SPECIFICATION SHEET

CP SERIES 2-WIRE TYPE DO TRANSMITTER

FEATURES

• Rigid aluminium enclosure with free angle mounting.
• Simple operation offers free range setting, auto-calibration, electrode self-diagnostics, using built-in microprocessor.
• Front operation and front wiring access.

SPECIFICATIONS

Product name and Model: DCP-20T Dissolved Oxygen Analyzer /Transmitter
Measurement Object: Dissolved Oxygen (DO).
Measurement Method: Polarographic Method.
Measurement Range:
DO: 0~50mg/L.
O2: 0~25%.
SAT: 0~100%.*
Temperature: 0~100°C.

* SAT (Saturation Ratio) is expressed as a percentage value of actual dissolved oxygen content in sample versus saturated dissolved oxygen content at a given temperature.

Display:
Least displayed value:
DO; 0.01mg/L.
O2; 0.1%.
SAT; 0.1%
Temperature; 0.1°C.

Output:
2-wire system, 4–20mA DC, isolated.

Output Ranges:
DO: 0~/2/5/10/15/20/25/30/50/100mg/L selectable.
O2: None.
SAT: None (display only).
Temperature: None.

Max. Load Resistance:
750Ω when power supply voltage is 24V DC (Max. load resistance (Ω) = 50x “Power Supply Voltage” - 450 ).

Power Supply:
24V DC (operational at 9~30V DC, depending on load resistance).

Power Consumption:
Max. 0.6VA.

Repeatability:
Within ± 0.8%FS (minimum ± 0.04mg/L) (By equivalent input).

Linearity:
Within ± 1%FS (minimum ± 0.05mg/L) (By equivalent input).

Temp. Compensation Range:
0~45°C.
Temperature sensor:
Thermistor 10kΩ at 25°C.

Ambient Temperature:
-20~55°C.

Ambient Humidity:
Max. 99% RH.

Enclosure:
IP 65.

Mounting:
50A (2 inches, 60.5mm O.D) pipe mount or wall mount.

Cable Entry:
2-cable glands (Ø6~Ø12)
1-spare port (NPT 1/2”), adapter available on request.

TERMINAL LAYOUT

Materials of Construction:
Main body: Aluminium alloy casting.
Window: Glass.
Paint Colour: Blue.
Weight: Approx. 2kg.
Options: Hood is available for protection from direct sunlight.

SPECIAL FUNCTIONS

• DO Adjusting Function:
The instrument has the ability to adjust to a laboratory test value and is able to compensate measurement value for saline solutions.

• Burnout function (Alarm annunciation):
When the sample temperature is outside the range of 0~50°C or when any abnormal memory data is detected the measurement is stopped. The output signal is shifted to the lower or upper limit to annunciate the abnormal conditions.

• Measure/Maintenance Mode Selection:
When in maintenance mode the display indicates an actual measured value, a measured sample value and the output is switched to a held value, this can be a dummy value or a true value based on the operator’s selection.

Note:
For extended distance between transmitter and electrode it is necessary to use an extension cable (model EC-22) and junction box (model FC-4).

ISO-14001
ISO-9001
SPECIFICATION SHEET

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### WIRING DIAGRAM

**Model: DCP-20T - CP Series 2-Wire Type DO Transmitter**

Transmitter mounted close to electrode sensor (direct connection)

Transmitter mounted remote from sensor electrode (connection via junction box)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Immersion type dissolved oxygen electrode holder</th>
<th>Flow through type dissolved oxygen electrode holder</th>
<th>Flow through type dissolved oxygen electrode holder</th>
<th>Drop in type dissolved oxygen electrode holder</th>
<th>Immersion type dissolved oxygen electrode holder with jet cleaning</th>
<th>Immersion type dissolved oxygen electrode holder with jet cleaning</th>
<th>Drop in type dissolved oxygen electrode holder with jet cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>OC-711</td>
<td>NOC-814</td>
<td>NOC-815</td>
<td>OC-991</td>
<td>JOC-711B</td>
<td>JOC-811B</td>
<td>JOC-950A</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Nil</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Cleaning Method</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Air or water jet cleaning</td>
<td>Air or water jet cleaning</td>
<td>Air or water jet cleaning</td>
</tr>
<tr>
<td>Cleaning water or air</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pressure</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.05<del>0.5MPaG (Sample pressure +0.5</del>0.1MPaG or more)</td>
<td>1.5~3.5L/min</td>
<td>6~10L/min</td>
</tr>
<tr>
<td>Consumption</td>
<td>Water</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Installation type</td>
<td>Immersion</td>
<td>Flow through</td>
<td>Drop in</td>
<td>Immersion</td>
<td>Flow through</td>
<td>Drop in</td>
<td>Drop in</td>
</tr>
<tr>
<td>Temp. Sample</td>
<td>0~45°C (No freezing condition)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Range</td>
<td>Ambient</td>
<td>-5~50°C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pressure range</td>
<td>Atmosphere 0.15MPaG or less</td>
<td>0.3MPaG or less</td>
<td>Atmosphere</td>
<td>Atmosphere 0.3MPaG or less</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 1kg (1m)</td>
<td>Approx. 2kg</td>
<td>Approx. 5kg</td>
<td>Approx. 1kg (1m)</td>
<td>Approx. 3kg (1m)</td>
<td>Approx. 5kg (1m)</td>
<td>Approx. 5kg (1m)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination electrode</td>
<td>Model 7540 (For sewage/with error signal sensor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetted Materials</td>
<td>PVC, PP</td>
<td>PVC, PP, SUS316</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning Cycle</td>
<td>-</td>
<td>-</td>
<td>1~3 hrs (Max. 12hrs by request)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cleaning Time</td>
<td>-</td>
<td>-</td>
<td>0.6~4min/cycle</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Power Supply</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>AC 100V ± 10% 50/60Hz</td>
<td>-</td>
<td>-</td>
<td>Approx. 25VA</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Approx. 25VA</td>
<td>Approx. 25VA</td>
<td>Approx. 25VA</td>
</tr>
</tbody>
</table>
Power units and combined meter-relays / power units are available from DKK-TOA. To be specified when placing order.

- **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 AC ±10%, 50/60Hz
  - **Ambient Temperature**: -5–55°C
  - **Construction**: Indoor use, plug in type.
  - **Weight**: Approx. 300g.

- **Bar Graph Meter-relay with 24V Power Supply**
  - **Model**: BMR-24
  - **Output Voltage**: 24V DC ±1V
  - **Alarms**: Four contacts of High-high, High, Low and Low-low limits.
  - **Contact rating**: 125V, 0.5A.
  - **Scale**: To be specified when placing order.
  - **Scale Length**: 100mm.
  - **Indication Element**: Red colour LED, 101 dots.
  - **Power Requirements**: 85–264V AC, 50/60Hz.
  - **Power Consumption**: Approx. 7VA
  - **Ambient Conditions**: 0–45°C, 40–80%RH.
  - **Weight**: Approx. 450g.

* A 4–20mA DC output signal is available from the terminal block.
### PRODUCT CODE

<table>
<thead>
<tr>
<th>DCP20T-0.</th>
<th>Output range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0–20 mg/L*1</td>
</tr>
<tr>
<td>Y</td>
<td>Test results, specify range *2</td>
</tr>
</tbody>
</table>

| 0         | Cable entry adaptor built-in *3 |
| 1         | Standard (Cable gland for ø6–ø12) |
| 2         | NPT1/2 |
| 0         | Electrode lead wiring method |
| 1         | Electrode lead wire direct |
| 1         | Exclusive cable (with FC-4) |

<table>
<thead>
<tr>
<th>Fitting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hood</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

**Product Code Notes:**

*1) If factory testing certificate is required please specify “other range” even if 0–20 mg/L range is required.

*2) Please specify range from the following: 0–1, 0–2, 0–5, 0–10, 0–15, 0–20, 0–25, 0–30, 0–50 mg/L

*3) The instrument will ship with standard cable gland installed even if other cable-entry type has been selected. The standard cable glands act as dust seals during shipment and storage. The following cable entry options are available:

- **Standard:** Cable gland (ø6–ø12), 2 ports. Additional cable entry (NPT1/2”), 1 port.

- **NPT1/2 inch:** remove the cable gland or dust seal of conduit piping entry and use NPT1/2 inch threaded entry.

- **G1/2 inch:** remove the cable gland or dust seal of the conduit piping entry and insert the G1/2 inch adapter included.

Cable entry ports that do not have conduit attached should be left with factory installed glands which will act as seal protection for the unused cable entries.

**Additional Notes:**

**Note 1:**

Temperature compensation resistance of applicable DO electrode is 10KΩ (at 25°C)

**Note 2:**

Measurement ranges are:
- DO: 0–50 mg/L (0–1, 2, 5, 10, 15, 20, 25, 30, 50 mg/L)
- O2: 0–25%
- SAT: 0–100% (display only)
- Temperature: 0–100°C

**Note 3:**

If the unit is required to be combined with a cleaning system that requires a “hold” output during cleaning (for example, Model JOC series), please use our Model ODM-135A DO transmitter instead.

**CAUTION**

Do not operate products before consulting instruction manual.

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Information and specifications are for a typical system and are subject to change without notice.