

# General Specifications

## DO30G Sensor for Dissolved Oxygen Analyzer

GS 12J05D03-01E

### ■ GENERAL

The DO30G sensor for dissolved oxygen is designed for use in water treatment plants such as sewage treatment works, effluent activated sludge process, and potable water treatment. It is also effective in river monitoring, intake protection, fish farming and other fields where water quality is important.

This galvanic cell has a fast response time and good long term stability, and features replaceable diaphragm and cable for easy maintenance. A temperature sensor is incorporated for compensation. The DO30G sensor can be used in either the PB350G/PB360G floating ball holders or in the DOX8HS submersion type holder.



DO30G Sensor



PB350G Floating ball holder

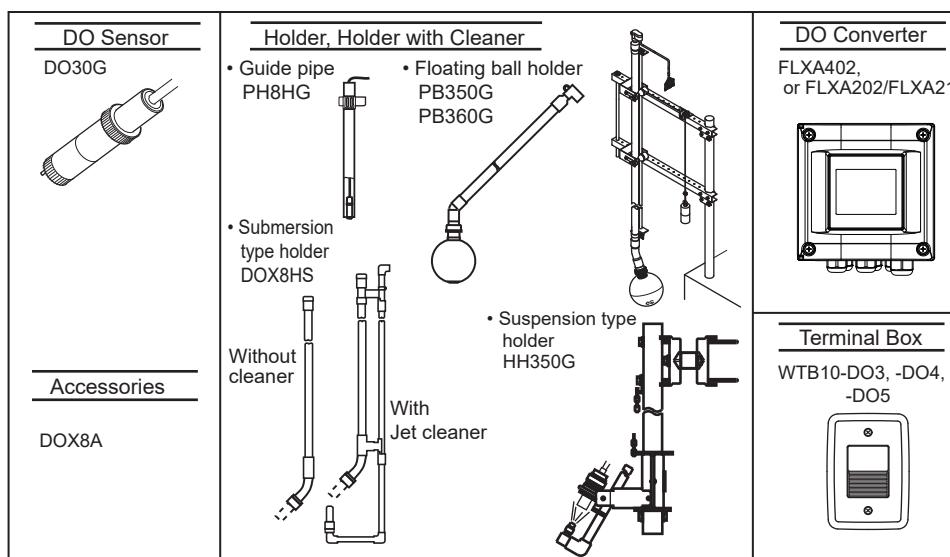
### ■ FEATURES

#### DO Sensor with Long-term Stability and Short Electrolyte Stabilization Time

- A DO sensor that uses a special electrolyte, shortening the electrolyte stabilization time and realizing stable measurements over a long period of time.
- Measuring range of 0 to 20 mg/L
- Cartridge-type membrane for easy replacement
- 50 mm thick membrane with high tear resistance and minimal impact from air bubbles

### ■ SYSTEM

Refer to GS 12A01F02-01EN for 4-wire Converter FLXA402, GS 12A01A03-01EN for 2-wire liquid analyzer FLXA202, GS 12A01A02-01E for 2-wire liquid analyzer FLXA21 and GS 12J05C02-00E for holders.



Note: "DO" of DO sensor means dissolved oxygen.

#### CAUTION



Installation Location of Holders (Guide Pipe, Submersion Type, etc)  
The holder should be used in a place that is as vibration free as possible.

Using the holder in a place where it is affected by vibration, may result in damage to the holder.

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**YOKOGAWA** ♦

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## ■ GENERAL SPECIFICATIONS

### GENERAL SPECIFICATIONS of DO30G SENSOR

Dissolved Oxygen: 0 to 20 mg/L (ppm)  
 Liquid Temperature: 0 to 40°C  
 Liquid Pressure: 0 to 100 kPa  
 Flow speed: 20 cm/s or more  
 Sensor for Temperature Compensation: Pt1000  
 Wetted Part Material:  
 rigid polyvinyl chloride, stainless steel, fluorinated ethylenepropylene, nitrile rubber, heat-resistant soft polyvinyl chloride, and polycarbonate  
 Cable Length: 3 m, 5 m, 10 m, 15 m and 20 m  
 Weight: Approx. 0.3 kg + 0.12 × N (kg)  
 N: cable length in meters (m)  
 (e.g., for a cable length of 5 m, the weight is approx. 0.9 kg)

### CHARACTERISTICS of DO30G SENSOR

Repeatability: 0.1 mg/L or 3% FS, whichever is greater (including sensor)  
 Temperature Compensation Error:  
 Within ±3% FS (including sensor) for a ±5°C change in the range of 0 to 40°C  
 Response Time: Within 2 minutes (90% response)(including sensor)

### WTB10 Terminal Box

Used when DO converter is installed at a distance from the DO sensor.  
 Ambient temperature: -10 to 50°C  
 Construction: JIS waterproof  
 Case material: Fiberglass reinforced polycarbonate resin  
 Electrical connections  
 DO sensor side: JIS A8 watertight plastic gland  
 DO converter side: JIS A15 watertight plastic gland with cable (max. 40 m)  
 Conduit adaptor (optional) available  
 Case color: Grayish green (Munsell 2.5GY5.0/1.0)  
 Weight: Body 0.5 kg Mounting hardware: 0.7 kg

### DOX8A Parts Set for Maintenance

A set of zero-adjusting reagent and maintenance parts  
 <Contents>  
 Zero adjusting reagent (sodium sulphite 500 g) 1 bottle  
 Membrane assembly (for membrane thickness of 50 µm) 3 sets  
 Electrolyte for sensor (50 mL) 1 bottle  
 Syringe for replacing electrolyte 1  
 Polish for silver electrode (30 g) 1 bottle  
 Polyethylene beaker (200 mL) 1

## ■ MODEL AND SUFFIX CODES

### 1. DO Sensor

Model	Suffix Code	Option Code	Description
DO30G	.....	.....	Dissolved Oxygen Sensor
—	-NN	.....	Always -NN
Membrane thickness	-50	.....	50 µm
Cable length	-03 -05 -10 -15 -20	.....	3 m 5 m 10 m 15 m 20 m
Cable terminal	-PN -FL -FM	.....	Pin terminal (*1) M4 ring terminal (*2) M3 ring terminal (*3)

\*1: Can be used for FLXA402, FLXA202/ FLXA21.

For a terminal box, select WTB10-DO3.

\*2: Used to connection to FLXA202/FLXA21.

For a terminal box, select WTB10-DO4.

\*3: Used to connection to FLXA402.

For a terminal box, select WTB10-DO5.

### 2. Terminal Box

Model	Suffix Code	Option Code	Description
WTB10	.....	.....	Terminal box
Applicable system	-DO3 -DO4 -DO5	.....	For FLXA402, FLXA202/FLXA21 (*1) For FLXA202/FLXA21 (*2) For FLXA402 (*3)
—	-NN	.....	Always -NN
Cable length	-00 -05 -10 -20 -30 -40	.....	No cable 5 m 10 m 20 m 30 m 40 m
Option	Mounting bracket /P /W	.....	Pipe mounting bracket
Conduit Adapter	/AWTB /ANSI	.....	Wall mounting bracket G1/2 1/2NPT

\*1: Pin terminals and cable with pin terminals are used.

\*2: M4 screw terminals and cable with M4 ring terminals are used.

\*3: M3 screw terminals and cable with M3 ring terminals are used.

### 3. Accessories (parts set for maintenance)

Model	Suffix Code	Option Code	Description
DOX8A	.....	.....	Parts set for maintenance (for membrane thickness of 50 µm)
Sensor	-M	.....	For membrane replacing type sensor
—	*B	.....	Style B

### 4. Spare Parts

Part Name	Part No.	Remarks	
Membrane and electrolyte for sensor	K9171HK	3 membrane assemblies (thickness of 50 µm) 50 mL of electrolyte Syringe for replacing electrolyte	
Zero adjusting reagent	L9920BR	Sodium sulfite 500g	
Polisher	K9088PE	For polishing silver electrode 30g	

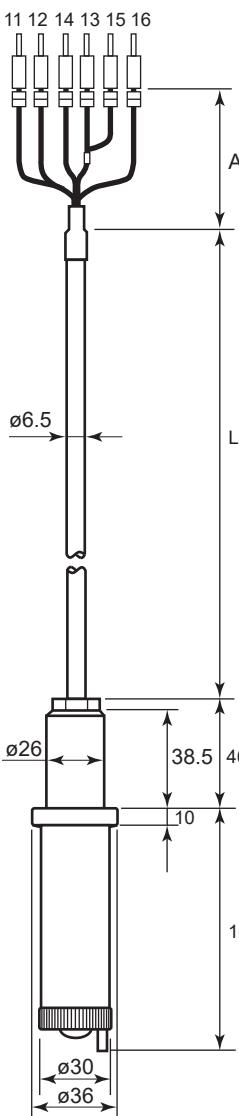
## ■ DIMENSIONS

### DO Sensor DO30G

Unit: mm

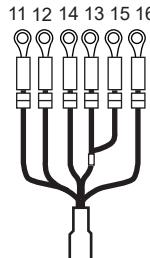
Dissolved-oxygen sensor with pin terminals

11 12 14 13 15 16



Dissolved-oxygen sensor with ring terminals

11 12 14 13 15 16



Pin terminals

Model and Suffix Codes	L	Weight(kg)
DO30G-NN-50-03-PN	3 000	Approx. 0.6
DO30G-NN-50-05-PN	5 000	Approx. 0.8
DO30G-NN-50-10-PN	10 000	Approx. 1.4
DO30G-NN-50-15-PN	15 000	Approx. 2.0
DO30G-NN-50-20-PN	20 000	Approx. 2.6

Ring terminals

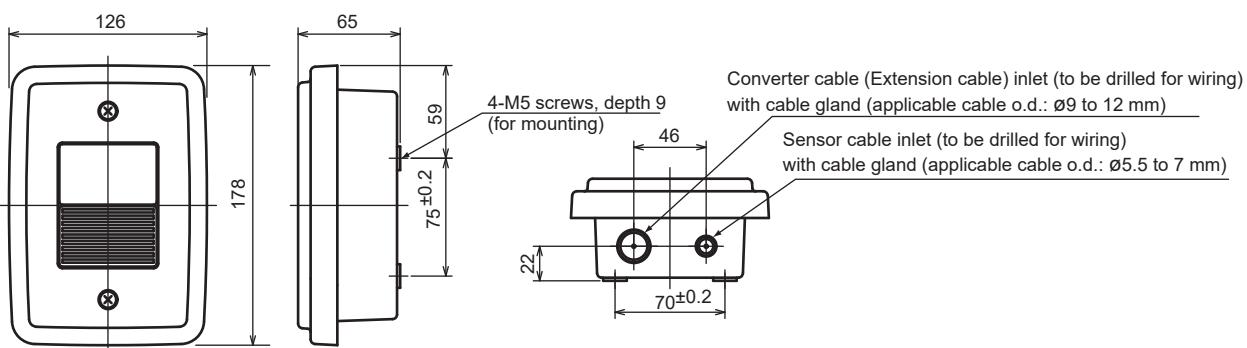
Model and Suffix Codes	L	Weight (kg)
DO30G-NN-50-03-FL	3 000	Approx. 0.6
DO30G-NN-50-03-FM	5 000	Approx. 0.8
DO30G-NN-50-05-FL	10 000	Approx. 1.4
DO30G-NN-50-05-FM	15 000	Approx. 2.0
DO30G-NN-50-10-FL	20 000	Approx. 2.6
DO30G-NN-50-10-FM		
DO30G-NN-50-15-FL		
DO30G-NN-50-15-FM		
DO30G-NN-50-20-FL		
DO30G-NN-50-20-FM		

Terminal assign.

13	IE
15	RE
11	T1
12	T2
14	Shield
16	Liquid earth

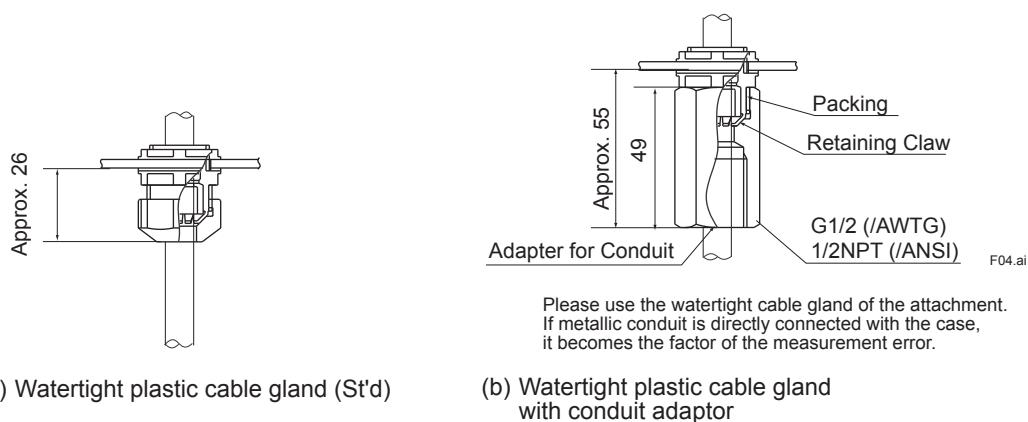
### Terminal Box WTB10

Unit: mm



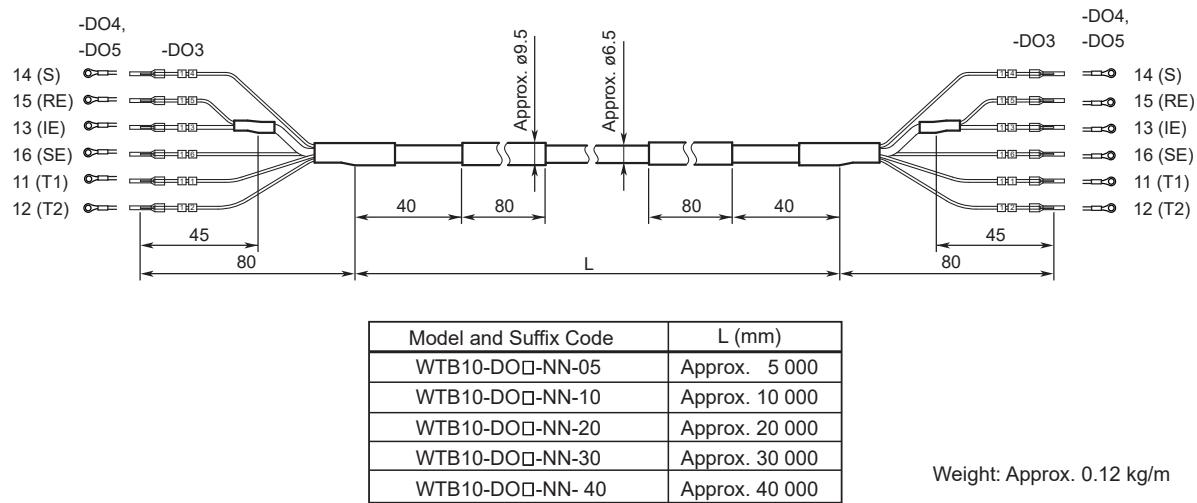
## Cable gland for the terminal box

Unit: mm



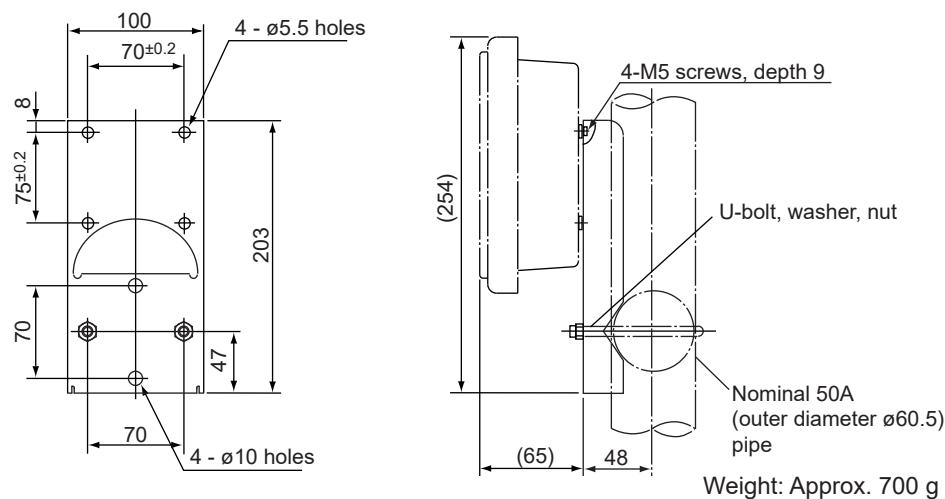
## Extension cable for WTB10 (Not supplied if the Cable length “-00” is selected)

Unit: mm



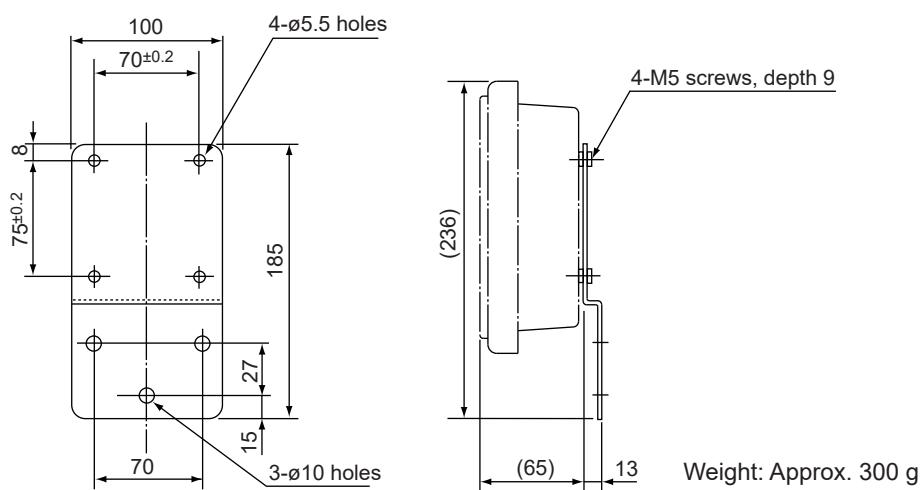
## Pipe mounting bracket (Option: /P)

Unit: mm

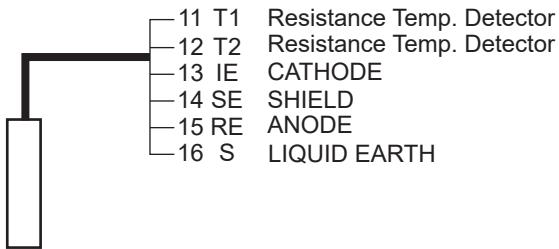


## Wall mounting bracket (Option: /W)

Unit: mm



## ■ WIRING DIAGRAM EXAMPLE



Note: Use WTB10 Terminal Box when DO converter is installed at a distance from the DO sensor.

## Inquiry Specifications Sheet for Dissolved Oxygen Analyzer

For inquiries on the Yokogawa dissolved oxygen analyzer, please tick (✓) the appropriate box (□) and write down the relevant information in the blanks.

## 1. General

Name of your company: \_\_\_\_\_  
Name of person : \_\_\_\_\_ Dept. or sect : \_\_\_\_\_ (Phone No. )  
Name of plant : \_\_\_\_\_  
Measuring point : \_\_\_\_\_  
Purpose of use :  Indication  Recording  Alarm  Control  
Power supply : \_\_\_\_\_ V  AC \_\_\_\_\_ Hz  DC \_\_\_\_\_

## 2. Measurement Conditions

(1) Liquid temperature : \_\_\_\_\_ to \_\_\_\_\_, Normal [°C]  
(2) Liquid pressure : \_\_\_\_\_ to \_\_\_\_\_, Normal [kPa]  
(3) Flow speed : \_\_\_\_\_ to \_\_\_\_\_, Normal [m/s]  
(4) Name of liquid to be measured : \_\_\_\_\_  
(5) Components of liquid to be measured : \_\_\_\_\_  
(6) Other conditions : \_\_\_\_\_

### 3. Installation environment

## 4. Requirements

(1) Measurement range :  0 to 20 mg/L  \_\_\_\_\_

(2) System component selection:  Sensor  Holder  Converter  Cleaning system  Calibration set  
 Parts set for maintenance  Terminal Box

(3) Length of sensor cable :  3 m  5 m  10 m  15 m  20 m

(4) Type of holder :  Guide pipe  Submersion  Floating ball  Suspension

(5) Cleaning method :  No cleaning  Jet cleaning

(6) Other requirements :