SPECIFICATION SHEET

TOA DKK

HEXAVALENT CHROMIUM MONITOR CRM-1600

This instrument is an automatic intermittent continuous monitoring device that measures the concentration of hexavalent chromium based on the method of JIS K 0102 using absorptiometry with a diphenylcarbazide reagent.

Features

○Rotating measurement cell

The sample is drained and stirred as the entire measurement cell is rotated by a pulse motor. This eliminated the need for an electromagnetic valve and stirrer, making the cell structure simpler. It has also resolved troubles caused by a clogged electromagnetic valve, etc.

○LED light source

The model adopts LED as the light source, which can be lit with alternating current by using an oscillator.

This has eliminated the need for a sector motor, filter, etc. This improvement offers an extended-life light source and a simplified mechanical structure.

○Two measurement ranges

The instrument has 2 measurement ranges, 0 to 0.5mg/L and 0 to 1mg/L. In addition to the manual switching method, a remote method can also be selected using an external signal.

○Data processing functions

An integrated computer allows various types of data processing, such as that for daily and monthly reports.

In addition, either an RS-485 digital communication interface or output to USB memory is available as an optional feature.

○Improved stability of reagents

The addition of a stabilizer to color reagents has improved reagent stability (under a utility model application).

Standard specifications

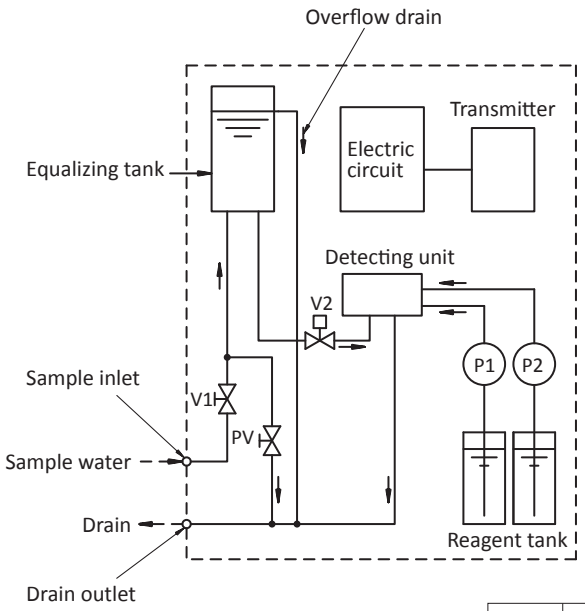
Product name	: Hexavalent Chromium Monitor
Model	: CRM-1600
Measurement method	: Diphenylcarbazide absorbance method
Scale range	: The scale can be manually switched between 2 ranges, 0 to 0.5mg/L and 0 to 1.0mg/L.
Repeatability	: Within ±3%FS (by standard solution)
Linearity	: Within ±3%FS (by standard solution)
Light source	: LED with a center wavelength of 525nm
Detection	: Photodiode
Measurement cycle	: Approx. 7 to 120min., depending on the setting, adjustable in 1-minute increments
Measurement time	: Approx. 7 to 13min., depending on the setting, adjustable in 1-minute increments
Display	: LCD display (minimum display of 0.01mg/L)
Contact input signals	: 3 contacts (no-voltage contact input signal)
Transmission output	: 4 to 20mADC (load resistance; 600Ω or less)
Contact output	: 6 contacts; “Under maintenance,” “Instrument failure,” “Concentration upper limit,” “Range 1,” “Range 2,” “Power cut-off” (fixed to c contact) RS-485 output or USB memory (optional feature)
Contact capacity	: DC 30V 0.1A (load resistance) / AC 240V 1A (load resistance)
External output support	: RS-485 output or USB memory (option)

Amount of sample required	: Approx. 600mL per measurement Sample consumption;1 to 3L per minute
Sample water conditions	: Temperature; 0 to 40°C (no freezing) SS and colored components must be removed. Pressure; 0.02 to 0.3MPa Coexisting components such as Mo (VI), Hg (I), Hg (V), V (V), and Fe (III) interfere with diphenylcarbazide because they cause similar color development. However, Mo (VI) is 25 mg/L or less and Fe (III) is 2 mg/L or less, so coexistence can be ignored. V (V) cannot coexist.
Power requirements	: 100 to 240VAC±10%, 50/60Hz
Power consumption	: Approx. 35VA
Installation	: Indoors, free from corrosive gases
Ambient temperature / humidity	: 5 to 40°C, 85%RH or less (no condensation)
Dimensions	: 380 (W) x 500 (D) x 1,502 (H)mm
Weight	: Approx. 24kg
Color	: Transmitter (Alluminum die cast); Metallic silver Detecting unit (Alluminum plate); Metallic silver

Principle of measurement

Sample water is supplied from the adjustment tank to the measuring cell in the detection unit. A certain amount of sulfuric acid and diphenylcarbazide solution are added. Then the concentration of hexavalent chromium in the colored sample water is measured by absorptiometry. It is calculated in the electric circuit part and the concentration is displayed in the conversion unit.

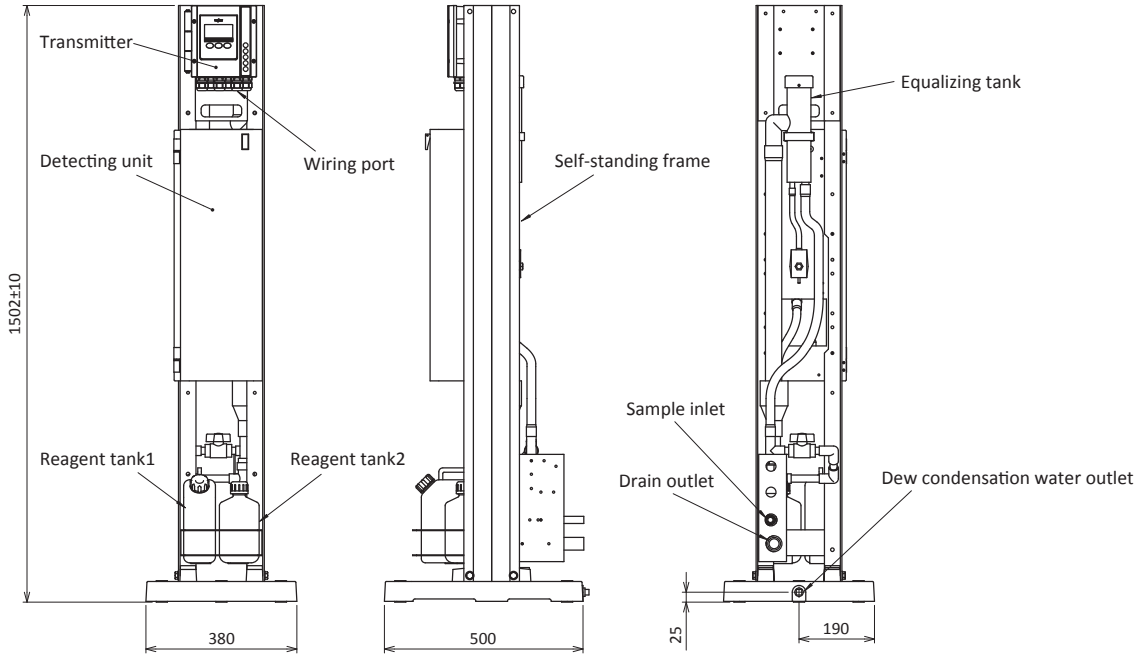
Flow sheet

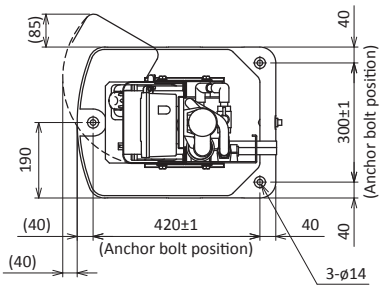


Symbol	Name	Remarks
P1	Reagent metering pump 1	H_2SO_4
P2	Reagent metering pump 2	Diphenylcarbazide
V1	Sample water flow control valve	
V2	Pinch valve	
PV	Sample water flow control valve	Bypass

Dimensions

Unit : mm





Product code

CRM1600-0-□□□□□

- Equalizing tank
  - 1 ····· Standard equalizing tank
  - 2 ····· Filter-equipped equalizing tank
- Digital output
  - 0 ····· None (standard)
  - 1 ····· RS-485/Modbus
  - 2 ····· USB memory
- Built-in arrester (power line/transmission line)*1
  - 0 ····· None
  - 1 ····· Included
- Power/transmission/signal cable entry*2
  - A ····· Cable gland for ø6 to 12cable (standard)
  - B ····· Conduit threads G1/2 for when a cable gland is removed
  - C ····· NPT 1/2 (supplied with six adapters)
- Language
  - 1 ····· Japanese (standard)
  - 2 ····· English

*1. Ceramic surge arresters (simple type) are attached to the power and transmission lines.

*2. There are 6 cable entries mounted with ø6 to 12cable glands. When a cable gland is removed, the G1/2 conduit threads appear.
When NPT1/2 cable entry is requested, 6 adapters (SUS316) are supplied; replace the necessary number of cable glands with the adapters. If some entries are not used for conduit, please leave the cable glands for sealing.

Note:

1) The unit is powered by an adjustable-voltage 100 to 240VAC, 50/60Hz power supply.

2) A 4 to 20mADC analog output comes standard.

3) When you replace existing equipment, the specifications for the alarm contact output and other items for this unit might differ from the old unit. Please contact us for details.

4) You cannot install the transmitter and detecting unit separately.

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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