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| Version | Date | Description of Revisions |
| 1 | November 1, 2011 | Standard Specification Release |
| 2 | April 17, 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 consulting engineer 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, sludge blanket analyzer, 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 13170 – Sludge Blanket Level as indicated in the Bid Form.

## Sensor

### Type: Submersible Head Ultrasonic.

### Mounting: 316 SS swing out brackets and all mounting hardware for skimmer guard or stationary as required by the process.

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

## Transmitter / Controller

### Provide self-testing, speed of sound calculations and automatic calibration.

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

### Provide NEMA 4X corrosive resistant housing and mounting hardware for remote wall mounting.

### Provide equipment tag wired to transmitter and to sensor 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.

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

### Provide a local junction box for wiring to allow withdrawal of the probe for maintenance.

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

### Samples shall not pass through housings containing electronics unless indicated otherwise.

### Each analyzer shall be fitted with calibration connections at the analyzer.

### All electrodes, fittings, and transmitters on analyzers measuring the same parameter shall be products of a single manufacturer.

### 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 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 | Royce | Interface Level Analyzer |
| 2 | Hach | Sonatax |
| 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.

## Sludge Blanket Analyzer

First Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Clarifier |
| **Process:** |  |
| Tag Name: | xxx-xxx |
| Installation DWG.: | 13170A |
| Fluid: | Secondary Clarifier Water |
| Temp min/max: | 0 to 25 °C |
| Chemicals: | Minimal |
| Tank Depth: | 4 Meters Max. |
| Sludge Collection: | Chain and Flight |
| **Sensor:** |  |
| Type: | Ultrasonic, Dual Crystal |
| Manufacturer: | Royce |
| Part Number: | 25DN |
| **Accessories**: |  |
|  | Royce Swing Unit |
|  | Skimmer |
|  | Royce Mounting Kit |
|  | Pipe Mounting Bracket Kit |
|  | *Additional added as necessary* |
| **Transmitter:** |  |
| Analog Output: | 4 - 20 mA DC isolated (600 W) |
| Relays: | 4 Form C, 250VAC, 6A |
| Manufacturer: | Royce |
| Part Number: | 2511A |

Second Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Clarifier |
| **Process:** |  |
| Tag Name: | xxx-xxx |
| Installation DWG.: | 13170A |
| Fluid: | Secondary Clarifier Water |
| Temp min/max: | 0 to 25 °C |
| Chemicals: | Minimal |
| Tank Depth: | 4 Meters Max. |
| Sludge Collection: | Chain and Flight |
| **Probe:** |  |
| Type: | SONOTAX sc Sludge Level Probe |
| Hardware: | Pivot Mount Hardware |
| Manufacturer: | HACH |
| Part Number: | 5773000 |
| **Accessories:** |  |
| 7.6m (25ft) Extension Cable | 5796000 |
| Fixed Point Mount for Probe: | LZX414.00.70000 |
| Pivot Mount for Probe (1m): | LZX414.00.71000 |
| SONOTAX sc Rail Mounting Assembly: | LZX414.00.73000 |
| Wiper Blades for Probe: | LZX328 |
|  | *Additional added as necessary* |
| **Transmitter:** |  |
| Type: | Single Probe System |
| Model: | SONOTAX sc System |
| Controller: | sc100 Standard Controller |
| Manufacturer: | HACH |
| Part Number: | 5770400 |
| **Accessories:** |  |
| 125V Power Cord with Strain Relief: | 5448800 |
| Sun Shield: for sc100 Controller: | LZX961.54 |

**END OF SECTION**