SPECIFICATION SHEET

TOADKK

SAND FILTER FS-3

This device is a pretreatment device for sample water introduced into water quality measurement devices such as alkalinity meters, residual chlorine meters, and chlorine demand meters.

If substances such as algae, microorganisms, and sand contained in the sample water flow into the water quality analyzer, they can clog the pipes and cause measurement errors. By filtering sample water with filter sand, this device removes these substances, prevents contamination of the measuring device, and is used to extend the maintenance cycle.

Filter sand is contained in two filter tanks, which are automatically backwashed alternately at regular intervals. During this time, sample water is continuously supplied to the measuring device, so it can be used in combination with various continuous measuring devices.

Features

○Since the SS adhering to the filter sand is periodically backwashed with washing water, it maintains stable filtration performance for a long period of time.

○Since two filter tanks are installed and washed alternately, filtered water can be continuously supplied to the water quality measuring device.

Standard specifications

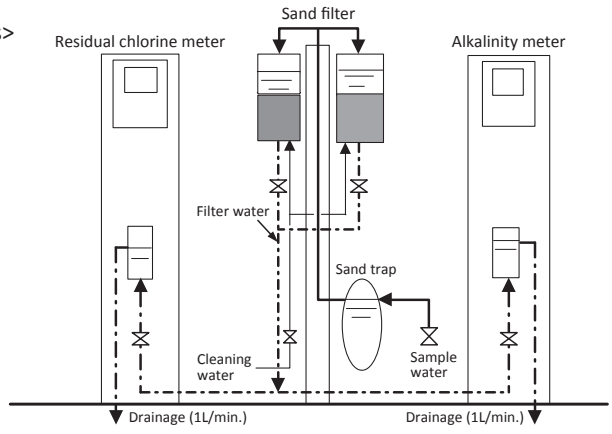
Product name	: Sand filter
Model	: FS-3
Purpose	: Removal of SS from sample water introduced into the water quality analyzer
Method	: Two-tube continuous sand filtration method (automatic backwash alternately)
Filter material	: Sand (Particle size 0.8 or 1.0mm)
Amount	: 1 to 6L/min (Varies depending on the amount of turbidity in the sample water)
Sample condition	: Temperature…0 to 40˚C (Do not freeze) Pressure…0.02 to 0.2MPa Flow…12 to 16L/min
Cleaning watersample (for backwash)	: Quality……Tap water equivalent Pressure…Under cleaning 0.05 to 0.5MPa Stopped 0.7MPa or less
Cleaning cycle	: Approx. 14min. to 154min. Cleaning time…1 to 9min (variable) Replacement time…5 to 9min (variable) Double tube filtration time…1 to 59min (variable) Cleaning cycle (Cleaning time + replacement time + double-cylinder filtration time)×2

Structural drawing

<Configuration example for pretreatment of two water quality meters>

○Install the water quality meter close to the sand filter, and keep the filtered water piping as short as possible.

○Since the filtered water supply from the sand filter to the water quality meter is a gravity flow due to the head difference, make sure that the installation surface (level) of the sand filter is not lower than the installation surface (level) of the water quality meter.



Power	: AC 100V±10% 50/60Hz Provide a step-down transformer for voltages other than AC 100V.
Power consumption	: Approx. 30VA (Approx. 80VA when optional air pump is added)
Wiring port	: For diameter 6 to 12mm cable gland
Piping	: Sample inlet; Rc 1/2 Tap water inlet; Rc 1/2 Sample water outlet; Rc 1/2 Drain; Rc1 1/2
Weight	: Approx. 60kg
Main material / Finish	: Control unit; Poly carbonate Mounting part; SPCC (Steel plate), SGP (Steel pipe), Metallic silver baking
Structure	: IP52 equivalent (indoor drip-proof type) (When installing outdoors, rainproof measures are required.)
Main material of wetted parts	: Hard vinyl chloride, corrosion-resistant tube, gunmetal, stainless

Operation

1. Supply sample water and cleaning water, and turn the power switch ON.
2. Then SV1 and SV3 are opened and the device starts filtering. After the two-cylinder filtration time has elapsed, SV1 becomes “closed” and SV2 becomes “open”, Filter 1 stops filtering and starts backwashing.
3. After backwashing is completed, SV2 is closed and filter 1 is replaced with sample water. The sample water at this time is drained so that it does not mix with the filtered water.
4. After the conversion time has elapsed, SV1 becomes “open” again and filter 1 Filtration resumes.
5. After the 5-cylinder filtration time has passed, SV3 will be "closed" and SV4 will be "open", and filter 2 will stop filtering and start backwashing.
   (Following operations are the same as for filter 1.)
   In this way, the instrument alternately cleans two filters, so sample water (filtered water) is continuously supplied to the analyzer. can be obtained by

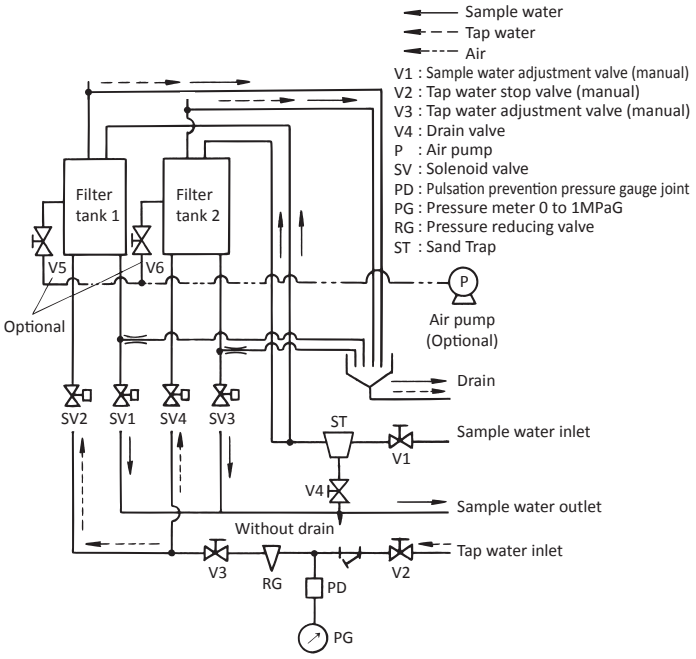
Time chart

The figure on the right shows the relationship between the operation process of the operation unit, the operation of the solenoid valve, and the set time of the cleaning timer.

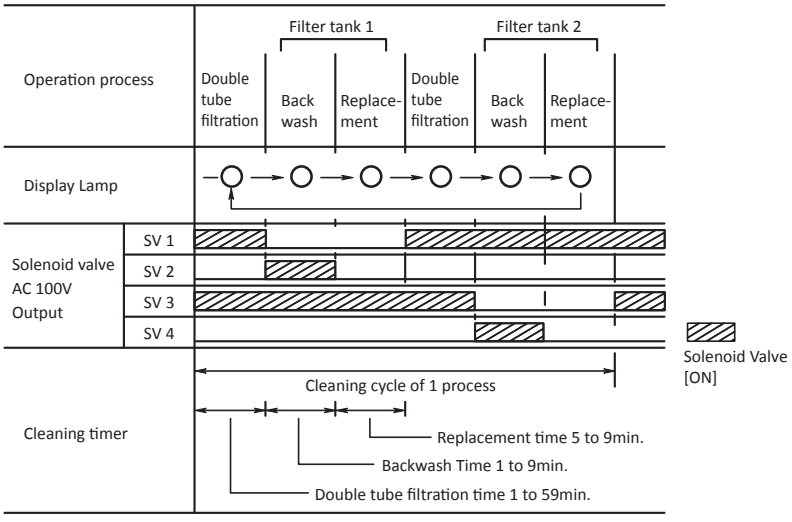
Option

Air pump : If the sample water is highly turbid, an air pump is used to aerate the filter tank to prevent clogging of the filter sand, and the filter sand is agitated and fluidized.
The structure of this air pump unit is neither dustproof nor waterproof.

Air purge : When installing in a corrosive gas atmosphere, perform an air purge to protect the inside of the operation section (cleaning sequence circuit).
Air purge port…Copper pipe joint for outer diameter φ6
Supply air…Equivalent to instrumentation air
Pressure; 0.14MPa
Flow; 0.5 to 1L/min

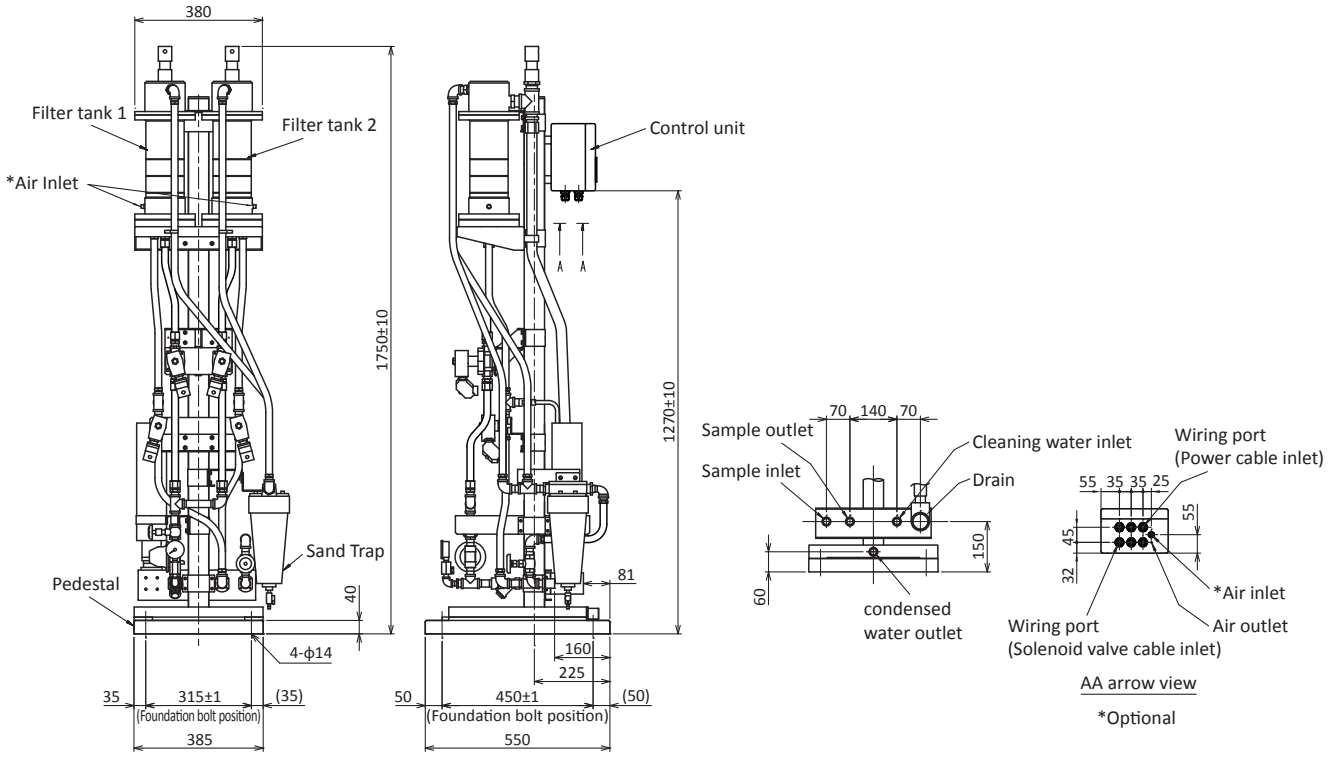


Filtration system diagram

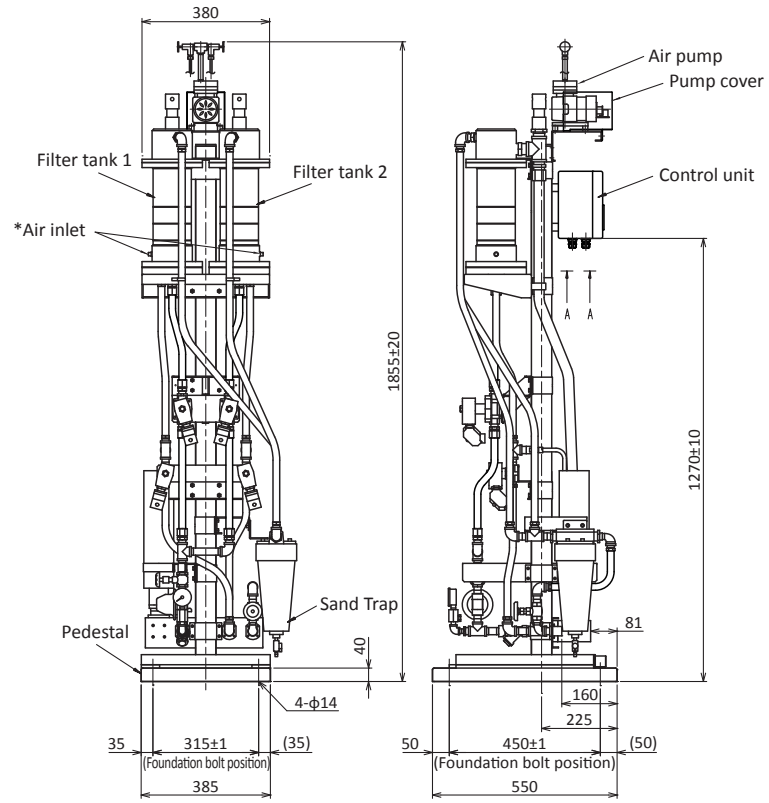


Dimensions Unit : mm

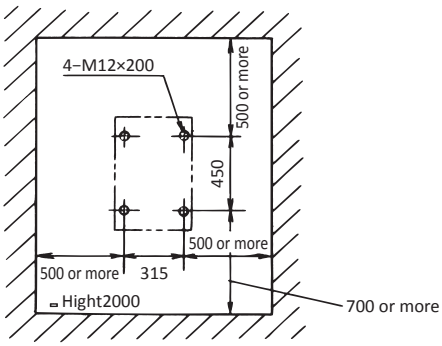
● Standard type

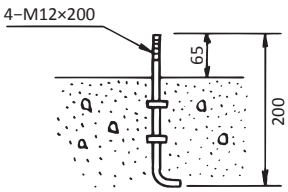


● With air pump



● Maintenance Space





Product code

FS3-1-□□□□□□

- Power pressure *1
  - 1 ····· AC 100V 50/60Hz
  - 2 ····· AC 110V 50/60Hz (With step-down transformer)
  - 3 ····· AC 115V 50/60Hz (With step-down transformer)
  - 4 ····· AC 120V 50/60Hz (With step-down transformer)
  - 5 ····· AC 200V 50/60Hz (With step-down transformer)
  - 6 ····· AC 220V 50/60Hz (With step-down transformer)
  - 9 ····· Special
- Air pump
  - 0 ····· None (Standard)
  - 1 ····· Equipped
  - 9 ····· Special
- Control unit air purge
  - 0 ····· None (Standard)
  - 1 ····· Equipped
  - 9 ····· Special
- Wiring connection
  - 0 ····· Cable gland for 6 to 12mm diameter (standard)
  - 9 ····· Special
- Wetted part material *2
  - 0 ····· SUS304 (standard) *3
  - 1 ····· Resin
  - 9 ····· Special
- Language
  - 0 ····· Standard
  - 1 ····· English
  - 9 ····· Special

*1. If the power supply voltage is other than AC 100V, use a step-down transformer (product code ZP30-0-xxx : No need to order separately) and combine with the main unit of AC 100V.
↑ Select 1, without air pump.
Select 2, equipped with air pump

*2. When used for fluorine ion monitor, pretreatment of seawater residual salt, etc., or when salt is used for desulfurization wastewater treatment When using for sample water that contains a large amount of water, select a corrosion-resistant resin.

*3. The material of the solenoid valve is gunmetal.

Note 1. If a wiring port adapter is required, please inform our sales representative of the specifications in advance.

TOA DKK

DKK-TOA CORPORATION

⚠ CAUTION Please read the operation manual carefully before using producuts.

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Information and specifications are subject to change without notice.

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