700G/TRACK
Data Logging Software

Users Manual
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**Introduction**

The Fluke 700G/TRACK Software (the Software) extends the functions of the Fluke 700G Series Pressure Gauge (the Gauge). Use this manual with the 700G Series Users Manual.

The Software lets you:

- Set up data logging configuration in the Gauge
- Upload logged data from the Gauge, including export of run data to text, comma separated values (CSV), and Excel files
- Clear logged data from the Gauge

**Minimum Requirements**

To use the Software, Microsoft Windows 2000 (SP4), XP (SP2), Vista, or Windows 7 is necessary. To export data to Excel files, Microsoft Excel version 2002 or newer is necessary.
Before You Start
Before you start, read this manual to learn more about the Software and its functions.

Standard Equipment
Make sure your data logging kit comes with:
- 700G/TRACK Software
- USB Cable

If something is missing, contact Fluke. See the How to Contact Fluke section.

Installation
To install the Software:
1. Put the Software CD into the CD drive on your computer.
2. The install program starts automatically. If it does not, use Windows Explorer to find the CD drive and click on the "setup.exe" program.
3. Follow the directions on the screen to install the Software.

Overview
The gauge can record (log) multiple data sets, each of which is identified by a sequential run number. Data logging runs use new items put into the Gauge's CONFIG menu sequence to start and stop the runs. Logging parameters can be changed for each data run. The logging runs can be as short or long as necessary. The length of the runs align with the storage capacity of the Gauge.

For each sample, the Gauge can log pressure or it can log pressure and temperature. This selection applies to all runs and must be made before you start the first run.

Logging Pressure
When logging only pressure, the Gauge has a capacity of 8500 data records. These records keep run identification and log sample data. Seven records are necessary for each new data logging run for run identification overhead. One record is necessary to log each sample, except for the triple-value case (average, minimum, maximum) where three records log each sample set.

For a single run, the capacity for all but the triple-value case is 8493 sample sets, and the capacity for the triple-value case is 2831 sample sets.
Logging Pressure and Temperature

When pressure and temperature are logged, the Gauge has a capacity of 5100 data records that keep run identification and log sample data.

For a single run, the maximum capacity for all but the triple-value case is 5093 samples, and the maximum capacity for the triple-value case is 1697 sample sets.

Intervals

The interval time setting sets the frequency of sample calculation and storage. Eleven discrete interval times are available and range from 1 second to 1 hour.

A sample value is calculated at the end of each interval and comes from all of the pressure measurements made during that interval. The sample value can be the last measurement made in the interval, or it can be the average, minimum, maximum, or median of all of the measurements made during that interval.

A sample value can be kept for each interval during the run, only for those intervals where the sample value is larger than a specified high or low limit, or only for those intervals where the pressure differential during the interval is larger than a maximum span.

Data Logging Modes

Two data logging modes are available, Download and Demand. Multiple log runs can be used in these modes, with the most number of runs dependent on the number of samples recorded in each run and the Gauge capacity.

Use Download mode to record or change the data logging parameters and send them to the Gauge. The gauge stays in this mode until the application or the Gauge “CLEAr DATA” function is used to clear the recorded data in the Gauge. At this point, the mode is set to Demand. In Download mode the parameters cannot be changed with the Gauge menus and the downloaded values are used for each new log run. Download mode can be used to change the logging parameters between runs and will not change logged data already in memory.

When the data logging mode is Demand mode, you can set the Gauge to log data without a computer connection. You can record and change some of the data logging parameters with the Gauge menus, while the remaining parameters default to set values. The gauge menus can be used to change the logging parameters between runs. This will not change previously logged data.
Menus
The Software menus duplicate the functions of the Gauge. You can use the buttons or the Software menu to interface with the Gauge.

File Menu
The File Menu lets you exit the Software.

Gauge Menu
The Gauge Menu contains the functions that interact with the Gauge:

Connect
Connect the Gauge and shows the Gauge description and data logging setup. On the Primary Display, select the communication port that the Gauge is connected to before you use this function. See How to Connect to the Gauge in the Primary Display section.

Disconnect
Disconnect from the Gauge. See How to Disconnect from the Gauge in the Main Screen section.

Upload Data
Upload all data logging runs from the Gauge and show them on the Log Upload Display. See the Log Upload Display section. The data can be exported from that display. See the How to Upload Logged Data description in the Main Screen section.

Clear Data
Erase all data logging runs from the Gauge. See How to Clear Logged Data in the Main Screen section.

Send Setup
Send the setup data to the Gauge. See the How to Send Setup Configuration description in the Main Screen section.

Retrieve Setup
Get the setup data from the Gauge. See the How to Retrieve Setup Configuration description in the Main Screen section.
Options Menu
The Options Menu specifies the default display and export options. See the Display Options and Export Options sections.

Help Menu
The functions necessary for help and support are in the Help Menu:
- Help Shows online help
- Support Shows customer support data
- Registration Tells you how to register the Software
- About Shows Software description and version data

Main Screen
The Main Screen is shown in Figure 1. The Main Screen controls let you:
- Connect to the Gauge
- Disconnect from the Gauge
- Upload logged data
- Clear logged data
- Exit the application

This data is shown on the main screen when you connect the Gauge:
- Gauge model
- Serial number
- Firmware version of the Gauge
- Number of data logging records used
- Number of data logging records free

Figure 1. The Main Screen
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The lower section of the Main Screen shows controls you can use to configure data logging parameters in the Gauge, send the configuration to the Gauge, and retrieve the current configuration from the Gauge.

How to Connect to the Gauge
To use the Software with the Gauge immediately:
1. Double-click the Software icon on the desktop to start the Software.
2. Turn on the Gauge.
3. Connect the USB cable to the PC and to the Gauge.
4. On the Software’s Main Screen, select the applicable COM Port from the Port dropdown.

Note
COM Port detection is not automatic. If necessary, go to Windows/Settings/System/Hardware/Device Manager on your PC to determine the USB Serial Port.
5. Push the Connect button. The Main Screen populates with the settings from gauge. See the Main Screen section for more information.

Note
If the Gauge is off or if the USB cable is not connected, you will receive an error message. See Figure 2.

How to Disconnect from the Gauge
To disconnect from the Gauge, click the Disconnect button. The button description and function changes to Connect and all shown data is removed.

How to Upload Logged Data
To upload logged data, click the Upload button. The logged data is uploaded and shown on the Log Upload Display. A display shows percent complete and an estimate of the time remaining in the upload. See the Log Upload Display section.
How to Erase Logged Data
To erase logged data, click the Clear button. After you give confirmation that logged data is to be erased, all logged data is removed from the Gauge. The data logging mode is set to Enabled, Demand, and all data on the display is refreshed.

How to Send Setup Configuration
After you make the necessary selections, click the Send button. The configuration is sent to the Gauge and all data on the display is refreshed. The data logging mode must be set to Enabled, Download to change more than the mode.

How to Retrieve Setup Configuration
To retrieve setup configuration data, click the Retrieve button. The gauge description, current data capacity, and setup are read from the Gauge and shown in the applicable fields.

Setup Configuration Fields
The subsequent sections tell you how to set up the configuration fields.

Data Logging Mode
Disabled
This command turns off data logging in the Gauge. All data logging functions are removed from the Gauge’s CONFIG menu sequence.

Enabled, Download
Turns on data logging in the Gauge with all logging parameters downloaded from the Software. All data logging functions related to parameter changes are removed from the Gauge’s CONFIG menu sequence. The only gauge functions available are start and stop of data logging, show the number of free records, and erase all logged data.

Enabled, Demand
Turns on data logging in the Gauge with all logging parameters set. This can only be used to upload logged data, erase all logged data, get data logging parameters, and change the data logging mode. The data logging functions that are available in the Gauge’s CONFIG menu sequence are start and stop data logging, show the number of free records, change the logging interval, change the samples each run, and erase all logged data. The log type is set at Continuous and the sample type is set at Interval End.

Interval
Use one of these sampling intervals:

- 1, 2, 5, 10, or 30 seconds
- 1, 2, 5, 10, or 30 minutes
- 1 hour
**Samples/Run**
The Samples/Run field is the maximum number of samples to log each run. This can range from 1 to 8500.

**Log Temperature**
Select Yes or No to log temperature.

**Log Type**

**Continuous**
A sample is kept at each interval of the run. The sample value is specified by the sample type selection below. This is the most common type of logging.

**Trip high**
Interval samples are kept during the run only when the sample values are above a high limit. Sample storage starts when a sample value of the interval becomes more than the trip setpoint, and continues at each interval until a subsequent sample value of the interval is lower than the trip reset. Sample storage then stops until a sample value, again, becomes more than the trip setpoint. The sample value is recorded and specified by the sample type selection below.

**Trip low**
Interval samples are only kept during the run when the sample values are above a low limit. Sample storage starts when a sample value of an interval becomes less than the trip setpoint, and continues at each interval until a subsequent interval's sample value becomes larger than the trip reset. Sample storage then stops until a sample value again becomes less than the trip setpoint. The sample value is recorded and specified by the sample type selection below.

**Trip span**
Interval samples are kept during the run only when the pressure difference during the interval is more than a maximum span or range. Sample storage starts when the difference between a maximum and minimum measurement of an interval becomes larger than the trip setpoint, and continues at each interval until a subsequent difference of the interval becomes less than the trip reset. Sample storage then stops until a difference of the interval again becomes more than the trip setpoint.

**Sample Type**
The Sample Type field is recorded as one of these fields:

- Interval end- The last measurement made in the sample interval.
- Average of all measurements made in the sample interval.
- Minimum of all measurements made in the sample interval.
- Maximum of all measurements made in the sample interval.
Pressure Gauge
Logging Pressure

- Median of all measurements made in the sample interval, the midpoint between minimum and maximum.
- Average, minimum, and maximum of all measurements made in the sample interval. Three records of storage for each logged sample set are necessary. This decreases capacity by 3.

**Unit**
Pressure units known by the current gauge configuration. Custom units are included.

**Custom Factor**
Custom unit conversion factor shown as units for psi.

**Trip Setpoint**
Trip setpoint as specified for the Log Type selected above, shown in the log unit selected above.

**Trip Reset**
Trip reset as specified for the Log Type selected, shown in the log unit selected.

**Log Upload Display**
Push the upload button to upload data files from the Gauge. The Primary display shows each data logging run found in the uploaded data. To show a run's data in the lower section of the display, click on it to highlight it.

Use the Display Mode box to select the subset of run data shown:
- All Data,
- Selected Data
- Readings Only

When the Display Mode is set to Selected Data, click the Change Selection button to change the display options. See the Display Options section.

The gauge has no real-time clock. The uploaded data is initially tagged by elapsed day and time from the start of a run. The runs are identified by a numeric position in the uploaded data. To record a label that gives more data about the run and to add a calendar date and time, highlight the run and click the Set Date/Label button. The base date and time are added to the elapsed day and time for each sample.

To export one run, highlight the run and click the Save Run button. The Export Options screen is shown to let the options be customized for exporting this run. A standard Save As screen is then shown. Select the file name and the folder where the file is to be put. Click the Cancel button of one of the screens to skip the export. See the Export Options section for more.

To export all runs, click the Save All button. The Export Options screen is shown to let the options be customized for exporting these runs. The same options are used for all runs. For each run, a Save As screen is then shown. Select the file name and the folder where the file is to be
put. Click the Cancel button of the Save As screen to skip the export of that run. Click the Cancel button of the Export Options screen to skip the export of all runs. See the Export Options section.

The default location for files is the folder "Fluke\700G Track" in "My Documents".

Display Options
Use the Display Options screen (in the Options Menu) to change the default selections for the run description fields. When data is first uploaded, the selections are set to the default values. After the first data display, the selections can be temporarily changed for the length of the data display. In the Display Options screen, check each field that is to be shown when the display mode is set to Selected Data. Logged pressure (Pressure Readings on the menu) is always shown. The Display Options Screen is shown in Figure 3.

The Display Options are:

- Run # or Label
- Gauge Description
- Log and Sample Type
- Interval Time
- Pressure Unit
- Custom Factor
- Trip Setpoint and Reset
- Initial Zero and Tare
- Zero Changes
- Temperature Readings
- Pressure Readings (always selected)
Export Options

Use the Export Options screen to change the default selections for the file type and run description fields to be exported from the Log Upload Display. When data is first uploaded, the selections are set to these default values. After the first data display, the selections can be temporarily changed for each export, and stay changed for the length of the data display. Logged pressure is always exported. See Figure 4.

Figure 4. The Export Options Screen
The selections are as follows:

**File Type**

TXT File

You can print a formatted text file or open it in a text editor. The run description fields are put on isolated lines at the start of the file, followed by a line for each logged data sample and zero change.

CSV File

An Excel Comma Separated Variable file has each item on a line in quotation marks and all items are separated by commas. The run description fields are put on isolated lines at the start of the file, followed by a line for each logged data sample and zero change.

New Excel File

A new Excel spreadsheet (xls) file. The locations of the run description fields, logged data samples, and zero changes in the spreadsheet are shown in the Excel Cell column below. See the Minimum Requirements section.

Excel Template

An Excel spreadsheet (xls) file that comes from a predefined Excel template (xlt) file. The locations of the run description fields, logged data samples, and zero changes in the spreadsheet are put into Excel Cell columns. These locations must be synchronized with the set data in the template. See the Minimum Requirements section. See the Excel Templates section.

**Multiple runs in**

Single File

When the upload has many runs, export all runs to one file.

Separate Files

When the upload contains many runs, export each run to an isolated file.

Excel Template

When the file type is set to Excel Template, the template you will use is selected here. Click on the Browse button and go to the necessary template file. See the Excel Templates section.

**Include Field**

Put a mark by each field to be exported. Logged pressure data is always exported.

**Insert Description**

An optional field description can be included for each field you will export. Put a mark on each field description to be included.
Excel Cell

Record the cell location where you put the data. Cell columns can range from A to YZ. Cell rows can range from 1 to 99999. The data fields are put as follows:

Run Description Fields

If the field description is included, the field description is put into the applicable cell and the field value is put into the subsequent cell to the right. If the field description is not included, the field value is put in the specified cell.

The Gauge Description has four values:

- Manufacturer
- Model
- Serial number
- Firmware version

These are in one cell isolated by commas. The Log and Data Type, Trip Setpoint and Reset, and Initial Zero and Tare fields each have two data items that occupy two rows. Each has its own description and field value, with the second row below the first.

Zero Changes

Zero changes are shown one for each row and start at the specified cell row. There are four field values for each zero change:

- the date
- the time
- the new zero setting
- the pressure unit

The second, third, and fourth values are put into the cells to the right of the first. If the field description is included, the field description is put into the applicable cell column and the field values are put into the cell columns to the right. If the field description is not included, the field values are put in the applicable cell columns.

Pressure Readings

Pressure is shown one for each row and start at the specified cell row. There are four field values for each value pressure indication:

- Date
- Time
- Reading
- Pressure unit

The second, third, and fourth values are placed in the cells next to the right of the first. There are six field values for each triple value pressure reading:

- Date
- Time
- Average reading
The second, third, and further values are put into cells to the right of the first. If the field description is included, the field description is put into the specified cell column and the field values are put into the cell columns to the right. If the field description is not included, the field values are put in the specified cell columns.

**Temperature Readings**

If temperature indications are in the uploaded data, they are shown one for each row and start at the applicable cell row. There are two field values for each value sample:

- Temperature
- Temperature unit

The second value is put in the cell to the right of the first. There are four field values for each triple value sample:

- Average temperature
- Temperature at the time of the minimum pressure
- Temperature at the time of the maximum pressure
- Temperature units

If the field description is included, the field description is put in the specified cell column and the field values are put in the cell columns to the right. If the field description is not included, the field values are put in the specified cell columns.

**Excel Templates**

An Excel template is made like a typical spreadsheet, but the file is named with the “.xlt” file extension. The templates can have predefined text, titles, graphs, and calculations which you can use with uploaded pressure data to make a complete spreadsheet presentation. The templates can be used many times, so it will not always be necessary to reformat some of your raw data.

The field options and Excel cell locations specified on the Export options screen must be synchronized with the predefined data in the template to make sure data is merged correctly.

Sample templates are supplied with the Software and are in their own folder on the CD. The templates must be manually written to your hard drive. The subsequent sections tell you more about them.
**Single-Run Graph**

The Single-Run Graph template has custom titles and a graph of the merged data. The vertical axis of the graph is scaled to the range of the uploaded pressure values and the horizontal axis is scaled to the number of samples uploaded.

The template file name is:

700GTRACK-template-single-run-pressure-graph.xlt

For the Export options for this template, see Table 1.

<table>
<thead>
<tr>
<th>Field</th>
<th>Include Field</th>
<th>Insert Description</th>
<th>Excel Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run # or Label</td>
<td>Yes</td>
<td>No</td>
<td>B3</td>
</tr>
<tr>
<td>Gauge Description</td>
<td>Yes</td>
<td>No</td>
<td>B5</td>
</tr>
<tr>
<td>Log and Sample Type</td>
<td>Yes</td>
<td>No</td>
<td>B10</td>
</tr>
<tr>
<td>Interval Time</td>
<td>Yes</td>
<td>No</td>
<td>B12</td>
</tr>
<tr>
<td>Pressure Unit</td>
<td>Yes</td>
<td>No</td>
<td>B8</td>
</tr>
<tr>
<td>Custom Factor</td>
<td>Yes</td>
<td>Yes</td>
<td>B18</td>
</tr>
<tr>
<td>Trip Setpoint and Reset</td>
<td>Yes</td>
<td>Yes</td>
<td>B16</td>
</tr>
<tr>
<td>Initial Zero and Tare</td>
<td>Yes</td>
<td>Yes</td>
<td>B14</td>
</tr>
<tr>
<td>Zero Changes</td>
<td>Yes</td>
<td>No</td>
<td>J24</td>
</tr>
<tr>
<td>Temperature Readings</td>
<td>No</td>
<td>No</td>
<td>Any</td>
</tr>
<tr>
<td>Pressure Readings</td>
<td>Yes</td>
<td>No</td>
<td>B24</td>
</tr>
</tbody>
</table>
**Single Run Pressure and Temperature Graph**

The Single Run Pressure and Temperature Graph template has custom titles and a graph of the merged data. The pressure graph vertical axis is scaled to the range of the uploaded pressure values. The horizontal axis is scaled to the number of samples uploaded. The temperature graph vertical axis is scaled to the range of the uploaded temperature values. The horizontal axis is scaled to the number of samples uploaded.

The template file name is:

700G TRACK-template-single-run-pressure-temperature-graph.xlt

For the Export options for this template, see Table 2:

<table>
<thead>
<tr>
<th>Field</th>
<th>Include Field</th>
<th>Insert Description</th>
<th>Excel Cell</th>
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</thead>
<tbody>
<tr>
<td>Run # or Label</td>
<td>Yes</td>
<td>No</td>
<td>B3</td>
</tr>
<tr>
<td>Gauge Description</td>
<td>Yes</td>
<td>No</td>
<td>B5</td>
</tr>
<tr>
<td>Log and Sample Type</td>
<td>Yes</td>
<td>No</td>
<td>B10</td>
</tr>
<tr>
<td>Interval Time</td>
<td>Yes</td>
<td>No</td>
<td>B12</td>
</tr>
<tr>
<td>Pressure Unit</td>
<td>Yes</td>
<td>No</td>
<td>B8</td>
</tr>
<tr>
<td>Custom Factor</td>
<td>Yes</td>
<td>Yes</td>
<td>B18</td>
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<tr>
<td>Trip Setpoint and Reset</td>
<td>Yes</td>
<td>Yes</td>
<td>B16</td>
</tr>
<tr>
<td>Initial Zero and Tare</td>
<td>Yes</td>
<td>Yes</td>
<td>B14</td>
</tr>
<tr>
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<tr>
<td>Temperature Readings</td>
<td>Yes</td>
<td>No</td>
<td>I44</td>
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<tr>
<td>Pressure Readings</td>
<td>Yes</td>
<td>No</td>
<td>B24</td>
</tr>
</tbody>
</table>
**Pressure Gauge**

**Start Data Logging on Gauge**
Set Download or Demand mode from the Software.

**Download Mode**
Download Mode shows “LOG” in the primary display and “DATA” in the secondary display. Push \( \text{DATA} \) to go to the current configuration functions, or push \( \text{ENT} \) to go to the new data logging branch. The data logging configuration menu sequence (new branch) is:

1. Start or stop data logging
   - Primary display: **LOG**
   - Secondary display: **FULL** if the log memory is full, **OFF** if not logging data, or **ON** if logging data.
   - \( \uparrow \) and \( \downarrow \) are ignored if the log memory is **FULL**, otherwise push either button to toggle between **OFF** and **START** if not logging data, or to toggle between **ON** and **STOP** if logging data.
   - Push \( \text{DATA} \) to go to the next menu item.
   - Push \( \text{ENT} \) to:
     - Exit configuration if the display shows **FULL**, **ON**, or **OFF**.
     - To stop logging and exit configuration if the display shows **STOP**.
     - To start logging and exit configuration if the display shows **START**.

2. Display number of free log records
   - Primary display: number of free records
   - Secondary display: **FREE**
   - \( \uparrow \) and \( \downarrow \) are ignored.
   - Push \( \text{DATA} \) to go to the next menu item if not logging, otherwise it exits configuration.
   - Push \( \text{ENT} \) to exit configuration.

3. Erase all logged data and set to Demand mode.
   - Primary display: **CLEAr**
   - Secondary display: **DATA**
   - \( \uparrow \) and \( \downarrow \) are ignored.
   - Push \( \text{DATA} \) to go to the next menu item and confirm erasure.
   - Push \( \text{ENT} \) to exit configuration without erasing the data.

4. Make sure that all logged data is erased and set to Demand mode.
   - Primary display: **CLEAr**
   - Secondary display: **CNFRM**
• ▲ and ▼ are ignored.

• Push ▼ to erase the data, set Demand mode, and exit configuration after the display briefly shows CLR to confirm erasure.

• Push ◄ to exit configuration without erasing the data.

When not logging data, the Gauge works as given in the 700G Series Users Manual.

When a log run is started, the pressure unit and custom factor are pushed to the downloaded selections. They are changed to their initial values at the end of the run.

While logging data, these changes occur:

• When ◄ is pushed, the log run to be stops before power is turned off.

• Power off on low-battery detection stops the log run before power is turned off.

• ◄ is active and an event record (including the change in the zero offset value) is placed into the log.

• The gauge’s Auto Off feature is disabled. It is changed to its initial value at the end of the run.

• Engineering units, damp, sample rate, tare, and custom factor functions on the current configuration menu are disabled.

• The units field on the display cycles between the units, the text LOG, and the text RUN at a rate of one time each second. This shows that data logging is on and the number after the text RUN shows the run number.

Demand Mode
You can make a data measurement/log without a computer. In Demand mode, a computer is not necessary to configure all of the logging parameters.

When data logging is active, a new item is added at the start of the configuration menu tree to point you to a different branch which contains all data logging functions. This new menu item shows “LOG” in the primary display and “DATA” in the secondary display. Push ◄ to go to the current configuration functions, or push ▼ to go to the new data logging branch.

The data logging configuration menu sequence (new branch) is as follows:

1. Start or stop data logging
   • Primary display: LOG

   • Secondary display: FULL if the log memory is full, OFF if not logging data, or ON if logging data.

   • ▲ and ▼ are ignored if the log memory is FULL, otherwise push either button to go between OFF
Pressure Gauge
Start Data Logging on Gauge

and START if not logging data, or to go between ON and STOP if logging data.

• Push to go to the next menu item.
• Push to:
  o Exit configuration if the display shows FULL, ON, or OFF.
  o To stop logging and exit configuration if the display shows STOP.
  o To start logging and exit configuration if the display shows START.

2. Display number of free log records
• Primary display: number of free records.
• Secondary display: FREE
• and are ignored.
• Push to go to the next menu item if not logging, otherwise it exits configuration.
• Push to exit configuration.

3. Select logging interval
• Primary display: interval selection of 1, 2, 5, 10, or 30 for seconds, or 1, 2, 5, 10, or 30 for minutes, or 1 for hours.
• Secondary display: time unit SEC, MIN, or HOUR as applicable for the selection.
• Push to decrease the interval selection. Stop at 1 second.
• Push to increase the interval selection. Stop at 1 hour.
• Push to go to the next menu item.
• Push to exit configuration.

4. Select maximum number of samples
• Main display: number of samples presently selected.
• Secondary display: SAMPL
• Push to decrease the interval selection. Stop at 1.
• Push to increase the interval selection. Stop at the maximum number of records (8500).
• Push to go to the next menu item.
• Push to exit configuration.

5. Erase all logged data and set to Demand mode.
• Primary display: CLEAr
• Secondary display: DATA
• ▲ and ▼ are ignored.
• Push ▼ to go to the next menu item and confirm erasure.
• Push ▼ to exit configuration without erasing the data.

6. Confirm erasure of all logged data and set to Demand mode.
• Main display: CLEAr
• Secondary display: CNFRM
• ▲ and ▼ are ignored.
• Push ▼ to erase the data, set Demand mode, and exit configuration after briefly displaying CLr to confirm erasure.
• Push ▼ to exit configuration. This will not erase the data.

While not logging data, the Gauge works as given in the 700G Series Users Manual.

When a log run starts, the pressure unit and custom factor are left at the values set by the current configuration functions.

While logging data, these changes occur:
• Push ◐ to stop the log run before power is turned off.

• Power off on low battery detection stops the log run before power is turned off.
• ◐ is active and an event record (including the change in the zero offset value) is recorded in the log.
• The Gauge’s Auto off function is disabled. It is change to its original value at the end of the run.
• Engineering units, damp, sample rate, tare, and custom factor items on the existing configuration menu are disabled.
• The units field on the display goes between the units, the text LOG, and the text RUN at a rate of one time each second. This shows that data logging is on and the number after the text RUN identifies the run number.
Serial Interface Instructions
The subsequent sections tell you how to set up the Gauge for serial communication.

Initiating Communication
Terminal communication can be setup with terminal communication Software on a PC. The terminal must be set as follows:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None
- Local echo on
### List of Commands

Use the subsequent list of commands to communicate with the Gauge:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAL_START</td>
<td>Puts the calibrator in calibration mode</td>
<td>MINMAX_RST</td>
</tr>
<tr>
<td>*CLS</td>
<td>Clears the error queue</td>
<td>MIN?</td>
</tr>
<tr>
<td>FAULT?</td>
<td>Returns an error code from the error queue</td>
<td>MAX?</td>
</tr>
<tr>
<td>*IDN?</td>
<td>Identification query. Returns the manufacturer, model number, and firmware revision level of the Calibrator.</td>
<td>*IDN?</td>
</tr>
<tr>
<td>TARE</td>
<td>Tares the offset pressure of the reading on the calibrator</td>
<td>TARE?</td>
</tr>
<tr>
<td>TARE?</td>
<td>Returns the current tare value</td>
<td>TARE?</td>
</tr>
<tr>
<td>PRES_UNIT?</td>
<td>Returns the pressure unit for the upper display</td>
<td>PRES_UNIT?</td>
</tr>
<tr>
<td>PRES_UNIT</td>
<td>Sets the pressure unit for the display</td>
<td>PRE_UNIT</td>
</tr>
<tr>
<td>ZERO_MEAS</td>
<td>Zeros pressure of the calibrator</td>
<td>ZERO_MEAS</td>
</tr>
<tr>
<td>ZERO_MEAS?</td>
<td>Returns the current zero offset value</td>
<td>ZERO_MEAS?</td>
</tr>
<tr>
<td>MIN?</td>
<td>Returns the minimum recorded value</td>
<td>MIN?</td>
</tr>
<tr>
<td>MAX?</td>
<td>Returns the maximum recorded value</td>
<td>MAX?</td>
</tr>
<tr>
<td>HC_OFF</td>
<td>Turns off unit</td>
<td>HC_OFF</td>
</tr>
<tr>
<td>HC_DFLT</td>
<td>Sets auto off defaults</td>
<td>HC_DFLT</td>
</tr>
<tr>
<td>TEMP?</td>
<td>Returns temperature in the chosen units</td>
<td>TEMP?</td>
</tr>
<tr>
<td>HC_COMP_OFF</td>
<td>Turns off temperature compensation</td>
<td>HC_COMP_OFF</td>
</tr>
<tr>
<td>HC_COMP_ON</td>
<td>Turns on temperature compensation</td>
<td>HC_COMP_ON</td>
</tr>
<tr>
<td>HC_COMP?</td>
<td>Returns state of temperature compensation</td>
<td>HC_COMP?</td>
</tr>
<tr>
<td>HC_RD_2410?</td>
<td>Return 2410 ADC counts.</td>
<td>HC_RD_2410?</td>
</tr>
<tr>
<td>HC_SI_OFF</td>
<td>Turns off SI mode</td>
<td>HC_SI_OFF</td>
</tr>
<tr>
<td>HC_SI_ON</td>
<td>Turns on SI mode</td>
<td>HC_SI_ON</td>
</tr>
<tr>
<td>CAL_STORE</td>
<td>Stores calibration data.</td>
<td>CAL_STORE</td>
</tr>
<tr>
<td>HC_AUTO_OFF</td>
<td>Turns auto shutdown off</td>
<td>HC_AUTO_OFF</td>
</tr>
<tr>
<td>HC_AUTO_ON</td>
<td>Turns auto shutdown on</td>
<td>HC_AUTO_ON</td>
</tr>
</tbody>
</table>
Pressure Gauge
Parameter Units

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUST_MULT?</td>
<td>Sets the multiplier for the custom unit type</td>
</tr>
<tr>
<td>STREAM_OFF</td>
<td>Turns off streaming data</td>
</tr>
<tr>
<td>STREAM_ON</td>
<td>Turns on streaming data</td>
</tr>
<tr>
<td>HC_TEMP?</td>
<td>Same as TEMP?</td>
</tr>
<tr>
<td>VAL?</td>
<td>Returns the measured pressure value in selected units</td>
</tr>
<tr>
<td>HC_CMD_LIST</td>
<td>Prints out a command list</td>
</tr>
<tr>
<td>TEMP_UNIT</td>
<td>Used to set temperature unit</td>
</tr>
<tr>
<td>TEMP_UNIT?</td>
<td>Returns temperature unit</td>
</tr>
</tbody>
</table>

The subsequent list of units is used with the Gauge:

- **Psi**: Pressure in pounds per square-inch
- **Bar**: Pressure in bars
- **mBar**: Pressure in millibars
- **Kg/cm²**: Pressure in kilograms per centimeter squared
- **lnH₂O⁴°C**: Pressure in inches of water at 4 °C
- **lnH₂O²⁰°C**: Pressure in inches of water at 20 °C
- **lnH₂O⁶⁰°F**: Pressure in inches of water at 60 °F
- **mH₂O⁴°C**: Pressure in meters of water at 4 °C
- **MH₂O²⁰°C**: Pressure in meters of water at 20 °C
- **cmH₂O⁴°C**: Pressure in centimeters of water at 4 °C
- **cmH₂O²⁰°C**: Pressure in centimeters of water at 20 °C
- **ftH₂O⁴°C**: Pressure in feet of water at 4 °C
- **ftH₂O²⁰°C**: Pressure in feet of water at 20 °C
**700G/TRACK**

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<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Error Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ftH2O60F</td>
<td>Pressure in feet of water at 60 °F</td>
<td>101</td>
</tr>
<tr>
<td>Inhg0C</td>
<td>Pressure in inches of mercury at 0 °C</td>
<td>102</td>
</tr>
<tr>
<td>mmhg0C</td>
<td>Pressure in millimeters of mercury at 0 °C</td>
<td>103</td>
</tr>
<tr>
<td>kpal</td>
<td>Pressure in kilopascals</td>
<td>105</td>
</tr>
<tr>
<td>Far</td>
<td>Temperature in Fahrenheit</td>
<td>106</td>
</tr>
<tr>
<td>Cel</td>
<td>Temperature in Celsius</td>
<td>108</td>
</tr>
<tr>
<td></td>
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<td>109</td>
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<td>122</td>
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</tbody>
</table>