

SG-100M Probe Hookup and Initialization

Probe is connected to a cable. Black harness connector at end of cable has three extended wires: red, black and green. The black is ground, the red is to be connected to regulated +5 vdc, and the green is the linear signal wire with output 0 – 5 vdc.

The probe has a linear output voltage range from about .5 volts up to 4.5 volts corresponding to the particular linear density range the probe was designed for

This probe must be user initialized using two-benchmark liquids of known density to establish linearity. Start with two liquids of known densities with values within the range of operation of the unit. Place probe in first liquid (density d1) and measure the probe output voltage (v1). Place probe in second liquid (density d2) and measure the output voltage (v2). With the two points (v1, d1) and (v2, d2) you can now establish a linear relation (below) that provides a one-to-one correspondence between voltage v and density d. A PLC will automatically do this linearization.

$$d = ((d2-d1)/(v2-v1))*(v-v1) + d1$$

Probe must stand vertically in the liquid and liquid must cover top of cable strain relief at the top of the probe (about 12” depth).

Be careful: **do not bend the black harness connector** at the end of the cable.