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| Version | Date | Description of Revisions |
| 1 | November 1, 2011 | Standard Specification Release |
| 2 | April 21, 2015 | General formatting |
| 3 | June 13, 2022 | 1.3 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, capacitance level meters/switches, 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 13250 – Capacitance Level Meters/Switches as indicated in the Bid Form.

## Transmitter / Controller

### Tagging: 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.

#### The probe is not to come in contact with the container wall.

#### Do not install probes in the area of the filling curtain.

#### When using in agitating tanks, make sure the probe is installed as a safe distance from the agitator.

#### Rod tubes with a ground tube should be used where there is a possibility of severe lateral load.

#### When mounting, ensure there is a good electrical conductive connection between the process connection and the tank.

#### Provide all stainless steel mounting hardware for surface, panel or handrail mounting as required by location.

#### 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 | Endress + Hauser | Liquicap T FMI21 |
| 2 | Siemens | LC500 |
| 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.

## Capacitive Level Meters

First Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Continuous Level in Liquids  w/ conductivity > 100µS/cm |
| **Process:** |  |
| Tag name: | xx-xx |
| Installation DWG: | 13250x |
| Fluid: | Raw Water |
| Temp min/max: | 0 to 25 °C |
| Press min/max: | 0 - 300 kPa |
| **Device Data:** |  |
| Approval: | CSA General Purpose, CSA C US |
| Process Connection: | Thread ANSI NPT 1 ½, PPS |
| Probe Length; Material; 150…2500mm (6”…100”): | 250mm L, PP Carbon Fibre (<1000mm) |
| Housing; Cable Entry: | F16 Polyester IP66, NEMA 4X; Thread NPT ½ |
| Electronics; Output: | FEI20; 4..20mA |
| Additional Option: | Shortening Kit PP |
| Manufacturer: | E+H |
| Part Number: | FMI21-D2B2B2 250mm L |

Second Named Manufacturer:

|  |  |
| --- | --- |
| **Service:** | Continuous Level in Liquids  w/ conductivity > 100µS/cm |
| **Process:** |  |
| Tag name: | xx-xx |
| Installation DWG: | 13250x |
| Fluid: | Raw Water |
| Temp min/max: | 0 to 25 °C |
| Press min/max: | 0 - 300 kPa |
| **Device Data:** |  |
| Type: | SITRANS LC500, Threaded or Welded Flange with Rod Sensor |
| Version: | Rod, 24mm (0.94”), PFA Insulated |
| Process Connection (316L Stainless Steel: | 1 ½” NPT [(Taper), ANSI/ASME B1.20.1] |
| Approvals: | General Purpose, CE, CSA, FM, C-TICK |
| Enclosure/Cabinet Inlet: | Aluminum Epoxy Coated, 2x ½” NPT, IP68 |
| Options: | No Additional Options |
| Thermal Isolator/Remote Version: | Without Thermal Isolator or Remote Electronics |
| Electronic Output: | 2-wire Loop Current 4-20mA |
| Further Designs: | Y01: “Insertion Length 200mm” |
|  | Y02: “Active Shield Length 1000mm” |
| Manufacturer: | Siemens |
| Part Number: | 7ML55150CC01-1AA1 –Z Y01: 200mm, Y02: 1000mm |
| **Specials** |  |
| LC500 Mounting Bracket | A5E01163730 |
|  | *Additional added as necessary* |

**END OF SECTION**