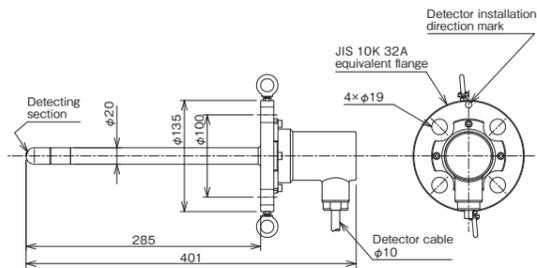
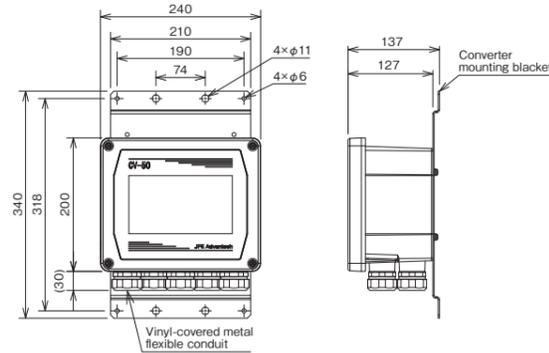


External Dimensions

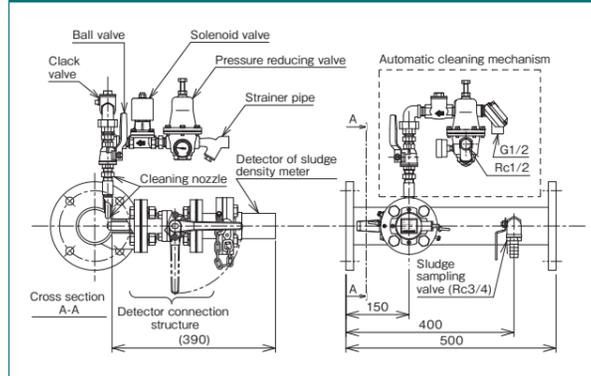
SD-50 Detector



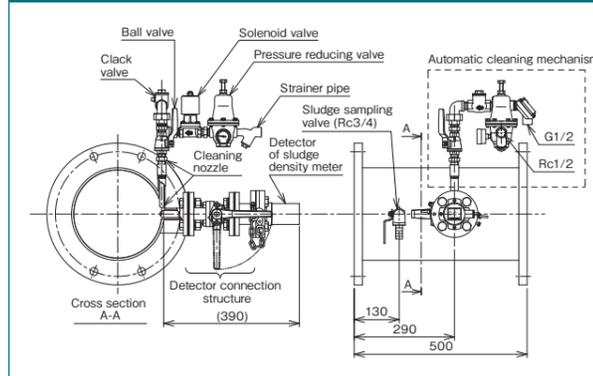
CV-50 Converter



Detector connection pipe (diameter:80A) 1,2



Detector connection pipe (diameter:100A to 600A) 1,2

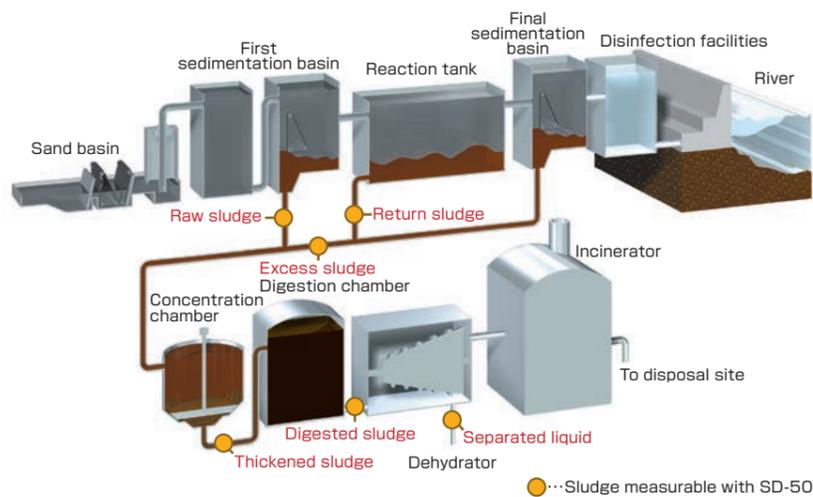


- 1: Install the pipe so that the detector is kept horizontal.
- 2: The cleaning nozzle and pressure reducing valve are optional.

Installation Position



Installing example of detector connection pipe



*Specifications in this catalog are subject to change without prior notice due to product improvement.

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Dual Scattered-Light Sludge Density Meter

SD-50

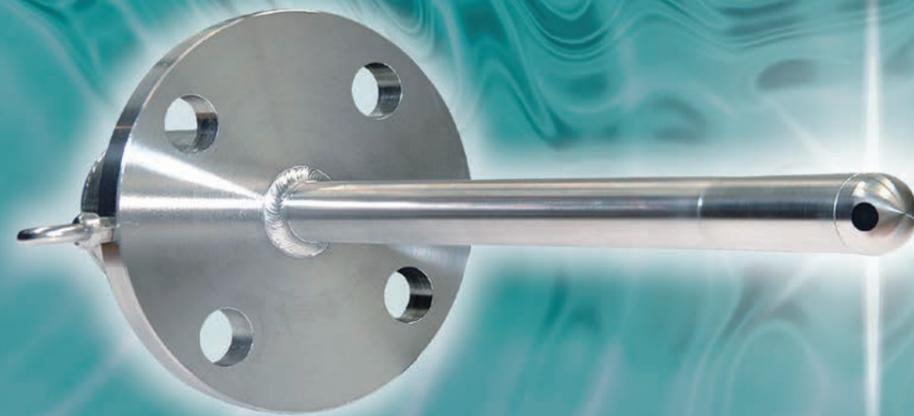


SD-50 achieves the accurate measurement of sludge density, and helps to control the sludge discharges.

Dual Scattered-Light
Stable measurement of black sludge

Anti sludge adhesion function
Increased maintainability

Renewed detector and converter
Improved operability

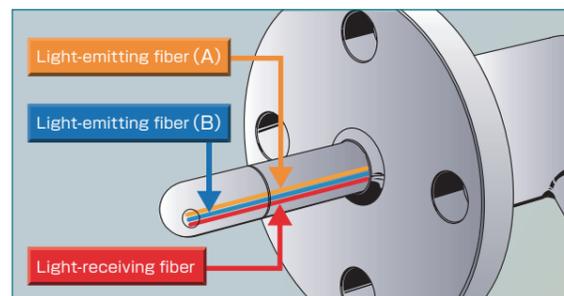


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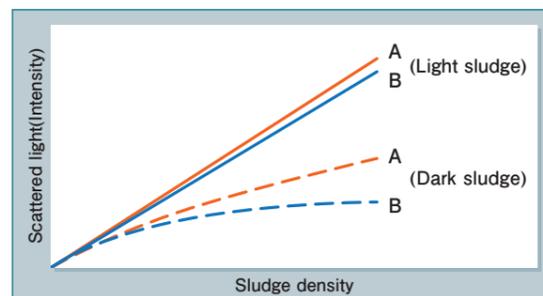
Features

- Black sludge is also stably measured by calculating the correlation characteristics using a composite light source (Dual Scattered-Light).
- Noise resistance is improved by digitizing the detector output.
- By using the self-cleaning function and cleaning nozzle (optional), sludge adhesion is reduced. Maintainability has improved.
- By adopting a touch panel for the CV-50 converter, operability and visibility have been improved. In addition smaller, lighter, and has improved weather resistance.

Measuring Principle



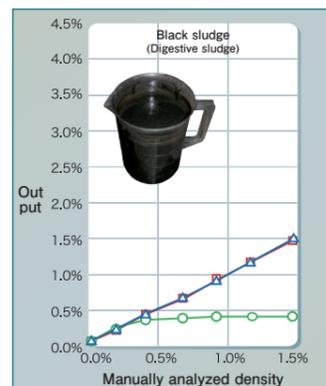
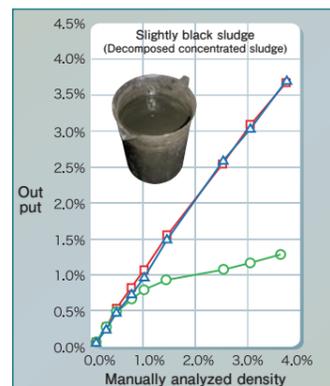
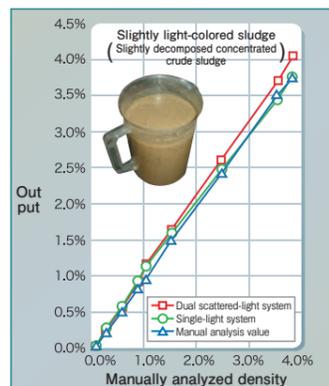
The detector section irradiates two types of near infrared rays (A and B) from the end of the emitting optical fibers, receives the scattered light reflected from the sludge in the receiving optical fiber and converts it to an electrical signal.



The scattered light intensity of the received light is determined by the density and color of the sludge for each wavelength of the light. SD-50 reduces the influence of the sludge color through automatic correction using the difference of the correlation characteristic.

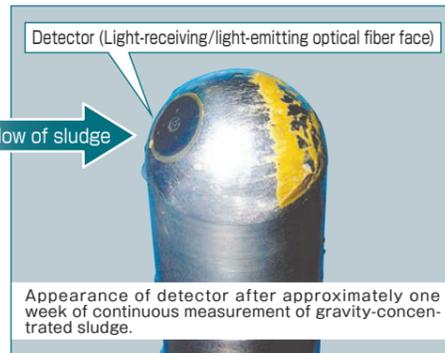
Performance Comparison

- The dual scattered-light system automatically compensates for the effect caused by a change in sludge color and ensures accurate measurement of black sludge.



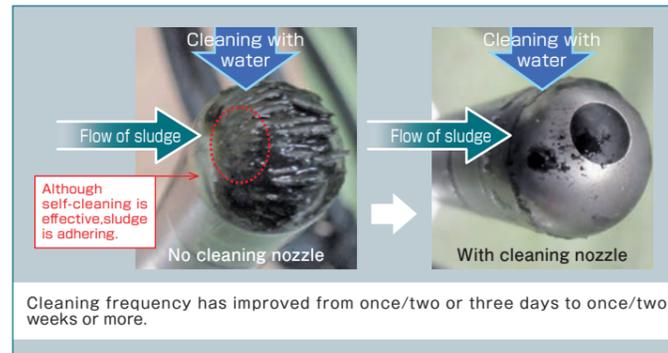
Effect of Sludge Self-cleaning Design

Self-cleaning function



The flow of sludge prevents it from adhering to the detector (Light-receiving/light-emitting optical fiber face).

Cleaning nozzle (Option)



By using a cleaning nozzle, sludge adhesion is prevented even with highly viscous concentrated sludge.

Specifications

SD-50 Detector

Measurement system	Dual scattered-light system
Detecting section	Direct-contact fiber optic system
Measuring range	0 to 8% (Standard) ¹
Measuring accuracy (Repeatability)	±2% of full scale (for sludge other than black sludge) ±5% of full scale (for black sludge) ²
Measurable flow speed	0.03m/s or higher (for sludge other than black sludge) 0.30m/s or higher (for black sludge) ²
Operating temperature range	-5 to 50°C (No freezing allowed)
Detector water pressure resistance	1Mpa
Material	SUS316
Weight	Approx. 4.4kg (including 10m cable ³)

1:Please contact us for other measurement ranges.
2:Recommended value for black sludge equivalent to digestive sludge.
3:Maximum cable length is 50m.

CV-50 Converter

Mounting method ¹	Mount to a pole or on a wall
Material	Casing Aluminum die cast (ADC12) Front panel acrylic
Color	Casing Munsell N4 equivalent Panel Munsell 5PB6/8 equivalent
Weight	Approx. 3.8kg (Converter main unit only)
Power supply	90 to 264VAC, 50/60Hz
Power consumption	Approx. 15W ²
Analog output	DC4 to 20mA (1channels) Density output
Allowable load resistance	800Ω or less
External control contact input ³	Photocoupler insulation input (built-in power supply :24VDC, 5mA)
Cleaning output	Control output (AC OUT) AC voltage output ⁴ (Allowable load 200VA or less) Control output (Cleaning) a contact ⁵ (contact rating: 240VAC, 1A)
Self-diagnosis function ⁶	Detector/converter intercommunication error, failure detector, failure parameter
Alarm signal output	a contact, b contact selection (2 points, contact rating: 240VAC, 1A) Density alarm
Failure signal output	c contact (contact rating: 240VAC, 1A)
Display	Touch panel type liquid crystal display (with backlight)
Lightning protection	Built-in lightning protection circuit power supply section ±10kV Current output section ±10kV ±5kA
Operating temperature range	-10 to 55°C
Protection level	IP66
Optional	The following options are available separately, please contact us for any details. • Converter stand • Converter mounting bracket and 50A pole mounting U-bolts

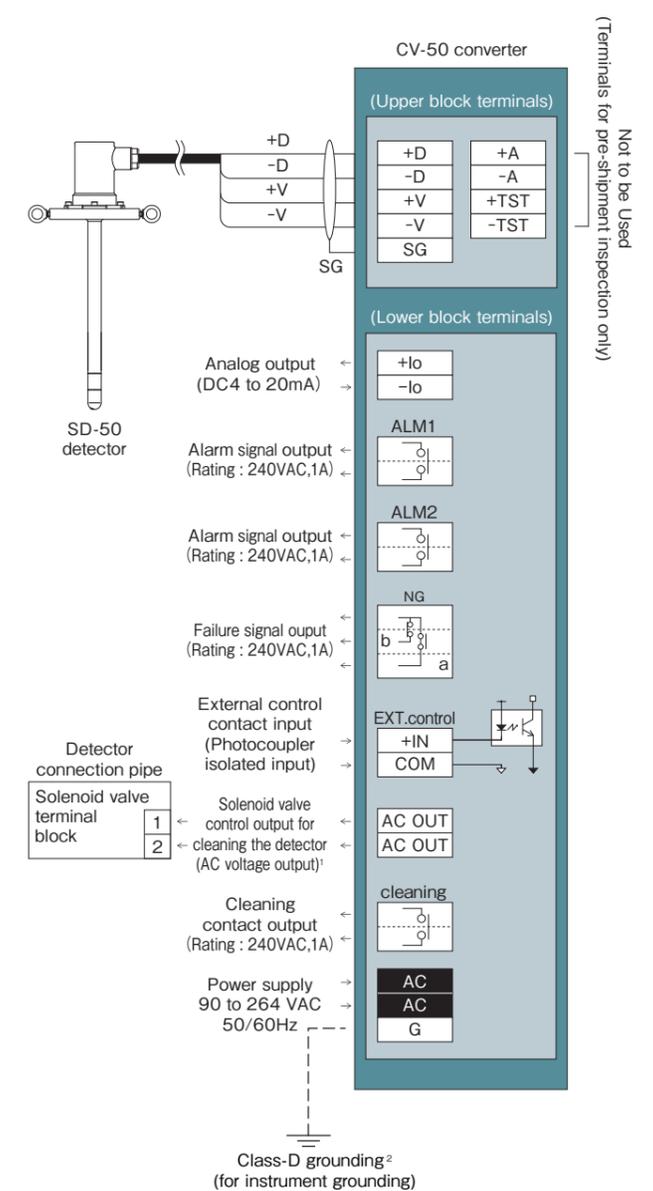
1:Converter mounting bracket are provided with the product. Converter stand, converter mounting bracket and 50A pole mounting U-bolts are sold separately.
2:When the solenoid valve of the detector connection pipe is operating, it is 36W or less.
3:Concentration display during pump stop, concentration signal hold, detector automatic cleaning linked to pump stop (a contact, b contact selection)
4:The AC voltage to the control output (AC OUT) is the same as the power supply voltage (90 to 264VAC 50/60Hz) to the converter.
5:It operates at the same timing as the control output of the cleaning output.
6:For details, see the instruction manual.

Detector connection pipe

Diameter ¹	80A, 100A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A, 600A
Length ¹	500mm
Material	SUS304 (Piping body)
Connection	Flange connection
Flange standard	10K flanged of Japanese Industrial Standards (JIS) or 7.5K flanged of Japan Water Works Association (JWWA)
Flange shape	FF type or RF type
Automatic cleaning mechanism	Attached
Optional	Cleaning nozzle, Pressure reducing valve

1:Please contact us for specifications other than the above.

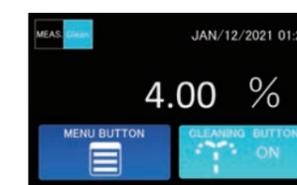
Device wiring diagram



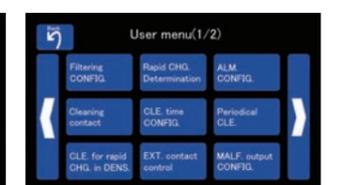
(Terminals for pre-shipment inspection only)

1: The AC voltage output to the solenoid valve control output for cleaning the detector (AC OUT) is the same as the power supply voltage (90 to 264VAC 50/60Hz) to the converter.
The voltage specifications of the standard cleaning mechanism are rated 100VAC, 50/60Hz.
Please contact us if the power supply voltage to the converter is other than 100VAC. Also, do not short-circuit the terminals because it may cause equipment failure.
2: Be sure to connect the grounding terminal (G) to ground potential.
(Class D grounding: ground resistance of 100Ω or less).

Display example



Measurement display example



Setting display example