Confirm that the operating voltage, operating temperature, operating pressure, material and area of application is suitable for that particular model number.

If the medium is conduction, make sure to chose the rod probe or cable probe type with PVDF or PP material coatings.

As the EB(MEC) uses capacitance theory for its measurement, both the dielectric constant and the volume of the tank has an effect on the accuracy of the instrument. For instance, a Medium di-electric constant is low, the CB’s JP1 sensitivity should be set to “H”, medium normal with as high di-electric constant or medium big tanks, sensitivity could be set at “M” or “L”.

The medium’s di-electric constant is a very important factor for the operation of the EB(MEC). A change in medium will change the di-electric constant to translate to a change in medium, there is also a need for calibration should the user need to change the high and low value of measurement of the medium.

If conductive materials cant the sensing probe, the output current will be affected. If medium is non-conductive, this problem doesn’t happen.

If the non-conductive medium is corrupted by water or other conductive mediums, a jacketed sensing probe should be used.

If installation within non metallic, cement or plastic tanks, user must make sure to chose the rod probe or cable probe type with PVDF or PP material coatings.

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In high temperature, highly corrosive environments with limited space, the Eb600 (figure 2) is highly suitable. It’s housing protection could ready IP67 and the extension diameter is only φ34mm. The material used can be either 304 or 316SS.

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Pre-calibration preparation:
1) Find out the capacitance value of the tank when the tank is full. Remove the circuit board from the EB(MEC), then use a capacitance tester to detect the capacitance value between sensing probe and vessel wall. There are 3 sensitivity ranges to select from, H range is 0-150PF, M range is 0-500PF, L range is 0-1500PF. Then adjust the sensitivity range at the levels (L, M, H). Depending on medium characteristics, medium with good conductivity should choose sensitivity L or M, medium with low conductivity or small tanks, usually H sensitivity is used.

2) Standard calibration method (high accuracy):
   A. When medium is low or when the tank is empty, ZERO can be calibrated until a current output of 4mA.
   B. When medium is high or when the tank is full, SPAN can be calibrated until a current output of 20mA.

3) Quick Calibration method (low accuracy):
   Outdoor calibration can be done as follows. At the O/P terminal, connect a digit meter and set it to DC current.
   A. ZERO calibration: Move the EB(MEC) to 30cm away from the tank wall, then connect the housing to H tank wall, adjust ZERO until an output of 4mA.
   B. SPAN calibration: e.g. After the EB(MEC) is top-mounted, the tank height 250cm, current medium height is 40cm away from full tank.

Use digit meter connect to O/P, set to current setting.
250cm (tank height)/ 16mA = 15.625 cm/mA
250cm - 40cm (Distance of medium to top)=
210cm (medium height)
210cm/ 15.625cm/mA= 13.44mA
(Calibrate SPAN until it reaches value)
In percentage: 13.44mA/ 16mA x100%=84%

Trouble Shooting
1. Output current too high when empty tank.
   A. Check the sensitivity jumper whether it is at the correct position.
   B. Please the circuit board and housing apart, check whether ZERO can output 4mA, use hand to touch the sensing probe to check whether there is an increase in output. (Should have increase under normal working operation)
   C. Check whether the tank is really empty.

2. Output current reaches at 0mA, ZERO calibration useless:
   A. Check whether the EB(MEC) ground is connected to signal ground of the display meter (should not be connected)
   B. Check whether power supply wires are connected correctly. (24VDC O/P)

3. Output current and medium level has very large discrepancies: e.g. half-full tank should have 12mA output, but output is instead 15mA
   A. Check the jumper setting whether it is of the correct position
   B. Recalibrate the SPAN and ZERO settings.
   C. Check whether the screws on the circuit board is fastened.
   D. Check whether the screw or flange connection is fastened.
   E. Check whether the power supply is 24V ±2V.