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| Version | Date | Description of Revisions |
| 1 | November 1, 2011 | Standard Specification Release |
| 2 | April 20, 2015 | General formatting |
| 3 | June 13, 2022 | 1.4 Tagging requirement revised (BM) |
|  |  |  |

NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

**For each project the Consultant is responsible for the correct application of the specifications and for updating and modifying all highlighted items, as well as updating and modifying those sections that are directly applicable to the project. All updates and modifications to this standard document are to be highlighted to the Region for review and acceptance on each project.**

**Notice:** This Document hardcopy must be used for reference purpose only.

**The on-line copy is the current version of the document.**

# GENERAL

## General

### The specifications in this section define additional requirements to those set forth in Section 13105 – Process Control: General Instrumentation Requirements. Where a conflict exists, the more stringent requirement is to be provided.

### The contractor is to clearly identify on the shop drawings any deviation from the specification.

### Contractor required to provide the following O&M documentation: manufacturers’ printed O&M documentation; installation instructions; specifications; operation manuals, including electrical drawings, and plumbing diagrams; sales literature; materials; and training materials as applicable.

### Contractor is to furnish copies of the manufacturer’s warranties.

### Contractor is to provide, through the Instrumentation Supplier, dissolved oxygen analyzers, complete and operable, in accordance with the Contract Documents.

## Measurement and Payment

### The work outlined in this section shall be included in the lump sum price for Section 13220 – Dissolved Oxygen Analyzer as indicated in the Bid Form.

## Sensor

### Principal: Galvanic.

### Range: 0.1 to 20 mg/L.

### Minimum Detection Limit: 0.1 mg/L.

### Calibration: Automatic or one step push button for dissolved oxygen.

## Transmitter

### Front panel keypad for parameter selection and calibration data entry.

### Set-up and calibration from user programmable and/or predetermined choices accessible from menu prompts.

### NEMA 4X corrosive resistant housing and mounting hardware.

### Equipment tag wired to transmitter in accordance with Section 01080 – Process Equipment Location Tagging.

# INSTALLATION

## General

### The following installation requirements are in addition to or deviations from the requirements set forth for instrumentation in Section 13105 – Process Control: General Instrumentation Standard.

#### Locate the sample point to suit the application. Take care to ensure the sample is representative of the process stream.

#### Provide all required process connections and miscellaneous mounting hardware not provided with analyzer. Select type and material for the application.

#### Ensure that the system is on-line 24 hours before start up and calibration for adequate warm up.

#### Provide a one (1) year supply of spare parts and consumables.

#### Transmitter unit is to be mounted at 1.8m off the floor in a readily accessible location for ease of reading and to facilitate maintenance and calibration.

#### Transmitter/Electronics not mounted/installed indoors must be installed within fiberglass enclosure with viewing window, thermostat and heater. Panel heater to be powered from separate lighting panel circuit than instrument.

# ACCEPTABLE MANUFACTURERS

### Acceptable manufacturers are listed in the following table in order of preference. The design has been completed around the first named supplier. The contractor is responsible for all costs associated with any changes required to the design to accommodate one of the other manufacturers.

|  |  |  |
| --- | --- | --- |
| Preference | Manufacturer | Model |
| 1 | Hach | 5740 sc Sc100 Controller |
| 2 | Royce | 96A 9200 Controller |
| 3 |  |  |

### The Contractor is to select the appropriate options to suit the application and the requirements of the specification.

### Where second and third named manufacturers are provided, they are to meet the performance specifications of the first named manufacturer.

## Dissolved Oxygen Analyzers

First Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Flow Through Mounting |
| **Process:** |  |
| Tag Name: | xxx-xxx |
| Installation DWG. | 13220x |
| Fluid: | Final Water |
| Temp min/max: | 5 to 50 °C |
| Dissolved Oxygen: | 0.01 to 20 mg/L |
| **Sensor Device Data:** |  |
| Sensor Type: | Galvanic membrane |
| Material: | Nickel-chrome cathode, lead anode |
| Self Cleaning: | Yes |
| Manufacturer: | Hach |
| Part Number: | 5740DOB |
| **Accessories:** |  |
| Extension cable, 15m (50ft): | 57961-00 |
| Air Blast Cleaning System for 5740sc, 115V: | 61361-00 |
| Pole Mount Kit: | 61308-00 |
| Replacement Cartridge: | 61267-00 |
| Spare Calibration Bags: | 276M1210 |
| **Transmitter Device Data:** |  |
| Inputs: | Up to two sensors |
| Analog Output: | 2 x 4 - 20 mA DC isolated (500 W) |
| Alarm Relays: | Three SPDT 100 – 230VAC, 5A, user configurable |
| Power Supply: | 100 – 230 VAC, 50/60 Hz |
| Enclosure: | NEMA 4/IP66 |
| Mounting: | Surface wall mount |
| Display: | LCD, 128x64 pixels, LED backlight |
| Manufacturer: | Hach |
| Part Number: | LXV401.52.00002 |
| **Accessories** |  |
| Power Cord with Strain Relief: | 5448800 |
| Weather Protection Shield: | LZX961.5 |

Second Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Flow Through Mounting |
| **Process:** |  |
| Tag Name: | xxx-xxx |
| Installation DWG. | 13220x |
| Fluid: | Final Water |
| Temp min/max: | 5 to 50 °C |
| Dissolved Oxygen: | 0.01 to 20 mg/L |
| **Sensor Device Data:** |  |
| Measuring Principle: | Galvanic |
| Cathode/Anode Material: | Platinum/Coiled Pure Lead |
| Electrolyte: | Potassium Chloride Gel |
| Manufacturer: | Royce Technologies |
| Part Number: | 96A |
| **Accessories:** |  |
|  | Sensor Adapter |
|  | Royce Deluxe Handrail Bracket |
|  | JB-91 Junction Box & Rail Mounting Kit |
| **Transmitter Device Data:** |  |
| Analog Output: | One Isolated 4 - 20 mA for DO  One Isolated 4-20 mA for Temperature |
| Alarm Relays: | 4 Standard Setpoint Relays, Form C, 250VAC, 6A |
| Power Supply: | Switch Selectable 115/230 VAC, 50/60 Hz |
| Enclosure: | NEMA 4X/IP65 |
| Mounting: | Rail Mount |
| Readout Device: | Harsh Environment, 2.5” x 4.5” Graphical LCD Digital Display |
| Manufacturer: | Royce Technologies |
| Part Number: | 9200 |
| **Accessories** |  |
|  | JC-1 Sensor Membrane Cleaning System, & Rail Mounting Kit |
|  | JC-1 Sensor Membrane Cleaning System Heater |

**END OF SECTION**