

December 4, 2017

A short-form description of wiring a SONO-VARIO moisture probe to a PLC or Batch Panel using the SONO-VIEW or SM-USB.

You will need the following items which should have be procured and delivered. If items are missing please contact MESA.

Item Description	Item Number	Images of the Item (not to scale)
<p>SONO-VARIO Moisture Probes: Common models.</p> <p>(back side view and front side view)</p>	<p>308074 or 308074 or 308090</p>	
<p>SONO-VARIO Probe Mounting Plate and Bracket (304 Stainless steel) Plate: 12" x 8" x 0.375 with Ø108.5mm cutout for any SONO-VARIO probe. Angle bracket for with 45° (sand) and 55° (rock) Weight: = 13.5 lbs.</p>	<p>308037</p>	

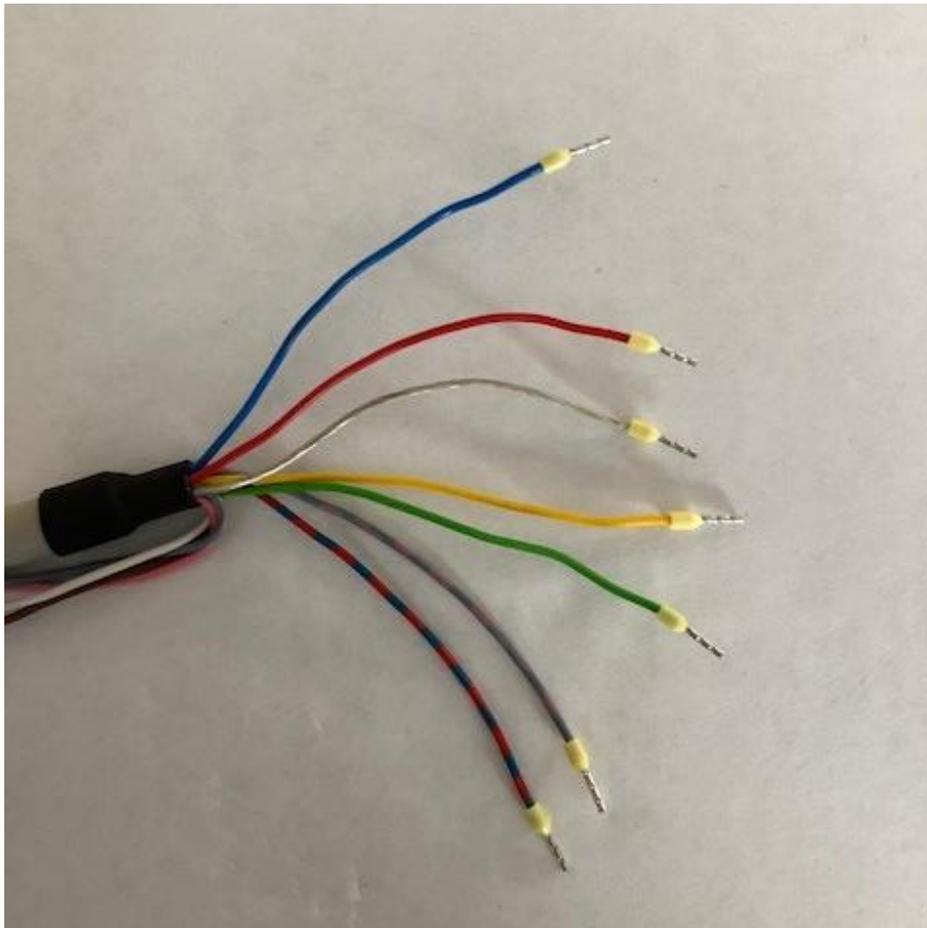
<p>Flange for SONO-VARIO, steel, \varnothing inner: 108mm, \varnothing outer: 132mm height 12mm</p>	<p>308031</p>	
<p>Probe cable (SONO) The probe cable has 6 twisted pair wires, 6 x 2 x 0.25mm (30 AWG) shielded; 10-pole MIL flange connector. 13-feet long</p>	<p>308029</p>	
<p>Options for setup and display:</p> <p>The SONO-VIEW can display up to 12-SONO probes. It have a menu driven display for setting up and adjusting every probe connected. It also can be connected to a notbook computer.</p> <p>If a display is not required, the SM-USB Converter module converts RS 485 or IMPbus data to USB. The SM-USB can connect up to 12-SONO probe to a notebook computer. Commissioning of SONO probes is managed with free software (SONOConfig).</p>		
<p>SONO-VIEW Stand-alone moisture display and configuration of any SONO probe. Up to 12-SONO probes can be connected via IMPBus interface. All measurement values can be shown on the LCD display.</p>	<p>300131</p>	
<p>SM USB Converter Module: Connect SONO RS485 and IMP-bus interface to a PC USB2 port. Setup and adjustment of all operating parameters and create calibrations. Used with free SONOConfig software.</p>	<p>100020</p>	

The SONO moisture probe will have been installed and positioned below a hopper gate, on a shoot or above a conveyor, using a mounting bracket. See our web pages for common installation documents.

Item 308029, the 13-foot long SONO probe cable, connects to the back of the SONO-VARIO probe with a MIL-style bayonet connector. The other end of the cable, having cable tails, will be pulled to a local junction box (J-Box), which is supplied by the installation company. From the J-Box the installer will pull the required wires back to the PLC or Batch control panel.

In the control room, where the PLC or Batch control panel is located you can use the SONO-VIEW or the USB converter module to communicate with the SONO probes. The SONO-VIEW or the 308030A module will be used only during commissioning. If more than one SONO probe the SONO-VIEW may be the best option as the IMPbus is simple to wire in series.

The SONO probe cable's color-coded leads and the shield must be wired for operation. The other colored wires in the cable bundle can be taped off, as they are not important for this application.

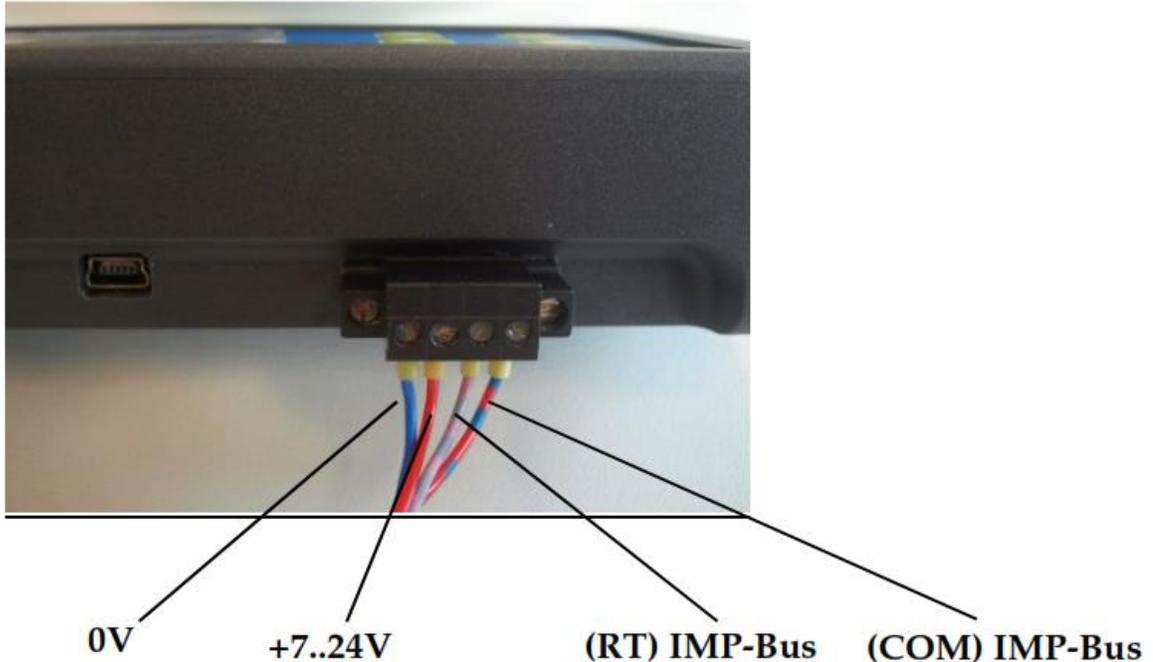


SONO Probe Connection to PLC or Control System	308029 cable wire lead Colors
12 to 24 VDC Power:	Red
0 VDC Power:	Blue
Cable Shield:	Clear
Percent Moisture + : (20 mA, 5 or 10 VDC)	Green
Percent Moisture - : (0/4 mA, 0/1/2 VDC)	Yellow
IMPbus RT (for SONO-VIEW or for SM-USB)	Gray/Pink (multicolored)
IMPbus COM (for SONO-VIEW or for SM-USB)	Blue/Red (multicolored)
NOTE: The White, Brown, Pink and Gray wires are not used.	

The moisture analog output default is = 4...20 mA = 0...20 percent. The percent scale can be changed or rescaled (4...20mA can be changed to 0...20mA) when you want to convert the mA analog output signal to a voltage. The 0...20mA output will need the addition of a precision resistor, placed across the input to the PLC or control panel of the batch control system. A 500 ohms resistor will convert the output to 0...10 VDC full scale output. A 250 ohms resistor will supply 0...5 VDC full scale output.

The SONO-VIEW connects to the SONO probes, using the two-wire IMPbus. If using the IMPbus you will not need to connect the RS-485 lead wires. The SONO-VIEW requires DC power to operate. No computer is needed if the SONO-VIEW is connected. But using the micro-USB cable supplied with the SONO-VIEW you can connect to a PC to run SONOConfig software, should you need to data log reading. Logged readings can be saved and sent to MESA, is detailed diagnosis if required.





The SM-USB connects to the SONO probes using the RS-485 wires or the IMPbus wires. The wiring and connectors are detailed in the SM-USB manual.

For complete technical details go to our web site for manuals and other support documentation.

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