

SINGLE PURPOSE PROCESS TITRATION ANALYZER

Model: SAT-100

This analyzer automatically measures component concentration in process streams using the principal of titration. Analytical operations such as sampling from process line, dilution with solvent, titration, end point detection and titration cell cleaning are automatically controlled together with concentration calculations and data processing by built-in microprocessor based controller. The result is transmitted by 4~20mA signal.

FEATURES

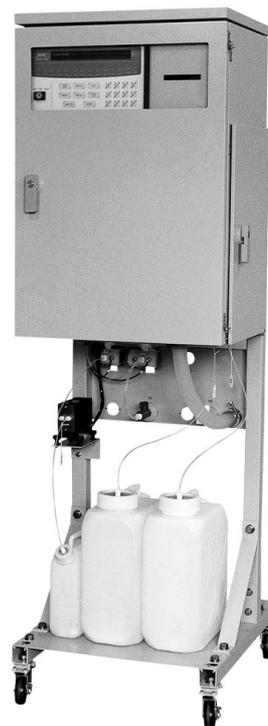
- **Single Stream, Single Component**
Suitable for measurement of single stream and single component.
- **Analyzer Calibration is initiated by one touch action.**
The component concentration is calculated on the basis of a calibration curve which is internally derived from a set of parameters such as titrant concentration and sample volume and automatically up-dated.
As pre-determined sample or mixed solution can be used as a calibration standard, a previous analysis of titrant concentration is not required.
- **Measurement range can be easily changed by the operator.**
Range is decided by titrant concentration and sample volume. Titrant concentration is selected by operator and two types of sampling volumes, are available for high and low sample concentration.
- **Interface to peripheral equipment is available.**
By interfacing to a host computer, information such as analysis results and equipment status is transmitted to the host computer.
- **One reagent pump system is equipped as standard.**
Reagent pump (capacity: 10mL) is used for injection of masking reagent before titration and for injection of cleaning solution into titration cell and electrode.

STANDARD SPECIFICATIONS

Product Name	: Single purpose process titration analyzer
Model	: SAT-100
Measurement Object	: Liquid, applicable by neutralization titration or redox titration, which has end point(s) with sufficient potential change. One or two end points are used for calculation of concentration, but only single components can be measured.
No. of measuring Streams	: one
No. of measuring Components	: one

TYPICAL SYSTEM CONFIGURATION

(Refer to Flow Diagram)	
Titration Pump	: Stepping-motor driven plunger type pump (max. capacity: 20mL)
Sampling Pump	: Air driven plunger type pump (capacity: 10mL)



Valve	: Air operated diaphragm valve, Materials: PP, per-tetrafluoro ethylene
Potentiometer Sensor	: High input impedance type : Combination type pH or ORP electrode(to be specified by customer)
Controller	: Microprocessor based system
Titration cell	: Material: Hard glass

OPTIONS

Read out	: Integral chart recorder or integral printer
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INPUT/OUTPUT SIGNALS

Input Signals	
Start signal	: Voltage free contact, rating 24V DC, 0.2A
Output signals	
Analogue signal	: For concentration value, 4~20mA DC (max. load 600Ω, including recorder load)
Contact signals	: Analyzer failure alarm, concentration high alarm, concentration low alarm, power failure alarm, auto mode, sampling, end of measurement cycle, analyzer running, voltage free contact signal and rating 100V AC, 0.05A or 24V DC, 0.2A

UTILITIES AND SAMPLING CONDITIONS

Sample

Pressure	: 50~150kPa
Flow rate	: approx. 1L/min. (Sample first loop may be required to minimize sample transportation lag.)
Temperature	: 10~40°C
Filtration	: Particulate filter with 10µm pre size, to be installed by customer.

Instrument Air

Pressure	: 400~700kPa
Flow rate	: approx. 100mL/min.
Quality	: Instrument air grade (dried air, free from dust and mist)

Dilution/cleaning Water

Pressure	: 50~150kPa
Flow rate	: approx. 100mL/min.
Quality	: De-ionized water

Power source	: 100 or 110V AC±10% , 50/60Hz, (to be specified by customer)
Drain	: Atmospheric vent, required (No drain line uplift)

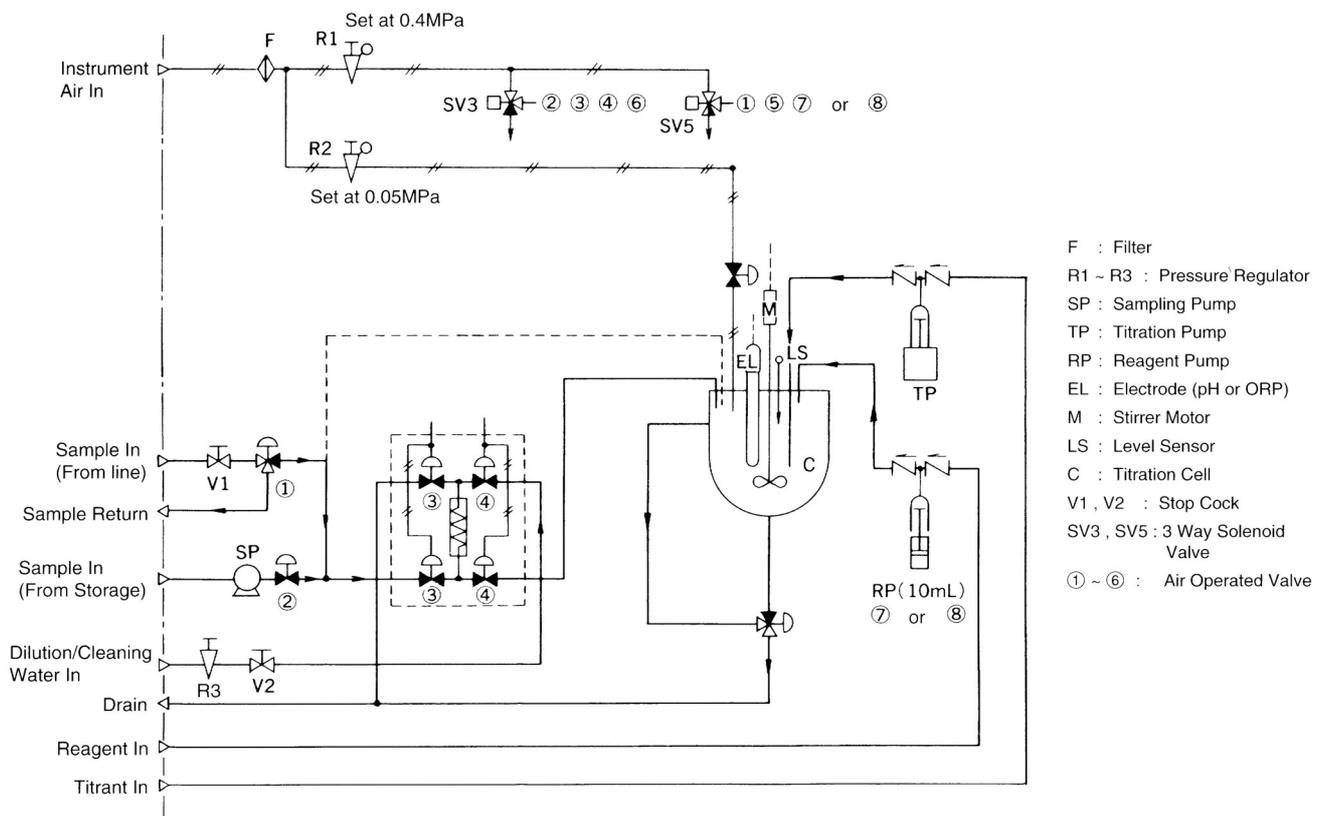
DIMENSIONS

Dimensions	: 500(w) x 600(d) x 1500(h) mm
Weight	: 100kg
Surface colour	: Munsell 5Y7/1

INSTALLATION CONDITIONS

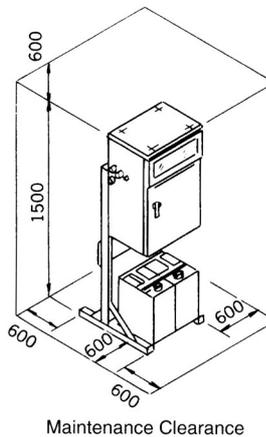
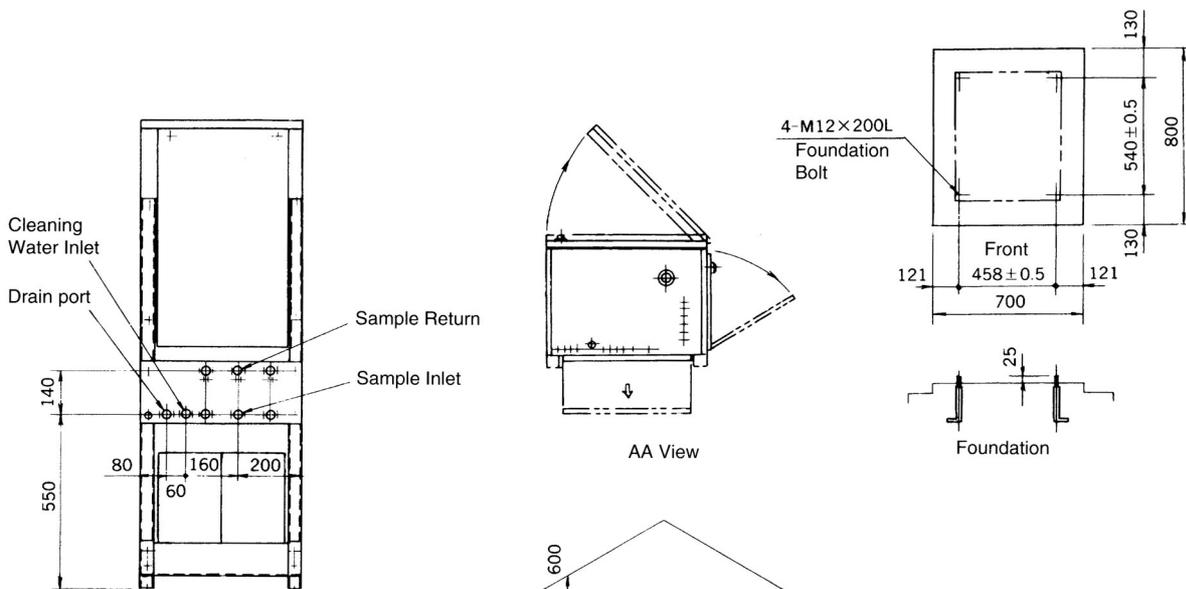
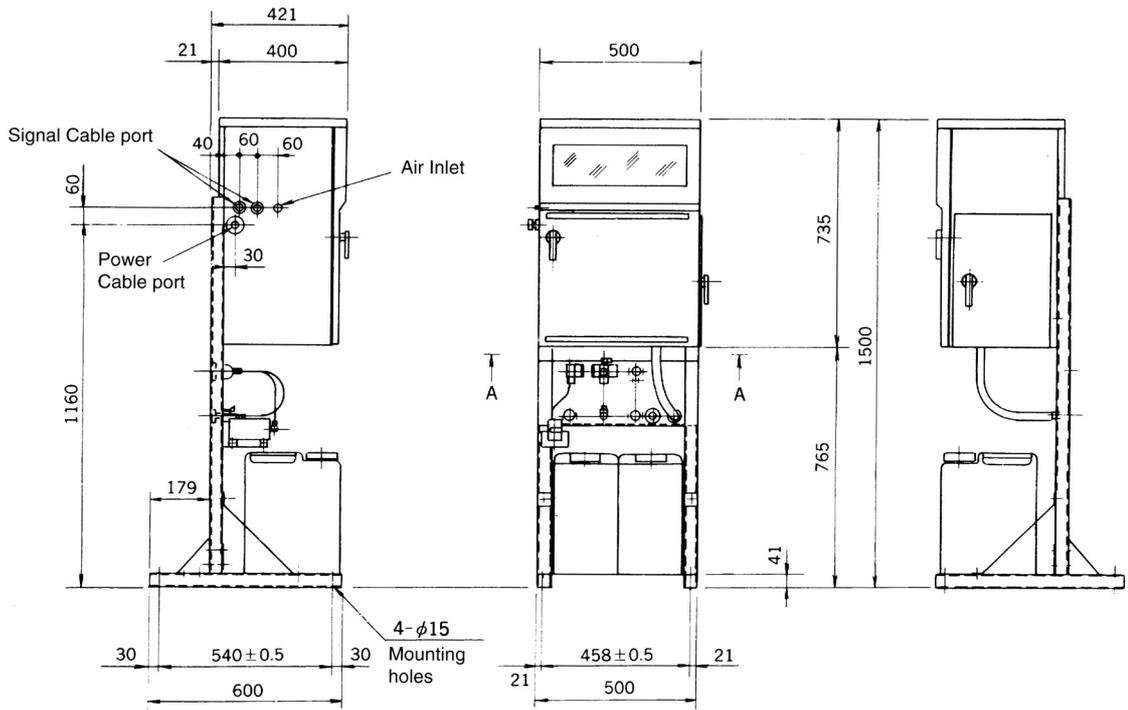
Temperature	: 10~40°C
Humidity	: Non condensing
Location	: Indoor (No direct sunshine, no rain fall)

FLOW DIAGRAM

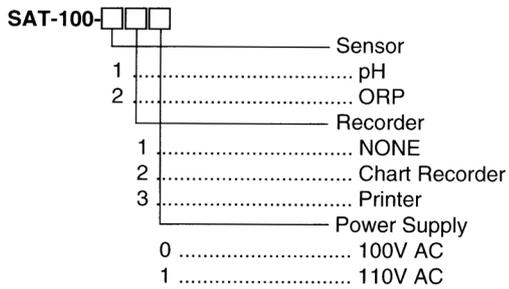


DIMENSIONS

Units: mm



PRODUCT CODE



TYPICAL APPLICATIONS

Measurement	Range(s)	Type of titration
Hydrogen peroxide in pure water	0 ~ 50mg/L	Redox
	0 ~ 200mg/L	
	0 ~ 500mg/L	
Nitric acid in process stream	0 ~ 100g/L	Neutralization
Sodium hydroxide in process stream	190 ~ 270g/L	Neutralization
Carbonic acid in ammonium carbonate solution	0 ~ 200g/L	Neutralization

DKK-TOA CORPORATION



CAUTION

Do not operate products before consulting instruction manual.

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