General Specifications

TB600G
Laser Turbidity Meter

GS 12E7A1-E

■ General

With the recent development in membrane filtration technologies, organic filters have come into practical use as a high-performance treatment method for drinking water. In the use of this filter treatment, filter breakage due to a long-term operation is of concern, which makes constant monitoring of filter performance critical and essential. This is where a turbidity meter that can detect a cut of hollow thread and breakage of pinholes is required.

The Laser Turbidity Meter TB600G detects intensity variations of the transmitted light of semiconductor laser when suspended materials pass through the cell and converts them into turbidity.

With the semiconductor laser, the TB600G can detect particles of even 0.1µm, providing the instrument with high sensitivity which is required to detect filter breakage and monitor filter conditions, especially in the membrane filtration method.

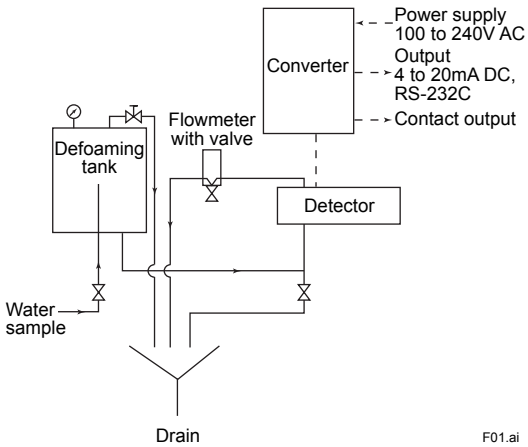
Furthermore, the TB600G can be used as a turbidity meter installed at outflows from filtration reservoirs where

*the water quality control is required under "the Provisional Guideline for **Cryptosporidium** Compliance."*

■ Features

- Based on the semiconductor laser method
- High-sensitivity measurement in 0.0001-degree
- Not affected by colors of water samples, particle sizes, and components
- Arrest the generation of air bubbles by utilizing the pressure-type defoaming tank
- Simple installation through easy wiring and piping, aided by a self-supporting stanchion where the turbidity meter is mounted.

■ System Configuration



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■ General Specification

Measured objects: Detection of membrane breakage on membrane filtration treatment and measurement of turbidity at outflows from filtration reservoirs at drinking water treatment plants
Measuring method: Semiconductor laser method
Measuring range: 0.0000 to 2.0000 mg/l or NTU
Measurement cycle: Selectable from among 6 seconds/1 minute/10 minutes. An average of the selected time is indicated. (Data is updated every six seconds.)
Output range: Specified setting with a minimum span of 0 to 0.1 mg/l or 0 to 0.1 NTU
Output signal: 4 to 20 mA DC (Maximum load resistance: 550 Ω), RS-232C
Serial communication:
Method; Unilateral communication start-stop synchronizing method
Transmission code; ASCII
Transmission speed; 9600 BPS
Data length; 8 bit
Stop bit; 2 bit
Parity check; None

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Communication data:
Time; e.g. #12:00C_RL_F
Measured turbidity value; e.g. #0.7981C_RL_F
Data output time is selected from among 1 minute/10 minutes/60 minutes/alarm occasion
Contact output; Alarm contact output
(Closed when alarm outputs),
Fail contact output
(Closed when fail outputs)
Contact capacity; AC100V 0.2A
0.2 A/DC 30V 0.2 A (Resistive load)
Display: Digital indication (Resolution 0.0001 mg/l)
Materials:
Wetted part; Quartz glass, PTFE, PFA, PP
Converter case; Polyurethane resin, backed finish, aluminum alloy casting
Detector case; Polycarbonate
Piping; Rigid vinyl chloride, stainless steel, polyethylene resin, polypropylene resin
Stanchion; Polyurethane resin, baked finish, carbon steel board or stainless steel
Colors:
Converter; Munsell 0.6GY3.1/6.0 and Munsell 2.5Y8.4/1.2
Stanchion; Munsell 0.6GY3.1/2.0
Ambient temperature: 0 to 40°C (Heating protection is required when water sample freezes)
Ambient humidity: 5 to 85%RH (non-condensing)
Installation location: Indoors
Installation space: 1200 x 1200 mm, including clearance for maintenance access
Mounting: Converter, single detector: rack mounting or 2-inch pipe mounting
With sampling system: anchor bolt mounting
Cable connection:
4 cable glands
(For power supply, output signal, contact output)
Outer diameter of applicable wire:
ø6 to ø12 mm
Piping connection:
Without sampling system:
Inlet; Rc1/4
Drain port; Rc1/4
With sampling system:
Inlet; VP16
Drain port; VP40
Water sample conditions:
Flow rate; 0.5 to 5 l/min (Detector flow rate: 50 ml/min)
Pressure; 20 to 300 kPa
Temperature; 0 to 40°C
Power supply: 100 to 240 V AC 50/60 Hz
Power consumption: 15 VA or less
Weight: Approximately 45 kg (with sampling system)
Detector; Approximately 2 kg
Converter; Approximately 6 kg

■ Characteristics

Minimum resolution: 0.0001 mg/l
Repeatability: ±3%F.S. or less

■ Model and Code

[Style : 2]

Model	Suffix Code	Option Code	Specification
TB600G	••••••••••••	••••••••••••	Laser turbidity meter
Sampling system	-NN	••••••••••••	Without sampling system (Note 1)
	-AD	••••••••••••	With sampling system, bottom piping installation
	-AB	••••••••••••	With sampling system, rear piping installation
	-SD	••••••••••••	With sampling system, bottom piping installation Stainless steel stanchion
	-SB	••••••••••••	With sampling system, rear piping installation Stainless steel stanchion
—	-NN	••••••••••••	Always -NN
Optional specifications		/R	With rack and pipe mounting brackets (Note 2)

Note 1: Without sampling system means that a detector, a converter and a 1-m cable used for between the converter and the detector, are delivered. A defoaming tank and/or flowmeter should be arranged separately, if necessary.
Note 2: This applies when selecting an option of "without sampling system (-NN)"
Note: Other instruments cannot be combined with the unit.

Accessories

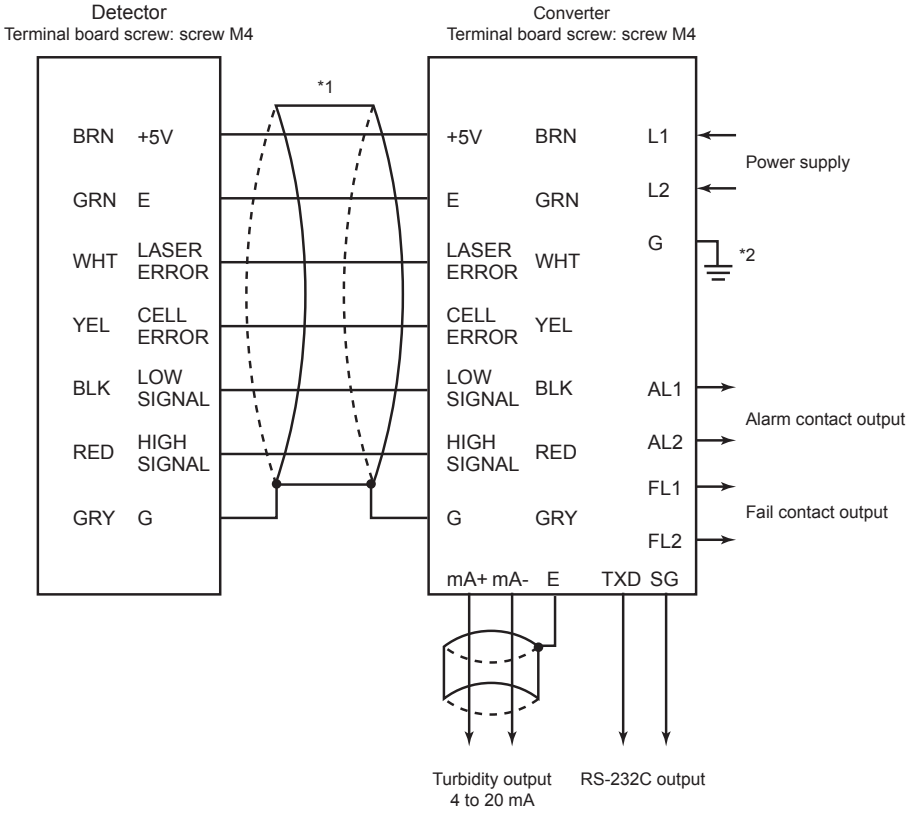
Name	Q'ty	Remarks
Fuse	1	250V 1A
Desiccant	3	For three times
Brush	1	For cleaning

Auxiliary parts

Name	Part Number
Fuse	K9058RT
Detector cover	K9058RW
Pressure-type defoaming tank (with mounting brackets)	K9725WA
Flowmeter	B1000EU
Desiccant (For once)	K9324PC
Lithium battery*	K9058RS
	A1090EB
Brush (For cleaning)	K9058RX

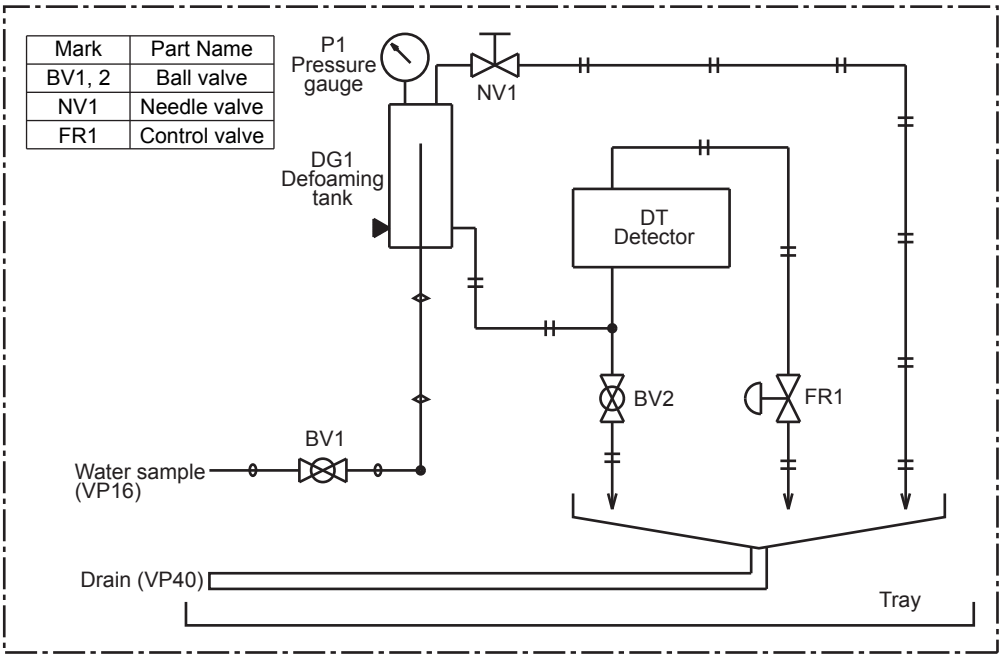
* : Date of manufacture of the product determines compatible lithium battery with the product. Contact YOKOGAWA .We will help you know the right battery to your product..

■ Wiring Diagram



*1 A dedicated cable (1 m) is used between the detector and the converter
*2 The earth terminal (G) must be grounded (grounding resistance 100 Ω or less)

■ Piping Diagram



Piping materials

ø6/ø4 Polyethylene tube
ø10/ø8 Polyethylene tube
VP16 Rigid vinyl chloride pipe
VP40 Rigid vinyl chloride pipe

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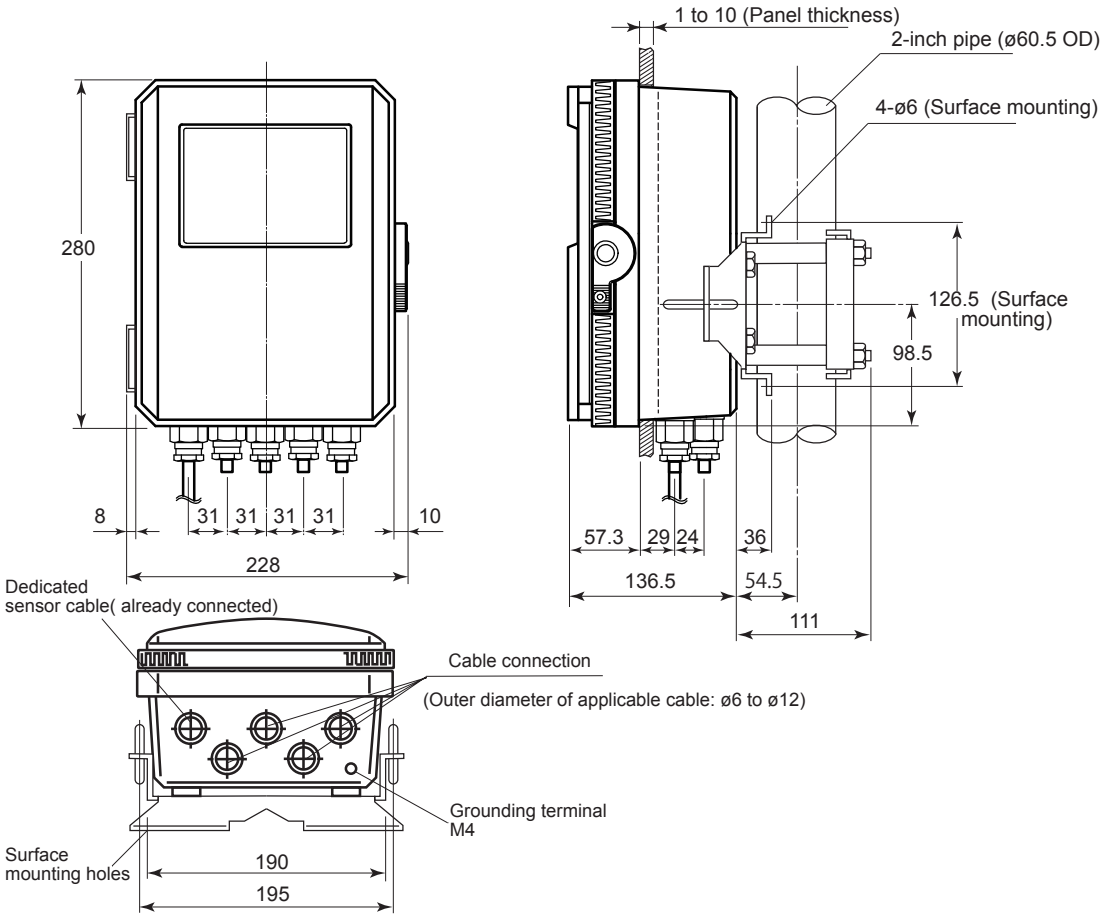
■ External Dimensions

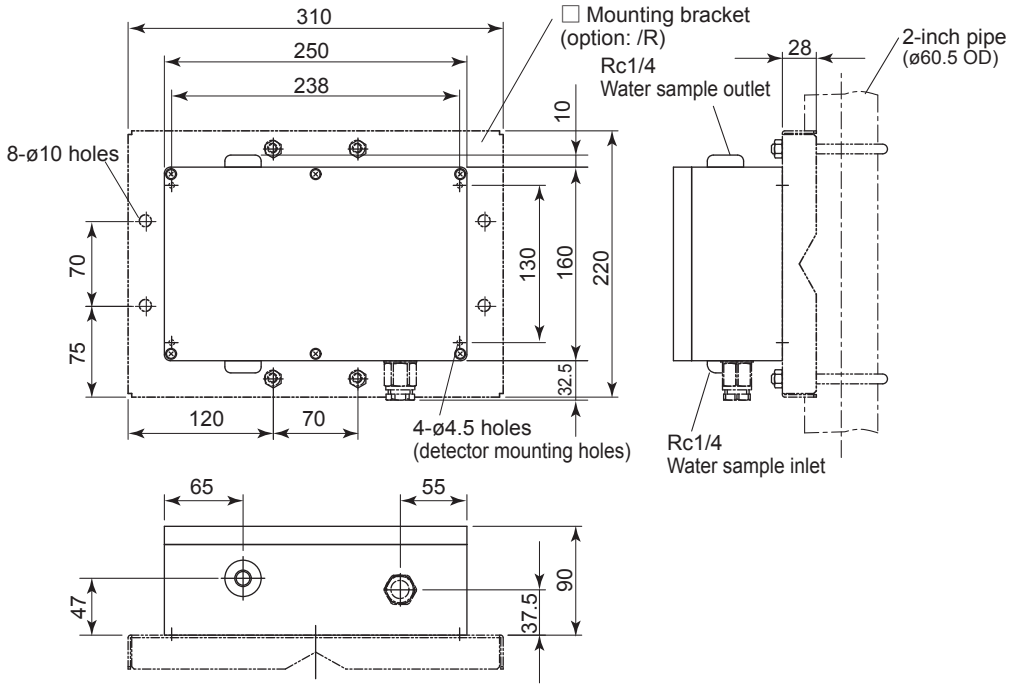
Without sampling system

Unit: mm

Converter

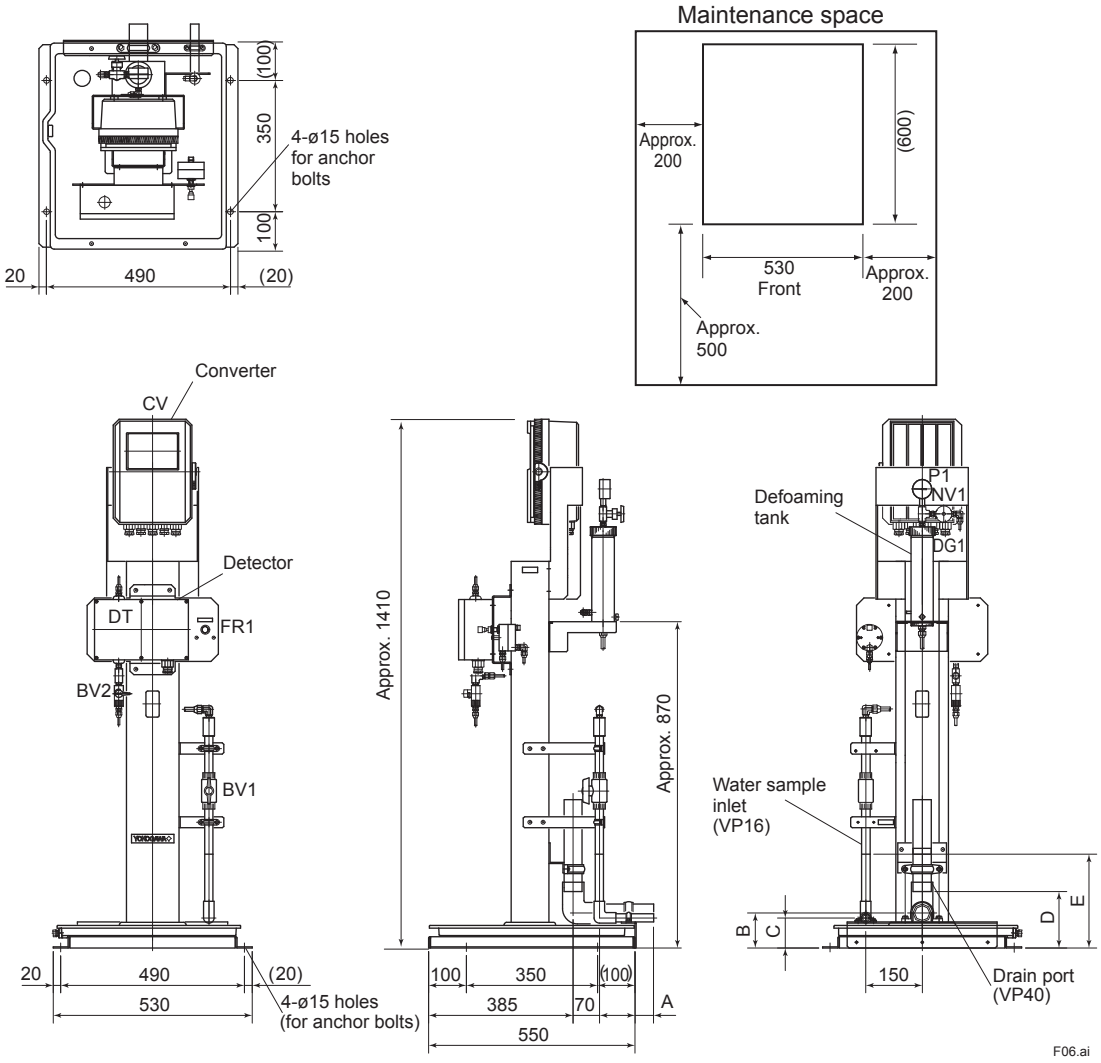


Detector



With sampling system

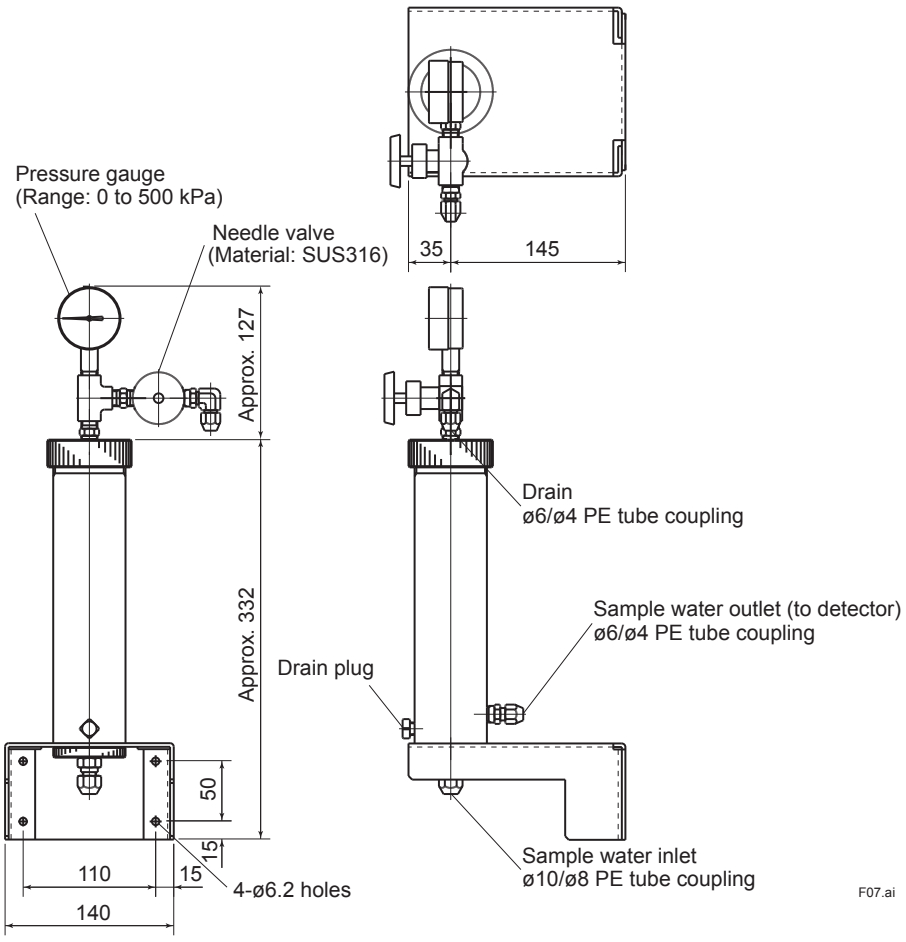
Unit: mm



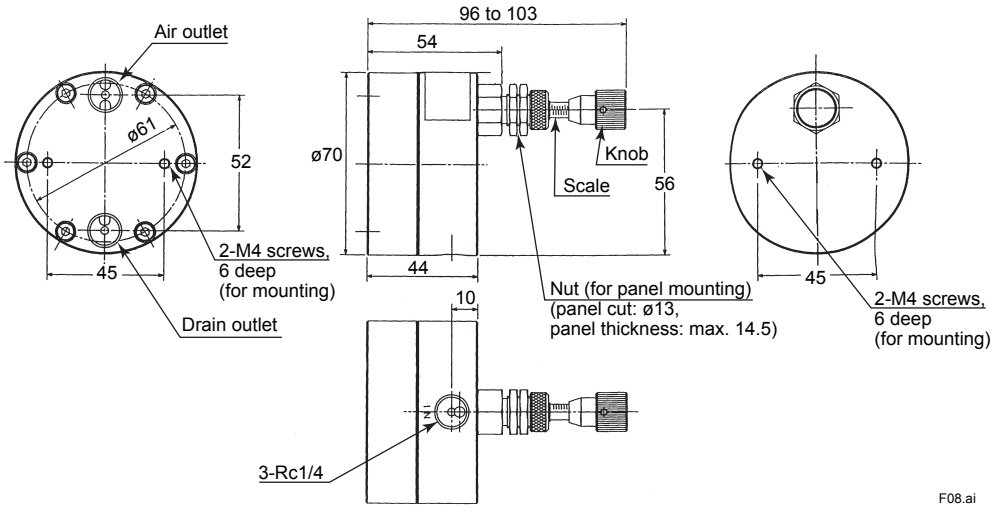
	Model and Suffix Code	Piping	A	B	C	D	E
	TB600G-AD-NN	Bottom piping installation, vertical	-	-	-	150	250
	TB600G-AB-NN	Rear piping installation, horizontal	50	93	80	-	-
	TB600G-SD-NN	Bottom piping installation, vertical	-	-	-	150	250
	TB600G-SB-NN	Rear piping installation, horizontal	50	93	80	-	-

Pressure-type defoaming tank (with mounting brackets), K9725WA

Unit: mm



Control valve, B1000EU



INQUIRY SHEET FOR TB600G LASER TURBIDITY MEASURING SYSTEM

Thank you for inquiring about our turbidity measuring system. Please fill in the following information or put a tick next to the relevant item(s).

1. General Information

Company name : _____

Contact person : _____ Section: _____ Phone: _____

Plant name : _____

Measurement location : _____

Purpose of use : □ Indication □ Recording □ Alarm □ Control

Power supply : _____ V AC, ____ Hz

2. Measurement Conditions

(1) Sample water temperature : Max. Min. Normal; _____ [°C]

(2) Sample water pressure : Max. Min. Normal; _____ [kPa]

(3) Sample water flow rate : Max. Min. Normal; _____ [l/min]

(4) Slurry or contaminations : □ No □ Yes _____

(5) Components of sample water : _____

(6) Others : _____

3. Installation

(1) Ambient temperature : approx._____ [°C]

(2) Location : □ Indoors _____

(3) Others : _____

4. Specification Requirements

(1) Measuring range : □ _____ to _____ mg/l

(2) Transmission output : □ 4 to 20mA DC □ RS-232C

(3) System configuration : □ Laser turbidity meter □ Sampling system

(4) Other information _____