

3. Level the orientation flat on the probe assembly using a standard bubble level and tighten the packing nut to secure the assembly. To optimize the repeatability of the verification process, the position and orientation of the probe assembly should be identical every time the process is performed.
4. Attach the regulator assembly with the interconnecting hose to the inlet quick disconnect fitting on the probe assembly if it is not permanently installed.
5. Attach the calibration gas supply, typically compressed air (or Nitrogen), to the inlet side of the regulator assembly. Back out the pressure control regulator. Open the supply valve to the VeriCal pressure regulator box.
6. Slowly apply 100 PSIG to the VeriCal setup and verify that the system is leak free using a liquid leak detection fluid on all junction points. This should also ensure a steady flow across the sensors and remove any debris that might be on the thermowells or the outlet of the VeriCal tube. Reduce the pressure on the system to 25.0 PSIG. Open the ST100A Configurator application via the USB connection to the ST100A. Go to the Process Data tab for the appropriate FE (Flow Element). Be ready to record this information on the In-Situ VeriCal Data Sheet.

Note: An alternate method allows the user to use the HMI without the Configurator if desired:

7. Enter the ST100A HMI menu structure by covering the top light sensor on the HMI (the hot key) for three seconds.
8. Select the "Diagnostics" option.
9. Select the "Raw Signal" option.
10. Select the desired FE (the default is FE 1).
11. The HMI displays the ST100A Raw Signal. As shown in the example configurator screenshot below, the parameters include:

FE1 Raw Signal

RefR: 998.107

dR: 103.670

dTdR: 22.041

Temp: 31.1

Flow: 15.94

12. Follow the ST100A VeriCal procedure as directed to complete the process.
13. The instrument is now in the VeriCal configuration and ready to establish a set of "Field Baseline Data."

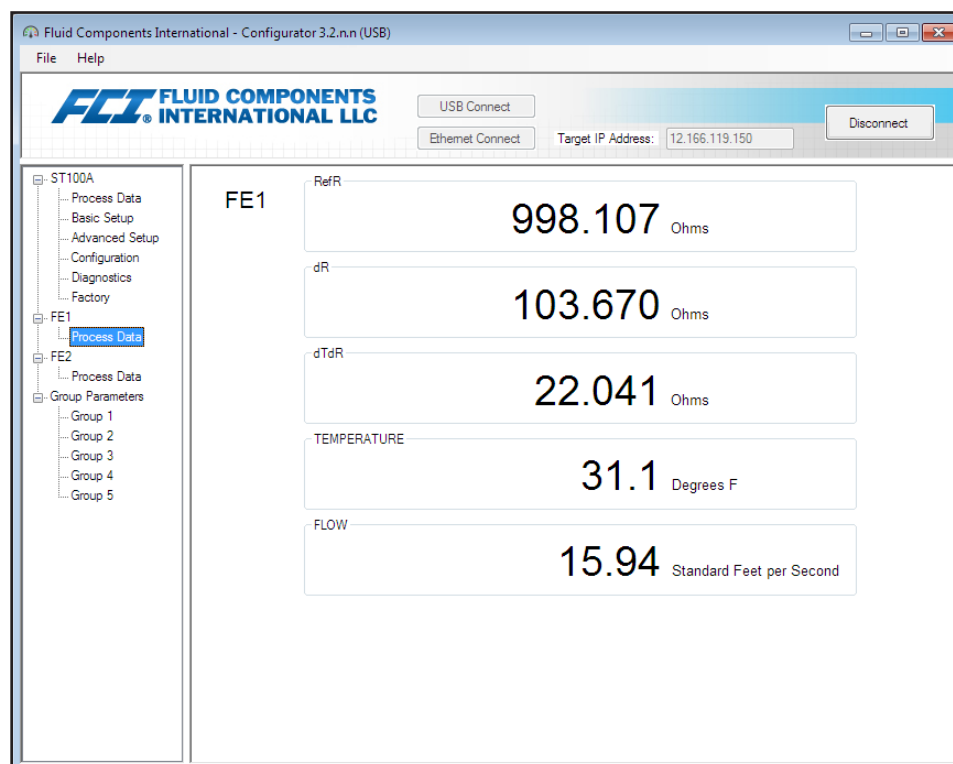


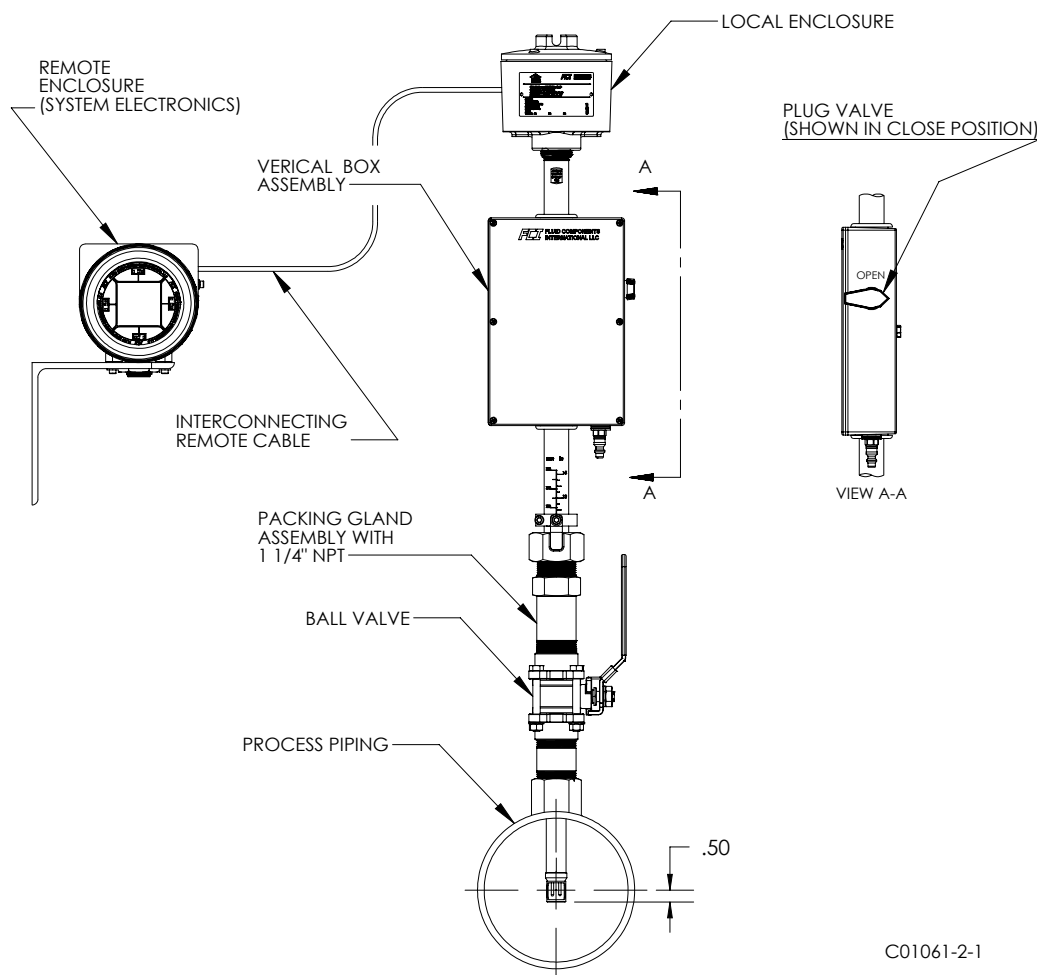
Figure 2 – ST100A Configurator Example Screenshot "FE1 Process Data"

Procedure

1. Verify that the VeriCal pressure gauge indicates 25.0 PSIG (± 0.20 PSIG). Note: using the exact pressure levels allows one to compare the current findings to the FCI Factory findings and any subsequent findings.
2. Allow the instrument to stabilize by sustaining the pressure for a minimum of 5 minutes. Observing the flow and temperature reading stability on the ST100A Configurator or HMI to verify that the instrument has come to equilibrium.
3. Record the VeriCal pressure as indicated on the regulator assembly pressure indicator and the ST100A data that is shown on the Configurator or HMI: RefR, dR, dTdR, Temperature, Flowrate, and optionally, the output current across a precision 250 Ω resistor.
4. Repeat this process for 50, 75 and 100 PSIG pressures.
5. The recorded values are the instrument's in-situ baseline calibration readings. All future verification readings will be compared to these baseline values and should be within 2-5% of the Field Baseline Data readings.
6. It is advisable to complete one more round of "Field Check Data" to establish a pattern of repeatability for this specific combination.

Note: This step is not mandatory, but it will help to understand the VeriCal system and what can be expected for future verifications.

7. The ST100A Configurator application can now be closed. Alternatively, cover the bottom light sensor on the HMI (the home key) for three seconds to return to the Home Screen.
8. Place probe assembly back into the correct location in the center of the process piping as indicated in the installation section of the operation manual.



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Figure 3 – Normal Mounting Configuration

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 www.fluidcomponents.com

In-Situ VeriCal Data Sheet

Order Number:		Equipment Used:		Due Date
Customer:		DMM:		
Date:		Resistor Pack:		
Serial Number:		Other:		
Tag Number:				

Field Baseline Data		Date:		Gas Supply:		
Pressure PSIG	ST100A RefR	ST100A dR	ST100A TCdR	ST100A Temp	ST100A Flow Rate	Vdc (at 250 Ω)

Field Check Data		Date:		Gas Supply:		
Pressure PSIG	ST100A RefR	ST100A dR	ST100A TCdR	ST100A Temp	ST100A Flow Rate	Vdc (at 250 Ω)

Field Check Data		Date:		Gas Supply:		
Pressure PSIG	ST100A RefR	ST100A dR	ST100A TCdR	ST100A Temp	ST100A Flow Rate	Vdc (at 250 Ω)

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Customer Service/Technical Support

FCI provides full in-house technical support. Additional technical representation is also provided by FCI field representatives. Before contacting a field or in-house representative, make sure to follow the setup steps listed in this manual. Then perform the troubleshooting techniques outlined in the main manual.

By Mail

Fluid Components International LLC
1755 La Costa Meadows Dr.
San Marcos, CA 92078-5115 USA
Attn: Customer Service Department

By Phone

Contact the area FCI regional representative. If a field representative is unable to be contacted or if a situation is unable to be resolved, contact the FCI Customer Service Department toll free at 1 (800) 854-1993.

By Fax

To describe problems in a graphical or pictorial manner, send a fax including a phone or fax number to the regional representative. Again, FCI is available by facsimile if all possibilities have been exhausted with the authorized factory representative. Our fax number is 1 (760) 736-6250; it is available 7 days a week, 24 hours a day.

By Email

FCI Customer Service can be contacted by e-mail at: techsupport@fluidcomponents.com.

Describe the problem in detail making sure a telephone number and best time to be contacted is stated in the email.

International Support

For product information or product support outside the contiguous United States, Alaska, or Hawaii, contact your country's FCI International Representative or the one nearest to you.

After Hours Support

For product information visit FCI at www.fluidcomponents.com. For product support call 1 (800) 854-1993 and follow the prerecorded instructions.

Point of Contact

The point of contact for service, or return of equipment to FCI is your authorized FCI sales/service office. To locate the office nearest you, visit the FCI website at www.fluidcomponents.com.

Warranty Repairs or Returns

FCI prepays ground transportation charges for return of freight to the customer's door. FCI reserves the right to return equipment by the carrier of our choice.

International freight, handling charges, duty/entry fees for return of equipment are paid by the customer.

Non-Warranty Repairs or Returns

FCI returns repaired equipment to the customer either collect or prepaid and adds freight charges to the customer invoice.

Extended Warranty

An extended warranty is available. Contact the factory for information.

Return to Stock Equipment

The customer is responsible for all shipping and freight charges for equipment that is returned to FCI stock from the customer site. These items will not be credited to the customer's account until all freight charges are cleared, along with applicable return to stock charges, from the credit invoice. (Exceptions are made for duplicate shipments made by FCI.)

If any repair or return equipment is received at FCI, freight collect, without prior factory consent, FCI bills the sender for these charges.

Field Service Procedures

Contact an FCI field representative to request field service.

A field service technician is dispatched to the site from either the FCI factory or one of the FCI representative offices. After the work is complete, the technician completes a preliminary field service report at the customer site and leaves a copy with the customer.

Following the service call, the technician completes a formal, detailed service report. The formal report is mailed to the customer after the technician's return to the factory or office.

Field Service Rates

All field service calls are billed at the prevailing rates as listed in the FCI Price Book unless previous arrangements have been made with the FCI Customer Service Manager.

Customers are charged for all travel expenses including airfare, auto rental, meals and lodging. In addition, the customer shall pay all costs of transporting parts, tools or goods to and from the job site. Invoicing travel time, field service work and other expenses will be performed by FCI's Accounting Department.



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