



Calamba Water District

Lakeview Subdivision, Halang, Calamba, Laguna
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PROJECT TITLE : **PRESSURE TRANSMITTER CONTROL SYSTEM**
LOCATION : **DIFFERENT AREAS IN CALAMBA CITY**

I. SCOPE OF WORKS AND SPECIFICATIONS

A. FOR THE SUPPLY OF LABOR , MATERIALS AND SUPERVISION FOR THE ABOVE PROJECT TITLE

- 1. Installation of level control
- 2. Assembly of control panel.
- 3. Installation of check valve
- 4. Programming, Testing and Commissioning

B. MATERIALS SPECIFICATIONS

1. INSTRUMENTATION

Pressure Transmitter

- 1 Description
 - 2 Wire Mini Compact Pressure Transmitter for gauge pressure measurement. Copper tubing will be installed from the present location of pressure gauge to the pressure transmitter which is to be installed inside the control house.
- 2 Technical Data
 - Brand Nivelco or Approved equal
 - Pressure Range 0 - 6 bars
 - Sensor Element Capacitive
 - Connection G 1/2
 - Accuracy 0.50%
 - Signal Output 2 wires, 4 - 20 mA, 0-10V
 - Housing Stainless Steel
 - Diaphragm Materials Stainless Steel
 - Electrical protection IP 65
 - Supply voltage 24 VDC
 - Installation Outdoor
- 3 Each instrument shall have SS name plate permanently fastened to the body which shall be visible when the instrument is in service
- 4 Should be with UL listing and EMC compliance as relevant to EN/IEC/equivalent standard
- 5 Testing
 - Each pressure transmitter shall be tested. The manufacturer shall furnish one certified copy of the following test reports to the Calamba Water District.
 - Functional Check Zero Error
 - Calibration and accuracy check Repeatability
 - Hydrotest @ 1.5 of the design pessure Hysteresis
 - Linearity

6 Certification

- The manufacturer shall furnish a sworn statement that the inspection and the entire specified test have been results thereof comply with the requirements of the applicable standards. A copy of the CERTIFICATION sent to Calamba Water District.

Universal Controller

1 Description

- Universal panel controller with relay and analogue outputs, PID Control Algorithm and auto tuning function.

2 Technical Data

- Brand Nivelco or Approved equal
- Input Signal 4 - 20 mA
- Supply Voltage 220 VAC
- Indication Pressure
- Installation Panel Indoor IP 20

- 3 Should be with UL listing and EMC compliance as relevant to EN/IEC/equivalent standard

4 Testing

- Each timer shall be tested. The manufacturer shall furnish one certified copy of the test reports to the Calamba Water District.

5 Certification

- The manufacturer shall furnish a sworn statement that the inspection and the entire specified test have been results thereof comply with the requirements of the applicable standards. A copy of the CERTIFICATION sent to Calamba Water District.

Digital Timer

1 Description

- Should be easy to use and read. With isolated power supply and input circuits. Waterproof Waterproof and dust-proof structure type

2 Technical Data

- Omron or Approved Equal
- 240 VAC Supply Voltage
- 10 mm Character Height
- Relay Output
- Up/Down Keys for each digit

- 3 Should be with UL listing and EMC compliance as relevant to EN/IEC/equivalent standard

4 Testing

- Each timer shall be tested. The manufacturer shall furnish one certified copy of the test reports to the Calamba Water District.

5 Certification

- The manufacturer shall furnish a sworn statement that the inspection and the entire specified test have been results thereof comply with the requirements of the applicable standards. A copy of the CERTIFICATION sent to Calamba Water District.

Electric Controller

- 1 Description
 - Miniature PLC
- 2 Technical Data
 - Brand Schneider Electric or Approved Equal
 - Rated Supply Voltage 100..240VAC
 - Analog Input Number 2 at 0...10 V
 - Discrete Output Type Relay normally open
 - Discrete Output Number 10 relay minimum
 - Discrete Output Voltage 5....125 VDC, 5....250VAC
 - Discrete Output Current 2A
- 4 Testing
 - Each timer shall be tested. The manufacturer shall furnish one certified copy of the test reports to the Calamba Water District.
- 5 Certification
 - The manufacturer shall furnish a sworn statement that the inspection and the entire specified test have been results thereof comply with the requirements of the applicable standards. A copy of the CERTIFICATION sent to Calamba Water District.

Control Panel

- 1 All electrical components incorporated in a panel must comply with the requirement of the current edition of Philippines Electrical Code
- 2 Cabinet type enclosures made of galvanized sheet steel in sizes and NEMA types as indicated, code-gauge, minimum 16-gauge thickness. Construct with multiple knockouts and wiring gutters. Provide fronts with adjustable indicating trim clamps, and doors with flush locks and keys, all panel board enclosures keyed alike, with concealed door hinges and door swings Equip with interior circuit-directory frame, and card with clear plastic covering. Provide POWDER COATED GRAY finish.
- 3 Wet location panel boards shall be NEMA 4 enclosures.
- 4 Use NEMA 1 enclosures for indoor use, primarily to provide a degree of protection against limited amounts of falling dirt.
- 5 Control Panel shall have a nameplate installed and mounted to the front cover.

B. VALVES

Check Valves

- 1 Check valves shall be resilient seated conforming to AWWA C508 (Swing-check Valves for Waterworks Service 2-in through 24-in (50-mm through 600-mm) NPS) or the latest revision or its equivalent.
- 2 The valve shall be designed for a minimum water working pressure of 1.0MPa (150psi).
- 3 The valve body and cover shall be cast in Ductile Iron and coated with a thermally applied polymeric coating.
- 4 The disc shall be encapsulated in EPDM rubber.

- 5 The check valve shall be designed so that the disc and body seat may be easily removed without removing the valve from the line.
- 6 The check valve shall be flanged type conforming to ISO 7005 – 2.

II. REFERENCE DRAWINGS

LH 1 - Location Plan

LH 2 - Schematic Diagram of Pumping station

III. ACCEPTANCE

- 1 No Leaks
- 2 No Overflowing of tank

IV. WARRANTY

- One year against defects of materials and workmanship from the date of issuance of Certificate of Completion.

V. OTHERS

- 1 Documents and Test Certificates to be submitted at the time of Delivery
 - a. Certified final dimensional drawings and weight
 - b. Catalogue, Operation and Maintenance Manual
 - c. Connection Diagram if available
 - d. IP Certificate
 - e. Material Composition Test Certificate
 - f. Test Certificate For Standard Environmental/EMC test specified in the catalogue
 - g. Guarantee Certificate
- 2 Construction Safety and Good Housekeeping must be observed at all Times.

VI. OPTIONS

Installation of digital pressure switch and electronic timer.