

総合カタログ

General Catalog

2016.10

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YABEGAWA Electric Industries, Ltd.

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YABEGAWA Electric Industries, Ltd.

Development of process control panels for high-purity aluminum purification over long periods of time. Our high technical strength and superior managerial power are recognized, and we received the FY2012 Excellent Manager Award.

Laboratory analyzers is from 2008 the United States Pittcon exhibition and JASIS exhibition and has been exhibited at the biotechnology exhibitions.

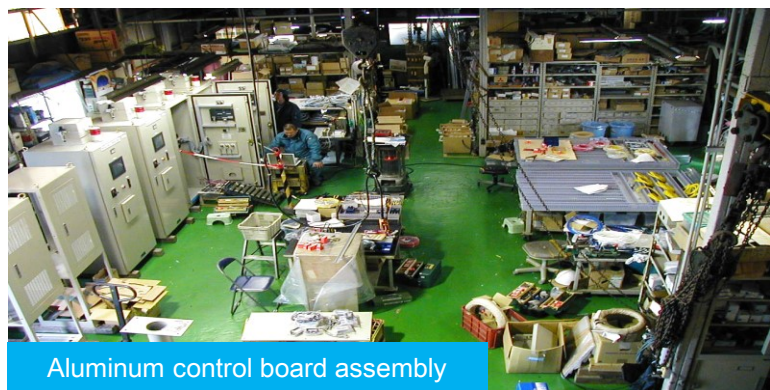
"Hydrogen fuel CO density measuring device" is promoting as a new business.

Activities

Main business is the manufacture and sale of the control panel of the aluminum refinery. Products, domestic as well as the United States, China, Russia, Taiwan, and Korea, has become a necessary device in high purity purification of aluminum and has been introduced many overseas factories. Also sells analyzer be developed in collaboration with Kyushu University. Taking advantage of technological development that has been polished in the control panel, it is actively also to develop new business.

Processing/technology

- PLC, touch panel, and control board Design, production, and installation construction
- Aluminum high purity controller Design, production, and installation construction (Ten countries or more in foreign countries are possessed the delivery results.)
- This system (instrument) was developed by the joint research with T. Imato (Prof. of Kyushu University)
- Flow controller (PRO-6000)
- Surface-active agent measurement device (PRO-1210N)



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Establishment	March 1946
Capital	¥25,000,000
Employee	19 men/3 females 22 in total

Plant size	{ Establishment } 800m ² { Building area } 400m ²
Main Equipment	<ul style="list-style-type: none"> • Control board assembly wiring test equipment • In-house network CAD/PC 20 • PLC development tool (Mitsubishi, OMRON, Panasonic) • Draft chamber • SPR analysis meter • Ultrapure water device • Electric balance • And others analysis equipment

Aluminum refinement Control Device

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High Purity Aluminum

High purity aluminum is used for a car, vehicles, an airplane, medicine packing, food packing, and the electronic field. Impurities especially slight in electronic items including a semiconductor are not allowed, either. Therefore, the precise process control for removing impurities to a limit is required of a high purity process.

Aluminum refinement Control Device

In order to refine aluminum in 99.99 to 99.999% of purity, aluminum is melted at 800°C high temperature, and it filters with a ceramics filter etc., and removes impurities.

A fine temperature and control of flow are needed for the refining. An aluminum high purity operator control panel is equipment for performing the temperature limiting and control of flow of an aluminum high purity-ized process, and is equipment indispensable to manufacture of high purity aluminum.

This product has a delivery track record in ten or more nations, such as the United States, Russia, South Korea, Taiwan, and Thailand, and has obtained high evaluation also from overseas.



"Aluminum refinement Control Device"



"Gas Control Panel"



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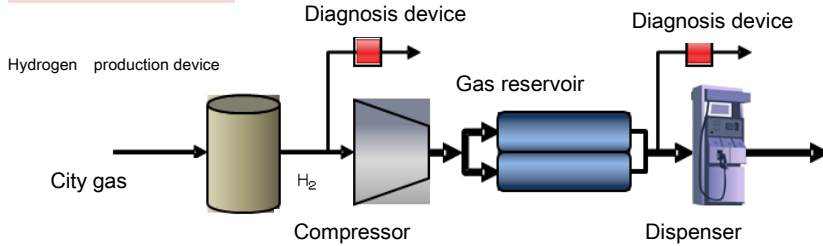
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Hydrogen-fuel aptitude diagnosis device

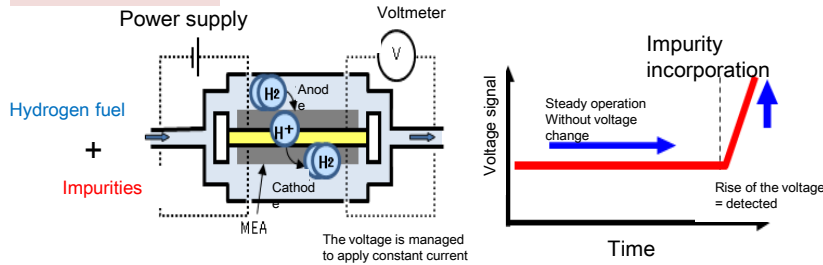
The device measures the concentration of CO in the hydrogen-fuel in real time.

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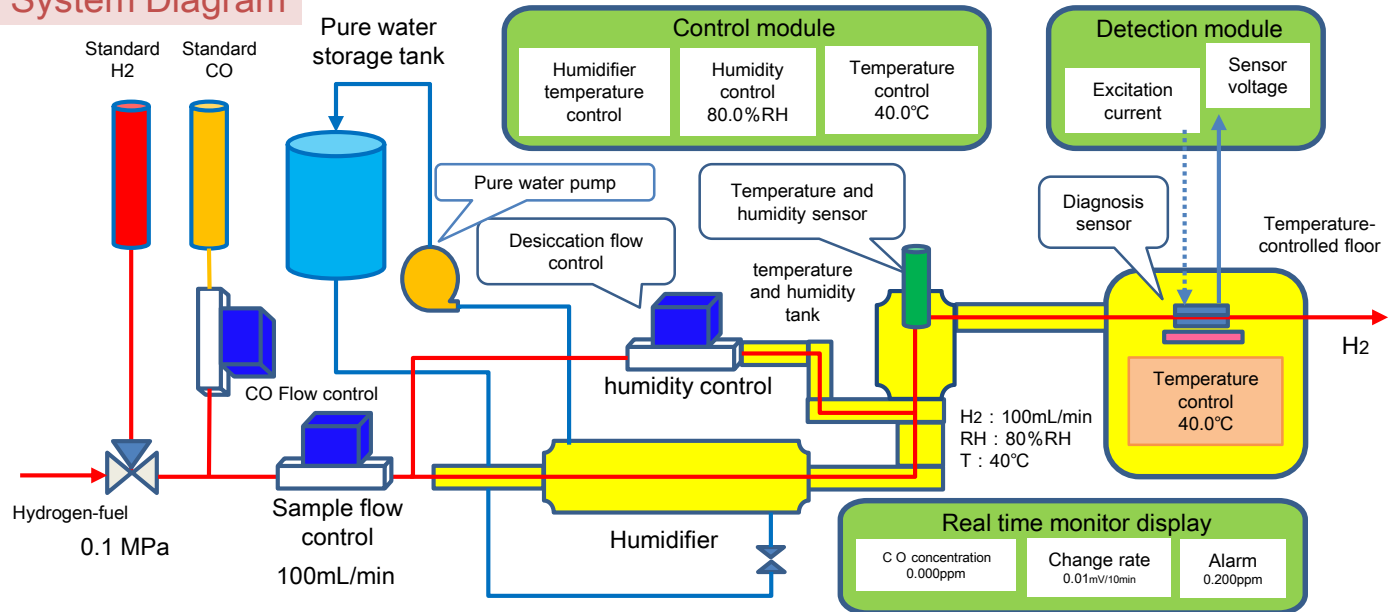
Installation



Sensor



System Diagram



Feature

- Concentration of CO is shown to a touch panel in real time. Operation is performed by the touch panel.
- ZERO adjustment is proofread automatically by pure hydrogen gas and SPAN adjustment is proofread automatically by CO=2ppm gas.
- Humidifier is humidified by less than 40 °C. It's high-performance and stable.
- Data logger function is had built-in, so operation data can be managed.
- Patent-pending device

This device is joint research item of Kyushu University, Saibu Gas Co., Ltd., Tokyo Gas Co., Ltd. and Yabegawa electric industry Co., Ltd.

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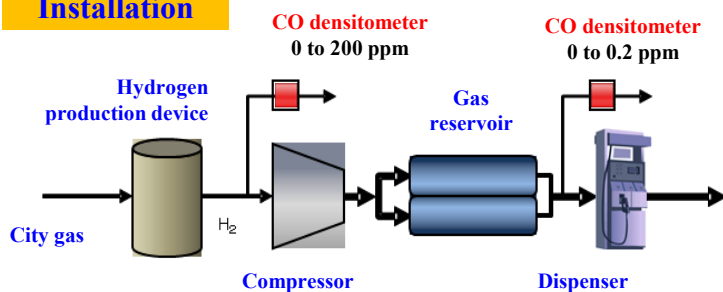
Hydrogen Fuel CO densitometry

CO densitometer in hydrogen fuel

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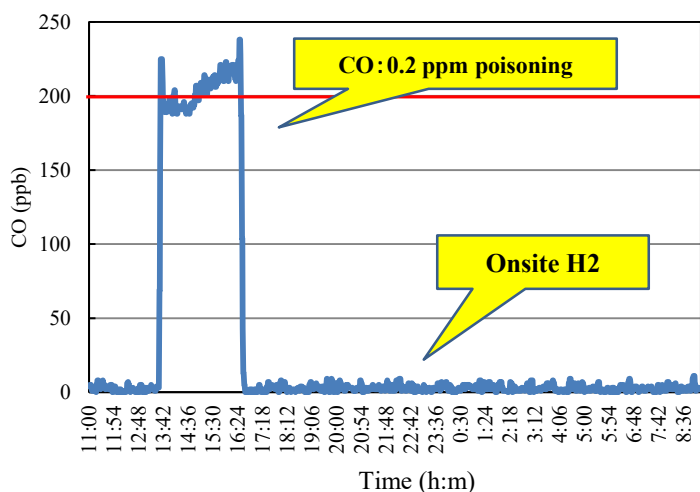
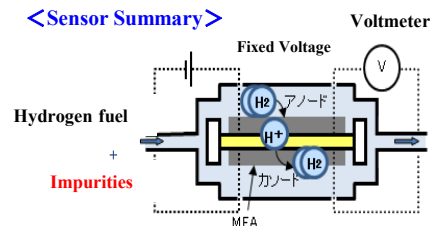


Installation

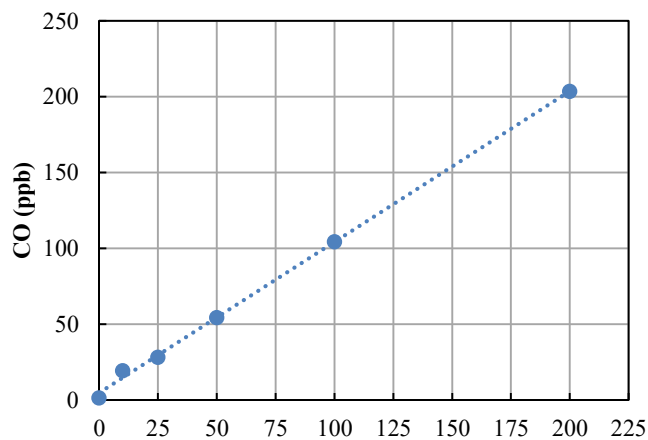


Hydrogen pump CO sensor

<Sensor Summary>



Onsite H2 production equipment Demonstration



CO calibration curve

Feature

- Installed in the hydrogen station
- Detect 0.2 ppm CO (IOS14687-2)
- Touch-panel type device, CO concentration is displayed
- With automatic calibration function using the standard gas
- Analysis is not required, industrial instrument
- Humidifier can humidification at a low temperature of 40 °C or less.
- No condensation, High performance.
- Data logger function is built-in
- Patent-pending device

International Exhibitions which participated

YABEGAWA

We have been displaying our new devices in International Exhibitions commencing with PITTCON conference & EXPO since 2008. Please come on our booth.

PITTCON 2008 New Orleans



Flow Controller (PRO-6000 Ver.2.00)

2008

PITTCON 2009 Chicago



SPR immunoassay devise (PRO-6920)

2009

2010

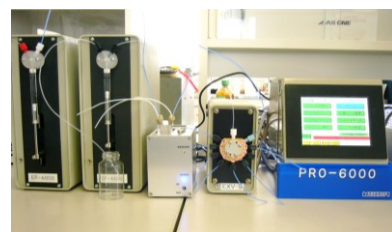
PITTCON 2010 Orlando



Chemiluminescence detection devise (PRO-1210N)

PITTCON 2012 Orland

2012



Flow Controller (PRO-6000 Ver.2.00)

PITTCON 2013 Philadelphia

2013



Compact Pump & Valve devise (PV200-M4E)

PITTCON 2014 Chicago

2014



Compact Pump & Valve devise (PV200-M4E Ver.2)

Electrochemical measurement devise (ECM-1)

Smart Community in Indonesia



Pocket-size Pump (HPN200, HPS450)

PITTCON 2016 オーランド

2016



Hydrogen fuel CO densitometry

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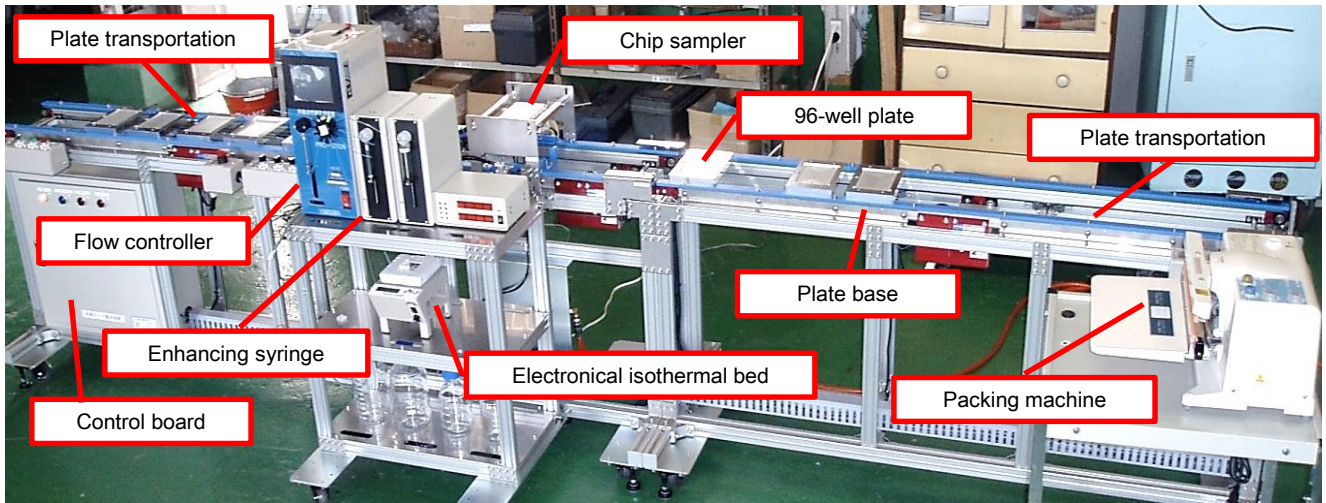
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96-well Antibody Coated Plates Manufacturing Equipment

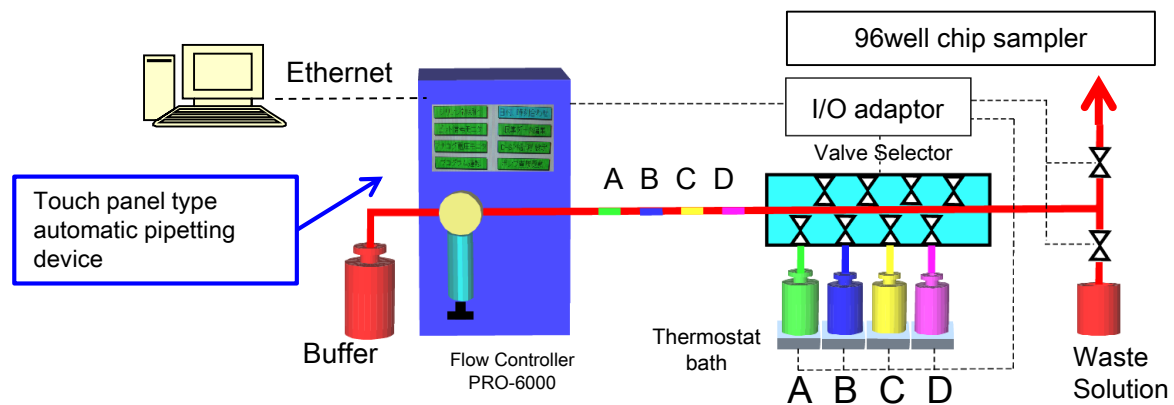
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This equipment fixes an antibody to 96-well plates automatically.
This equipment consists of Flow controller, Enhancing syringe, valve selector etc.

- Homogeneous plates can be manufactured by automation.
- An antibody is not exposed to air in the process coated to a plate.
- The plate which coated the antibody by this equipment is long-life.
- Since mass production is possible, cost is reducible.
- Excimer laser helps form a stable antibody layer in a short time.



Joint development Hokkaido University Faculty of Environmental Earth Science Prof. Kawaguchi.

※ Specifications may change without notice.

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[Agent]

PRO-6000 series are touch panel type automatic pipetting devices.
This device can be used as an analysis device by connected with SPR (surface plasmon resonance) sensor,

Flow Controller *PRO-6000 Ver.1*

Touch panel type automatic pipetting device



- It can be easily operated by a touch panel.
- If it connects with a SPR sensor, it can be used as an analysis apparatus.

Dimensions	W150 × H375 × D200 mm	Adapt Valve	CAVRO SVP6,SVP9
Weight	10kg	Adapt Syringe	CAVRO XLP-6000, XL-3000
Power Supply	AC 85 to 264V 100VA	Syringe Size	50μL to 50mL
Exterior Output signal	Input 16 points / Output 16 points Tr.	Operation Bulk	10nL to 50mL
		Flow Range	10nL to 320mL/min

SPR Immunoassay Measurement System *PRO-6900-SPR*

Measuring device of environmental pollutant



- Two syringes and nine port valves are stored in isothermal bath. It is controllable among 10 to 30 degrees.
- Max 18 samples can be measured.
- If it connects with a sensor, it can be used as an analysis apparatus.
- RS232C,RS485,Ethernet.Remote monitoring system. For industrial use.

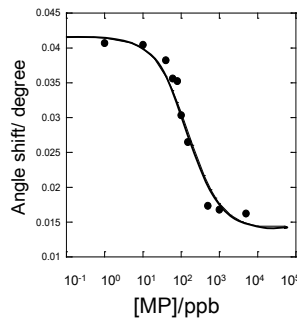
Dimensions	W340 × H420 × D340 mm	Adapt Valve	CAVRO SVP6,SVP9
Internal isothermal Bath	W340 × H250 × D170 mm	Adapt Syringe	CAVRO XLP-6000
Weight	15kg	Syringe Size	50μL to 50mL
Power Supply	AC 85 to 264V 100VA	Operation Bulk	10nL to 50mL
Exterior Output Signal	Input 16 points / Output 16 points Tr.	Flow Range	10nL to 320mL/min
SPR sensor	Mebius Dual-SPR200		

Determinate quantity of low-molecular compound

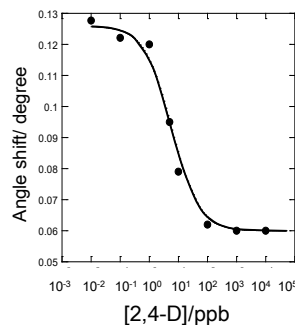
SPR sensor is connected to PRO-6000. High sensitivity detection can be performed.

〈measuring object〉
environmental pollutant

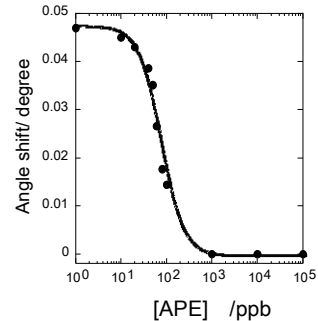
- Agrichemical
- Surfactant



Agrichemical: MP, methyl parathion



Agrichemical: 2,4-D, dichlorophenoxyacetic acid



Surfactant : APE, alkylphenol polyethoxylate

※ Specifications may change without notice.

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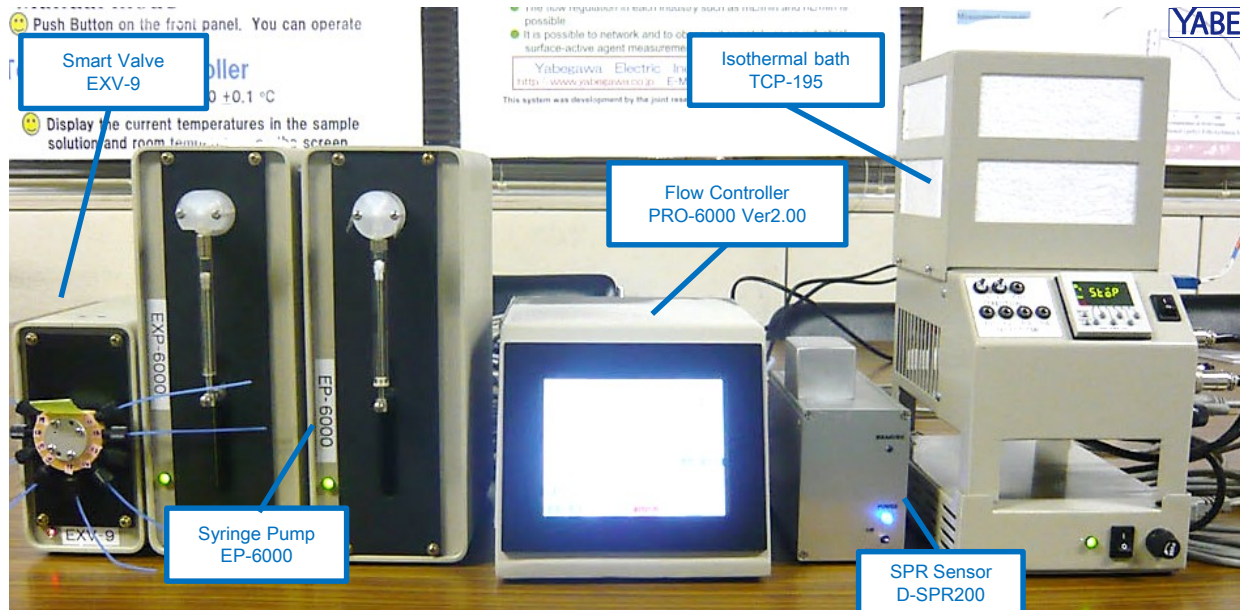
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[Agent]



Developed by joint research with Prof. Imato, of Kyushu university

- Syringe pump and Smart Valve are controlled by PRO-6000.
- Flow rate, flow speed, on-off valve are programmed by PRO-6000.
- User are emancipated from cumbersome syringe operation.

Feature

- Pesticides, surfactants, etc. remaining in the environment can be measured.
- The main body of Flow Controller is set up on a bench. The syringe pump and the valve etc. are set up in a hood.
- The syringe pump and the valve are added by one-touch by Pro-Link.
- RS232C, Pro-Link and Ethernet are available to drive PRO-6000 at various locations.
- PRO-6000 has an analog input port for sensing devices.
- SPR measurement device with an automatic curve generation machine.
- An automatic calibration function tedious immunoassay.

Summary

PRO-6000 Ver.2

External Size	W70 × H185 × D220 mm
Power Supply	AC85 to 264V 100VA
Exterior Output Signal	Input 16 points /Output 16 points Tr.
Calibration Curve	Automatic calibration curve generator

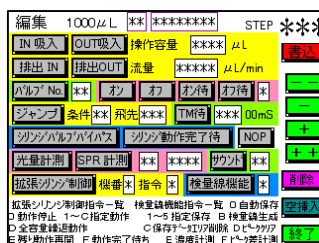
Smart Valve EXV-9

External Size	W80 × H150 × D200 mm
Adapt Valve	CAVRO SVP-6 or SVP-9

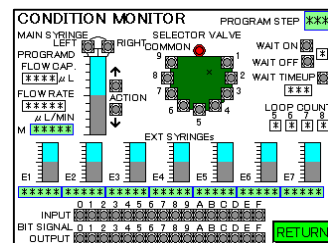
Syringe Pump EP-6000

External Size	W100 × H260 × D180 mm
Adapt Syringe	Cavro XLP-6000 50μL to 50mL
Operation Bulk	10nL to 50mL
Flow Range	10nL to 320mL/min

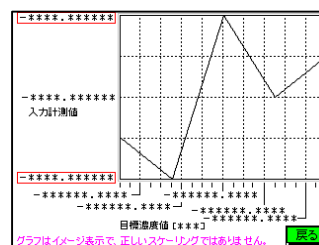
Touch panel monitor



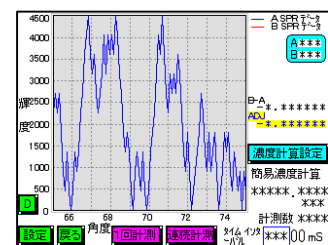
Creation of a program



Display of a situation of operation



Automatic calibration curve generator



Measuring result

※ Specifications may change without notice.

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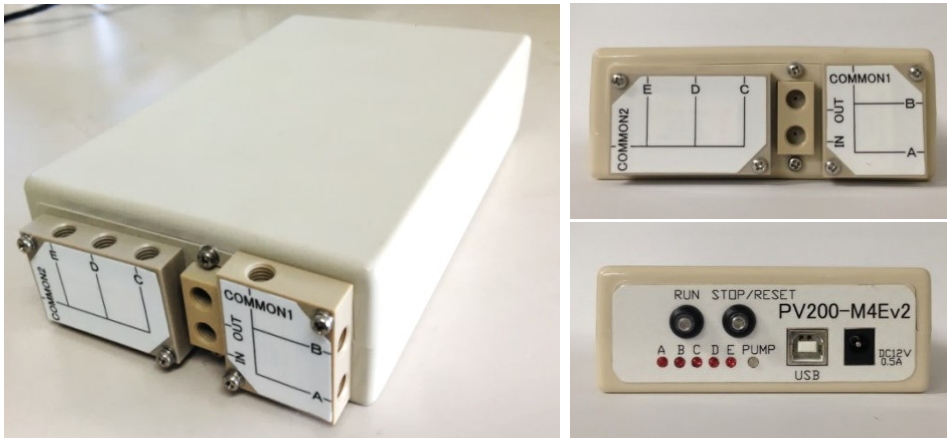
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[Agent]



- Small peristaltic pump equipped with manifold solenoid valve.
- Program of this device can be created by dedicated software.

Feature

Control Part

- Pump can be shifted from normal rotation to reverse rotation, and flow rate can be changed.
- Max 128 steps program are created by dedicated software.
- The created Program can be written in the device, and can be executed autonomously.

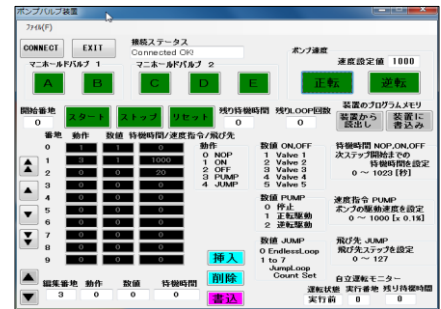
Pump

- Self-suction. Not need priming water.
- Even if a pump stops, there are no worries about a leak or an adverse current.
- This pump is long-lived because the tube is pressed gently by a big diameter tire.

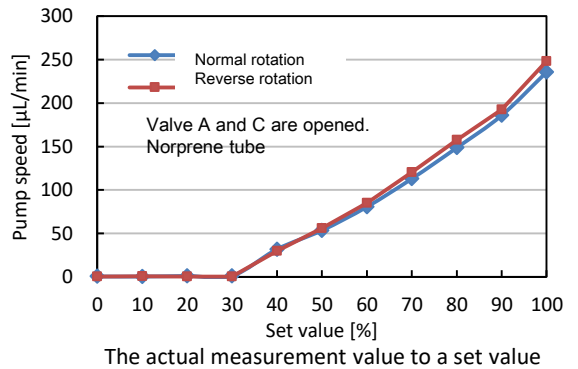
Specification

Power Supply	100 to 240V 50/60Hz
Outside Dimension	W170 × H 38 × D100 mm
Weight	About 430 g
Discharge Pressure	0.05 [MPa]
Fluid Pressure Range	Vacuum to 30psi
Connection	1/4"-28UNF (Both IN and OUT)

Flow Range [μL/min]	Tubing Materials
50 to 250	Norprene
90 to 500	Silicon
90 to 400	kalrez



Dedicated software



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[Agent]



HPS-010 , HPO-010

HPS-1000

Battery-powered ! Can be used anywhere ! Micro flow pump.

Summary

- The flow rate can be varied freely by knob from the Min. to Max.
- Reversal operation can also be performed.
- When using two size AA battery, it can operate continuously for 20 hours.
- If an attached adapter is used, it can drive from commercial power (100 to 240VAC).
- In a low flow rate region, operation is stable.
- Peristaltic pump-tube is not in contact with the metal.
- Self-suction. Not need priming water.
- Even if a pump stops, there are no worries about a leak or an adverse current.

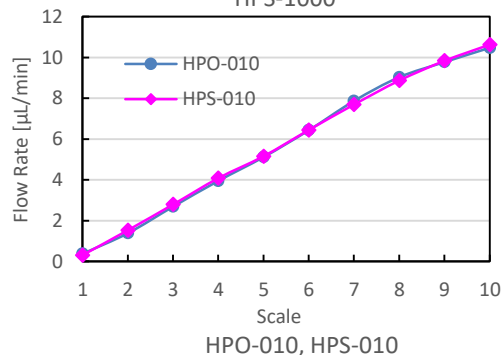
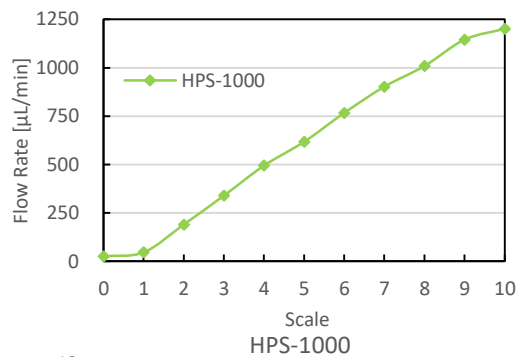


Specifications

Model Number	HPS-010	HPO-010	HPS-1000
Tubing Materials	Silicon	Olefin	Silicon
Flow Range	0.2 to 10 [μ L/min]		30 to 1000 [μ L/min]
Repeatability	<2% (In scale more than 4.)		<2%
Discharge Pressure	0.03 [MPa]		0.05 [MPa]
Motor	Stepping motor		
Outside Dimension	W67×H29×D92mm		W76×H35×D135mm
Power Source	Two AA batteries or Dedicated power adapter		
Weight	About 100g (Batteries are not included.)		About 200g (Batteries are not included.)
Connection	1/4"-28UNF (Both IN and OUT)		
Accessories	AC adapter (3.3V2.0A)		

The cautions on preservation

- When you do not use it for a long period of time, please discharge the liquid in a pump tube.
- Please remove the dry cell in order to prevent a liquid leak.
- ※ The pump of the flow areas 20 and 30 and 40 types are also producible.
- ※ Specifications may change without notice.



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HPN-200



HPK-400, HPS-450

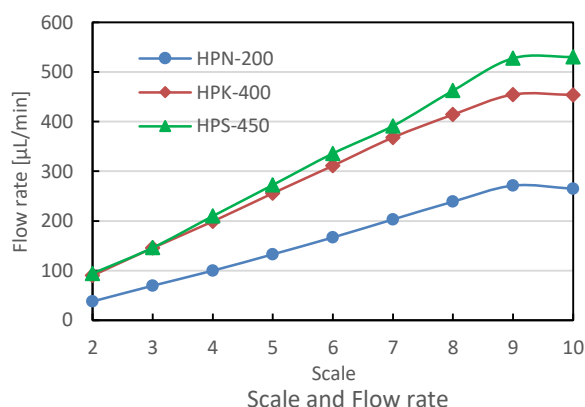
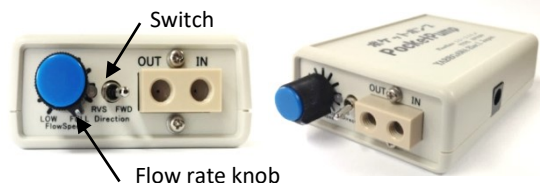
Summary

Battery-powered ! Can be used anywhere ! Micro flow pump.

- The flow rate can be varied freely by knob from the Min. to Max.
- Reversal operation can also be performed.
- When using a size AA battery or a charging battery, it can operate continuously for 30 hours.
- If an attached adapter is used, it can drive from commercial power (100 to 240VAC).
- Since an automatic voltage regulator is used for a pump, The flow rate does not change with the residual quantities of a battery.
- Peristaltic tube pump is not in contact with the metal.
- Self-suction. Not need priming water.
- Even if a pump stops, there are no worries about a leak or an adverse current.

Specifications

Model Number	HPN-200	HPK-400	HPS-450
Tubing Materials	Norprene	Kalrez	Silicon
Flow Range [μ L/min]	50 to 250	90 to 400	90 to 500
Repeatability	<2%	<3%	<3%
Discharge Pressure	0.05 [MPa]		
Motor	DC geared motor		
Outside Dimension	W67×H29×D92mm		
Power Source	Two AA batteries or Dedicated power adapter		
Weight	About 100g (Batteries are not included.)		
Connection	1/4"-28UNF (Both IN and OUT)		
Duration of Pump Life	About 1000 hours (※Not guarantee time)		
Accessories	AC adapter (3.3V2.0A)		



The cautions on preservation

- When you do not use it for a long period of time, please discharge the liquid in a pump tube.
- Please remove the dry cell in order to prevent a liquid leak.

※ Specifications may change without notice.

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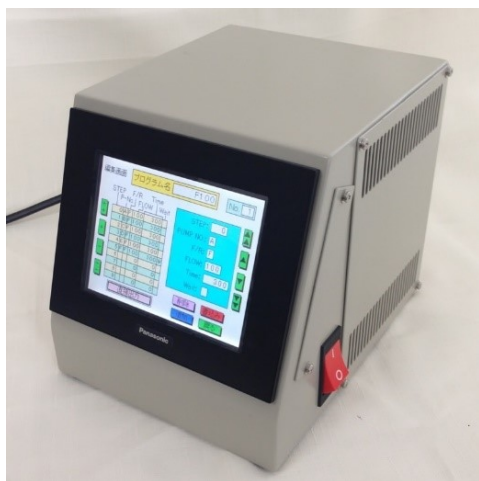
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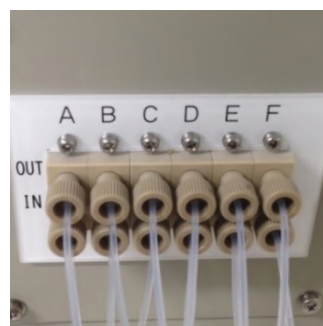
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- Six compact peristaltic pumps are controlled by this device.
- Program can be created and executed by touch panel operation.
- Can be used for solution sending to liquid-analyzer and such.



Feature

Control Part

- Six compact peristaltic pumps embedded in the device are controlled respectively.
- Max 128 steps program can be created and executed.
- Normal rotation or reverse rotation, Flow rate and pump driving time can be set.

Pump

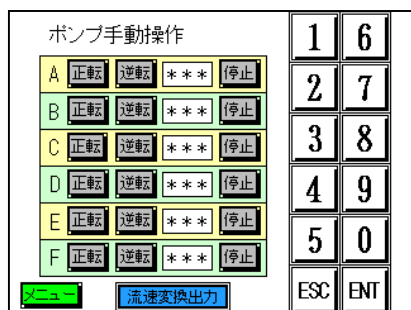
- Self-suction. Not need priming water.
- Even if a pump stops, there are no worries about a leak or an adverse current.
- This pump is long-lived because the tube is pressed gently by a big diameter tire.

Specification

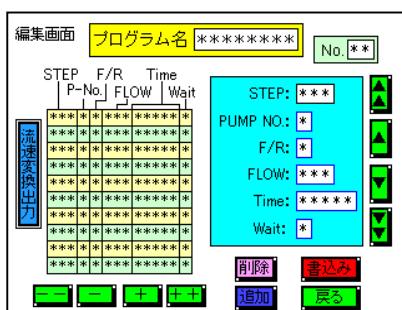
Power Supply	AC 100V 50/60Hz
Outside Dimension	W170 × H 180 × D220 mm
Connection	¼"-28UNF (Both IN and OUT)

Flow Range [μL/min]	Tubing Materials	Discharge Pressure
0 to 10	Silicon or Olefin	0.03 [Mpa]
50 to 250	Norprene	0.05 [Mpa]
90 to 500	Silicon	
90 to 400	Kalrez	

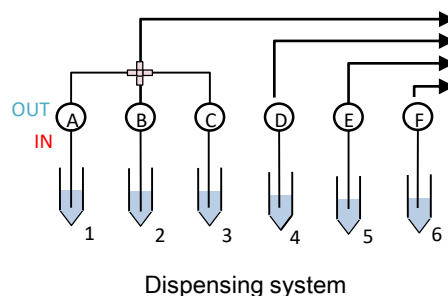
The quality of the material of a tube is limited by the flow area.



Manual operation screen



Program edit screen



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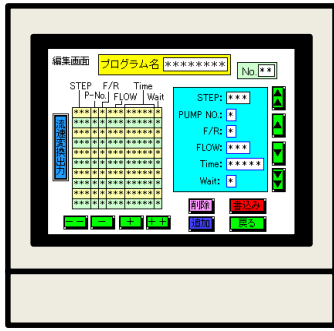
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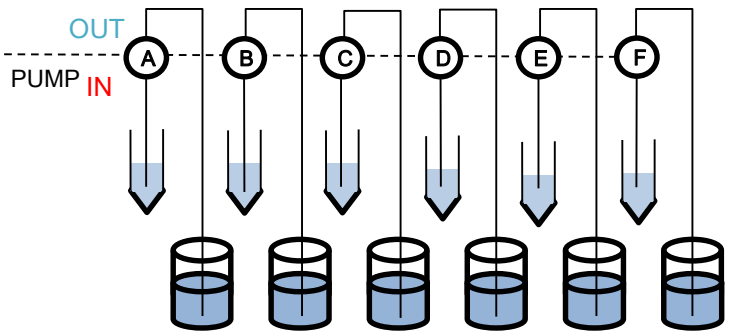
[Agent]

PRO-6000 6PUMP Dispensing system

YABEGAWA



PRO-6000 6PUMP

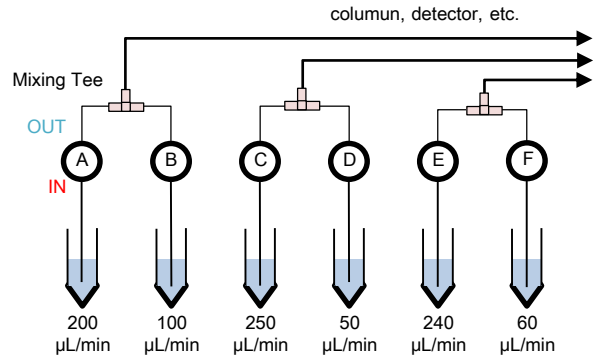


Six pumps are built in the main body.

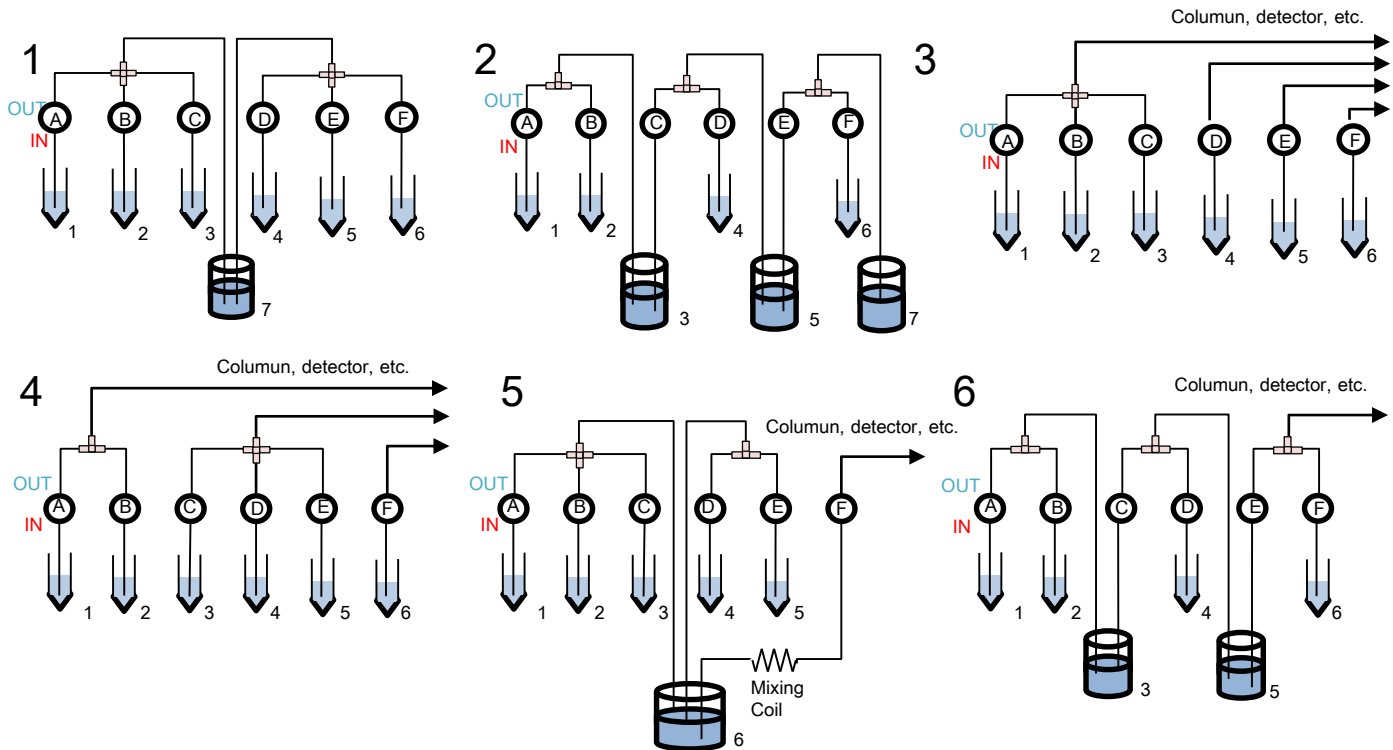
SAMPLE PROGRAM

This is a program which mixes solution at following rate and passes 3000 μ L of mixed-solutions to a detector. A:B=2:1 C:D=5:1 E:F=4:1

P-No.	FLOW μ L/min	TIME min	VOL μ L	TOTAL VOL μ L
A	200	10	2000	3000
B	100	10	1000	
C	250	10	2500	3000
D	50	10	500	
E	240	10	2400	3000
F	60	10	600	



Dispensing system



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The biosensor using an electrochemistry measuring method.
High sensitivity and high selective sensing device.

In order to measure a patient's health condition from a sample, a patient goes to specialized agencies, such as a hospital. It needs to be pretreated using the expertise by a clinical laboratory technologist. After a detection inhibitory substance is removed, analysis of each ingredient in a sample is conducted. The patient needs to go to specialized agencies, such as a hospital, and needs to undergo an inspection. The sensor by which a patient can diagnose his health condition himself at home is called for.

This equipment performs a pretreatment and measurement of a sample automatically in detection of uric acid in a urine sample. The patient itself can diagnose health condition easily.



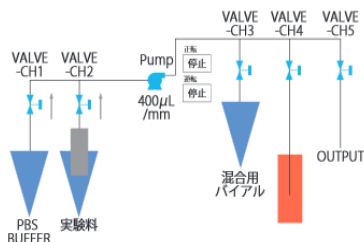
Electrochemical biosensor chip 3.5cm×1.2cm

- working electrode, antipole, copper thin film which as standard reference electrode are sputtered on-board.
- Since it wires in polymer resin, copper does not participate in the reaction in solution.
- Connector for circuit board is general USB interface. Disinstallation is easy.

URIC ACID DETECTION USING ELECTROCHEMICAL SENSOR CHIP

Pretreatment module

First, sulfite ion and the organic impurities were removed from the real urine sample by the miniaturized NH₂-terminated filter (Pore size is less than 10μm.). In addition, the electrochemical detection essentially requires controlling pH. In the pretreatment system, the filtered sample was mixed with phosphate buffer. The pH of the sample solution was adjusted to pH 7.4 in the sample pH range between 4.5 and 7.5. Then, the electrochemical sensor measured the sample without further pretreatment



The calibration curve shows a good linear relation with respect to the concentration of uric acid between 150 mM to 500 mM.

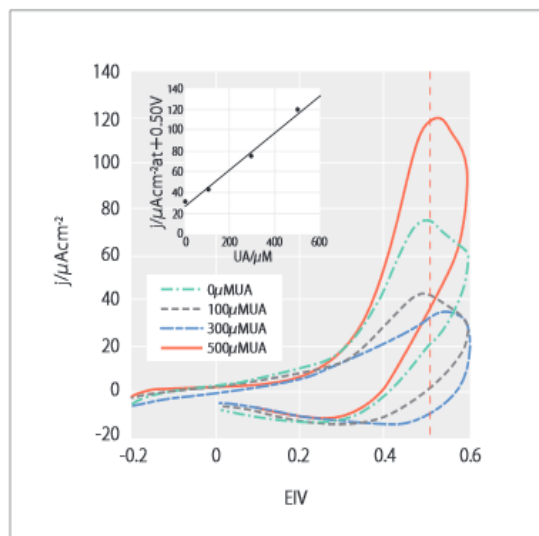


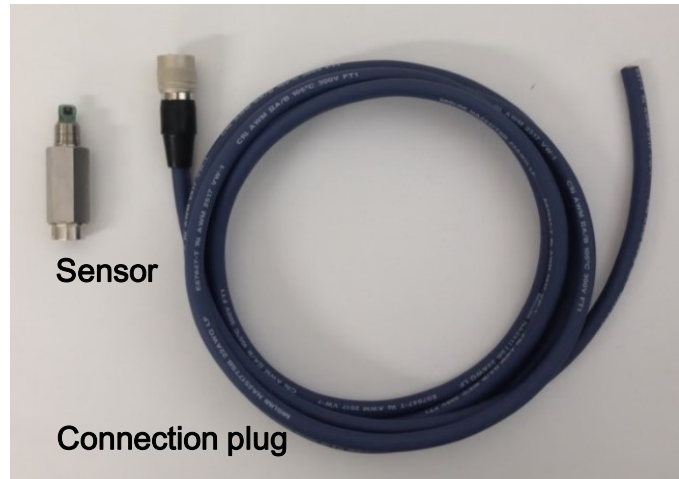
Fig.3 Cyclic voltammograms of FcC6SH SAM modified Au for the detection of uric acid in the urine sample. Sweep rate was 0.05 V s⁻¹.

Small relative humidity sensor (%RH)
The temperature and humidity of the gas inside the pipe can be measured.

High-performance semiconductor temperature humidity sensor is being used for the detection part.

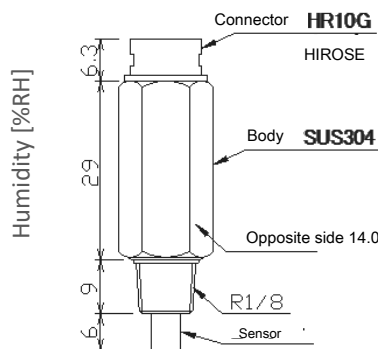
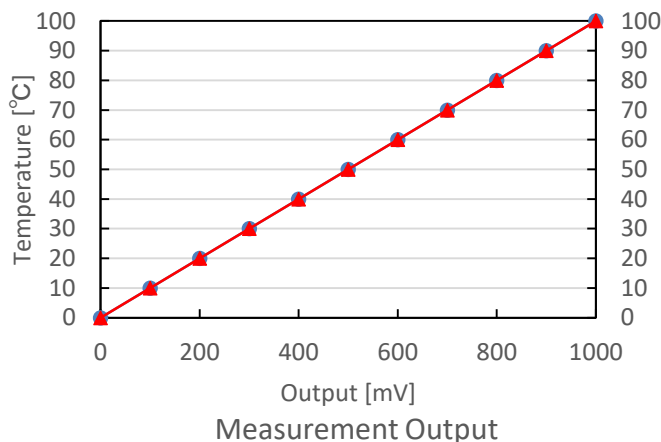
Summary

- The temperature and the humidity can be measured at the same time.
- Measurement output is analog "0-0.8V".
- The optional monitor who indicates a measured value can be connected.



Specifications

Device under test	Gas	Measuring Range	Temp : 0-80°C Humi : 5-95 %RH
Using Pressure	-30-500kPa	Accuracy	Temp : 5-60 °C±0.3°C Humi : 20-80 %RH±2% ※without freeze and dew condensation on the sensor
Withstanding Pressure	-80 ~ 1100kPa 30min	Measuring Output	Temp : 0 ~ 100°C/0 ~ 1 V Humi : 0 ~ 100%RH/0 ~ 1 V separation capacity 12bit
Sensor Connection	Rc1/8	Output offset error	±0.02% Max 0.75%FS
Power Source	3.3V ±5% 10mA DC	Output gain error	-0.10% Max±2%FS
Accessory	Connection plug (with 2m cord)	Output gain error drift	-3ppm/°C
Options	<ul style="list-style-type: none"> • Monitor (HRTU-M) • Analog/Serial Converter 		



Outline drawing of the Sensor



※ Specifications may change without notice.

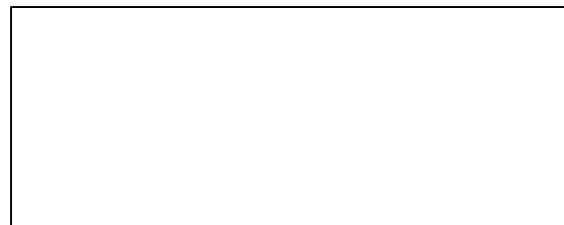
YABEGAWA Electric Industries, Ltd.

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Automated reagent diagnostic equipment

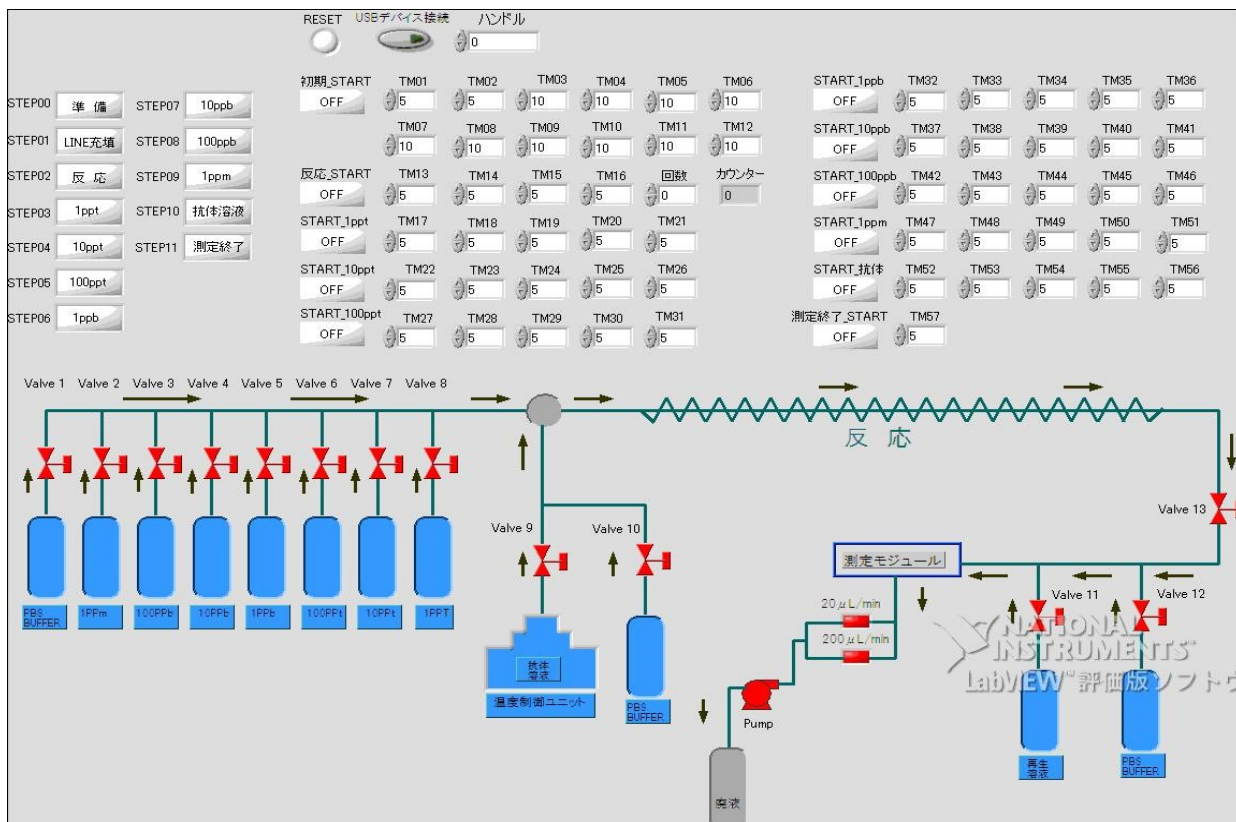
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Summary

- Automatically create a calibration curve by 8 points standard solution (1ppt ~ 1ppm).
- Antibody-antigen reaction activation treatment in the temperature controller of reaction paths.
- By dedicated LabView software, it is possible to make a diagnosis of automatic reagent by the program by simply set the standard solution and antibody-antigen.

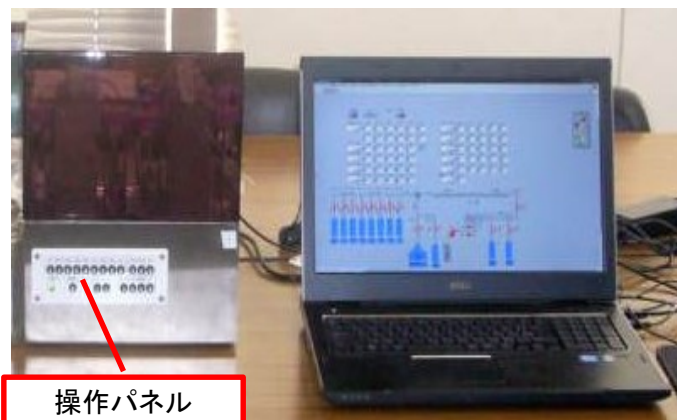
PC screen

PC—LabView



Specification

Power Source	AC100V/DC24V
Outer diameter	W270 × H300 × D290 (mm)
Standard solution	8ch (1ppt.....1ppm)
Solenoid valve	4,3,2-way valve •• Each one, 1-Way valve •• Four
Solenoid valve	Tube φ0.25, φ0.4, φ0.5



This equipment was developed by the guidance of Ushio Inc. New Business Development Office.

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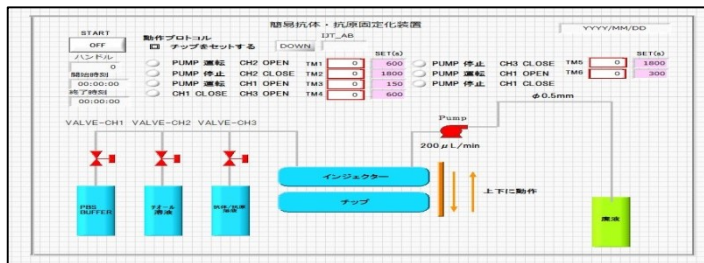
Automatic antibody/antigen immobilization equipment

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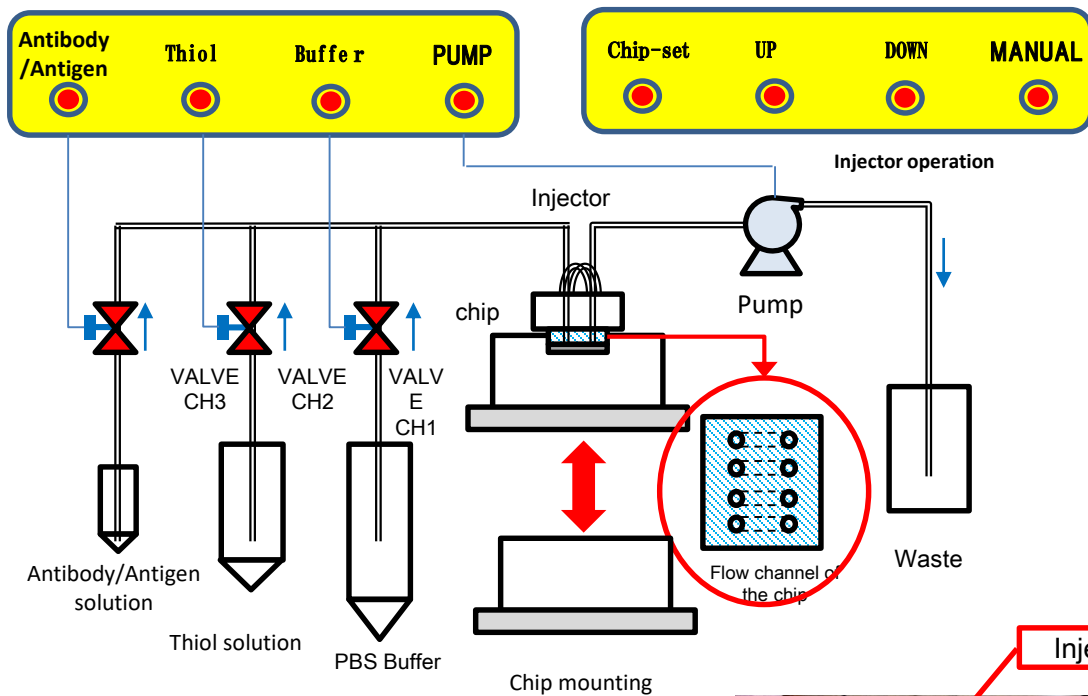
Summary

- An antibody or an antigen is immobilized automatically on the chip.
- Reagents are injected to a flow channel in the chip by a pump.
- When using exclusive software, antibody immobilization is performed automatically

Flow diagram



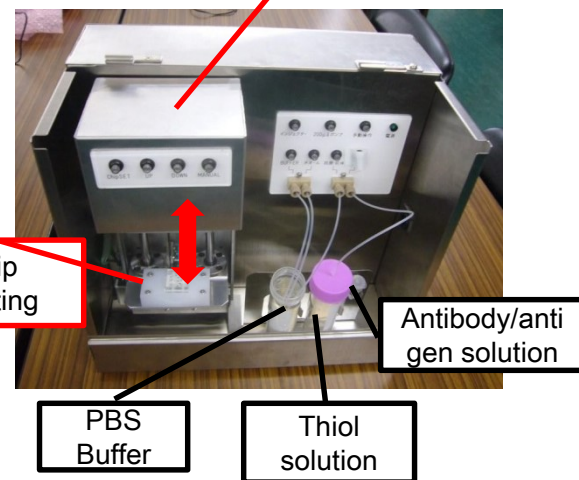
PC
Labview screen



Specification

Power Source	DC24V
Outside dimension	W290 × H260 × D180 (mm)
Flow rate	200μL/min
Solenoid valve	Three solenoid valves
Connection	¼"-28UNF (Both IN and OUT)

Appearance



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Automatic density adjustment equipment

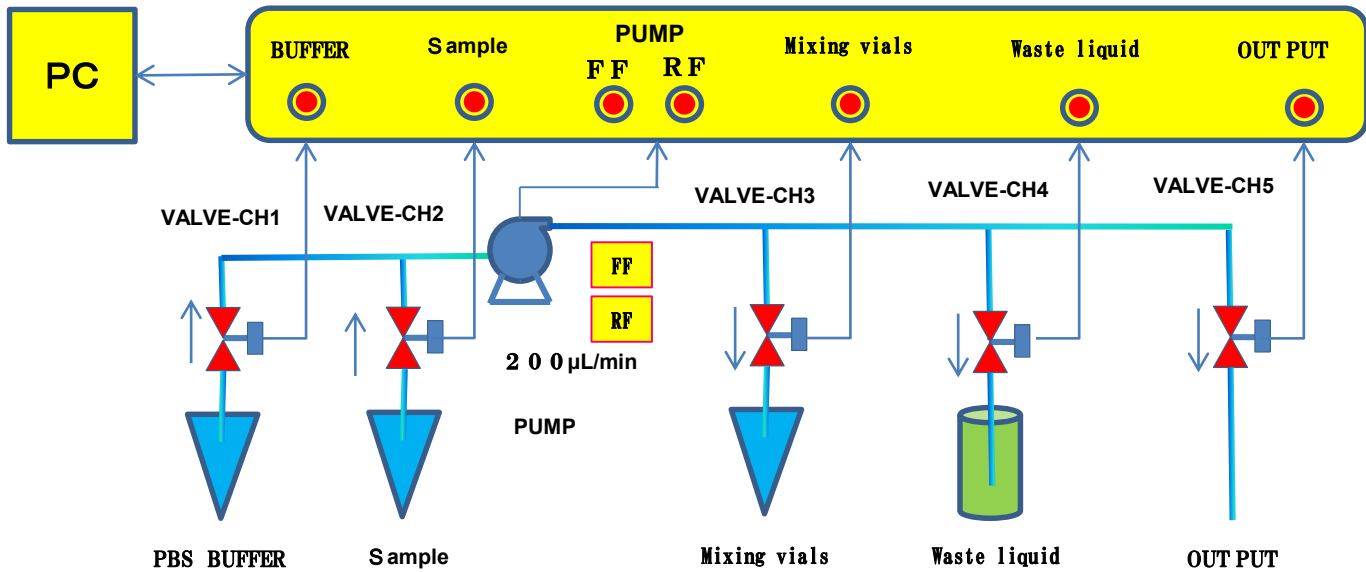
Automatically adjust the dilution concentration of the reagent dispensing.

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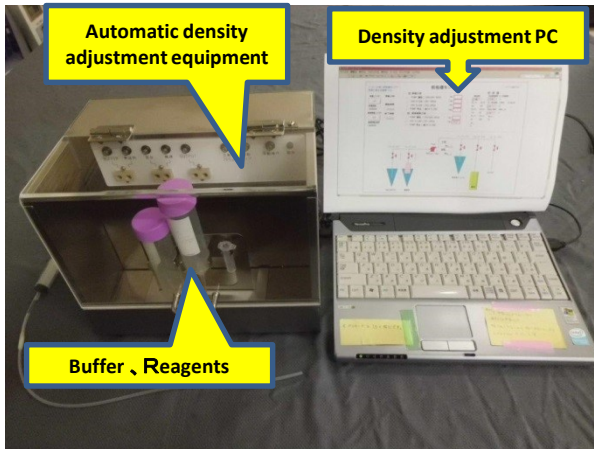
Summary

- Device to dilute the concentration of the sample automatically.
- Concentration of the reagents by a dedicated Labview software, dilute automatically in accordance with the program.

Flow diagram



Appearance



Specification

Power Source	DC24V
Outside dimension	W250×H200×D180 (mm)
Flow rate	200 µL/min
Solenoid valve	Five solenoid valves
Connection	¼"-28UNF (Both IN and OUT)

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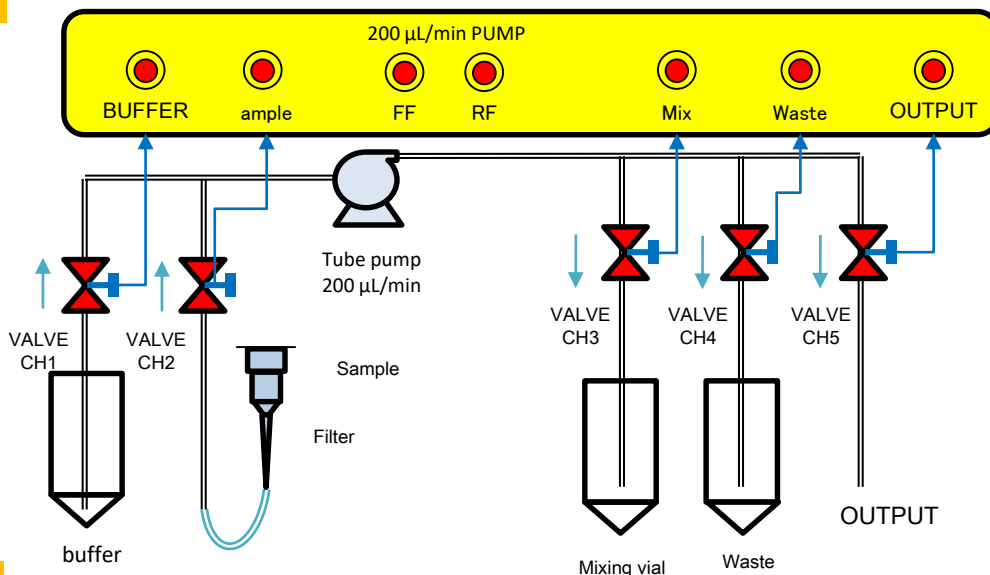
Automatic pretreatment equipment

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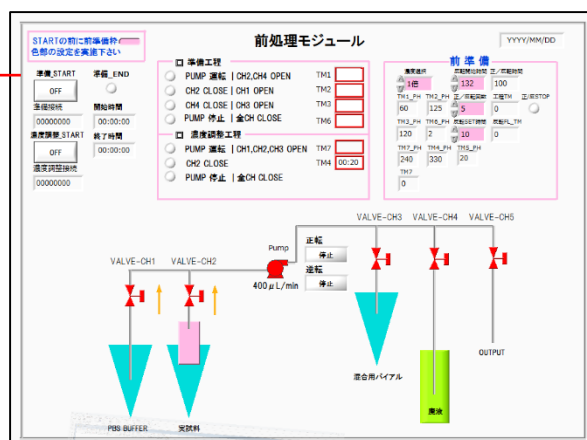
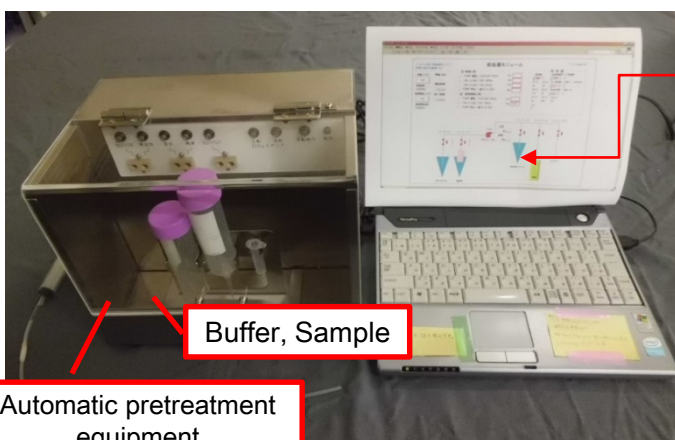
Summary

- The equipment which preprocesses a sample automatically.
- When exclusive Labview software is used, a reagent and a filter are just set and a sample is filtered automatically by a program.

Flow diagram



Appearance



Labview screen

Specification

Power Source	DC24V
Outside dimension	W250×H200×D180 (mm)
Flow rate	200 µL/min
Solenoid valve	Five solenoid valves
Connection	¼"-28UNF (Both IN and OUT)

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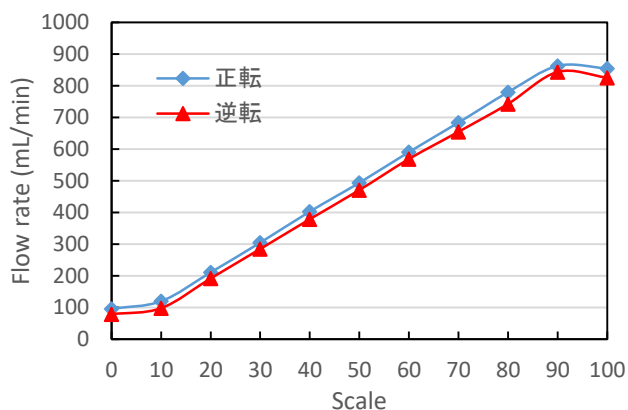
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Rechargeable battery-powered ! Portable device !

Summary

- This device is driven by two 12V nickel hydride batteries.
- It run four hours on a single full charge.
- The voltage of the batteries are shown to the indicator of the body, so charge time is readily-apparent.
- The flow rate can be varied freely by the knob from the Min. to Max.
- Reversal operation can also be performed.
- Peristaltic tube pump. The tube of the pump is not in contact with metals.
- Self-suction. Not need priming water.

Specifications

Pump part

Materials	Tube : flurane (F-5500-A) PharMed / Norprene / Olefin-based
	Base : NBR
	Cover : PP
Motor	DC geared motor
Connection	Φ8
Discharge pressure	0.05 MPa (Discharge 5m /Imbibition 5m)
Flow rate	800 mL/min
Duration of Pump Life	About 1000 hours (※Not guarantee time)

Control part

Power	Nickel hydride battery 24V (12V×2)
Outside dimension	W155×H190×D260 mm
Weight	About 6 kg (batteries are included)
Power switch	ON-OFF
Changing-over switch	discharge-stop-imbibition
Flow rate Knob	Low to 800 mL/min
Operation light	Imbibition : red Discharge : green
Battery drain time	More than 4 hours (Full charge)

※ Specifications may change without notice.

We'll response to a request from customers. For more information...

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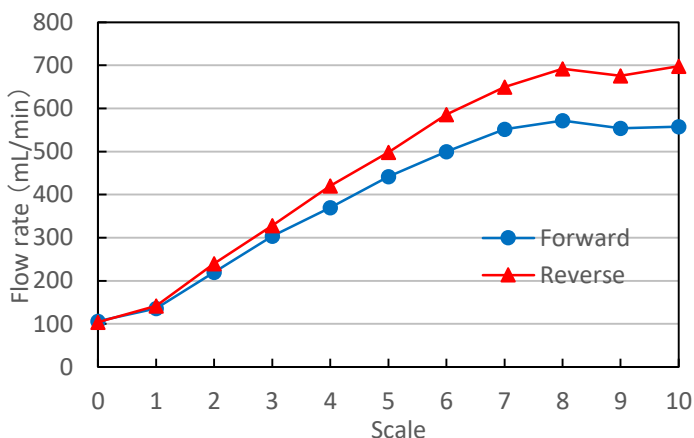
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Rechargeable battery-powered ! Portable device !

Summary

- This device is driven by a 12V nickel hydride battery.
- It run two hours on a single full charge.
- The voltage of the batteries are shown to the indicator of the body, so charge time is readily-apparent.
- The flow rate can be varied freely by the knob from the Min. to Max.
- Reversal operation can also be performed.
- Peristaltic tube pump. The tube of the pump is not in contact with metals.
- Self-suction. Not need priming water.

Specifications

Pump part

Materials	Tube : flurane (F-5500-A) PharMed / Norprene / Olefin-based
	Base : NBR
	Cover : PP
Motor	DC geared motor
Connection	Φ4.8
Discharge pressure	0.05 MPa
Flow rate	500 mL/min
Duration of Pump Life	About 1000 hours (※Not guarantee time)

Control part

Power	Nickel hydride battery 12V
Outside dimension	W130×H190×D180 mm
Weight	About 2.7 kg
Power switch	ON-OFF
Changing-over switch	discharge - stop - imbibition
Flow rate Knob	Low to 500 mL/min
Operation light	Discharge : red imbibition : green
Battery drain time	2 hours and more (Full charge)

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Summary

- Anytime, anywhere! it is a device that automatically suck the gas.
- 24 solenoid valves and DC system air pump
- Create a program in the touch panel, you can drive or stop according to the schedule.
- Battery-powered portable device
- External tube can be removed with one touch

Specifications

Outside dimension	460×220×290 mm
Weight	12 kg (battery included)
Battery life	42(hour/once charge)
Flow rate	MAX 2.0 L/min (adjustable by flowmeter)
Inside Tubing Material	Silicon, Polyurethane etc.
Power Source	24V400 type Lithium battery
Power consumption	24V 7.2W
Connection	ID 4 mm
Accessories	AC adapter for charging
Ambient Temp.	0-40 °C

AC adapter for charging

Rating capacity	90W
INPUT	100-240V 50/60Hz 2.5A
OUTPUT	19V/4.73A

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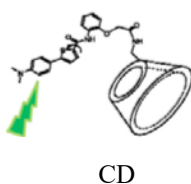
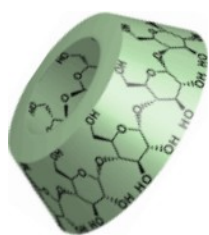


- Measure the concentration of the surfactant in the waste water.
- Add the sample (100 μ L) to the vial of the detection kit.
- Setting the vial to the sensor.
- Portable battery powered, can be measured in the collection site of the sample.

Portable Fluorescence Sensor Surfactant & Detection kit

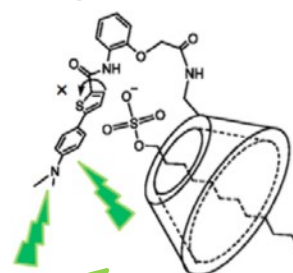
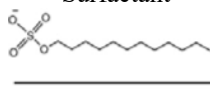
Fluorescence Assay Based on Twisted Intramolecular Charge Transfer (TICT)

Cyclodextrin(CD)



Low emission

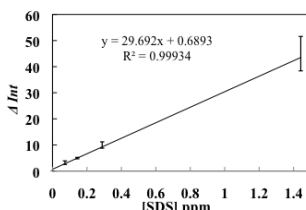
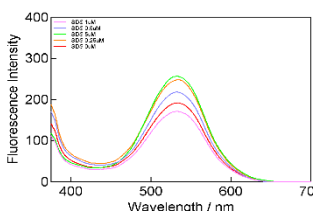
Surfactant



Strong emission

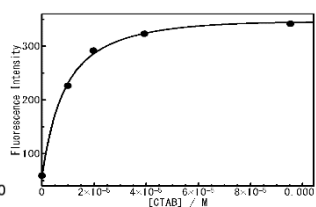
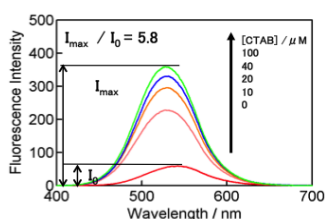
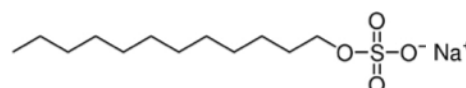


Guest included in CD cavity



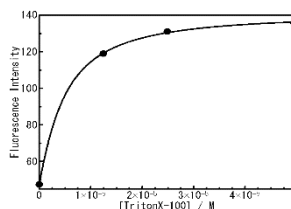
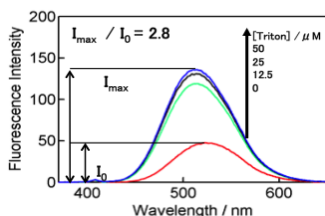
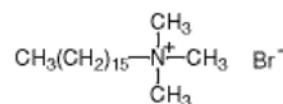
Sodium Dodecyl Sulfate (SDS) Detection kit

Anionic surfactant



Cetyltrimethylammonium Bromide (CTAB) Detection kit

Cationic surfactant



Polyoxyethylene p-t-octylphenyl Ether (TritonX-100) detection kit

Non-ionic surfactant

