



SPECIFICATION SHEET



Sand filter

Model: **FS-3**

BS11-027

This item is used for pre-conditioning the sample prior to its introduction into water quality analyzers such as Alkalinity or residual chlorine analyzers etc..

If algae, bacteria, sediment or other suspended material present in the sample are allowed to flow into the water quality analyzer, internal plumbing may become clogged, causing measurement errors. This equipment filters the sample using sand and therefore removes these materials from the sample, preventing internal fouling and prolonging the time period between maintenance.

The sand is contained in two filter tanks, and is subjected to automatic, periodic back-washing. The sample is continuously supplied to the analyzer. This filter is suitable for various types of continuous analyzers.

Features

Two cylinders of this equipment perform cleaning alternately to continuously supply the sample (filtrate) to the analyzer. Sand is used as the filtration material with alternate back washing eliminating the need for consumables such as filter paper. The cleaning period can be varied.



Standard Specifications

Product Name	: Sand filter
Model	: FS-3
Application	: SS removal from sample to be introduced into water quality analyzer
Filtration Method	: 2-cylinder continuous sand filtration (alternate automatic back washing)
Filter Material	: Sand (Particle size 0.8mm and 1.0mm)
Filtration Rate	: 1 ~ 6L/min (depending on sample turbidity)
Sample Conditions	: Temperature 0 ~ 40°C (No freezing) Pressure 0.02 ~ 0.2MPa Flow rate 12 ~ 16L/min
Cleaning Water Conditions (for back washing):	: Quality Equivalent to city water Pressure 0.05 ~ 0.5MPa when in cleaning 0.7MPa or less when not in cleaning Flow rate 12 ~ 16L/min
Cleaning Period	: Approx. 12 ~ 150min Cleaning time 1 ~ 9min (variable) Displacement time 5 ~ 9min (variable) Filtration time of both cylinders 1 ~ 59min (variable) Cleaning period = . (Cleaning time + Displacement time + Filtration time of both cylinders) x 2
Power Requirements	: 100V AC ±10% 50/60Hz
Power Consumption	: Approx. 30VA (Approx. 80VA when optional air pump is attached)

Air Source : An instrument air purge connection port is available as an option. When this equipment is used in a corrosive gas atmosphere, an air purge is recommended for protection.

Required specification

Pressure 0.14MPa
 Flow rate 0.5 ~ 1L/min
 Quality Instrumentation air grade.

Cable Joint Port : Equivalent to marine water tight cable gland for electric appliance B20a

Piping Joint Port :
 Sample inlet Rc¹/₂(PT¹/₂F)
 City water Rc¹/₂(PT¹/₂F)
 Sample outlet Rc¹/₂(PT¹/₂F)
 Drain port Rc¹/₂(PT¹/₂F)
 Air joint port Rc¹/₄(PT¹/₄F) with plug (when optional air purge is used, ø6 copper tube joint)

Weight : Approx. 70kg
Paint Colour : Acidproof metallic silver baking finish

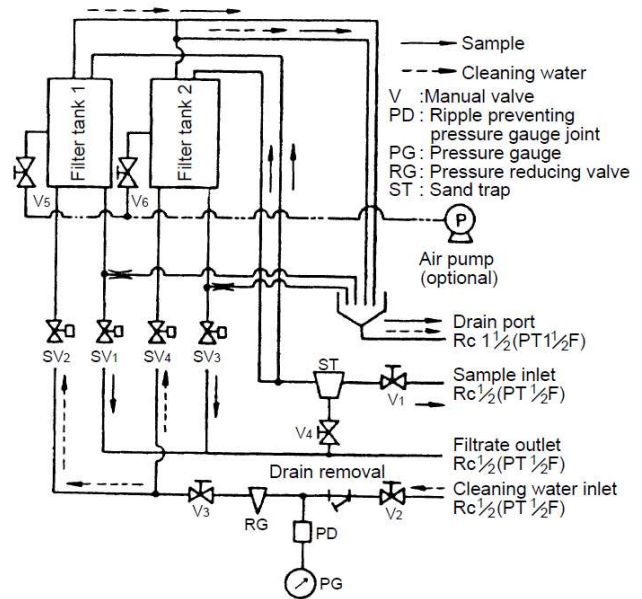
Construction : Drip-proof (Rain protection is required when used outdoors.)

Wetted Materials : Hard PVC, corrosion resistant tube, gun metal, stainless steel, neoprene

Air Pump (optional) : When sample has a high turbidity, air is blown to move the sand and prevent it from clogging.

Principle of Operation

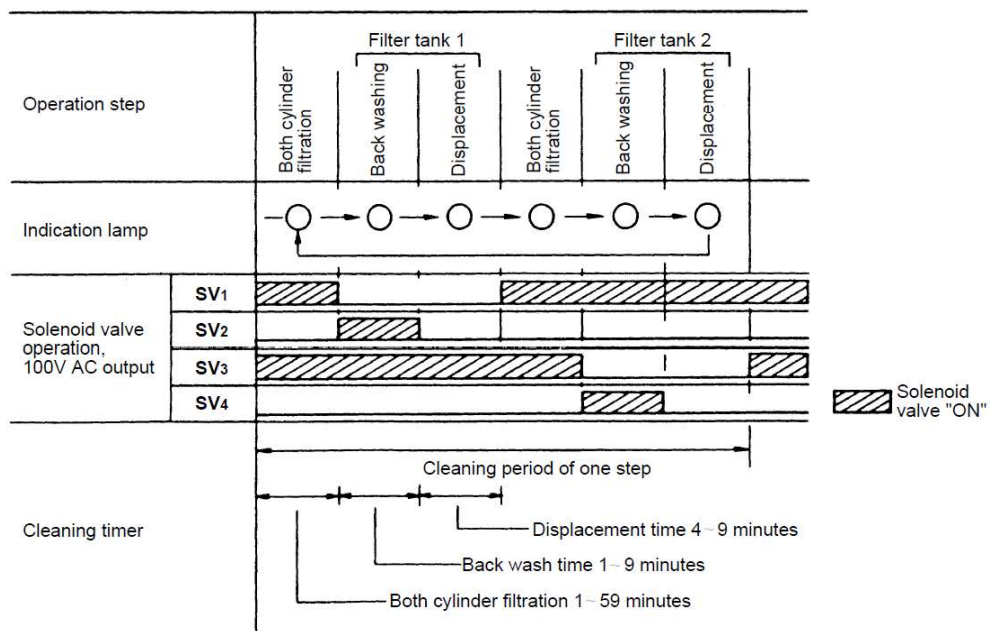
- ① When sample and cleaning water are supplied and the power switch is turned to ON, SV₁ and SV₃ open and the system starts filtration.
 - ② After elapsing the both cylinders filtration time, SV₁ is closed and SV₂ is turned to open. Filter 1 ceases filtration and back washing starts.
 - ③ After completion of back washing, SV₂ is closed and cleaning water in filter 1 is replaced by the sample. The sample is drained without mixing with filtrated water.
 - ④ After elapsing the displacement time, SV₁ opens again and filtration by filter 1 is restarted.
 - ⑤ After elapsing the both cylinders filtration time, SV₃ is closed and SV₄ is turned to open. Filter 2 ceases filtration and back washing starts. (Operations after this are the same as those of filter 1.)
- As above mentioned, two filters performs alternate washing to continue sample (filtrate) supplying to the analyzer.



Filtration System Diagram

Time Chart

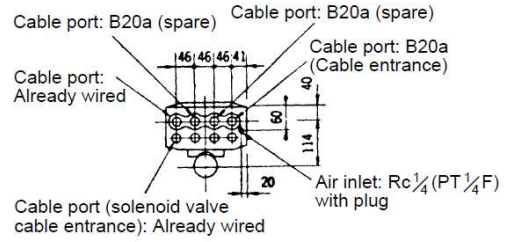
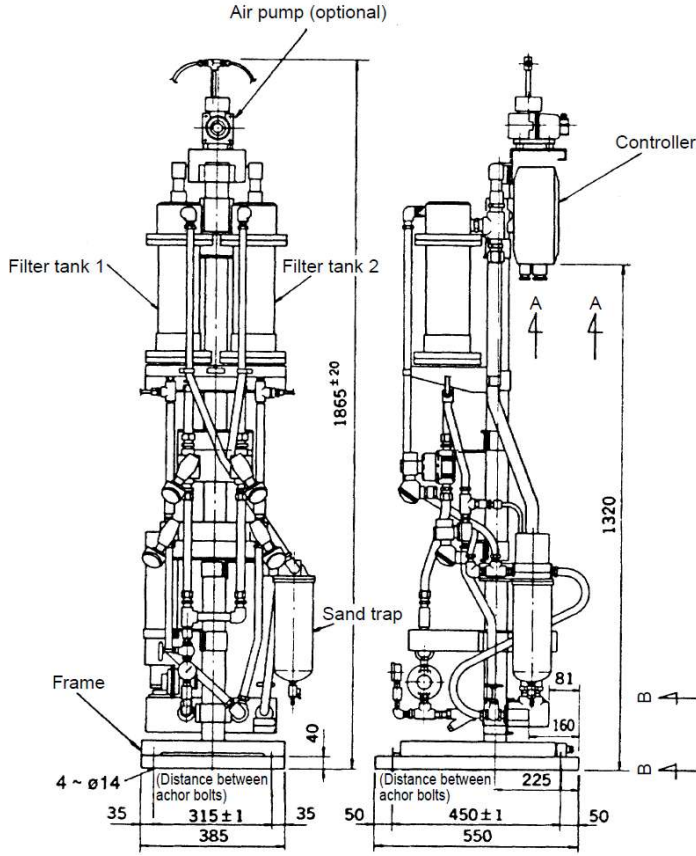
The relationship between the operation of the controller, solenoid valves and cleaning timer setting is described in the time chart below.



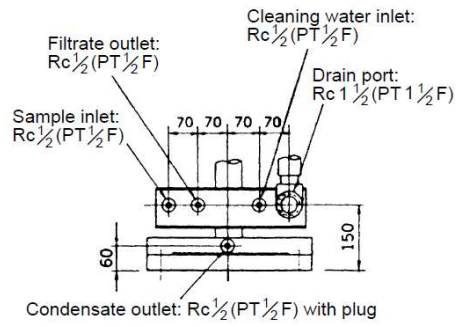
Dimensions

(Unit: mm)
General tolerance: ±10

Note: Sample (filtrate) flow from the filter to the analyzer is by natural flow based on head pressure differential. Therefore ensure that the floor level of the filter is not lower than that of the analyzer.

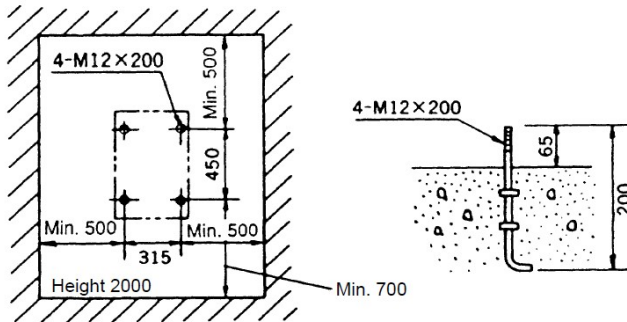


A-A



B-B

Maintenance Space



 CAUTION	Do not operate products before consulting instruction manual.
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For continuous product improvement, DKK reserves the right to change specifications without notice.

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