

Dissolved Oxygen Analyzer (4-wire system)

OBM-162A

The OBM-162A is a 4-wire dissolved oxygen analyzer housed in a robust, die-cast aluminum enclosure, making it ideal for installation and use out in the field. It runs on adjustable-voltage AC power supply.

This model features a dual transmission output with a range 4~20mADC (including solution temperature), and comes with a dual 2-point alarm contact output (upper and lower limits, form A contact). It is also equipped with a dedicated electrode and electrode lead, which are used to detect damage of the membrane. Combined detector is a polarographic dissolved oxygen electrode.



Features

Adjustable transmission output range:

The transmission output range can be easily reconfigured within 0~50mg/L, in increments of 0.01mg/L, with a minimum width of 1.00mg/L.

Self-diagnosis of electrode quality during calibration:

Error codes for “Zero calibration error”, “Span calibration error” and “Unstable response” are issued when the electrode quality deteriorates to an unacceptable level.

Temperature display and output:

The instrument displays the temperature of the sample and provides a transmission output of 4~20mADC.

Measurement value conversion:

Measured values can be converted to a concentration value better suited to operation management needs.

Easy operation via external rainproof keys on the front:

The OBM-162A comes with 10 rainproof keys on the front of the instrument. Thus, there is no need to open the enclosure when performing operations.

Automatic return to measurement mode:

If the instrument remains in maintenance mode for two hours, it can automatically return to measurement mode.

Calibration history:

The date, time, current value, and temperature at the time of calibration can be saved automatically up to 10 times. This makes it easy to save information for future reference.

[Optional features]

100VAC output for cleaner control:

This feature is required when using the instrument with a water jet cleaner or pulsed air jet cleaner.

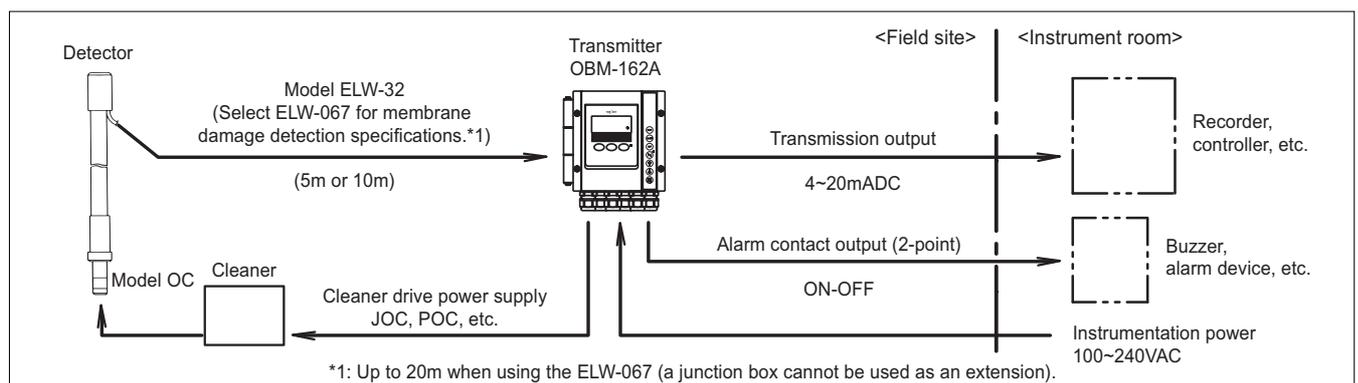
RS-232C output:

A special extension cable can be connected to the RS-232C digital communication interface, making it possible to transfer data to a computer.

Membrane damage detection feature (It cannot be added in the field due to factory option.)

The instrument uses a dedicated electrode and electrode lead to detect damage to the membrane.

Configuration



Standard Specifications

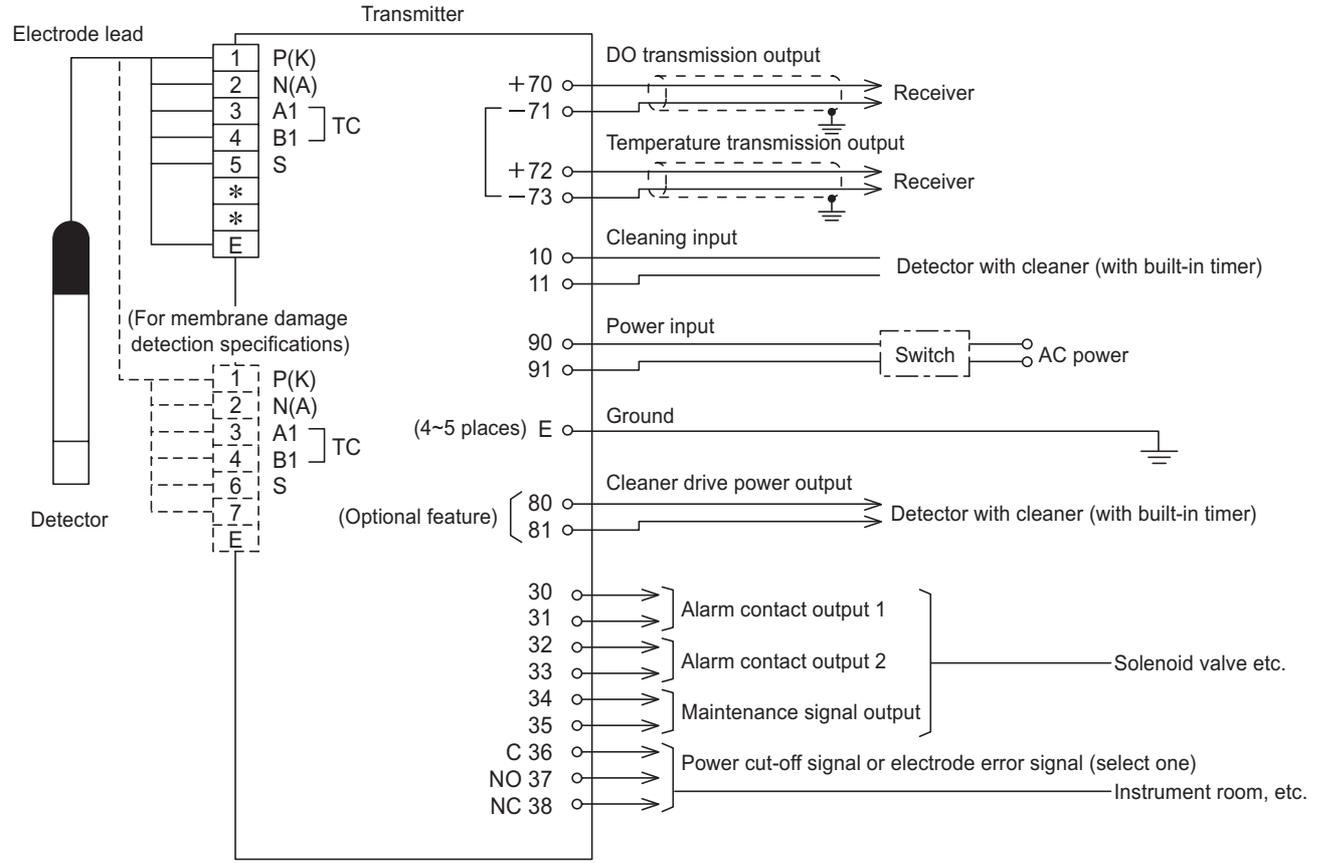
<p>Product Name : Dissolved Oxygen Analyzer</p> <p>Model : OBM-162A</p> <p>Measurement method : Polarograph type membrane electrode method *2</p> <p>Measurement range : DO; 0.00~50.00mg/L (0.01mg/L resolution) Temperature; -10.0~100.0°C (0.1°C resolution)</p> <p>Transmission output range : DO; 0.00~50.00mg/L (The upper limit range can be adjusted in 0.01mg/L increments within a range of 1.00~50.00mg/L.) Temperature; Adjusted in increments of 1°C, with a minimum width of 10°C (range of -5~100°C)</p> <p>Performance : Linearity; Within $\pm 1\%$FS. 0~2mg/L range...within ± 0.05mg/L (with the equivalent input) Repeatability; Within $\pm 0.8\%$FS. 0~2mg/L range...within ± 0.04mg/L (with the equivalent input)</p> <p>Temperature compensation : 0~45°C</p> <p>Alarm contact output : Number of circuits; 2 circuits, form A contact Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load) Sensitivity; Values within 5% of the transmission output range (2 points) can be specified</p> <p>Under maintenance signal output : Contact closed during maintenance (form A contact) Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load)</p> <p>Electrode error signal output (*3 optional) : Contact closed (form C contact) when an electrode error occurs, such as when a temperature compensation element error occurs or the membrane becomes damaged. *4 Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load)</p>	<p>SAT; 0.0~200.0% (0.1% resolution) } No transmission output (display only)</p> <p>O₂; 0.0~30.0% (0.1% resolution) }</p>	<p>Power cut-off signal output (*3 optional) : Provides a closed contact signal when a power failure occurs. Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load)</p> <p>Under cleaning signal input terminal : Output is held while a closed contact input signal is being issued. No-voltage contact signal.</p> <p>Display : Digital LCD</p> <p>Calibration : Zero calibration; 1) Electrical zero 2) Zero water Span calibration; Air or water saturated with air</p> <p>Transmission output : Isolated; 4~20mADC. Maximum load resistance...650Ω. Dissolved oxygen concentration and sample solution temperature (the 2 circuits share a common terminal)</p> <p>Ambient conditions : -20~55°C, 95%RH or less</p> <p>Operating power : 100~240VAC, 50/60Hz</p> <p>Power consumption : Approximately 10VA</p> <p>Construction : IP65</p> <p>Mounting : 50A pipe (optional feature; wall or rack mount)</p> <p>Materials : Main body; Die-cast aluminum Window; Polyester resin</p> <p>Paint finish : Metallic silver, Munsell N1.5</p> <p>Cable entry : Cable glands for $\phi 6\sim 12$ cable, 6 ports 6 G1/2 conduit threads can be connected when the cable glands are detached.</p> <p>Weight : Approx. 2kg</p>
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*2: A galvanic-cell type membrane electrode can also be used together with the unit.

*3: Power cut-off signal output or electrode error signal output must be selected.

*4: A dedicated electrode and electrode lead are required to detect damage to the membrane.
(The sample conductivity must be at least 10mS/m (100μS/cm).)

Terminal connection

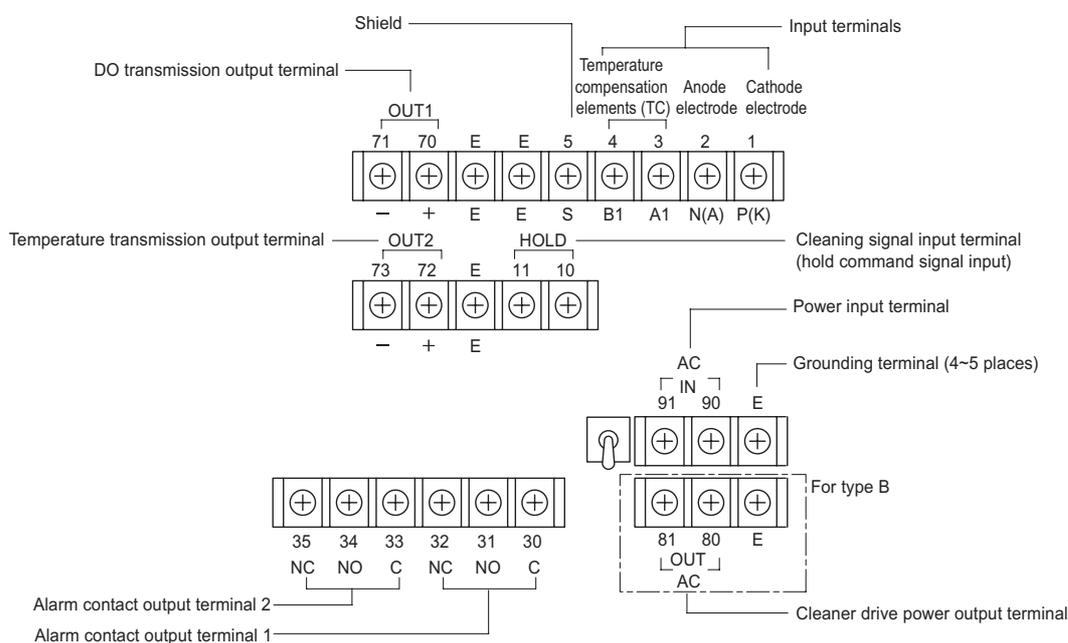


External terminals

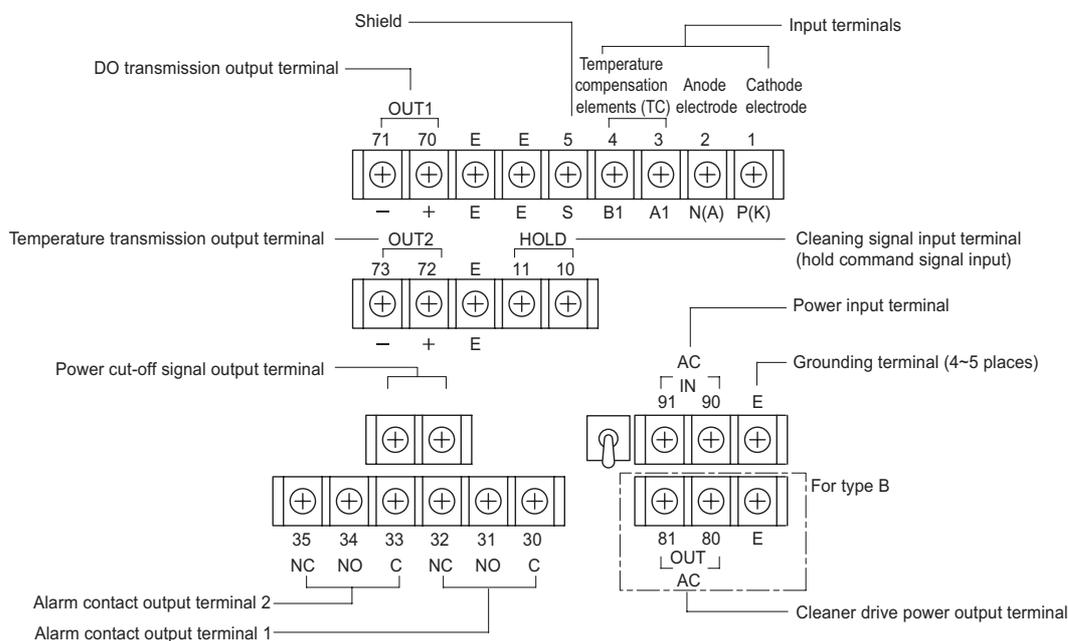
There are four different patterns (A, B, C, and D) for configuring external terminals. These patterns are listed in the table below. The configuration varies according to whether a power cut-off signal output terminal and cleaner drive power output terminal are equipped.

		Type of transmitter			
		A (standard)	B	C	D
Power cut-off signal output terminal (optional)	None (standard)	○	○		
	Equipped			○	○
Cleaner drive power output terminal (optional)	None (standard)	○		○	
	Equipped		○		○

Type A and B (2-point alarm contact output without a power cut-off signal output terminal)



Type C and D (2-point alarm contact output with a power cut-off signal output terminal)

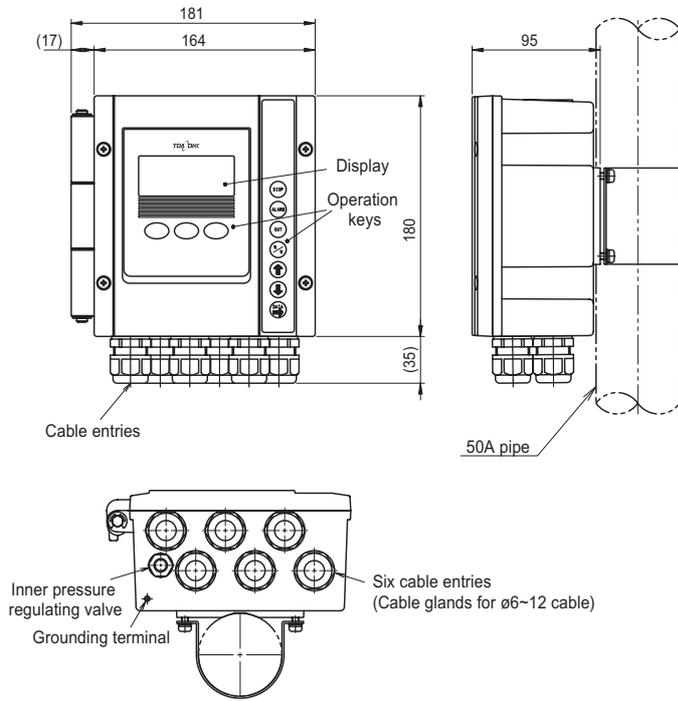


*Error signal output setting is also available.

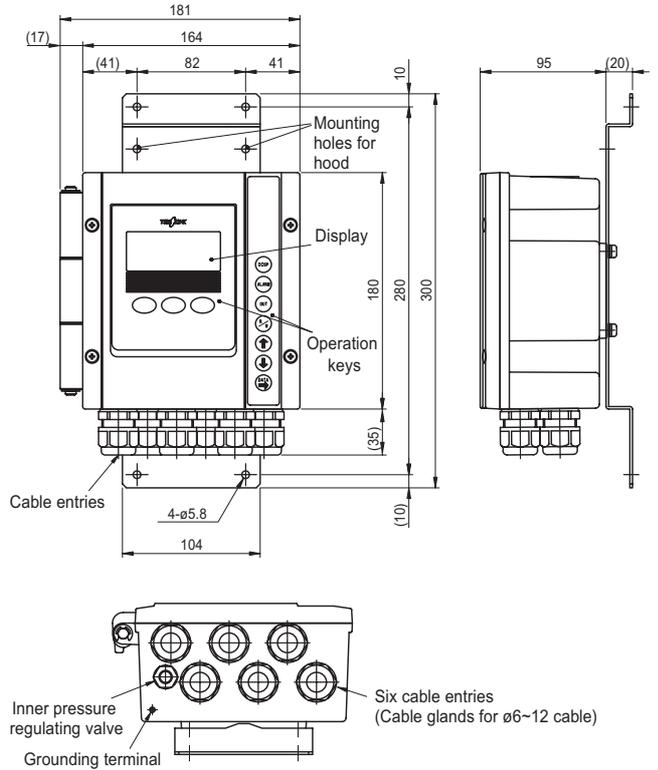
Dimensions

Unit : mm

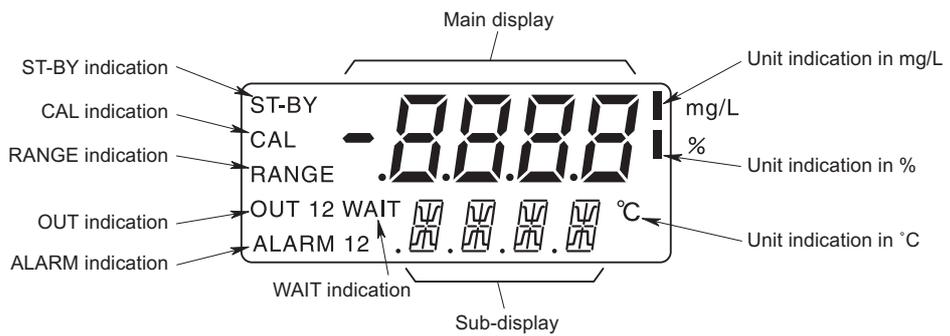
● Mounted on a pipe



● Mounted on a wall or rack



Display



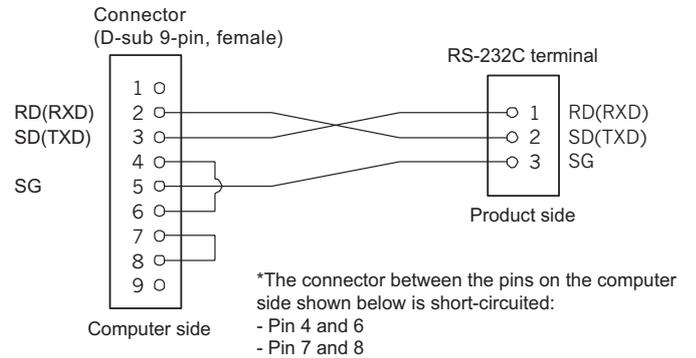
Optional features

● RS-232C interface

When “Equipped” is selected for the RS-232C output setting, a RS-232C interface is added to the terminal area. This makes it possible to transfer measurement data to a computer.

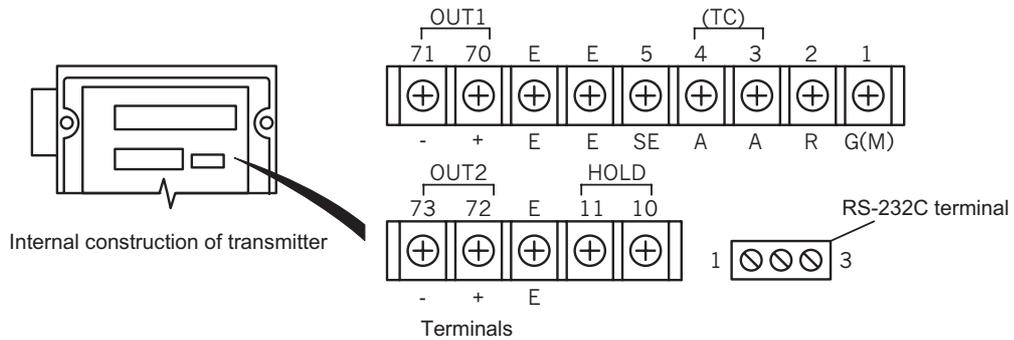
Terminal block for RS-232C

Terminal number	Signal code	Signal name	Input/output direction
1	RD(RXD)	Received data	Input
2	SD(SXD)	Transmitted data	Output
3	SG	Signal ground	—

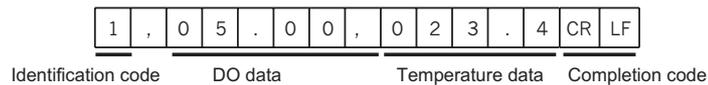


Dedicated communication cable configuration

Note: The length of the communication cable can be no more than 10m.



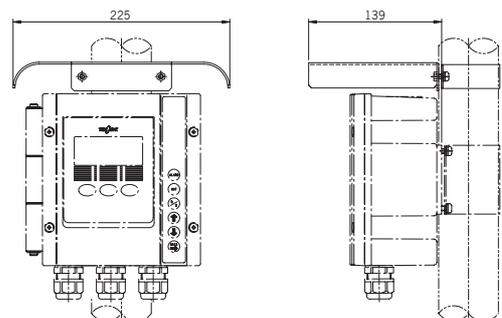
When a request is received from the computer, the transmitter sends out data in the following format.



● Hood

Recommended when installing the instrument outdoors at a location exposed to direct sunlight.

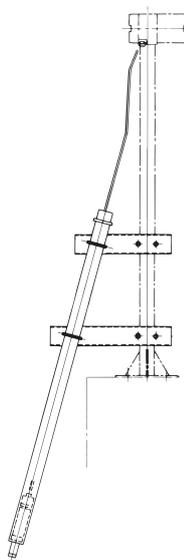
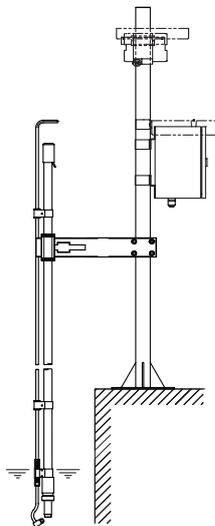
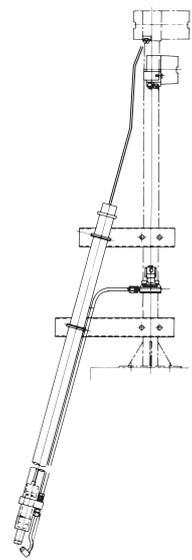
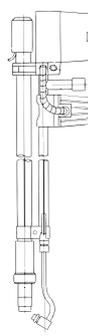
- Material : SUS304
- Mounting : 50A pipe
- Code number : 7049930K



Applicable detectors

The model, general specifications and configuration of the typical detectors suitable for use in combination with OBM-162A are listed in the following table. Properly select the detector in accordance with installation and measurement conditions.

The DO electrodes to be combined are either 7533L (general use/for waste water treatment applications) or 7536L (for night soil treatment applications). Select the electrode lead ELW-32. For the DO electrode to be combined with the optional membrane damage detection specifications, select the model 7540L (for night soil treatment applications). In this case, select the electrode lead ELW-067.

Product name	Immersion type DO electrode holder	Drop-in type DO detector	Immersion type detector with pulse air jet cleaner	Drop-in type detector with water jet cleaner	Immersion type detector with water jet cleaner
Model	OC-711	OC-950	POC-7D	JOC-950C	JOC-711C
Construction	Outdoor installation, rainproof				
Auto cleaning method	None	None	Pulse air jet	Water jet or air jet	Water jet or air jet
Wetted materials	PVC	PVC/SUS304	PVC/SUS316	PVC/SUS316	PVC/SUS316
Sample temperature	0~45°C				
Pressure	Atmospheric pressure				
Flow velocity	Electrode section is at least 10 cm/s				
Detector length	Holder length: 0.5~3.5m	Protection tube length: 2~6 m	Holder length: 1~3 m	Protection tube length: 2~6m	Holder length: 0.5~3m
Weight	Approximately 1 kg (length: 1m)	Approximately 17 kg (length: 5 m)	Approximately 4 kg (length: 1 m)	Approximately 20kg (length: 5m)	Approximately 7 kg (length: 1 m)
Cleaning water or air	None	None	Instrument air 0.2~0.5MPa	Industrial water or instrument air 0.2~0.5MPa	Industrial water or instrument air 0.2~0.5MPa
Power supply	Not required	Not required	100VAC, 50/60Hz	100VAC, 50/60Hz	100VAC, 50/60Hz
Configuration					



DKK-TOA CORPORATION



CAUTION

Do not operate products before consulting instruction manual.

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