

DISSOLVED OXYGEN ANALYZER/TRANSMITTER

Model: ODM-135A

FEATURES

- Microprocessor based 2-wire transmitter suitable for field installation. The unit features isolated inputs and outputs, digital display and rain proof construction.
- **Simple Span Calibration**
The instrument can be calibrated in one action by virtue of memory-resident saturated DO (dissolved oxygen) data. A built-in stabilization determination function enables the unit to be calibrated accurately without operator error.
- **Automatic determination of electrode quality**
During calibration, the electrode quality is automatically evaluated. If the electrode quality has deteriorated to an unacceptable level, an error message is generated.

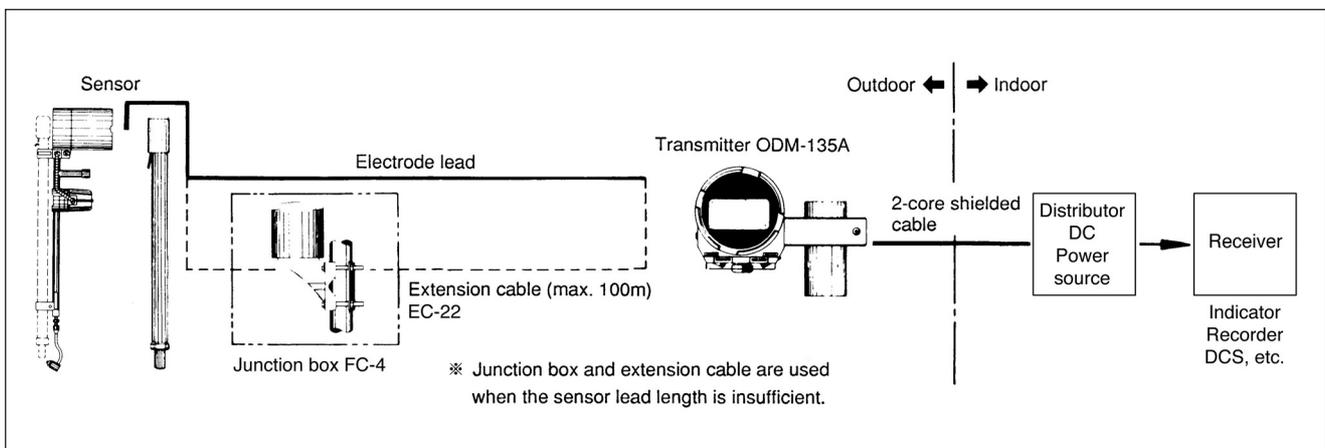
STANDARD SPECIFICATIONS

Product Name	: DO Analyzer/Transmitter
Model	: ODM-135A
Measurement Range (Transmission output range)	
DO	: 0.00~1.00/2.00/5.00/10.00/15.00/ 20.00/25.00/30.00/50.00mg/L
SAT	: 0.0~150.0%
O ₂	: 0.0~30.0%
Temp.	: 0.0~100.0°C
	} No output (display only)
Display	: LCD
Resolution	
DO	: 0.01mg/L
SAT	: 0.1%
O ₂	: 0.1%
Temp.	: 0.1°C
Performance (With equivalent input of electrode)	
Linearity	: Within ±1% FS (±0.05mg/L for ranges 0~1/2mg/L)
Temp. Compensation Range	: 0~45°C
Temp. Comp. Accuracy	: Within ±3% against 0~45°C (with equivalent output)
Transmission Output	: Isolated 4~20mA DC (load resistance; 650 Ω or less) (max. load resistance [Ω]=50xVoltage [V]-550)

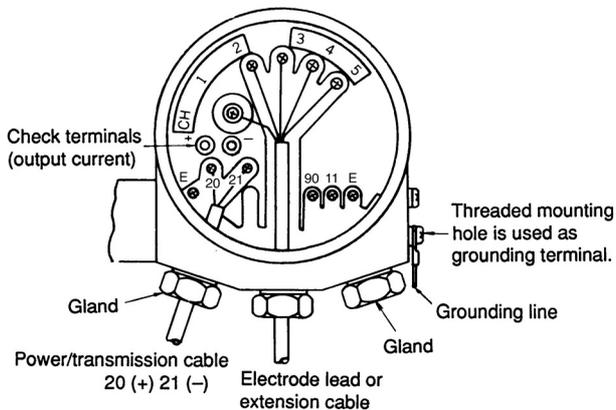


Ambient temperature	: -20~55°C
Humidity	: Max. 99%RH
Power consumption	: Approx. 0.6VA
Weight	: Approx. 3kg
Construction	: Rainproof, suitable for outdoor installation (JIS C0920) IP55
Mounting	: Mounted on a 50A pipe
Cable ports	: Three G 3/4 (PF 3/4 F) ports
Materials	
Main body	: Cast aluminium alloy
Window	: Glass
External Hold Command Output (Option)	: Receives hold signal from water jet cleaner to hold 4~20mA output during cleaning cycle

SYSTEM CONFIGURATION



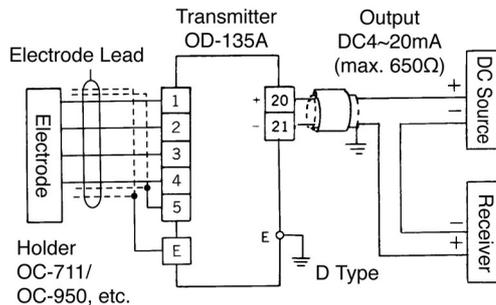
TERMINAL CONNECTIONS



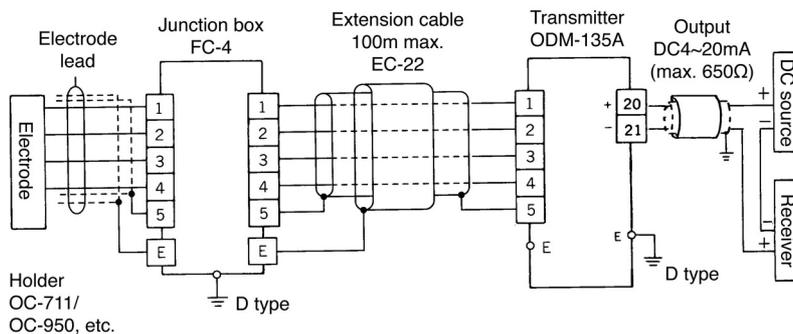
* Optional feature:
remote input to terminals 90, 11
for input "hold".

WIRING SCHEMATIC

<Direct Connection of electrode lead>



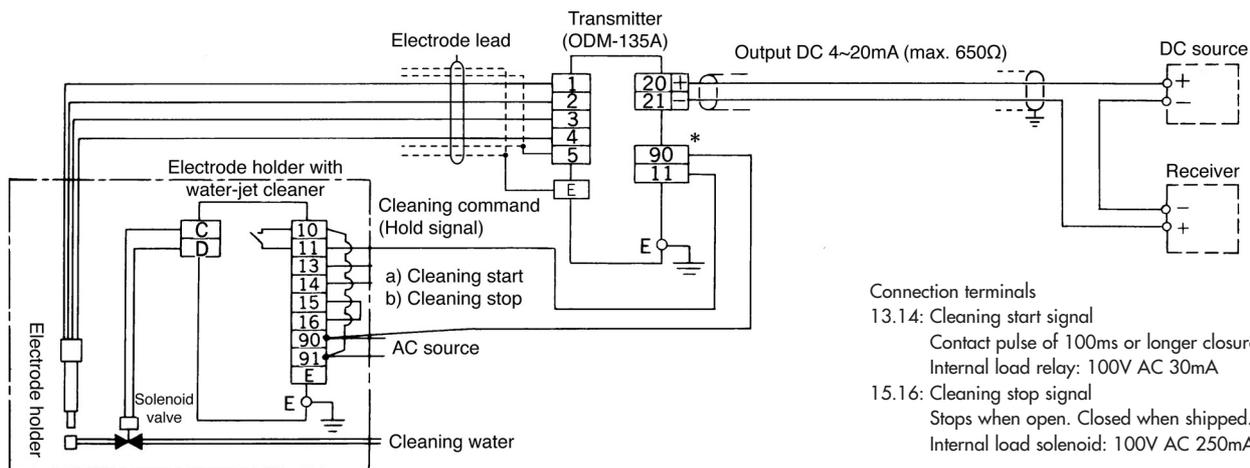
<Use of junction box an extension cable>



Note:
Connector box and extension cable are used when the electrode lead length is insufficient.

<Use of electrode holder with water-jet cleaner>

*When external input function for output holding (terminals #90, #11) is equipped



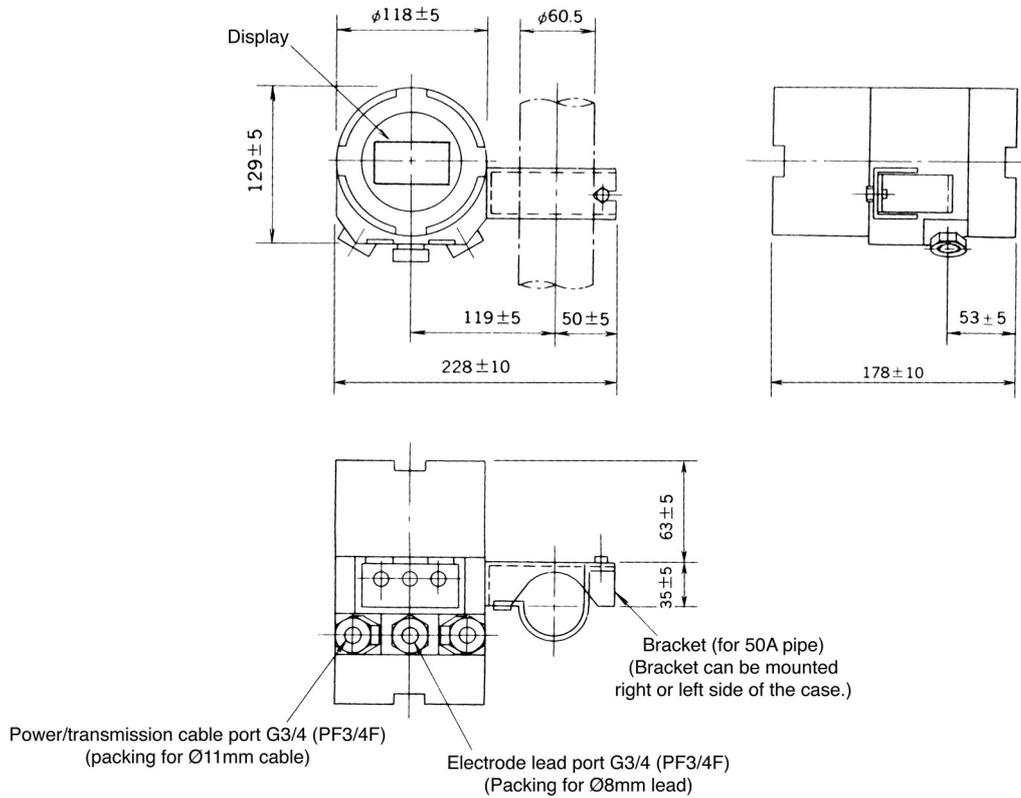
JOC-711B or JOC-950A
(7533L or 7536L)

Connection terminals
13.14: Cleaning start signal
Contact pulse of 100ms or longer closure time
Internal load relay: 100V AC 30mA
15.16: Cleaning stop signal
Stops when open. Closed when shipped.
Internal load solenoid: 100V AC 250mA

a: To start cleaning by external signal, apply the contact signal here.
(Contact rating: 100V AC 1A contact pulse of 100ms or longer)
b: To stop cleaning, open between the contacts.
(Shorten normally)

DIMENSIONS

Unit: mm



PRODUCT CODE

ODM135A-0-

	Measurement range
1	0~50.00mg/L (set at 0~10.00mg/L at shipment)
Y	Custom spec.
	External Hold Command Output
0	Nil
1	Supplied (to be combined with water-jet cleaner)
	Combined electrode
A	7533L, 7699L (standard)
B	7536L, 7695L (for sewage applications), 7546L (for float)
C	Fermentation use (765L, 766L)
	Wire port adapter
0	Nil G3/4 (PF3/4) standard
1	G1/2 (PF1/2) with SUS304 adapter
2	NPT1/2 with SUS304 adapter
3	NPT3/4 with SUS304 adapter
	Electrode lead wire wiring method
	Electrode lead wire ($\phi 8$ mm)
A	direct connection
B	direct connection
C	Exclusive cable (FC-4/EC-22 type)
	Hood
0	Nil
1	Supplied
	Markings
0	Standard (Japanese)
1	English

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

RELATED EQUIPMENT
• Dissolved Oxygen Electrodes

Diaphragm Polarograph type.

The system has the following features: Durable, very safe and diaphragm replacement is easy. These electrodes give very reliable measurement and have minimum maintenance requirements. It is also possible to use these electrodes for general applications as well as for oxygen applications.

DISSOLVED OXYGEN (OXYGEN) ELECTRODE TABLE

Applications		General Use		
		General tank		General tank/ Sewage application
Model		7533L		7536L 7546L
Classification		Recycling system		
Material	Main body	PVC, PE, SUS316		
	Diaphragm	PTFE, FEP		
Sample Conditions	Temp.	0~45°C		
	Pressure	0.3MPa or less		
	Flow speed	10cm/s or more, at sensor tip		
Heat Resistance		50°C		
90% response time		Approx. 60s (25°C)		Approx. 180s (25°C)
Linearity		Within ±3% of air saturation value (temp. fixed)		
Repeatability		Within ±2% of air saturation value (temp. fixed)		
Combination lead		ELW-32		
Combination holder		OC-711, JOC-711B etc.		FOC-7□□

The above table shows the list of electrodes to be used with the microprocessor type detector. The combination lead is 5m (standard).

• Combined Detector

Refer to electrode and electrode holder for DO amplifier B507-018-[] [] for details.

Product name		Immersion Type DO electrode holder	Immersion Type DO electrode holder	Flow through type DO electrode holder	Flow through type DO electrode holder	Throw in type DO electrode holder	Throw in type DO electrode holder
Model		OC-711	FOC-711/712	NOC-814	NOC-815	OC-991	OC-950C
Installation		Immersion type	Float system vertical type (FOC-711) Float system arm type (FOC-712)	Flow through type		Throw in type	
Service Temperature range	Sample	0~45°C (No freezing)					
	Ambient	-5~50°C					
Service pressure range		0.03MPa or less	Atmosphere	0.15MPa or less	0.3MPa or less	0.1MPa or less	
Weight		Approx. 1kg (total length 1m)	Approx. 30kg (FOC-711), Approx. 20kg (FOC-712)	Approx. 2kg	Approx. 5kg	Approx. 3kg (protector tube 2m)	Approx. 17kg (protector tube 5m)
Combined electrode		7533L (General) 7536L (Sewage application)	7546L General sewage	7533L (General) or 7536L (Sewage application)			
Materials in contact with sample		Holder: PVC, PP	Float main body: PVC, etc..	Holder: PVC, PP Case: PVC	Holder: PVC, PP Case: SUS316	Detector: SUS 316, PVC, PP	
						Protector tube: PVC	Protector tube: SUS304
Process Connection				25A JIS 10K FF	25A JIS 10K RF		

• **Electrode holder with jet-cleaner (JOC series)**

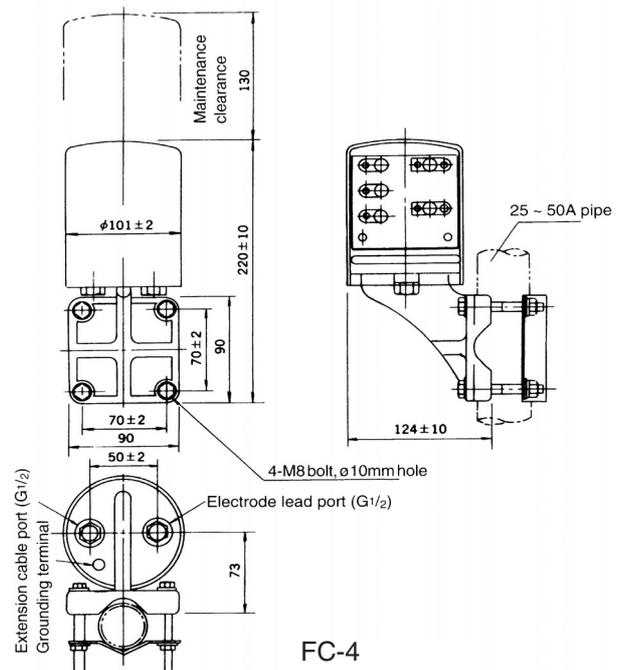
This holder provides a water or air jet spray to the electrode tip to remove electrode fouling. The cleaning interval can be altered by setting the built-in timer. Cleaning start and finish can also be controlled by external contact switching signals. Both immersion and flow-through types of electrode holder are available. Both types feature rainproof construction.

Product Name		DO electrode holder with jet-cleaner	DO electrode holder with jet-cleaner	Throw-in type DO electrode holder with jet-cleaner
Model		JOC-711B	JOC-811B	JOC-950A
Cleaning method		Intermittent air or water jet cleaning		
Mounting method		Immersion type	Flow-through type	Throw-in type
Temp. range	Sample	0~45°C (no freezing)		
	Ambient	0~50°C		
Pressure range		Below 0.03MPa	Below 0.3MPa	Below 0.1MPa
Cleaning cycle		1~3h (up to 12h available as option)		
Cleaning time		0.6~4min/cleaning (jet cleaning time adjustable between 30~60s)		
Cleaning water/air	Pressure		0.05~0.5MPa (sample pressure + 0.05~0.1MPa)	
	Consumption	Water	1.4~3.5L/min	
		Air	6~10L/min	
Power source		100V AC ±10%, 50/60Hz		
Power consumption		Approx. 25VA		
Weight		Approx. 7kg (total length; 1m)	Approx. 9kg	Approx. 20kg (protection tube; 5m)
Electrode		7533L or 7536L		
Wetted part material		Holder; PVC, PP, Case; SUS316	Holder; PVC, PP, Case; SUS16	Sensor; SUS316, PVC, PP Protection tube; SUS304
Paint colour		Metallic silver		
Construction		Rain proof construction		
Connection		-	25A JIS 10K RF	-

JUNCTION BOX

When the transmitter is installed remotely to the sensor (mainly for panel mounted transmitters) and the standard electrode lead length is too short, a junction box is required.

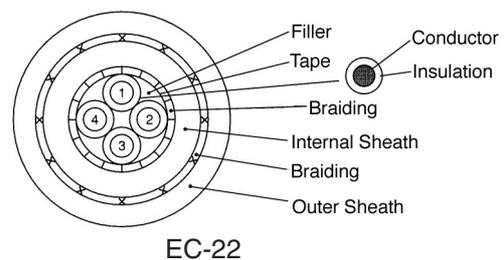
- Model** : FC-4
- Construction** : Field installation, spray proof (JIS CO920)
- Mounting** : 25~50A Pipe, wall or panelmount
- Material** : ABS resin
- Finish** : Matted chromium plating, metallic silver
- Weight** : Approx. 0.9kg



EXTENSION CABLE

The extension cable is a special cable specifically manufactured for use with pH analysers. It is used for connection between transmitter and junction box. Maximum cable length is 100m. The cable must not be spliced.

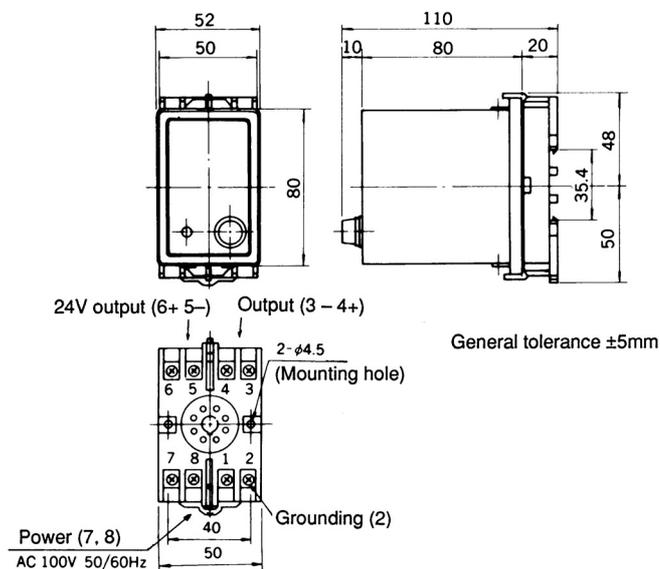
Model	EC-22
Overall diameter	8mm
Insulation	Polyethylene and PVC
Sheath	PVC
Insulation resistance between core conductors	At least 10 ⁹ MΩ/100m
Standard length	5m~100m (available in 5m lengths)
Weight	Approx. 0.5kg/5m



POWER UNIT

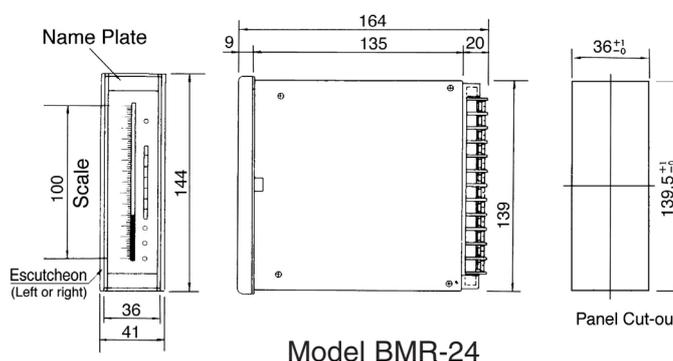
- Model : PA-24
- Output Voltage Rating : 24V DC +3V, -1V
- Output Current Rating : 2~22mA (not suitable for parallel connection of two instruments)
- Power Requirements : 100V ±10%, 50/60Hz
- Ambient Temperature : -5~55°C
- Construction* : Indoor use, plug-in type
- Weight : Approx.300kg

*4~20mA DC output signal is available from the terminal block.



BARGRAPH METER RELAY

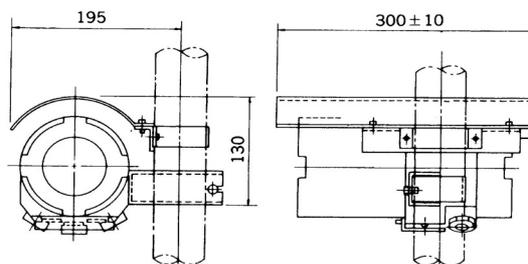
- Model : BMR-24
- Output : 24V DC, ±1V
- Input : 4~20mA DC (input resistance; 10Ω)
- Alarm Outputs : High-high, high, low, low-low. (Contact rating: 125V, 0.5A)
- Scale : Specify with purchase order.
- Scale Length : 100mm
- Display : Red LED, 101 dots.
- Power Requirements : 85~264V AC, 50/60Hz
- Power Consumption : Approx. 5VA
- Ambient Conditions : 0~45°C, 40~80% RH
- Weight : Approx 450g



SUN-SHADE

(For protection from direct sun-light)

- Material : 304 Stainless Steel
- Mounting : 50A Pipe bracket



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CAUTION

Do not operate products before consulting instruction manual.