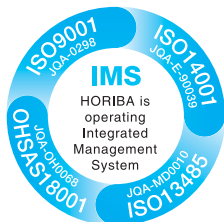


SC-2 Monitor

CS-152



High-speed response and compact profile make the SC-2 Solution Concentration Monitor the ideal choice for wafer and batch-type cleaning devices

The CS-152 is a high-precision chemical concentration monitor designed for use with the SC-2 solutions used in semiconductor-manufacturing cleaning processes. Featuring fast response and a compact size, the CS-152 continually monitors the concentrations of the various components of the SC-2 solutions (HCl/H₂O₂/H₂O) used to remove metal ions. Feedback control based on the monitor output is used to keep the concentrations of the SC-2 solutions within the allowable ranges and to eliminate unnecessary replacement of chemicals. A short measuring cycle allows the accurate tracking of chemical concentrations, while the compact design facilitates integration with a cleaning device.

Features

Short 3-second measurement cycle supports concentration control for 300-mm processes

A short measurement cycle of approximately three seconds makes it possible to track concentrations at much closer to real time. Supports fine-tuned concentration control for batch-type-bath as well as single-bath cleaning devices.

Compact design helps reduce cleaning-device footprint

The compact design reduces the monitor's footprint by about a third*, reducing the amount of space required by the cleaning device. The monitor is easily integrated with the cleaning device.

*Based on comparison with the HORIBA CS-342 series.

Reduces lot defects in the cleaning process for improved yield

Output from the monitor is used for automated spiking control of the SC-2 solutions, enabling cleaning with a high reproducibility rate. As a result, lot defects decrease in the cleaning process, which helps to boost the overall yield.

Fully automatic measurement and simple control

All the user has to do is set up the SC-2 solution supply. Measurement is fully automatic, so no control whatsoever is required once the measurement has begun. Also, air is used for reference spectral measurement, removing the need for a utility water supply.

Comprehensive measures to eliminate air bubbles enable measurement of high-temperature samples

A built-in bubble removal function removes air bubbles immediately before the flow cell, allowing continuous measurement of the solution as it is flowing. If the monitor has an integrated cooling unit, high-temperature samples can be sent directly to the monitor. Temperature compensation is carried out automatically.

24 V DC used for improved safety

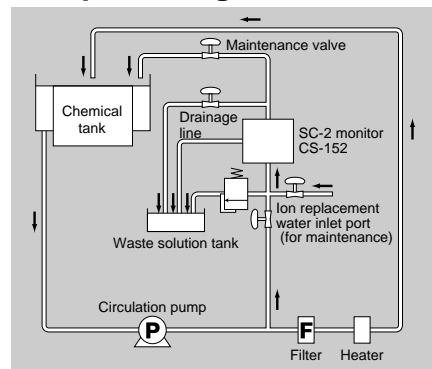
The monitor uses a low-voltage (24 V DC), and running on about 45 W gives it even better electric-shock safety and energy efficiency. An internal leakage sensor is also installed to detect solution leaks, so that the supply of SC-2 solutions can be shut off in the event of an emergency.

Specifications

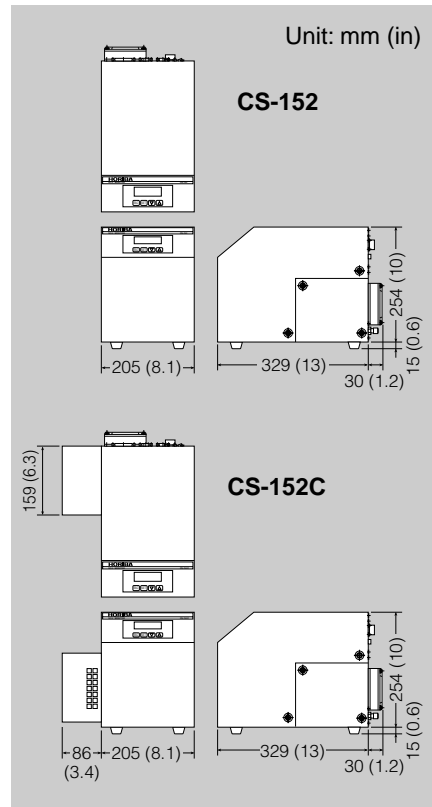
Model	CS-152	CS-152C
Model specifications	No cooling unit	Integrated cooling unit
Measurement sample	SC-2 (Hydrochloric acid/Hydrogen peroxide aqueous solution)	
Measurement principle	Absorption spectrometry	
Concentration computation principle	Temperature-compensated multivariate analysis	
Measurement range	HCl: 0.00 to 2.00 %/0.00 to 10.00 % H ₂ O ₂ : 0.00 to 2.00 %/0.00 to 10.00 % H ₂ O: 96.0 to 100.0 %/80.0 to 100.0 %	
Reproducibility (Peak to peak)	HCl: ±0.15 %/±0.20 % H ₂ O ₂ : ±0.15 %/±0.20 % H ₂ O: ±1.5 %/±1.5 %	
Chemical conditions	Temperature	20 to 30°C
	Flow rate	20 to 60 ml/min.
	Pressure	0.10 to 0.20 MPa
Measurement cycle	Approx. 3 seconds minimum	
Equipment temperature	20 to 25°C	
Operation panel	1) Temperature level display: Hydrochloric acid, Hydrogen peroxide, Water 2) Alarm display (Hydrochloric acid, Hydrogen peroxide): Concentration low-low limit, Concentration low limit, Concentration high limit, Concentration high-high limit 3) Alarm value settings (Hydrochloric acid, Hydrogen peroxide): Concentration low-low limit, Concentration low limit, Concentration high limit, Concentration high-high limit	
Serial input/output	RS-232C 1) Concentration data: Hydrochloric acid, Hydrogen peroxide, Water 2) Alarm value settings (Hydrochloric acid, Hydrogen peroxide): Concentration low-low limit, Concentration low limit, Concentration high limit, Concentration high-high limit	
Parallel input	12 to 30 V DC (photocoupler insulated) Parallel concentration alarm (ON/OFF)	
Parallel output	Maximum current when open collector output is ON: 5 mA Maximum voltage when open collector output is OFF: 30 V 1) Alarm output (Hydrochloric acid, Hydrogen peroxide): Concentration low-low limit, Concentration low limit, Concentration high limit, Concentration high-high limit 2) Device error (including liquid leakage) 3) Under measurement	
	4 to 20 mA (2 outputs: HCl concentration, H ₂ O concentration) The analog output can be prepared to correspond to each requirement by users. (Please specify when ordering.)	
	Power	
Power	24 V DC ±10%, 2 A	
Dimensions	205 (W) x 329 (D) x 269 (H) mm 8.5 (W) x 13 (D) x 10.6 (H) in	291 (W) x 329 (D) x 269 (H) mm 11.5 (W) x 13 (D) x 10.6 (H) in
Mass	Approx. 11 kg	Approx. 12 kg
Connection pipe size	For inlet and outlet: Outer diameter 3 mm (inner diameter 2 mm)	
Pipe connection	Nippon Pillar Super type	
Utilities	Instrumentation air for driving air valve: 0.3 to 0.5 MPa (Piping outer diameter: 4 mm)	

Please consult Horiba concerning any specifications not listed above.

Sample configuration



External dimensions



Please read the operation manual before using this product to assure safe and proper handling of the product.

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