

SPECIFICATION SHEET

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 $0\sim 50 \text{ mg/L}$, in increments of 0.01 mg/L, with a minimum width of 1.00 mg/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:

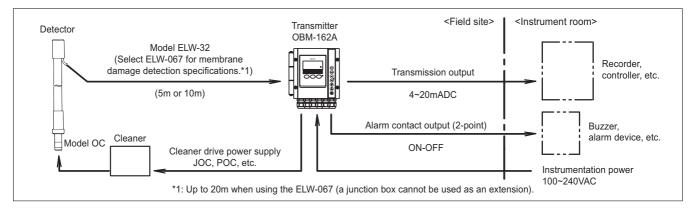
This feature is required when using the instrument with a water jet cleaner or pulsed air jet cleaner.

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.

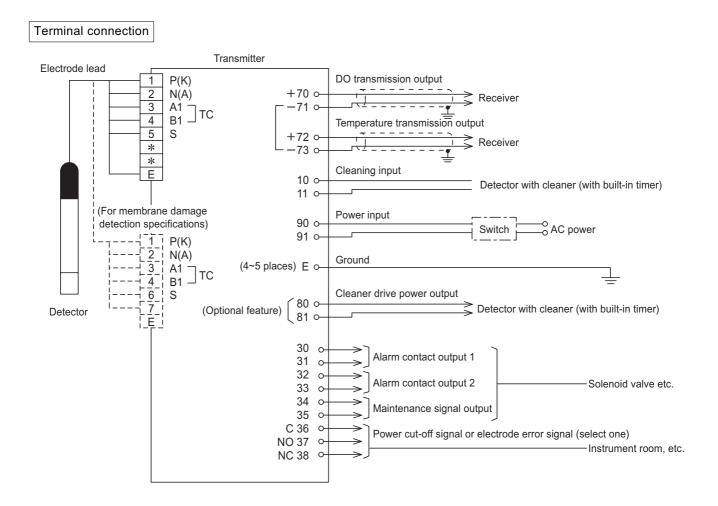


Configuration

Standard Specifications

Product Name	: Dissolved Oxygen Analyzer	Power cut-off	: Provides a closed contact signal when a	
Model	: OBM-162A	signal output (*3	power failure occurs.	
Measurement	: Polarograph type membrane electrode	optional)	Contact capacity:250VAC 3A or 30VDC	
method	method *2		3A or less (resistance load)	
Measurement	: DO; 0.00~50.00mg/L (0.01mg/L resolution)	Under cleaning	: Output is held while a closed contact input	
range	Temperature; -10.0~100.0°C (0.1°C	signal input	signal is being issued. No-voltage contact	
	resolution) No transmission	terminal	signal.	
	SAT; 0.0~200.0% (0.1% resolution) _ output	Display	: Digital LCD	
	O_2 ; 0.0~30.0% (0.1% resolution) (display only)	Calibration	: Zero calibration; 1) Electrical zero	
Transmission	: DO; 0.00~50.00mg/L (The upper limit		2) Zero water	
output range	range can be adjusted in 0.01mg/L		Span calibration; Air or water saturated	
	increments within a range of		with air	
	1.00~50.00mg/L.)	Transmission	: Isolated; 4~20mADC. Maximum load	
	Temperature; Adjusted in increments of	output	resistance650 Ω . Dissolved oxygen	
	1°C, with a minimum width of 10°C		concentration and sample solution	
	(range of -5~100°C)		temperature (the 2 circuits share a	
Performance	: Linearity; Within ±1%FS. 0~2mg/L		common terminal)	
	rangewithin ± 0.05 mg/L (with the	Ambient conditions : -20~55°C, 95%RH or less		
	equivalent input)	Operating power	: 100~240VAC, 50/60Hz	
	Repeatability; Within ±0.8%FS. 0~2mg/L	Power consumption	on : Approximately 10VA	
	rangewithin ± 0.04 mg/L (with the	Construction	: IP65	
	equivalent input)	Mounting	: 50A pipe (optional feature; wall or rack	
Temperature	: 0~45°C		mount)	
compensation		Materials	:Main body; Die-cast aluminum	
Alarm contact	: Number of circuits; 2 circuits, form A		Window; Polyester resin	
output	contact	Paint finish	: Metallic silver, Munsell N1.5	
	Contact capacity; 250VAC 3A or 30VDC	Cable entry	: Cable glands for ø6~12 cable, 6 ports	
	3A or less (resistance load)		6 G1/2 conduit threads can be connected	
	Sensitivity; Values within 5% of the		when the cable glands are detached.	
	transmission output range (2 points) can	Weight	: Approx. 2kg	
	be specified	*2: A galvanic-ce	ll type membrane electrode can also be used	
	ce : Contact closed during maintenance (form	together with the		
signal output	A contact)	*3: Power cut-off	signal output or electrode error signal output	
	Contact capacity; 250VAC 3A or 30VDC	must be selected	1.	
	3A or less (resistance load)	*4: A dedicated e	electrode and electrode lead are required to	
Electrode error	: Contact closed (form C contact) when an	detect damage to	o the membrane.	
signal output	electrode error occurs, such as when a	(The sample con	ductivity must be at least 10mS/m	
(*3 optional)	temperature compensation element error	(100µS/cm).)		
	occurs or the membrane becomes			
	damaged. *4			
	Contact capacity; 250VAC 3A or 30VDC			

3A or less (resistance load)

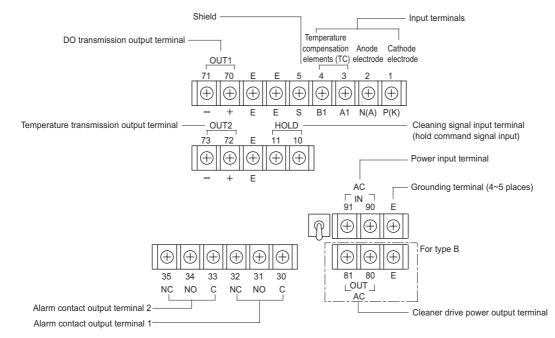


External terminals

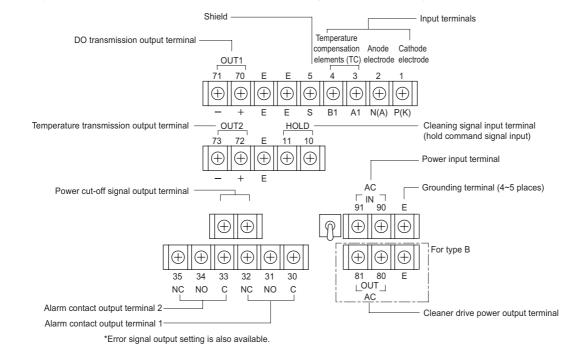
There are four different patterns (A, B, C, and D) for configuring external terminals. These patterns are listed in the table below. The configuration varies according to whether a power cut-off signal output terminal and cleaner drive power output terminal are equipped.

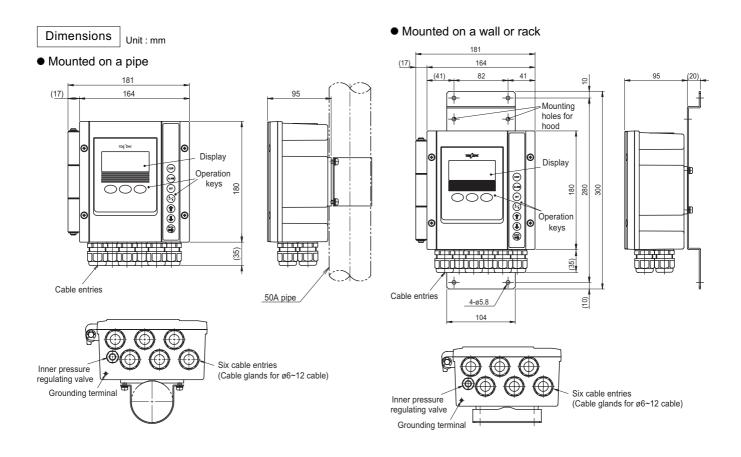
		Type of transmitter			
		A (standard)	В	С	D
Power cut-off signal	None (standard)	0	0		
output terminal (optional)	Equipped			0	0
Cleaner drive power	None (standard)	0		0	
output terminal (optional)	Equipped		0		0

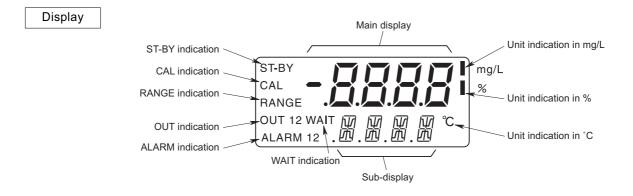
Type A and B (2-point alarm contact output without a power cut-off signal output terminal)

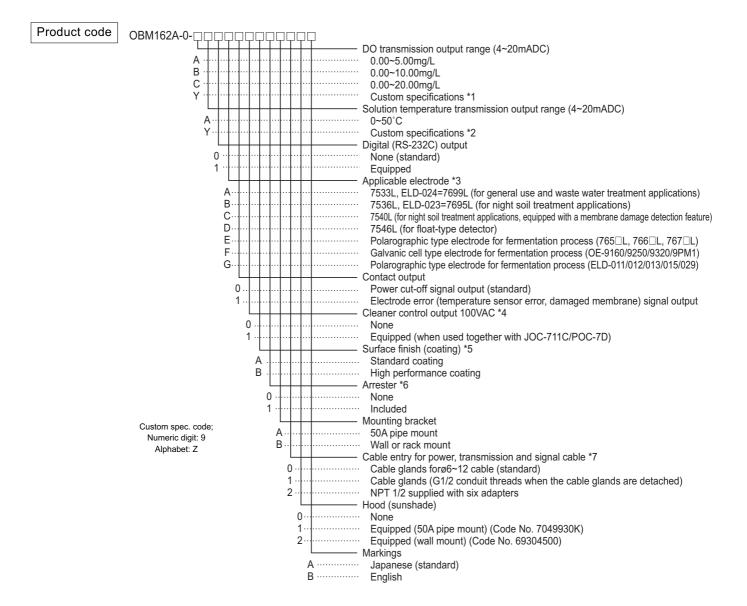


Type C and D (2-point alarm contact output with a power cut-off signal output terminal)









- *1: Specify the DO measurement output range in 0.01mg/L increments, with a minimum width of 1.00mg/L and a range of 0.00~50.00mg/L.
- *2: Specify the solution temperature output range in 1°C increments, with a minimum width of 10°C and a range of -5~100°C.
- *3: The output characteristics vary according to the type of electrode used. There are 7 categories of electrodes that can be used. Select the electrode that best fits the specifications.
- *4: The OBM-162A runs on an adjustable-voltage power supply, while the cleaners that can be used with the model (such as the JOC or POC) run on 100VAC only. Thus, when "Equipped" is selected, it is important to note that the voltage supplied to the main unit is 100VAC.
- When using a supply voltage greater than 100VAC, a ZP-30 step-down transformer is required.
- *5: Standard coating: Melamine primer and topcoat. Average film thickness: Greater than 30µm. Glossiness; G40. High performance coating: Epoxy primer and middle coat, polyurethane resin topcoat. Average film thickness: Greater than 100µm. Glossiness; G80.
- *6: A (simplified) ceramic surge arrester is mounted on the power line and transmission line.

*7: There are six cable entries with cable glands for a ø6~12 cable (G 1/2 conduit threads when the cable glands are detached). The NPT 1/2 comes with 6 SUS304 adapters. After detaching the cable glands, insert the required number of adapters into the cable entries and screw them into place. When cable entries ports are not used, make sure to leave the standard cable glands in place. These glands function as a seal.

- Note 1: The OBM-162A is a dissolved oxygen analyzer housed in a die-cast aluminum case. This case is equipped with keys on the front panel and wiring connections in the front, making it easy to operate the instrument and access the wiring.
 - The OBM-162A is designed to provide a variety of different output, such as solution temperature, alarm contact, and cleaner control. The instrument also comes with a self-diagnostics function to detect a variety of problems, including memory errors and temperature sensor errors. In addition, there are a number of other functions provided, including DO value adjustment, measured solution temperature value shift, and manual temperature compensation (for fermentation electrode).
- Note 2: This instrument operates on adjustable-voltage power supply of 100~240VAC, 50/60Hz.
- Note 3: The instrument is equipped with a 2-point alarm contact output function. However, this function is set to "OFF" when shipped from factory.

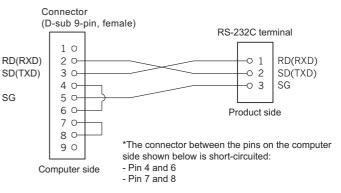
Optional features

• 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.

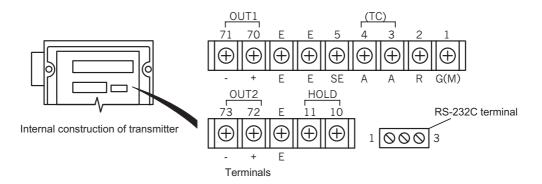
Terminal block for RS-232C

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	—

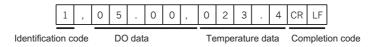


Dedicated communication cable configuration

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



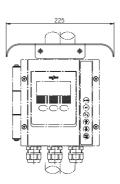
When a request is received from the computer, the transmitter sends out data in the following format.

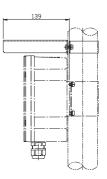


Hood

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	Drop-in type DO	Immersion type detector	Drop-in type detector	Immersion type detector	
FIGUUCLIIAITIE	DO electrode holder	detector	with pulse air jet cleaner	with water jet cleaner	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			ode section is at least 1			
Detector length	Ū.	Protection tube length: 2~6 m		,	Holder length: 0.5~3m	
Weight	Approximately 1 kg	Approximately 17 kg	Approximately 4 kg	Approximately 20kg	Approximately 7 kg	
Weight	(length: 1m)	(length: 5 m)	(length: 1 m)	(length: 5m)	(length: 1 m)	
Cleaning	None	None	Instrument air	Industrial water or	Industrial water or	
water or air			0.2~0.5MPa	instrument air 0.2~0.5MPa	instrument air 0.2~0.5MPa	
Power supply	Not required	Not required	100VAC, 50/60Hz	100VAC, 50/60Hz	100VAC, 50/60Hz	
Configuration						