

This device is used in sanitization facilities before release such as a sewage treatment plant.

When measuring sodium hypochlorite, which is used as a disinfectant after normal sewage treatment, use a residual chlorine meter (CLF1620A) for sewage discharge.

Use a residual chlorine meter (CLF1620B) for simplified sewage discharge when measuring sodium hypochlorite used as a disinfectant for overflow water in rainy or simple discharge water in a treatment plant, and use a residual halogen meter (CLF1620C) for simple sewage discharge when measuring bromate disinfections.



CLF1620A



CLF1620B
CLF1620C

Features

- Total residual chlorine (free Chlorine + Bonded Chlorine) Concentration in Sewage Treated Water is measured without reagents.
- Regular reagent supply is not necessary because it is reagent-free.
- Good correlation with the DPD method is obtained because it is no reagent measurement and adjustment is not conducted.
- Since the detector is swing rotate method rotary electric without contact and continuous cleaning by beads is carried out at the pole, stable measurement is possible for a long time.
- Automatic cleaning of plumbing lines and detectors with tap water is equipped by standard. If the bio-system is very dirty, we recommend the addition of ozone-cleaning (CLF1620A).
- By adoption of large measurement tanks that are resistant to fouling, strengthened and simplified cleaning functions, we overcame the bad condition of simple discharged water by the measure of intermittent activation peculiar to discharged water (CLF1620B, CLF1620C).

Standard specifications

Product name	: Non-reagent Residual Chlorine Meter (for sewage discharged water)
Model	: CLF-1620
Measurement target	: CLF1620A; Total Residual Chlorine in Process Water in Sewage Works CLF1620B; Residual of merging sewage simplified discharged water chlorine CLF1620C; Residual of merging sewage simplified discharged water Halogen (When using bromine-based disinfectant. Display/output as a bare equivalent value of residual salt.)
Measurement method	: Polarographic method with eccentric rotating microelectrodes (Reagent-free)
Detector	: CLR-161 (Detect electrode 2132)
Measurement range	: CLF1620A; 0 to 3 mg/L CLF1620B, CLF1620C; 0 to 5 mg/L
Measured units	: mg/L or ppm
Display	: LCD digital minimum display; 0.01
Transmission output range	: CLF1620A; Select from 0 to 1/2, 0 to 2/3 2 ranges manual or remote CLF1620B, CLF1620C; 0 to 1/2, 0 to 2/3, 0 to 3/5
Transmission output	: DC 4 to 20mA (insulated type) load resistor 600Ω or less

Output signal	:	Measured value ; DC 4 to 20mA (insulated type) load resistor 600Ω or less for measured range Number of outputs...2 points (1point is a spare)	Power consumption	:	AC 100V; Average 13VA Max. 28VA *Max 39VA AC 240V; Avg.29VA Max. 45VA *Max. 57VA *When washing CLF-1620A with ozone
Contact	:	Select assignment to 6 contacts from the following items (Duplication of 3 items is allowed) Range indication, maintenance in progress, concentration high limit alarm, concentration low limit alarm, instrument error* ¹ , calibration in progress* ² , power supply off* ² , cleaning in progress *1.Instrument error contents (abnormal communication, abnormal hardware, abnormal setting, sample water cut, abnormal temperature, abnormal rotation) zero calibration error, stability determination error* ²) *2.Power-off is fixed to contact output 1 Number of contact points... 6 points (5 points of A contact point and 1 point of C contact point) Capacitance... DC 30V 0.1A resistive loads	Sample water condition	:	Do not stop or stagnate (CLF1620A) Temperature...0 to 40°C (do not freeze) Pressure...0.05 to 0.5 MPa pH...pH5.5 to 8.6 (within 1pH of the range of variation) Electrical Conductivity...4 to 150mS/m (40 to 1500µS/cm) Sample water flow...1 to 3L/min (CLF1620A) 3 to 10L /mi(n CLF1620B, CLF1620C) Amount of suspended substances (SS) ...20mg/L or less (Upper limit: 60mg/L)
Contact signal input	:	Range switching command...low range at open, high range at closed Calibration start command...Automatic zero calibration start (Non-voltage contact of 100mSec width or more) Sample water switching signal... Sample water filled at closed, washing water filled at open Connect contact signals synchronized with start/stop of sample water pump for closed contact (CLF1620B, CLF1620C) Non-voltage contact input; ON resistance within 50 Ω, short-circuit Max. flow 10mA, open-circuit voltage DC 24V	Washing method	:	Line washing with water (CLF1620A) (Ozone cleaning is optional) Water shower cleaning (CLF1620B, CLF1620C) Washing starts...manual, internal timer, Distance (contact input from outside) Washing period...0 to 99 hours Voluntary setting possible Washing time...about 11 minutes Wait time...0 to 30 minutes optional Transmission Holding time...Washing time + Waiting time
Communication method	:	Interface RS-485 compliant (insulated) Communication speed...Select from 1200/2400/4800/9600/19200/ Select from 38400/57600bps Protocol...Modbus/RTU Data length...8Bits Parity...Select NONE/ODD/EVEN Stop bit...1Bit Data order... BIG ENDIAN	Washing water condition	:	Water quality...equivalent to tap water Pressure...0.2 to 0.5MPa Temperature...2 to 30°C (higher is preferable) Consumption...Approx. 3 to 6L/min
Analogue input signal	:	DC 4 to 20mA (for external analog instrument) It can be converted to any scale and read by Modbus communication	Structure	:	Indoor installation type (rain-proof treatment is required outdoors)
Power supply voltage	:	AC 100 to 240V +10% 50/60Hz	Mounting method	:	Independent stand
			Material quality	:	Converter...Aluminum die-casting Detector...Aluminum plate
			Color	:	Metallic silver
			Grounding liquid material	:	PVC, PFA, PP, acrylic, etc.
			Pipe connection port	:	Sample water inlet...VP16 (CLF1620A) VP20 (CLF1620B, CLF1620C) Drain...VP25 (CLF1620A) VP30 (CLF1620B, CLF1620C) Wash water inlet...VP16
			Distribution line	:	6 glands for φ6 to 12 cables Screw G1/2 for conduit connection when disconnected
			Ambient temperature	:	-5 to 45°C (Sample water, washed water must not freeze)
			Humidity	:	85%RH or less
			Weight	:	Approx. 20kg (CLF1620A) Approx. 22kg (CLF1620A with ozone cleaning) Approx. 25kg (CLF1620B, CLF1620C)

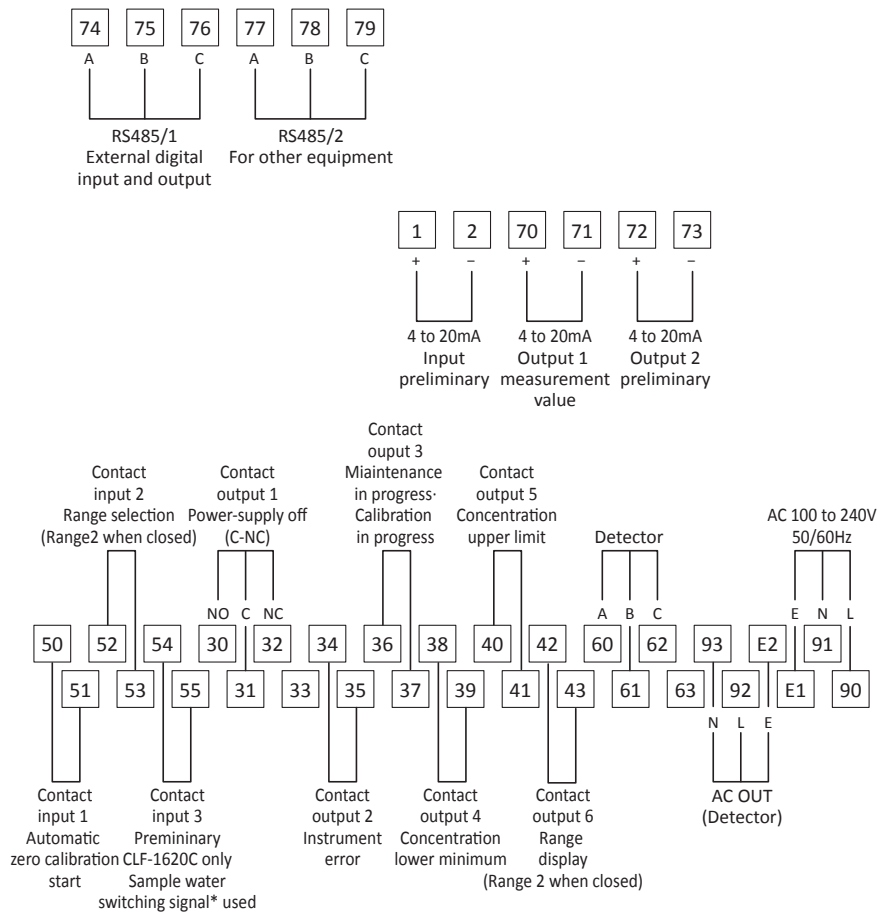
Performance

Straightness : Within $\pm 5\%$ FS
(in hypochlorous solution)
 Electrical linearity : Within $\pm 1\%$ FS
(Equivalent input)
 Repeatability : Within $\pm 5\%$ FS or ± 0.1 mg/L
 Whichever is greater
(in hypochlorous solution)
 Electrical repeatability : Within $\pm 1\%$ FS
(Equivalent input)
 Temperature compensation range : 0 to 40°C
 Response speed : 90% response within 2 minutes

Calibration method

Zero calibration : With the input open
 Span calibration : Match with the DPD measurement value

External terminal diagram



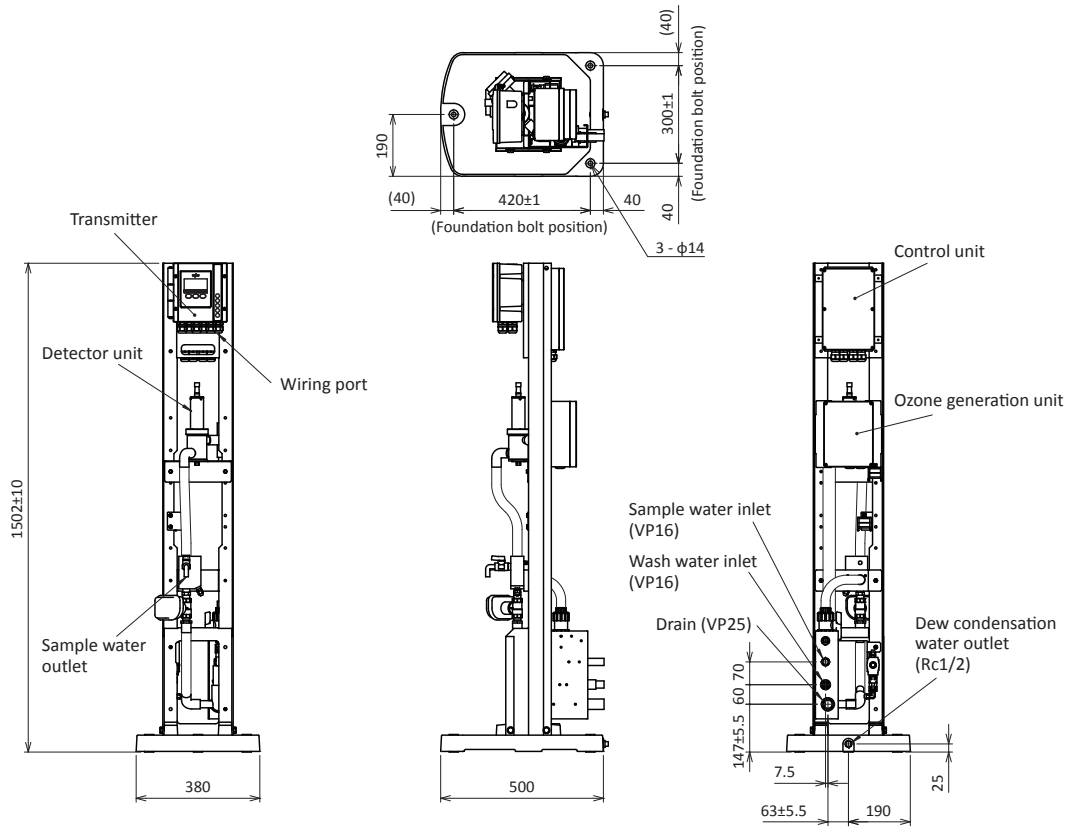
*Fill sample water when closed, fill washing water when open
 The closed contact connects the contact synchronized with the start and stop of the sample water pump.

Contact input and contact output contents can be changed by setting the transmitter.

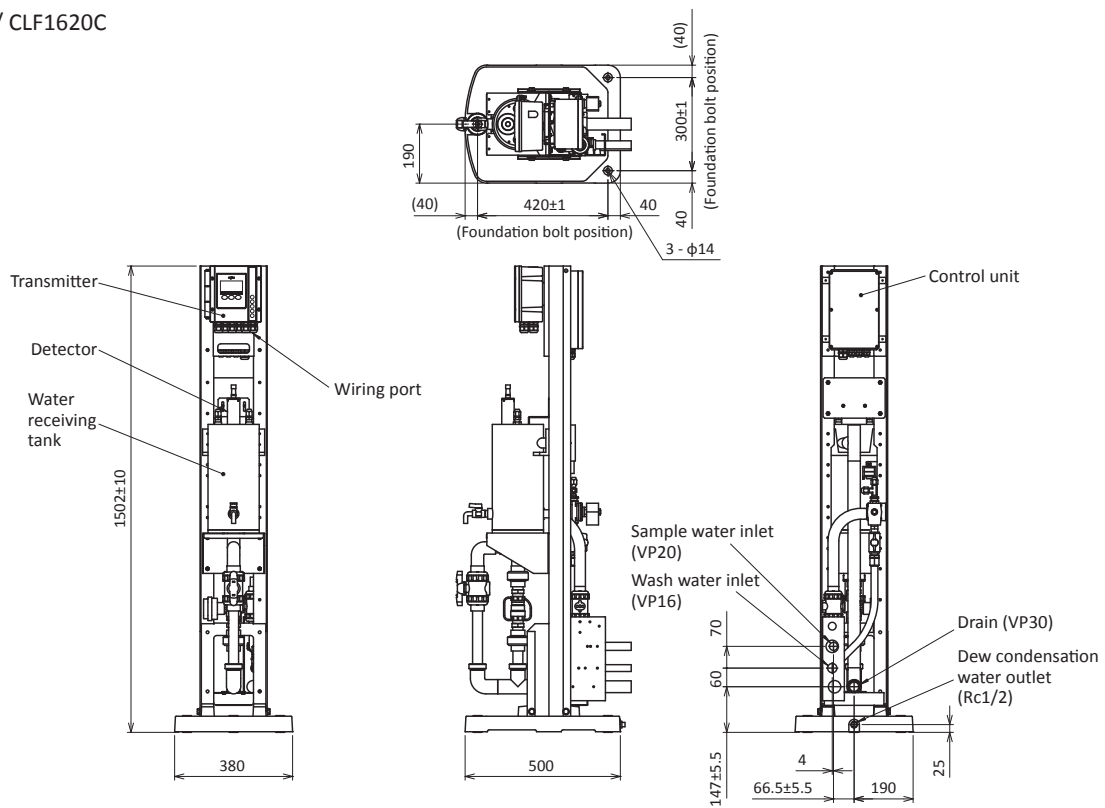
Dimensions

Unit : mm

● CLF1620A

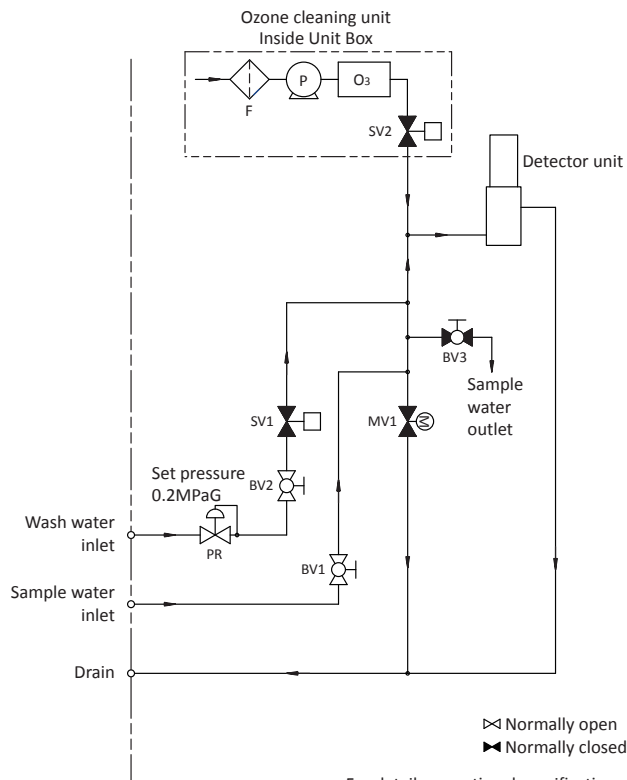


● CLF1620B / CLF1620C



Flow sheet

● CLF1620A

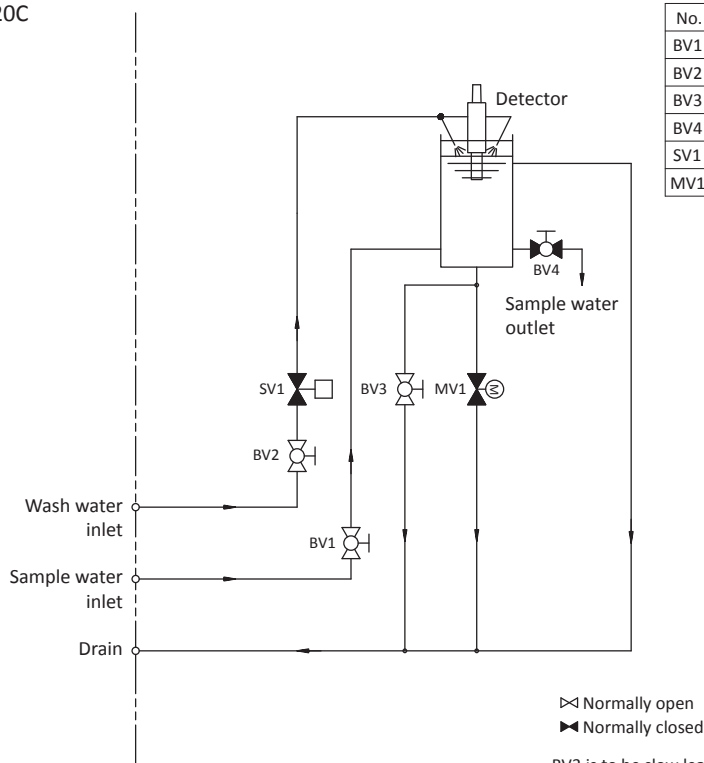


No.	Name
BV1	Sample water adjustment valve
BV2	Wash water adjustment valve
BV3	Sample water take-out valve
SV1	Wash water stop valve
SV2	Solenoid valve
MV1	Drain valve
PR	Pressure-reducing valve
* O ₃	Ozone generator
* P	Air pump
* F	Air filter

*Optional specification mark

For details on optional specifications, please refer to the specification statement

● CLF1620B / CLF1620C

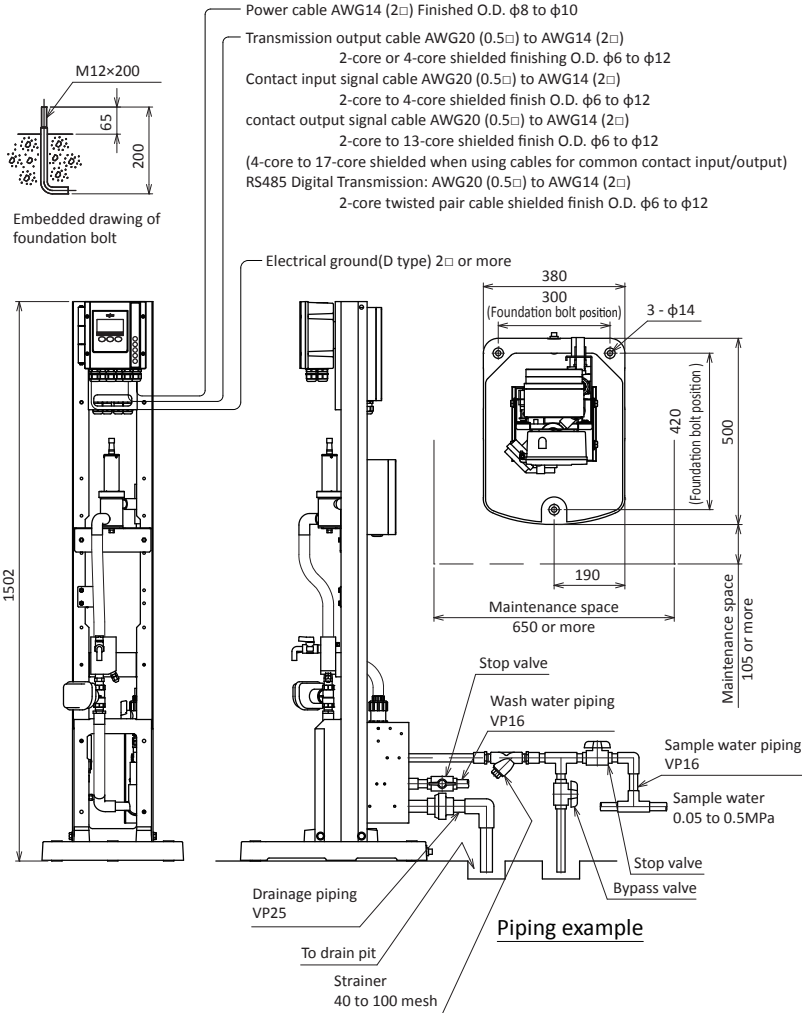


No.	Name
BV1	Sample water adjustment valve
BV2	Wash water adjustment valve
BV3	Drain adjustment valve
BV4	Sample water take-out valve
SV1	Wash water stop valve
MV1	Drain valve

BV3 is to be slow leak and adjusts drain volume

Installation

● CLF1620A



Precautions for installation

(A) Installation

(1) Installation place

Please set it in a place that conforms to the specifications and meets the following conditions.

- (a) Places where installation and maintenance work can be easily done.
- (b) A place where the ambient temperature and humidity are within the specified range, not exposed to direct sunlight, and there is no sudden change in temperature or local temperature change.
- (c) Place where there is no equipment that generates electrical noise ambient.
- (d) Where seawater, chemicals, etc. do not apply.
- (e) A place free from vibration.
- (f) There is a drain for wastewater treatment, and there is no problem even if the liquid spills. (concrete floor, etc.)
- (g) Place free of corrosive gas.

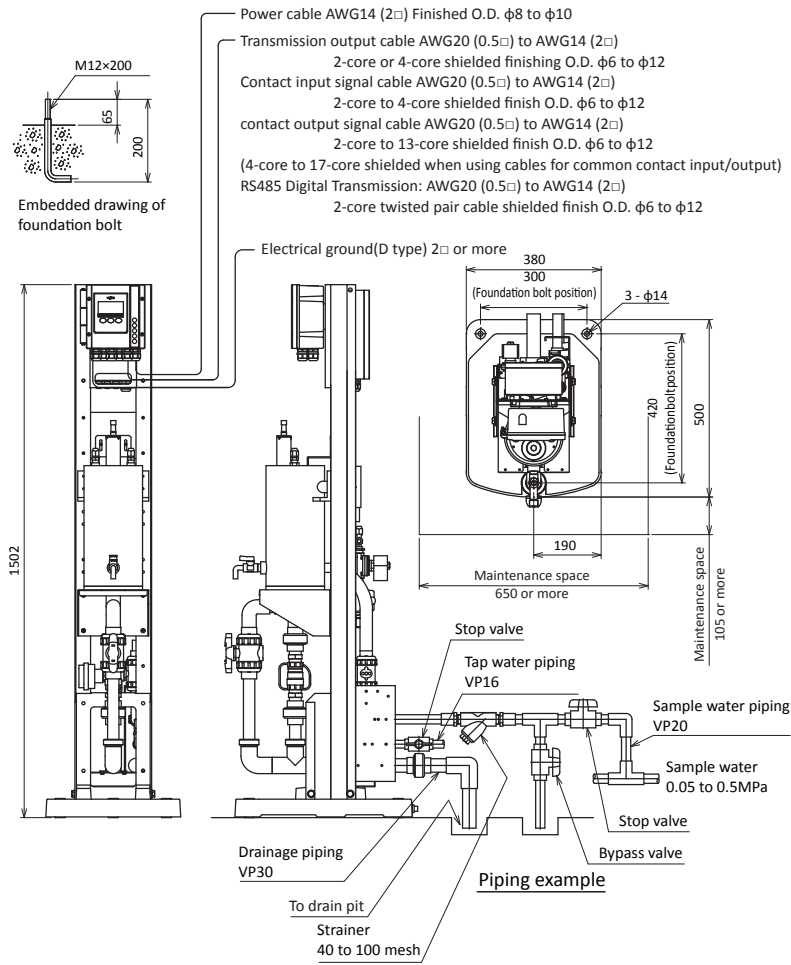
(2) Outdoor and cold weather installation

When this instrument is installed outdoors, it must be stored in a cubicle. In addition, in cold areas, freezing accidents can be considered, so we recommend that you store it in a kept-warm cubicle.

(3) Installation instructions

Make sure that the top of the product is level with the mounting surface.

● CLF1620B / CLF1620C



Precautions for installation

(A) Installation

(1) Installation place

Please set it in a place that conforms to the specifications and meets the following conditions.

- (a) Places where installation and maintenance work can be easily done.
- (b) A place where the ambient temperature and humidity are within the specified range, not exposed to direct sunlight, and there is no sudden change in temperature or local temperature change.
- (c) Place where there is no equipment that generates electrical noise ambient.
- (d) Where seawater, chemicals, etc. do not apply.
- (e) A place free from vibration.
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(3) Installation instructions

Make sure that the top of the product is level with the mounting surface.

Option

- Converter air purge
- Washing method
CLF1620A...ozone-cleaning

Product code

CLF1620A-0-□□□□	Residual chlorine meter for sewage discharge	Measured in a small measurement cell
CLF1620B-0-□□□□	Residual chlorine meter for simple sewage discharge	Measured in a large measurement tank
CLF1620C-0-□□□□	Residual halogen meter for simple sewage discharge	Measured in a large measurement tank
□□□□	Measurement range (2 -range manual/remote switching)	
1	0 to 1/2 ^{*1}	
2	0 to 2/3	
3	0 to 3/5 (Only CLF1620B/C can be specified) ^{*2}	
9	Special	
□	Measurement unit	
A	mg/L	
B	ppm	
Z	Special	
□	Automatic cleaning ^{*3}	
1	Water washing only (standard)	
2	Water washing + ozone washing (Only CLF1620A can be selected)	
□	Converter air purge	
0	With	
1	Without	
□	Description form	
1	Japanese(Standard)	
2	English	

Custom spec. code;
Numeric digit: 9
Alphabet: Z

- *1. CLF1620A measurement range setting is 0 to 1/2 as the standard.
- *2. CLF1620B, CLF1620C measurement range is set from 0 to 3/5 as the standard.
- *3. For automatic cleaning of CLF1620A, water cleaning is the standard equipment. You can add ozone cleaning. Automatic cleaning of CLF1620B, CLF1620C is equipped with water shower cleaning in air layer as standard.

Note 1. The power-supply voltage is an AC-free power supply of AC 100 to 240V ±10% 50/60Hz .
Note 2. Transmission output is DC 4 to 20mA.



DKK-TOA CORPORATION



Please read the operation manual carefully before using products.

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