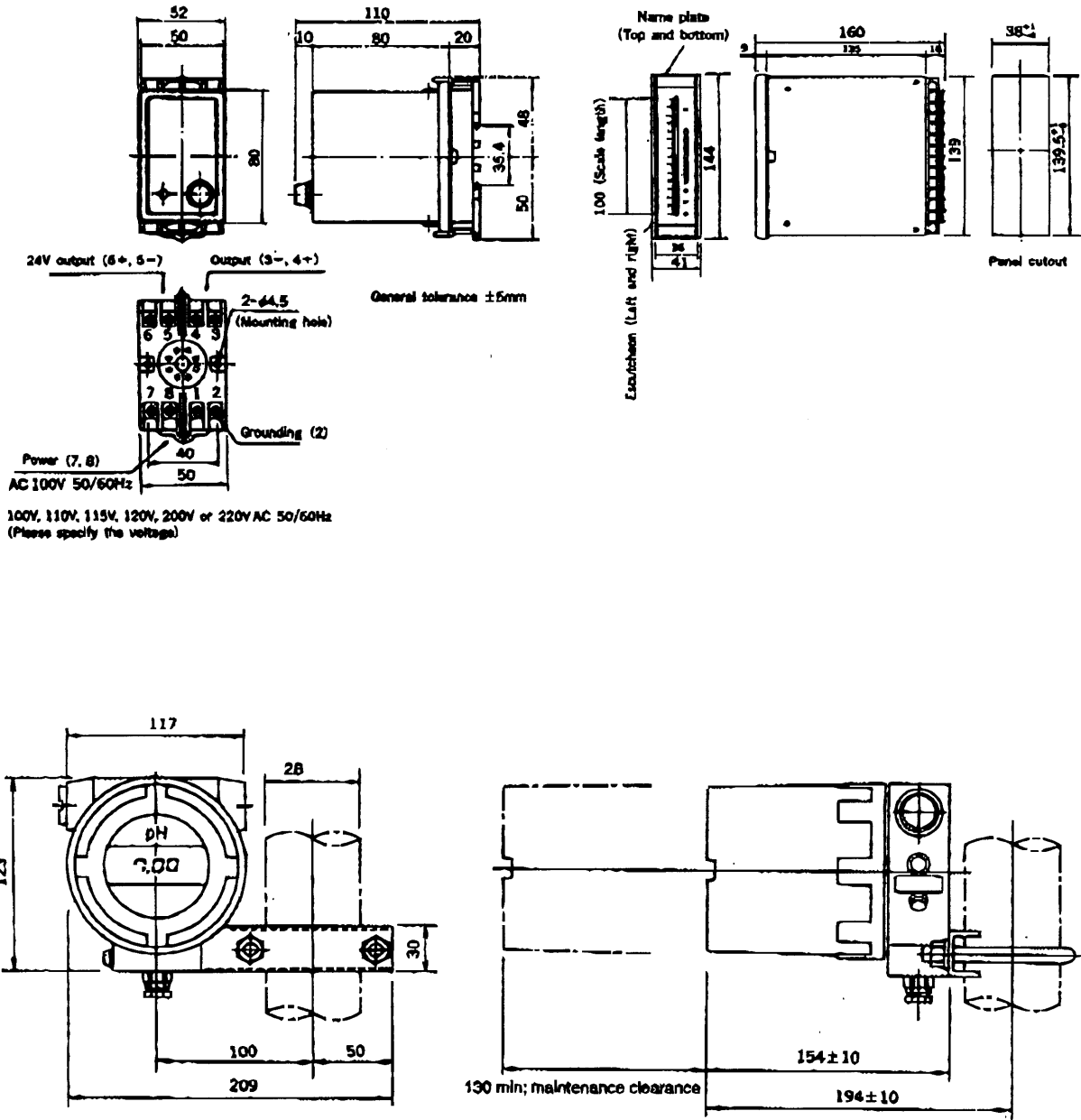


**Intrinsically Safe System**

System Model No.	Certification No.	Type of Protection	Zener Barrier to be used (Maker)
SHCP-P-1	C12661	Exia IIC T4	2787 (P & F)
SHCP-M-1	C12662	Exia IIC T4	MTL7875+ (MTL)
SHCP-S-1	C12663	Exia IIB T4	9002/13-280-110-00 (R.S.s-h)
SHCP-M-2	C12664	Exia IIC T4	MTL4041B-SOC (MTL)

**DIMENSIONS**

(All units in mm)



**DKK-TOA CORPORATION**



**CAUTION**

Do not operate products before consulting instruction manual.

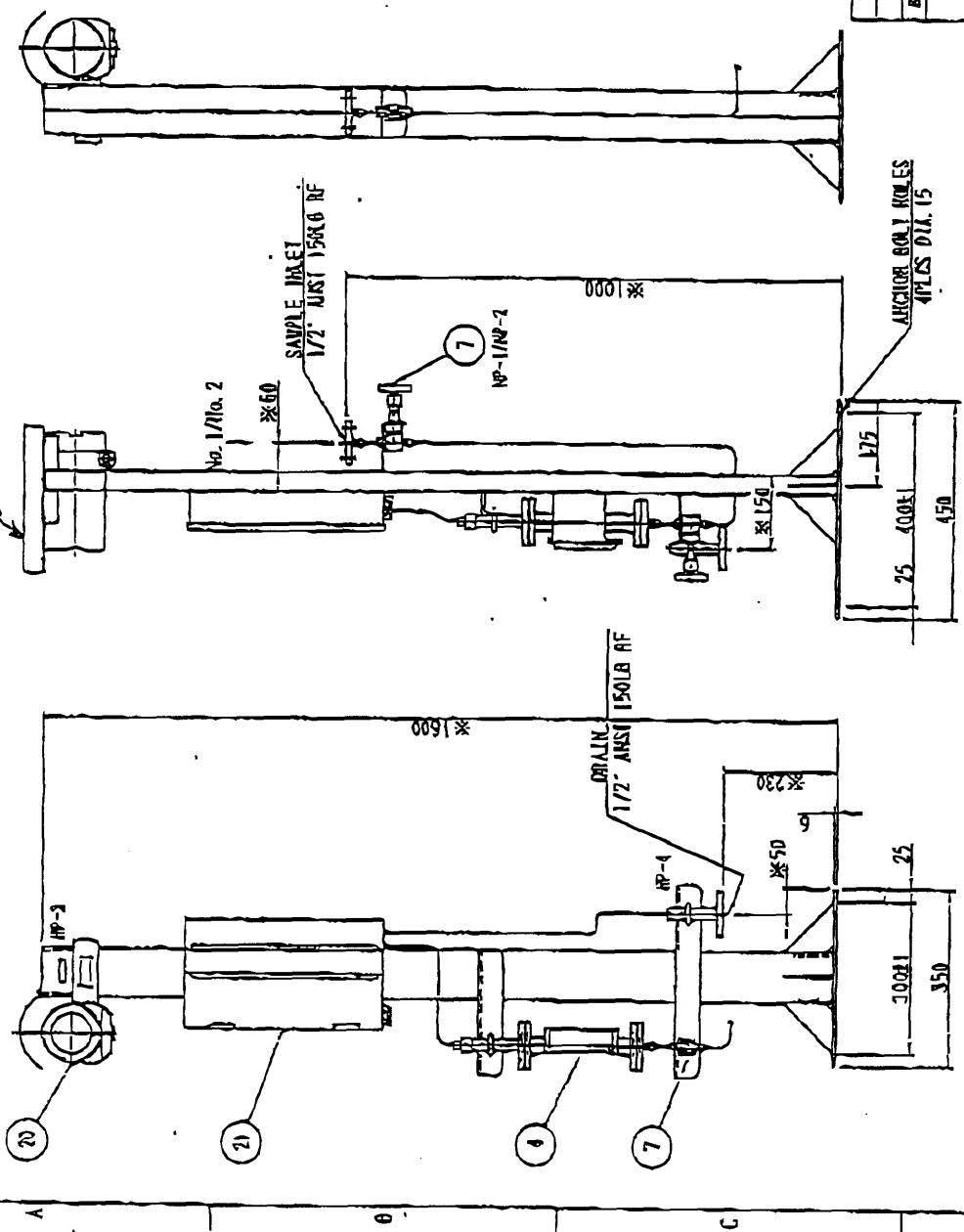
International Operations:  
 DKK-TOA Corporation  
 29-10, 1-Chome, Takadanobaba, Shinjuku-ku, Tokyo 169-8648 Japan  
 Tel: +81-3-3202-0225 Fax: +81-3-3202-5685

Representative Office (Europe):  
 DKK-TOA European Representative  
 St. Johns Innovation Centre, Cowley Rd., Cambridge CB4 0WS UK.  
 Tel: +44 (0)1223-526471 Fax: +44 (0)1223-709239

<http://www.toadkk.co.jp>

Information and specifications are for a typical system and are subject to change without notice.

Hood (Sunshade)



SAMPLE No.	SAMPLING POINT	PRESSURE (kg/cm <sup>2</sup> )	TEMPERATURE (°C)	CONNECTION SIZE/TUBE
No. 1	WP-AT-104	1.0	LESS THAN 45	1/2" INST 1500 MM
No. 2	WP-AT-202	1.0	LESS THAN 45	1/2" INST 1500 MM

PARTS No.	DESCRIPTION	QTY	REMARKS
4	FLOW METER	1	SPECIFICATIONS OF THE PART NUMBERS ARE SHOWN IN THE SPECIFICATION SHEET No. 07097-SAU-S.
7	NEEDLE VALVE (AIR-TIGHT)	1	
20	DR DRAIN	1	SPECIFICATIONS OF THE PART NUMBERS ARE SHOWN IN THE SPECIFICATION SHEET No. 07097-SAU-A.
21	DR DETECTOR	1	

NOTE

1. UNIT: mm
2. GENERAL TOLERANCE IS IN ACCORDANCE WITH CLASS "V" JIS D 0405 UNLESS OTHERWISE SPECIFIED.
3. TOLERANCE OF DISTANCE MARKED WITH \* IS ± 0.01mm.
4. SPECIFICATIONS OF THE WAVE PLATE NUMBERS ARE SHOWN IN THE SPECIFICATION SHEET No. 07097-SAU-R

FOR REFERENCE

REV. NO.	DATE	DESCRIPTION	APPROVED BY	DESIGNED BY
(2)	JUN. 24. 98	REVISED ACCORDING TO THE DESIGN PROGRESS.	W. KANASUJI	K. ISHIZUKA
(1)	APR. 21. 98	REVISED ACCORDING TO THE DESIGN PROGRESS.	W. KANASUJI	K. ISHIZUKA

TITLE	SCALE	DWG. NO.
OXYGEN METER DIMENSIONS OF SAMPLING SYSTEM	1/10	OSC 3-628015-2A

MODEL	DESIGNED BY	CHECKED BY	DATE
BSC1-10	K. ISHIZUKA	W. KANASUJI	JUN. 19. 98
	W. KANASUJI	K. ISHIZUKA	MAR. 19. 98
	W. KANASUJI	K. ISHIZUKA	MAR. 18. 98