ABB

Btu 8000/8100

8000/8100
Btu/CV Transmitter
Start-Up Guide

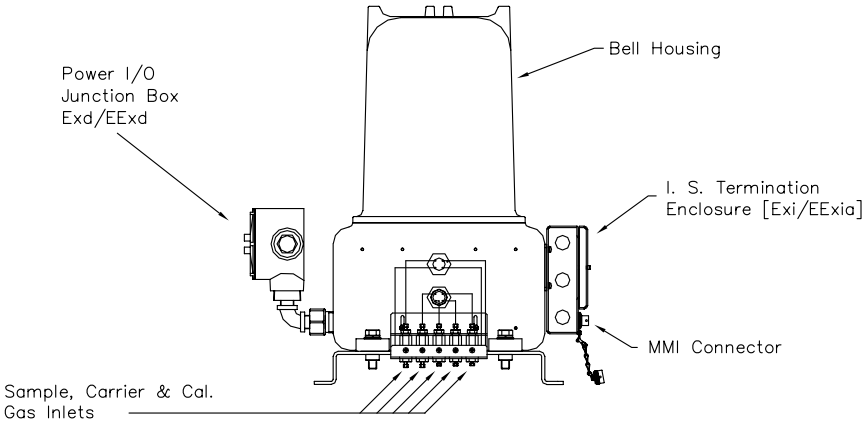
TOTALFLOW

MEASUREMENT & CONTROL SYSTEMS

Getting Started

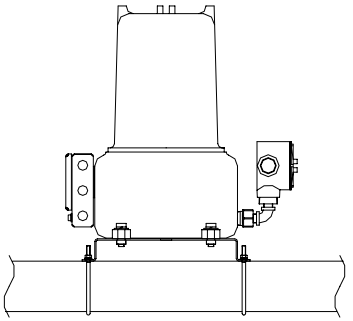
With Your Totalflow Btu Transmitter

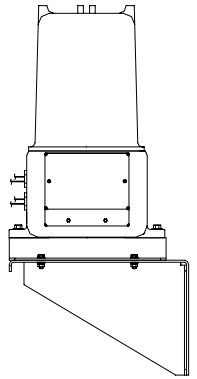
This is a guide only and it is recommended that the user consult the *Totalflow 8000/81000 Btu/CV Transmitter User's Manual* for more detailed information while doing the installation and startup. For additional technical support, dial (800) 442-3097 or International dial 1-918-338-4880.



Step 1 **Mount The Unit**

See the "Pipe Meter Run Installation" or "Shelf Installation" write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*

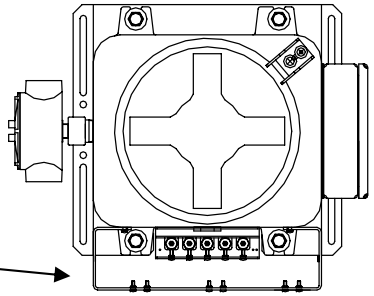




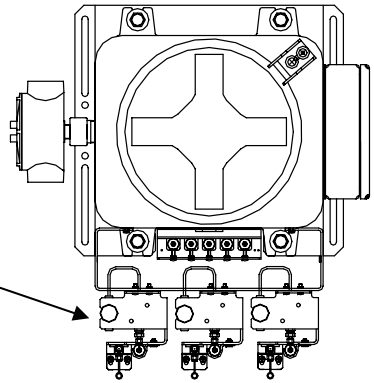
Step 2 **Install The Sample Conditioning Bracket, Sample Conditioning Modules and connect to Sample Filters.**

See "Installing Sample Conditioning Modules" write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*

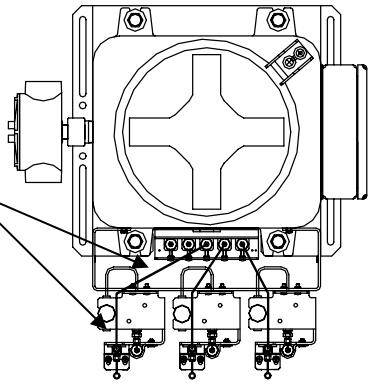
NOTE: Sample Conditioning Modules are optional. If none required, connections are made to the sample inlet filters.



2A. **Mount Sample Conditioning Bracket.**



2B. **Mount Sample Conditioning Modules on Sample Conditioning Bracket.**



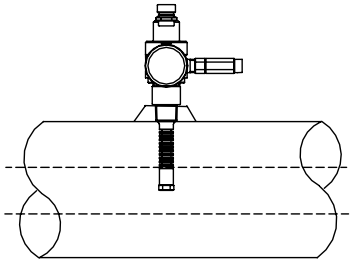
2C. **Connect Tubing Between Sample Conditioning Modules and Sample Input Filters.**

IMPORTANT: Remove sealing screws from bottom of input filters to connect tubing. Leave sealing screws in any unused filters.

Step 3 **Install The Sample Probes.**

See the "Temperature Compensated Regulator Probe Installation" write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*

NOTE: The bottom of the sample probe should be in the middle 1/3 of the pipe diameter. Install probe per probe manufacturer's recommendations.



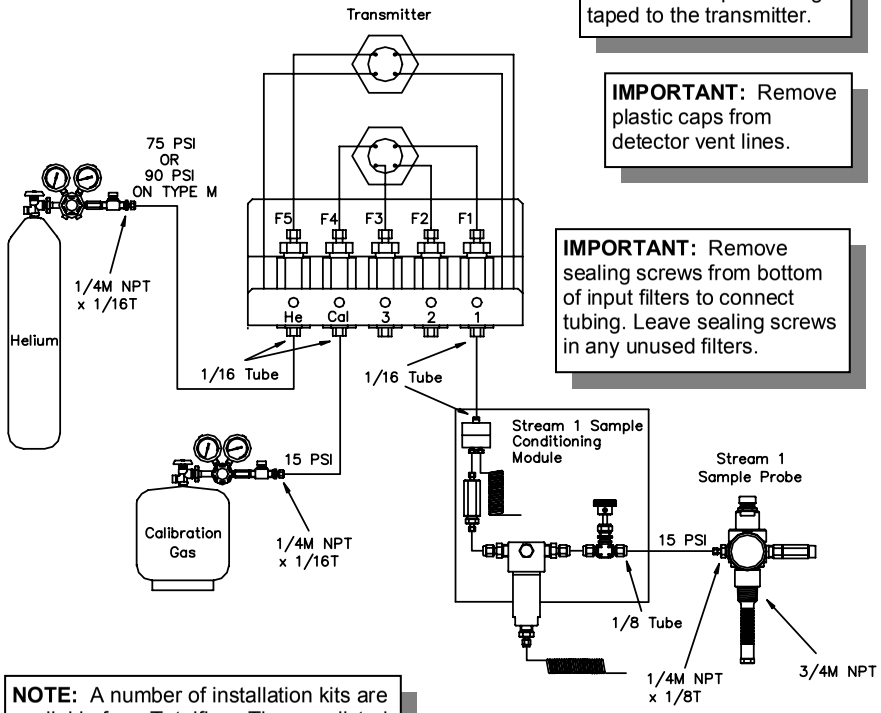
Step 4 **Hook Up Carrier, Sample and Calibration Gas.**

See the "Carrier/Calibration Gas Bottle Rack Installation" and "Sample Transport Tubing" write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*

NOTE: Tube fittings for filters are in a plastic bag taped to the transmitter.

IMPORTANT: Remove plastic caps from detector vent lines.

IMPORTANT: Remove sealing screws from bottom of input filters to connect tubing. Leave sealing screws in any unused filters.



NOTE: A number of installation kits are available from Totalflow. They are listed in the Miscellaneous Accessories Data Sheet.

Cautions:

1. Use only good quality clean stainless steel tubing for carrier, calibration gas and sample lines. Do not use any type of plastic or Teflon tubing. Anything other than good quality clean stainless steel tubing will give unsatisfactory results.
2. Use only High Purity 99.995% grade helium for carrier.
3. Sample Transport Tubing Lengths:

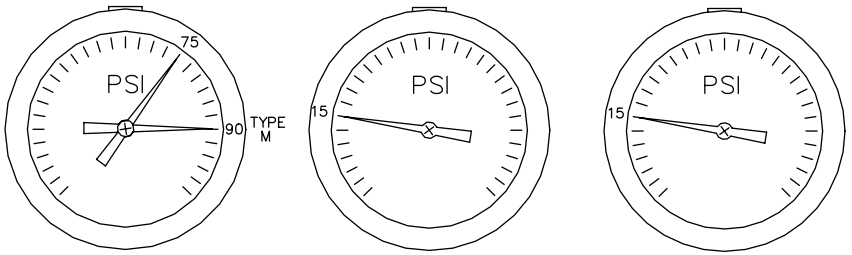
   If an optional Sample Conditioning Module is not being used, the sample transport tubing should be 1/16 inch tubing and no longer than 10 feet.

   When optional Sample Conditioning Modules are used, the sample transport tubing can be up to 50 feet. Lengths longer than 50 feet must adhere to the rules of calculated lag time per the "*How to Calculate Lag Time*" write-up, which can be found in the *Installation* section of the *Totalflow 8000/81000 Btu/CV Transmitter User's Manual* or in the *Sampling Accessories Data Sheet*.
4. Purge all lines prior to connecting to the Btu Transmitter.
5. Suggested Btu start-up blend component concentrations:

C6+	0.03%	NeoC5*	0.1%
IC5	0.1%	NC5	0.1%
IC4	0.3%	NC4	0.3%
C3	1.0%	C2	5.0%
CO2	1.0%	N2	2.5%
C1	89.57%		

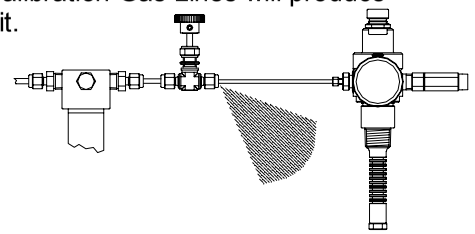
* NeoC5 required only for Auto Peak Find.

Step 5 **Set Carrier Regulator at 75 PSI (90 PSI on Type M version), Calibration Blend Regulator and Sample Probe Regulator to 15 PSI.**



Step 6 **Check For Leaks.**

Leaks in the Carrier, Sample or Calibration Gas Lines will produce unsatisfactory results from the unit.

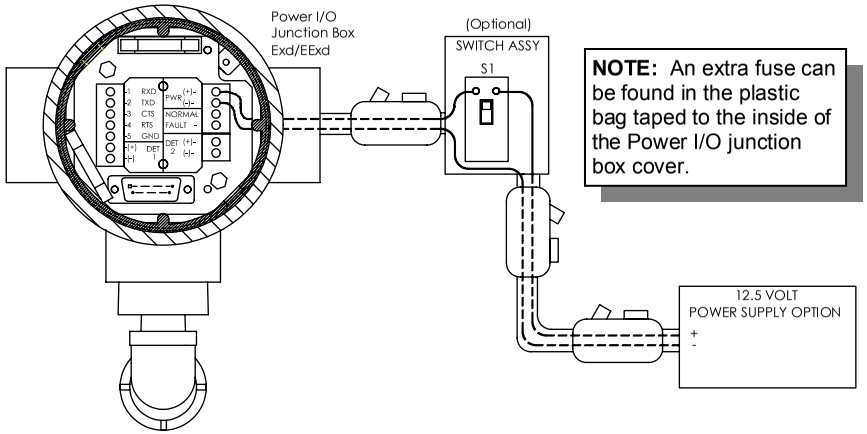


NOTE: The optional Cal Blend and Carrier Pressure Regulators have a built-in low pressure switch. If purchased, wire the switch to the I.S. Termination enclosure per the "*Btu/CV Transmitter Options*" write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*

Step 7 **Apply AC power to the AC/DC power supply and verify 12.5 – 16 VDC output prior to connecting to the Btu Transmitter. If Solar powered, see supplied drawings.**

See the *"12.5 – 16 VDC Operational Power Source Installation"* write-up in the *Installation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.* Any power supply used, should be capable of supplying at least 2.5 amps of current.

Step 8 **Connect the AC/DC power supply to the Btu Transmitter and apply power. Verify a minimum of 12.5 volts at the input terminals of the Btu Transmitter.**

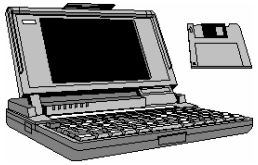


NOTE: An extra fuse can be found in the plastic bag taped to the inside of the Power I/O junction box cover.

NOTE: Wiring from an AC Power Supply should be 14 AWG up to a distance of 50 ft., 12 AWG wire for 50 – 100 ft., and 10 AWG for 100-500 ft. If powered by a battery and solar panel, wiring should be 12 AWG with a maximum distance of 50 ft. The maximum voltage to the transmitter is 16.0 VDC. Explosion proof seals are required when going from a Div. I to a Div. II or General Purpose classification area.

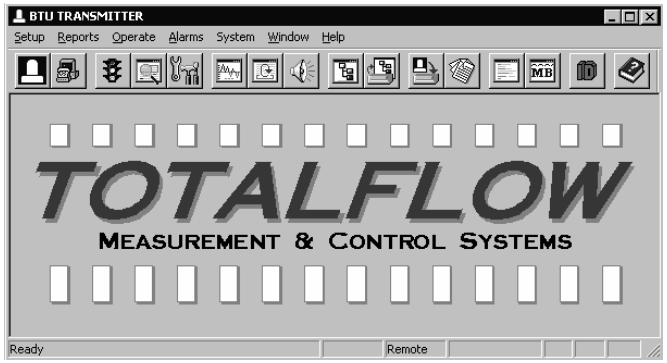
Step 9 **Install the 'Man Machine Interface (MMI)' software.**

For more information on software installation and Btu Transmitter setup, see the *Operation* section of the *Totalflow 8000/8100 Btu/CV Transmitter User's Manual.*



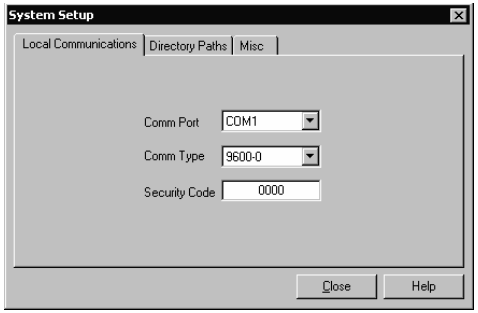
Step 10 **Start the MMI software.**

In *Windows*, click the *Start* button, select *Programs*, select *Totalflow BTUMMI* (or correct program folder if changed during installation), and then select *BTUMMI* to display the initial screen.



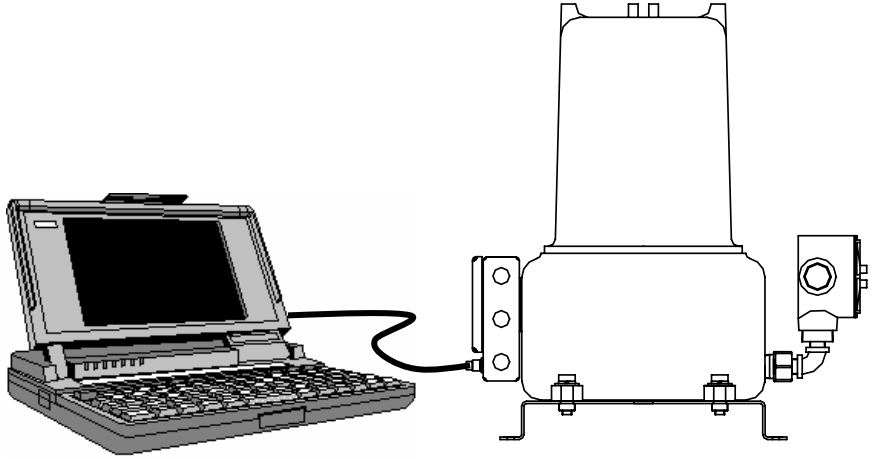
Step 11 **Verify the '*Local Communications*' parameters.**

Select the *System* file menu at the top of the screen as shown above and select *Setup* to display the following screen.



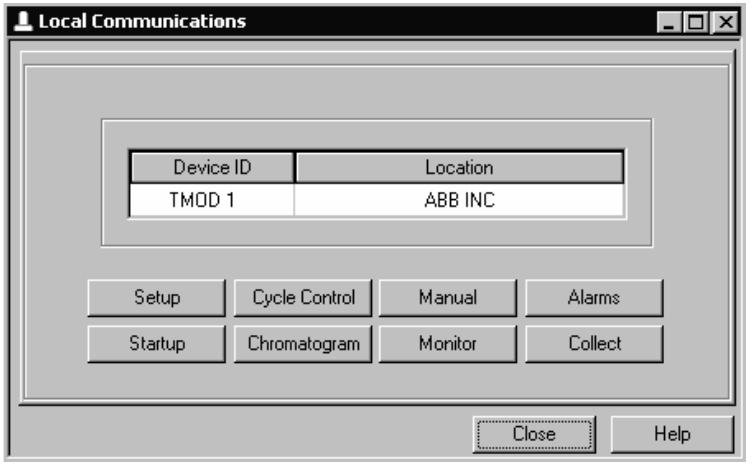
- Select the PC's Communications Port (Comm Port) that will be used to communicate with the Btu Transmitter.
- Set the Communications Type (Comm Type) to 9600-0.
- Set Security Code to match the Btu Transmitter. The Btu Transmitter will default to four zeros (0000) on initial startup.
- Finish by clicking on the '*Close*' button.

Step 12 **Connect the communications cable (Pt.# 2015240-002) between the appropriate communication's port on the laptop computer and the MMI connector on the Btu Transmitter.**



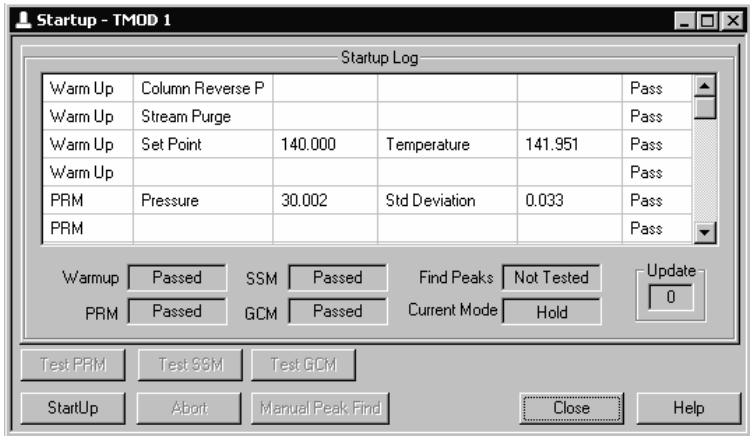
Step 13 **Click on the Local Communications Icon ( ) and if communications are established, the following screen is displayed.**

If the Invalid Security Code screen should appear, enter four zeros (0000) for the new code and click OK. The Btu Transmitter should have defaulted to 0000 on startup.



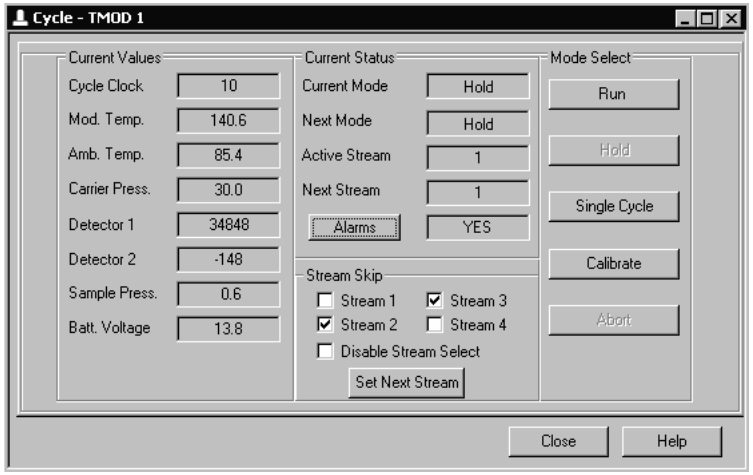
Step 14 **Click on the *'Startup'* button on the *Local Communications* screen to display the Startup screen as shown.**

Watch to see that the diagnostics all pass and the *'Current Mode'*, goes from *'Start'* to *'Hold'*.

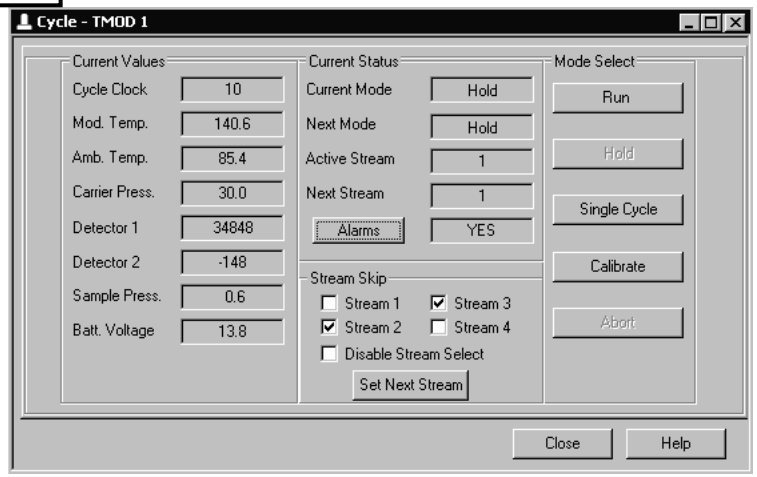


Step 15 **While in the *'Hold'* mode, close the *'Startup'* screen and click on the '*Cycle Control*' button on the *Local Communications* screen to display the following screen.**

NOTE: If you maximize the main screen, subsequent screens can be Restored Down ( ) and resized so that you have multiple screens open at one time. If you do that, you don't have to close each screen to open another.



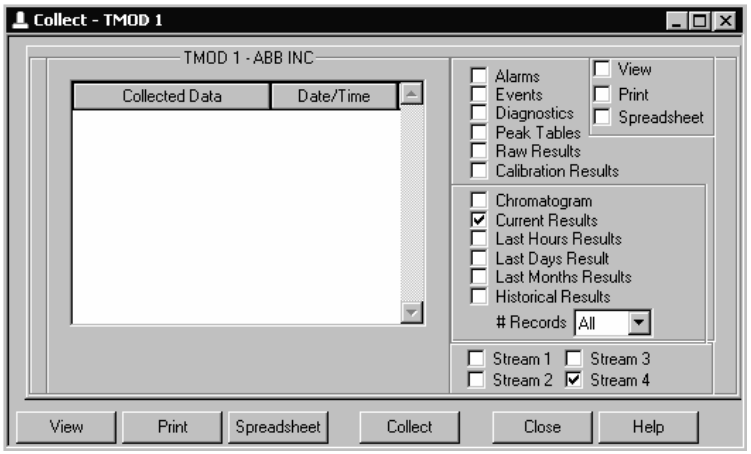
Step 16 **Click on the *'Run'* button.**



Step 17 **After 30 seconds the *Cycle Clock* will begin counting. Wait unit the clock exceeds 180 seconds and proceed to Step 18.**

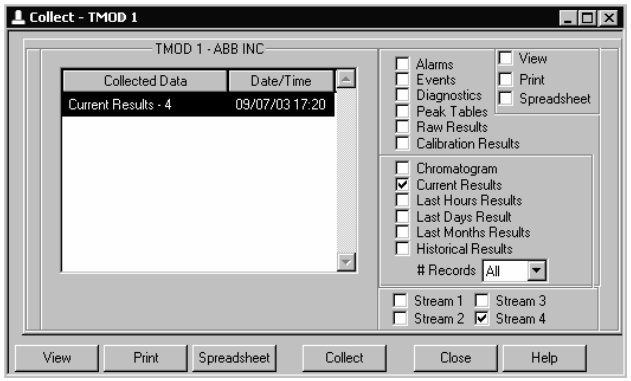
NOTE: The analysis time for each cycle is 3 minutes. Approximately 160 seconds are required to complete the chromatography with 20 more seconds needed to do the calculations and purge the sample loops in preparation for the next cycle.

Step 18 **Click on the *'Collect'* button on the *Local Communications* screen to display the *Collect* screen.**

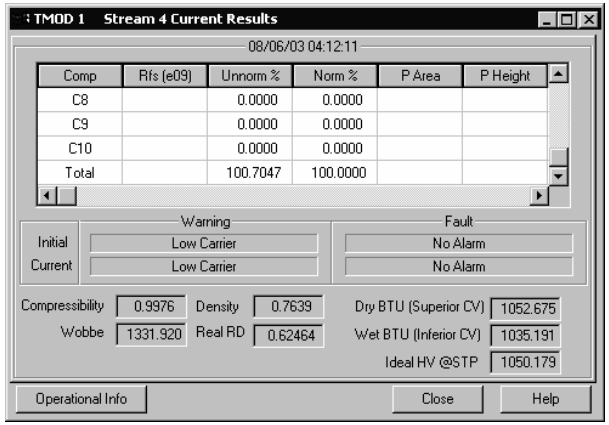


Step 19 **Check the '*Current Results*' and *'Stream 4'* box and then click the '*Collect*' button.**

After the collection is complete, there will be a Collected Data entry as shown by the *Current Results – 4* below.



Step 20 **With the Collected Data entry highlighted, click the *'View'* button to display the *Current Results*.**



Step 21 **Scroll to the bottom of the window and verify:**

- Unnormalized Totals equal 100% +/- 3.
- Fault windows show No Alarms.

Step 22 **Allow the Btu Transmitter to run for a minimum of 8 hours. Check the calibration and calibrate if required.**

NOTE: Communication wiring for the Btu Transmitter will need to be addressed per hazardous area classification. Explosion proof seals are required when going from a Div. I to a Div. II or General Purpose classification areas. Communication cables must be routed in separate conduit from power cables. Contact your local Totalflow representative for specific wiring instructions and drawings.

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