

# 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.

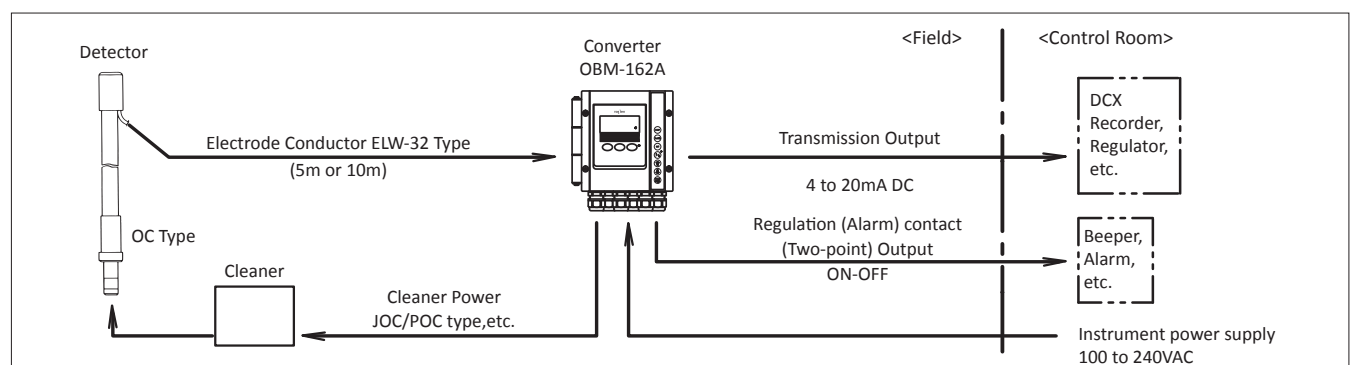
The meter has double circuit (incl. water temperature) transmission output 4 to 20mA DC and upper and lower limit alarm contact output (contact a).



### Features

- Able to change transmission output range  
The output range can be set within the measurement range 0 to 50mg/L by using 0.01mg/L as the unit and above 1.00mg/L.
- Able to determine whether the electrode is in good condition during calibration  
In case normal calibration cannot be conducted, the meter will display “Zero calibration error”, “Span calibration error” and “Low response”
- Temperature display and output  
The instrument displays the temperature of the sample and provides a transmission output of 4 to 20mA DC.
- Measurement value conversion  
Measured values can be converted to a concentration value better suited to operation management needs.
- Enable simple operation by the waterproof keys on the front panel  
All the operations can be carried out on the 10 waterproof keys of the front panel without opening door.
- Able to resume detection mode automatically  
After 2 hours maintenance mode, the system will resume measurement mode automatically.
- 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)
- 100VAC output for cleaner control  
The combination of water-injection cleaner and pulse air-injection cleaner will need it.
- RS-232C output  
In case dedicated communication cable is connected to RS-232C output, it will transmit data for the computer.
- Membrane damage detection function  
In case the membrane is damaged, electrode abnormal signal will be output through dedicated electrode and dedicated cable.

### Structural Diagram

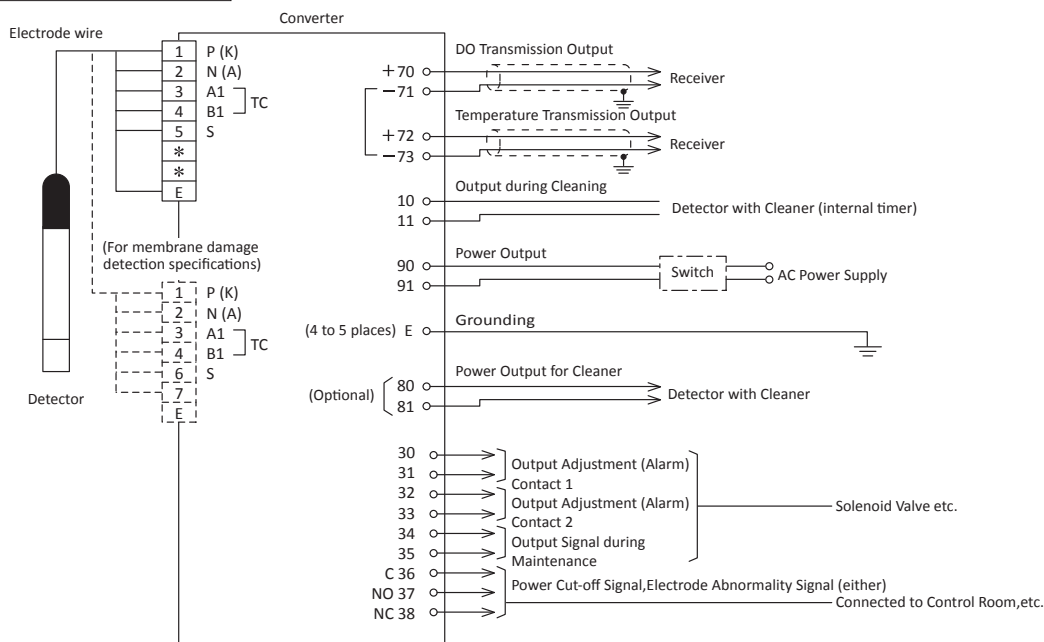


## Standard Specification

Product Name	: Dissolved Oxygen Analyzer
Model	: OBM-162A Type
Measurement Method	: Membrane polarographic method
Measurement range	: DO...0.00 to 50.00mg/L (resolution 0.01mg/L)
	Temperature...-10.0 to 100.0°C (resolution 0.1°C)
	SAT...0.0 to 200.0% (resolution 0.1%) without transmission output (display only)
	O <sub>2</sub> ... 0.0 to 30.0% (resolution 0.1%) without transmission
Transmission output range	: DO...0.00 to 50.00mg/L Upper limit side of the output range can be set from 1.00 to 50.00mg/L. (in increments of 0.01mg/L)
	Temperature...-5 to 100°C (display only) The minimum width is 10°C. (Both the upper and lower limit values can be set in increments of 1°C)
Performance	: Linearity, within 1FS, or 0.05mg/L within the range of 0 to 2mg/L (equivalent input as a reference) Repeatability within 0.8% FS, or 0.04mg/L within the range of 0 to 2mg/L (equivalent input as a reference)
Temperature compensation	: 0 to 45°C
Alarm contact output	: Number of circuits; 2 circuits, contact a. 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

Under maintenance signal output	: Contact closed during maintenance (contact a) Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load)
Electrode error signal output	: Contact closed (contact c) when an electrode error occurs, such as when a temperature compensation element error occurs or the membrane is damaged.
Power cut-off signal output	: Provides a (contact c) signal outputted when a power failure occurs. Contact capacity; 250VAC 3A or 30VDC 3A or less (resistance load)
Under cleaning signal input	: Transmission output is held while a closed contact input signal is being outputted. No-voltage contact signal.
Display	: LCD
Calibration method	: zero; electrical zero or zero liquid Span; atmosphere or Air saturated water
Transmission output	: Isolated...4 to 20mA DC, load resistance below 650Ω
Ambient temperature and humidity	: -20 to 55°C, below 95%RH (No freezing)
Power supply	: 90 to 264VAC, 50/60Hz
Power consumption	: approx. 10VA
Structure	: equivalent to IP65
Installation	: 50A Pipe (optional; mounted on wall or rack)
Material	: body...aluminum casting Window...polyester resin
Paint finish	: silver (metallic gray), N1.5 (Munsell Color System)
Terminal	: cable connector x 6 (for cable with external diameter 6 to 12) Dismantle the cable connector and connect to conduit (G 1/2×6)
Weight	: approx. 2kg

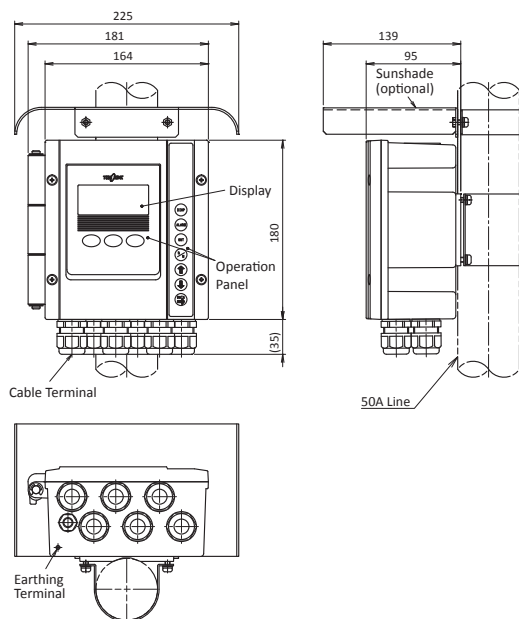
## Diagram of Wiring between Devices



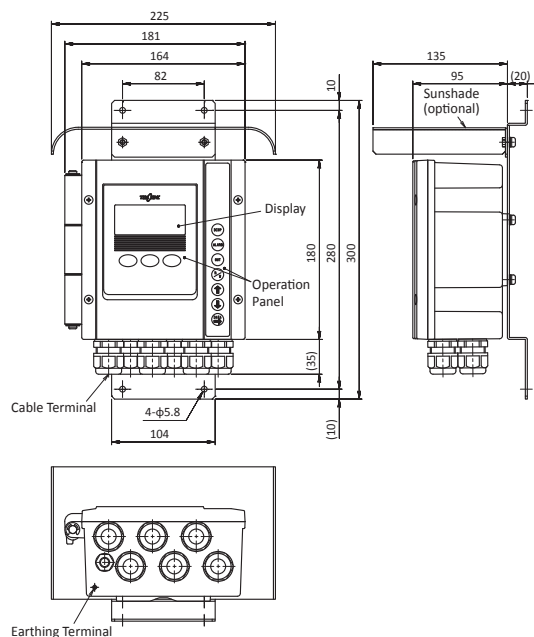
## Dimensions

Unit : mm

### ● Pipe installation



### ● Mounted on wall or rack



## Product code

OBM162A-0-

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A	DO value transmission output (4 to 20mA DC) range
B	0.00 to 5.00mg/L
C	0.00 to 10.00mg/L
Y	0.00 to 20.00mg/L
	Other designation*1
A	Water Temperature, Transmission output (4 to 20mA DC) range
Y	0 to 50°C
	Custom specifications*2
0	Digital (RS-232C) output
1	None (standard)
	Yes
A	Combined electrode*3
B	7533L, ELD-024=7699L Type (Ordinary; for sewage treatment)
C	7536L, ELD-023=7695L Type (For deflection treatment)
D	7540L Type (For deflection treatment, with membrane damage deflection function)
E	7546L Type (For the user of floating detector)
F	Polarographic method for fement (765□L, 766□L, 767□L)
G	Galvanic method for fement (OE-9160/9250/9320/9PM1)
	Polarographic method for fement (ELD-011/012/013/015/029)
0	Contact output
1	Output power cut-off signal (standard)
	Output electrode abnormality (temperature element, abnormality or membrane damaged) signal
0	100V AC output for cleaner control*4
1	No
	Yes (combined with JOC-711C Type/POC-7D Type)
A	Surface finish*5
B	Standard painting
	Heavy-duty anticorrosion painting
0	Internal lightning arrester*6
1	No
	Yes
A	Installation accessories
B	For installing 50A line
	For mounting on wall or rack
0	Power, Transmission, Signal cable Terminal*7
1	ø6 to ø12 cable connector (standard)
2	If the cable connector is dismantled, then use the screw
	G1/2 for cable conduit
	NPT 1/2 (supplied with 6 adapters)
	Sun-shading
0	No
1	Yes (to install 50A line) (Code No. 7049930K)
2	Yes (to mount on wall) (Code No. 69304500)
A	Written form
B	Japanese (standard)
	English as designated

Custom spec. code;  
Numeric digit: 9  
Alphabet: Z

- \*1. DO measurement range 0.00 to 50.00mg/L.  
The designated unit is 0.01mg/L, and the amplitude is over 1.00mg/L.
- \*2. The water temperature measurement range is -5 to 100°C; please designate 1°C as the unit and the amplitude over 10°C.
- \*3. Since the output characters of different electrodes are different, please designate 7 combined electrode types correctly.
- \*4. This meter uses free power; the output voltage for controlling combined cleaner (JOC/POC, etc.) is limited to 100VAC.  
Therefore, when user selects Yes, please note that the power supply for this meter is limited to 100VAC.  
In case power supply is over 100VAC, please prepare a ZP-30 reducing transformer separately.
- \*5. In standard painting, Melamine resin shall be sprayed up and down with average membrane thickness of over 30µm and glossiness at G40.  
Heavy-duty anticorrosion painting, epoxy resin shall be sprayed on the middle and down layers and Melamine resin on the top layer, till average membrane thickness of over 100µm and glossiness at G80.
- \*6. Porcelain lightning arrester (simple type) shall be installed on the power line and transmission line.
- \*7. The terminal has 6 x cable connectors ø6 to ø12; If the cable connector is dismantled, then use the screw G1/2 for cable conduit.  
In the NPT1/2 requirements, there are 6 x adapters SUS304; please dismantle cable connector, and connect to terminal according to the required number; moreover, for the terminal and cable connector that do not use cable conduit, please maintain the original plug cock (plugged) state.

## Optional

### ● RS-232C Communication

#### Function

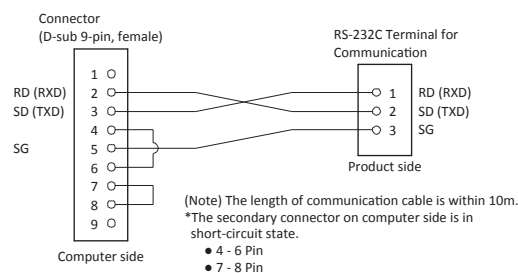
When user selects Yes

RS-232 output, a RS-232C

communication terminal will be added to the terminal, which can transmit digital test data to computer.

Terminal block for RS-232C

Terminal Number	Signal Code	Signal Name	Direction
1	RD (RXD)	Receiving data	Input
2	SD (SXD)	Sending data	Output
3	SG	Earthing for signal transmission	—



Structure of Special Communication Cable

## Combined Detector

The type, specifications and shape of the typical combined detector are shown as below. Please select according to installation and measurement conditions.

The DO electrode installed is 7533L Type (ordinary; for sewage treatment), or 7536L Type (for defecation treatment). The special conductor is ELW-32 Type. The DO electrode to install on the optional membrane damage detection is 7540L Type (for defecation treatment). The special conductor is ELW-067 Type.

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
Structure	Outdoor rain-proof				
Auto cleaning method	No	No	Pulse air-jet	Water-jet or air-jet	Water-jet or air-jet
Mat. of Wet Part	PVC	PVC/SUS304	PVC/SUS316	PVC/SUS316	PVC/SUS316
Sample water temperature	0 to 45°C				
pressure	Atmospheric pressure				
velocity	Electrode part is above 10cm/s				
Length of Detector	L. of clamp: 0.5 to 3.5m	L. of sleeve: 2 to 6m	L. of clamp: 1 to 3m	L. of sleeve: 2 to 6m	L. of sleeve: 0.5 to 3m
Weight	Approx. 1kg (1m long)	Approx. 17kg (5m long)	Approx. 4kg (1m long)	Approx. 20kg (5m long)	Approx. 7kg (1m long)
Pressure of cleaning water or air supply	No	No	Plant air 0.2 to 0.5MPa	Industrial water: 0.2 to 0.5MPa Plant air: 0.05 to 0.35MPa	
Power supply	No	No	100VAC 50/60Hz	100VAC 50/60Hz	100VAC 50/60Hz
Shape					



**DKK-TOA CORPORATION**



**CAUTION**

Please read the operation manual carefully before using products.

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Information and specifications are subject to change without notice.