

BioView™ Manual

BioTrak™ 645S/745S Thermal Mass Flow Meters for Biogases

Software Instruction Manual

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Rev B_PN 106515



BioView Software

Disclaimer

GLOBAL SUPPORT LOCATIONS: WE ARE HERE TO HELP!

For Global Service Centers, go to <http://www.sierrainstruments.com/facilities.html>

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Warnings and Cautions

General Safety Information

We use caution and warning statements throughout this book to draw your attention to important information.

Symbol Key		
Symbol	Symbol Meaning	Description
	Warning	This statement appears with information that is important to protect people and equipment from damage. Pay very close attention to all warnings that apply to your application.
	Caution/Note	This statement appears with information that is important for protecting your equipment's performance. Read and follow all cautions that apply to your application.



CAUTION

- Caution! Before making adjustments to the Smart Electronics device, verify the flow meter is not actively monitoring or reporting to any master control system. Adjustments to the electronics will cause direct changes to flow control settings.
- Caution! All flow meter connections, isolation valves and fittings for hot tapping must have the same or higher pressure rating as the main pipeline.
- Caution! The flow meter electronics and sensor probe have been manufactured and calibrated to operate as a unit. The flow meter will not operate properly if parts are replaced from another meter.
- Caution! Printed circuit boards are sensitive to electrostatic discharge. To avoid damaging the board, follow these precautions to minimize the risk of damage:
 - before handling the assembly, discharge your body by touching a grounded, metal object
 - handle all cards by their edges unless otherwise required
 - when possible, use grounded electrostatic discharge wrist straps when handling sensitive components

Notice

This publication must be read in its entirety before performing any operation. Failure to understand and follow these instructions could result in serious personal injury and/or damage to the equipment. Should this equipment require repair or adjustment beyond the procedures given herein, contact the factory at:

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BioView Software

Introduction

Introduction

Thank you for purchasing the BioTrak 645S/745S Thermal Gas Mass Flow Meter from Sierra Instruments. The BioTrak 645S/745S is one of the most technically advanced flow meters in the world. Extensive engineering effort has been invested to deliver advanced features, accuracy measurement performance, and outstanding reliability.

The new BioView™ software allows users to easily display data and configure the BioTrak to their specific application parameters. Then, log flow/temperature data to an Excel® file. The software can also access the BioSelect® menu and the BioCal™ calibration validation diagnostic test.

The BioTrak 645S/745S is available with two different options: the RS485 Communication option or the Pulse Output option. The BioView™ software has been developed to react intuitively to the type of BioTrak meter with which it is interfacing.

This manual contains the installation and operation instructions for the BioView™ software.

This manual is divided into the following sections: Introduction, Installation, Operation, Glossary, and Index.

Installation

Open the enclosure by unscrewing the enclosure cap, loosen the two captive screws on the display assembly and rotate it open. Connect the 645S/745S to a PC with a USB (Type-A to Mini-B) cable. If the PC is connected to the internet and running Windows®, the PC will try to automatically load the VCP driver. If the driver does not load automatically, download the VCP driver at: www.ftdichip.com/Drivers/VCP.htm

NOTE! The latest version of the BioTrak™ software is available for download at <https://www.sierrainstruments.com/products/bioview.html>

Fig. 2.1: Online Download Location for BioTrak™ software

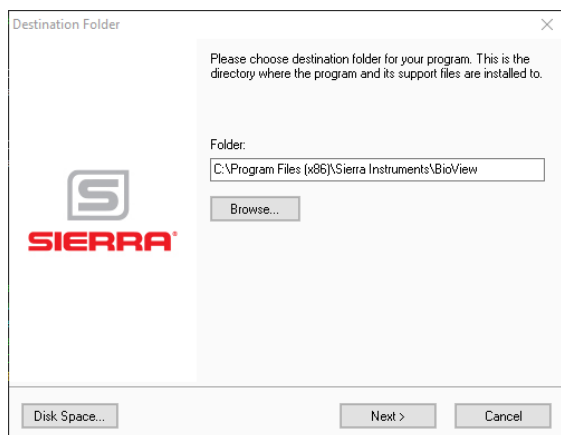
1 - Click on the BioView™ software download button

The screenshot shows the Sierra Instruments website for BioView Software. The page includes a navigation bar with links like Products, Support & Contact, Resources, Docs & Downloads, Request Quote, and My Account. The main content area is titled 'Configuration and Data Logging Software BioView Software' and lists several features: quick access to configuration parameters, selection of measurement units, BioSelect™ menu, BioCal™ Calibration Validation, alarm settings, and data logging to Excel. A red button labeled 'BioView Software Download' is prominently displayed, with a black arrow pointing to it from the instruction text above. Other elements include a 'Get A Quote' button, a 'View videos' link, and a 'Need Assistance?' section with contact information.

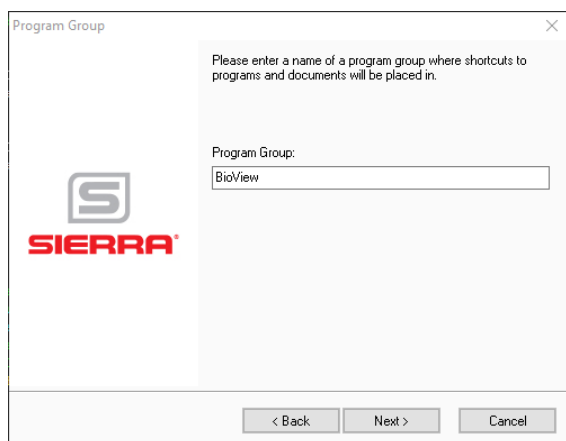
BioView Software

Installation

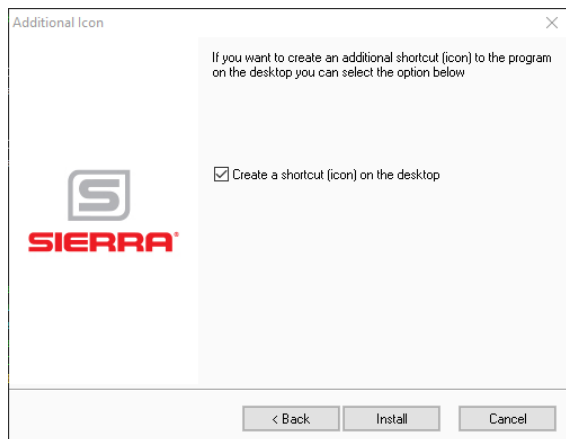
To install the BioView program, run the "BioView_V#.#-setup.exe" file that is located in the downloaded file. After clicking "Next" the screen will show:



Select the folder in which you wish to install BioView, then click "Next".

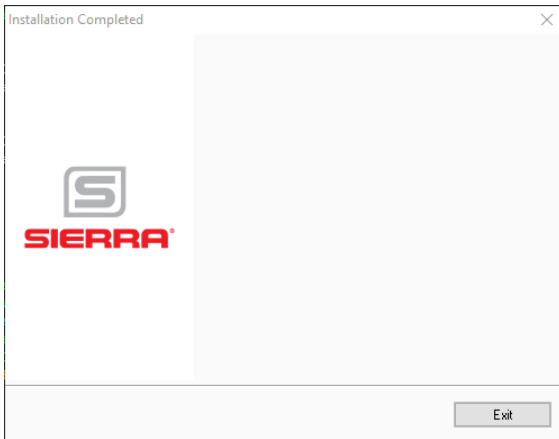


When the program is done installing, note the program group and click "Next".

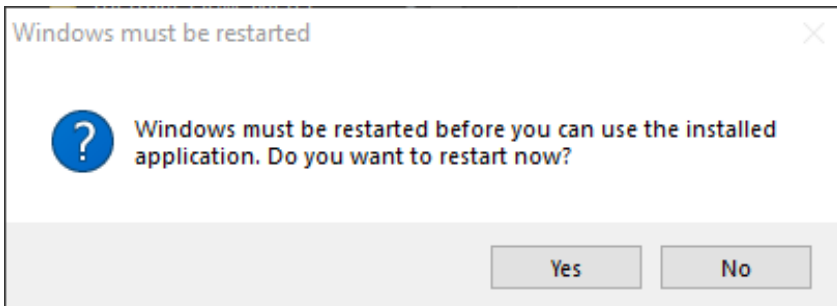


To find the program easily, you may choose to create a shortcut icon for your PC desktop by placing a check in the checkbox. Click "Install" to continue.

When the program is done installing, you may exit.



To complete the installation process, close all applications, and restart your computer.



The BioView™ Software will be ready to use after the computer has rebooted.

BioView Software

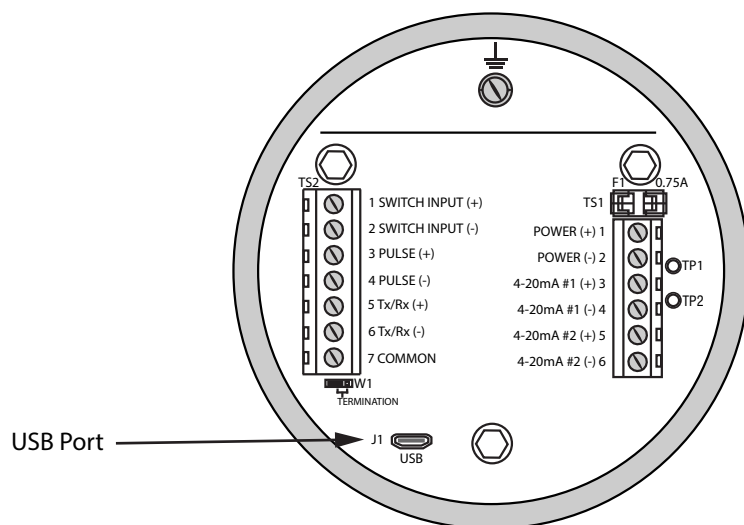
Installation

Power on the Meter

Refer to the BioTrak 645S/745S Instruction Manual for Power input wiring instructions. The meter must be powered on to communicate with the BioView™ software tool.

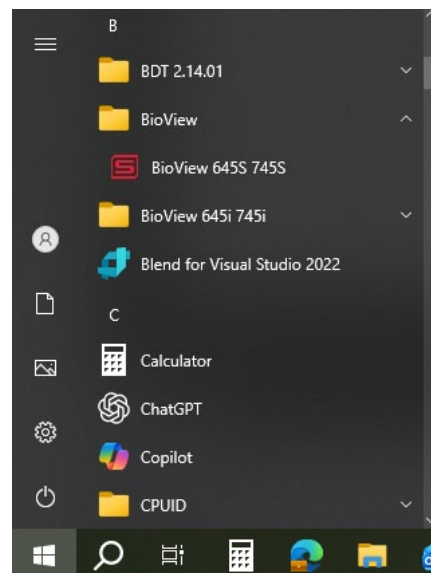
Connect the 645S/745S to a PC or Laptop via USB

Be sure to have your 645S/745S flow meter connected by USB to a PC or laptop that has BioView™ software successfully downloaded to the operating system. The USB port can be found by removing the rear enclosure cap.



Startup BioView™ Software

After re-boot and connecting to a PC via USB, startup the BioView™ software accessible in the Windows "Start" button or search bar.



COM Port Assignment

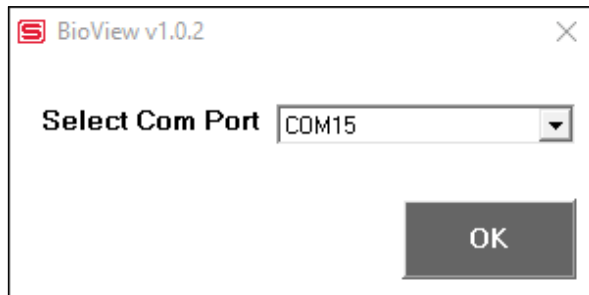
Be sure to have your BioTrak connected by USB to a PC or laptop before opening BioView™ Software. Upon opening BioView™ Software for the first time, Windows® will assign a "virtual COM port". The COM port number that has been assigned will appear automatically in the drop down box.

If the correct COM Port does not appear, go to Control Panel/Device Manager and click on Ports (COM & LPT). The COM port number should be displayed under the USB symbol.

If prompted, enter the assigned COM port in BioView™ by using the drop down menu and press **OK**.

i NOTE! The 645S/745S meter must be plugged into the computer in order for the system to register it.

Fig. 2.2: COM Port Selection Window



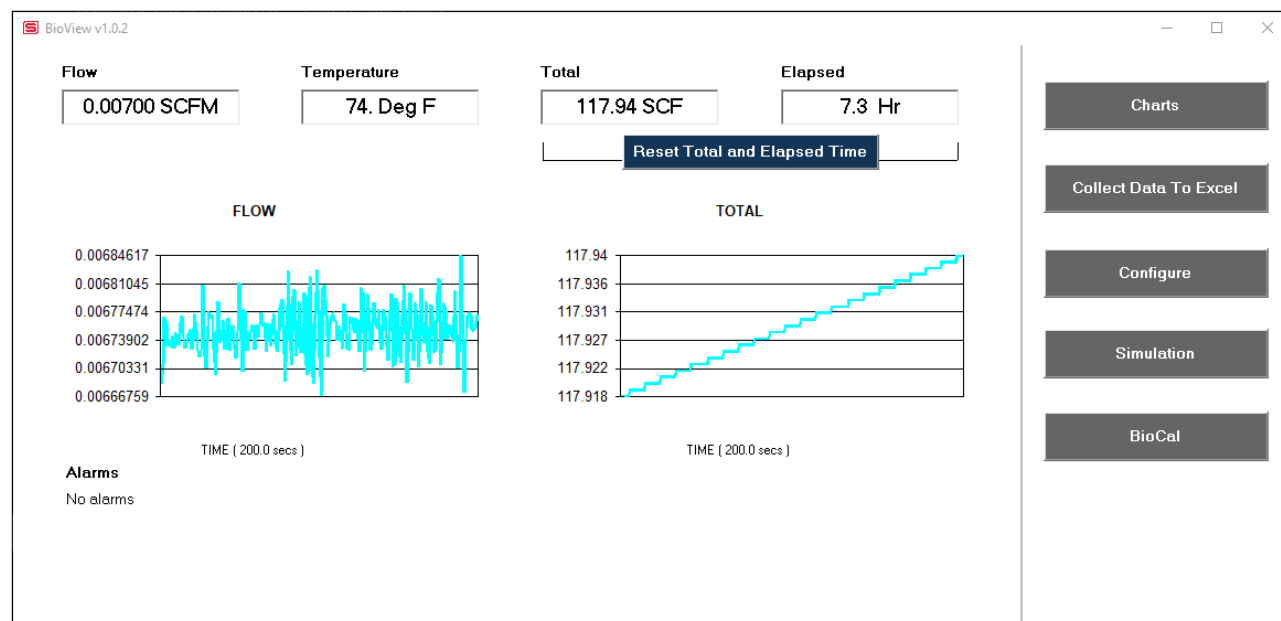
BioView Software

Operations

Main Screen

The image below depicts the main screen that appears upon entering BioView™ Software.

Fig. 3.1: BioView™ Main Screen



Charts Button

This calls up two charts that can be configured for either temperature or flow. Each chart can be individually enlarged and re-scaled from the original default settings. For more information on how to change the charts settings, refer to p. 14.

NOTE! The charts are refreshed at user selected update rate. See p. 14 for more information on setting up charts.

Data Log

This function allows all selected data to be logged to an Excel® file at the specified sample time. All readings are time/date stamped. For more information on using the Data Logger function, refer to "Data Logger" on page 21.

Configure

This allows the operator to go in and set the application parameters. This can be done either via the BioView™ software or manually via the instrument's display. For more information on configuring application parameters, refer to p. 16.

Simulation

This function can be used to verify that all the flow meter outputs are working properly. The easiest way to perform this check is to enter a specific temperature/flow rate. The corresponding analog outputs can be verified using a DMM and using a watch for the pulse. Refer to p. 22 for more information on how to use the Simulation function.

BioCal™

Sierra Instruments has developed the BioCal® Calibration Validation to help our customers avoid sending the meter back for annual or biennial re-calibrations. Calibration Validation allows our customers to validate the accuracy and functionality of the meter in the field with the push of a button. By performing a simple test, the operator can verify that the meter is running accurately. BioCal® ensures the repeatability, functionality of the sensor and its associated signal processing circuitry, and cleanliness of the sensor.

The BioCal™ calibration validation test can be performed while the unit is still in the pipe. The BioCal™ calibration validation test is explained in greater detail on p. 26.

Alarms

The unit can be configured for high/low alarms for either flow or temperature. The "alarms window" displays any alarms or warnings.

Exit

Exit the application.

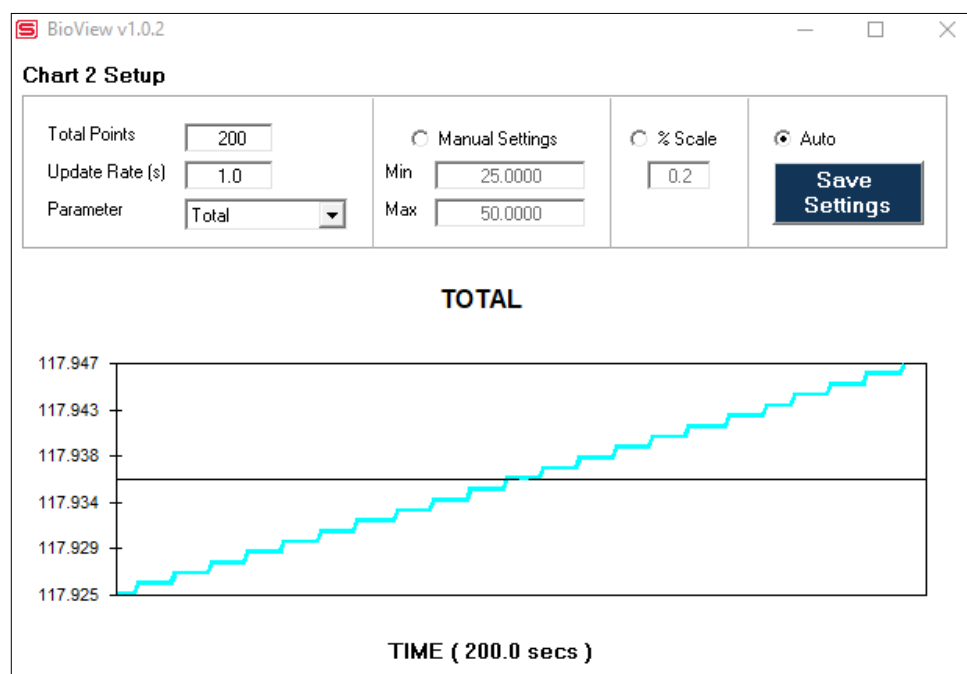
BioView Software

Operations

Charts Settings

From the main menu screen, click on "Charts". Two charts will appear side-by-side. Each chart can be selected for flow, temperature or total flow and scaled in one of three ways: a plus/minus percent scale, inputting min/max values manually, or real-time automatic scaling.

Fig. 3.2: Chart Settings Window - Charts 1 and 2



Save Setting

Click the Save Settings button to save the chart settings to the main page window. These settings can then be closed by clicking on the "X" at the top right corner of the window.

Parameters

Flow, temperature or total flow can easily be selected for charting.

Total Points

The total points specifies the number of points plotted on the graph. Older data is automatically omitted.

Update Rate

The update rate controls the data refresh rate.

Percent (%) Scale

This sets the scale to a plus/minus specified percentage from the initial measured value. Typically, the minimum/maximum is scaled at plus/minus 10% of that initial value.

Manual Chart Setting

The Manual mode allows a user to input min/max values for chart scaling. When entering new values, click on Save Settings for them to take effect.

Automatic Chart Setting

Automatic mode lets the program adjust the scaling on a real-time basis based on the entire range of values.

Configure

From the main menu, click on the "Configure" button and enter the requested password for either Level I (1234) or Level II (9111) access.

Fig. 3.3: Password Window



NOTE! Most users will only need access to the Level I screen to do basic setting of units, alarms and output scaling.

Fig. 3.4: Level II Configuration Screen - RS485 Option

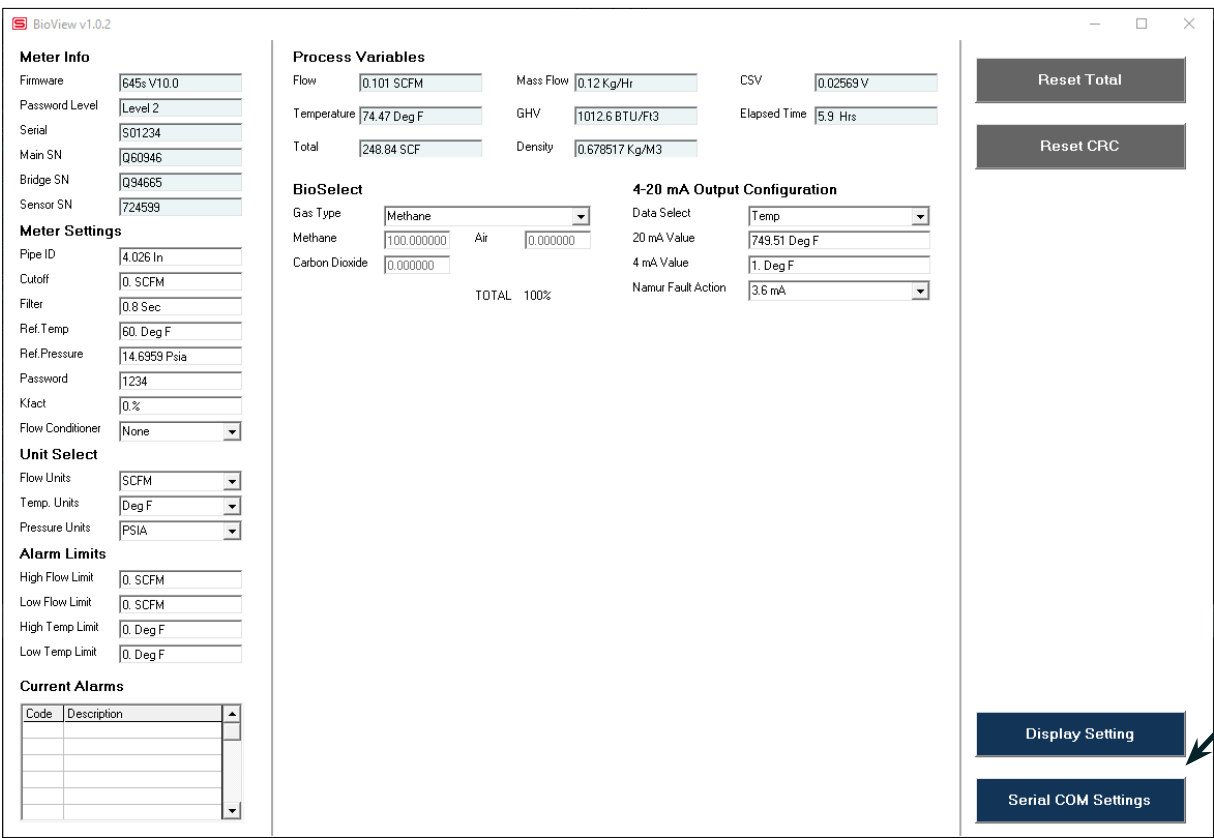


Fig. 3.5: Level II Configuration Screen - Pulse Output Option

Meter Info

Firmware: 645s V10.0
 Password Level: Level 2
 Serial: S12544
 Main SN: Q34915
 Bridge SN: P99266
 Sensor SN: 724599

Meter Settings

Pipe ID: 4.026 In
 Cutoff: 0. SCFM
 Filter: 0.7 Sec
 Ref. Temp: 77.54 Deg F
 Ref. Pressure: 29.1526 Psia
 Password: 1234
 Kfact: 0. %
 Flow Conditioner: None

Unit Select

Flow Units: SCFM
 Temp. Units: Deg F
 Pressure Units: PSIA

Alarm Limits

High Flow Limit: 0. SCFM
 Low Flow Limit: 0. SCFM
 High Temp Limit: 0. Deg F
 Low Temp Limit: 0. Deg F

Current Alarms

Code	Description

Process Variables

Flow: 0.007 SCFM
 Mass Flow: 0.03 Kg/Hr
 CSV: 0.04036 V
 Temperature: 74. Deg F
 GHV: 1166.0 BTU/Ft3
 Elapsed Time: 7.3 Hrs
 Total: 117.97 SCF
 Density: 2.21239 Kg/M3

BioSelect

Gas Type: Digester Mix
 Methane: 60.000000
 Air: 0.000000
 Carbon Dioxide: 40.000000
 Normalize Gas %

4-20 mA Output Configuration

Data Select: Flow
 20 mA Value: 1000. SCFM
 4 mA Value: 0. SCFM
 Namur Fault Action: Not used

Digital Output Select

Pulse Output

Pulse Output Configuration

Pulse Option: Max Flow & Max Frequency
 Max Frequency: Max Freq= 100 Hz
 Max Flow: Max Flow= 1000.0006 SCFM
 Pulses Per Unit: Pulse per Unit= 5.9999906
 Units Per Pulse: Unit per Pulse= .1666667

Buttons: Reset Total, Reset CRC, Display Setting, Serial COM Settings

The BioView™ software is an intuitive program that recognizes the meter configuration automatically. The meter configuration determines whether the screen in Fig 3.4 or 3.5 will appear.

The RS485 settings can be accessed by clicking on the "Serial COM Settings" button highlighted by the arrow in Figure 3.4.

The Pulse Output settings can be accessed in the "Frequency Output Configuration" and "Digital Output Select" fields highlighted by the two arrows in Fig. 3.5.

BioView Software

Operations

Unit Select

The "Unit Select" section is used to change the desired units in the flow rate, temperature and reference pressure parameters.

Process Properties

Pipe Inner Diameter (ID): The pipe inner diameter can be entered in either inches or millimeters, depending on whether the flow or mass measurement units selected are metric or US standard. Once entered, the program will automatically recalculate the pipe cross-sectional area for the velocity/flow calculations. A precise ID is required to ensure accurate flow measurement.

Cut-off: A gas flow rate at (or below) the cut-off setting will cause the meter to read zero. Default cut-off is set to 1% of maximum flow value.

Filter: Changing this value will increase or decrease the damping of the flow rate reading. Increase the setting to increase damping. The default setting is 0.8 seconds (see 645S/745S Instruction Manual for more details).

Serial Numbers: Serial numbers of the meter, the main board, bridge and sensor (factory set).

Display

The four drop-down boxes can be used to select the data to present on Screen 1 and Screen 2 of the flow meter display. By selecting "Alternate", the screen automatically switches between the data screens.

Alarm Limits

Users can set both high/low alarms for both flow and temperature. When a limit is reached, an alarm message is displayed. In addition, if the meter's digital output is activated, breaching the alarm limit automatically activates a discrete output to control an external buzzer, light or some other way to alert the operator.

Analog 4-20mA

The BioTrak has one analog 4-20mA output that is configurable for either flow or temperature. Though the BioTrak will be scaled for the specific application coming from the factory, BioView™ allows the operator to easily re-scale the 4-20mA output as needed.

Process Variables

- Flow:** Current flow rate in selected units
- Total:** Cumulative mass or volume flow in selected units
- Velocity:** Massflow
- Temperature:** Gas temperature (Fahrenheit or Celsius)
- CSV:** Current sense voltage
- Elapsed Time:** Time since the Totalizer was reset

Reference Conditions

Reference temperature and pressure are the standard (or normal) temperature and pressure (STP) for which the flow rate is calculated.

BioSelect®

This menu allows the user to choose from a list of gases. More information on BioSelect® can be found on p. 24.

Digital Output Select

This selection configures the 645S/745S digital output for either pulses (counts) or as an alarm discrete output.

If the pulses (counts) output is selected, it can be programmed in three different ways using the pull-down menu "Frequency Output Configuration".

- Maximum flow and maximum frequency
- Pulses per Unit
- Units per Pulse

i NOTE! This is only available on a meter configured for Pulse Output. If RS485 option has been ordered, the Pulse option is not available.

BioView Software

Operations

Serial COM Settings

Use this function to set the serial communication settings for any of the optional BioTrak bus communication boards.

Fig. 3.8: Select Serial Communication Window

The figure displays two instances of the 'Configure Serial...' window, each titled 'Serial Communications'. The left window shows settings for a Hart protocol: Bus Type is 'Hart', Address is '0', Baud Rate is '1200', and Parity is 'Odd'. The right window shows settings for a Modbus protocol: Bus Type is 'Modbus', Address is '01', Baud Rate is '9600', and Parity is 'None'. Both windows have standard Windows-style title bars with minimize, maximize, and close buttons.

Setting	Left Window (Hart)	Right Window (Modbus)
Bus Type	Hart	Modbus
Address	0	01
Baud Rate	1200	9600
Parity	Odd	None

NOTE: Modbus is only available on a meter configured for RS485 Modbus RTU. If the Pulse Output option has been ordered, the RS485 Modbus RTU option is not available.

Data Logger

The Data Logger screen can be accessed from the main screen. Clicking the "Collect Data to Excel" function will prompt the user for a password. Enter a Level I or Level II password and the Data Logger window will appear.

Fig. 3.9: Data Logger Window - Logging Turned Off

Excel Filename

Select

Data Selection

- ☐ CSV (Current Sense Voltage)
- ☐ Flow
- ☐ Flow NM3/H
- ☐ Gas Temperature
- ☐ Total
- ☐ Elapsed Time

Data Preview

Index	Name	Value

Logged Values

Sample Time

Hrs: Min: Sec:

Start Data Logger

Select the sample time from the drop down menu, and then select the required data from the Data Selection list. Select or create a name for the Excel® file and then press the "Start Data Logging" button.

Fig. 3.10: Data Logger Window - Logging Turned On

Excel Filename

Select

Data Selection

- ☒ CSV (Current Sense Voltage)
- ☒ Flow
- ☒ Flow NM3/H
- ☒ Gas Temperature
- ☒ Total
- ☒ Elapsed Time

Data Preview

Index	Name	Value
15	Csv [I]	0.040467709
0	Flow [SCFM]	0.0067510782
8	FlowVol [NM3/H]	0.020802299
12	Gas_temp [Deg F]	74.04599
20	Total [SCF]	117.99
21	ElapsedTime [Hrs]	7.3666668

Logged Values

4/2/26 10:51:50 0.040379 0.006727 0.020728 74.043747 117.989000
7.366667
4/2/26 10:51:50 0.040379 0.006727 0.020728 74.043747 117.989000
7.366667
4/2/26 10:51:51 0.040605 0.006727 0.020728 74.043747 117.989000
7.366667
4/2/26 10:51:52 0.040605 0.006744 0.020781 74.043747 117.989000
7.366667

Sample Time

Hrs: Min: Sec:

Stop Data Logger

When "Start Data Logging" is pressed, the data is recorded in the specified Excel® file - and also displayed in the Data Logged window. Pressing "Stop Data Logging" ends data acquisition.

BioView Software

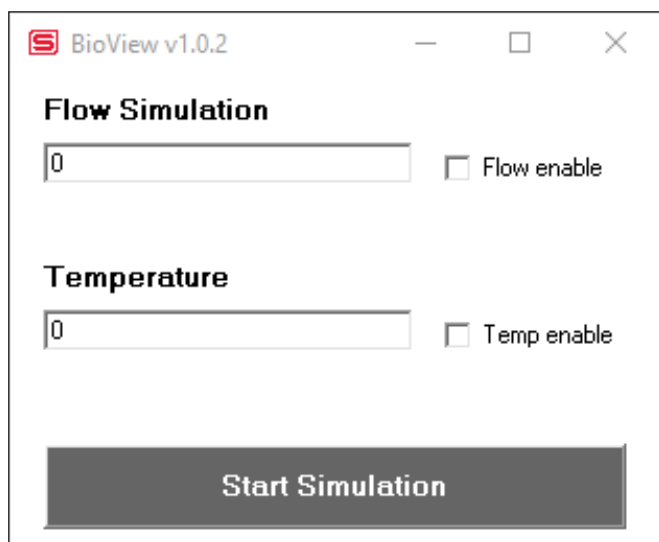
Operations

Simulation Mode

After clicking on "Simulation", a password will be requested. Enter the password and then the Simulation screen will be shown.

Fig. 3.11: Simulation Mode Window

The simulation mode simulates flow rate or temperature. Click on the required data and enter a value.



BioView v1.0.2

Flow Simulation

0 ☐ Flow enable

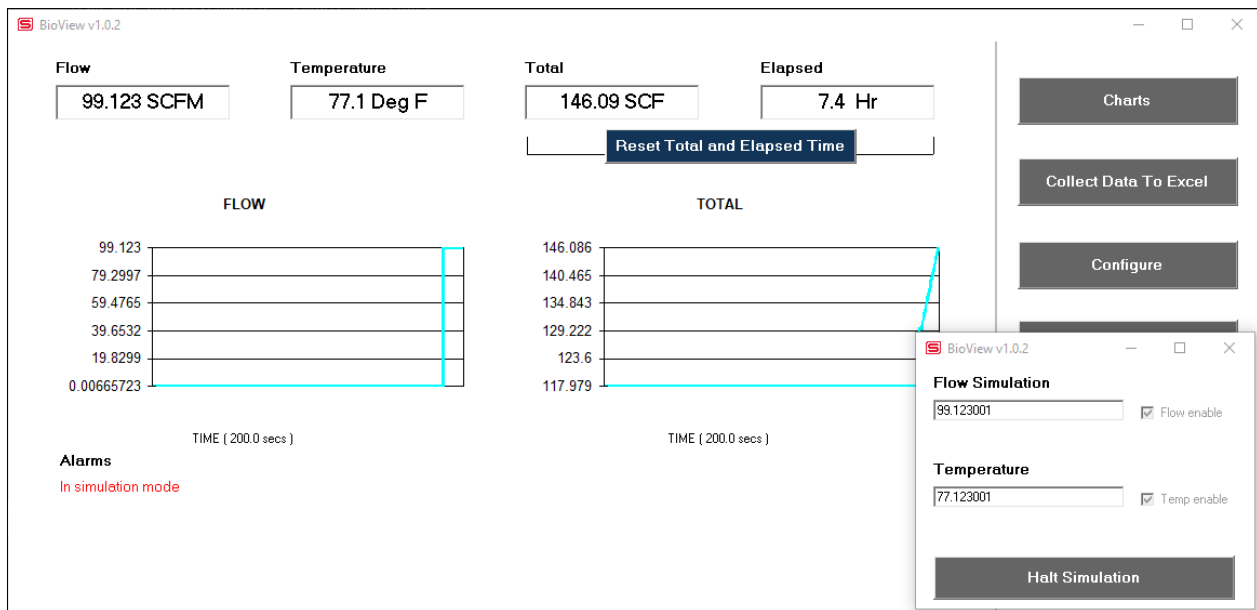
Temperature

0 ☐ Temp enable

Start Simulation

Simulation mode allows users to verify the operation of the analog output, digital outputs and totalizer at simulated flow rates and temperature.

Fig. 3.12: Simulation Running



In Simulation mode, all BioTrak outputs and the Totalizer respond as if in normal measurement mode. Click "Halt Simulation" to end.

BioView Software

Operations

BioSelect® Gas Menu

Each BioTrak flow meter is calibrated in the factory and pre-programmed with a list of available pure gases or digester gas mix calibrations. To choose what gas or digester gas mixture flow for the BioTrak to monitor, chose from the list of gases under BioSelect:

- Air
- Methane
- Digester Mix

Fig. 3.13: BioSelect® Menu

BioSelect	
Gas Type	Air
Methane	0.000000
Air	100.000000
Carbon Dioxide	0.000000
TOTAL 100%	

NOTE: A list of pure and mixed gases available on the BioTrak flowmeter are kept on the Sierra website at www.sierrainstruments.com.

Fig. 3.14: Setting the BioSelect® Digester Mix

The figure consists of two screenshots of the BioSelect software interface, illustrating the process of setting gas concentrations for a Digester Mix.

Top Screenshot: The "BioSelect" window shows the "Gas Type" dropdown menu set to "Digester Mix". The "Methane" dropdown menu is open, showing options "Methane", "Air", and "Digester Mix". The "Carbon Dioxide" dropdown menu is also open, showing the same options. A "Normalize Gas %" button is visible at the bottom left. The "TOTAL" value is displayed as "0%".

Bottom Screenshot: The "BioSelect" window shows the "Gas Type" dropdown menu set to "Digester Mix". The "Methane" dropdown menu is closed, and the "Air" dropdown menu is open, showing the same options. The "Carbon Dioxide" dropdown menu is also open, showing the same options. The "Methane" input field is set to "60.000000", the "Air" input field is set to "0.000000", and the "Carbon Dioxide" input field is set to "40.000000". A "Normalize Gas %" button is visible at the bottom left. The "TOTAL" value is displayed as "100%".

When the "Digester Mix" option is chosen, a series of additional gas concentration fields will appear. These fields are labeled "CH4%", "CO2%", etc. A default amount will appear in each field, these can be changed to any percentage between 1 and 100. The total for the gases in the Digester Mix must equal 100% or an error will occur.

NOTE: If the total of both gases is greater or less than 100%, an alarm will show. Adjust the percentages until 100% is achieved.

BioView Software

Operations

BioCal™

BioCal™ is performed to verify the proper operation of the BioTrak flow meter. From the Main menu, click on the "BioCal" button to access the BioCal™ Menu Window.

Fig. 3.15: BioCal™ Test Menu Window

BioView v1.0.2

BioCal Settings

Performed By

Meter TAG

Comments

Test Type

Log File

Test

BioCal Value

Time Remaining

Result

On the BioCal™ Menu, there are fields to enter information about the person performing the test, meter tag information, and any other important information may be entered into the comments area.

A drop-down menu allows the user to choose between these two options:

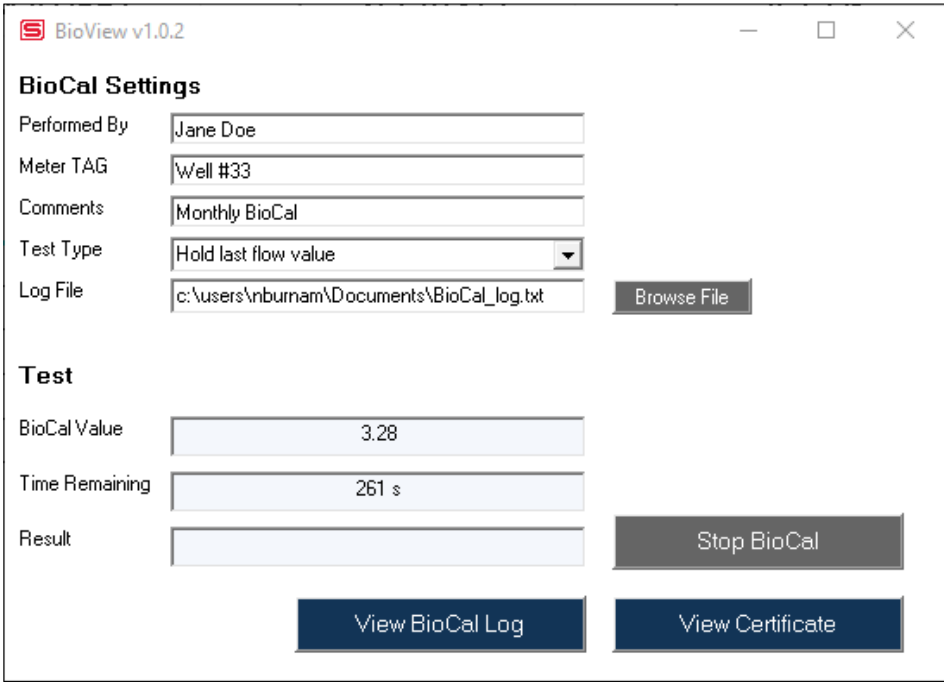
- Flow goes to Zero during BioCal™
- Flow holds the last value during BioCal™

Please note that the test will take about five minutes. If the "go to zero" option is chosen, the flow measurement will stop and go to zero for this period. If the "hold value" option has been chosen, the totalizer will continue to increment.

The user can also specify a particular folder name and location for the data to be stored in a log to access test results at later times.

When ready to start, click the "Perform BioCal" button.

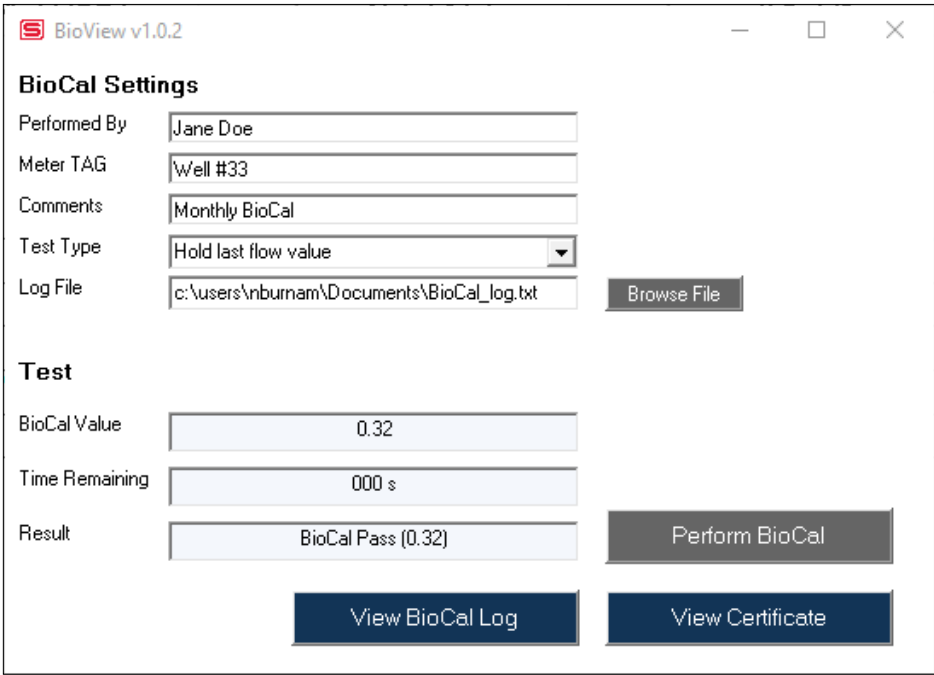
Fig. 3.16: Running a BioCal™ Test



The screenshot shows the 'BioView v1.0.2' window with the 'BioCal Settings' section. The 'Performed By' field contains 'Jane Doe', 'Meter TAG' contains 'Well #33', and 'Comments' contains 'Monthly BioCal'. The 'Test Type' dropdown is set to 'Hold last flow value'. The 'Log File' field shows 'c:\users\nburnam\Documents\BioCal_log.txt' with a 'Browse File' button next to it. Below the settings is the 'Test' section, which includes a 'BioCal Value' field showing '3.28', a 'Time Remaining' field showing '261 s', and a 'Result' field. To the right of the 'Result' field is a 'Stop BioCal' button. At the bottom of the window are two buttons: 'View BioCal Log' and 'View Certificate'.

A Pass/Fail message for the BioCal™ test will be displayed at the test conclusion.

Fig. 3.17: BioCal™ Results Window



This screenshot shows the same 'BioView v1.0.2' window, but the test has completed. The 'BioCal Value' field now shows '0.32', and the 'Time Remaining' field shows '000 s'. The 'Result' field displays 'BioCal Pass (0.32)'. The 'Stop BioCal' button has been replaced by a 'Perform BioCal' button. The 'View BioCal Log' and 'View Certificate' buttons remain at the bottom.

BioView Software

Operations

BioCal™ Certificate

The BioCal™ Certificate function displays the latest certification. When performing a BioCal™ test, all the data is logged into a log file with all pertinent data, including the serial number. A laptop or PC can be used to perform the BioCal™ test on the 645S/745S meter. When a BioCal™ certificate is requested, the program will search the log file for the specific serial number and will display only the last check performed.

Fig. 3.18: BioCal™ Certificate

**SIERRA**

20 Ryan Ranch Road, Suite 109
Monterey, CA 93940 USA
Phone: 1-831-373-0200
sales@sierrainstruments.com

BioCal™ CERTIFICATE
CALIBRATION VALIDATION

BioCal™ Performed on: April 02 2026 11:50:43 AM

Firmware version: 645s V10.0

Meter Serial Number: S12544

BioCal™ Results: BioCal PASS

BioCal™: 0.32

Test Temperature: 73.9 F

Tag #/Meter Location: Well #33

Test performed by: Jane Doe

Additional Comments: Monthly BioCal

BioCal™ is a calibration routine that validates the flow meter's calibration accuracy by testing the following:

- * Repeatability of sensor
- * Repeatability of sensor electronics
- * Confirms Calibration Algorithms

At the conclusion of the test, the meter will display a pass/fail message and the BioCal™ data.

A "pass" result confirms the meter is measuring accurately.

BioCal™ limits: $\pm 0 - 0.8$ Pass, $\pm 0.8 - 1.0$ Warning, $> \pm 1.0$ Fail

Configuration:

Pipe Diameter: 4.026 In

Customer STP: 77.5 Deg F & 29.15 Psia

4-20 mA Range: 0 - 1000 SCFM

Zero Flow Cutoff: 0 SCFM

Previous BioCal Value: 0.34

Previous BioCal Result: Pass

Previous BioCal Date: 4/2/26 8:54:2

Gross Heating Value[BTU/FT3]: 0

Density[Kg/M3]: 2.347

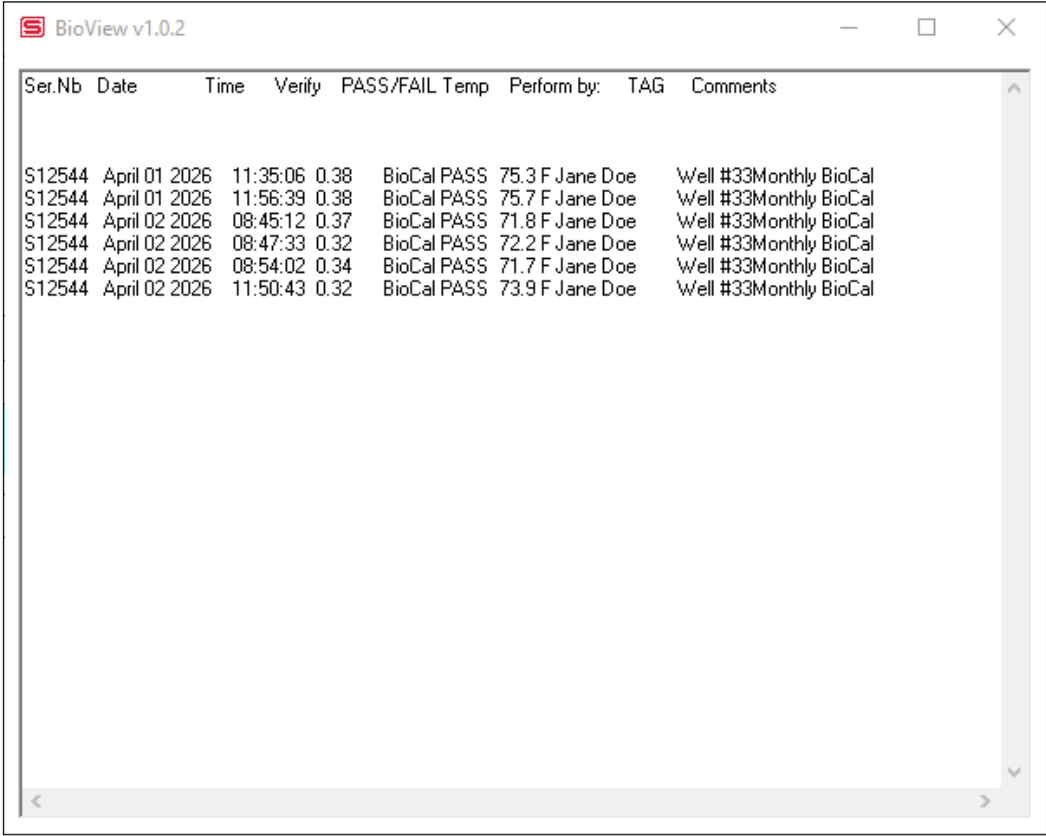
BioSelect: Single Gas

Air 100%

BioCal™ Log

The "View Log" button allows the operator to view a log of previous BioCal™ tests that have been executed on the meter.

Fig. 3.19: BioCal™ Log



Ser.Nb	Date	Time	Verify	PASS/FAIL	Temp	Perform by:	TAG	Comments
S12544	April 01 2026	11:35:06	0.38	BioCal PASS	75.3 F	Jane Doe		Well #33Monthly BioCal
S12544	April 01 2026	11:56:39	0.38	BioCal PASS	75.7 F	Jane Doe		Well #33Monthly BioCal
S12544	April 02 2026	08:45:12	0.37	BioCal PASS	71.8 F	Jane Doe		Well #33Monthly BioCal
S12544	April 02 2026	08:47:33	0.32	BioCal PASS	72.2 F	Jane Doe		Well #33Monthly BioCal
S12544	April 02 2026	08:54:02	0.34	BioCal PASS	71.7 F	Jane Doe		Well #33Monthly BioCal
S12544	April 02 2026	11:50:43	0.32	BioCal PASS	73.9 F	Jane Doe		Well #33Monthly BioCal

BioView Software

Glossary

Glossary

COM	Communication
CSV	Current Sense Voltage
DMM	Digital Multimeter
ID	Inner Diameter
mA	Milliamps
PC	Personal Computer
RTD	Resistance Temperature Detector
STP	Standard Temperature and Pressure
TSI	Temperature Sense Current

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Wiring



Troubleshooting Tips



Definition of Terms



NOTE! is used for Notes and Information



WARNING! is used to indicate a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION! is used to indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates compliance with the WEEE Directive. Please dispose of the product in accordance with local regulations and conventions.



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